

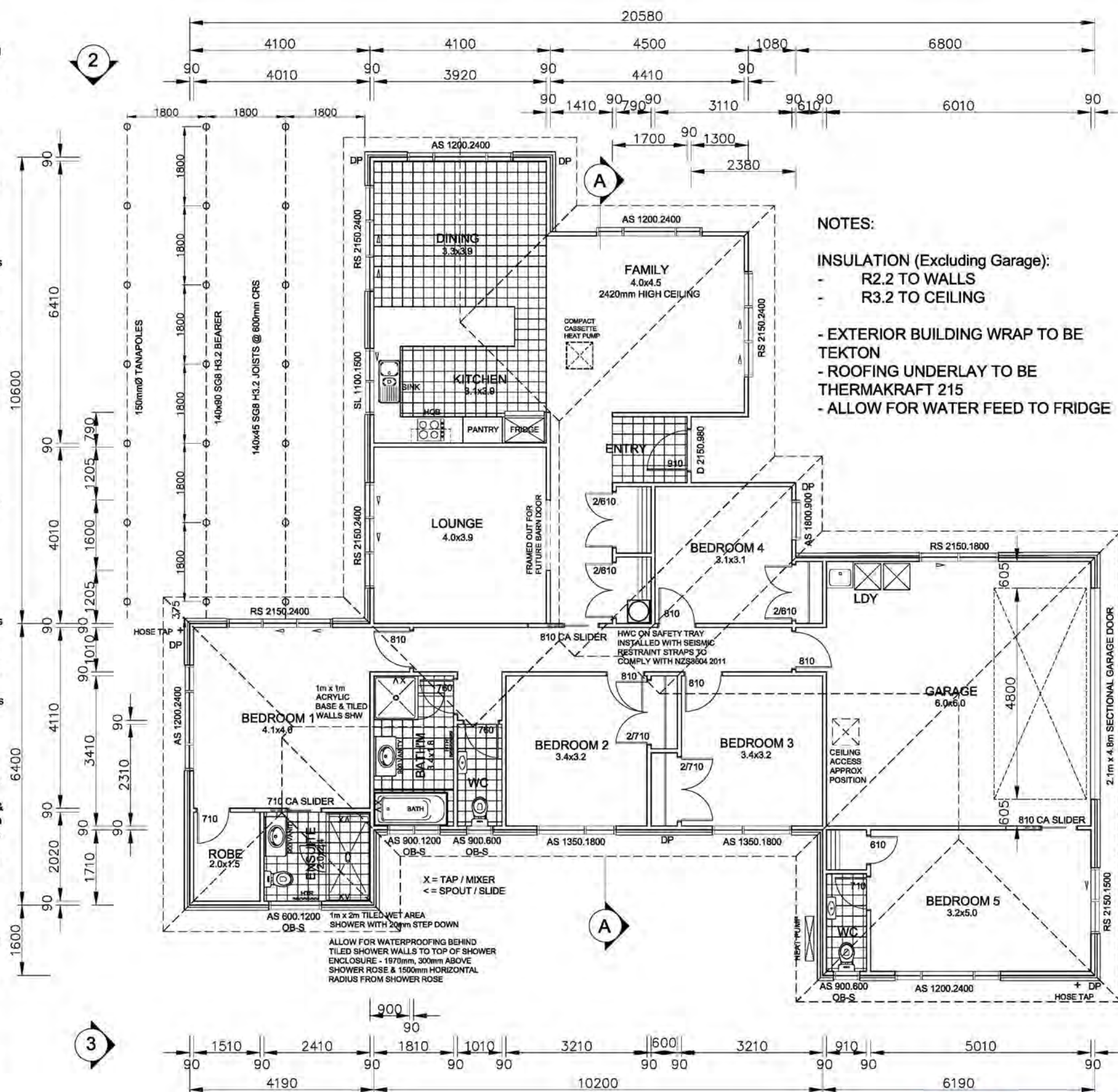
Sharalyn Fraser *Agency*

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GENERAL NOTES:

- All work must be carried out to conform to relevant sections of the New Zealand Building Code and New Zealand Standards - in particular NZS 3604, NZS 3602 & NZS 4218. All references to Standards shall be taken as reference to the latest revision including amendments.
 - Ground bearing must be reconfirmed on site following excavation but prior to placing concrete and reinforcing.
 - Confirm site boundaries with licenced surveyor. Fences may not necessarily be on the legal boundary.
 - All work to be carried out to best trade practice
 - All habital rooms have at least 5% of their floor area as opening windows or approved alternative to achieve ventilation requirements
 - All habital rooms have windows providing at least 10% of their floor area as natural light. At least 50% of the glazed area providing natural light is clear glazing falling within the visual awareness zone providing natural light is clear glazing falling within the visual awareness zone
 - Garage spaces within or attached to the building envelope shall have
 - A - Openings provided with a 50mm min total level change between the interior & exterior paving
 - B - Provision to drain water away from the threshold of the opening.
 - refer to E2 fig 65 & table 18 for overall level change requirements
 - Do Not Scale off Building Consent Documentation issued from TA's as the plans may have been scanned and the scale distorted.
 - Prenail framing and truss manufacturer to provide lintel sizes and provide a producer statement for framing, window lintels and trusses.
 - Window openings to be 20mm larger than window sizes (10mm tolerance each side)
 - All bottom plates and framing to shower areas to be H3.1. All framing in other at risk areas such as parapets and enclosed balconys to comply with NZS 3602 for particular situation.
 - Allow for dwangs to fix fittings as required by owner.
 - Wall junctions shall be framed up with not less than 2 studs blocked and nailed.
 - Maximum diameter hole in 90mm stud to be 25mm or 35mm diameter where not more than 3 consecutive studs are drilled.
 - Lintels supporting rafters or trusses shall be secured against uplift as per clause 8.6.1.8 & figure 8.12, NZS 3604:2011. 25x1mm strap with 6/30x2.5mm nails into both lintel & stud & 25x1mm strap taken under plate & up 150mm each side of stud fixed with 6/30x2.5mm nails into each side of stud
 - Confirm building wrap is able to be used with timber treatment.
 - Builders on site to comply with F5 of the building code (Health & Safety)
 - Benchtops & Vanities
 - To be selected at owners discretion. To be continuously smooth and easily maintained in a hygenic condition e.g. stainless steel, high pressure laminate, acrylic, granite, or engineered stone surface. Must be sealed to adjoining impervious, easily cleaned walls e.g. aquaenamel paint, tiles, or glass
- INTERNAL LININGS
- WALLS:
- Generally - 10mm Standard Gib Board
 - Bathrooms - 10mm Gib Aqualine
- CEILINGS:
- Generally - 13mm Standard Gib
 - Bathrooms - 13mm Gib Aqualine
 - Back block sheet joints and allow for control joints as required by manufacturer
- FRAMING
- Exterior Walls & Internal Load Bearing Walls:
- Up to 2.4m - 90x45 SG8 at 400 crs H1.2
- Interior Non Load Bearing Walls:
- Up to 2.4m - 90x45 SG8 at 600 crs H1.2



- NOTES:
- INSULATION (Excluding Garage):
- R2.2 TO WALLS
 - R3.2 TO CEILING
- EXTERIOR BUILDING WRAP TO BE TEKTON
 - ROOFING UNDERLAY TO BE THERMAKRAFT 215
 - ALLOW FOR WATER FEED TO FRIDGE

Revisions:

Revisions:	rev A	rev B
AUGUST 2 / 2019		
NOVEMBER 20 / 2019		

CONSENT
PLANS

Project:
**NEW
DWELLING**

LOT 3 HADFIELD ROAD
PEKA PEKA

Client:
BEATTIE

Drawing Title:
FLOOR PLAN

Designer:
**COASTAL
ARCHITECTURE LTD.**

11 Kodex Place
Paraparaumu
New Zealand

Tel: 04 296 1248
e-mail : coastarchdesign@gmail.com

Design:
MB

Drawn:
BF

Scale:
as shown

Job: 980060

Page of: 3

Rev: B



G.J. Gardner. HOMES

New Zealand's favourite home builders.

FLOOR PLAN SCALE 1:100 AREA = 219.4m² (227.6m² OVER CLADDING)

BC190682
Received by
Kapiti Coast District Council
3/03/20
via Email

All work shall be in accordance with the NZBC. If in doubt ASK The Contractor must verify all dimensions on the job before commencing any work or shop drawings. Figured dimensions are to be used, scaled dimensions must be verified. This drawing and concept are copyright of M and L Barke Construction Ltd - Kapiti / Wellington Franchisees for G.J. Gardner Homes. The recipient of this document is prohibited from disclosing its content for any purpose without the prior written consent of M and L Barke Construction Ltd - Kapiti / Wellington Franchisees for G.J. Gardner Homes

DRAINAGE PLAN NOTES:

- All Plumbing and Drainage to be in accordance with AS/NZS 3500.2 for ground floor systems and for single stack systems
- Plumber/drainlayer to fill out producer statement and return to council with an as built drainage plan
- pipes to be inspected before covering with sand
- A tempering valve is required to be installed on the hot water service
- No pipes at any point exceed 10m in length from dn 100 vented drain
- Non-potable supply appropriately protected from cross connection hazards & is identified by appropriate signage
- HWC to be no less than 65 degrees at the cylinder to prevent against legionella bacteria.
- Water temperature delivered to sanitary fixtures to be no more than 55 degrees in compliance with G12

PIPE GRADIENTS

- Minimum grades for drains and discharge pipes
- 65° & less = 1 in 40
- 80° & 100° = 1 in 60

HOT & COLD WATER

- All hot & cold water pipes in house to be run in Dux Secura Polybutylene plumbing system
- 20mm for Main and to HWC
- 15mm to all other branches
- 15mm to exterior taps
- Kitchen hot water supply pipe to be 10mm if over 12m in length but must be under 25m long

OVERFLOW RELIEF GULLY HEIGHT CLEARANCE TO COMPLY WITH AS3500.2 CL 4.6.6.6 & CL 4.6.6.7

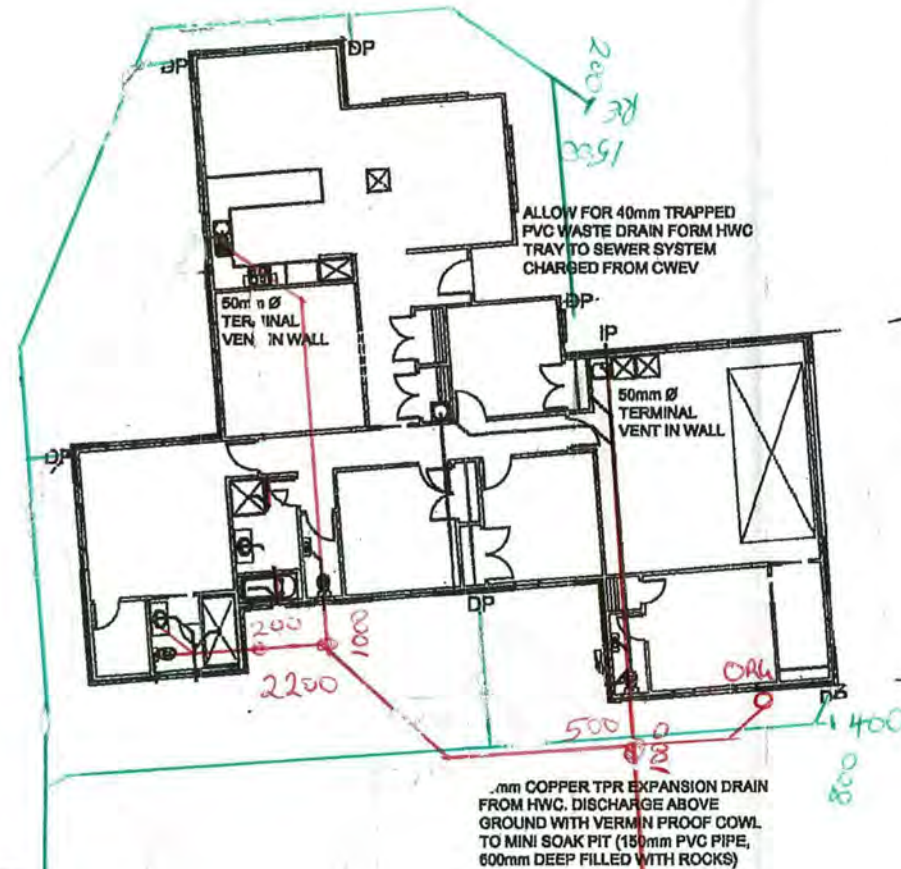
150mm BELOW THE LOWEST FIXTURE & 75mm ABOVE THE IMPERMEABLE SURFACE

Laid by
STREAMLINE PLUMBING
AND DRAINAGE
DANIEL HOLLAND
REV # 240
ON 9/10/2019
IN 100mm S16
PVC PIPE.

NOTES:

ALL SEWER & STORMWATER PIPES TO BE 100mm Ø
ALL PIPE WORK ABOVE SLAB TO BE 40mm Ø
WC WASTE PIPE TO BE 100mm Ø

ALL EXPOSED HOT & COLD WATER PIPES TO BE LAGGED IF IN FROST PRONE AREA



NOTE:
WATER SUPPLY TO HOUSE
VIA A PURETEC HYBRID
WATER FILTER SYSTEM

2 x 25000lt STORMWATER
TANKS WITH DIVERTRON
1200x SUBMERSIBLE PUMP

OVERFLOW FROM TANKS TO
NATURAL SWALE.
OUTFALL SHALL BE VIA ROCK
DISSIPATER TO REMOVE THE
VELOCITY & DAMAGE ASSOCIATED
WITH FAST MOVING WATER

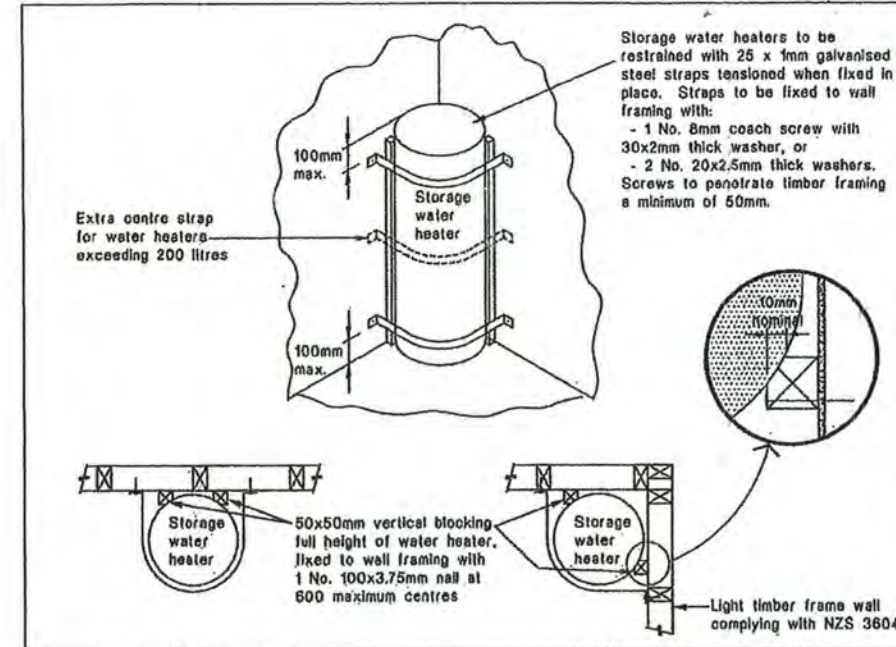
1 x 30000lt STORMWATER TANK FOR FIRE
FIGHTING REQUIREMENTS (ADDITIONAL
WATER FOR FIRE FIGHTING SUPPLIED FROM
COMMUNITY FIRE FIGHTING TANK ON ROAD).
OVERFLOW TO HOUSE TANKS

NOTE:
THE FIRE FIGHTING HYDRANT IS TO BE
POSITIONED 6m MIN FROM DWELLING TO
ENABLE FIREMEN ACCESS TO THE HYDRANT
SHOULD THE BUILDING ITSELF BE ON FIRE

NOTE:
DRIVEWAY TO BE FORMED WITH
PERMEABLE MATERIAL

ALLOW FOR 4.5m x 11m HARD
STANDING AREA IN FRONT OF GARAGE
FOR FIRE FIGHTING APPLIANCES

HARD METAL ACCESS
FOR FIRE TRUCK



Revisions:

AUGUST 2 / 2019 rev A
SEPTEMBER 6 / 2019 rev B

CONSENT PLANS

Project:
**NEW
DWELLING**
LOT 3 HADFIELD ROAD
PEKA PEKA

Client:
BEATTIE

Drawing Title:
DRAINAGE PLAN

Designer:
**COASTAL
ARCHITECTURE LTD.**
11 Kodex Place
Paraparaumu
New Zealand
Tel: 04 296 1248
e-mail: coastarchdesign@gmail.com

Design:
MB
Drawn:
BF
Scale:
as shown

Job:
980060
Page of:
2
Rev:
B



G.J. Gardner HOMES
New Zealand's favourite home builders

All work shall be in accordance with the NZBC. If in doubt ASK The Contractor must verify all dimensions on the job before commencing any work or shop drawings. Figures dimensions are to be used, scaled dimensions must be verified. This drawing and concept are copyright of M and L Barke Construction Ltd. Kapiti / Wellington Franchisee for G.J. Gardner Homes. The recipient of this document is prohibited from disclosing its content for any purpose without the prior written consent of M and L Barke Construction Ltd. Kapiti / Wellington Franchisee for G.J. Gardner Homes

DRAINAGE PLAN SCALE 1:200

Memorandum from licensed building practitioner: Record of Building work [FOUNDATIONS]

Section 88, Building Act 2004

THE BUILDING
Street Address: Lot 3, 6 Hadfield Road,
Suburb: PEKA PEKA

THE PROJECT
Building consent number: 190682

THE OWNER(S)
Name(s): Adam Beattie
Mailing Address: 31 Wood Leigh, PARAPARAUMU,
Phone Number: or
Email Address: lou.barke@gjgardner.co.nz

RECORD OF WORK THAT IS RESTRICTED BUILDING WORK		
PRIMARY STRUCTURE		
Work that is restricted building work	Description of restricted building work	Carried out or supervised
Tick <input checked="" type="checkbox"/>	If appropriate, provide details of the restricted building work	Tick <input checked="" type="checkbox"/> whether you carried out this design work or supervised someone else carrying out this design work
Foundations and subfloor framing	<input checked="" type="checkbox"/> Dig, Steel, Pour Footings Box & Steel Floor, Supervise floor pour	<input checked="" type="checkbox"/> Carried out <input checked="" type="checkbox"/> Supervised
Columns and beams	<input type="checkbox"/>	<input type="checkbox"/> Carried out <input type="checkbox"/> Supervised
Other	<input type="checkbox"/>	<input type="checkbox"/> Carried out <input type="checkbox"/> Supervised

EXTERNAL MOISTURE MANAGEMENT SYSTEMS		
Work that is restricted building work	Description of restricted building work	Carried out or supervised
Tick <input checked="" type="checkbox"/>	If appropriate, provide details of the restricted building work	Tick <input checked="" type="checkbox"/> whether you carried out this design work or supervised someone else carrying out this design work
Damp proofing	<input checked="" type="checkbox"/> Damp Proof Membrane Underslab only	<input checked="" type="checkbox"/> Carried out <input type="checkbox"/> Supervised

980060

Waterproofing <input type="checkbox"/>	Waterproofing to Blockwork <input type="checkbox"/>	<input type="checkbox"/> Carried out
Other <input type="checkbox"/>		<input type="checkbox"/> Supervised
		<input type="checkbox"/> Carried out
		<input type="checkbox"/> Supervised

ISSUED BY	
Name and contact details of the licensed building practitioner who is licensed to carry out or supervise design work that is restricted building work:	
Name: <u>Shane Mackenzie</u>	LBP number: <u>102284</u>
Class(es) licensed in: <input checked="" type="checkbox"/> Foundations <input checked="" type="checkbox"/> Carpentry <input type="checkbox"/> Roofing <input type="checkbox"/> External Plastering <input type="checkbox"/> Brick & Blocklayers	
Plumbers, Gasfitters and Drainlayers registration number (if applicable):	
Mailing Address (if different from below):	
Street Address/Registered Office: <u>18 Torrance Way</u>	
Town/City: <u>Perth</u>	Postcode:
Phone number: <u>027 222 5047</u>	Mobile:
After hours: <u>027 222 5047</u>	Fax:
Email address: <u>Landmaxextra.co.za</u>	Website:

DECLARATION

I, <u>Shane Mackenzie</u> carried out or supervised the restricted building work identified on this form:	
Signature: <u>[Signature]</u>	Date: <u>20.9.19.</u>

Memorandum from licensed building practitioner: Record of Building work [ROOFING]

Section 88, Building Act 2004

THE BUILDING
Street Address: Lot 3, 6 Hadfield Road,
Suburb: PEKA PEKA

THE PROJECT
Building consent number: 190682

THE OWNER(S)
Name(s): Adam Beattie
Mailing Address: 31 Wood Leigh, PARAPARAUMU,
Phone Number: or
Email Address: lou.barke@gjgardner.co.nz

RECORD OF WORK THAT IS RESTRICTED BUILDING WORK		
PRIMARY STRUCTURE		
Work that is restricted building work	Description of restricted building work	Carried out or supervised
Tick <input checked="" type="checkbox"/>	If appropriate, provide details of the restricted building work	Tick <input checked="" type="checkbox"/> whether you carried out this design work or supervised someone else carrying out this design work
Roof <input type="checkbox"/>	Roof Battens and Fixings for Battens	<input type="checkbox"/> Carried out <input checked="" type="checkbox"/> Supervised
Other <input type="checkbox"/>		<input type="checkbox"/> Carried out <input type="checkbox"/> Supervised

EXTERNAL MOISTURE MANAGEMENT SYSTEMS		
Work that is restricted building work	Description of restricted building work	Carried out or supervised
Tick <input checked="" type="checkbox"/>	If appropriate, provide details of the restricted building work	Tick <input checked="" type="checkbox"/> whether you carried out this design work or supervised someone else carrying out this design work
Damp proofing <input type="checkbox"/>	Roof Underlay	<input type="checkbox"/> Carried out <input checked="" type="checkbox"/> Supervised
Roof Cladding or roof cladding system <input type="checkbox"/>	Installation of Roof Cladding system. Including Flashings as per manufacturers' specifications.	<input type="checkbox"/> Carried out <input checked="" type="checkbox"/> Supervised

980060

Other <input type="checkbox"/>	<input type="checkbox"/> Carried out <input type="checkbox"/> Supervised
--------------------------------	---

Name and contact details of the licensed building practitioner who is licensed to carry out or supervise design work that is restricted building work:	
Name: <i>Nick Nolan</i>	LBP number: <i>116537</i>
Class(es) licensed in: <input type="checkbox"/> Foundations <input type="checkbox"/> Carpentry <input checked="" type="checkbox"/> Roofing <input type="checkbox"/> External Plastering <input type="checkbox"/> Brick & Blocklayers	
Plumbers, Gasfitters and Drainlayers registration number (if applicable):	
Mailing Address (if different from below):	
Street Address/Registered Office: <i>Po Box 694 Paraparaumu</i>	
Town/City: <i>Paraparaumu Beach</i>	Postcode: <i>5032</i>
Phone number: <i>0274430452</i>	Mobile: <i>0274430452</i>
After hours:	Fax:
Email address: <i>nick@hkroofting.co.nz</i>	Website:

DECLARATION

I <u><i>Nick Nolan</i></u> carried out or supervised the restricted building work identified on this form:	
Signature: <u><i>Nick Nolan</i></u>	Date: <u><i>4/11/2019</i></u>



CAPITAL
Continuous Spouting
0800 SPOUTING

Capital Continuous Spouting 2018 Limited
32 Park Street
Kingsley Heights, Upper Hutt 5018
www.wellingtonspouting.co.nz

GUARANTEE

Job Number: 10641

Installation Date: 31/10/2019

HKR
6 Hadfield Link Rd
Peka Peka Wellington 5391

Thank you for choosing Capital Continuous Spouting Limited

Capital Continuous Spouting guarantees the installation and workmanship of our products installed at the above address for a period of 10 years from the date of installation. All materials used hold a 10 year warranty.

Failure of our products part or wholly due to the following causes are not covered by this guarantee:

1. All unwashed surfaces must be cleaned every 6 months.
2. Failure to remove debris leading to accumulation of moisture retaining matter in the spouting and downpipes.
3. Mechanical, chemical or other damage sustained subsequent to installation.
4. Storm or tempest or other causes beyond the control of Capital Continuous Spouting Ltd
5. Attachment of non-approved aftermarket products to our gutter i.e. leaf guard not installed by us

Regards

Craig Wylie
Managing Director


Memorandum from licensed building practitioner: Record of Building work [CARPENTRY]

Section 88, Building Act 2004

THE BUILDING
Street Address: Lot 3, 6 Hadfield Road,
Suburb: PEKA PEKA

THE PROJECT
Building consent number: 190682

THE OWNER(S)
Name(s): Adam Beattie
Mailing Address: 31 Wood Leigh, PARAPARAUMU,
Phone Number: or
Email Address: lou.barke@gjgardner.co.nz

RECORD OF WORK THAT IS RESTRICTED BUILDING WORK		
PRIMARY STRUCTURE		
Work that is restricted building work	Description of restricted building work	Carried out or supervised
Tick	<input checked="" type="checkbox"/> If appropriate, provide details of the restricted building work	Tick <input checked="" type="checkbox"/> whether you carried out this design work or supervised someone else carrying out this design work
Walls	<input checked="" type="checkbox"/> Standing PreNail Framing and all connections	<input checked="" type="checkbox"/> Carried out <input checked="" type="checkbox"/> Supervised
Roof	<input checked="" type="checkbox"/> Erect Roof Framing and all connections	<input checked="" type="checkbox"/> Carried out <input checked="" type="checkbox"/> Supervised
Columns and beams	<input checked="" type="checkbox"/> Columns & Beams as per plan	<input checked="" type="checkbox"/> Carried out <input checked="" type="checkbox"/> Supervised
Bracing	<input checked="" type="checkbox"/> Ply Bracing and all hold downs and fixings	<input checked="" type="checkbox"/> Carried out <input checked="" type="checkbox"/> Supervised
Bracing	<input checked="" type="checkbox"/> Gib Bracing only, as per plan.	<input checked="" type="checkbox"/> Carried out
Other	<input type="checkbox"/> 	<input type="checkbox"/> Carried out <input type="checkbox"/> Supervised

EXTERNAL MOISTURE MANAGEMENT SYSTEMS

Work that is restricted building work	Description of restricted building work	Carried out or supervised
Tick <input checked="" type="checkbox"/>	If appropriate, provide details of the restricted building work	Tick <input checked="" type="checkbox"/> whether you carried out this design work or supervised someone else carrying out this design work
Damp proofing	<input type="checkbox"/> DPC between frames and concrete <i>CAME Supplied</i>	<input type="checkbox"/> Carried out <input checked="" type="checkbox"/> Supervised
Building Wrap	<input checked="" type="checkbox"/> Installed Building Wrap and Flashings	<input checked="" type="checkbox"/> Carried out <input checked="" type="checkbox"/> Supervised
Ventilation system (for example, subfloor or cavity)	<input checked="" type="checkbox"/> Cavity for Linea as per plan	<input checked="" type="checkbox"/> Carried out <input checked="" type="checkbox"/> Supervised
Wall cladding or wall cladding system	<input checked="" type="checkbox"/> Linea on Cavity as per plan	<input checked="" type="checkbox"/> Carried out <input checked="" type="checkbox"/> Supervised
External Windows & Joinery	<input checked="" type="checkbox"/> Installed Joinery	<input checked="" type="checkbox"/> Carried out <input checked="" type="checkbox"/> Supervised
Other	<input type="checkbox"/> <i>NA</i>	<input type="checkbox"/> Carried out <input type="checkbox"/> Supervised

ISSUED BY

Name and contact details of the licensed building practitioner who is licensed to carry out or supervise design work that is restricted building work:

Name: *Murray Pearce*LBP number: *BP124403*Class(es) licensed in: ☐ Foundations ☒ Carpentry ☐ Roofing ☐ External Plastering ☐ Brick & Blocklayers

Plumbers, Gasfitters and Drainlayers registration number (if applicable):

Mailing Address (if different from below):

Street Address/Registered Office: *34 Rewa Rewa Crescent*Town/City: *Waikanae*Postcode: *5036*

Phone number: _____

Mobile: *0279479989*

After hours: _____

Fax: _____

Email address: *murray.pearce1966@gmail.com*

Website: _____

DECLARATION

I, *M Pearce*, carried out or supervised the restricted building work identified on this form:Signature: *M Pearce*Date: *22/1/2020*

Memorandum from licensed building practitioner: Record of Building work [CARPENTRY - BRACING]

Section 88, Building Act 2004

THE BUILDING
Street Address: Lot 3, 6 Hadfield Road,
Suburb: PEKA PEKA

THE PROJECT
Building consent number: 190682

THE OWNER(S)
Name(s): Adam Beattie
Mailing Address: 31 Wood Leigh, PARAPARAUMU,
Phone Number: or
Email Address: lou.barke@gjgardner.co.nz

RECORD OF WORK THAT IS RESTRICTED BUILDING WORK		
PRIMARY STRUCTURE		
Work that is restricted building work	Description of restricted building work	Carried out or supervised
Tick <input checked="" type="checkbox"/>	If appropriate, provide details of the restricted building work	Tick <input checked="" type="checkbox"/> whether you carried out this design work or supervised someone else carrying out this design work
Bracing <input checked="" type="checkbox"/>	Gib Bracing only, as per plan.	<input checked="" type="checkbox"/> Carried out <input checked="" type="checkbox"/> Supervised
Other <input type="checkbox"/>	<u>NA</u>	<input type="checkbox"/> Carried out <input type="checkbox"/> Supervised

EXTERNAL MOISTURE MANAGEMENT SYSTEMS		
Work that is restricted building work	Description of restricted building work	Carried out or supervised
Tick <input checked="" type="checkbox"/>	If appropriate, provide details of the restricted building work	Tick <input checked="" type="checkbox"/> whether you carried out this design work or supervised someone else carrying out this design work
Other <input type="checkbox"/>	<u>NA</u>	<input type="checkbox"/> Carried out <input type="checkbox"/> Supervised

ISSUED BY

Name and contact details of the licensed building practitioner who is licensed to carry out or supervise design work that is restricted building work:

Name: Murray PearceLBP number: BP124403Class(es) licensed in: ☐ Foundations ☒ Carpentry ☐ Roofing ☐ External Plastering ☐ Brick & Blocklayers

Plumbers, Gasfitters and Drainlayers registration number (if applicable):

Mailing Address (if different from below): 34 Rewarewa Crescent

Street Address/Registered Office: -

Town/City: WaikanaePostcode: 5036Phone number: 0278479989Mobile: 0278479989

After hours: _____

Fax: _____

Email address: murray.pearce1966@gmail.com

Website: _____

DECLARATIONI Murray Pearce carried out or supervised the restricted building work identified on this form:Signature: [Signature]Date: 22/1/2020

Memorandum from licensed building practitioner: Record of Building work [BRICKWORK]

Section 88, Building Act 2004

THE BUILDING

Street Address: Lot 3, 6 Hadfield Road,

Suburb: PEKA PEKA

THE PROJECT

Building consent number: 190682

THE OWNER(S)

Name(s): Adam Beattie

Mailing Address: 31 Wood Leigh, PARAPARAUMU,

Phone Number: or

Email Address: lou.barke@gjgardner.co.nz

RECORD OF WORK THAT IS RESTRICTED BUILDING WORK

PRIMARY STRUCTURE

Work that is restricted building work	Description of restricted building work	Carried out or supervised
Tick <input checked="" type="checkbox"/>	If appropriate, provide details of the restricted building work	Tick <input checked="" type="checkbox"/> whether you carried out this design work or supervised someone else carrying out this design work
Other <input type="checkbox"/>		<input type="checkbox"/> Carried out <input type="checkbox"/> Supervised

EXTERNAL MOISTURE MANAGEMENT SYSTEMS

Work that is restricted building work	Description of restricted building work	Carried out or supervised
Tick <input checked="" type="checkbox"/>	If appropriate, provide details of the restricted building work	Tick <input checked="" type="checkbox"/> whether you carried out this design work or supervised someone else carrying out this design work
Damp proofing <input type="checkbox"/>	Ensured DPC is breaking mortar joint	<input type="checkbox"/> Carried out <input type="checkbox"/> Supervised
Wall cladding or wall cladding system <input type="checkbox"/>	Brick Veneer as per plan	<input checked="" type="checkbox"/> Carried out <input type="checkbox"/> Supervised
Other <input type="checkbox"/>		<input type="checkbox"/> Carried out <input type="checkbox"/> Supervised

ISSUED BY

Name and contact details of the licensed building practitioner who is licensed to carry out or supervise design work that is restricted building work:

Name: Kelly BakerLBP number: 111559Class(es) licensed in: ☐ Foundations ☐ Carpentry ☐ Roofing ☐ External Plastering ☒ Brick & Blocklayers

Plumbers, Gasfitters and Drainlayers registration number (if applicable):

Mailing Address (if different from below):

Street Address/Registered Office: 66 Campbell Ave PongakawaTown/City: KapitiPostcode: 5032Phone number: 0272804266Mobile: 0272804266After hours: " "Fax: _____Email address: baker.k@xtra.co.nzWebsite: _____**DECLARATION**I, Kelly Baker carried out or supervised the restricted building work identified on this form:Signature: [Signature]Date: 9.12.19



Combined Certificate of Compliance and Electrical Safety Certificate

Unique ID: 32728

Note: If you are using this form to provide only an Electrical Safety Certificate, then only complete sections 1, 3 and 5

1. Customer Information

Customer Name: Adam Beattie

Customer Phone / Email: 027 6822999

Location of Installation: 6 Hadfield Road, Peka Peka.

2. Certifier Information

Certifier Name: William Liley

Registration / Practising Licence Number: 6265991

Organisation: O'Leary Electrical LTD.

Telephone Number: 021630031

Email: o'learyelectricaltd@gmail.com

Name and Registration Number of person(s)

Involved in work and supervised by certifier: Dylan

3. Details of work to which certificate applies

The work is: ☒ an entire installation ☐ a specific part of an installation

The work is: ☒ High Risk ☒ General ☐ Low Risk (Certificate of Compliance not required)

Indicate the number of each item installed or altered:

Number of lighting outlets: 72

Number of socket outlets: 43

Number of ranges: 1x Hob / 1x oven

Number of water heaters: 1

General Description of Work

New Installation

Tick (✓) if work includes:

☒ Mains

☒ MEN switchboard closest to point of supply

☒ Main Earthing System

☐ Electric Lines

Period within / Date on which the work was done: _____

The work is safe to be connected to: ☒ 230/400V MEN System ☐ Other (specify) _____

4. Certificate of Compliance

I am satisfied that the work to which this Certificate of Compliance applies has been done lawfully and safely and the information in this certificate is correct. The work:

- ☐ complies with Part 1 of AS/NZ 3000 ☒ complies with Part 2 of AS/NZ 3000
- ☐ complies with the following standard(s): _____
- ☐ has been installed in accordance with a certified design (attach or reference*)
- ☐ has an earthing system that is correctly rated
- ☒ contains fittings which are safe to connect to a power supply
- ☐ relies on supplier's Declaration of Conformity (attach or reference*)
- ☐ relies on manufacturer's Instructions (attach or reference*)
- ☒ has been satisfactorily tested in accordance with Electricity (Safety) Regulations 2010
- ☒ is safe to connect

Test Results:

	Electrical Worker	Inspector
Polarity (Independent earth):	✓	
Insulation resistance:	✓	
Earth continuity:	✓	
Bonding:	✓	
Other (specify):		

Electronic reference: WWW.JARussells.CO.NZ

Certifier's Signature: William Liley

Date: 16/12/19

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

5. Electrical Safety Certificate

Date on which the connection was done: _____

I am satisfied that the work to which this Electrical Safety Certificate applies is connected to a power supply and is safe to use

Name: William Liley

Registration / Practising License Number: E265991

Signature of Connector: William Liley

Date: 16/12/19

Independent Electrical Inspectors Ltd.

3 Celtic Way, Paraparaumu.
 ✓ Andrew Stellingwerf -12866 ph:027 280 4588

COMBINED COC / ROI / ESC

Customer Name: O'LEARY
 Location of Installation: 61 MOFFAT RD POKIAPA Reference: 161219/1

Certificate of compliance for revenue metering installed on this site in accordance with E.I.P.C code.
☐ Vircom EMS testhouse ☐ Indeserve testhouse ☒ Other REVENUE METER
 Description of work inspected: NEW HOUSE NEW MAIN METER

Certificate of compliance supplied

Reference: 32728 Issued by: W LILEY

Reg Number: E265991 Dated: 16/12/19

Reference: Issued by:

Reg Number: Dated:

HAZARD IDENTIFICATIONS AND CONTROLS.

ELECTRA CONTROL ROOM PH: 06 367 9755

IN EMERGENCY PHONE: 111

NETWORK ACCESS PH: 0800 800 109

MINIMUM P.P.E. REQUIRED: HARD HAT, FLAMEPROOF OVERALLS, WORK BOOTS, GLOVES, SAFETY GLASSES.

FIRE EXTINGUISHER, FIRST AID KIT, AND WATER BOTTLE LOCATED REAR OF VEHICLE.

Client:	<u>O'LEARY</u>		Electra acknowledgement #		
Job Type:	<u>NEW SAFETY DISC</u>		Time on:	<u>0900 1315</u>	
Asset #:	<u>364563</u>		Time off:	<u>0915 1330</u>	
HAZARD	POTENTIAL HARM	ACTIONS PROPOSED	COMMENTS	WORK CARRIED OUT	
Electricity	Shock, burns	MINIMISE	CHECK GROUNDING	Inspect & Liven ✓	
Heights	Gravity	MINIMISE	CHECK LADDER FIXINGS	1 PH tie in	
Falls, trips & slips	Injury			3 PH tie in	
Outdoor/Weather	Cold/Heat/Rain			Disco/Recon ✓	
Traffic	Hit by			Fuse	
Public Access	Danger to public				
CONSIDER ALSO: SITE SECURITY, OTHER SERVICES, ENVIRONMENTAL ISSUES, HEAVY LIFTING, ELEVATED WORKING, ETC					
TESTING AND COMMISSIONING					
TESTING & INSPECTIONS CARRIED OUT IN ACCORDANCE WITH THE ELECTRICITY SAFETY REGULATIONS AS/NZS 3000 / AS/NZS3019					
Voltage:	R: <u>241</u> v	W: v	B: v	Comments:	
Earth Loop impedance:	R: <u>.69</u> Ω	R Ω	B: Ω		
PSSC:	R: <u>.35</u> ka	W: ka	B: ka		
Insulation Resistance:	<u>>500</u> MΩ	Earth Lead Resistance:	<u>0.02</u> Ω	Bonding:	<u>0.00</u> Ω
Polarity	✓	Visual Check	✓	R.C.D Test	<u>29.2</u> ms
					<u>24</u> ma

This work complies with the NZ building code, is connected to a power supply and has not adversely affected any other part of this installation. I certify that the installation or part thereof, to which this certificate applies, complies with the current electrical regulations and is safe to use.

SIGNATURE



DATE 16/12/19



O'LEARY ELECTRICAL LTD

PO BOX 2167 RAUMATI

Electronic References

C.O.C - 32728

ADDRESS - 6 Hadfield road, Peka Peka

✓ GENERAL CABLE	http://www.generalcable.co.nz/
✓ SCHNEIDER DATA	http://www.schneider-electric.com/
✓ UTILUX	http://www.utilux.co.au/WebSiteUtilux/Default.asp
✓ MERLIN GERIN	http://www.schneider-electric.com/
✓ MARLEY	http://www.marley.co.nz/
○ HPM	http://www.hpm.co.nz
○ TEUBEL	http://www.teubels.co.nz/
✓ GENERAL ELECTRIC	http://www.ge.com/nz/
○ DYNAMIX	http://www.dynamix.co.nz/
✓ MANROSE	http://www.simx.co.nz/
✓ SIMX	http://www.simx.co.nz/
✓ PDL	http://www.pdl.co.nz
✓ PHILIPS	http://www.phillips.co.nz/
○ VYNCO	http://www.vynco.co.nz/
○ LORETTO	http://www.globelink.co.nz/
○ SWITCH LIGHTING	http://www.switch-lighting.co.nz/
○ PRISMA	http://www.rexel-lighting.co.nz/

o SG (JUPITER)	http://www.sg-as.no/
o MICRON	http://www.micronsecurity.com/
✓ CLIPSAL	WWW.SCHNEIDER-ELECTRIC.COM/
o GOLDAIR	http://www.goldair.co.nz/
o HUGO	http://www.hugolighting.com/
✓ FUJITSU	http://www.fujitsu.com/nz/
o HOME DOWNLIGHTS	http://www.homedownlights.co.nz/
o HALCYON LIGHTING	http://halcyonlights.co.nz/
o SUPERLUX	http://www.superlux.com.au/
✓ MARTEC	www.lightingpacific.co.nz
✓ LIGHTINGPLUS	www.lightingplus.co.nz
o UNDERTILE	www.warmup.co.nz
o EUROTECH	WWW.EUROTECHLIGHTING.CO.NZ
o PIERLITE	WWW.GERARDLIGHTING.CO.NZ
✓ METCON	WWW.METCON.CO.NZ
✓ SIGNET	WWW.TRICAL.CO.NZ
✓ NEXANS	WWW.NEXANS.CO.NZ
✓ NEWTECH	WWW.NEWTECH.CO.NZ
✓ Bright light	WWW.brightlight.co.nz



Bradnam's

windows & doors nz

11th November 2019

Attention: **G J Gardner Kapiti**
M & L Construction Ltd
P O Box 65
Paraparaumu 5254

PRODUCER STATEMENT

Project Name: Lot3 – 6 Hadfield Road – Peka Peka

Project Address: Lot3 – 6 Hadfield Road – Peka Peka

We certify that the products supplied by our company for this project, meet or exceed the requirements of the New Zealand Building Code, NZS 4211:1985 Performance of Windows and NZS 4223 Glazing in Buildings.

More specifically, we have manufactured the aluminium windows and doors for this project in accordance with the design and manufacturing specifications provided by **NATIONAL ALUMINIUM LTD**, and those required by NZS 4223.

Window and door units manufactured to these specifications have been tested to, and comply with, the wind pressure rating, deflection, weather performance and glazing requirements of the above New Zealand Standards.

The products supplied by our company for this project, can be expected to have a serviceable life of not less than 15 years in accordance with section B2 of the New Zealand Building Code. This relates specifically to the structural elements of the windows and doors.

Over time, even with regular maintenance, decorative elements and non-structural fittings such as handles, fasteners, roller mechanisms, mohair and other similar components may require replacement as they wear out. This process does not contravene the Durability Requirements of section B2 of the New Zealand Building Code or this Producer Statement.

Yours sincerely

Mark Harrison
Branch Manager



Bradnam's
windows & doors nz

Warranty for Bradnam's Aluminium

The organisations involved in the manufacture of your Bradnam's aluminium joinery warrant the product they have supplied and their workmanship.

Fabricator Warranty:

The joinery supplier who has supplied you with Bradnam's aluminium joinery (the "Fabricator") will, subject, to the conditions below, at its option, repair or replace free of charge any Bradnam's aluminium joinery due to a failure in workmanship or installation carried out by the Fabricator within a period of five years from the date of delivery or installation by the Fabricator.

The Fabricator shall not be liable for any defect in materials covered by any other supplier warranty. This Warranty does not affect any applicable statutory consumer rights.

NALCO Extrusion Warranty:

National Aluminium Limited ("NALCO") has supplied the Fabricator with aluminium and will, subject to the conditions below, at its option, repair or replace free of charge any Bradnam's aluminium extrusion supplied by NALCO where it:

- Fails to remain waterproof
- Fails to be durable as defined by the New Zealand Building Code Requirement: Fifteen Years
- Fails to comply with the performance requirements of NZS4211: Specification for windows: within a period of TWO Years from the date of manufacture.

NALCO shall not be liable for any defect in workmanship, fabrication installation or failure of powdercoating paint finish covered by the Powdercoating Warranty or any defect in hardware not manufactured by NALCO.

This warranty does not affect any applicable statutory consumer rights.

Conditions of the Fabricator and NALCO Warranty ("the Warrantee"):

- The Warranties are only applicable to windows and doors fitted to domestic dwellings.
- The Warranties do not apply in the event of:
 - a) Any damage or deterioration arising from causes beyond the control of NALCO or the Fabricator including but not limited to impact, abrasion, earthquake, flood, mechanical damage, neglect, malicious damage, misuse, fire damage, act of God, pollution, abnormal weather, damage caused by geothermal gases, air pollution or severe coastal conditions, excessive heat, exposure to chemicals, or attempted repairs unauthorised by NALCO or the Fabricator.
 - b) Where the defect is caused by the use of adhesive tapes or by the use or failure of sealants or mastics.
 - c) Where the defect is caused by a failure to regularly maintain the surfaces in accordance with the recommended care and maintenance procedures as set out in the Powdercoat Warranty.
 - d) Where the defect is attributable to a defect in the structure to which the joinery has been affixed.

- The obligations under this Warranty are limited to either free replacement of the defective component or repair at the discretion of NALCO or the Fabricator, as the case may be.
- Neither NALCO nor the Fabricator is liable for any additional direct or indirect special consequential or third party claims for loss, damage or expenses.
- The Warranties are not assignable or transferable to subsequent owners without the prior written consent of both NALCO and the Fabricator.
- The liability of NALCO and the Fabricator shall not exceed the original invoice value of the applicable aluminium joinery product at fault.
- No liability shall arise where the purchase price for any product supplied remains unpaid in full, or where payment is not made on the due date for payment.
- No liability shall arise unless a claim is made in writing to the Fabricator or to NALCO within 30 days of the defect arising or being reasonably discoverable by the purchaser.

Bradnam's Windows and Doors is a registered trademark of National Aluminium Ltd (NALCO)

49 Business Parade North, East Tamaki, Auckland 2013 Ph: 64 9 272 1700, Fax 64 9 272 1708, Website www.bradnams.co.nz

Customer: **G J Gardner Kapiti – M & L**

Address: Lot3 – 6 Hadfield Road – Peka Peka

Quote Number: 39782

Job Number: 22275

Signed: 

Date: 11th November 2019

Wellington Frame & Truss
Broken Hill Road
Porirua
WELLINGTON

Phone 04 296 1086

August 22, 2019

Client: GJ Gardner Homes
Beattie

PRODUCER STATEMENT

Ref. Lot 3, 6 Hadfield Place
Peka Peka

Job No. 19 004
Consent #

This statement is to confirm the frames & trusses supplied to the above job have been manufactured as follows:

Timber frames:

External Walls -

Internal Walls -

Trusses -

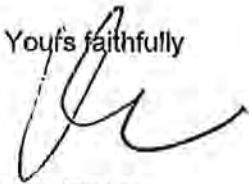
Kiln Dried and Gauged Radiata Pine, Machine Stress Graded, H1.2 LOSP/Boron treated.

Kiln Dried and Gauged Radiata Pine, Machine Stress Graded, H1.2 LOSP/Boron treated.

Kiln Dried and Gauged Radiata Pine, Machine Stress Graded, H1.2 LOSP/Boron treated.

Note: All timber used in frames and trusses is a minimum grade MSG8 unless the architectural plan states MSG10/12 and then the higher grade is used.

Yours faithfully



Matt Taylor
Detailer

PlaceMakers Wellington Frame & Truss

MANUFACTURER STATEMENT : Page 1

Job: 18-355

Client: PlaceMakers Panaramua
Phone:Site: GJ GARDNER HOMES
LOT 3, 6 HADFIELD ROAD
PEKA PEKA

Phone:

Description:
Building Consent No.:
MITek 20/20 Engineering L7 3018

MITek New Zealand Limited

Printed: 05/23/17 22 Aug 2018

MANUFACTURER STATEMENT

This statement is issued by PlaceMakers Wellington 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 18-355 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

These 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

Material: Metal Tiles
Dead Load: 0.210 kPa
Restraints: 400 mm centres
Live Load: Q_{ur} = 0.250 kPa
Q_c = 1.100 kN

Celling

Material: Rondo on clips
Dead Load: 0.200 kPa
Restraints: 1800 mm centres
Live Load: Q_c = 1.400 kN

Wind

Area: Very High (50.0 m/s)
Pressure Coeff: C_{pe} = varies; C_{pl} = -0.30, 0.20

MITek® Truss List

Legend: * = detail only, ? = input only, ✕ = 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)	Truss
ET1	1	4100	25.000	900	J5A	3	3072	25.000	900	T3	3	6190	25.000	901	
*FLY1	2	2840	25.000	900	J5B	3	3072	25.000	828	T3A	1	6190	25.000	901	
*GN1	8	855	0.000	816	J6	3	2172	25.000	900	T3B	1	6167	25.000	901	
*HB1	1	6864	18.249	900	J6A	3	2172	25.000	900	T4	1	6190	25.000	900	
*HB2	1	3440	18.249	900	J7	3	1272	25.000	900	T4A	1	6190	25.000	900	
*HB3	1	3408	18.249	900	J7A	3	1272	25.000	900	T5	1	4190	25.000	900	
*HB4	2	1266	18.249	900	J9	1	2322	25.000	900	T5A	1	4190	25.000	900	
*HB5	1	1839	18.249	900	J9A	1	2322	25.000	900	T6	1	3263	25.000	900	
*HB6	1	6382	18.249	900	*OR1	8	1255	0.000	816	T7	1	3263	25.000	900	
*HB7	3	5180	18.249	900	*R1	1	1504	25.000	900	T7A	1	3262	25.000	900	
*HB8	1	4119	18.249	900	*R10	1	4210	25.000	900	T8	1	4100	25.000	805	
*HB9	2	3765	18.249	900	*R11	1	895	25.000	900	T8A	1	2723	25.000	923	
J1	1	3623	25.000	900	*R2	4	881	25.000	900	T8B	1	2723	25.000	923	
J10	1	1422	25.000	900	R3	1	846	25.000	900	T9	1	4100	25.000	805	
J10A	1	1422	25.000	900	R3A	1	846	25.000	900	TG1	1	8600	25.000	900	
J11	1	2152	25.000	900	*R4	2	1747	25.000	900	TG2	1	7890	25.000	901	
J11A	2	2152	25.000	900	*R5	1	1359	25.000	900	TR1	1	7890	25.000	901	
J12	2	1252	25.000	900	*R6	3	953	25.000	900	TR2	1	6423	25.000	900	
J12A	2	1252	25.000	900	*R7	1	1103	25.000	900	TR3	1	4690	25.000	900	
J1A	1	3623	25.000	900	*R8	2	933	25.000	900	TR4	1	4690	25.000	900	
J1B	1	3623	25.000	900	*R9	1	2646	25.000	900	TR5	1	4690	25.000	900	
J1C	1	3623	25.000	900	*SN1	88	655	0.000	816	TR6	1	4690	25.000	900	
J1D	1	3623	25.000	900	T1	1	8600	25.000	900	TR7	1	4690	25.000	900	
J2	1	2723	25.000	900	T10	1	894	25.000	900	V1	1	2461	25.000	828	
J2A	2	2723	25.000	900	T11	1	855	25.000	900	V2	1	1833	25.000	828	
J3	1	1823	25.000	900	T1A	1	8600	25.000	900	V3	1	806	25.000	828	
J3A	1	1823	25.000	900	T1B	1	6480	25.000	900	V4	1	1453	25.000	900	
J4	1	1676	25.000	900	T1C	1	6480	25.000	900	V5	1	1361	25.000	900	
J4A	1	1676	25.000	900	T1D	1	6480	25.000	900						
J5	2	3072	25.000	900	T2	1	4690	25.000	900						

Roof Truss quantity : 228

Total quantity : 228

The MITek® trusses are fabricated under the supervision of:

Signed:

Date:





22/6/19

Name of Supervisor: M. O. TAYLOR

On behalf of: PlaceMakers Wellington Frame & Truss

PlaceMakers®
Know how. Can do.
Manufacturing

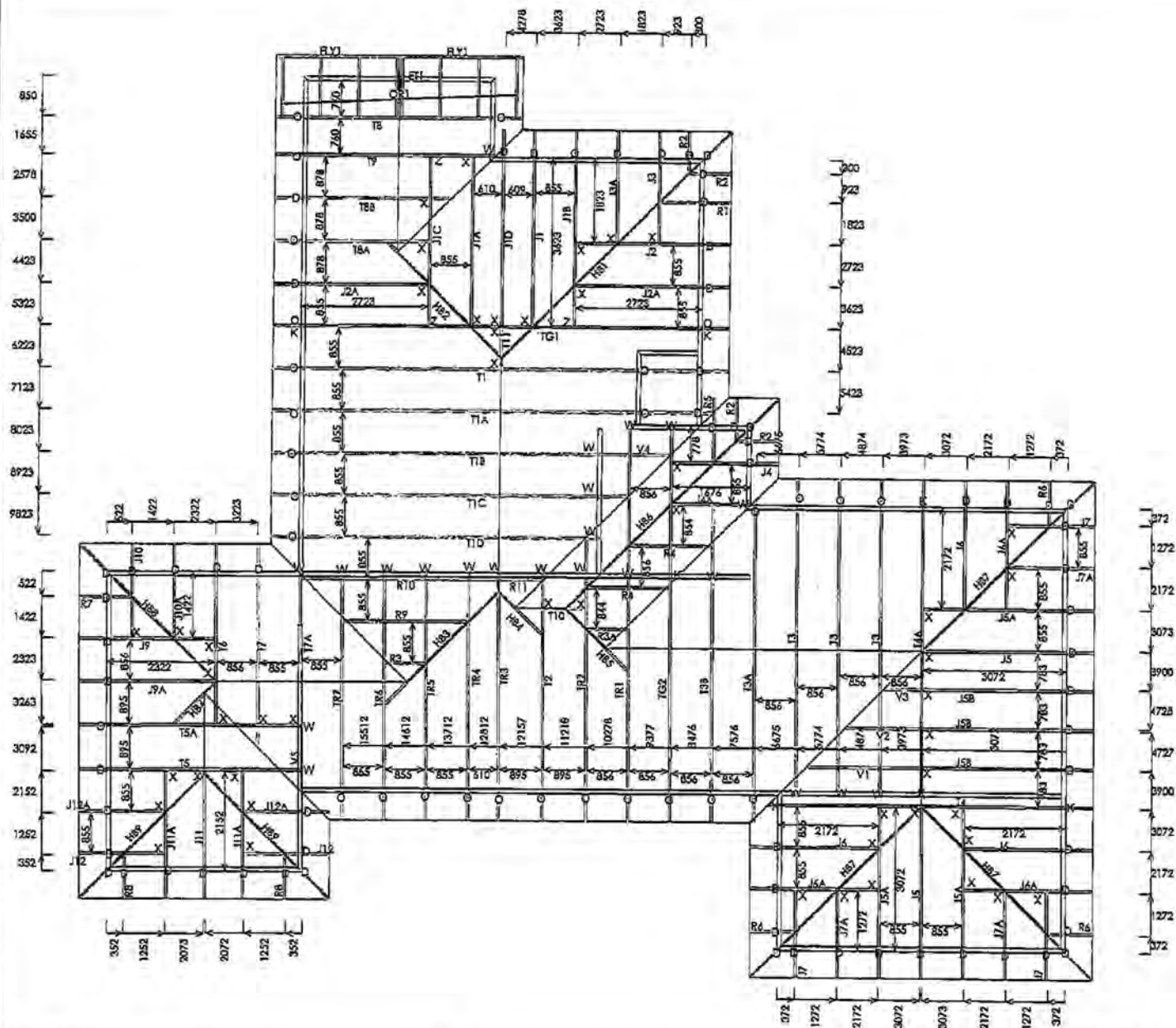
Truss Fixings

-  D - Pair of LUMBERLOK Wire Dogs
-  X - LUMBERLOK JH47x90 Joist Hanger
-  Z - LUMBERLOK JH47x120 Joist Hanger
-  P - LUMBERLOK JH47x190 Joist Hanger
-  E - LUMBERLOK JH95x165 Joist Hanger
-  O - Pair of LUMBERLOK CT200 Ceiling Ties
-  H - LUMBERLOK CT400 Cyclone Tie
-  B - LUMBERLOK CT600 Cyclone Tie
-  M - Pair of LUMBERLOK Multi Grips
-  NP - LUMBERLOK Nailon Plate
-  N - LUMBERLOK N21 Diagonal Cleat
-  W - Pair of LUMBERLOK CPC40 Cleats
-  K - LUMBERLOK TTP 16kN Truss to Top Plate set

NOTES:

All other areas must have a minimum of a pair of LUMBERLOK wiredogs for truss to top plate connections.
Refer to:
LUMBERLOK Timber Connectors Characteristic Loadings Data brochure 03/4

If Rondo battens on clips used, the bottom chords of the trusses are to be restrained using 90x45 runners @ 1800mm crs.



PlaceMakers
Know how. Can do.
Manufacturing

Site Address:

GJ GARDNER HOMES
LOT 3, 6 HADFIELD ROAD
PEKA PEKA

Sheet Title:

For Construction
Truss Fixings

Date: 22 Aug 2019

Drawn: Matt Taylor

Scale: 1:100

System: MiTek 20/20

Job Details:

Roof Pitch : 25.0 Deg
Roof Material : Metal Tiles
Ceiling Material : Rondo on clips
Wind Zone : Very High
Roof Snow Load: 0.000 kPa

Truss Centres : 900 mm
Roof Live Load : 0.250 kPa
Floor Live Load : kPa
Wind Speed : 50.0 m/s

PrimeCad v4.7.301

MiTek

Job Title:
19-355

Sheet:

1

Revision Number:

Building Code Clause(s) **B1 & B2****PRODUCER STATEMENT – PS4 – CONSTRUCTION REVIEW**

(Guidance notes on the use of this form are printed on page 2)

ISSUED BY: Hamish Wells Consulting Civil Engineer
(Construction Review Firm)TO: RFL Ltd
(Owner/Developer)TO BE SUPPLIED TO: Kapiti Coast District Council
(Building Consent Authority)IN RESPECT OF: Rib-Raft Foundation slab for dwelling
(Description of Building Work)AT: 6 Hadfield Road, Pake Peka, Kaipit Coast
(Address) 3 LOT DP 531543 SO.....has been engaged by RFL Ltd
(Construction Review Firm)To provide ☐ CM1 ☐ CM2 ☒ CM3 ☐ CM4 ☐ CM5 (Engineering Categories) or ☐ observation as per agreement with owner/developer
or ☐ otherservices
(Extent of Engagement)in respect of clause(s) B1 and B2 of the Building Code for the building work described indocuments relating to Building Consent No. BC 190682 and those relating toBuilding Consent Amendment(s) Nos. None issued during the

course of the works. We have sighted these Building Consents and the conditions of attached to them.

Authorised instructions / variations(s) No. None (copies attached)or by the attached Schedule ☐ have been issued during the course of the works.

On by the basis of ☐ this ☒ these review(s) and information supplied by the contractor during the course of the works and on behalf of the firm undertaking this Construction Review, 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 Consent and Building Consent Amendments identified above, with respect to Clause(s) B1 & 2 of the Building Code. I also believe on reasonable grounds that the persons who have undertaken this construction review have the necessary competency to do so.

I, Hamish Tennent Wells am: ☒ CPEng No. 186323
(Name of Construction Review Professional)☐ Reg Arch No.I am a Member of: ☒ IPENZ ☐ NZIA and hold the following qualifications: NZCE Civil REA

The Construction Review Firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than \$500,000*.

The Construction Review Firm is a member of ACENZ: ☐SIGNED BY Hamish Tennent Wells ON BEHALF OF Hamish Tennent WellsDate: 01/10/2019 Signature: [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 \$500,000*.

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

Hamish Wells

Engineer Ltd

Civil Engineer
CMEngNZ 186323

CIVIL
STRUCTURAL
INFRASTRUCTURE
LAND DEVELOPMENTS
ENVIRONMENTAL

202 Otaki Gorge Rd, Otaki
PO Box 188, Otaki 5512
Hamish Wells
M: 0274 459 757
E: Hamish@Engnr.co.nz

Site Inspection Report			
Controlling Authority	Wellington City Council	Date	2/10/2019
BC/RC reference #	BC 190682	Other Ref #	HW-190285
Site location details (add UTM co - ords for rural sites)	6 Hadfield Rd Peka Peka Kapiti Coast		
Client & designer details phone # details email details	Hamish Wells 0274 459 757 Hamish@engnr.co.nz		
Contractor details phone # details email details	RFL northisland@rfl.co.nz		
Description of construction work being inspected : Rib-Raft Foundation			

Rib-Raft slab foundation in final stages of preparation in readiness for concrete. Last sheets of mesh being placed and rebars being fixed.

Reinforcement is as per structural details.

Concrete cover to reinforcement as per design around penetrations.

Crack control bars to be placed, discussed.

No issues found, fine to proceed and place concrete once last of the mesh, rebars and crack control bars have been placed.



Building Code Clause(s) B1 & 2**PRODUCER STATEMENT – PS4 – CONSTRUCTION REVIEW**

(Guidance notes on the use of this form are printed on page 2)

ISSUED BY: Hamish Wells Consulting Civil Engineer
(Construction Review Firm)TO: G. S. Gardner
(Owner/Developer)TO BE SUPPLIED TO: KCDC
(Building Consent Authority)IN RESPECT OF: Driven Timber Piles
(Description of Building Work)AT: 6 Hadfield Road, Peka Peka
(Address)
LOT DP SO SOhas been engaged by Scate & Son
(Construction Review Firm)To provide ☐ CM1 ☐ CM2 ☒ CM3 ☐ CM4 ☐ CM5 (Engineering Categories) or ☐ observation as per agreement with owner/developer
or ☐ other services
(Extent of Engagement)in respect of clause(s) B1 & 2 of the Building Code for the building work described in documents relating to Building Consent No. 190682 and those relating to Building Consent Amendment(s) Nos. none issued during the course of the works. We have sighted these Building Consents and the conditions of attached to them.Authorised Instructions / variations(s) No. none (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 and on behalf of the firm undertaking this Construction Review, 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 Consent and Building Consent Amendments identified above, with respect to Clause(s) B1 & 2 of the Building Code. I also believe on reasonable grounds that the persons who have undertaken this construction review have the necessary competency to do so.I, Hamish Tennent Wells am: ☒ CPEng No. 186323
(Name of Construction Review Professional) ☐ Reg Arch No. I am a Member of: ☒ IPENZ ☐ NZIA and hold the following qualifications: NZCE Civil REA

The Construction Review Firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than \$500,000*.

The Construction Review Firm is a member of ACENZ: ☐SIGNED BY Hamish Tennent Wells ON BEHALF OF Hamish Tennent WellsDate: 27/9/2019 Signature: [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 \$500,000*.

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

Site Inspection Report Form

No: 1016

Controlling Authority	KCDC	Date	25/9	2019
BC/RC reference #		Other Ref #	190265	
Site location details (add UTM co-ords for rural sites)	6 Hadfield Road, Pekaipeka			
Client & designer details Phone # details Email details	G J Gardner Adam Beattie			
Contractor details Phone # details Email details	Scarfe & Son			

Description of work being inspected:

Driven Timber Piles

2.4m 175 SED HS Tampapakas

2.3 m in ground average

Excellent sets to gravels / till at depth,
depths fairly uniform across site

Set 1 50 mm / 10 blows 5mm sets

Set 2 65 mm / 10 " 6.5mm sets

Set 3 55 mm / 10 " 5.5mm sets

Set 4 62 mm / 10 " 6.2 mm sets

500 kg drop hammer, falling 1.5m

Satisfactory

Signed



Page

1

of

1



Installation Guarantee

This is to certify

This home has been insulated by PinkFit®,
the preferred installers of Pink® Batts® insulation.

The PinkFit® Licensee guarantees that, at the time of installation, the insulation
was installed in accordance with New Zealand Standard Energy Efficiency -
Installing Insulation in Residential Buildings NZS 4246:2016.

Proper installation is essential for insulation to meet the durability requirements of
NZBC B2.3.1(a) of not less than 50 years.

This guarantee is transferable to subsequent owners of the home.

Please keep this document in a safe place.

Signature:

Glenn Sturgess

Date: 17/12/2019

PinkFit® Licensee Trading As:

PinkFit® Wellington

PinkFit® Licensee Company Name: GBS (2015) Limited

Registration Details

Compliance Number: M100081705

Date Printed: 17/12/2019

Bullder Details: G.J. Gardner Homes

Install Date: 06/12/2019

Site Details: 6 Hadfield Road
Waikanae Beach
Peka Peka

Completion: 17/12/2019

Building Consent No.:

Product Details:

Celling Insulation Pink® Batts® Classic R3.6 Celling thickness 180mm

Wall Insulation Pink® Batts® Ultra® R2.6 Wall thickness 90mm

PinkFit® is a network of independent installers licensed by Tasman Insulation New Zealand Limited. PinkFit®, Pink® and the colour PINK are registered trade marks of Owens Corning used under license by Tasman Insulation. Batts® is the registered trade mark of Tasman Insulation New Zealand Limited.



0800 746 534
pinkfit.co.nz

July 2019 1021

Residential roof warranty



Address Warranted Lot 3, 6 Hadfield Road Peka Peka
 Gerard Certified Roofer Horowhenua Kapiti Roofing
 Name of Purchaser M and L Barke Construction Limited
 Product Description Gerard Corona Sat Obsidian

Warranty Date 29.11.2019
 Warranty 143985
 Purchase Order GJR2701

Standard residential environments

Low/medium corrosion areas – more than 750m from breaking surf



WEATHERPROOF

If the roof fitted at the above address has been correctly installed and does not continue to satisfy the external moisture requirements of the New Zealand Building Code (in force at the Date of Warranty) for a period of 50 years from the Date of Warranty, we will at our option, repair or replace the roof or the affected part of it.



SURFACE COATING

If, as a direct result of a manufacturing defect, the surface coating of any tile or trim comprised in the roof fitted at the above address deteriorates during the period (from the Date of Warranty) of 20 years for Textured Coated products or 15 years for Satin Finish products, to the extent that, in our reasonable opinion, the appearance of the roof is substantially affected, then we will at our option replace the affected products, apply our surface coating to the affected tile or provide other reasonable compensation to the Purchaser.



During an initial period following the Date of Warranty, we will bear the full cost of fulfilling the warranties (including material and labour costs in removing and replacing or repairing defective tiles or trim and any inspection, freight or waste disposal costs).

During the subsequent period, those costs will be shared between us and the purchaser (or subsequent homeowner) as shown below.

Weatherproof warranty

Surface Coating warranty: Textured Coated Tile

Surface Coating warranty: Satin Finish Tile

Initial period
Full cost of repair or replacement

First 25 years

First 10 years

First 5 years

Subsequent period
Pro-rata share

Years 26 - 50, as per Schedule A

Years 11 - 20, as per Schedule B

Years 6 - 15, as per Schedule C

Severely corrosive environments

Exposed marine areas – less than 750m from breaking surf



WEATHERPROOF

If the roof fitted at the above address has been correctly installed and does not continue to satisfy the external moisture requirements of the New Zealand Building Code (in force at the Date of Warranty) for a period of 25 years for Textured Tiles or 15 years for Satin Finish Tiles, from the Date of Warranty, we will at our option, repair or replace the roof or the affected part of it.



SURFACE COATING

If, as a direct result of a manufacturing defect, the surface coating of any tile or trim comprised in the roof fitted at the above address deteriorates during the period (from the Date of Warranty) of 10 years for Textured Coated products or 5 years for Satin Finish products, to the extent that, in our reasonable opinion, the appearance of the roof is substantially affected, then we will at our option replace the affected products, apply our surface coating to the affected tile or provide other reasonable compensation to the Purchaser.



Our obligations under these warranties are subject to the CONDITIONS and EXCLUSIONS overleaf and apply only if the roof has been fitted by a Gerard Certified Roofer in accordance with the Gerard Roofs Installation Guide. You must follow the recommendations in Gerard Roofs' maintenance guidelines for this warranty to remain valid. The maintenance guidelines are available on request from Gerard Roofs.

Residential roof warranty



Warranty Conditions & Exclusions

- The warranties apply only if the Purchaser has made full payment for the supply and fitting of the roof.
- As colour variations may exist in tiles and trims manufactured at different times, we reserve the right to repair or replace a tile or trim in the closest available colour in our range at the time of repair or replacement.
- The performance of a roof or individual tiles may be affected by the following. The warranties do not apply (and we are not liable) if:
 - the roof/tiles/trims are not maintained strictly in accordance with the Gerard Roofs Maintenance Guidelines issued by us from time to time (which include, amongst other things, repainting satin tiles after 15 years (5 years in severe marine environments) or if certain signs of deterioration are exhibited);
 - the tiles and other roofing materials are not stored, handled and installed strictly in accordance with the Gerard Roofs Installation Guide issued by us from time to time;
 - any work is done to the roof other than temporary emergency work or work carried out under our supervision, or subject to our prior inspection and prior written approval;
 - the product manufacturers' recommendations relating to the use of roof cleaning products are not strictly followed;
 - the performance of the roof/tiles/trim has been affected by:
 - faulty roofing design or faulty installation such as, but not limited to, incorrect specification of the product, the inappropriate use of dissimilar metals or substitution with materials not supplied by us;
 - faulty design or workmanship in the creation of penetrations in the roof (e.g. aerials, skylights, vents, pipework);
 - damage caused by anyone walking, or other unusual traffic, on the roof;
 - fallstones; moisture retaining substances; droppings from wildlife; pollutants; corrosive agents; fumes; dust; pollen; or organic growth;
 - defects in the structure on which the roof has been fitted;
 - any unusual natural phenomena or act of god including, without limitation, earthquakes, fires, floods, lightning, heavy hail, the build up of snow or other natural substances or winds stronger than those which the roof ought reasonably to have been designed and built to withstand, given the building's location, site conditions, design and any other relevant factors.
 - the roof/tiles/trims are not installed in accordance with the requirements of the New Zealand Building Code.
- The warranties do not cover (and we are not liable for):
 - installation of the roof (this is the installer's responsibility);
 - the performance of Gerard Vision Tiles, skylights or vents;
 - rust (red or white) on, or run off from rust on, roof fasteners;
 - 'halos' of rust (red or white) on the surface of tile or trims surrounding fasteners;
 - normal wear and tear; natural weathering, variable darkening, gradual fading or chalking of tiles or trims;
 - variations in the colour or texture of Textured Coated products arising from natural variations or the presence of other minerals in the crushed rock used in the chip with which the tiles are made.
- To the fullest extent permitted by law, we will not be liable for any consequential, indirect or special damage or loss of any kind whatsoever, including (without limitation) damage to other property or building elements, loss of profits or anticipated savings, or any such losses arising due to any delay by us in complying with our obligations under the warranties.
- Each of the limitations in paragraphs 3, 4 and 5 (and any part of each of those limitations) is a separate limitation applying even though one or more of the other limitations may be held not to apply in the circumstances.
- All warranties, liabilities and obligations, other than those specified in this warranty, are excluded to the fullest extent permitted by law.
- Any replacement or remedial work carried out under a warranty does not extend the term of any warranty.

Other things you should know

- To claim under the warranties and as a condition of our liability under the warranties:
 - the Purchaser must deliver written notice of the claim to the email or business address below and complete the warranty claim form which we will provide by return email or post to the address you specify in the notice;
 - any claim must be made within 3 months of the date the Purchaser became aware (or ought to have been aware) of the matter giving rise to the claim.
- Any expense incurred in claiming under the warranties is to be borne solely by the Purchaser.
- Subject to paragraph 1, this warranty extends to subsequent owners of the property.
- The benefits given by the warranties are in addition to other rights and remedies available to the Purchaser under any law which relates to the roof/tiles/trims, except to the extent excluded by this warranty.
- Any failure, delay or indulgence by us will not operate as a waiver. A waiver by us of any condition of these warranties is not a waiver of any other condition. No waiver is effective unless it is in writing.

SCHEDULE A: Weatherproof Warranty

Year	Company Contribution %	Purchaser/Owner Contribution %
1-25	100	Nil
26	50	50
27	48	52
28	46	54
29	44	56
30	42	58
31	40	60
32	38	62
33	36	64
34	34	66
35	32	68
36	30	70
37	28	72
38	26	74
39	24	76
40	22	78
41	20	80
42	18	82
43	16	84
44	14	86
45	12	88
46	10	90
47	8	92
48	6	94
49	4	96
50	2	98
51+	Nil	100

SCHEDULE B: Textured Coating

Year	Company Contribution %	Purchaser/Owner Contribution %
1-5	100	Nil
6	100	Nil
7	100	Nil
8	100	Nil
9	100	Nil
10	100	Nil
11	50	50
12	45	55
13	40	60
14	35	65
15	30	70
16	25	75
17	20	80
18	15	85
19	10	90
20	5	95
21+	Nil	100

SCHEDULE C: Satin Finish Coating

Year	Company Contribution %	Purchaser/Owner Contribution %
1-5	100	Nil
6	100	33
7	100	40
8	100	46
9	100	51
10	100	60
11	50	34
12	45	27
13	40	20
14	35	14
15	30	7
16	25	Nil
17	20	Nil
18	15	Nil
19	10	Nil
20	5	Nil
21+	Nil	100

The warranties are given by AHI Roofing Limited trading as Gerard Roofs (referred to here as we or us).
90-104 Felton Matthew Ave, PO Box 18071, Glen Innes, Auckland.
Telephone 0800 244 737 E-mail info@gerardroofs.co.nz

You must follow the recommendations in Gerard Roofs' maintenance guidelines for this warranty to remain valid. The maintenance guidelines are available on request from Gerard Roofs.



RX PLASTICS

RX PLASTICS

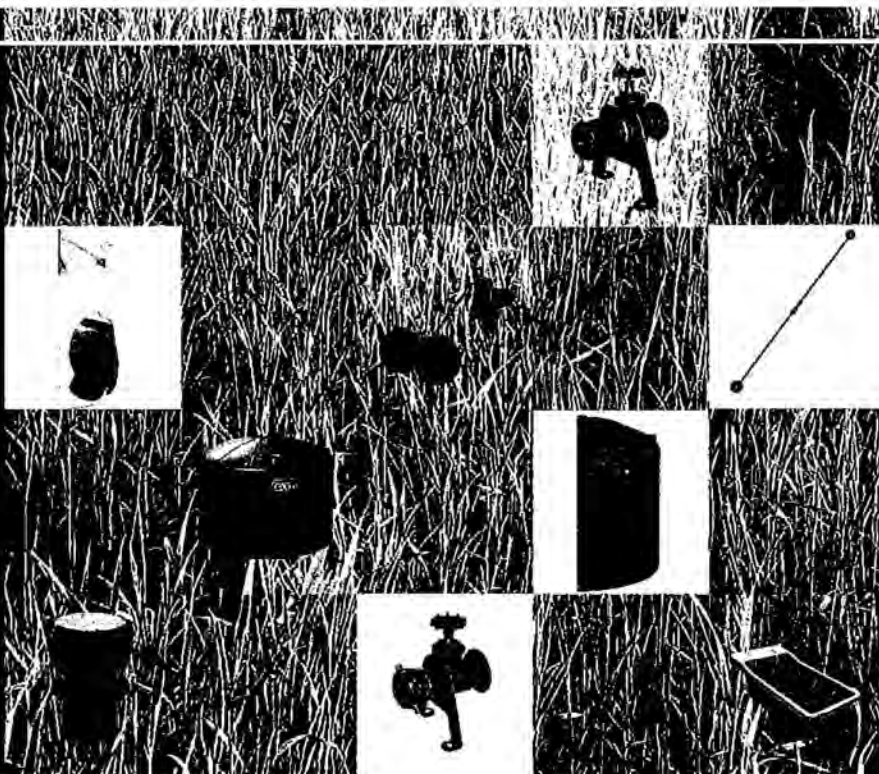
10,000 - 30,000 Litre Plastic MAX Water Tanks

Tank Installation Instructions

Warranty Terms and Conditions

Tank Lifting Instructions

July 2018



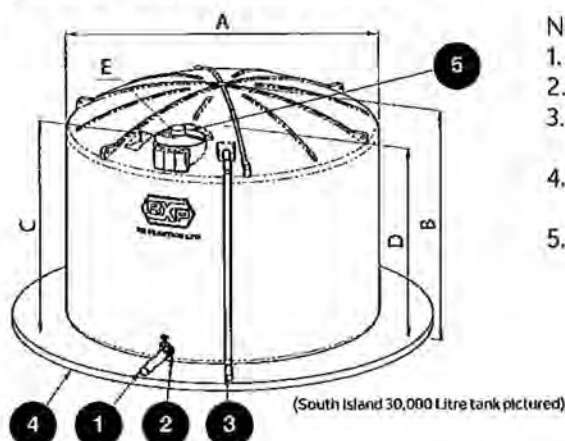
RX PLASTICS LTD
PO Box 360 Ashburton
Phone +64 3 309 5083
Email sales@rxplastics.co.nz
www.rxplastics.co.nz

an Ollaxis company

TANK SITE PREPARATION

Installation and use instructions for a 10,000 - 30,000 litre tank

Issue: 5 April 2017



Notes:-

1. Flexible hose
2. Outlet supported
3. Overflow must be piped well away from tank foundation
4. Foundation - 100mm compacted sand or concrete pad
5. Vent in lid (recommended position)

Volume	A (Tank ϕ)	B (Tank H)	C (Lid H)	D (Wall H)	E (Lid ϕ)
10,000L	2150	3300	3210	3000	450
15,000L	3000	2525	2360	2050	450
+25,000L	3500	3000	2730	2400	650
*26,000L	3550	3000	2730	2400	650
+30,000L	3900	3000	2730	2400	650
*30,000L	3900	3050	2940	2280	650

*North Island mould
* South Island mould

Advise RX Plastics Ltd immediately of transport damage prior to siting and installing your tank;

- It is the responsibility of the purchaser to ensure the tank is installed correctly using the guidelines supplied by RX Plastics and best plumbing practice.
- Select a site that is flat and level.
- The foundation (4) can be made from concrete; sand; crusher dust or compact native soil, measuring approximately 100mm deep and 600mm wider than the tank base. All bases (except concrete) must be supported to prevent erosion from wind, water and any other factor.
- On sloping ground, ensure actual tank site and surrounding area are level and that the area will remain free from any possible erosion damage in the future.

TANK SITE PREPARATION

- RX Plastics DO NOT recommend that any RX Plastics tank is buried.
- Immediately after delivery, secure the Tank by either tying down with rope (avoid over tightening) or partially filling with water, approximately 300mm deep. **NOTE:** - DO NOT attempt to lift a tank containing water - it must be completely drained before moving.
- RX Plastics require an overflow to be fitted. Ensure that the overflow does not erode the foundation. Overflow can be fitted in one of the panels beside the manhole (3). Minimum recommended overflow size is 90mm (subject to inlet size).
- Ensure all pipe work from the tank is supported to reduce stress on the tank. Use flexible pipe (1) or bellows on all pipework to allow the tank to expand and contract (Up to 100mm).
NOTE - PE pipe is not considered flexible.
- To avoid the possibility of internal pressure; vacuum or heat build-up (when empty or full), a vent (5) must be installed. A recommended vent of 100mm is required for AS/NZS 4766 certified tanks. Always seek advice from tank manufacturer before installing
- Any tank with an outlet (2) that is over 50mm BSP is not certified to AS/NZS4766.
- Any tank with an outlet (2) exceeding 100mm outlet fitting (126mm hole) in the lower section of the tank wall will NOT be covered by the RX Plastics warranty.
- Cleaning of tanks is advised if used for potable water supply. Seek advice from specialist tank cleaning company.
- Ensure any fittings that are screwed into the tank are not cross threaded and are not overtightened to avoid leaking.
- No unauthorised repairs, modifications or alterations should be undertaken without prior written approval from RX Plastics as this will void the warranty.
- RX Plastics do not recommend entering the tank for any reason, but if required follow MBIE guidelines on confined spaces entry before and during the procedure.
- Heavy unsupported loads are not permitted on the tank dome or wall - this includes standing on the dome under any circumstances or unsupported pipework.

NOTE:-

To view the TANK WARRANTY conditions go to the RX Plastics website - www.rxplastics.co.nz/tanks.

Please read these guidelines before installation.
Failure to prepare and install your tank correctly will void your warranty.



WARRANTY TERMS AND CONDITIONS

RX Plastics 500-30,000 Litre Plastic **Water** Tank Issue: 5 April 2017
Any tank colour

20 Year Product Warranty

The warranty for this product will be for a period of twenty (20) years from the date of purchase. (Proof of purchase and proof of date of purchase may be required)

Warranty for the tank will provide coverage from freedom from defects, faulty workmanship or materials. (Please read the following instructions carefully):

This **WARRANTY** is **VOID** under the following conditions:

- In the event that the tank and fittings are not installed strictly in accordance with the Tank Site Preparation guidelines
- If used for any purpose than as a stationary water tank.
- Unauthorised repairs, modifications, alterations or relocation without prior written approval from RX Plastics.
- Act of God.
- If the defect arises from use that is other than fair wear and tear.
- That the tank has not been adequately vented to prevent vacuum or pressurisation of vessel. Refer to Tank Manufacturer for advice.
- Damage sustained while in transit or on the Merchants premises.
- The warranty does not cover consequential loss or damage howsoever arising.
- The warranty does not cover minor cosmetic damage or slight variations in tank colour.
- The warranty does not cover leaking of factory fitted fittings or mechanical fittings, unless they arise from defects of the fittings, or faulty materials.
- Prompt notification shall be give to RX Plastics of any defect or failure. RX Plastics agrees to either repair or replace as its option under terms of this warranty.

Please read these guidelines before installation.
Failure to prepare and install your tank correctly will void your warranty.



TANK LIFTING

Issue: 4 July 2018

These recommendations are for ground based lifting and do not include aerial transportation.

RX Plastics recommends the following for normal situations where a tank is required to be lifted into position using the moulded in lifting lugs.

- All lifting lugs to be used to perform this task
- Tank must be empty of all contents
- The use of spreader bars to be used on all lifting lugs
- Long chains or strops to be used to lift tank

Spreader bars to be no shorter than

- 30K tank: 3800mm in length with a chain / strop length no shorter than 800mm from lug to spreader bar.
- 25K/26K tank: 3600mm in length with a chain / strop length no shorter than 800mm from lug to spreader bar.
- 15K tank: 3000mm in length with a chain / strop length no shorter than 600mm from lug to spreader bar.
- 10K tank: 2400mm in length with a chain / strop length no shorter than 500mm from lug to spreader bar.

RX Plastics recommends the use of compliant lifting equipment to Work Safe New Zealand guidelines.

These recommendations are for ground based lifting and do not include aerial transportation.



PO Box 18071, Glen Innes
Auckland 1743, New Zealand
Freephone 0800 244 737
Fax 0800 766 324
www.gerardroofs.co.nz

Dear Homeowner,

We are proud to provide you with this **Gerard Roofs® warranty**.

Please find enclosed your Gerard Roofs:

- o **Warranty certificate**
- o **Roof care and maintenance guide**

Most building materials require some servicing and maintenance during their product life, and roofs are no exception. Therefore, it is important that you take the time to read the enclosed **roof care and maintenance guide** for your Gerard roof.

To **validate your warranty** (or update your personal details) please:

- o **visit www.gerardroofs.co.nz** (Contact us / Register your warranty)
- o **or phone Gerard Roofs on 0800 244 737**

For more information about Gerard Roofs, suggested maintenance programmes, or your warranty please visit www.gerardroofs.co.nz

Or alternatively, you can call Gerard Roofs customer services on 0800 244 737 during office hours.

Yours sincerely,

The Team at Gerard Roofs

Residential roof warranty



Address Warranted Lot 3, 6 Hadfield Road Peka Peka

Gerard Certified Roofer Horowhenua Kapiti Roofing

Name of Purchaser M and L Barke Construction Limited

Product Description Gerard Corona Sat Obsidian

Warranty Date 29.11.2019

Warranty 143985

Purchase Order GJR2701

Standard residential environments

Low/medium corrosion areas – more than 750m from breaking surf



WEATHERPROOF

If the roof fitted at the above address has been correctly installed and does not continue to satisfy the external moisture requirements of the New Zealand Building Code (in force at the Date of Warranty) for a period of 50 years from the Date of Warranty, we will at our option, repair or replace the roof or the affected part of it.



SURFACE COATING

If, as a direct result of a manufacturing defect, the surface coating of any tile or trim comprised in the roof fitted at the above address deteriorates during the period (from the Date of Warranty) of 20 years for Textured Coated products or 15 years for Satin Finish products, to the extent that, in our reasonable opinion, the appearance of the roof is substantially affected, then we will at our option replace the affected products, apply our surface coating to the affected tile or provide other reasonable compensation to the Purchaser.



During an initial period following the Date of Warranty, we will bear the full cost of fulfilling the warranties (including material and labour costs in removing and replacing or repairing defective tiles or trim and any inspection, freight or waste disposal costs).

During the subsequent period, those costs will be shared between us and the purchaser (or subsequent homeowner) as shown below.

	Initial period Full cost of repair or replacement	Subsequent period Pro-rata share
Weatherproof warranty	First 25 years	Years 26 - 50, as per Schedule A
Surface Coating warranty: Textured Coated Tile	First 10 years	Years 11 - 20, as per Schedule B
Surface Coating warranty: Satin Finish Tile	First 5 years	Years 6 - 15, as per Schedule C

Severely corrosive environments

Exposed marine areas – less than 750m from breaking surf



WEATHERPROOF

If the roof fitted at the above address has been correctly installed and does not continue to satisfy the external moisture requirements of the New Zealand Building Code (in force at the Date of Warranty) for a period of 25 years for Textured Tiles or 15 years for Satin Finish Tiles, from the Date of Warranty, we will at our option, repair or replace the roof or the affected part of it.



SURFACE COATING

If, as a direct result of a manufacturing defect, the surface coating of any tile or trim comprised in the roof fitted at the above address deteriorates during the period (from the Date of Warranty) of 10 years for Textured Coated products or 5 years for Satin Finish products, to the extent that, in our reasonable opinion, the appearance of the roof is substantially affected, then we will at our option replace the affected products, apply our surface coating to the affected tile or provide other reasonable compensation to the Purchaser.



Our obligations under these warranties are subject to the CONDITIONS and EXCLUSIONS overleaf and apply only if the roof has been fitted by a Gerard Certified Roofer in accordance with the Gerard Roofs Installation Guide. You must follow the recommendations in Gerard Roofs' maintenance guidelines for this warranty to remain valid. The maintenance guidelines are available on request from Gerard Roofs.

Residential roof warranty



Warranty Conditions & Exclusions

- The warranties apply only if the Purchaser has made full payment for the supply and fitting of the roof.
- As colour variations may exist in tiles and trims manufactured at different times, we reserve the right to repair or replace a tile or trim in the closest available colour in our range at the time of repair or replacement.
- The performance of a roof or individual tiles may be affected by the following. The warranties do not apply (and we are not liable) if:
 - the roof/tiles/trims are not maintained strictly in accordance with the Gerard Roofs Maintenance Guidelines issued by us from time to time (which include, amongst other things, repainting satin tiles after 15 years (5 years in severe marine environments) or if certain signs of deterioration are exhibited);
 - the tiles and other roofing materials are not stored, handled and installed strictly in accordance with the Gerard Roofs Installation Guide issued by us from time to time;
 - any work is done to the roof other than temporary emergency work or work carried out under our supervision, or subject to our prior inspection and prior written approval;
 - the product manufacturers' recommendations relating to the use of roof cleaning products are not strictly followed;
 - the performance of the roof/tiles/trim has been affected by:
 - faulty roofing design or faulty installation such as, but not limited to, incorrect specification of the product, the inappropriate use of dissimilar metals or substitution with materials not supplied by us;
 - faulty design or workmanship in the creation of penetrations in the roof (e.g. aerials, skylights, vents, pipework);
 - damage caused by anyone walking, or other unusual traffic, on the roof;
 - fallstones; moisture retaining substances; droppings from wildlife; pollutants; corrosive agents; fumes; dust; pollen; or organic growth;
 - defects in the structure on which the roof has been fitted;
 - any unusual natural phenomena or act of god including, without limitation, earthquakes, fires, floods, lightning, heavy hail, the build up of snow or other natural substances or winds stronger than those which the roof ought reasonably to have been designed and built to withstand, given the building's location, site conditions, design and any other relevant factors.
 - the roof/tiles/trims are not installed in accordance with the requirements of the New Zealand Building Code.
- The warranties do not cover (and we are not liable for):
 - installation of the roof (this is the installer's responsibility);
 - the performance of Gerard Vision Tiles, skylights or vents;
 - rust (red or white) on, or run off from rust on, roof fasteners;
 - 'halos' of rust (red or white) on the surface of tile or trims surrounding fasteners;
 - normal wear and tear; natural weathering, variable darkening, gradual fading or chalking of tiles or trims;
 - variations in the colour or texture of Textured Coated products arising from natural variations or the presence of other minerals in the crushed rock used in the chip with which the tiles are made.
- To the fullest extent permitted by law, we will not be liable for any consequential, indirect or special damage or loss of any kind whatsoever, including (without limitation) damage to other property or building elements, loss of profits or anticipated savings, or any such losses arising due to any delay by us in complying with our obligations under the warranties.
- Each of the limitations in paragraphs 3, 4 and 5 (and any part of each of those limitations) is a separate limitation applying even though one or more of the other limitations may be held not to apply in the circumstances.
- All warranties, liabilities and obligations, other than those specified in this warranty, are excluded to the fullest extent permitted by law.
- Any replacement or remedial work carried out under a warranty does not extend the term of any warranty.

Other things you should know

- To claim under the warranties and as a condition of our liability under the warranties:
 - the Purchaser must deliver written notice of the claim to the email or business address below and complete the warranty claim form which we will provide by return email or post to the address you specify in the notice;
 - any claim must be made within 3 months of the date the Purchaser became aware (or ought to have been aware) of the matter giving rise to the claim.
- Any expense incurred in claiming under the warranties is to be borne solely by the Purchaser.
- Subject to paragraph 1, this warranty extends to subsequent owners of the property.
- The benefits given by the warranties are in addition to other rights and remedies available to the Purchaser under any law which relates to the roof/tiles/trims, except to the extent excluded by this warranty.
- Any failure, delay or indulgence by us will not operate as a waiver. A waiver by us of any condition of these warranties is not a waiver of any other condition. No waiver is effective unless it is in writing.

SCHEDULE A: Weatherproof Warranty

Year	Company Contribution %	Purchaser/Owner Contribution %
1-25	100	Nil
26	50	50
27	48	52
28	46	54
29	44	56
30	42	58
31	40	60
32	38	62
33	36	64
34	34	66
35	32	68
36	30	70
37	28	72
38	26	74
39	24	76
40	22	78
41	20	80
42	18	82
43	16	84
44	14	86
45	12	88
46	10	90
47	8	92
48	6	94
49	4	96
50	2	98
51+	Nil	100

SCHEDULE B: Textured Coating

Year	Company Contribution %	Purchaser/Owner Contribution %
1-5	100	Nil
6	100	Nil
7	100	Nil
8	100	Nil
9	100	Nil
10	100	Nil
11	50	50
12	45	55
13	40	60
14	35	65
15	30	70
16	25	75
17	20	80
18	15	85
19	10	90
20	5	95
21+	Nil	100

SCHEDULE C: Satin Finish Coating

Year	Company Contribution %	Purchaser/Owner Contribution %
1-5	100	Nil
6	67	33
7	60	40
8	54	46
9	47	53
10	40	60
11	34	66
12	27	73
13	20	80
14	14	86
15	7	93
16	Nil	100
17	Nil	100
18	Nil	100
19	Nil	100
20	Nil	100
21+	Nil	100

The warranties are given by AHI Roofing Limited trading as Gerard Roofs (referred to here as we or us).
 90-104 Felton Matthew Ave, PO Box 18071, Glen Innes, Auckland.
 Telephone 0800 244 737 E-mail info@gerardroofs.co.nz

You must follow the recommendations in Gerard Roofs' maintenance guidelines for this warranty to remain valid. The maintenance guidelines are available on request from Gerard Roofs.

ABOUT KITCHENS LIMITED GUARANTEE

1. About Kitchens Guarantees their own products (being manufactured by About Kitchens rather than supplied through About Kitchens by a product partner or other manufacturer) for a period of one year from the date of installation. All other products supplied by About Kitchens carry the guarantees that are issued by the particular product supplier. Notwithstanding the products supplier's own guarantee, the liability of About Kitchens shall be limited to a period of 1 year from the date of installation.
2. About Kitchens' obligations under this guarantee are, at About Kitchens discretion, limited to:
 - a. Repairing the goods or
 - b. Replacing the goods (excludes all deleted product lines)
 - c. Only those products purchased from About Kitchens
3. About Kitchens total liability under this guarantee will not exceed the contract price paid by the Customer to About Kitchens for the goods.
4. This Guarantee excludes defects or issues arising either directly or indirectly from:
 - i. The Customer's negligence or misuse or any inevitable accident, natural movement of timber, act of God or other factor beyond reasonable control of About Kitchens.
 - ii. Unreasonable or excessive exposure to heat, sunlight, water or steam.
 - iii. Non-compliance by the Customer over the correct care and treatment of any About Kitchens product (as evidenced by reasonable use and/or the product care instructions)
 - iv. Any unauthorised person repairing or attempting to repair the goods.
 - v. The goods having been modified, incorrectly maintained or used for a purpose other than for which it was intended.
 - vi. The goods having been incorrectly installed by persons not approved by About Kitchens.
 - vii. Blemishes, imperfections, colour and pattern variations in granite, stone, veneers and quarts, and knots or grains in timber veneers, which occur as part of the natural product (including those that arise in the course of fair wear and tear that do not affect the suitability of the material for the purpose for which it is used)
 - viii. Any goods that have not been installed by approved About Kitchens installers.
5. Appliance guarantees and warranties will be voided where clients request cabinetry dimensions other than those specified by the Appliance Manufacturer. About Kitchens accepts no liability where appliances fail as a result.
6. This Guarantee excludes any goods or services which are not purchased from, or contracted by About Kitchens.
7. This Guarantee is personal to the customer and is non-transferable.
8. This Guarantee does not limit or restrict any other statutory right or remedy available to the Customer within New Zealand.
9. To make a claim, contact About Kitchens directly by calling 06 3647152.



ABOUT KITCHENS

ABOUT KITCHENS

ABOUT QUALITY

ABOUT SERVICE

KITCHEN CARE AND MAINTENANCE GUIDE

Kitchen Cabinets and Doors

Whilst Melteca/Melamine doors are hardwearing and water resistant, they are NOT waterproof. Care should be taken to ensure they are not exposed to high levels of heat, moisture, steam and humidity and that any accidental spills are wiped up immediately. Please contact your plumber immediately should any leaks or seepage occur.

Cleaning

Your kitchen cabinets are manufactured from durable Melteca and Melamine and should be cleaned using a streak-free glass cleaner or a high quality micro-fibre cloth. For more difficult stains, start by using a dish-washing detergent on a damp cloth. To clean glass doors or aluminium doors, spray glass cleaner onto the cloth (not directly onto the glass).

Alternatively use a high quality micro fibre cloth without cleaners. Panel Form vinyl foil wrapped doors should be wiped over using a cleaning agent such as dish-washing detergent or Spray and Wipe. Under NO circumstances should abrasive cleaners such as "Jif" or "Ajax" be used.

Kitchen Benchtops - Care

Your bench is manufactured from low maintenance high pressure laminate. Whilst heat and scratch resistant, care is still needed when taking pots and pans straight from the hob or oven – use a heatproof mat or board to protect the bench. Take care not to drag rough objects across the bench as scratches may damage the surface. And finally do not use a knife to cut directly onto the bench surface. Be aware that the base board of your bench does not have the same waterproof qualities as the top surface. Please contact your plumber immediately should any leaks or seepage occur.

Your Granite bench top is one of the most hard-wearing stones and is almost impossible to scratch under normal kitchen use. It is not damaged by standing hot utensils on it (although this is not recommended) or by sharp knives, although diamond or tungsten implements can scratch the surface. Granite is also resistant to spills of substances such as acids and alcohol. However, things such as beetroot, wine and cooking oil, particularly when hot, may cause a stain on your granite bench top if they are left too long, so you should always clean them up immediately.

Cleaning

Cleaning with dishwashing detergent is usually sufficient, however stubborn food stains may need full strength "Handy Andy" or "Janola" diluted 1 part to 3 water. For everyday of your Granite bench top we recommend wiping the surface of your bench top with warm, soapy water and a damp cloth.

Caesarstone – Care

Caesarstone has outstanding properties to ensure ease of maintenance and longevity of your surfaces. It will withstand exposure to tea, wine, vinegar and strongly coloured substances. Everyday cleaning Caesarstone requires very little maintenance to keep the surface looking like new. For every day, using a warm cloth with mild detergent will suffice.

To avoid damage, it is best to use the appropriate cutting board and never use knives directly on the Caesarstone surface.

Caesarstone will tolerate brief exposures to moderately hot temperatures, however prolonged direct contact with heat from hot pots can cause thermal shock, discolouration or damage. Therefore, never place hot cooking appliances directly onto the surface of Caesarstone. The use of a "hot pad" or appropriate heat proof board will prevent damage from occurring.

Uniquartz – Care

Uniquartz surfaces are virtually maintenance-free. There is no need for polishing, sealing or reconditioning. Light dusting followed by cleaning with warm soapy water is enough to restore the shine to the countertops.

Protecting Uniquartz

Make sure not to use any abrasives or harsh chemicals on the countertops. Uniquartz surfaces are suited to interiors only and are not intended for use on external walls or surfaces.

Stainless Steel Surfaces

Always wipe with detergent based cleaner and never use scouring products e.g. "Jif" or "Ajax". To remove finger marks and smears we recommend use of a high quality micro fibre cloth. Avoid aggressive detergents such as oven cleaner coming in contact with stainless steel.

Ceramic Hobs

Clean with specialist ceramic hob cleaners available from your supermarket. Burnt on spills can be scraped off using either a glass scraper or the scraper provided by the hob manufacturer.

Kitchen Sinks

Sinks are manufactured from high quality stainless steel which provides a surface with maximum durability. However, stainless steel can be scratched or scuffed. When scuffing does occur, please

remember that this is normal and the effect will become uniform with age. The high quality stainless steel will not lose its attractive shine.

Recommended daily care

Regular cleaning is important to maintain the appearance of your sink. Wipe with a soft, soapy cloth, rinse and dry after every use. Drying is very important to eliminate any film build-up that may develop from hard water deposits.

What to AVOID

Bleaches containing hypochlorite will attack stainless steel and cause pitting and staining. Silver dip cleaners containing acids which attack stainless steel and leave a permanent stain. Certain foods, when left for prolonged periods can cause pitting and corrosion. Examples are citric fruit juices, salt, vinegar, mustard, pickles and mayonnaise. Strong acids can damage stainless steel (e.g. Photographic developing liquids or denture cleanser). If they come into contact with the sink, they should be washed away immediately with clean water.



MBF Tiling Ltd

Producer statement

Construction - water proof membrane

Building Consent application number: 190682

Address: 6 Hadfield Road, Peka Peka

Issued by: Matthew Fisher - MBF Tiling Ltd

Date: 7 February 2020

Warranty period: 15 years from 7 February 2020

Product used: Davco Dampfix Gold

In respect of: Waterproofing bathroom: all floor and skirtings, shower floor and shower walls to ceiling height.

I have been engaged by the building consent applicant to undertake ☒ all or ☐ part only (as specified in the attached particulars) of the water proof membrane application in respect of the above building consent. I have sighted the above building consent and read the conditions, together with the waterproofing details contained therein. I have inspected the substrate to which the water proof membrane was applied, and have found this to be satisfactory.

As the water proof membrane applicator, I can confirm that the water proof membrane application specified above has been constructed in accordance with the manufacturer's specifications and requirements, and to the extent required by the above building consent, and complies with the above building consent in respect of Clauses E2 and E3 of the Building Regulations 1992.

I attach copies of the following warranties to the property owners:

- ✓ Davco Waterproofing producer statement
- ✓ 15 year product warranty

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.

Matthew Fisher
Water Proof Membrane Applicator Registration Number: 16/0529
Qualifications: BCITO Qualified Tiler
Address: 21 Tireti Road, Titahi Bay, Porirua

Davco

EXCELLENCE IN
TILING SYSTEMS



WATERPROOFING PRODUCER STATEMENT

All sections of this form must be completed

Date of Installation:	<input type="text" value="0"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="2"/> <input type="text" value="2"/> <input type="text" value="0"/>	Completion Date	<input type="text" value="0"/> <input type="text" value="7"/> <input type="text" value="0"/> <input type="text" value="2"/> <input type="text" value="2"/> <input type="text" value="0"/>
Applicator Number:	<input type="text" value="1"/> <input type="text" value="6"/> <input type="text" value="0"/> <input type="text" value="5"/> <input type="text" value="2"/> <input type="text" value="9"/>		
Author Name:	<input type="text" value="Matthew"/>	<input type="text" value="Fisher"/>	
Company:	<input type="text" value="M B Fisher Tiling Limited"/>		
Address:	<input type="text" value="21 Tireti Road, Titahi Bay, Porirua"/>		
Contact Number:	<input type="text" value="0"/> <input type="text" value="2"/> <input type="text" value="2"/> <input type="text" value="0"/> <input type="text" value="9"/> <input type="text" value="7"/> <input type="text" value="8"/> <input type="text" value="6"/> <input type="text" value="8"/> <input type="text" value="2"/>		
e-Mail:	<input type="text" value="matt@mbftiling.co.nz"/>		
Site Address:	<input type="text" value="6 Hadfield Road, Peka Peka"/>		
Site Owners Name:	<input type="text" value="Adam Beattie"/>	<input type="text"/>	

Site Installation Details

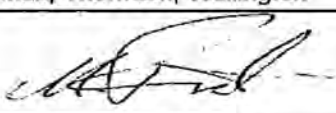
Primer:	<input checked="" type="checkbox"/>		
Bond Breaker:	<input checked="" type="checkbox"/>		
Waterproofing:	K10 Plus: <input checked="" type="checkbox"/>	K10 Rapid: <input type="checkbox"/>	Dampfast: <input type="checkbox"/>
Davco Adhesive Systems Used:	<input checked="" type="checkbox"/>		

Application Details

Internal:	<input checked="" type="checkbox"/>	External:	<input type="checkbox"/>
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Product Purchase Details

Place of purchase:	<input type="text" value="Tilemax, Thorndon, Wellington"/>
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Applicator Signature:  Date: 13 February 2020_

Customer Name (Print)

Subject to the conditions within this document, THE APPLICATOR warrants his/her workmanship as follows:

- a) The waterproof membrane has been installed in direct compliance with the manufacturer's specifications and installation guidelines.
- b) As per the manufacturer's product warranty, the workmanship on the materials by the applicator shall hold a watertight barrier for a period of 15 years.

The applicators workmanship warranty will be subject to the following conditions:

- 1. This warranty will extend only to the workmanship undertaken by the applicator and will in no way bind the manufacturer of the materials which is applied and installed by the applicator.
- 2. Under this warranty, the applicators obligations will be limited to the applicator making good at their expense any workmanship found to be defective.
- 3. This warranty will not apply to any defective workmanship that is
 - a) Caused either directly or indirectly by governmental or environmental issues or any other interference beyond the reasonable control of the applicator.
 - b) Caused by the act, omission, default or representation of any other party other than the applicator, and in particular the work of any other trade, damage caused by unauthorised repair or maintenance other than the approved applicator during the warranty period.
 - c) Caused by the materials being altered by any other party other than the approved applicator after application.
- 4. All warranties will be deemed invalid unless the applicator receives the customers claim in writing within the warranted period and within fourteen (14) days after the date of discovering the alleged defect.
- 5. All warranties will be deemed invalid should the area be disturbed prior to the applicator and or manufacturer sighting the alleged defect.
- 6. Where the applicator is required to repair any defective workmanship, the customer shall remove and or replace any equipment or objects hindering access by the applicator to the materials. The cost of any site inspection requested under the warranty claim that is not a direct result relating to scope of works completed, will be paid by the party requesting the inspection at the agreed applicators consultancy rate.
- 7. The customer will have made full payment to the applicator for the work completed within the terms of the applicators contract, prior to the customer making any claim under this warranty.
- 8. In the event that any materials subject to this warranty are acquired for personal, domestic or household use, then this warranty shall be read subject to the guarantees contained in the Consumer Guarantees Act 1993.
- 9. The customer acknowledges that the applicator is not employed by nor is the applicator an agent representing the manufacturer of the materials and that the manufacturer will not be liable to any person for the workmanship, acts or defaults of the applicator.

SCANNED

RECEIVED

25 SEP 2019



ADVISING COUNCIL OF YOUR LICENSED BUILDING PRACTITIONER(S)

Section 87 of the Building Act 2004, requires that the owner must notify names of licenced building practitioners engaged in restricted building work.

As soon as practicable before work commences the owner must give the building consent authority (Council) **written notice** of the names of any licensed building practitioners, not stated in the application for building consent, who will be engaged in restricted building work.

After any restricted building work has started under a building consent, as soon as practicable, the owner must give the building consent authority (Council) **written notice** if a licensed building practitioner ceases to be engaged or supervise the restricted building work and (if applicable) the details of other licensed building practitioners engaged to complete the work.

Building Act 2004 – Section 87

The information Council uses for this purpose **must be obtained from the owner**. Verification of this can be by the owner's signature accompanying the details **or** if sent electronically, the details are sent from the owners email address.

The following information is required:

1. The Project

Building Consent Number:

190682

2. The Building

Building Name:

Building Street Address:

lot 3, 6 Hadfield Rd Peka Peka

3. The Owner

Owners name:

(for companies, trusts or other organisations also provide a contact person's name)

Owners address:

Owners contact details

landline: (04) 2961248

mobile:

afterhours:

Fax:

email:

kapiti@gigapower.co.nz

4. Details of each Licensed Building Practitioner (LBP) engaged to carry out / supervise restricted building work.

Particular work to be carried out or supervised:	Name of LBP:	Licensing Class:	Licensed Building Practitioner Number: (or registration number if treated as being licensed under section 291 of the Act)
Foundation	Shane McKenzie	Carpentry	BP107284
Carpenter	Bm Building	Carpentry	1064568124403
Bricks	KB Bricklaying	B1 & B2	111559
Roof	Nicolas Nolan	Metal tile	BP116537
Electrical	Shawn Olesky		E17118
Plumber	Streamline		24031

NB: Please remember that the **owner must verify** that they have provided this information, if you have written **all** the details on this sheet please **sign below**.

Signature:

Date:

20/9/19

Relevant Information

Issued in accordance with Building Consent No. 190682

1. Earthworks (used regardless as to whether it complies with the District Plan or not): Should a waahi tapu or other cultural site be unearthed during earthworks, the operator and/or owner shall: 1) Cease operations; 2) Inform local Iwi; 3) Inform Heritage New Zealand (HNZ) and apply for an appropriate authority; and 4) Take appropriate action, after discussion with HNZ, Council and Tangata Whenua, to remedy damage and/or restore the site. NB: In accordance with the Heritage New Zealand Pouhere Taonga Act 2014, where an archaeological site is present (or uncovered), authority from HNZ is required if the site is to be modified in any way.
2. Both hot and cold water pipes are to be tested to 1500kPa pressure.
3. Any external cladding system must be completed before a pre-lining inspection for the affected wall can take place.
4. The owner/builder is responsible for clearly defining the site boundary lines and pegs. This may require a survey. NOTE: established fences are not necessarily on the boundary.
5. Plan notes take precedence over general specifications.

Building Consent
[Form 5, Building (Forms) Regulations 2004]
190682
Section 51, Building Act 2004

The building

Street address of building: 6 Hadfield Road, Te Horo
Legal description of land where building is located: LOT 3 DP 531543
Valuation number: 1490005601
Building name: N/A
Location of building within site/ block number: -
Level/unit number:

The owner

Name of owner: Adam Beattie
Contact person: As above
Mailing address: 49 Saunders Close, Whitby, Porirua 5024
Street address/registered office: N/A
Phone numbers:
Landline: - *Mobile:* 027 682 2999
After hours: - *Fax number:* -
Email address:
Website: -
First point of contact for communications with the council/building consent authority:
Full Name: GJ Gardner Homes Kapiti/Wellington
Mailing Address: PO Box 65, Paraparaumu 5254
Phones: 04 296 1248
Email: julianne.mollet@gjgardner.co.nz

Building work

The following building work is authorised by this building consent:
New 5 bedroom, 2 bathrooms, 4 toilets, 2 living areas, double internal garage

Rural Dwelling

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.

Conditions of building consent

This building consent is subject to the following conditions:

1. There are no conditions.

Compliance schedule

A compliance schedule is not required for the building.

Attachments

Copies of the following documents are attached to this building consent:

- List of required inspections and supporting documentation required
- Building Consent Addendum
- Plans and specifications
- Advice of licensed building practitioners

Note: The cover letter and all attachments to this building consent should be read fully to ensure you understand all conditions of this consent.

Signature

Position

On behalf of: KAPITI COAST DISTRICT COUNCIL

Date: 14/09/19

Building Consent Addendum to 190682

Application	Building Consent No. 190682
GJ Gardner Homes Kapiti/Wellington	
PO Box 65	
Paraparaumu 5254	

Project	
Description:	New (& prebuilt) House, Unit, Bach, Crib, Town House etc. Being Stage 1 of an intended 1 Stages New 5 bedroom, 2 bathrooms, 4 toilets, 2 living areas, double internal garage
Intended Life:	Indefinite, but not less than 50 years
Intended Use:	Rural Dwelling
Estimated Value:	\$431,800
Location:	6 Hadfield Road, Te Horo
Legal Description:	LOT 3 DP 531543
Valuation No:	1490005601

Builder: GJ Gardner Homes Kapiti/Wellington PO Box 65,
Paraparaumu : 04 296 1248

Designer: Coastal Architecture Ltd PO Box 65, Paraparaumu : 04 296
1248

Contractor: Hamish Wells Engineer Ltd PO Box 188, 202 Otaki Gorge
Road, Otaki : 027 445 9757

Specific requirements

1. The inspection of all specific design components covered by a producer statement design (PS1), where the designer has recommended construction monitoring, is the responsibility of the Design Engineer who is also required to supply a written report (PS4) to the Council. It is the Design engineer's responsibility to confirm design assumptions.
2. Names and registration numbers of the plumber and drainlayer are required before work commences.

3. A certifying plumber/drainlayer is to complete the attached producer statement forms and return to Council. Also provide a neat 'as built' drainage plan showing sewer, stormwater and water.

KAPITI COAST DISTRICT COUNCIL

Consent No: 190682

Building Category: R1

Site Address: 6 Hadfield Road, Te Horo

Owner/Agent: GJ Gardner Homes Kapiti/Wellington

Inspections

The following inspections are required:

- 1 Pre-Slab Building
- 1 Pre-Slab Plumbing
- 1 Drainage
- 1 Preline Building
- 1 Postline / Wet area Pre Application
- 1 Pre Wrap
- 1 Pre Clad
- 1 Brick Veneer
- 1 Wet Area Post-application
- 1 Preline Plumbing
- 1 Final Inspection
- 11 Total Inspections

Documentation

The following documentation is required:

- Application for CCC
 - Electrical safety certificate
 - As-built drainage plan
 - Drainage (Form 126) for stormwater installation
 - Plumbing (Form 125) for pressure test and installation piped services
 - Construction review PS4 statement for structural engineering
 - Membrane applicator certificates - internal wet area
 - Timber framing and truss certification
 - Roof product manufacturers warranty
 - Record of Work
 - Water tank warranty
 - Septic tank warranty
 - Other (specify)
- Hamish Wells of Hamish Wells Engineer Ltd to Inspect: Site Prep, Piling and RibRaft Pre-pour
- PS3 from installer
- PS3 or installers certificate from Internal Membrane Installer

Building Practitioners

- Carpentry 1
- Foundations 1
- Bricklaying and Blocklaying 1
- Roofing 1
- Plumber

Drainlayer
Electrician

2275

21 August 2018

Kāpiti Coast District Council
Private Bag 60601
PARAPARAUMU 5581

Engineering Report for Three Lot Subdivision for Geoff Thompson: 4 Octavius Road, Peka Peka

1. INTRODUCTION

This report references the subdivision plans 2275-P1-001B showing the proposed subdivision at 4 Octavius Road Peka Peka.

The property is located on the lower foothills to the north-east of Waikanae township. Its description is as follows:

Legal Description: Lot 1 DP 81236
Area: 2.9961ha
Zoning: Rural Residential

The subdivision will create two additional lots as follows:

Lot	Comments	Area	Zone
Lot 1	Front lot with existing residence	8,010 m ²	Rural Residential
Lot 2	Lot fronting Hadfield Road	9,201 m ²	Rural Residential
Lot 3	Lot fronting Hadfield Road	12,750 m ²	Rural Residential

This report has been prepared solely for the purposes of assessing the suitability of the land for subdivision and the information supplied should not be used for any other purpose.

2. PROPOSED DEVELOPMENT

The current application for Resource Consent will lead to the creation of three lots. These lots will range from 8,010m² to 12,750Ha and will retain the Rural scale. Further future subdivision is possible but is not specifically covered by this report.

This report covers the suitability for subdivision of the site in regard to Natural Hazards, Geotechnical, Stormwater, Wastewater and Water Supply issues, as well as access and provision of utilities.

3. INVESTIGATIONS

As a background to the preparation of the Resource Consent Application, investigations have been carried out into:

- a. Geotechnical conditions, including Geological setting, slope stability, subsoil conditions and Engineering properties and considerations;
- b. Identified Hazards and Features, being the Ohariu Fault Hazard Zone and High Voltage Transmission Lines, both as identified in the District Plan;
- c. Specific Building Site assessments.
- d. Water supply and suitability of rainwater collection.

3.1. GEOTECHNICAL INVESTIGATIONS

The property has frontages onto Octavius Road and Hadfield road, and at its western edge borders the Main Trunk rail line. There is an existing residence at the eastern end.

a. Topography

- i. The topography of the site is gently sloping with gradients that are typically "low" (categories as per the GWRC classifications and denoting slopes of 0°-10°). The site is predominantly in pasture with shelter belts at the boundaries of the paddocks. The western, lower end of the property terminates in a section of the Kapiti maritime escarpment with two incised gullies extending to the lower terrace. It is likely that these indicate potential flow paths in wet weather.
- ii. **Soils.** The underlying geology of the site appears to consist of alluvial material incorporating Gravel deposits interspersed with fine grained silts and clays and overlain with Loess. Site investigations included test pits, boreholes prepared for percolation tests, and by observation of exposed cut channels alongside the stream. From previous reports it appears to be within an alluvial fan identified as being 14,000 – 24,000 years old. More detailed information is included with the penetrometer test results which are appended.



Historical photograph of area. Source: Leslie Adkin, entitled "Old steep fans at "Hadfield", north of Waikanae", c.1900, Te Papa Tongarewa, Registration Number B.021628. Reproduced from "Review of evidence for an active fault trace", August 2008, Ian R Brown Associates Ltd.

- iii. **Groundwater.** No indication was sighted of groundwater within the test pits dug on the site.

A pond is located to the south-west of the existing house, which intercepts a spring and surface runoff. An overflow channel extends initially to the north of the pond and then skirts inside the northern boundary to meet with northern-most incised gully which runs through the marine cliff adjacent to the western boundary.

At the time of inspection this channel was flowing until it met a boggy area uphill of the gully. No other surface seepage was noted however the presence of minor gullies indicated that surface flows were probable in significant storm events, and there were areas of saturated soil indicating potential seepage or localised poor drainage.

An aerial photograph of the site taken in 1980 clearly shows the same channel indicating that there has been no significant erosion or movement since that time.

A 100mm diameter piped drain was discovered with a constant minor flow running onto the overflow drain at the point where it turns to run westwards. A source for this flow was not found but it is possible that it is an outlet for a field drain placed to intercept another spring on the site.

- b. **Slope Stability.** An on-site inspection as well as a review of previous reports and photographic records that go back to the 1980's reveal no apparent evidence of an underlying slope instability.
 - i. Experience with similar soils elsewhere in the Waikanae Foothills suggest that excavated slopes of 2 (Horizontal) to 1 (Vertical) will be

stable in heights up 3m. More detailed investigations may be required when assessing the stability of steeper or higher cuts.

- c. **Liquefaction.** Liquefaction is the process where, during earthquake shaking, sand and silt grains in wet soil are rearranged and the water in the spaces between the grains is squeezed.

To liquefy, the soil must be:

- i. loose - compacted soils tend not to liquefy
- ii. sandy or silty - clays and gravels tend not to liquefy
- iii. wet - the soil must be below the water table.
- iv. Liquefaction usually only happens in susceptible soils in moderate to strong ground shaking (when household items start to fall and break).

(Explanation courtesy of Environment Canterbury)

None of these risk factors appear to apply to the site and it is expected there is virtually no risk of Liquefaction.

This is reinforced by the GWRC mapping system which indicates a classification of "none" for Liquefaction risk on the subject site.



Aerial Photograph c1980 with property outlined in red. Image courtesy of Retrolens.co.nz. Geological features appear relatively unaltered in 38 years suggesting stable ground conditions.

3.2. IDENTIFIED HAZARDS

a. Fault Lines

- i. The Ohariu Fault is shown in the current District Plan Natural Hazards as running approximately 950m to the east of the eastern Boundary of the site. The fault is currently listed as "Uncertain Constrained"
- ii. Investigations were carried out adjacent to the subject site in 2003 and 2008 with the latter being reported by Ian R Brown Associates in their "Review of Evidence for an Active Fault Trace", dated August 2008 ("Brown Report")
- iii. The results of this investigation were that previously assessed evidence of a potential fault line running close to the eastern boundary of the property and through 61 Hadfield Road were refuted as being due to another unrelated cause. This has had the effect of pushing the likely fault hazard zone further to the east of the property and as such is no longer considered to be a direct hazard on the site.

b. Noise Corridor.

The operative District Plan identifies a Noise Corridor associated with SH1 which has a boundary 50m inside the property parallel with its western boundary. It is currently anticipated that any building site will be uphill of this line.

4. FOUNDATIONS

Lots 2 and 3 allow for many options for the final siting of a building, beyond the sites specifically identified.

Our site assessment has noted exposed materials in cut faces that indicate likely founding in firm gravels within a silty sand or clay matrix. The existence of large boulders makes it extremely difficult to get meaningful scala penetrometer results. but sufficient testing was undertaken to indicate that the natural ground appears to be suitable for standard house foundations in accordance with NZS 3604.

Test pits indicated some variance across the site with lenses of clay/silt being possible and in one instance was found at depth below a firm gravel layer where scala penetrometer testing indicated refusal had been reached.

We recommend that the site be subject to site specific foundation investigation and design once the final location of a residence and its design has been finalised, and the specific subsoil conditions can be investigated and confirmed. This should ideally be undertaken once excavation for a building platform has been completed and conditions checked at least 2m below final ground level.

5. WATER SUPPLY

Properties in the surrounding area are dependent on rainwater collection. We are not aware of any activities in the area that would make roof water collection unsuitable.

The provisions have been considered in accordance with Rule 11B.3.2(1) of the Proposed District Plan as outlined below:

Water Supply

1. It shall be demonstrated (as evidenced by a report including an environmental impact report from a suitably qualified and experienced person) that:

a) a water supply of sufficient quality (potable for drinking purposes) and quantity can be provided for the activities proposed for the subdivision, including fire fighting;

New dwellings will provide their own water supply systems utilising roofwater collection and storage in compliance with Drinking Water Standards for New Zealand 2005 (Revised 2008). Properties in the surrounding area are also dependent on rainwater collection and we are not aware of any activities in the area that would make roof water collection unsuitable.

The minimum volume of net water storage needs to be 30,000 litres to satisfy the requirements of the KCDC SDPR 2012. However, 50,000 litres is recommended. This will be in addition to any additional storage required for stormwater attenuation. Owners must provide, maintain and monitor the installation and operation of the potable water supply in accordance with "The selection, operation and maintenance of individual household water supplies" (revised 2013), as published by the Ministry of health.

b) The proposed water supply will have no adverse effects on other water users;

The proposed roof water collection and storage, in accordance with Ministry of Health guidelines is independent of and will have no adverse effects on other water users.

c) the proposed supply will have no adverse effects on the water resource; and;

The proposed roof water collection and storage, in accordance with Ministry of Health guidelines will have no adverse effects on the water resource.

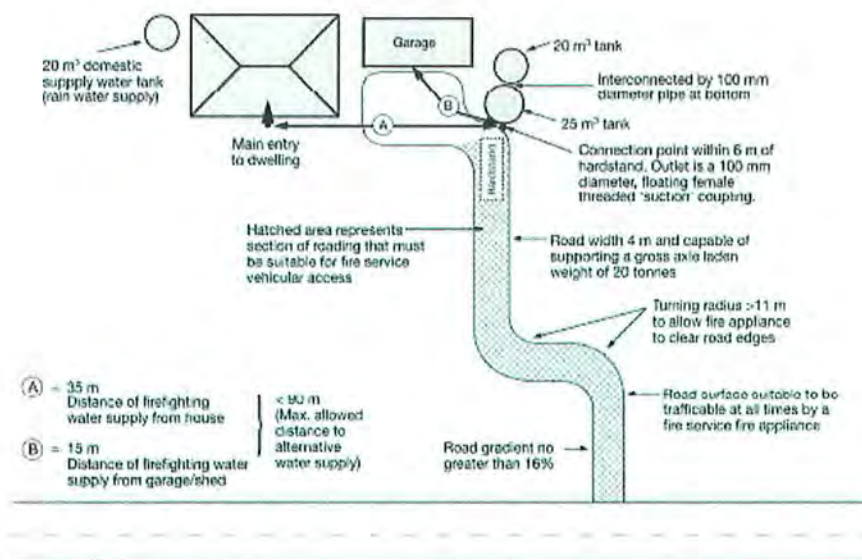
d) the proposed water supply will have no adverse effects on natural and physical resources.

The proposed roof water collection and storage, in accordance with Ministry of Health guidelines will have no adverse effects on natural and physical resources.

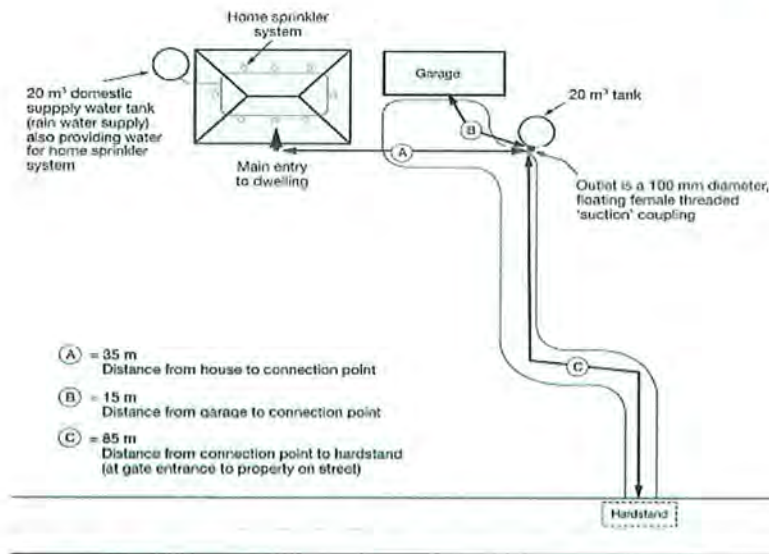
Restricted Discretionary Rule 7A.3.2(1d) requires:

'A firefighting water supply must be provided which complies with the New Zealand Fire Service Firefighting Water Supplies Code of Practice SNZ PAS 4509:2008.'

Future dwellings will be required to provide their own water supply systems, most likely comprising of roof water collection and storage. These dwellings will also comply with SNZ PAS 4509:2008 by providing a non-reticulated fire-fighting water supply when dwellings are constructed as set out below.



Unsprinklered



Sprinklered

We respectfully request that the associated condition of consent addressing fire-fighting requirements of the subdivision may be:

'Firefighting requirements shall comply with the New Zealand Fire Service Firefighting Water Supplies Code of Practice SNL PAS 4509:2008.

Note: An alternative rural firefighting solution shall only be accepted if accompanied by the written approval of the Fire Region Manager. Unless an alternative firefighting solution is approved by the Fire Region Manager, a tank or fixed source shall be installed prior to issue of certification pursuant to section 224(c).'

6. WASTEWATER:

Lot 1 is an existing residence with an on-site wastewater system discharging to a disposal field on the proposed lot 2. It is proposed to locate a new disposal field within the lot 1 boundary as part of the subdivision. All lots will have sufficient area for disposal fields in accordance with NZS 1547:2012.

For the other two lots we have assessed the requirements as follows:

- (1) Based on the provisions of NZS 1547:2012 "On-Site Domestic Waste Water Management" the likely disposal field soil type will be within a broad range from "Gravels with an indicative permeability of >3m/day" which are rated as "Category 1" to "Clay Loams" rated as category 4. For a drip irrigation system, with a depth of 100mm – 150mm of good quality topsoil, the suggested worst case irrigation rate is 3.5mm/day. It is noted that an earlier

investigation by Connell Wagner dated November 2004 at a location at the North-east of the site, determined a soakage rate of 35mm per hour.

- (2) For a 5-person household the likely flow rate will be between 900 and 1000 l/day assuming "Households with standard fixtures" and Roof Water supply. From Table J1, this would require a 3,000 litre septic tank as a minimum size.
- (3) The septic tank should be of a system that produces effluent of secondary treatment quality in accordance with NZS 1547, to suit disposal in highly permeable soils. Assuming drip irrigation at 3.5mm per day, (table M1) the required Disposal Area would be approximately 285m², and in line with the GWRC guidelines, no reserve area is needed. Permeability testing will need to be undertaken once the actual disposal site is confirmed to check the design permeability and exact area of disposal required. The design must also ensure that the size of the soakage field matches the waste water flow from the expected number of people in the house.

7. STORMWATER

Stormwater attenuation/disposal. It is likely that in a Rural environment, tank storage would be available for storing potable water, so tank-based attenuation is a likely option for the disposal of surplus rainwater, and to achieve Hydraulic Neutrality. The alternative of utilising a soak pit for this as well as disposal of any overflow cannot be ignored however. The calculations for a 250m² house suggest that;

- a. An attenuation tank capacity of 5384 litres would be required with an orifice diameter of 30mm, with discharge to ground or via a small soakage trench.
- b. Outfall Soakage could be managed with a Rainsmart Soak Pit of roughly 10mx0.4mx0.4m depending on site measured soakage (200mm/hour assumed).
- c.

8. ACCESS

Existing access is available from Hadfield Road for all lots. Two vehicle crossings are currently provided and it is proposed that these be upgraded with a remediation of the existing surface and an overlay of chip seal or asphalt.

The metalled access tracks will also be remediated as necessary to Rural ROW standard under the SDPR 2012.

9. UTILITIES

Confirmation has been provided by Electra and Chorus that capacity is available for Power and Telecoms respectively.

In our opinion there are no engineering issues that would preclude the subdivision of the property in accordance with the application subject only to the appropriate specific investigation and design being undertaken prior to works commencing.

We trust that the above report addresses all pertinent matters regarding the development of the site. Please feel free to contact us if you have any queries.

Yours sincerely
LANDLINK LIMITED

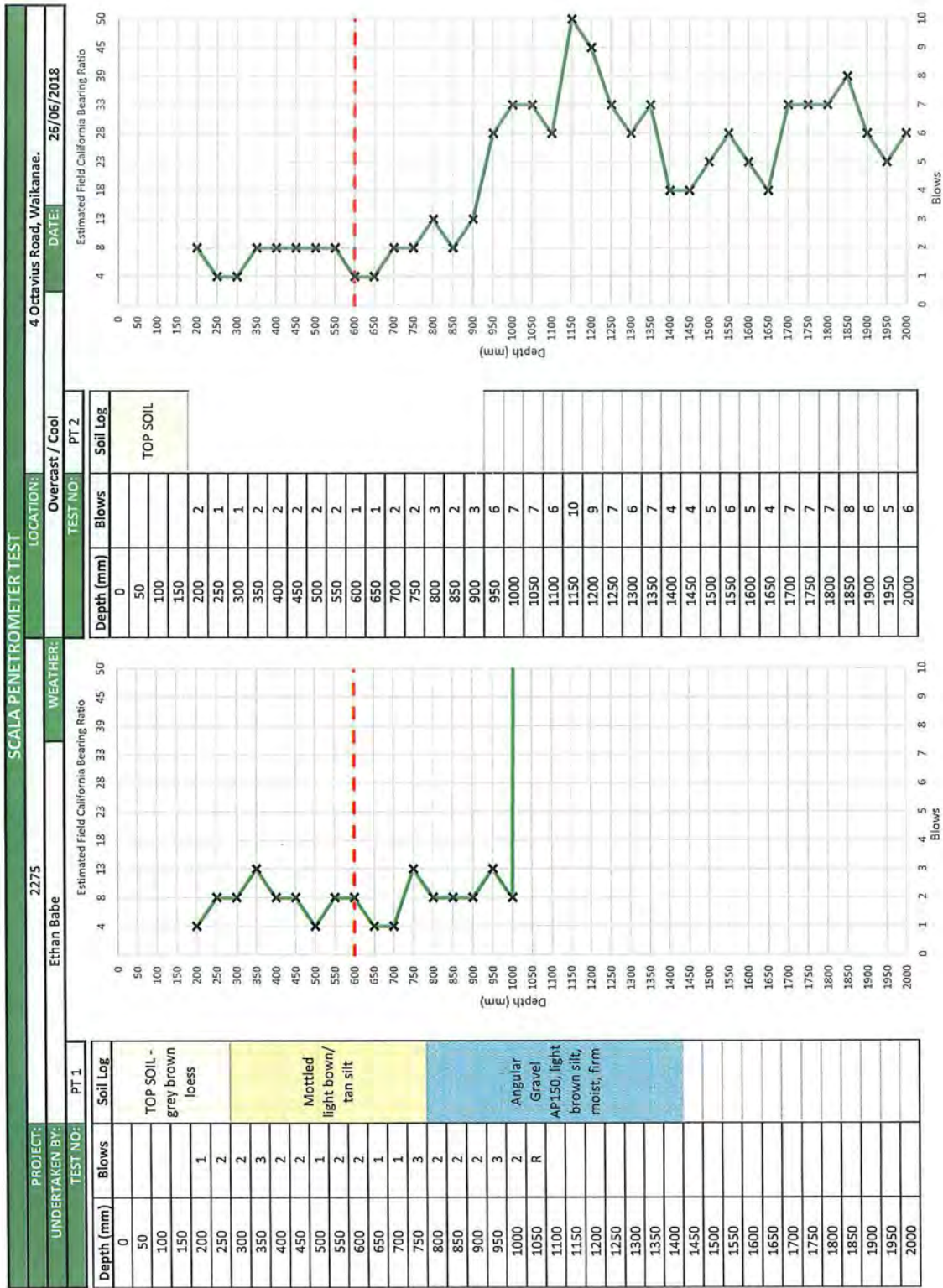


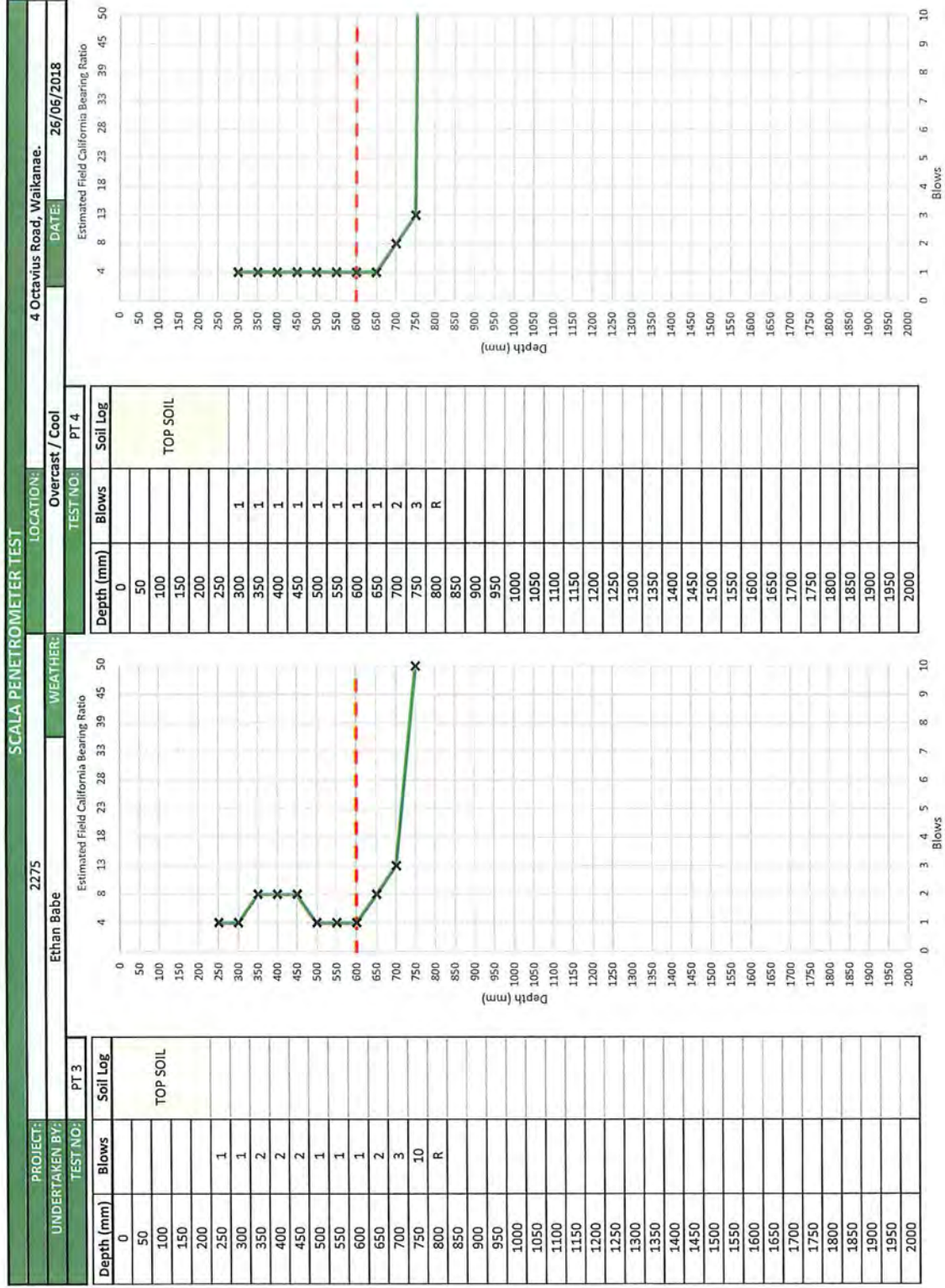
Dave Munro Bsc(Math), BE(Civil)(Hons), CMEngNZ
Project Engineer

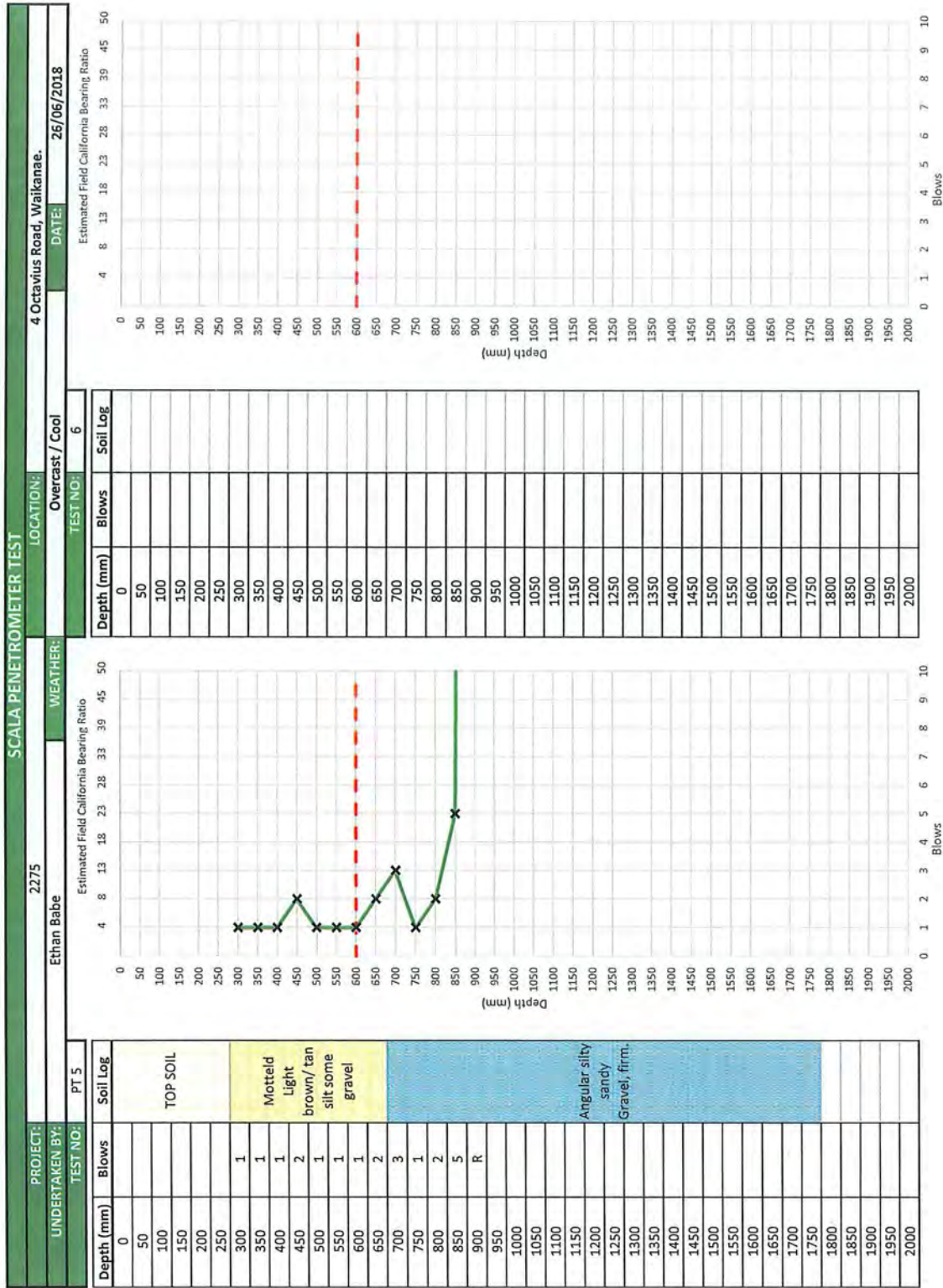
Attached:

- Penetrometer tests
- Stormwater Calculations











APPENDIX 2
ATTENUATION TANK CALCS

STORMWATER DESIGN CALCULATIONS

CLIENT:	Geoff Thompson	JOB NO:	2275
ADDRESS:	4 Octavius St	DATE:	20/08/2018
DESIGN PARAMETERS:	Runoff Coeff.		
Site Area:	9201 m ²	C=	0.3
House Coverage:	250 m ²	C=	0.9
Driveway:	50 m ²	C=	0.85
Additional Impermeable:		C=	0.85
Estimated Permeability	0 mm/hr	EST	
Design Percolation Rate	0 mm/hr	FOS=	4

Design Limitations: The design calculations are based on assumptions related to a realistic building size on this lot for the purposes of assessing suitability for subdivision.

DESIGN SOLUTION OPTIONS AND COMPONENTS:

A) ATTENUATION TANK

DESIGN STORM	Q10 STORAGE WITH Q2 OUTFLOW AS CRITICAL CASE.
Assumed Tank	25,000 litre "Flat Top" tank
Manufacturer	MacDonald Concrete Group Limited
Storage Height	2.58 m
Attenuation Orifice Diameter	30 mm
Design Max Attenuation Storage	5384 litres
MAX Orifice Height above Base	1.92 m
(Minimum for 10,000 litre storage is 1.15m)	

Note: Orifice controlled outlet to be connected to overflow and directed to stormwater discharge or to soak pit.

B) OUTFLOW FROM ATTENUATION TANK

The outflow is attenuated to the pre-development level for the critical storm event (Q2) so no further management is strictly necessary for hydraulic neutrality other than a diffused discharge to ground. However for full on site management available soakage can be utilised for the attenuated outflow. For example a Rainsmart soakpit has been sized as follows:

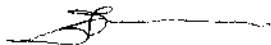
Sump or Chamber Diam: Nominal	
Number	1
Rainsmart Module Configuration:	
Length:	6.44 m
Width :	0.40 m
Depth:	0.84 m
Minimum Cover:	0.30 m

Other Design Requirements:

1. Provide overflow outlet to soak pit from discharge directly to secondary overflow path, bubble-up sump or otherwise stabilised and diffused outlet.
2. Refer specification and installation requirements of supplier for filter fabric encasing, excavation, and compaction. Trafficable areas may require geogrid reinforcing and greater cover.

Other Design Requirements:

Refer KCDC standard drawing KCDC-SW-006 for typical boulder pit details.

Calculations By:		DJ Munro CMEngNZ
------------------	---	---------------------

STORMWATER ON-SITE DETENTION TANK (OSD) DESIGN

10 YEAR ARI STORM WITH 2 YEAR ARI STORM OUTLET

20 August 2018

9201 m2 Lot with

350 m2 house

ADDRESS

NAME

PHONE

4 Oakdale St

Gaulf Thompson

Calcs By

Date

DJM

20-Aug-18

NOTE:

Only fill in the blue (unprotected) cells

DATA

Depth of Tank

2 Year Ischeyt Value

10 Year Ischeyt Value

Time of Concentration

1 m

89.6 mm

129.8 mm

10 min (10, 15, 30, 60)

Site Area

1. EXISTING SITE COVERAGE

Existing Roof

Existing Paved

Existing Garden

TOTAL Existing Area

2. PROPOSED DEVELOPMENT

Additional/Reduced Roof

Additional/Reduced Paved

Additional/Reduced Lawn/Garden

TOTAL Addition Area (should be zero)

3. REMAINING UNDRAINED AREA

Undrained Roof Area (Normally Zero)

Undrained Paved Area (Normally Zero)

Undrained Lawn/Garden Area

TOTAL Entry Not to Tank Area

Area (m²)

°C

CA (m²)

8291

0

0.9

0.0

0.85

0.35

3220.4

9201

285

0.9

225.0

240

0.85

42.5

-205

0.35

-105.0

0

162.5

(Not input this detention tank after development)

0

0.9

0.0

0.85

0.35

3115.4

8901

3115.4

CONTROL DATA

Existing °C

Developed °CA to OSD tank

Additional Area

0.35

268 (m²)

0 (m²)

(°CA to Site Area)

(°CA to Site CA (Add - CA Land))

(°CA to Site CA (Add - CA Land))

0.00

0

0

RUNOFF DATA

Intensity I

Allowable Qmax whole site

Least Flow

Allowable Qmax from tanks =

Allowable Qave from tanks =

for 2 year

for 10 year

58.1 mm/hr

52.94

51.22

1.7 l/s

1.1 l/s

83.6 mm/hr

74.80

72.37

2.44 l/s

1.6 l/s (Qmax * 0.65)

Orifice Calculation - PROTECTED DO NOT ENTER ANY FIGURES

Or Q10 outflow

Or Q10ave

Q=

Qave

51.4 mm

2.147642343 for h=

1.4

1.726521091 for h in Q2

0.646159373

1.1 Q2

STORAGE (2 year)

time (min)

depth (mm)

inflow (l)

outflow (l)

storage (l)

Inflow °CA to Site

Outflow °CA to Site

diff Inflow-outflow

10

9.9

2636

673.343253

1063

13.9

3725

838

2888

15

12.5

3356

1010.014388

2246

15

4741

1256

3485

20

14.3

3835

1347

2458

20

5418

1675

3743

30

17.0

4554

2020

2534

30

6434

2513

3921

60

23.3

6232

4040

2192

60

8505

5026

3779

120

31.4

8369

8020

300

120

11853

10052

1601

180

41.2

11025

12120

0

180

15578

15078

500

240

45.7

12224

16160

0

240

16164

17271

20104

300

50.2

13422

20200

0

300

17095

25130

0

360

53.8

14381

24240

0

360

17600

30139

0

420

57.3

15340

28380

0

420

18106

35182

0

480

60.9

16298

32320

0

480

18865

40208

0

540

63.6

17017

36361

0

540

19405

45234

0

600

67.2

17976

40401

0

600

19745

50260

0

660

69.8

18695

44441

0

660

19745

55285

0

720

72.6

19414

48471

0

720

19745

60311

0

1440

126.6

33606

120623

0

1440

126.6

33606

120623

Mean

2534

Mean

3921

SUMMARY

Tank Volume

10 Year Max Discharge

2 Year Max Discharge

Orifice Diameter

3930.0 litres

2.1 l/s

1.7 l/s

31 mm

Adjust to Design "h" and selected Orifice Size:

Tank Volume

Tank Height =

Storage rate

35000 L

2.58 m

9690 L/m

Clear internal dimension to top of design storage level

A) Adjust "h"

Set h=

2 Year Ave Flow

required Orifice Diameter

10 Year orifice Flow

10 Year Average Flow

0.40

1.12 L/s

39

2.148 l/s

1.396

A) Select orifice to next lowest standard diameter

Set Orifice Diameter to

30 mm

B) Adjust "h" in accordance with storage volume

For Q10, Set h=

Q10 outflow

Q2 Outflow

0.55 m

1.5 L/s

1.1

Adjust until it meets calculated "Storage Height" below

Ave Flow

Ave Flow

Max Storage (10 year)

Storage Height H =

Above Ground =

5384 L

0.645 m

OK

Set Outlet height from (100mm) base of tank

1.92 m

Client: Geoff Thompson

Location: 4 Octavius St

Job No: 2166

Stormwater Event: Q10 ex Attenuation Tanks Input from Sheet 1

Soakage Trench

Soakage Rate SR= 0 mm/hr
 Length L= 6.435 m
 Width, W= 0.53 m
 Effective Depth, D= 0.89 m
 Cover = 0.085 m
 Initial Water Depth= 0 m
 Porosity, n= 0.95 (Volume voids/Total Volume)
 Central Riser, Dia= 0.6 m
 Central Riser Area = 0.28 m²

9 Reinsmart
 1 reinsmart plus
 2 reinsmart
 Allow
 400 at 30.00%
 300 at 30.00%

Storage Available= 3.16 m³
 (Based on Porosity)
 Maximum Shortfall/ Outflow 17.16 m³
 Max Water Depth=

Time	Runoff	Volume In	Base Soakage	Surplus	Storage Depth	Wall Soakage	Total Input	Total Soakage	Accumulated Storage	Trench outflow
s	m ³ /s	m ³	m ³	m ³	m	m ³	m ³	m ³	m ³	m ³
10	0.00095	0.57	0.00	0.57	0.18	0.00	0.57	0.00	0.57	0.00
15	0.00095	0.86	0.00	0.86	0.27	0.00	0.86	0.00	0.86	0.00
20	0.00095	1.14	0.00	1.14	0.35	0.00	1.14	0.00	1.14	0.00
30	0.00095	1.71	0.00	1.71	0.53	0.00	1.71	0.00	1.71	0.00
60	0.00095	3.42	0.00	3.42	0.89	0.00	3.42	0.00	3.16	0.26
120	0.00095	6.84	0.00	6.84	0.89	0.00	6.84	0.00	3.16	3.69
180	0.00095	10.26	0.00	10.26	0.89	0.00	10.26	0.00	3.16	7.11
240	0.00095	13.68	0.00	13.68	0.89	0.00	13.68	0.00	3.16	10.53
300	0.00095	17.10	0.00	17.10	0.89	0.00	17.10	0.00	3.16	13.95
360	0.00094	20.32	0.00	20.32	0.89	0.00	20.32	0.00	3.16	17.16
420	0.00086	21.67	0.00	21.67	0.89	0.00	21.67	0.00	3.16	18.52
480	0.00080	23.03	0.00	23.03	0.89	0.00	23.03	0.00	3.16	19.87
540	0.00074	24.04	0.00	24.04	0.89	0.00	24.04	0.00	3.16	20.89
600	0.00071	25.40	0.00	25.40	0.89	0.00	25.40	0.00	3.16	21.74
660	0.00067	26.42	0.00	26.42	0.89	0.00	26.42	0.00	3.16	22.26
720	0.00063	27.43	0.00	27.43	0.89	0.00	27.43	0.00	3.16	24.28

High Intensity Rainfall System V3

Depth-Duration-Frequency results (produced on Wednesday 27th of June 2018)

Sitename: Geoff Thompson

Coordinate system: NZMG

Rainfall depths (mm)

ARI (y)	aep	Duration									
		10m	20m	30m	60m	2h	6h	12h	24h	48h	72h
1.58	0.633	7	10	12.3	17.5	24.2	40.5	56	77.4	90.6	99.4
2	0.5	7.6	10.8	13.3	18.9	26.1	43.3	59.7	82.2	96.2	105.5
5	0.2	9.6	13.7	16.9	24	32.7	53.4	72.7	98.9	115.8	126.9
10	0.1	11.3	16.1	19.8	28.2	38.1	61.3	82.8	111.8	130.9	143.5
20	0.05	13.1	18.7	23	32.8	44	70	93.8	125.7	147.1	161.3
30	0.033	14.3	20.4	25.1	35.8	47.8	75.5	100.8	134.5	157.4	172.6
40	0.025	15.2	21.7	26.7	38.1	50.7	79.7	106	141.1	165.1	181
50	0.02	16	22.8	28	40	53	83.1	110.3	146.3	171.3	187.8
60	0.017	16.6	23.7	29.1	41.6	55	85.9	113.8	150.8	176.5	193.5
80	0.012	17.7	25.2	31	44.2	58.3	90.7	119.7	158.1	185	202.9
100	0.01	18.5	26.4	32.5	46.3	61	94.5	124.5	164	191.9	210.4

Coefficients

c1	c2	c3	d1	d2	d3	e	f
0.0001	-0.0153	0	0.5114	0.4679	0.227	0.2115	2.8626

Standard errors (mm)

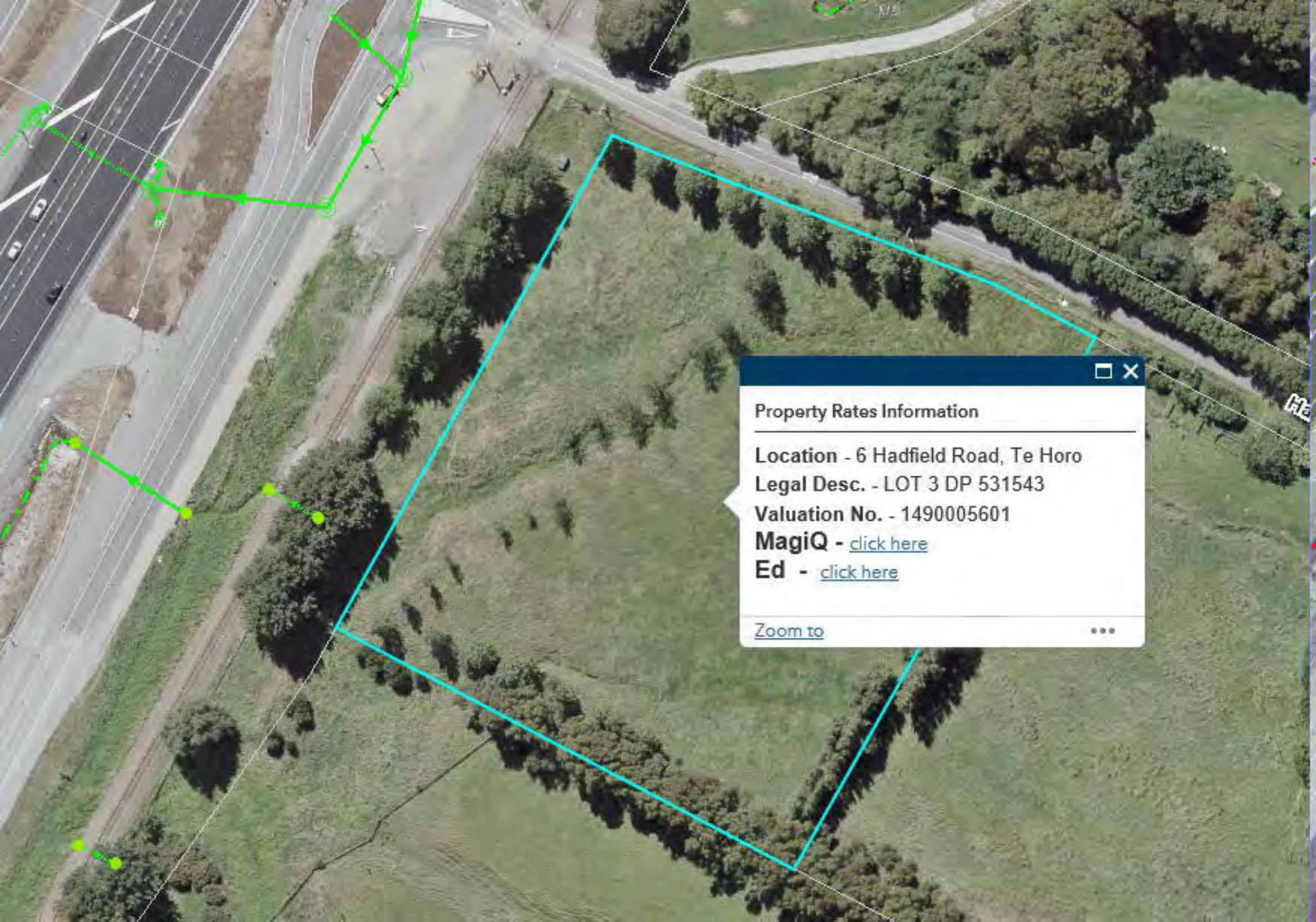
ARI (y)	aep	Duration									
		10m	20m	30m	60m	2h	6h	12h	24h	48h	72h
1.58	0.633	0.4	0.4	0.4	0.4	0.5	0.7	0.9	1	1.2	1.3
2	0.5	0.4	0.4	0.4	0.5	0.5	0.8	1	1.1	1.3	1.4
5	0.2	0.4	0.5	0.5	0.7	0.7	1.2	1.5	1.6	1.9	2
10	0.1	0.5	0.6	0.7	0.9	1	1.6	2.1	2.2	2.7	2.8
20	0.05	0.6	0.9	1	1.4	1.4	2.3	3.1	3.1	3.8	4
30	0.033	0.8	1.1	1.3	1.8	1.7	2.8	3.8	3.8	4.6	4.8
40	0.025	0.9	1.3	1.5	2.1	1.9	3.3	4.4	4.4	5.3	5.5
50	0.02	1	1.4	1.7	2.3	2.1	3.6	4.9	4.9	5.8	6.1
60	0.017	1.1	1.6	1.9	2.6	2.3	3.9	5.3	5.3	6.3	6.6
80	0.012	1.2	1.8	2.2	3	2.6	4.5	6.1	6	7.2	7.5
100	0.01	1.4	2	2.4	3.4	2.9	5	6.7	6.5	7.9	8.3

Extreme rainfall assessment with climate change

Projected temperature change: 2.1 degree Celsius

Rainfall depths (mm)

ARI (y)	aep	Duration									
		10m	20m	30m	60m	2h	6h	12h	24h	48h	72h
1.58	0.633	8.2	11.6	14.2	20	27.4	45	61.6	84.4	97.8	106.7
2	0.5	8.9	12.5	15.3	21.6	29.5	48.1	65.7	89.6	103.9	113.3
5	0.2	11.2	15.9	19.5	27.6	37.3	60.2	81.6	110.1	128	139.7
10	0.1	13.2	18.7	23	32.6	43.9	70.1	94.1	126.6	147.7	161.3
20	0.05	15.3	21.8	26.8	38.1	51	80.9	108.2	144.7	169	185
30	0.033	16.7	23.8	29.3	41.8	55.8	88.2	117.7	157.1	183.2	200.5
40	0.025	17.8	25.3	31.2	44.5	59.2	93.1	123.8	164.8	192.5	210.8
50	0.02	18.7	26.6	32.7	46.7	61.9	97.1	128.8	170.9	200.1	219.4
60	0.017	19.4	27.7	34	48.6	64.2	100.3	132.9	176.1	206.2	226
80	0.012	20.7	29.4	36.2	51.6	68.1	105.9	139.8	184.7	216.1	237
100	0.01	21.6	30.8	38	54.1	71.2	110.4	145.4	191.6	224.1	245.7





Property Rates Information

Location - 6 Hadfield Road, Te Horo

Legal Desc. - LOT 3 DP 531543

Valuation No. - 1490005601

MagiQ - [click here](#)

Ed - [click here](#)

[Zoom to](#) 

PROPOSED DWELLING

FOR BEATTIE
LOT 3, 6 HADFIELD ROAD, PEKA PEKA

CONTENTS:

- 1 - SITE PLAN
- 2 - DRAINAGE PLAN
- 3 - FLOOR PLAN
- 4 - FOUNDATION PLAN
- 5 - ROOF PLAN
- 6 - ELEVATIONS
- 7 - SECTION AA
- 8 - BRACING PLAN
- 9 - ELECTRICAL PLAN
- 10 - DETAILS
- 11 - DETAILS
- 12 - DETAILS
- 13 - DETAILS
- 14 - E2 MATRIX

NOTES:

CAUTION - PLANS HAVE BEEN DIGITALLY REPRODUCED & MAY NOT BE TO SCALE.

ALL WORK CARRIED OUT TO CONFORM TO RELEVANT BUILDING CODE & STANDARDS FOR LIGHT TIMBER FRAMED CONSTRUCTION.

ALL WORK CARRIED OUT UNDER JURISDICTION OF PRODUCER STATEMENT TO MEET THE ENGINEER REQUIREMENTS FULLY.

APPROVED
BY BUILDING
Jade Spiers-Allan
12/09/2019

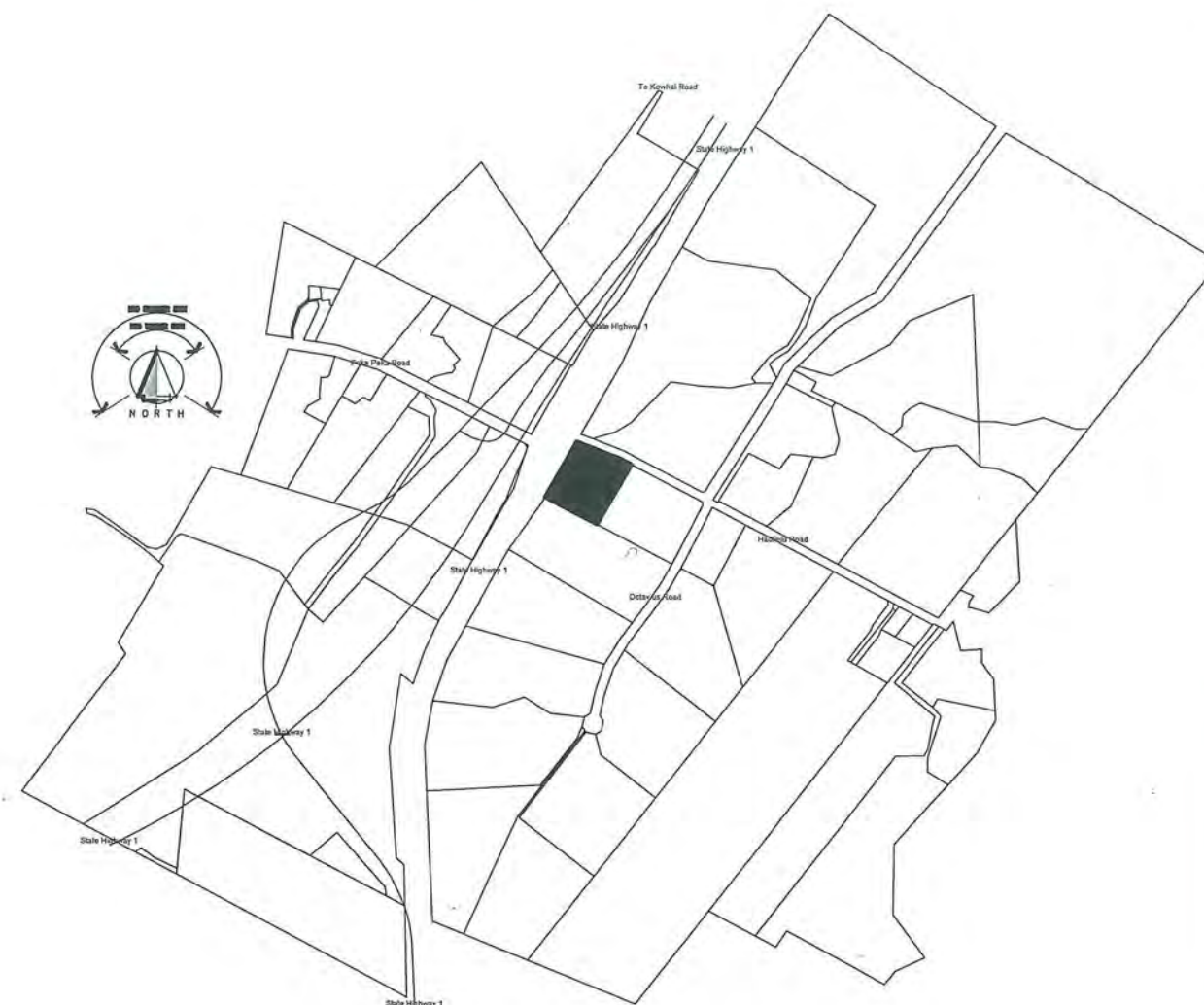
APPROVED BY
PLANNING
amyc
14/09/2019

ALL WORKS
SHALL BE IN
ACCORDANCE
W/RM190160

00001

CAUTION
Plans have been digitally
reproduced and may not
be to scale.

Endorsements made on any single
page apply equally to the entire
project.



G.J. Gardner. HOMES
New Zealand's favourite home builders

COASTAL
ARCHITECTURE LTD.



00002

Revisions:
AUGUST 2 / 2019 rev A

RECEIVED
19 AUG 2019
BY:

CONSENT PLANS

Project:
**NEW
DWELLING**
LOT 3 HADFIELD ROAD
PEKA PEKA

Client:
BEATTIE

Drawing Title:
SITE PLAN

Designer:
COASTAL
ARCHITECTURE LTD.
11 Kodex Place
Paraparaumu
New Zealand
Tel: 04 296 1248
e-mail: coastarchdesign@gmail.com

Design:
MB
Drawn:
BF
Scale:
as shown

Job: 980060
Page of: 1
Rev: A



G.J. Gardner. HOMES
New Zealand's favourite home builders

BOUNDARY 92.19m

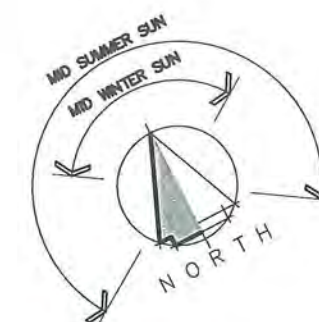
BDY 6m
BDY 20m
BDY 20m
BDY 6m

BOUNDARY 75.98m

BOUNDARY 22.27m

LOT 3
DP 531543
SITE AREA = 12149m²
DWELLING = 227.6m²
COVERAGE = 2% (Max 35%)

VERY HIGH WIND ZONE
CORROSION ZONE C



EXISTING WATER COURSE

EXISTING GATE

EXISTING CULVERT

BOUNDARY 102.91m

DATUM TOP
OF DRIVEN
PEG = 20.5
(MSL Approx)

FINISHED GROUND
LEVEL = 22.5m Approx

2x25000lt
HOUSE
WATER TANKS

30000lt FIRE
FIGHTING
WATER TANK

AIRTECH
9000 SEPTIC
SYSTEM

AIRTECH 9000 SEPTIC DISPOSAL FIELD - 300m² MIN

SITE PLAN

SCALE 1:500

NOTE: SITE CONCEPT ONLY. SUBJECT TO ENGINEERING APPROVAL

All work shall be in accordance with the NZBC. If in doubt ASK The Contractor must verify all dimensions on the job before commencing any work or shop drawings. Figured dimensions are to be used, scaled dimensions must be verified. This drawing and concept are copyright of M and L Barke Construction Ltd - Kapiti / Wellington Franchisee for G.J. Gardner Homes. The recipient of this document is prohibited from disclosing its content for any purpose without the prior written consent of M and L Barke Construction Ltd - Kapiti / Wellington Franchisee for G.J. Gardner Homes.

DRAINAGE PLAN NOTES:

- All Plumbing and Drainage to be in accordance with AS/NZS 3500.2 for ground floor systems and for single stack systems
- Plumber/drainlayer to fill out producer statement and return to council with an as built drainage plan
- pipes to be inspected before covering with sand
- A tempering valve is required to be installed on the hot water service
- No pipes at any point exceed 10m in length from dn 100 vented drain
- Non-potable supply appropriately protected from cross connection hazards & is identified by appropriate signage
- HWC to be no less than 65 degrees at the cylinder to prevent against legionella bacteria.
- Water temperature delivered to sanitary fixtures to be no more than 55 degrees in compliance with G12

PIPE GRADIENTS

- Minimum grades for drains and discharge pipes
- 65Ø & less = 1 in 40
- 80Ø & 100Ø = 1 in 60

HOT & COLD WATER

- All hot & cold water pipes in house to be run in Dux Secura Polybutylene plumbing system
- 20mm for Main and to HWC
- 15mm to all other branches
- 15mm to exterior taps
- Kitchen hot water supply pipe to be 10mm if over 12m in length but must be under 25m long

OVERFLOW RELIEF GULLY HEIGHT CLEARANCE TO COMPLY WITH AS3500.2 CL 4.6.6.6 & CL 4.6.6.7

150mm BELOW THE LOWEST FIXTURE & 75mm ABOVE THE IMPERMEABLE SURFACE

NOTE:
WATER SUPPLY TO HOUSE VIA A PURETEC HYBRID WATER FILTER SYSTEM

2 x 25000lt STORMWATER TANKS WITH DIVERTRON 1200x SUBMERSIBLE PUMP

OVERFLOW FROM TANKS TO NATURAL SWALE.
OUTFALL SHALL BE VIA ROCK DISSIPATER TO REMOVE THE VELOCITY & DAMAGE ASSOCIATED WITH FAST MOVING WATER

1 x 30000lt STORMWATER TANK FOR FIRE FIGHTING REQUIREMENTS (ADDITIONAL WATER FOR FIRE FIGHTING SUPPLIED FROM COMMUNITY FIRE FIGHTING TANK ON ROAD).
OVERFLOW TO HOUSE TANKS

AIRTECH 9000 ECO SEPTIC SYSTEM & ASSOCIATED DISPERSAL FIELD - 300m² MIN

NOTES:

ALL SEWER & STORMWATER PIPES TO BE 100mm Ø
ALL PIPE WORK ABOVE SLAB TO BE 40mm Ø
WC WASTE PIPE TO BE 100mm Ø

ALL EXPOSED HOT & COLD WATER PIPES TO BE LAGGED IF IN FROST PRONE AREA

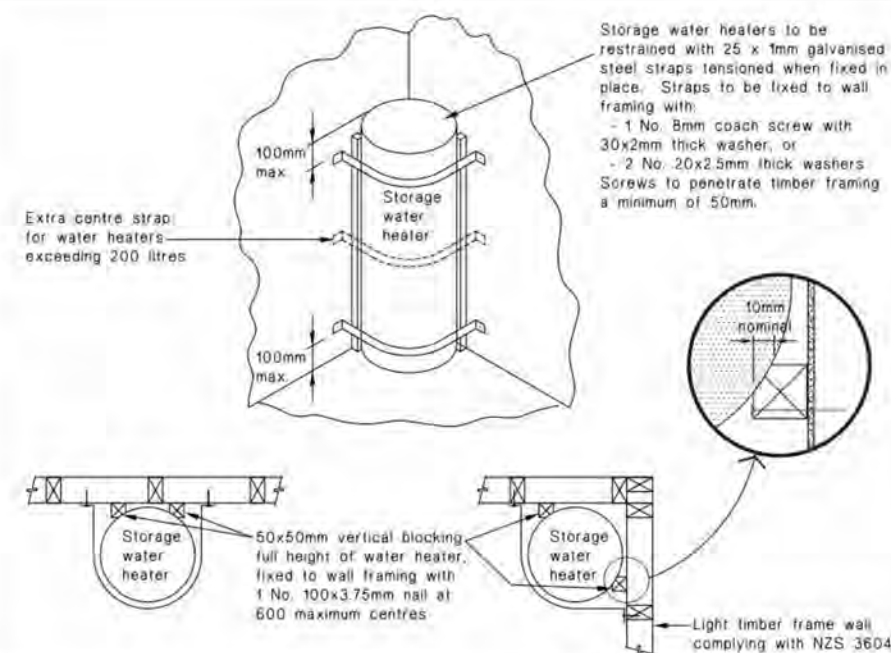
ALLOW FOR 40mm TRAPPED PVC WASTE DRAIN FROM HWC TRAY TO SEWER SYSTEM CHARGED FROM CWEV

NOTE:
THE FIRE FIGHTING HYDRANT IS TO BE POSITIONED 6m MIN FROM DWELLING TO ENABLE FIREMEN ACCESS TO THE HYDRANT SHOULD THE BUILDING ITSELF BE ON FIRE

NOTE:
DRIVEWAY TO BE FORMED WITH PERMEABLE MATERIAL

ALLOW FOR 4.5m x 11m HARD STANDING AREA IN FRONT OF GARAGE FOR FIRE FIGHTING APPLIANCES

HARD METAL ACCESS FOR FIRE TRUCK



Revisions:

AUGUST 2 / 2019 rev A
SEPTEMBER 6 / 2019 rev B

CONSENT PLANS

Project:
NEW DWELLING
LOT 3 HADFIELD ROAD
PEKA PEKA

Client:
BEATTIE

Drawing Title:
DRAINAGE PLAN

Designer:
COASTAL ARCHITECTURE LTD.
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Design: MB
Drawn: BF
Scale: as shown

Job: 980060
Page of: 2
Rev: B



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GENERAL NOTES:

- All work must be carried out to conform to relevant sections of the New Zealand Building Code and New Zealand Standards - in particular NZS 3604, NZS 3602 & NZS 4218. All references to Standards shall be taken as reference to the latest revision including amendments.
- Ground bearing must be reconfirmed on site following excavation but prior to placing concrete and reinforcing.
- Confirm site boundaries with licenced surveyor. Fences may not necessarily be on the legal boundary.
- All work to be carried out to best trade practice
- All habitable rooms have at least 5% of their floor area as opening windows or approved alternative to achieve ventilation requirements
- All habitable rooms have windows providing at least 10% of their floor area as natural light. At least 50% of the glazed area providing natural light is clear glazing falling within the visual awareness zone providing natural light is clear glazing falling within the visual awareness zone
- Garage spaces within or attached to the building envelope shall have
- A - Openings provided with a 50mm min total level change between the interior & exterior paving
- B - Provision to drain water away from the threshold of the opening.
- refer to E2 fig 65 & table 18 for overall level change requirements
- Do Not Scale off Building Consent Documentation issued from TA's as the plans may have been scanned and the scale distorted.
- Prenail framing and truss manufacturer to provide lintel sizes and provide a producer statement for framing, window lintels and trusses.
- Window openings to be 20mm larger than window sizes (10mm tolerance each side)
- All bottom plates and framing to shower areas to be H3.1. All framing in other at risk areas such as parapets and enclosed balconies to comply with NZS 3602 for particular situation.
- Allow for dwangs to fix fittings as required by owner.
- Wall junctions shall be framed up with not less than 2 studs blocked and nailed.
- Maximum diameter hole in 90mm stud to be 25mm or 35mm diameter where not more than 3 consecutive studs are drilled.
- Lintels supporting rafters or trusses shall be secured against uplift as per clause 8.6.1.8 & figure 8.12, NZS 3604:2011. 25x1mm strap with 6/30x2.5mm nails into both lintel & stud & 25x1mm strap taken under plate & up 150mm each side of stud fixed with 6/30x2.5mm nails into each side of stud
- Confirm building wrap is able to be used with timber treatment.
- Builders on site to comply with F5 of the building code (Health & Safety)

Benchtops & Vanities

- To be selected at owners discretion. To be continuously smooth and easily maintained in a hygienic condition e.g. stainless steel, high pressure laminate, acrylic, granite, or engineered stone surface. Must be sealed to adjoining impervious, easily cleaned walls e.g. aquaenamel paint, tiles, or glass

INTERNAL LININGS

WALLS:

- Generally - 10mm Standard Gib Board
- Bathrooms - 10mm Gib Aqualine

CEILINGS:

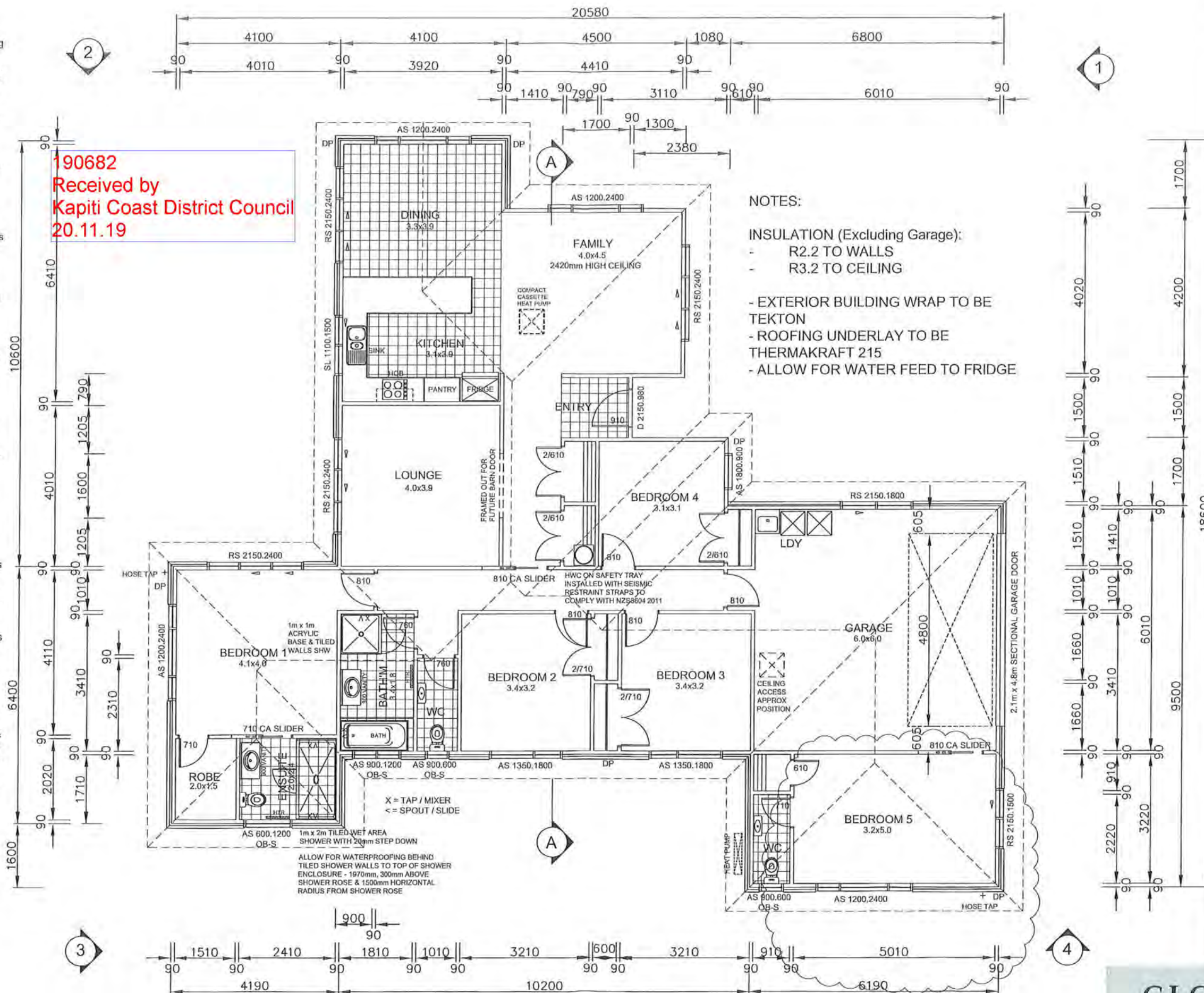
- Generally - 13mm Standard Gib
- Bathrooms - 13mm Gib Aqualine
- Back block sheet joints and allow for control joints as required by manufacturer

FRAMING

Exterior Walls & Internal Load Bearing Walls:

- Up to 2.4m - 90x45 SG8 at 400 crs H1.2
- Interior Non Load Bearing Walls:
- Up to 2.4m - 90x45 SG8 at 600 crs H1.2

190682
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Kapiti Coast District Council
20.11.19



NOTES:

INSULATION (Excluding Garage):

- R2.2 TO WALLS
- R3.2 TO CEILING
- EXTERIOR BUILDING WRAP TO BE TEKTON
- ROOFING UNDERLAY TO BE THERMAKRAFT 215
- ALLOW FOR WATER FEED TO FRIDGE

Revisions:

AUGUST 2 / 2019 rev A
NOVEMBER 20 / 2019 rev B

CONSENT PLANS

Project:
NEW DWELLING
LOT 3 HADFIELD ROAD
PEKA PEKA

Client:
BEATTIE

Drawing Title:
FLOOR PLAN

Designer:
COASTAL ARCHITECTURE LTD.

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Design: MB
Drawn: BF
Scale: as shown

Job: 980060
Page of: 3
Rev: B



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FLOOR PLAN SCALE 1:100 AREA = 219.4m² (227.6m² OVER CLADDING)

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Revisions:
AUGUST 2 / 2019 rev A

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CONSENT PLANS

Project:
**NEW
DWELLING**
LOT 3 HADFIELD ROAD
PEKA PEKA

Client:
BEATTIE

Drawing Title:
**FOUNDATION
PLAN**
Designer:

COASTAL
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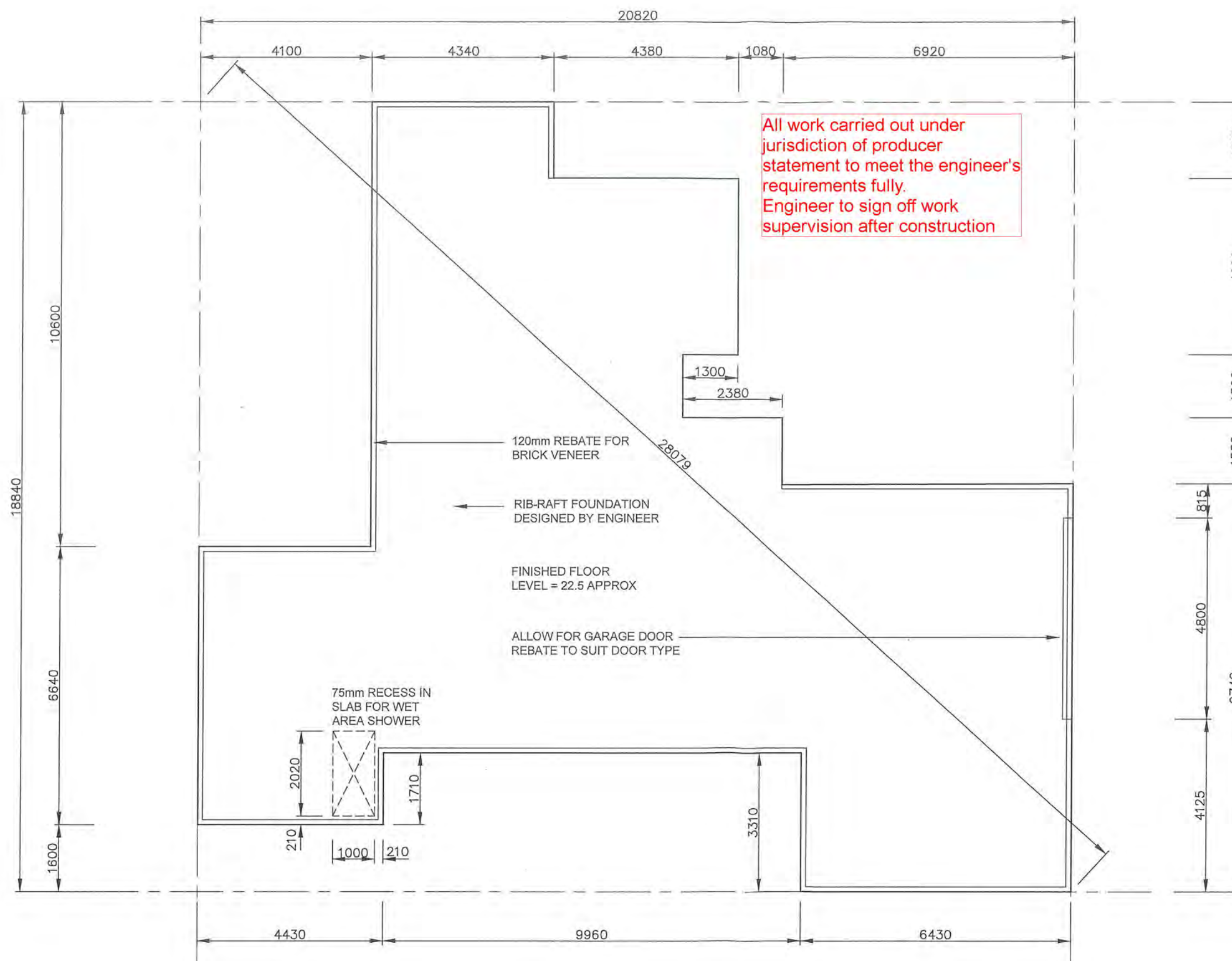
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Scale:
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Page of: 4
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NZS 3604 2011 RECOMMENDS A CONTROL JOINT AROUND THE PERIMETER OF ANY AREAS WITH SOLID TILES ON FLOOR TO AVOID CRACKING. BUILDER TO VERIFY WITH OWNER SPECIFIC AREAS

AREA OF FOUNDATION = 227.6m²

ALL CONSTRUCTION TO COMPLY WITH NZS 3604:2011, NZBC AND BEST POSSIBLE TRADE PRACTICES

BOTTOM PLATES FIXING
THE FIXING OF BOTTOM PLATES SHALL BE IN ACCORDANCE WITH 7.5.12 NZS 3604:2011.
APPROVED ANCHORS (FIXED TO MANUFACTURERS SPECIFIC INSTRUCTIONS) IN ACCORDANCE WITH 7.5.12.2 NZS 3604:2011

MINIMUM FLOOR HEIGHT

PROTECTED GROUND
100MM BRICK VENEER
150MM OTHER CLADDINGS
UNPROTECTED GROUND
150MM BRICK VENEER
225MM OTHER CLADDINGS
HEIGHTS AS PER NZS3604 2011 SECTION 7

FOUNDATION PLAN SCALE 1:100

NOTES

TRUSSES

DO NOT SUPPORT BOTTOM CHORD OF TRUSS AT POINTS OTHER THAN THOSE DESIGNATED BY THE TRUSS MANUFACTURER

ALL ROOF FRAMING TO BE H1.2

ROOF FRAMING FIXINGS

TRUSSES

FIXINGS FOR A ROOF TRUSS AT ITS SUPPORT SHALL BE AS GIVEN BY THE TRUSS MANUFACTURERS DESIGN BUT **SHALL BE NOT LESS THAN:** 2/90x3.15 SKEWED NAILS & STRAP FIXING (see figure 10.6 NZS 3604 2011)

TILE BATTEN FIXING:

2 / 90x3.15 GUN NAILS (0.8kN FIXING CAPACITY)

SUPPLY COPY OF RELEVANT WARRANTIES FOR ROOFING, MEMBRANE SYSTEMS & FASCIA / GUTTER SYSTEMS AS APPROPRIATE TO COUNCIL

ROOFING MATERIAL TO BE INSTALLED TO MANUFACTURERS REQUIREMENTS IN PARTICULAR, FIXING & MINIMUM PITCH (REFERENCE ALSO SECT 8 OF E2 NZ BUILDING CODE)

SOFFITS

UNFINISHED HARDIES SOFFITS MUST BE PAINTED TO COMPLY WITH NZBC DURABILITY REQUIREMENTS

SPOUTING

FRONT EDGE OF SPOUTING TO BE 20mm BELOW TOP EDGE OF FASCIA

ROOF PLAN

SCALE 1:100

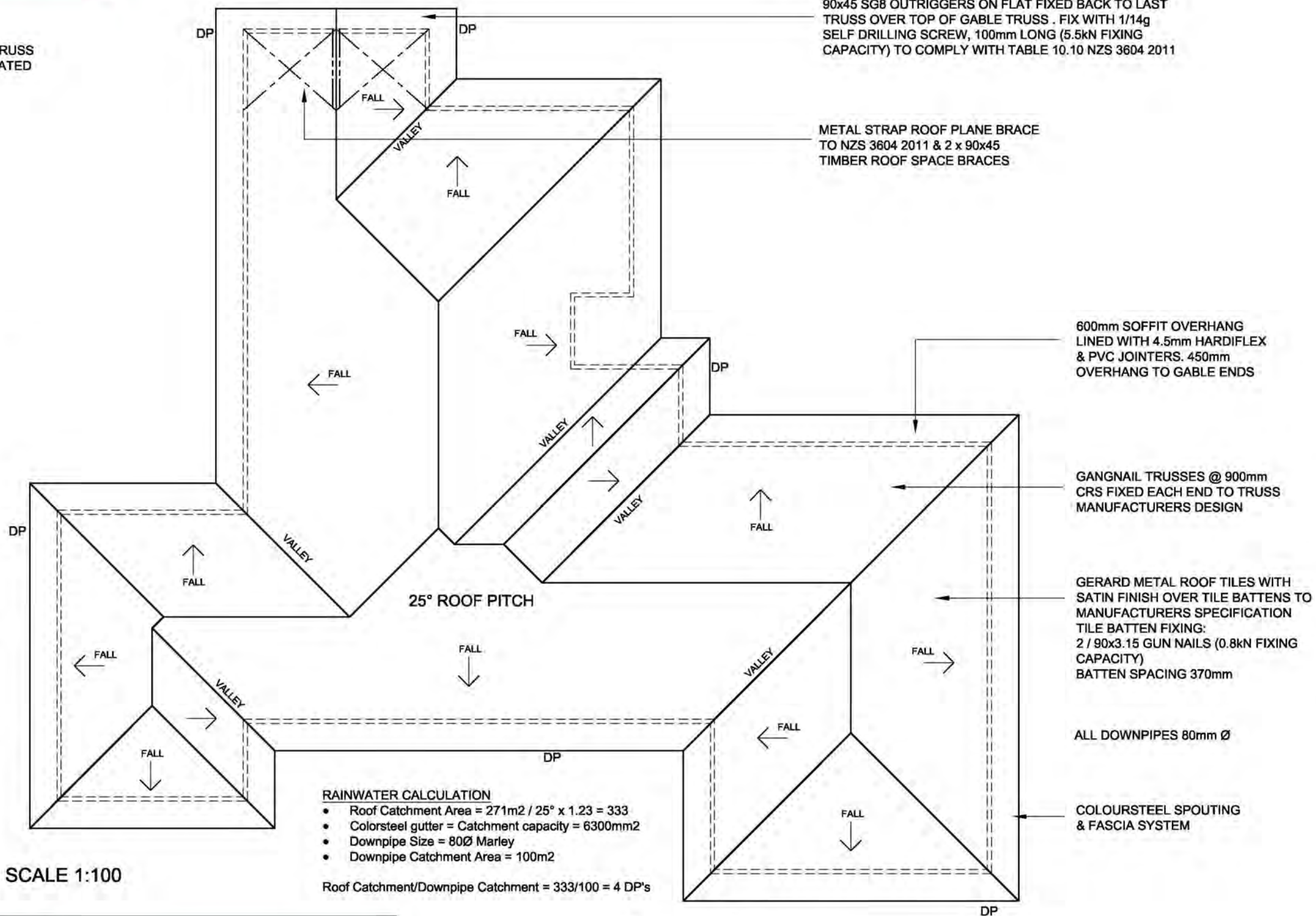
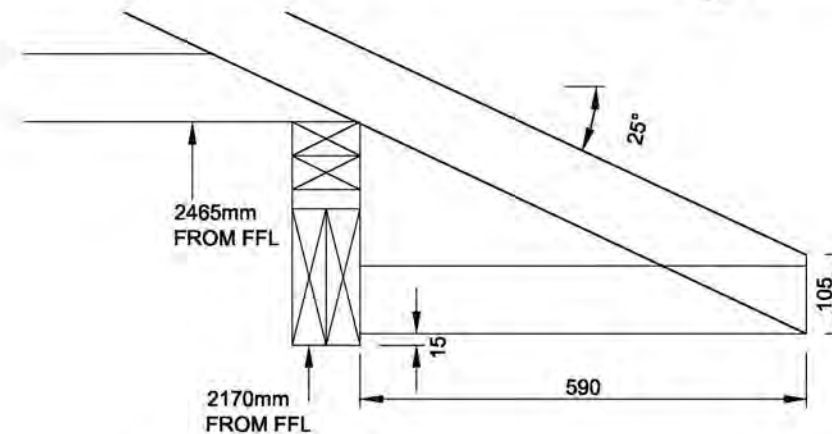
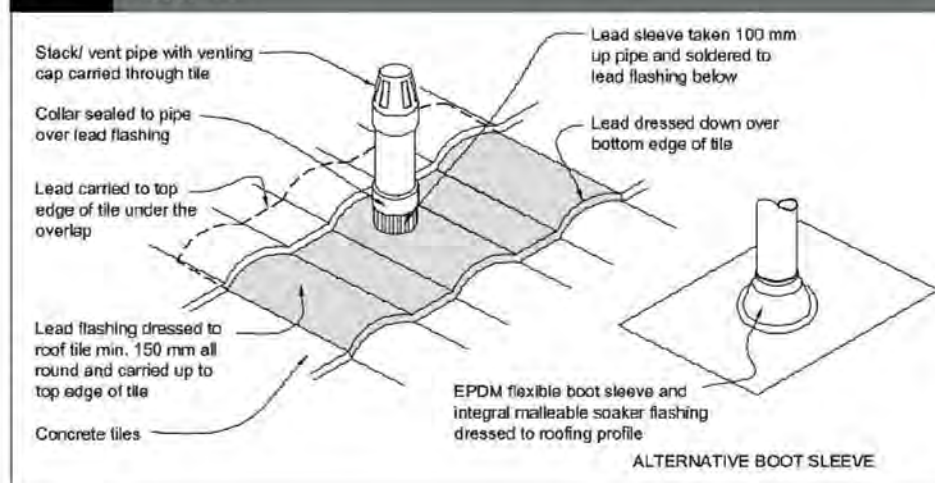


Figure 29: Pipe penetration for masonry tile
Paragraph 3.2.7



DETAIL TO SUIT 2150mm HIGH JOINERY

Revisions:

AUGUST 2 / 2019 rev A
SEPTEMBER 6 / 2019 rev B

CONSENT PLANS

Project:

NEW DWELLING

LOT 3 HADFIELD ROAD
PEKA PEKA

Client:

BEATTIE

Drawing Title:

ROOF PLAN

Designer:

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Scale:

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Job:

980060

Page of:

5

Rev:

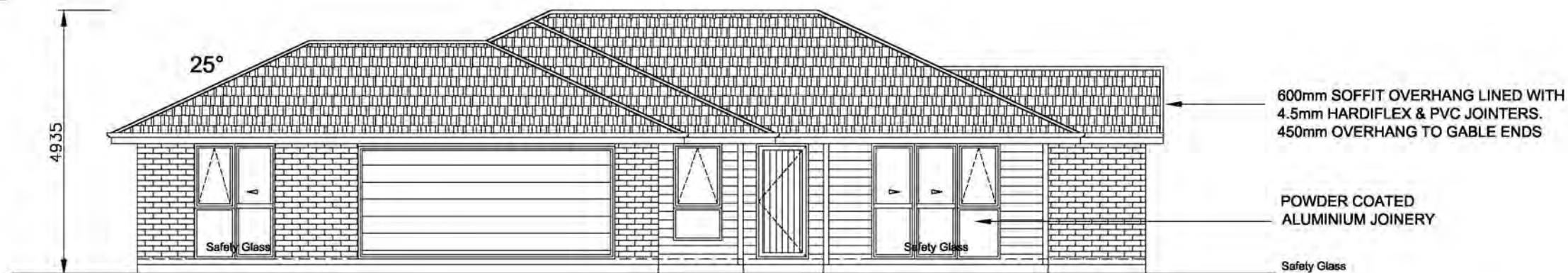
B



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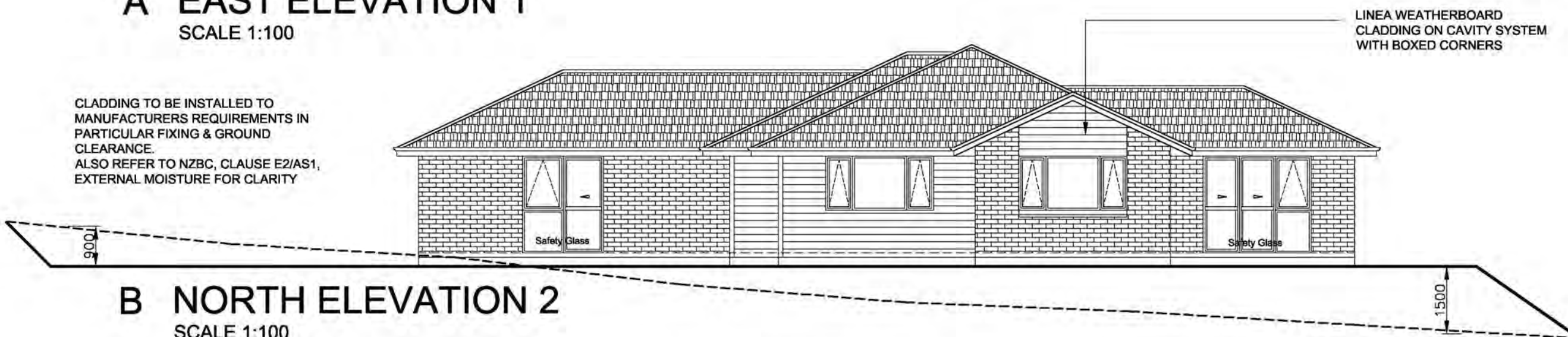
NOTE:
ALL CLADDINGS, ROOFING &
SPOUTING SYSTEMS TO BE
MAINTAINED BY OWNER IN
ACCORDANCE TO
MANUFACTURERS
RECOMMENDATIONS &
WARRANTEE REQUIREMENTS



A EAST ELEVATION 1

SCALE 1:100

CLADDING TO BE INSTALLED TO
MANUFACTURERS REQUIREMENTS IN
PARTICULAR FIXING & GROUND
CLEARANCE.
ALSO REFER TO NZBC, CLAUSE E2/AS1,
EXTERNAL MOISTURE FOR CLARITY

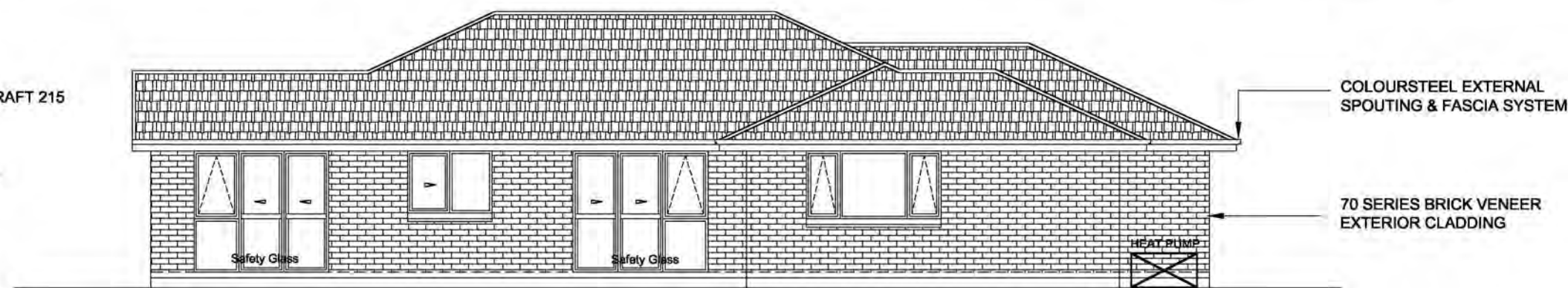


B NORTH ELEVATION 2

SCALE 1:100

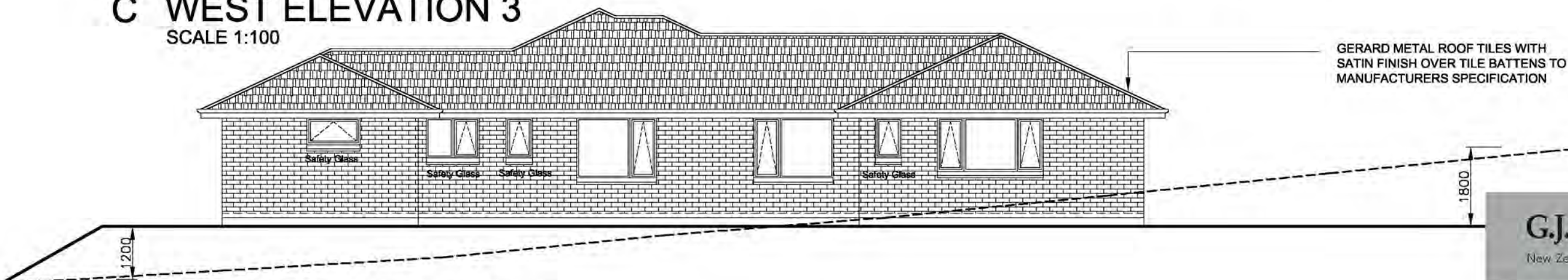
BUILDING WRAP - TEKTON
ROOFING UNDERLAY - THERMAKRAFT 215

INSULATION (Excluding Garage):
R3.2 BATTS TO CEILINGS
R2.2 BATTS TO EXTERIOR WALLS



C WEST ELEVATION 3

SCALE 1:100



D SOUTH ELEVATION 4

SCALE 1:100

Revisions:
AUGUST 2 / 2019 rev A
SEPTEMBER 6 / 2019 rev B

CONSENT PLANS

Project:
**NEW
DWELLING**
LOT 3 HADFIELD ROAD
PEKA PEKA

Client:
BEATTIE

Drawing Title:
ELEVATIONS

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Scale:
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Job: 980060
Page of: 6
Rev: B



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Revisions:
AUGUST 2 / 2019 rev A



CONSENT PLANS

Project:
**NEW
DWELLING**
LOT 3 HADFIELD ROAD
PEKA PEKA

Client:
BEATTIE

Drawing Title:
SECTION AA

Designer:
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ARCHITECTURE LTD.
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Design:
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Page of: 7
Rev: A



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COLOURSTEEL SPOUTING
& FASCIA SYSTEM

600mm SOFFIT OVERHANG
LINED WITH 4.5mm
HARDIFLEX & PVC
JOINTERS

25°

POWDER COATED
ALUMINIUM JOINERY

LINEA WEATHERBOARD
CLADDING ON CAVITY
SYSTEM TO FEATURE WALLS

13mm CEILING LINING ON GIB
RONDO CEILING BATTENS

PRESSED METAL ROOF TILES OVER TILE
BATTENS TO MANUFACTURERS
SPECIFICATION
TILE BATTEN FIXING:
2 / 90x3.15 GUN NAILS (0.8kN FIXING CAPACITY)

GANGNAIL TRUSSES @ 900mm CRS FIXED
EACH END TO PRE-NAIL MANUFACTURERS
SPECIFICATION
ALL ROOF FRAMING TO BE H1.2

70 SERIES BRICK VENEER
EXTERIOR CLADDING

90x45 FRAMING @ 400mm
CRS LINED WITH 10mm GIB

RIBRAFT FOOTINGS
DESIGNED BY ENGINEER

INTERNAL LININGS

WALLS:

- GENERALLY - 10mm STANDARD GIB BOARD
- BATHROOMS - 10mm GIB AQUALINE

CEILINGS:

- GENERALLY - 13mm STANDARD GIB
- BATHROOMS - 13mm GIB AQUALINE
- BACK BLOCK SHEET JOINTS AND ALLOW FOR CONTROL JOINTS AS REQUIRED BY MANUFACTURER

RESTRICTOR STAYS TO LIMIT SASH OPENING TO MAX 100mm MUST BE FITTED WHERE EVER SILL HEIGHT IS LESS THAN 760mm & THE DIFFERENCE IN LEVELS ARE 1m OR GREATER. REFER F4 NZBC

SAFETY GLASS AS REQUIRED BY NZS 4223 PT 3 2016 VERSION TO BE PROVIDED TO ALL WET AREA JOINERY, GLAZED DOORS, SIDE PANELS, FULL HEIGHT WINDOWS & WINDOWS WITH SILLS LESS THAN 500mm FROM FFL.

SILL SUPPORTS TO MANUFACTURERS SPECIFICATIONS & DETAILS

GLAZING TO CONFORM NZS 4223 PT 1, 2 & 3 2016 VERSION

THE SUPPLIER AND THE MAIN CONTRACTOR SHALL CHECK ALL DIMENSIONS ON SITE AND CONFIRM PRIOR TO MANUFACTURE.

EXTERIOR JOINERY TO COMPLY WITH NZS 4211, DESIGN TO VERY HIGH WIND PRESSURE AND SUITABLE HEAD FLASHINGS TO BE FITTED TO ALL UNITS.

SECTION AA SCALE 1:50

CROSS SECTION NOTES

- CLADDING TO BE INSTALLED TO MANUFACTURERS REQUIREMENTS IN PARTICULAR FIXING AND GROUND CLEARANCE
- ALSO REFER TO NZBC, CLAUSE E2/AS1, EXTERNAL MOISTURE: THIRD EDITION FOR CLARITY
- ALL JUNCTIONS TO CLADDINGS AND OTHER EXTERNAL MOISTURE PROTECTION AREAS, TO HAVE CAPILLARY GAPS/BREAKS AND INSEAL WHERE RELEVANT, STOPPING WIND DRIVEN OR SURFACE TENSION WATER

BUILDING WRAP - TEKTON
THERMAKRAFT 215 ROOFING UNDERLAY

INSULATION (Excluding garage)
R3.2 BATTS TO CEILING
R2.2 BATTS TO EXTERIOR WALLS

ALLOW FOR 90x45 DOUBLE TOP PLATE

ALL CONSTRUCTION TO COMPLY WITH
THE NZBC, NZS 3604:2011, NZS 3602:2003
AND BEST TRADE PRACTICE.

WALL UNDERLAY TURNED
INTO OPENING

100mm MIN
TURN UP TO
FLEXIBLE TAPE

WALL UNDERLAY
TURNED INTO
OPENING OVER
FRAMING

50mm
MIN LAP

SILL SUPPORT BAR -
REFER 9.1.10.5 B

LINE OF CLADDING

CAVITY BATTEN

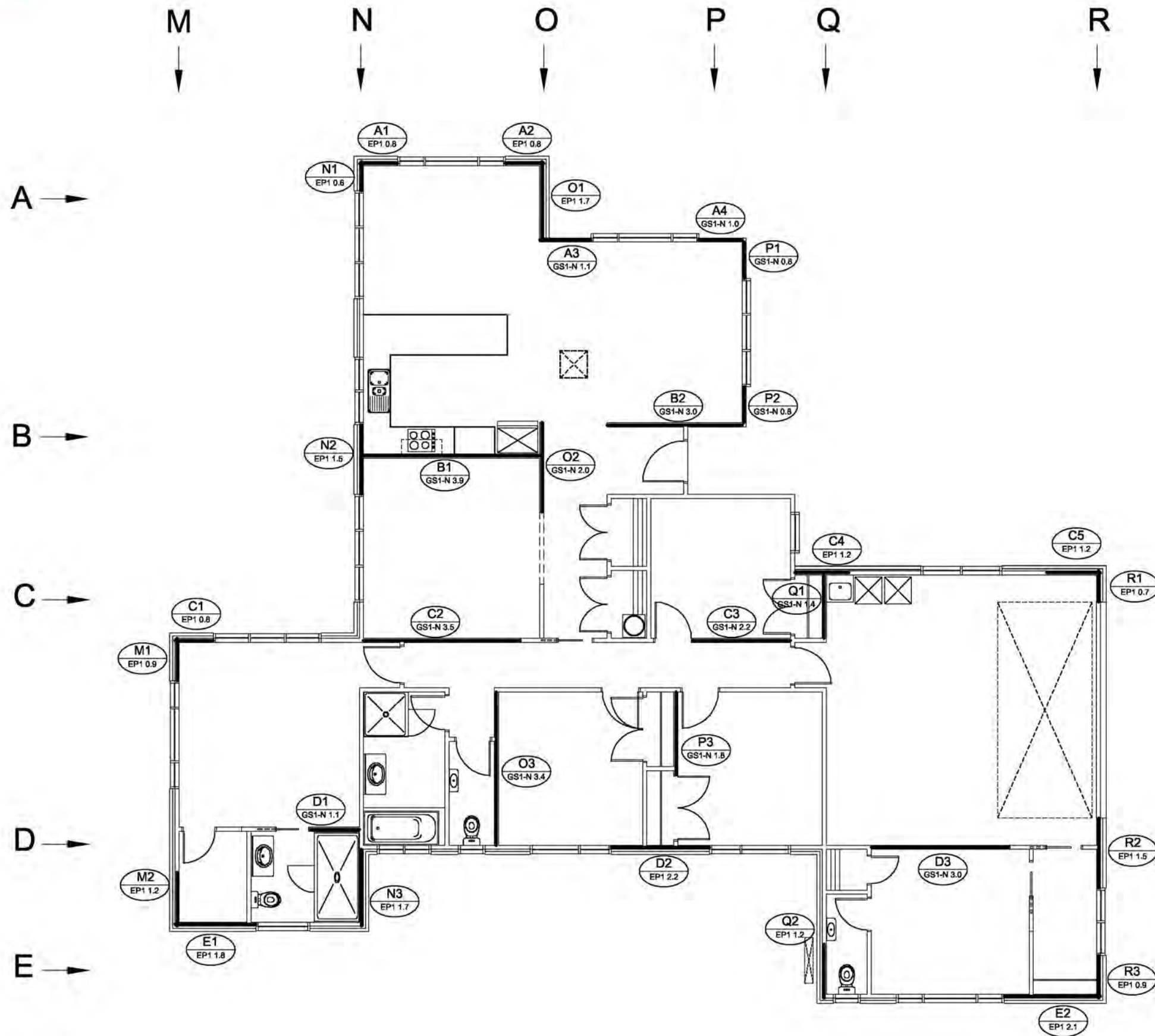
FLEXIBLE TAPE
TURNED OUT 50mm
MIN OVER UNDERLAY

100mm MAX

NOTE:

1. DETAILED CLADDING OMITTED FOR CLARITY, REFER TO SPECIFIC CLADDINGS.
2. HEAD TO BE TREATED SIMILARLY WITH CONTINUOUS WALL UNDERLAY & FLEXIBLE TAPE AT CORNERS
3. REFER INDIVIDUAL CLADDING DETAILS FOR JAMB FLASHINGS

BUILDING WRAP OPENING DETAIL n.t.s



NOTES:

- THIS SITE IS A VERY HIGH WIND ZONE
- BRACING TO BE INSTALLED TO MANUFACTURERS SPECIFICATIONS - WINSTONES GIB EZYBRACE SYSTEMS 2016
- BRACING DISTRIBUTION TO NZS 3604 CLAUSE 5.5.3

BRACING PLAN

SCALE 1:100

ENSURE CONTRACTORS AND PRENAILERS ARE ADVISED
OF THE REQUIRED BRACING DESIGN AMMENDMENTS.

Revisions:
AUGUST 2 / 2019 rev A
SEPTEMBER 6 / 2019 rev B

CONSENT PLANS

Project:
**NEW
DWELLING**
LOT 3 HADFIELD ROAD
PEKA PEKA

Client:
BEATTIE

Drawing Title:
BRACING PLAN

Designer:
COASTAL
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e-mail : coastarchdesign@gmail.com

Design: MB
Drawn: BF
Scale: as shown

Job: 980060
Page of: 8
Rev: B



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New Zealand's favourite home builders

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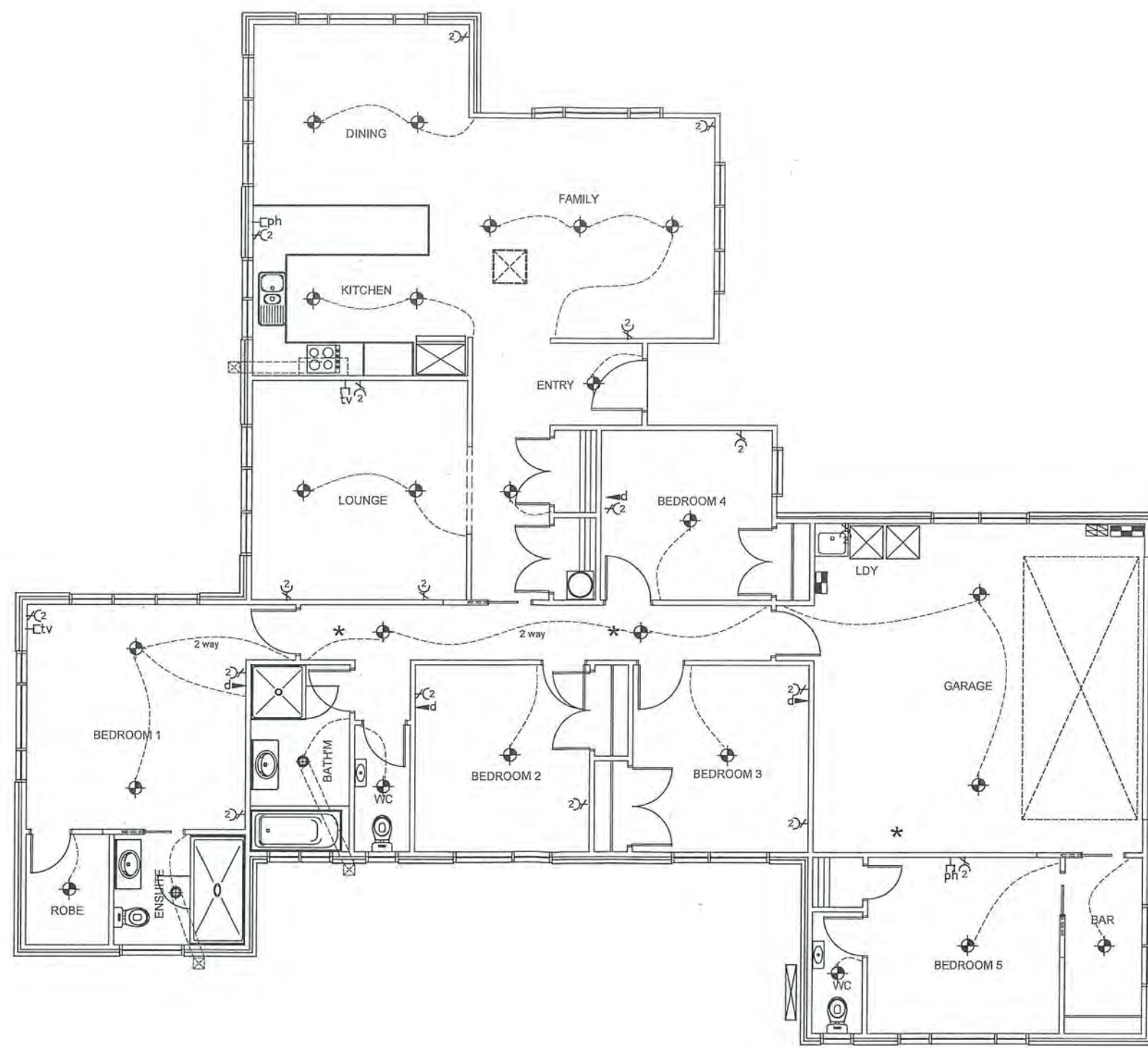
NOTE: SUGGESTED LAYOUT ONLY, TBC ON SITE WITH ELECTRICIAN & OWNER

ELECTRICAL LEGEND			
	Recessed Downlight		Smoke detector
	Manrose 3 in 1 (heating, fan & light)		Power Point (2 denotes double)
	Meter Board		Television Point
	Switch Board		Phone Point
	Starbox		Data Point
	Extractor Fan		

ELECTRICAL NOTES:

RECESSED DOWNLIGHTS (IF USED) SHALL BE INSTALLED TO PREVENT TRANSFER OF MOISTURE INTO CEILING SPACE & MAINTAIN MIN CLEARANCE FROM INSULATION AS REQUIRED BY NZECP 54:2001

PROVIDE ELECTRICAL CERTIFICATE AFTER COMPLETION & PRIOR TO CODE COMPLIANCE CERTIFICATE BEING ISSUED



Revisions:
AUGUST 2 / 2019 rev A

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19 AUG 2019
BY:

CONSENT
PLANS

Project:
NEW
DWELLING
LOT 3 HADFIELD ROAD
PEKA PEKA

Client:
BEATTIE

Drawing Title:
ELECTRICAL
PLAN
Designer:
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Design: MB
Drawn: BF
Scale: as shown

Job: 980060
Page of: 9
Rev: A

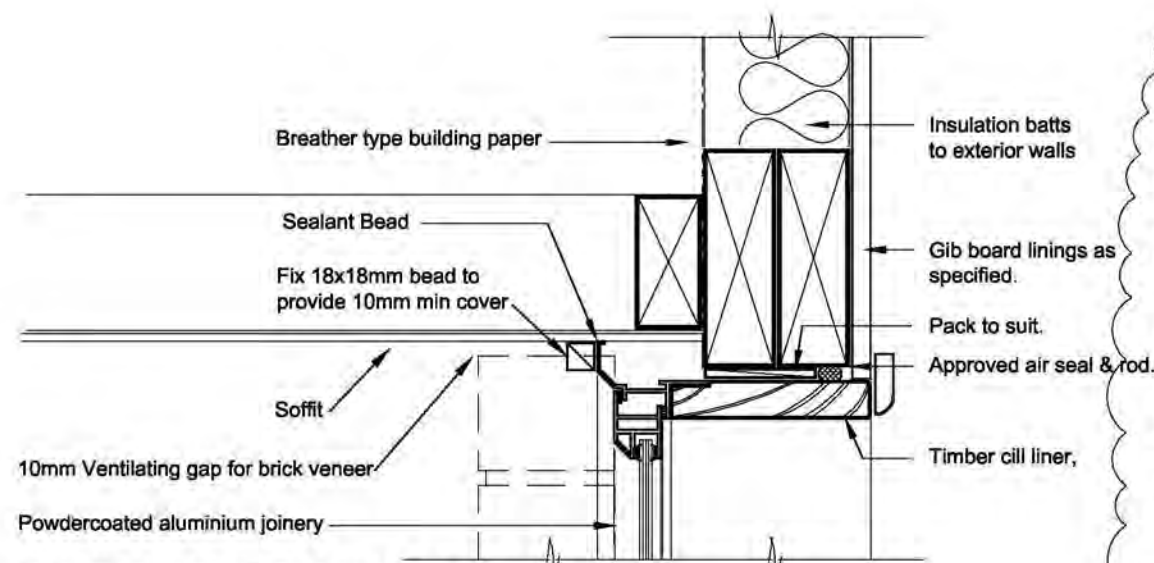


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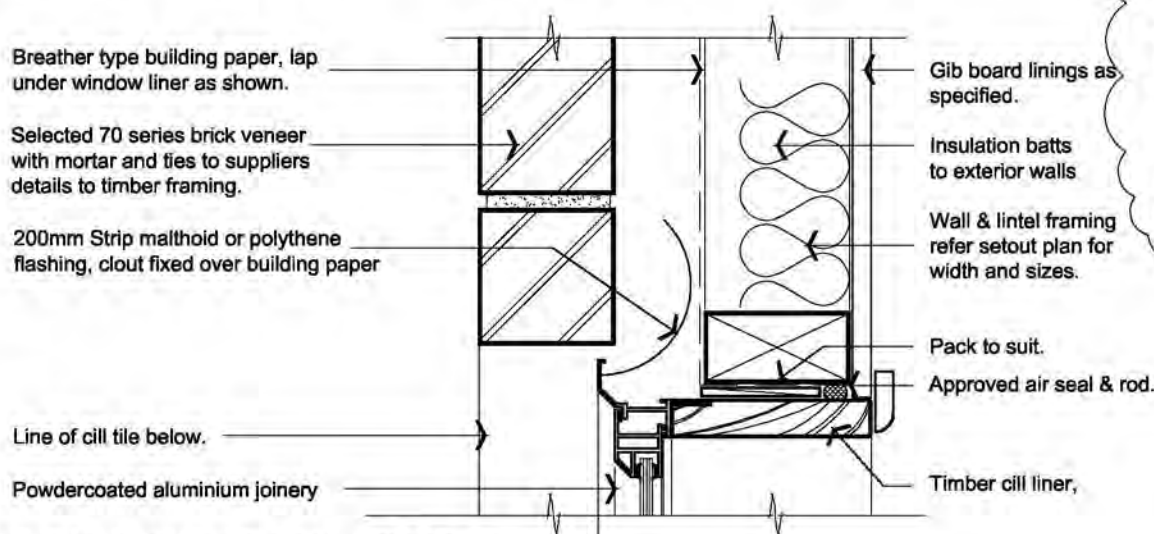
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ELECTRICAL PLAN

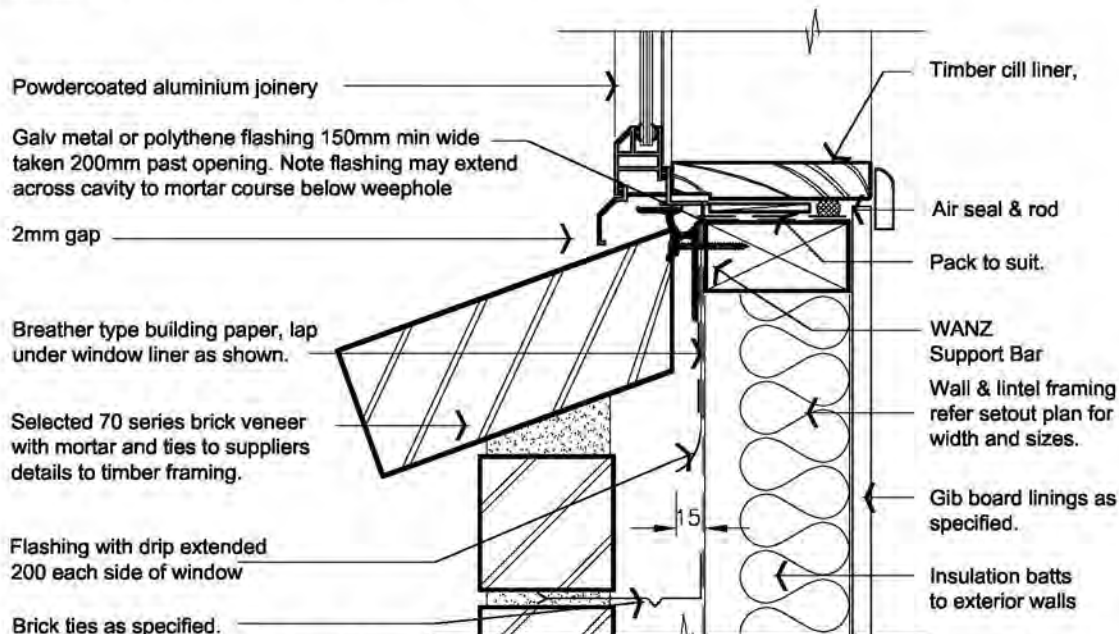
SCALE 1:100



BRICK WINDOW HEAD DETAIL
SCALE 1:5



BRICK WINDOW JAMB DETAIL
SCALE 1:5



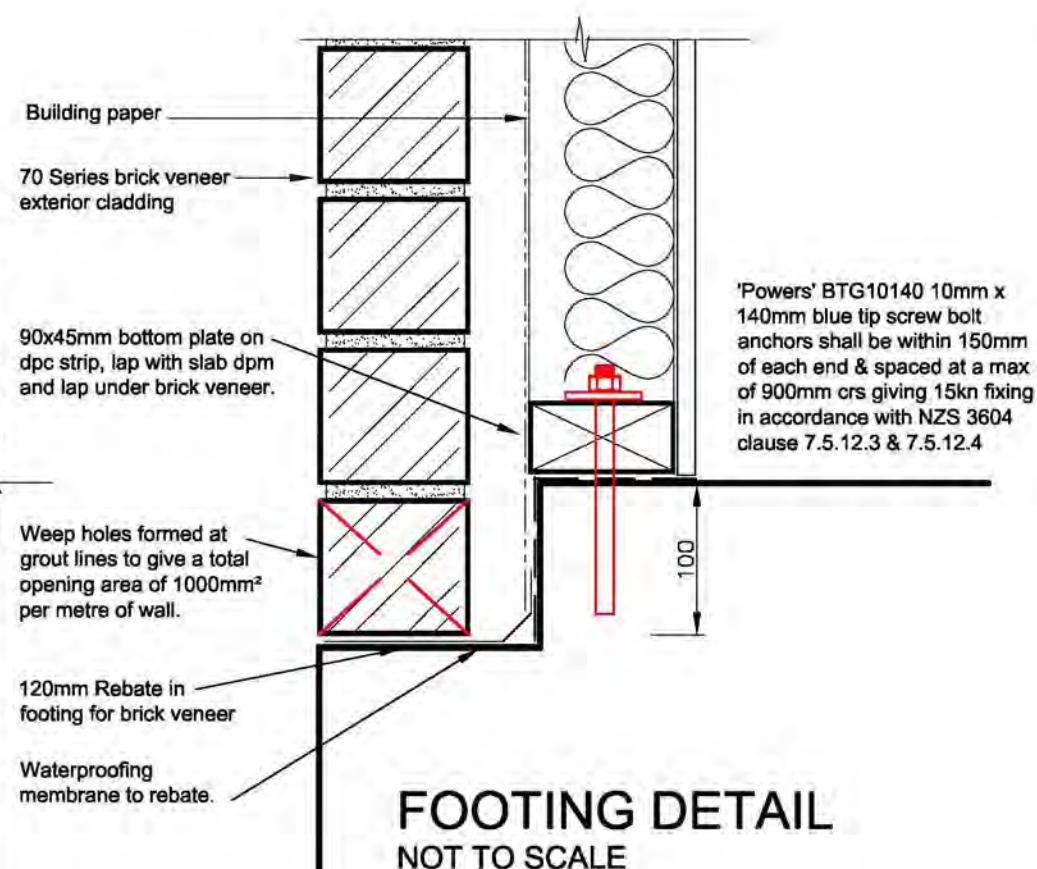
BRICK WINDOW SILL DETAIL
SCALE 1:5

MASONRY NOTES:

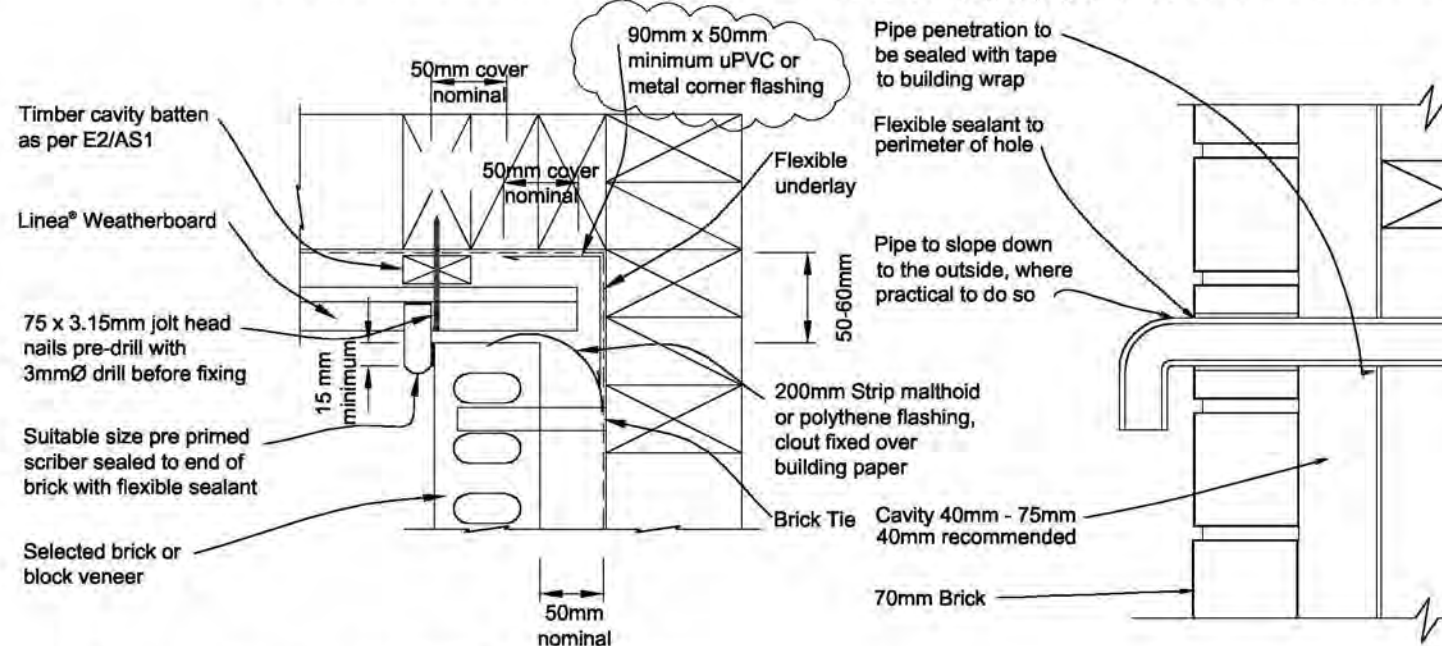
THE CAVITY BETWEEN THE MASONRY VENEER & THE EXTERIOR FACE OF TIMBER STUD WALL SHALL BE NOT LESS THAN 40mm NOR MORE THAN 75mm. PIPES & SERVICES SHALL NOT BE PLACED IN THE CAVITY.

THE BRICK VENEER CAVITY SHALL BE VENTILATED TO THE OUTSIDE AIR WITH TOP & BOTTOM OPENINGS. THE BOTTOM OPENINGS SHALL SERVE AS WEEP HOLES TO DRAIN MOISTURE TO THE OUTSIDE. THE CAVITY SHALL BE VENTED UNDER OPENINGS EXCEEDING 2.4m WIDE THROUGH GAPS IN PERPENDS POSITIONED AT 1/3 POINTS ALONG THE OPENING - SEE FIG 73C E2/AS1

85mm 316 or 304 STAINLESS STEEL BRICK TIES POSITIONED 600mm HORIZONTALLY & 400mm VERTICALLY, WITHIN 300mm AROUND OPENINGS, WITHIN THE TOP 2 MORTAR COURSES, WITHIN THE BOTTOM 400mm OF VENEER & IN THE 2 COURSES WHERE A BOND BREAKER HAS BEEN USED



FOOTING DETAIL
NOT TO SCALE



LINEA TO BE INSTALLED & NAILED OFF COMPLETELY PRIOR TO BRICK LAYING TO ENSURE BRICK TIES ARE NOT VIBRATED LOSE

INTERNAL BRICK TO WEATHERBOARD DETAIL

BC190682
Further Information Received
10/09/2019

Revisions:
AUGUST 2 / 2019 rev A
SEPTEMBER 6 / 2019 rev B

CONSENT PLANS

Project:
NEW DWELLING
LOT 3 HADFIELD ROAD
PEKA PEKA

Client:
BEATTIE

Drawing Title:
DETAILS

Designer:
COASTAL ARCHITECTURE LTD.
11 Kodex Place
Paraparaumu
New Zealand
Tel: 04 296 1248
e-mail : coastalarchdesign@gmail.com

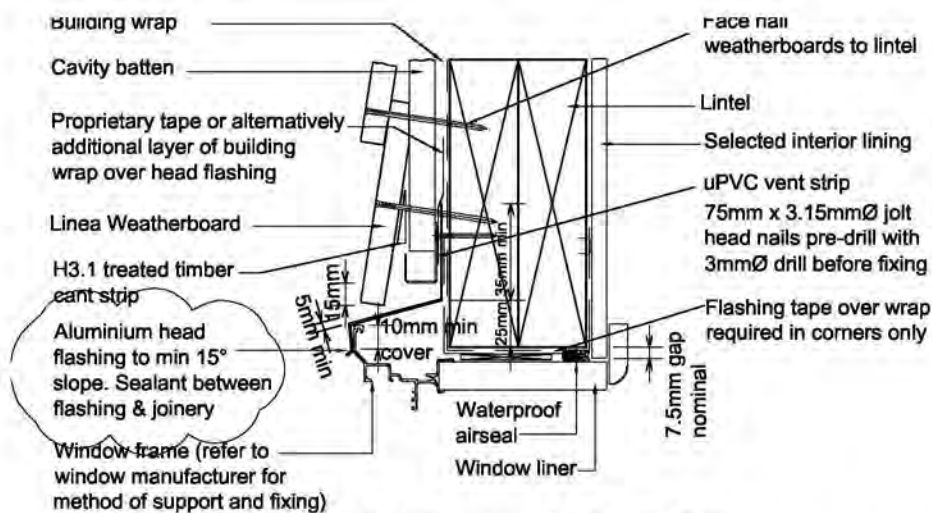
Design:
MB
Drawn:
BF
Scale:
as shown

Job: 980060
Page of: 10
Rev: B



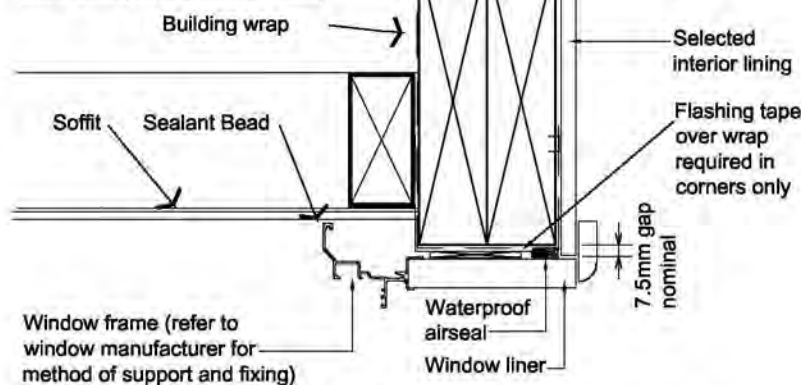
G.J. Gardner. HOMES
New Zealand's favourite home builders

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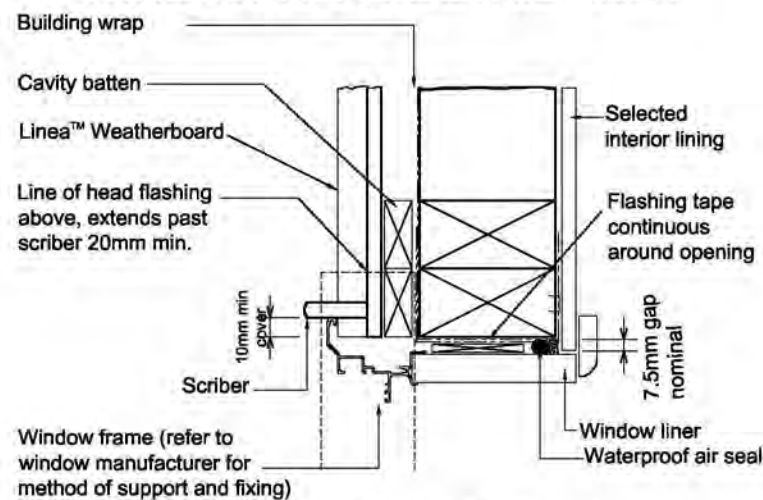


GABLE WINDOW HEAD DETAIL Scale 1:5

Also refer Figure 91 NZBC clause E2/AS1 document for head and jamb details.



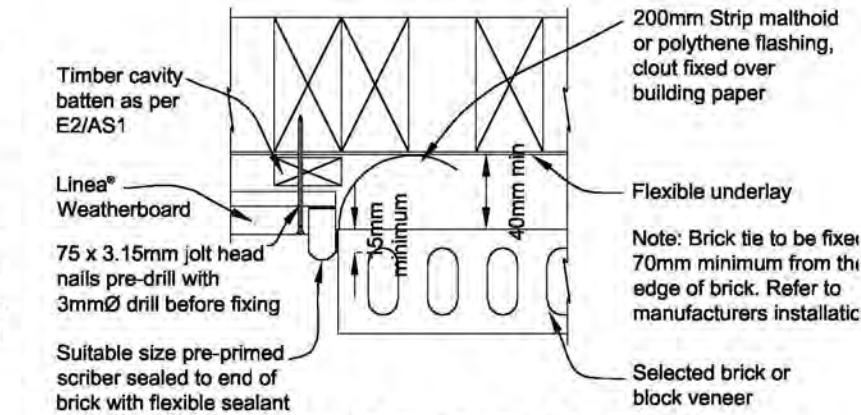
WINDOW HEAD DETAIL Scale 1:5



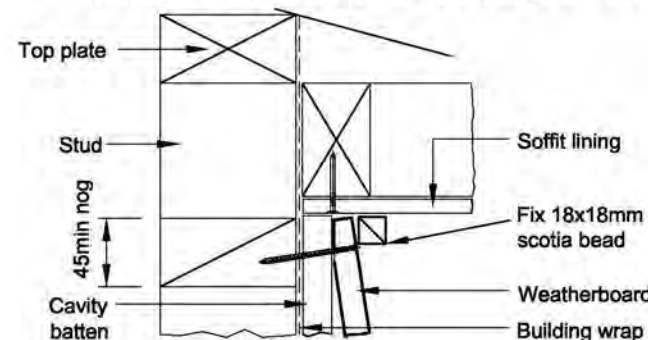
WINDOW JAMB DETAIL Scale 1:5



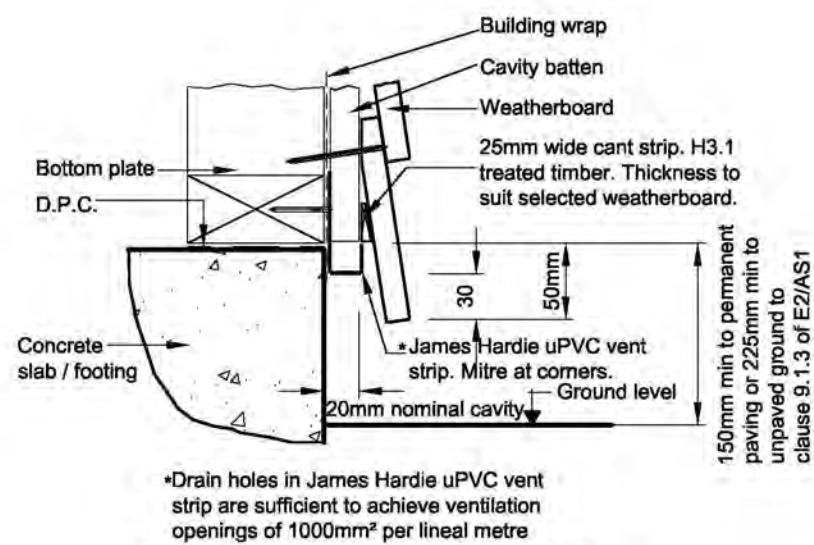
WINDOW SILL DETAIL Scale 1:5



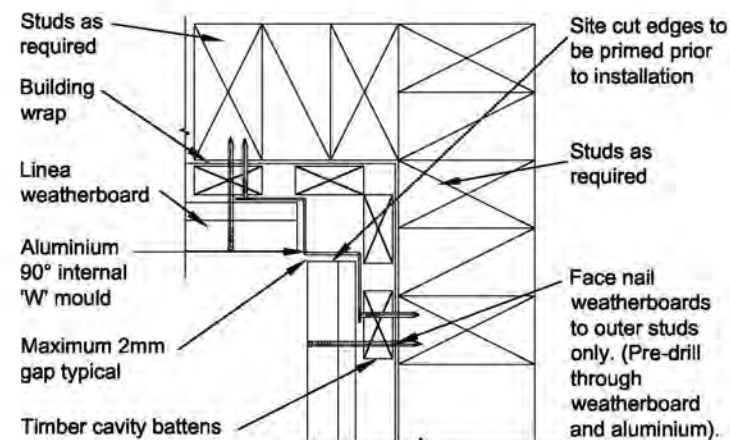
TIMBER CAVITY INTERNAL CORNER



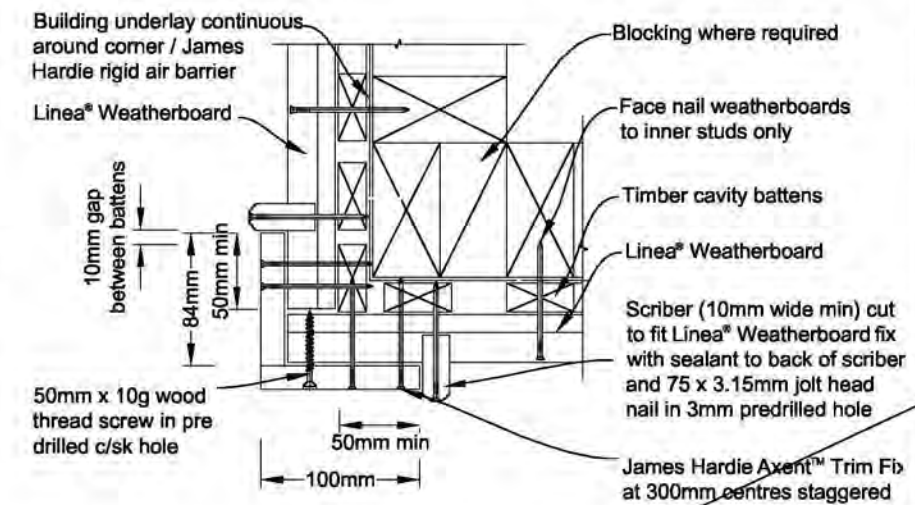
Cavity Soffit Detail



Cavity Foundation Detail

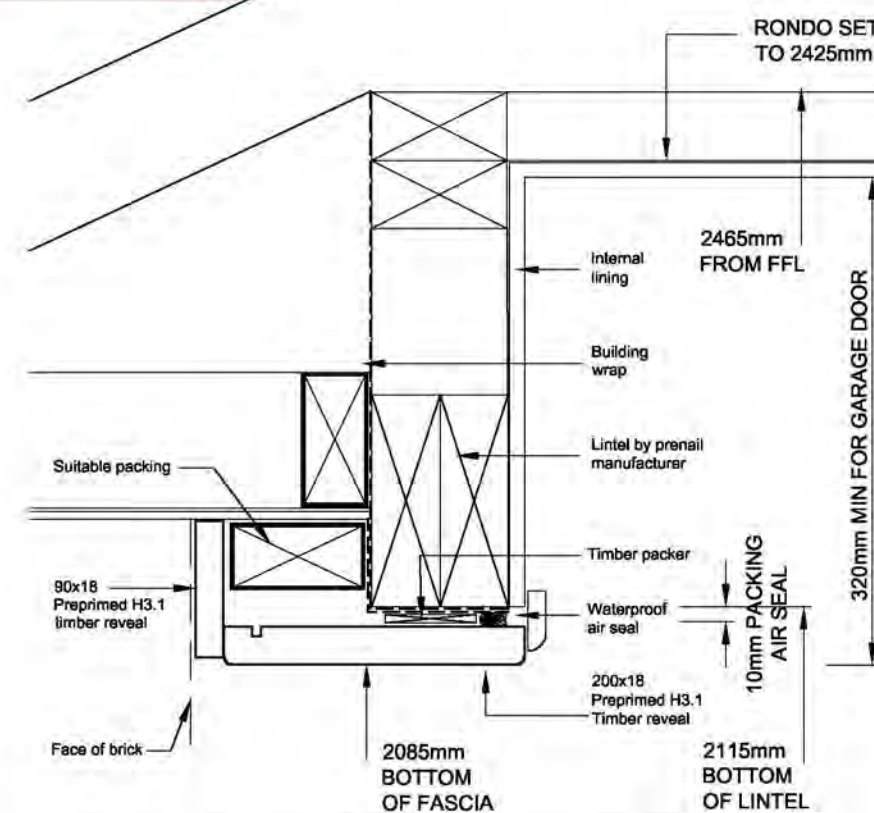


TIMBER CAVITY INTERNAL CORNER

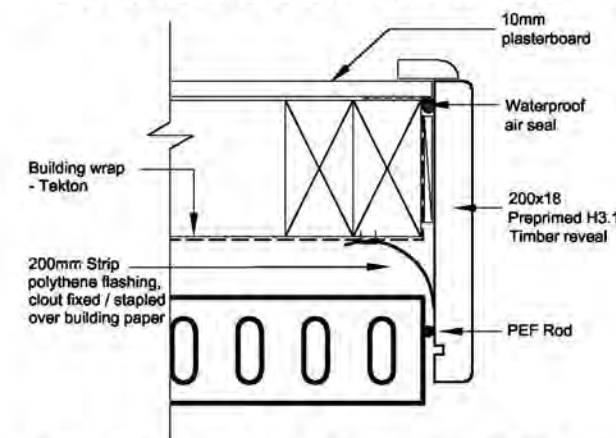


TIMBER CAVITY BOXED CORNER

BC190682
Further Information Received
10/09/2019



GARAGE DOOR HEAD DETAIL



GARAGE DOOR JAMB DETAIL

Revisions:
AUGUST 2 / 2019 rev A
SEPTEMBER 6 / 2019 rev B

CONSENT PLANS

Project:
NEW DWELLING
LOT 3 HADFIELD ROAD
PEKA PEKA

Client:
BEATTIE

Drawing Title:
DETAILS

Designer:
COASTAL ARCHITECTURE LTD.
11 Kodex Place
Paraparaumu
New Zealand
Tel: 04 296 1248
e-mail : coastarchdesign@gmail.com

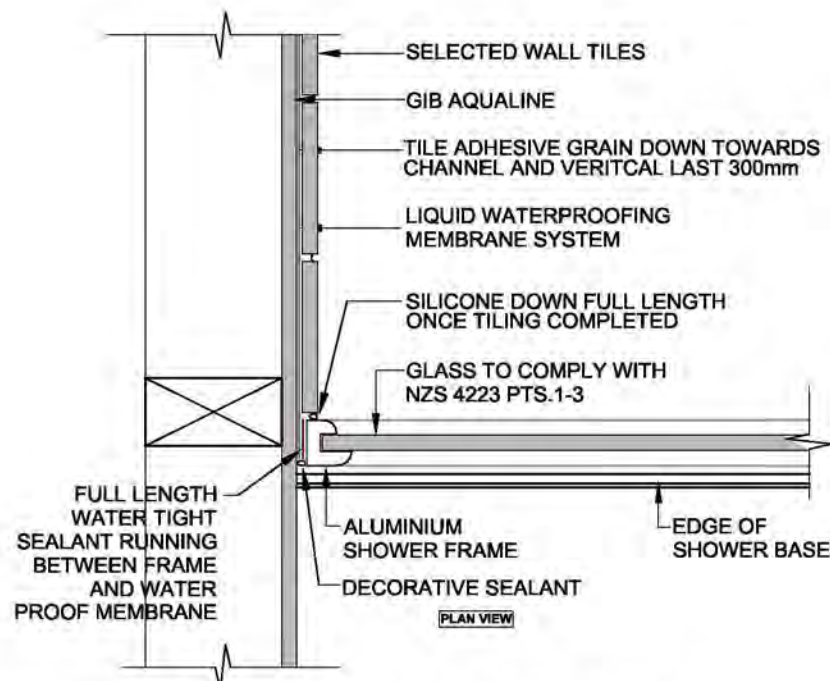
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Drawn:
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Scale:
as shown

Job: 980060
Page of: 11
Rev: B

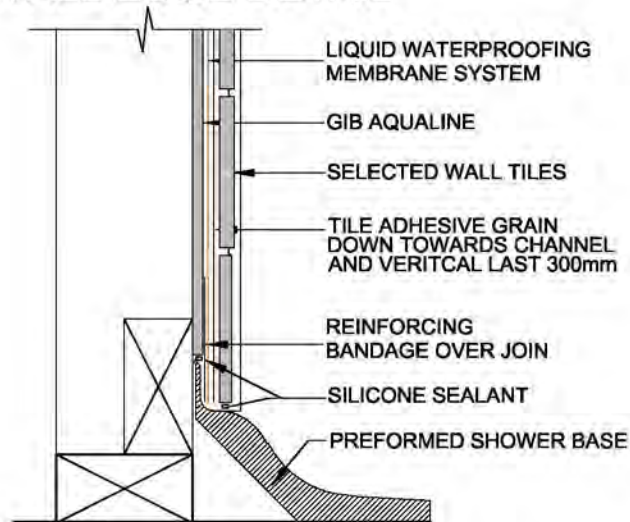


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New Zealand's favourite home builders

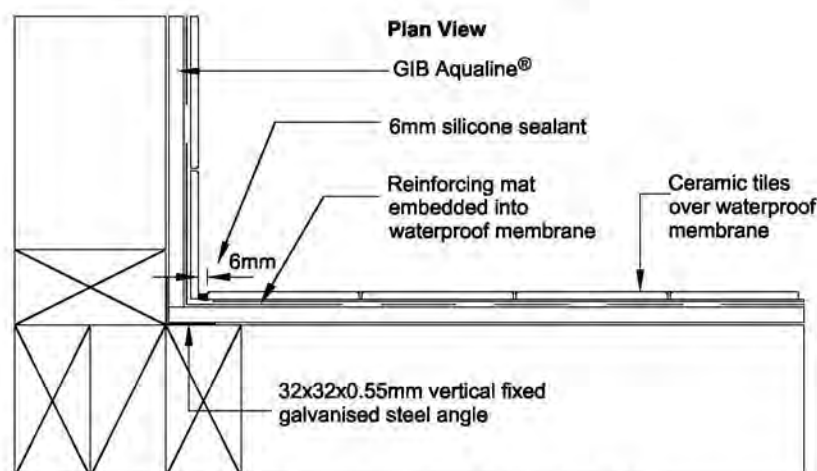
All work shall be in accordance with the NZBC. If in doubt ASK The Contractor must verify all dimensions on the job before commencing any work or shop drawings. Figured dimensions are to be used, scaled dimensions must be verified. This drawing and concept are copyright of M and L Barke Construction Ltd - Kapiti / Wellington Franchisee for G.J. Gardner Homes. The recipient of this document is prohibited from disclosing its content for any purpose without the prior written consent of M and L Barke Construction Ltd - Kapiti / Wellington Franchisee for G.J. Gardner Homes



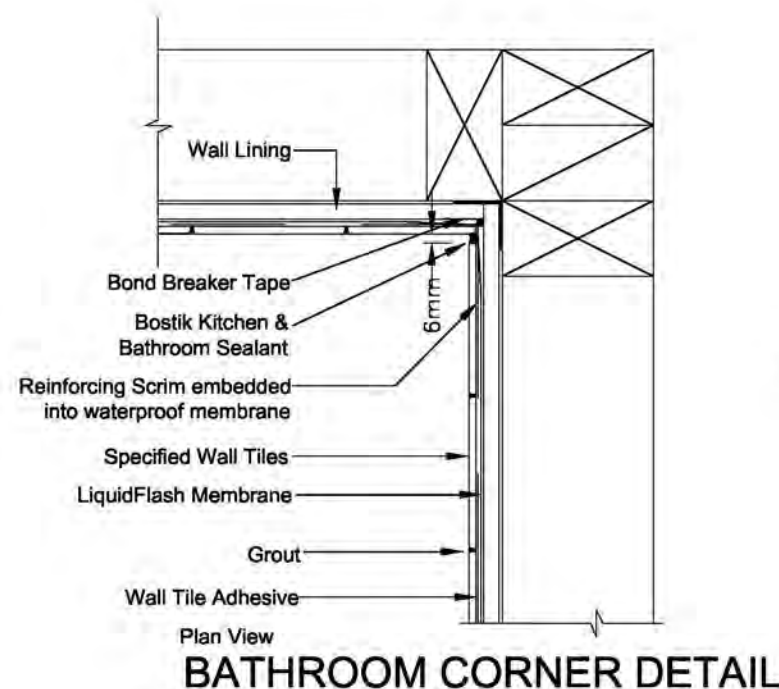
ACRYLIC SHOWER BASE/TILED
WALL EDGE DETAIL



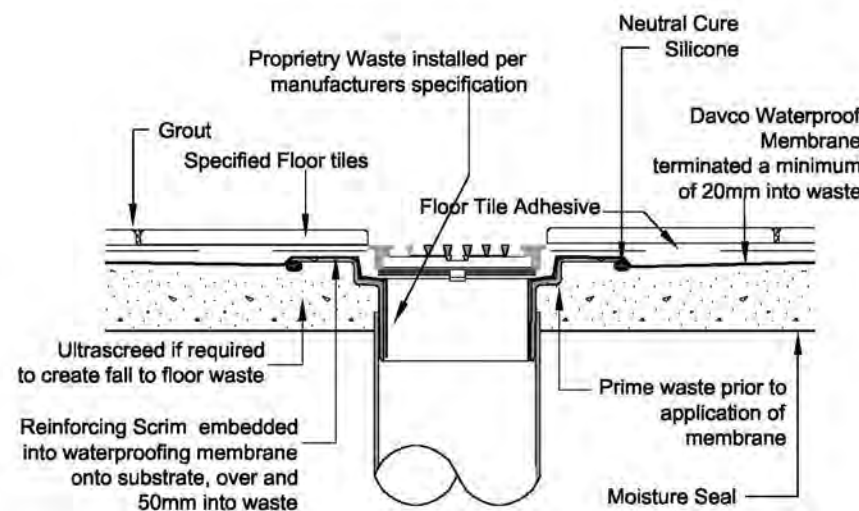
ACRYLIC SHOWER BASE/TILED
WALL, CONC FLOOR DETAIL



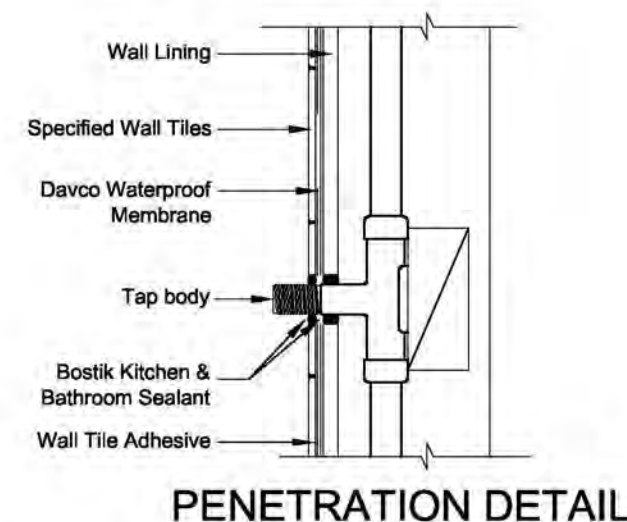
ACRYLIC SHOWER BASE/TILED
WALL, INTERNAL CORNER DETAIL



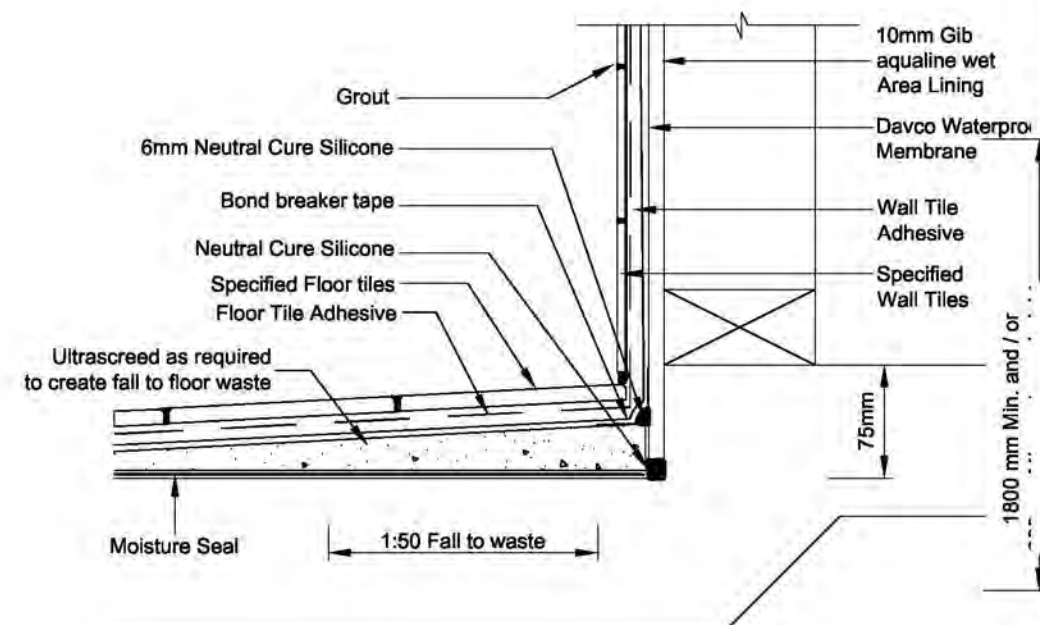
BATHROOM CORNER DETAIL



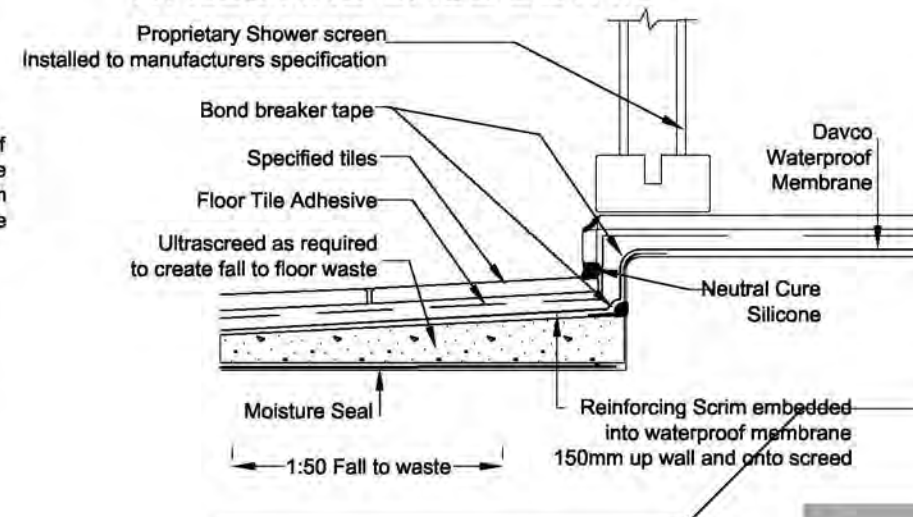
DRAINAGE WASTE DETAIL



PENETRATION DETAIL



ENSUITE SHOWER - TILED
WALLS AND BASE DETAIL



ENSUITE SHOWER
STEP DOWN DETAIL

Revisions:
AUGUST 2 / 2019 rev A
SEPTEMBER 6 / 2019 rev B

CONSENT
PLANS

Project:
**NEW
DWELLING**
LOT 3 HADFIELD ROAD
PEKA PEKA

Client:
BEATTIE

Drawing Title:
DETAILS

Designer:
**COASTAL
ARCHITECTURE LTD.**
11 Kodex Place
Paraparaumu
New Zealand
Tel: 04 296 1248
e-mail : coastalarchdesign@gmail.com

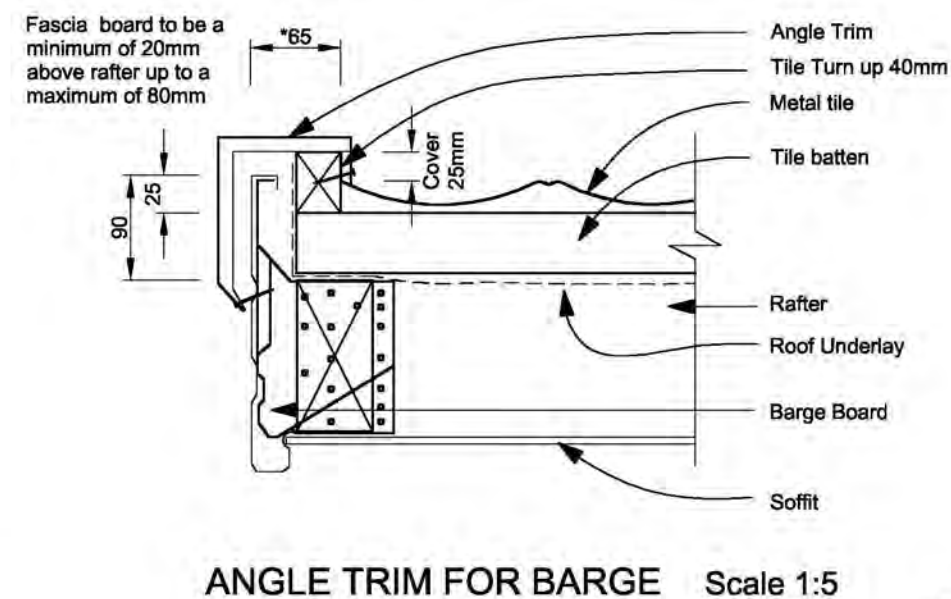
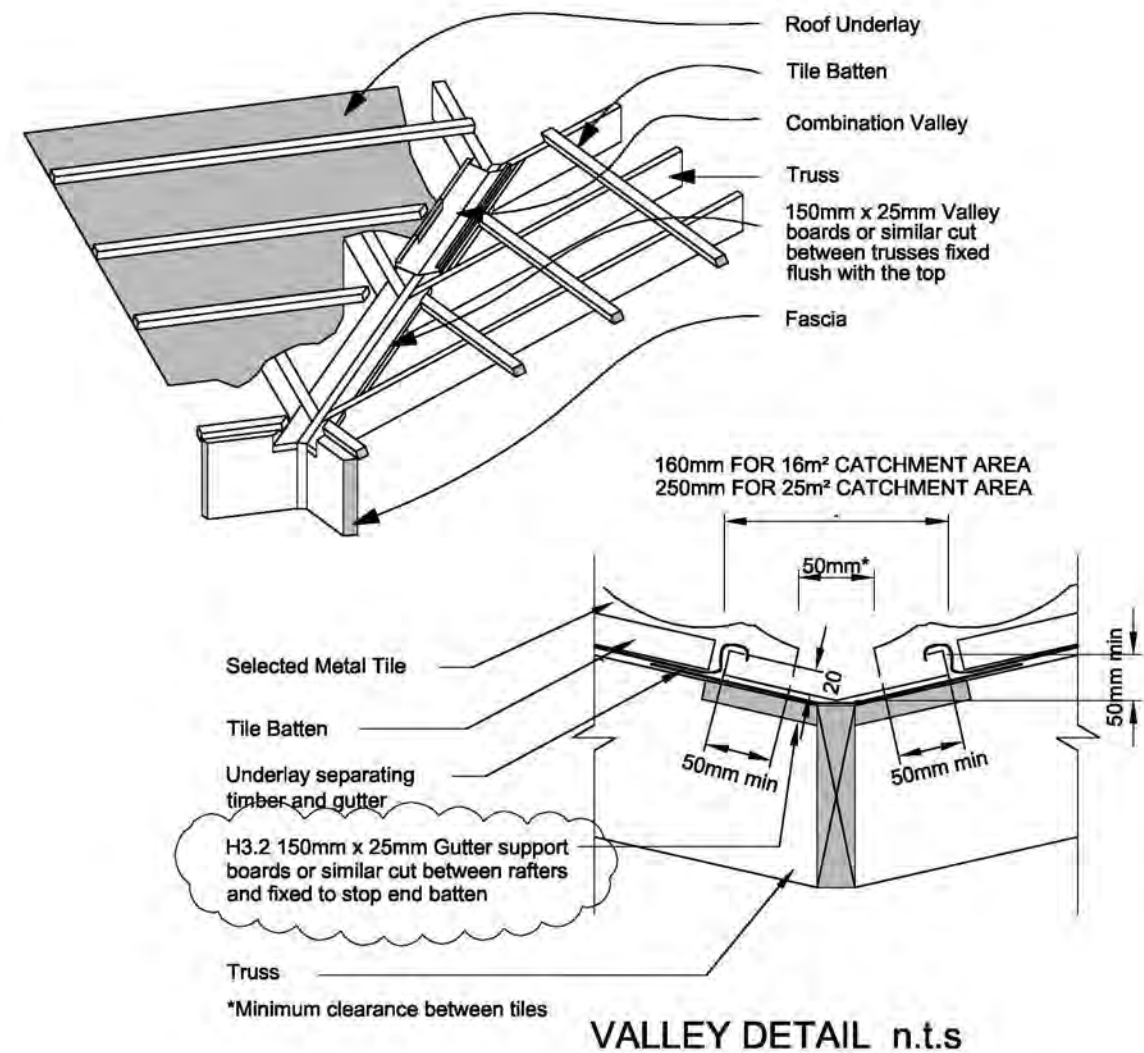
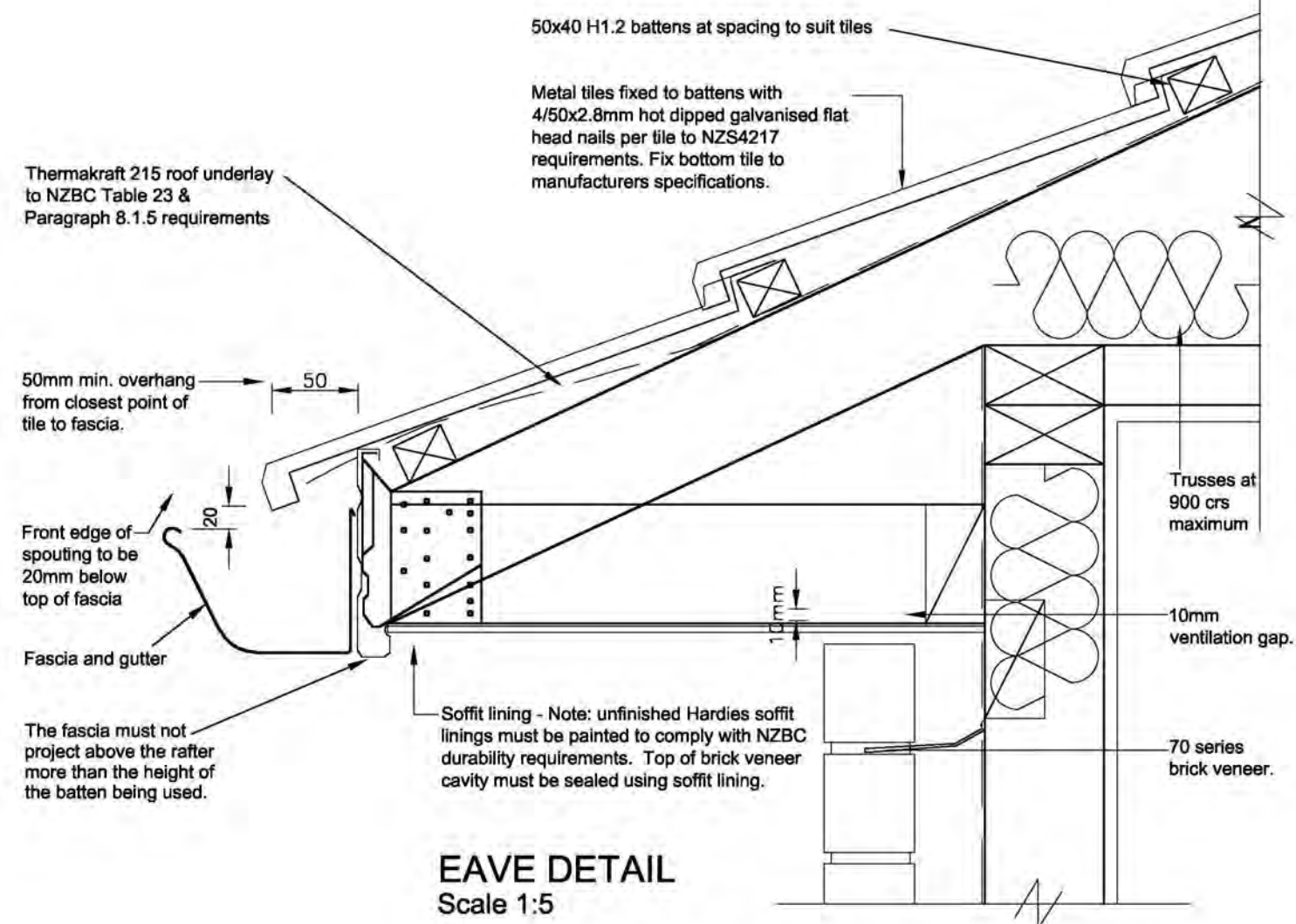
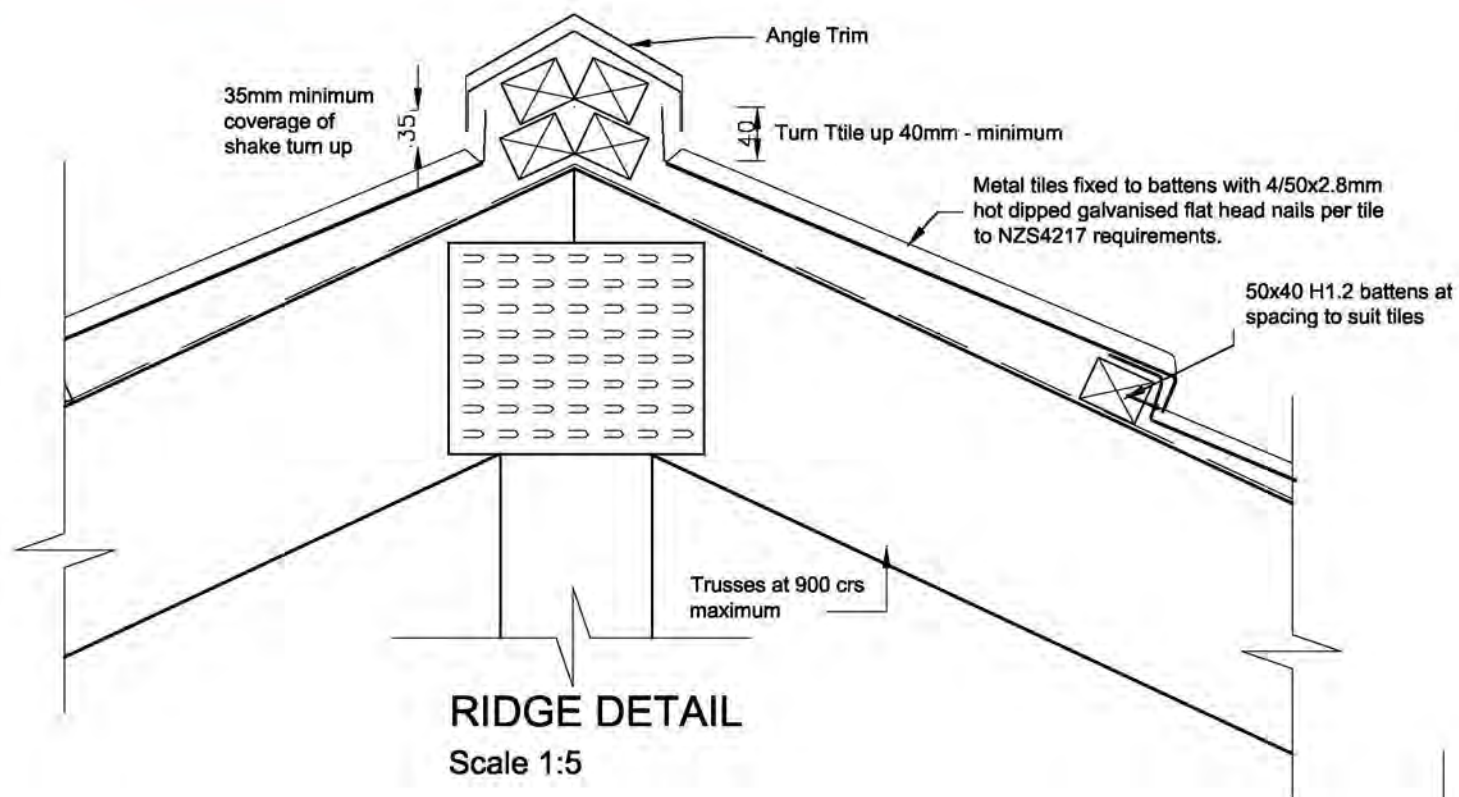
Design:
MB
Drawn:
BF
Scale:
as shown

Job: 980060
Page of: 12
Rev: B



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New Zealand's favourite home builders

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Revisions:
AUGUST 2 / 2019 rev A
SEPTEMBER 6 / 2019 rev B

CONSENT PLANS

Project:
NEW DWELLING
LOT 3 HADFIELD ROAD
PEKA PEKA

Client:
BEATTIE

Drawing Title:
DETAILS

Designer:
COASTAL ARCHITECTURE LTD.
11 Kodex Place
Paraparaumu
New Zealand
Tel: 04 296 1248
e-mail : coastarchdesign@gmail.com

Design: MB
Drawn: BF
Scale: as shown

Job: 980060
Page of: 13
Rev: B



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New Zealand's favourite home builders

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J0015

Revisions:
AUGUST 2 / 2019 rev A

E2/AS1 : Building Envelope Risk Matrix.

Project Details.

Name NAME BEATTIE
 Street/No. STREET HADFIELD ROAD
 Lot/DP/No. LOT LOT 3
 City/Town/District. CITY PEKA PEKA



Definition of Risk [table 1 from E2/AS1]

Factor	Risk	Detail
A Wind Zone	LOW	LOW wind zone as described by NZS 3604
	MEDIUM	MEDIUM wind zone as described by NZS 3604
	HIGH	HIGH wind zone as described by NZS 3604
	V.HIGH	VERY HIGH wind zone as described by NZS 3604
B No. of storeys	LOW	One storey
	MEDIUM	Two storey in part
	HIGH	Two storey's
	V.HIGH	More than two storey's
C Roof / Wall intersection Design.	LOW	Roof / wall intersection - Fully protected. [eg. hip / gable roof with eaves.]
	MEDIUM	Roof / wall intersection - Partly exposed. [eg. hip / gable roof with NO eaves.]
	HIGH	Roof / wall intersection - Fully exposed. [eg. Parapets or eaves greater than 90° vertical with soffit linings.]
	V.HIGH	Roof elements finished within the boundaries formed by exterior walls [eg. lower ends of aprons, chimney's etc.]
D Eaves width (1.)	LOW	Greater than 600mm at first floor level.
	MEDIUM	450 - 600mm at first floor level, or 600mm at second floor level
	HIGH	100-450mm at first floor level, or 450-600mm at second floor level
	V.HIGH	0 -100mm at first floor level, or 100-450mm at second floor level or 450 - 600mm at third floor level
E Envelope Complexity	LOW	Simple rectangular, L, T, or boomerang shape with single cladding type
	MEDIUM	Complex angular or curved shape [eg. Y or arrow head] with single cladding type.
	HIGH	More complex angular or curved shape [eg. Y or arrow head] with multiple cladding type.
	V.HIGH	As for high risk, but with junctions not covered in C or F on this Table [eg. box windows, pergola's, multi storey re - entrant shapes etc.]
F Deck design.	LOW	None or timber slat deck or porch at ground level
	MEDIUM	Fully covered in plan by roof, or timber slat deck attached at first or second floor level.
	HIGH	Enclosed deck exposed in plan or cantilevered at first floor level
	V.HIGH	Enclosed deck exposed in plan or cantilevered at second floor level or above.

NOTES

1. Eaves width measured from external face of the wall cladding to outer edge of overhang including gutters and fascias
 2. Balustrades and parapets count as 0 mm eaves.

Risk Severity by Face

North Elevation.									
RISK FACTOR	LOW	Score	MED	Score	HIGH	Score	V.HIGH	Score	Sub totals for each risk factor.
Wind Zone as NZS 3604	0		0		1		2	✓	2
No. of storey's	0	✓	1		2		4		0
Roof / Wall intersection	0	✓	1		3		5		0
Eaves width.	0		1	✓	2		5		1
Envelope Complexity	0		1		3	✓	6		3
Deck design.	0	✓	2		4		6		0
Total Risk Score for this Elevation									6

East Elevation.									
RISK FACTOR	LOW	Score	MED	Score	HIGH	Score	V.HIGH	Score	Sub totals for each risk factor.
Wind Zone as NZS 3604	0		0		1		2	✓	2
No. of storey's	0	✓	1		2		4		0
Roof / Wall intersection	0	✓	1		3		5		0
Eaves width.	0		1	✓	2		5		1
Envelope Complexity	0				3	✓	6		3
Deck design.	0	✓	2		4		6		0
Total Risk Score for this Elevation									6

South Elevation.									
RISK FACTOR	LOW	Score	MED	Score	HIGH	Score	V.HIGH	Score	Sub totals for each risk factor.
Wind Zone as NZS 3604	0		0		1		2	✓	2
No. of storey's	0	✓	1		2		4		0
Roof / Wall intersection	0	✓	1		3		5		0
Eaves width.	0		1	✓	2		5		1
Envelope Complexity	0	✓	1		3		6		0
Deck design.	0	✓	2		4		6		0
Total Risk Score for this Elevation									3

West Elevation.									
RISK FACTOR	LOW	Score	MED	Score	HIGH	Score	V.HIGH	Score	Sub totals for each risk factor.
Wind Zone as NZS 3604	0		0		1		2	✓	2
No. of storey's	0	✓	1		2		4		0
Roof / Wall intersection	0	✓	1		3		5		0
Eaves width.	0		1	✓	2		5		1
Envelope Complexity	0	✓	1		3		6		0
Deck design.	0	✓	2		4		6		0
Total Risk Score for this Elevation									3

Selected Cladding Resulting from Risk Assessment

	Risk score from tables above.	Cladding Selected from table 3 [from tables on page 30 E2/AS1]	TICK SELECTED OPTION	
			DIRECT FIXED	DRAINED CAVITY
North Elevation.	6	Brick Veneer		✓
		Linea Weatherboard		✓
South Elevation.	3	Brick Veneer		✓
East Elevation.	6	Brick Veneer		✓
		Linea Weatherboard		✓
West Elevation.	3	Brick Veneer		✓

CONSENT PLANS

Project:
NEW DWELLING
LOT 3 HADFIELD ROAD
PEKA PEKA

Client:
BEATTIE

Drawing Title:
E2 MATRIX

Designer:
COASTAL
ARCHITECTURE LTD.
11 Kodex Place
Paraparaumu
New Zealand
Tel: 04 296 1248
e-mail : coastarchdesign@gmail.com

Design: MB
Drawn: BF
Scale: as shown

Job: 980060
Page of: 14
Rev: A



G.J. Gardner. HOMES
New Zealand's favourite home builders

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Form 2A

Memorandum from licensed building practitioner: Certificate of design work Section 30C or 45, Building Act 2004

Please fill in the form as fully and correctly as possible.

If there is insufficient room on the form for requested details, please continue on another sheet and attach the additional sheet(s) to this form.

THE BUILDING

Street address: 6 Hadfield Road

Suburb: Peka Peka

Town/City: Kapiti Coast

Postcode:

THE OWNER(S)

Name(s): G J Gardner Homes

Mailing address: Julieanne.Mollet@gjgardner.co.nz

Suburb:

PO Box/Private Bag:

Town/City: Paraparaumu

Postcode:

Phone number: 04) 296 1248

Email address: Julieanne.Mollet@gjgardner.co.nz

BASIS FOR PROVIDING THIS MEMORANDUM

I am providing this memorandum in my role as the: Please tick the option that applies ☒

- ☐ **sole** designer of all of the RBW design outlined in this memorandum – I carried out all of the RBW design work myself – no other person will be providing any additional memoranda for the project
- ☐ **lead** designer who carried out some of the RBW design myself but also supervised other designers – this memorandum covers their RBW design work as well as mine, and **no other** person will be providing any additional memoranda for the project
- ☐ **lead** designer for all but specific elements of RBW – this memorandum only covers the RBW design work that I carried out or supervised and the **other** designers will provide their own memorandum relating to their specific RBW design
- ☐ **specialist** designer who carried out specific elements of RBW design work as outlined in this memorandum – other designers will be providing a memorandum covering the remaining RBW design work

IDENTIFICATION OF DESIGN WORK THAT IS RESTRICTED BUILDING WORK (RBW)

I Hamish Tennent Wells carried out / supervised the following design work that is restricted building work

PRIMARY STRUCTURE: B1

Design work that is RBW	Description of RBW	Carried out or supervised	Reference to plans and specifications
Tick <input checked="" type="checkbox"/> if included. Leave blank if excluded	If appropriate, provide details of the RBW	Tick <input checked="" type="checkbox"/> whether you carried out this design work or supervised someone else carrying out this design work	If appropriate, specify references
All RBW design work relating to B1 <input type="checkbox"/>		<input type="radio"/> Carried out <input type="radio"/> Supervised	
Foundations and subfloor framing <input checked="" type="checkbox"/>	Rib Raft Foundations	<input type="radio"/> Carried out <input checked="" type="radio"/> Supervised	

Design work that is RBW	Description of RBW	Carried out or supervised	Reference to plans and specifications
Tick <input checked="" type="checkbox"/> if included. Leave blank if excluded	If appropriate, provide details of the RBW	Tick <input checked="" type="checkbox"/> whether you carried out this design work or supervised someone else carrying out this design work	If appropriate, specify references
Walls <input type="checkbox"/>		<input type="radio"/> Carried out <input type="radio"/> Supervised	
Roof <input type="checkbox"/>		<input type="radio"/> Carried out <input type="radio"/> Supervised	
Columns and beams <input type="checkbox"/>		<input type="radio"/> Carried out <input type="radio"/> Supervised	
Bracing <input type="checkbox"/>		<input type="radio"/> Carried out <input type="radio"/> Supervised	
Other <input type="checkbox"/>		<input type="radio"/> Carried out <input type="radio"/> Supervised	

Design work that is RBW	Description of RBW	Carried out or supervised	Reference to plans and specifications
Tick <input checked="" type="checkbox"/> if included. Leave blank if excluded	If appropriate, provide details of the RBW	Tick <input checked="" type="checkbox"/> whether you carried out this design work or supervised someone else carrying out this design work	If appropriate, specify references
EXTERNAL MOISTURE MANAGEMENT SYSTEMS: E2			
All RBW design work relating to E2 <input type="checkbox"/>		<input type="radio"/> Carried out <input type="radio"/> Supervised	
Damp proofing <input type="checkbox"/>		<input type="radio"/> Carried out <input type="radio"/> Supervised	
Roof cladding or roof cladding system <input type="checkbox"/>		<input type="radio"/> Carried out <input type="radio"/> Supervised	
Ventilation system (for example, subfloor or cavity) <input type="checkbox"/>		<input type="radio"/> Carried out <input type="radio"/> Supervised	
Wall cladding or wall cladding system <input type="checkbox"/>		<input type="radio"/> Carried out <input type="radio"/> Supervised	
Waterproofing <input type="checkbox"/>		<input type="radio"/> Carried out <input type="radio"/> Supervised	
Other <input type="checkbox"/>		<input type="radio"/> Carried out <input type="radio"/> Supervised	

Design work that is RBW	Description of RBW	Carried out or supervised	Reference to plans and specifications
Tick <input checked="" type="checkbox"/> if included. Leave blank if excluded	If appropriate, provide details of the RBW	Tick <input checked="" type="checkbox"/> whether you carried out this design work or supervised someone else carrying out this design work	If appropriate, specify references
FIRE SAFETY SYSTEMS: C1 - C6			
Emergency warning systems Evacuation and fire service operation systems <input type="checkbox"/> Suppression or control systems Other		<input type="radio"/> Carried out <input type="radio"/> Supervised	
Note: The design of fire safety systems is only restricted building work when it involves small-to-medium apartment buildings as defined by the Building (Definition of Restricted Building Work) Order 2011.			

WAIVERS AND MODIFICATIONS	
Waivers or modifications of the Building Code are required. <input type="radio"/> Yes <input checked="" type="radio"/> No	
If Yes, provide details of the waivers or modifications below:	
Clause	Waiver/modification required
List relevant clause numbers of building code	Specify nature of waiver or modification of building code required

ISSUED BY

Name and contact details of the licensed building practitioner who is licensed to carry out or supervise design work that is restricted building work.

Name: **Hamish Tennent Wells**

LBP or Registration number: **186323**

The practitioner is a: ☐ Design LBP ☐ Registered architect ☒ Chartered professional engineer

Design Entity or Company (optional): **Hamish Wells Engineer Ltd**

Mailing address (if different from below): **PO Box 188 Otaki 5512**

Street address/Registered office: **202 Gorge Road**

Suburb: **Te Horo**

Town/City: **Otaki**

PO Box/Private Bag: **188**

Postcode: **5528**

Phone number: **0274 459 757**

Mobile: **0274459757**

After hours: **NA**

Fax: **NA**

Email address: **hamish@engnr.co.nz**


Website: **NA**

DECLARATION

I, **Hamish Tennent Wells** LBP, state that I have applied the skill and care reasonably required of a competent design professional in carrying out or supervising the Restricted Building Work (RBW) described in this form, and that based on this, I also state that the RBW:

- Complies with the building code, or
- Complies with the building code subject to any waiver or modification of the building code recorded on this form

Signature: **Hamish Wells**

 Digitally signed by Hamish Wells
Date: 2019.08.28 13:42:24 +12'00'

Date: **07/08/2019**

Building Code Clause(s) **B1 & B2**

PRODUCER STATEMENT – PS1 – DESIGN

(Guidance on use of Producer Statements (formerly page 2) is available at www.engineeringnz.org)

ISSUED BY: **Hamish Wells Engineer Ltd**

(Design Firm)

TO: **G J Gardner Homes**

(Owner/Developer)

TO BE SUPPLIED TO: **Kapiti Coast District Council**

(Building Consent Authority)

IN RESPECT OF: **Rib Raft Foundation design**

(Description of Building Work)

AT: **6 Hadfield Road**

(Address)

Town/City: **Kapiti Coast**

(Address)

LOT **3**

DP **531543**

SO

We have been engaged by the owner/developer referred to above to provide:

Design & Supervision

(Extent of Engagement)

services in respect of the requirements of Clause(s) **B1 & B2** 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 **VM1 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:

Rib Raft Foundation Design 6 Hadfield Rd Peka Peka and numbered **1 - 7**
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 **soft ground**
- (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, **Hamish Tennent Wells** am: ☒ CPEng **186323** # ☐ Reg Arch #
(Name of Design Professional)

I am a member of: ☒ Engineering New Zealand ☐ NZIA and hold the following qualifications: **NZCE Civil REA**

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: **Hamish Tennent Wells**

(Name of Design Professional)

Hamish Wells Digitally signed by Hamish Wells
Date: 2019.08.28 13:42:42 +12'00'

ON BEHALF OF **Hamish Wells Engineer Ltd**

(Design Firm)

Date **07/08/2019**

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 \$500,000.*

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

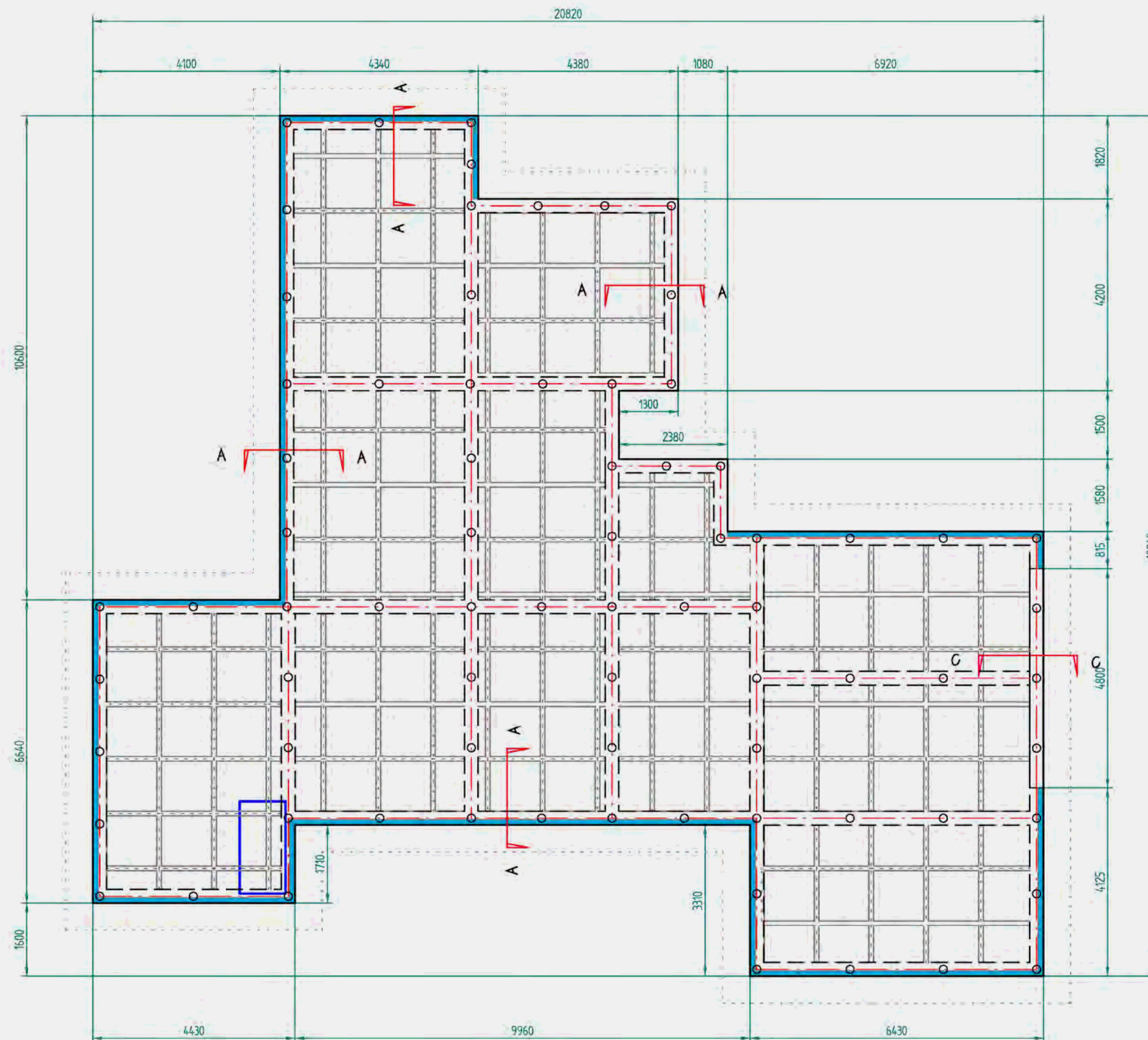
1) ALL DIMENSIONS MUST BE CHECKED AGAINST THE ARCHITECTURAL PLANS

2) ANY DISCREPANCY IS TO BE REPORTED TO THE ENGINEER AND THE ARCHITECT IMMEDIATELY AND NO FURTHER WORK CARRIED OUT UNTIL THE ISSUE IS RESOLVED

3) ALL WORKS IS TO COMPLY WITH THE RIB RAFT MANUAL OR THE ENGINEERING DRAWINGS

Inspections required as follows

- ☒ site prep
- ☒ Piling
- ☒ Ribraft prepour



20 MPA CONCRETE

OUT LINE

INLINE

ROOF LINE

BRICK REBATE 120

75MM SHOWER RECESS

EDGE BEAM SECTION

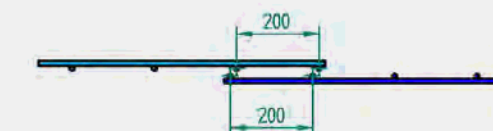
A A

GARAGE REBATE SECTION

C C

1100X1100 RIB RAFT POD

5662 500E MESH 200MM LAP REQUIRED



BC190682
Further Information Received
10/09/2019

RIB RAFT FOUNDATION DESIGN

Hamish Wells
Engineer Ltd

Civil Engineer
CMEngNZ #186323

CIVIL
INFRASTRUCTURE
LAND DEVELOPMENT
ENVIRONMENTAL

202 Otaki Gorge Rd, Otaki
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Hamish Wells
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SCALE 1 : 100 @ A3

JOB NO: 190285

SHEET TITLE:

RIB RAFT FOUNDATION DESIGN 6 HADFIELD RD PEKA PEKA

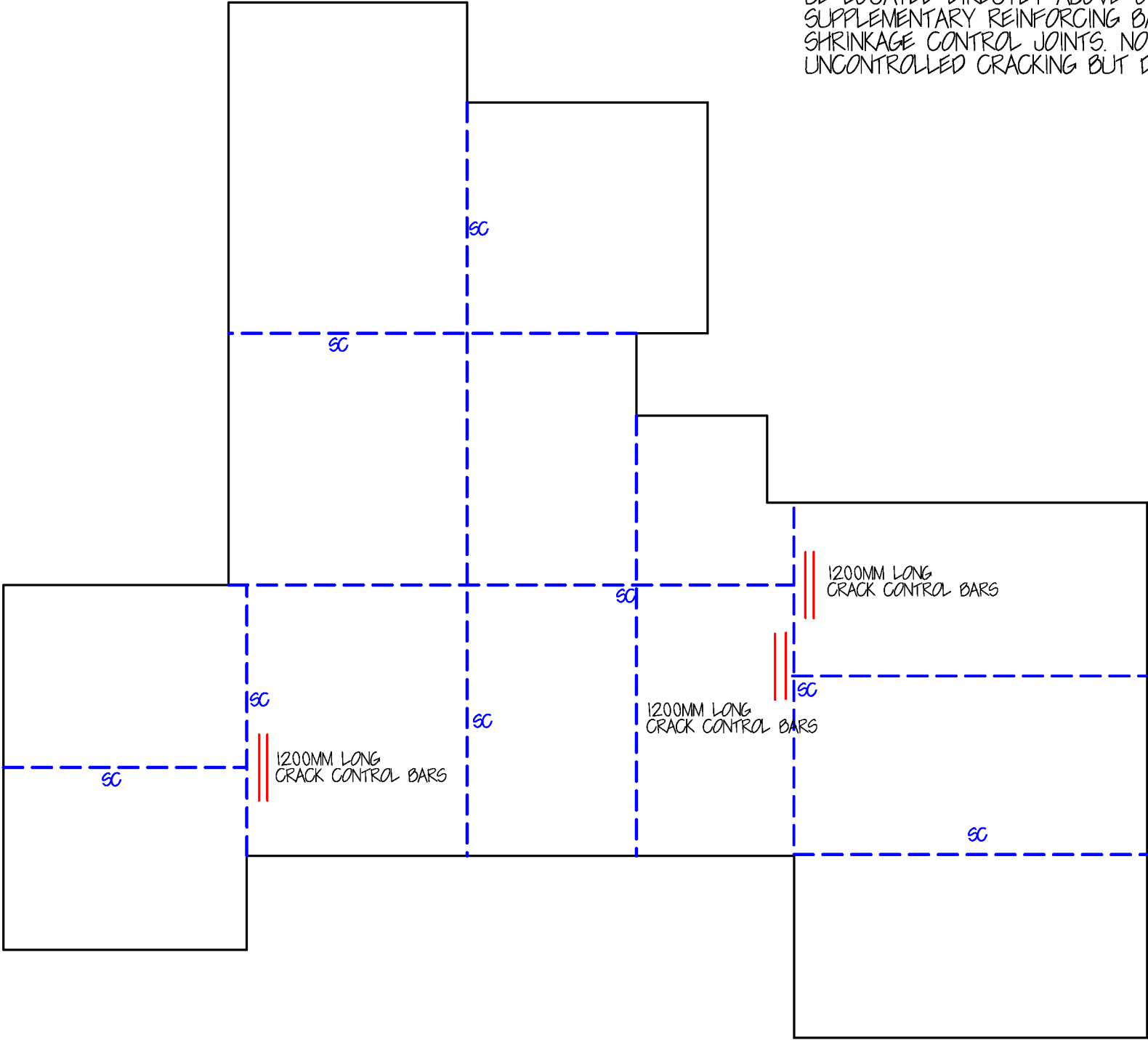
REV	DATE	DESCRIPTION	CLIENT NAME: BEATTIE		
0	7/08/2019	FOR CONSENT ISSUE	DRAWN BY: JDW	CHECKED BY: HTW	SHEET: 1 OF 7
0	28/08/2019	UPDATED			

1) ALL DIMENSIONS MUST BE CHECKED AGAINST THE ARCHITECTURAL PLANS

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3) ALL WORKS IS TO COMPLY WITH THE RIB RAFT MANAUL OR THE ENGINEERING DRAWINGS

SHRINKAGE CONTROL JOINTS
SHRINKAGE CONTROL JOINTS SHALL BE SAW CUT AFTER HARDENING. THE SAW CUT SHALL BE CUT TO A DEPTH OF 25MM AND SHALL BE CUT NO LATER THAN 24HRS IN SUMMER OR 48HRS IN THE WINTER. THE SAW CUT SHALL BE PLACED OVER 100MM WIDE INTERNAL RIBS WHEREVER POSSIBLE. WHERE A SHRINKAGE CONTROL JOINT RUNS ALONG THE LINE OF A 300MM WIDE LOAD BEARING RIB THEN THE JOINT SHALL BE LOCATED DIRECTLY ABOVE ONE EDGE OF THE 300MM RIB. SUPPLEMENTARY REINFORCING BARS SHALL NOT BE PLACED ACROSS ANY SHRINKAGE CONTROL JOINTS. NOTE THAT CUTTING THE SLAB REDUCES THE RISK OF UNCONTROLLED CRACKING BUT DOES NOT ELIMINATE THE RISK. SHOULD ADDITIONAL



Inspections required as follows

- ☒ site prep
- ☒ Piling
- ☒ Ribraft prepour

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Further Information Received
10/09/2019

RIB RAFT FOUNDATION SAW CUT PLAN

<div>Hamish Wells</div> <div>Engineer Ltd</div> <div>Civil Engineer</div> <div>CMEngNZ #186323</div>	<div>CIVIL INFRASTRUCTURE LAND DEVELOPMENT ENVIRONMENTAL</div>	<div>202 Otaki Gorge Rd, Otaki</div> <div>PO Box 188, Otaki 5542</div> <div>Hamish Wells</div> <div>M:0274 459 757</div> <div>E: Hamish@engenr.co.nz</div>	SCALE 1 : 100 @ A3		JOB NO: 190285		REV	DATE	DESCRIPTION	CLIENT NAME: BEATTIE		
			SHEET TITLE:		RIB RAFT FOUNDATION DESIGN 6 HADFIELD RD PEKA PEKA		0	7/08/2019	FOR CONSENT ISSUE	DRAWN BY: JDW	CHECKED BY: HTW	SHEET: 2 OF 7
							0	28/08/2019	UPDATED			

1) ALL DIMENSIONS MUST BE CHECKED AGAINST THE ARCHITECTURAL PLANS

2) ANY DISCREPANCY IS TO BE REPORTED TO THE ENGINEER AND THE ARCHITECT IMMEDIATELY AND NO FURTHER WORK CARRIED OUT UNTIL THE ISSUE IS RESOLVED

3) ALL WORKS IS TO COMPLY WITH THE RIB RAFT MANAUL OR THE ENGINEERING DRAWINGS

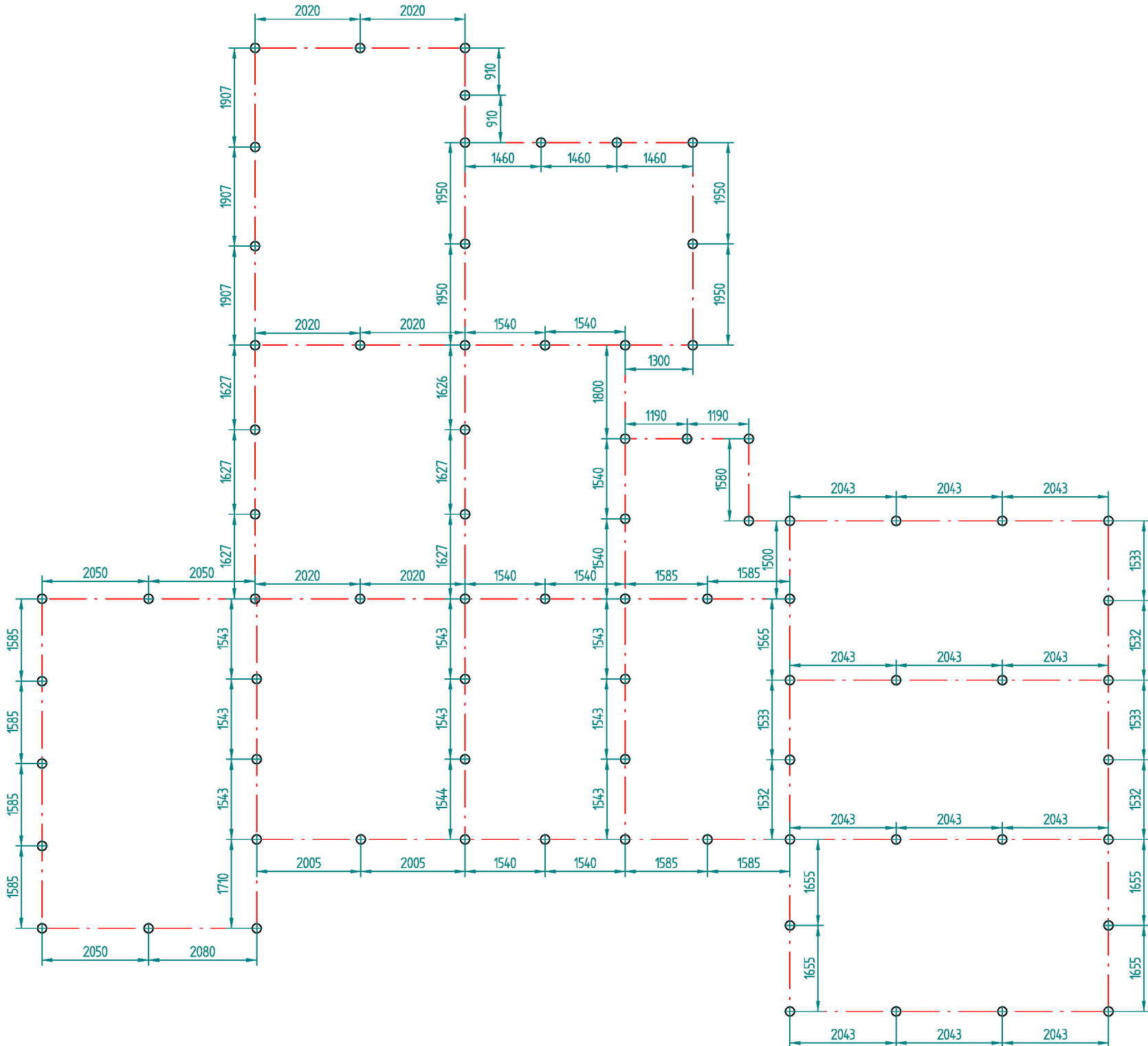
ALL PILES TO BE 175 SED H5 TANAPILES DRIVEN
TO PRACTICAL REFUSAL UNDER ENGINEER SUPERVISION

Inspections required as follows

☒ site prep

☒ Piling

☒ Ribraft prepour



BC190682
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SED PILED RIB RAFT FOUNDATION AND DIMENSION PLAN

Hamish Wells

Engineer Ltd

Civil Engineer
CMEngNZ #186323

CIVIL
INFRASTRUCTURE
LAND DEVELOPMENT
ENVIRONMENTAL

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E: Hamish@engenr.co.nz

SCALE 1 : @ A3

JOB NO: 190285

SHEET TITLE:

RIB RAFT FOUNDATION DESIGN 6 HADFIELD RD PEKA PEKA

REVIEW

DATE _____

DESCRIPTON

CLIENT NAME: BEATTIE

0

7/08/2015

FOR CONSENT ISSL

0

28/08/20

UPDATED

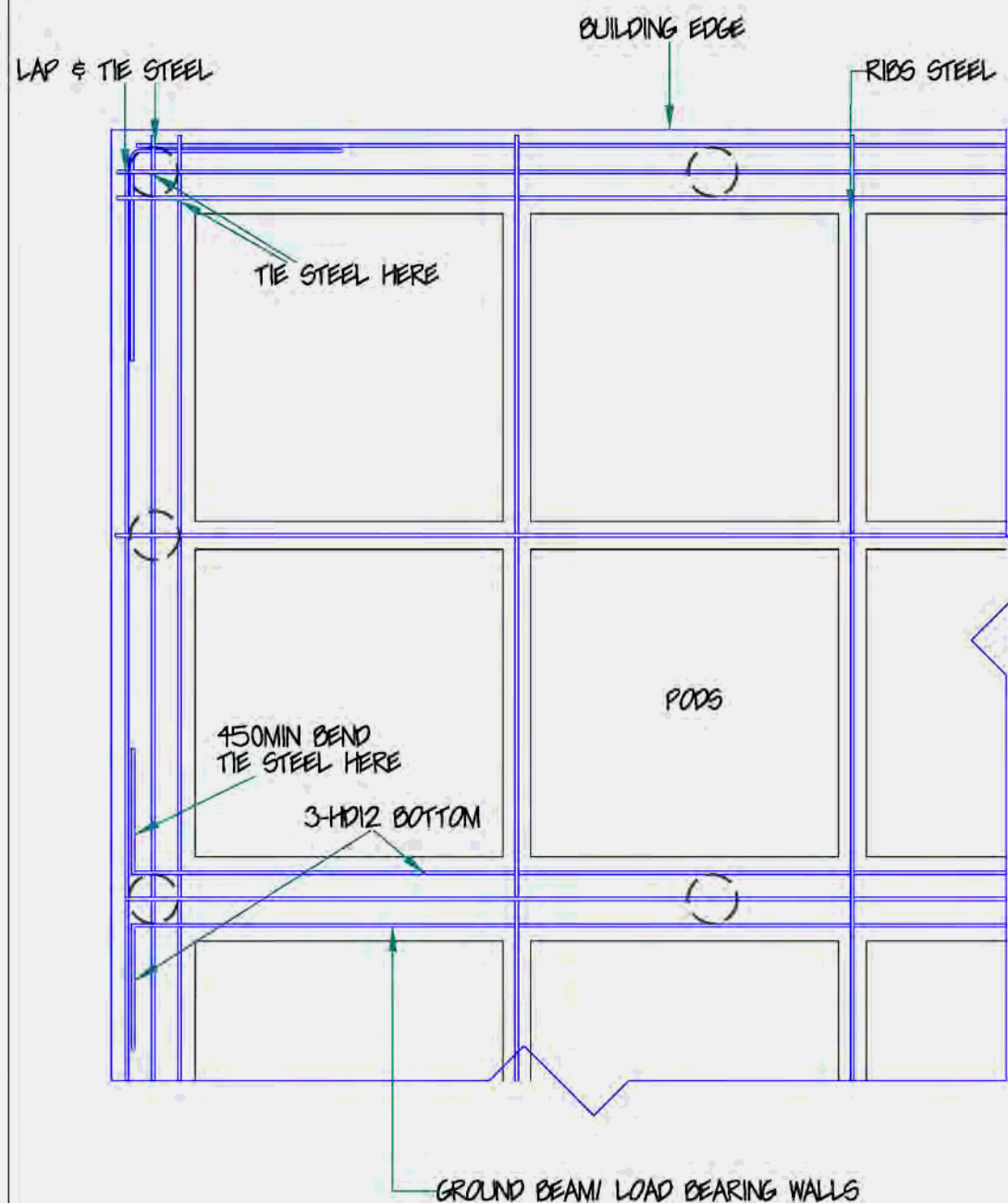
DRAWN
BY: JPDW

CHECKED
BY: HTW

SHEET:
3

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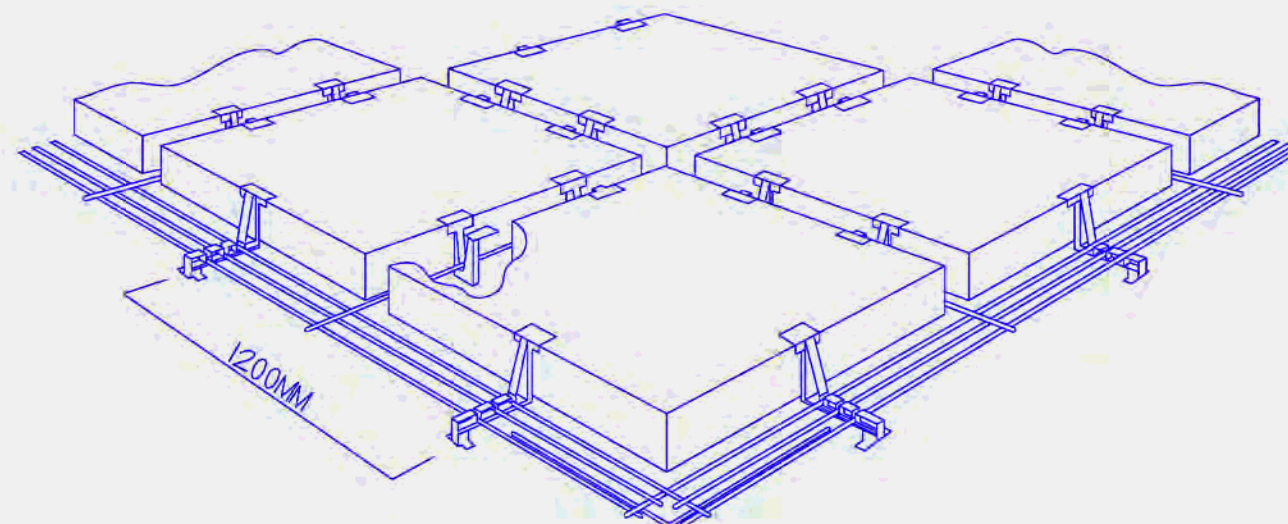
BC190682
Further Information Received
10/09/2019

LOAD
BEARING RIB

PART POD

RE - ENTRANT CORNER
STEEL (2HD12) 1200MM
LONG

ALTERNATIVE
ARRANGEMENT
OF PODS



BUILDING PLATFORM PREP

IN LINE WITH FIRTH RIBRAFT MANUAL AND NZS3604:2011 ALL VEGETATION, TOP SOIL AND OTHER ORGAINC OR DELETERIOUS MATERAIL SHALL BE REMOVED FROM THE AREA TO BE COVERED BY THE PROPOSED BUILDING PLATFORM. IMPORTED FILL IF EWQUIRED, SHALL BE AS PER NZS3604:2011 CL:7.5.3 PLACED IN APPROX 150 LAYERS AND COMPACTED TO LEVEL. A NOMINAL 50MM SAND BLINDING TO BE PLACED AND COMPACTED TO FORMATION LEVEL. FOR SINGLE STOREY LIGHT WEIGHT BUILDING A MINIMUM OF 6 BLOWS PER 300MM. ENGINEER TO VERIFY BUILDING PLATFORM BEFORE PLACING CONCRETE.

CONCRETE

500E MESH GRADE SE62DE WITH FIRTH RAFTMIX. RAFTMIX PUMP. RAFTMIX 25. OR RAFTMIX PUMP 25. PARTICULAR ATTENTION - IS TO BE PAID TO THE REQUIREMENTS OF 3.10.1 FRR MANUAL - PLACING - THE CONCRETE SHALL BE POURED IN SUCH A WAY AS TO ENSURE THAT THE PODS REMAIN IN POSITION DURING PLACING. FAILURE TO ENSURE THE PODS DON'T MOVE WILL RESULT IN A WEAKENED STRUCTURE AND AT WORST, IF THE PODS FLOAT ON THE CONCRETE, A SUB 85MM THICK SLAB THAT MAY FAIL UNDER DESIGN POINT LOADS

SHRINKAGE CONTROL JOINTS

SHRINKAGE CONTROL JOINTS SHALL BE SAW CUT AFTER HARDENING. THE SAW CUT SHALL BE CUT TO A DEPTH OF 25MM AND SHALL BE CUT NO LATER THAN 24HRS IN SUMMER OR 48HRS IN THE WINTER. THE SAW CUT SHALL BE PLACED OVER 100MM WIDE INTERNAL RIBS WHEREVER POSSIBLE. WHERE A SHRINKAGE CONTROL JOINT RUNS ALONG THE LINE OF A 300MM WIDE LOAD BEARING RIB THEN THE JOINT SHALL BE LOCATED DIRECTLY ABOVE ONE EDGE OF THE 300MM RIB. SUPPLEMENTARY REINFORCING BARS SHALL NOT BE PLACED ACROSS ANY SHRINKAGE CONTROL JOINTS. NOTE THAT CUTTING THE SLAB REDUCES THE RISK OF UNCONTROLLED CRACKING BUT DOES NOT ELIMINATE THE RISK. SHOULD ADDITIONAL ASSURANCE AGAINST CRACKING BE REQUIRED. PLEASE REFER TO HAMISH WELLS LTD FOR ADVICE.

DPM

DPM AS PER FIRTH RIBRAFT TECHNICAL MANUAL AND NZS3604:2011 CL 7.5.6.1 CONSISTING OF A LAYER OF POLYTHYLENE NOT LESS THAN 0.25MM THICK PLACED OVER THE ENTIRE BUILDING PLATFORM DIRECTLY OVER SAND BLINDING LAYER EXTENDING TO THE OUTSIDE OF THE EDGE BEAM. LAP JOINTS NOT LESS THAN 150MM WIDE. SEALED WITH PRESSURE-SENSITIVE PLASTIC TAPE NOT LESS THAN 50MM WIDE. DPM TO BE PROTECTED FROM DAMAGE. ALL PENETRATIONS OF THE DPM BY PLUMBING AND SERVICES OR PUNCTURES DURING CONSTRUCTION SHALL ALSO BE SEALED WITH PRESSURE SENSITIVE TAPE. MINIMUM REQUIREMENT IS THAT THE DPM EXTENDS TO THE OUTSIDE OF THE EDGE BEAM. THE INSTALLER SHALL ENSURE A SQUARE AND TIDY FINISH AT THE UNDERSIDE AND AT ALL CORNERS OF THE EDGE BEAM.

Inspections required as follows

- ☒ site prep
- ☒ Piling
- ☒ Ribraft prepour

GENERIC RIB RAFT DETAILS

Hamish Wells
Engineer Ltd

Civil Engineer
CMEngNZ #186323

CIVIL
INFRASTRUCTURE
LAND DEVELOPMENT
ENVIRONMENTAL

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SCALE 1: 25 @ A3

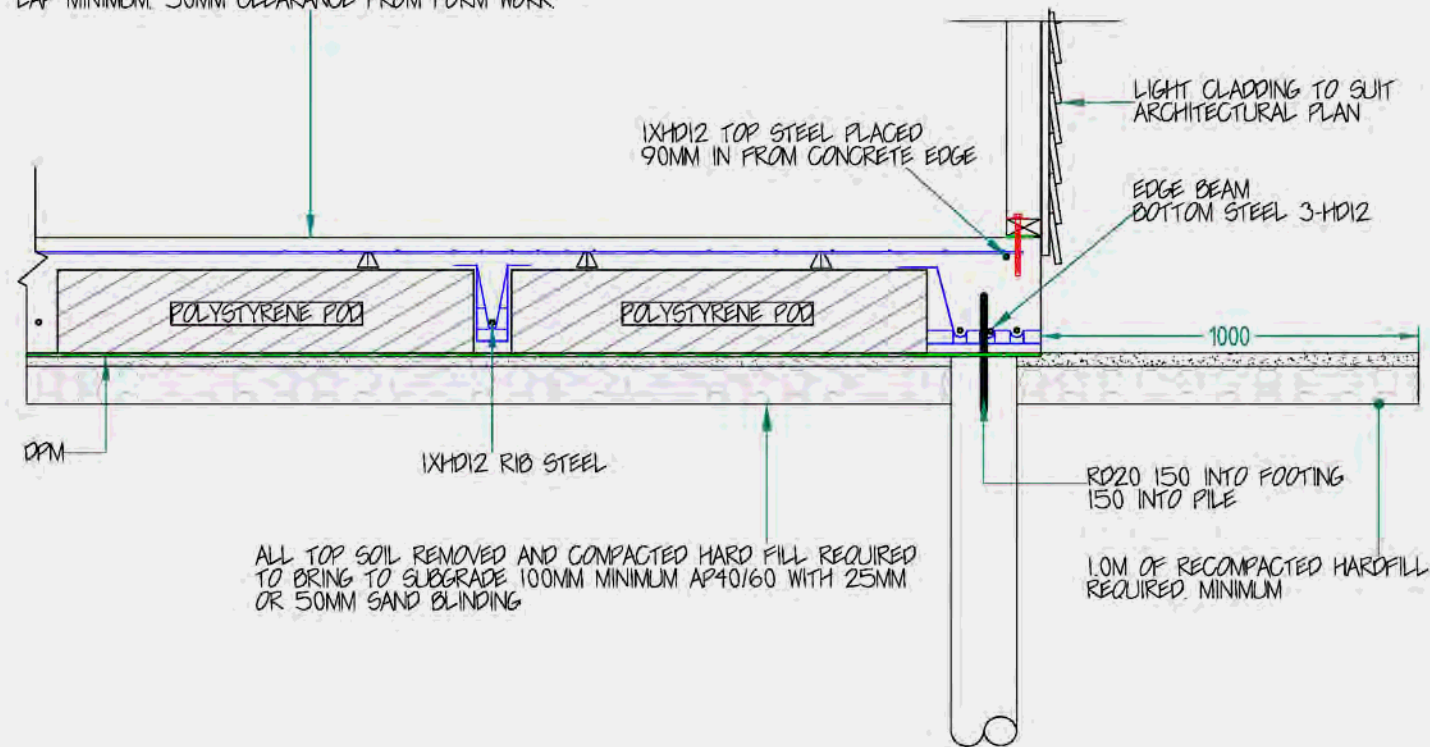
JOB NO: 190285

SHEET TITLE:

RIB RAFT FOUNDATION DESIGN 6 HADFIELD RD PEKA PEKA

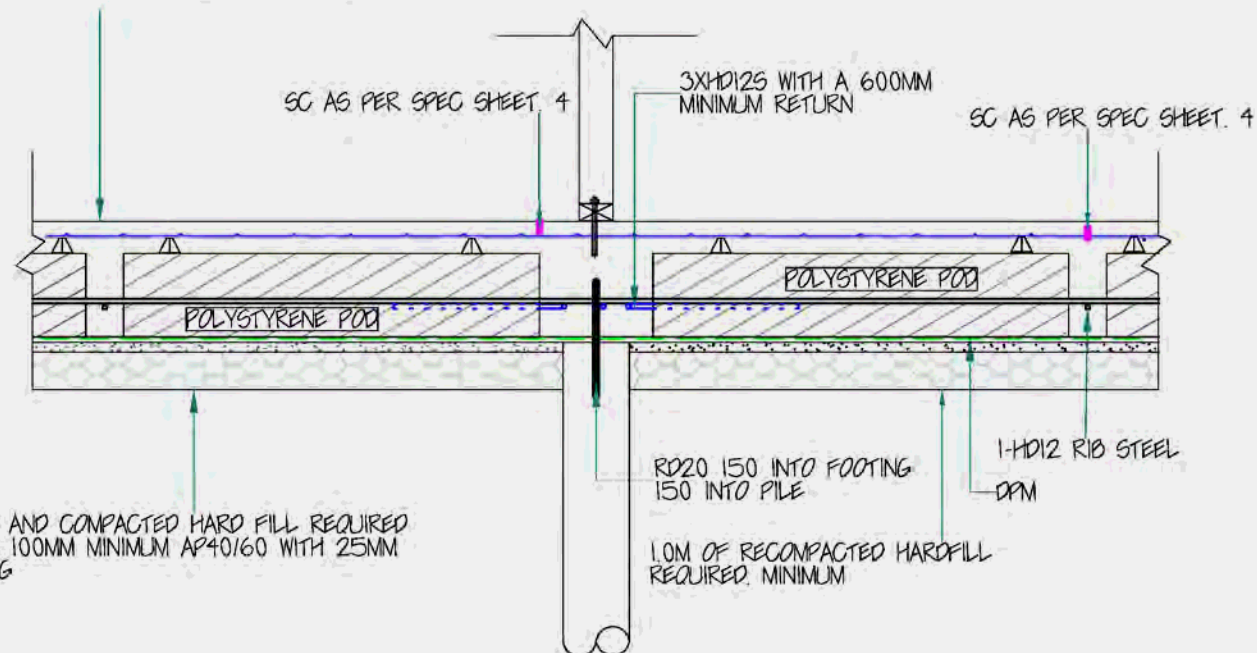
REV	DATE	DESCRIPTION	CLIENT NAME: BEATTIE		
0	7/08/2019	FOR CONSENT ISSUE	DRAWN BY: JOW	CHECKED BY: HTW	SHEET: 4 OF 7
0	28/08/2019	UPDATED			

85MM OR 110MM WITH UNDER FLOOR HEATING TOPPING
SLAB WITH SE 62 MESH. MESH REQUIRED TO HAVE 200MM
LAP MINIMUM. 50MM CLEARANCE FROM FORM WORK.



SECTION A-A
FOUNDATION DETAIL - LIGHT CLADDING - SUPPORTED BY PILES

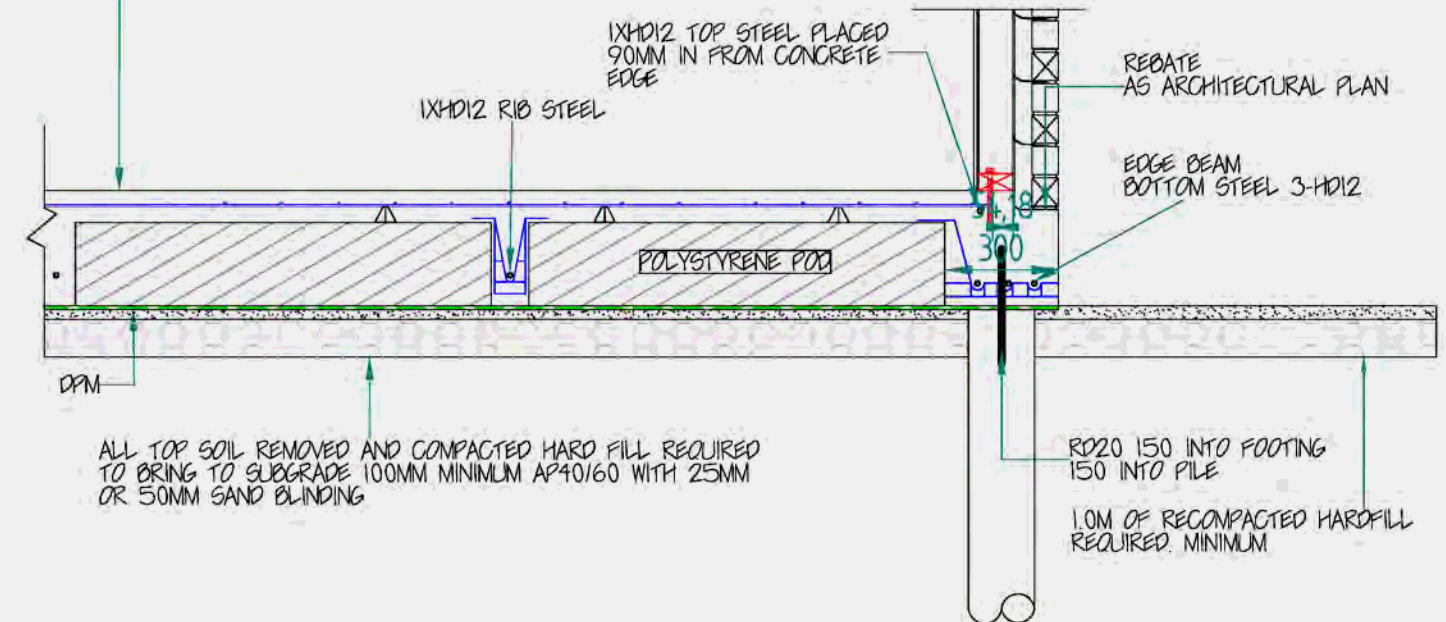
85MM OR 110MM WITH UNDER FLOOR HEATING TOPPING
SLAB WITH SE 62 MESH. MESH REQUIRED TO HAVE 200MM
LAP MINIMUM.



SECTION B-B
FOUNDATION DETAIL GROUND OR LOAD BEARING BEAMS
- SUPPORTED BY PILES

ALL PILES TO BE 175 SED H5 TANAPILES DRIVEN
TO PRACTICAL REFUSAL UNDER ENGINEER SUPERVISION

85MM OR 110MM WITH UNDER FLOOR HEATING TOPPING
SLAB WITH SE 62 MESH. MESH REQUIRED TO HAVE 200MM
LAP MINIMUM. 50MM CLEARANCE FROM INSIDE OF BRICK REBATE.

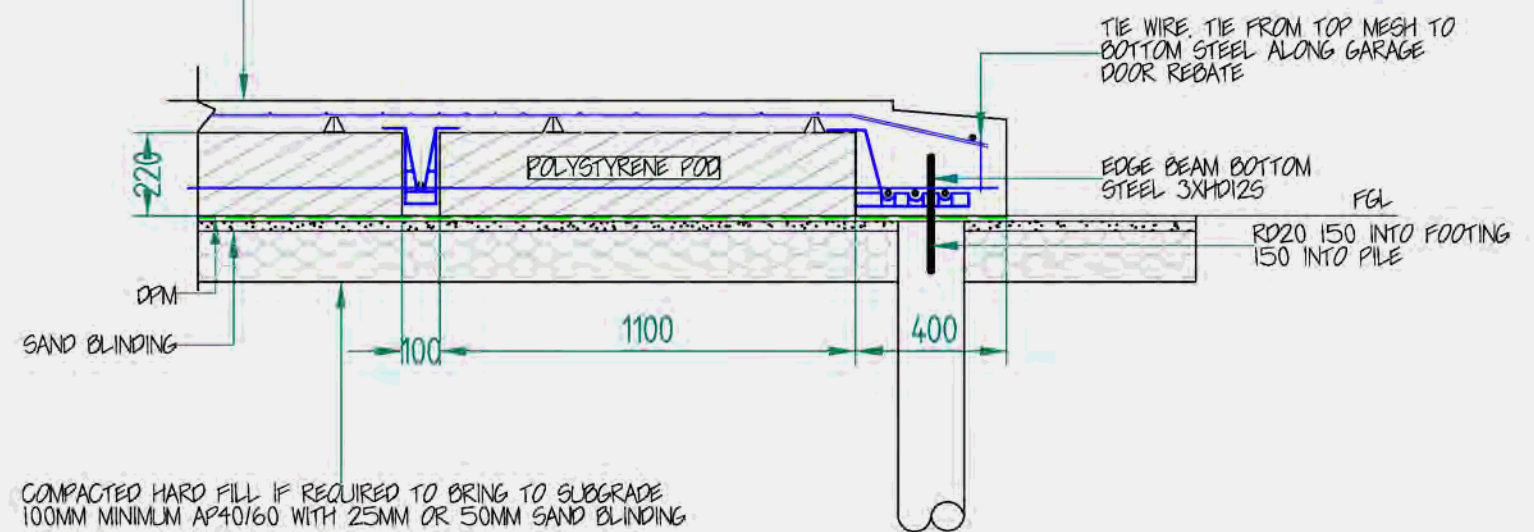


SECTION A-A
FOUNDATION DETAIL - HEAVY CLADDING - SUPPORTED BY PILES

Inspections required as follows

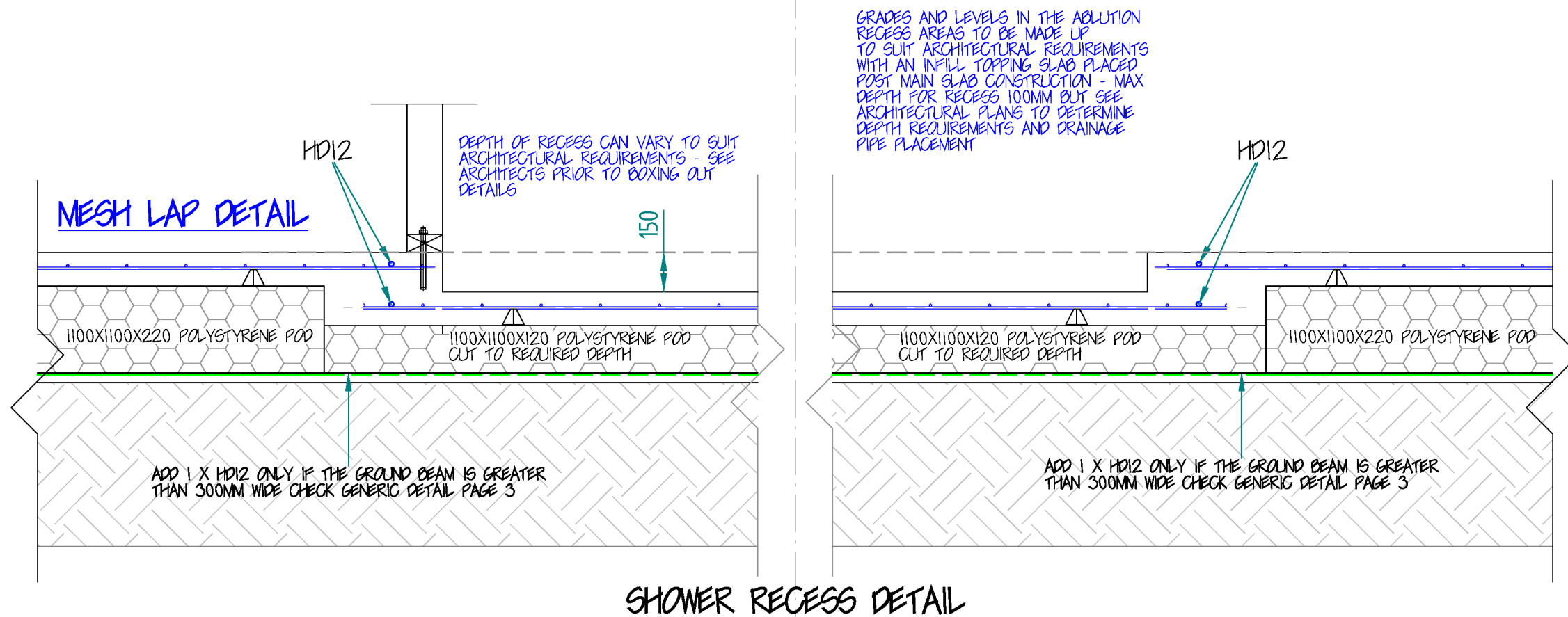
- ☒ site prep
- ☒ Piling
- ☒ Ribraft prepour

85MM TOPPING SLAB WITH SE62 MESH. MESH REQUIRED TO HAVE 50MM MINIMUM CLEARANCE FROM FORM WORK



OPTION 1 SECTION C-C
GARAGE DOOR REBATE 400MM WIDE EDGE DETAIL

BC190682
Further Information Received
10/09/2019

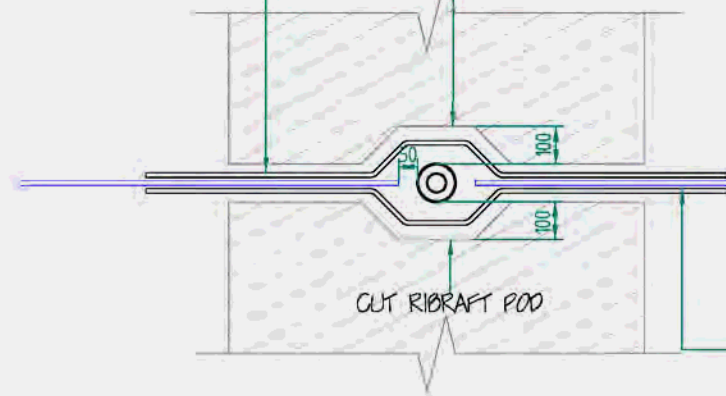


- Inspections required as follows
- ☒ site prep
 - ☒ Piling
 - ☒ Ribraft prepour

BC190682
Further Information Received
10/09/2019

600MM MINIMUM
LAP REQUIRED

CUT RIBRAFT POD



CUT RIBRAFT POD

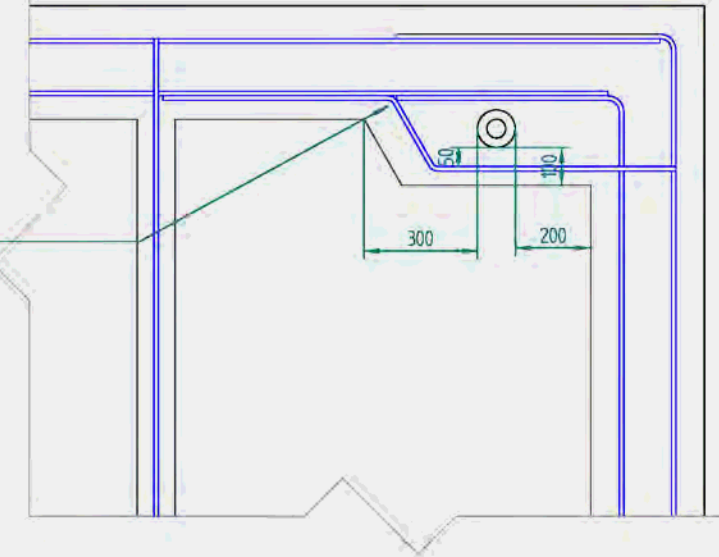
ADDITIONAL HD12 CRANK AROUND LAP MIN
600MM AT BOTH ENDS WITH RIB BARS MIN.
50 COVER TO PIPE

Inspections required as follows

- ☒ site prep
- ☒ Piling
- ☒ Ribraft prepour

BC190682
Further Information Received
10/09/2019

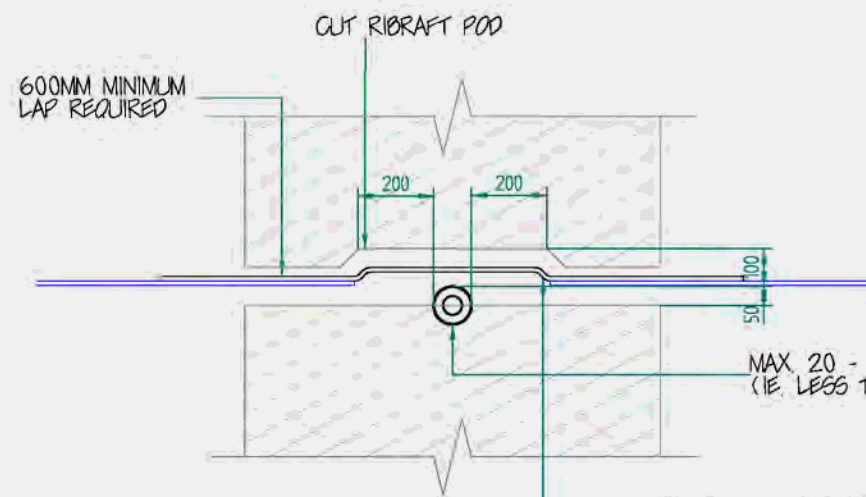
ADDITIONAL HD12 CRANKED AROUND
PIPE MIN. 600 LAP WITH EDGE BAR



PLAN VIEW: WITHIN RIB

DIAMETER OF SLEEVE CAPPED. WITH INTERNAL
PIPE COMING UP THROUGH CAP TO ALL SERVICES.

PLAN VIEW AT OPEN CORNER



CUT RIBRAFT POD

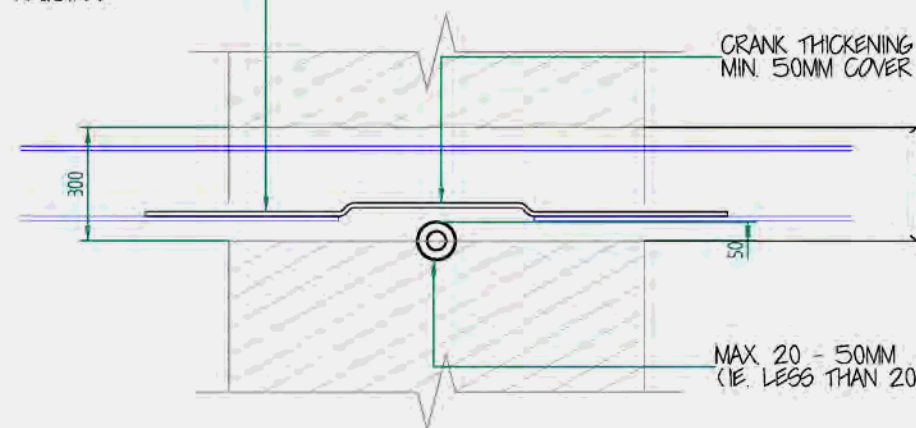
600MM MINIMUM
LAP REQUIRED

MAX 20 - 50MM
(IE. LESS THAN 20MM. NOT REQUIRED)

ADDITIONAL HD12 CRANK AROUND LAP MIN.
600MM AT BOTH ENDS WITH RIB BARS MIN.
50 COVER TO PIPE

PLAN VIEW: AT RIB EDGE

600MM MINIMUM
LAP REQUIRED

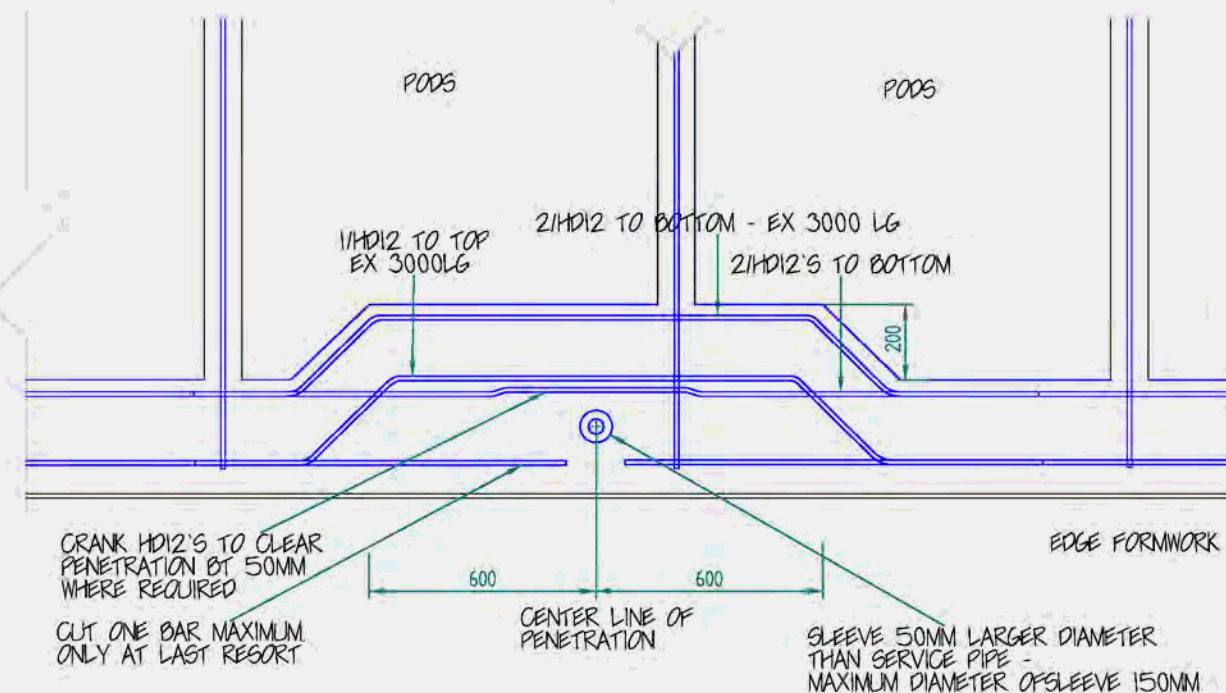


CRANK THICKENING BAR AROUND
MIN. 50MM COVER TO PIPE

TYPICALLY 300MM OR GREATER

MAX 20 - 50MM
(IE. LESS THAN 20MM. NOT REQUIRED)

PLAN VIEW: AT THICKENING EDGE



PODS

PODS

1/HD12 TO TOP
EX 3000LG

2/HD12 TO BOTTOM - EX 3000 LG

2/HD12'S TO BOTTOM

CRANK HD12'S TO CLEAR
PENETRATION BY 50MM
WHERE REQUIRED

CUT ONE BAR MAXIMUM
ONLY AT LAST RESORT

CENTER LINE OF
PENETRATION

EDGE FORMWORK

SLEEVE 50MM LARGER DIAMETER
THAN SERVICE PIPE -
MAXIMUM DIAMETER OF SLEEVE 150MM

SLEEVED SERVICES.

SERVICE TO BE PLACED CENTRALLY IN DUCTS WITH ID
50MM LARGER THAN SERVICE OD. DUCTS TO BE FIRMLY
EMBEDDED IN SAND AND SECURLY FIXED AND TAPED TO
PREVENT DISPLACEMENT DURING CONCRETING.

Hamish Wells
Engineer Ltd

Civil Engineer
CMEngNZ #186323

CIVIL
INFRASTRUCTURE
LAND DEVELOPMENT
ENVIRONMENTAL

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SCALE 1 : 20 @ A3

JOB NO: 190285

SHEET TITLE:

RIB RAFT FOUNDATION DESIGN 6 HADFIELD RD PEKA PEKA

REV	DATE	DESCRIPTION	CLIENT NAME:	DRAWN BY:	CHECKED BY:	SHEET:
0	7/08/2019	FOR CONSENT ISSUE	BEATTIE	JDW	HTW	7
0	28/08/2019	UPDATED				OF
						7

<u>FOUNDATION</u>	Client	G/JG Beattie	Number of storeys	Single
<u>CALCULATION</u>	Site	6 Hadfield rd Peka Peka	soil class	D&E (deep , very soft)
<u>SPREADSHEET</u>	Designer	JDW	location	Waikanae
	Date	28/08/2019		

<u>ROOF</u>	Roof type	Steel Galvanized 0.8mm	0.10	Kpa
	Roof Tributary width (Max)	5.45	5.45	m
	Roof pitch (Deg)	25.00	25.00	Deg
	Roof area	279.80	279.80	
	Roof above the eaves	2.20		
	Effective roofing length		6.01	m
	Adjusted roof weight		0.60	KN/m run
	Roof supporting structure allowance		0.15	
	Roof weight line load		1.42	KN/m run
	Roof weight total		72.84	KN

<u>UNDER ROOF</u>	Ceiling Type	Gypsum Plaster, 13mm	0.13	
<u>CEILING</u>	Ceiling supporting structure Y / N	No	0.00	Timber
	Ceiling Tributary width (m)	3.45	3.45	
	1st floor ceiling weight		0.45	KN/m run

<u>GROUND FLOOR</u>	Wall type	Timber Stud	0.05	
<u>WALLS</u>	Cladding Type	Brick 70mm	1.33	
	Cladding Weight	Heavy		
	Stories Height (m)	2.40	2.40	
	Total external wall length	85.34	85.34	
	Ground floor wall weight		3.31	KN/m run
	Ground floor wall weight total		282.65	KN

<u>FOUNDATION</u>	Foundation type	Ribraft (85mm)		
	Width (m)	0.30	Edge Wt	2.15
	Depth (m) (total)	0.31	Slab Wt	4.07
	Slab Thickness (m)	0.085		
	Length along	20.8		
	Width across	18.8		
	Foundation total slab area	227.0		
	Foundation Perimeter length	85.3		
	Ground beam length	0.0		
	Foundation weight edge (inc 1m of slab)	3.62	KN/m run	
	Foundation weight Total	1108.44	KN	

<u>IMPOSED LOADS</u>	Imposed load roof	0.25	Kpa
	Imposed load first floor	2.00	Kpa
	Imposed load Ground floor	2.00	KPa

<u>OUTPUT</u>	Total un-factored dead load on edge foundation beam	10.83	KN/m run
<u>Foundation</u>	Total un-factored Imposed loads on edge foundation beam	16.28	KN/m run
<u>Edge Load</u>			

<u>Total</u>	Total un-factored dead load	1493.4	KN
<u>Building Weight</u>	Total Un-factored imposed load	644.0	KN

<u>Wind</u>	Wind zone	Very High	324.6 KN
<u>Snow</u>	Snow Load allow	0.00 Kpa	0.0 KN

NOTES

Unit Weights

Client GJG Beattie
Site 6 Hadfield rd Peka Peka

Date 28/8/19
Designer JDW

UNITS LOADS FROM NZS1170.1:2002

ROOF

Roof type	Kpa
0 None	0.00
1 Steel Galvanized 0.8mm	0.10
2 Concrete tiles	0.53
3 Other	10.00

UNDER ROOF CEILING

Ceiling Types	Kpa
0 None	0.00
1 Fibrous Plaster 10mm	0.09
2 Gypsum Plaster, 13mm	0.13
3 Lime Plaster, 13mm	0.24
4 Other	10.00

WALLS

Wall and Cladding Types	
0 None	0.00
1 Timber Stud	0.05
2 Brick 70mm	1.33
3 20 Series Block	1.82
4 15 Series Block	1.51
5 10 Series Block	1.20
6 Ply (10mm)	0.12
7 Weather Board	0.15
8 Integra	0.45
9 Other	10.00

1ST FLOOR

Floor Types and Coverings	
0 None	0.00
1 Timber	0.12
2 Interspan	
4 Ply / wood / T and G, (20mm)	0.09
5 Carpet	0.10
6 Other	10.00

Timber joist weight calculator

width	45	mm
Depth	190	mm
Spacing	400	mm
	540.00	KG/M^3
	11.54	KG/M^2
	0.11	Kpa

Foundation

	Edge Beam Width	Depth	Slab Thickness	Edge weight KN/M run	Slab Weight KN/M^2
0 None	0.00	0	0	0	0
1 Maxraft (100mm)	0.450	0.200	0.100	2.160	2.400
2 Maxraft (120mm)	0.450	0.200	0.120	2.430	2.880
3 Ribraft (85mm)	0.300	0.305	0.085	2.154	4.073
4 Ribraft (110mm)	0.300	0.330	0.110	2.331	4.921
5 Ribraft (100)	0.300	0.320	0.100	2.304	4.497
6 Slab 85mm	0.300	0.450	0.085	3.240	2.040
7 Slab 100mm	0.300	0.450	0.100	3.240	2.400
8 Slab 125mm	0.300	0.450	0.125	3.240	3.000
9 SED Slab 150	0.400	0.300	0.150	2.880	3.600

Civil Engineer
CMEngNZ CPEng 186323

SLAB CALCULATIONS

Client Site GJG Beattie
6 Hadfield rd Peka Peka

Date 28/8/19
Designer JDW

Minimum Concrete strength determination WRT NZS 3101 Cl 3.4 and 3.10

Site with in 500m of coast?	No
Concrete exposed to freeze thawing?	No
Piled foundation?	Yes
Is there a garage?	Yes
Minimum Concrete covers	above DPM
	In non aggressive soils
	Exposed to wetting (exterior)

Min Concrete	Mpa
25	mm
25	mm
35	mm
40	mm

Slab Calcs

Input data	Slab width	bw	1	M
	over all depth	d	0.085	M
	depth to centriod of tension reo	t	0.0425	M
	Mesh Type		SE62	
	Concrete strength	f'c	25	MPa
			As	146.1
				500

Checks	Minimum area of steel	110.5	MM^2	PASS
	Moment capacity	2.68	KNm	

9.3.9.3.3 Max concrete shear capacity

Max capacity	0.2f'c	5.000	MPa
vc = lesser of	0.2 Sqrt f'c	1.000	MPa
or	(0.07+10 Pw) Sqrt f'c	0.436	MPa
where Pw = as/bd			

Garage point load shear check

Point load KN	13	NZS1170.1 Table 3.1 item F	
Bearing area	0.2	by	0.2
		Shear area	0.14
		Applied punching shear	9.49E-02
			PASS
Bearing pressure under point load			94.96
			Kpa

EDGE BEAM CALCULATIONS

Input data	beam width	bw	0.3	M
	over all depth	d	0.305	M
	depth to centriod of tension reo	t	0.255	M
	Top reinforcement		1-HD12	
	Bottom reinforcement		3-HD12	
	Concrete strength	f'c	25	MPa
Checks	Minimum area of steel		118.95	MM^2
	Moment capacity		36.87	KNm
				PASS

9.3.9.3.3 Max concrete shear capacity

Max capacity	0.2f'c	5.000	MPa
vc = lesser of	0.2 Sqrt f'c	1.000	MPa
or	(0.07+10 Pw) Sqrt f'c	0.645	MPa
where Pw = as/bd			

Applied load

Load from previous sheets factored			
Shear stress = V*/φbd		0.55	N/mm^2
Applied bearing pressure		124.76	Kpa
Max spanning capacity of foundation		2.81	M

PASS

SLAB CALCULATIONS

Client Site
GJG Beattie
6 Hadfield rd Peka Peka

Date
28/8/19
Designer
JDW

RIB BEAM CALCULATIONS

Input data	beam width	bw	0.1	M	
	over all depth	d	0.305	M	
	depth to centriod of tension reo	t	0.255	M	
	Bottom reinforcement		1-HD12		
Checks	Concrete strength	f _c	25	MPa	
	Minimum area of steel		39.65	MM ²	PASS
	Moment capacity		12.29	KN/m	
9.3.9.3.3					
	Max concrete shear capacity				
	Max capacity	0.2f _c	5.000	MPa	
	vc = lesser of	0.2 Sqrt f _c	1.000	MPa	
	or	(0.07+10 Pw) Sqrt f _c	0.572	MPa	
	where Pw = as/bd				
Applied load					
Garage	Point load	70/30 share	of 19.5kn	13.65	KN
	Shear stress = V*/φbd			0.50	N/mm ²
					PASS
	Max spanning capacity of rib		2.68	M	

Hamish Wells

Engineer Ltd

Civil Engineer
CMEngNZ CPEng 186323

CIVIL
STRUCTURAL
INFRASTRUCTURE
LAND DEVELOPMENTS
ENVIRONMENTAL

202 Otaki Gorge Rd, Otaki
PO Box 188, Otaki 5512
Hamish Wells
M: 0274 459 757
E: Hamish@Engner.co.nz

Building Bracing Calculator

Name GJG Beattie
Street and Number 6 Hadfield rd Peka Peka
Designer JDW
Date 28/8/19

Building Specifiaction
Number of storeys Single
Floor Loading 2kPa
Foundation Type Slab
Light

Single Floor
Cladding Weight Heavy
Roof Weight light
Room in Roof Space no
Roof Pitch (degrees) 25.00
Roof height above eaves (m) 2.2
Building height to apex (m) 4.9
Ground to lower floor level (m) 0.3

Stud Height (m) 2.4
Building Length (m) 20.8
Building Width (m) 18.8
Building Plan Area (m2) 227

Building Location
Wind Zone Very High
Select by Building Consent Authority Map
or Preference Very High

Complete Single Floor
Column Only

light
No

Earthquake Zone Soil Type
Waikanae D&E (deep , very soft)
Annual exceedance probability
1/500 (NZS3604:2011 default)

Bracing Units required for Wind

Demand W (BU)			
			Walls single
along	Slab	0	1204
across	Slab	0	1255

Bracing Units required for Earthquake

Demand along / across E (BU)			
slab	1467	0	0

Foundation Calculation	Client	GJG Beattie	Date	28/8/19
	Site	6 Hadfield rd Peka Peka	Designer	JDW

Horizontal Loads Of structure onto slab from bracing sheets (Ex. GIB)

Max Wind Demand	1255	Bus	62.8	KN
Max Seismic Demand	1467	Bus	73.3	KN

From NZS 1170 Peak ground acceleration a_h = ZRC

Location	Waikanae	
Z =	0.4	Z Ref Table 3.3 NZS 1170:5
R_{SLS} =	0.25	R Ref Table 3.3 NZS1170:0
R_{ULS} =	1	D Ref Table 3.3 NZS 1170:5

Soil type	D&E (deep , very soft)	C=	1.12
Annual Probability	1 in 500	R mod:	1

Ground acceleration for slab

a_h =	0.112	SLS	a_h =	0.448	ULS
---------	-------	-----	---------	-------	-----

Sliding Demand Seismic	Foundation Weight, F_w =	1108.4	KN
	Building weight, B_w =	385.0	KN
	Imposed load, IL =	644.0	KN

Sliding resistance

Wind = $(1.2G + \psi_c Q)\mu_s$	where, ψ_c =	0.425	
Seismic = $(G + \psi_c Q)\mu_s$	where, μ_s =	0.425	ex McManus paper 6.03.01 max 0.5

Where	G =	1493.4	from previous calculation
	Q =	644.0	from previous calculation

<u>SLS</u>	Horizontal design load Wind =	43.94	KN
	Horizontal sliding design load seismic =	197.5	KN

=> Design sliding resistance wind =	Resistance	878.0	>	Demand	43.9	KN	PASS
=> Design sliding resistance Seismic =	Resistance	751.0	>	Demand	197.5	KN	PASS

<u>ULS</u>	Horizontal design load Wind =	62.8	KN
	Horizontal sliding design load seismic =	569.9	KN

=> Design sliding resistance wind =	Resistance	878.0	>	Demand	62.8	KN	PASS
=> Design sliding resistance Seismic =	Resistance	751.0	>	Demand	569.9	KN	PASS

Shear keys	#	rating Bus	R Bus	R Kn	add sliding R	Total R	
or Piles	50	75	3750	187.5	751.0	938.5	PASS

NOTES

Lot 3 Hadfield Road
Pekapeka

DATE:

20-08-19

CIVIL STRUCTURAL INFRASTRUCTURE LAND DEVELOPMENTS ENVIROMENTAL

PREPARED FOR :
GJ Gardner

SITE REPORT

Site suitability Retest report

in terms of NZS 3604:2011 Timber framed buildings - Section 3 "Site requirements"

Date: 20-08-19

Site Data

Address: Lot 3 Hadfield Road
Town: Pekaheka
Post code:

Client Data

Client: GJ Gardner
Email: julieanne.mollet@gjgardner.co.nz
Address:
Mobile:
Landline: 04 296 1248

Legal

Lot: 3 **DP:** 531543
TA: KCDC
RA: GWRC

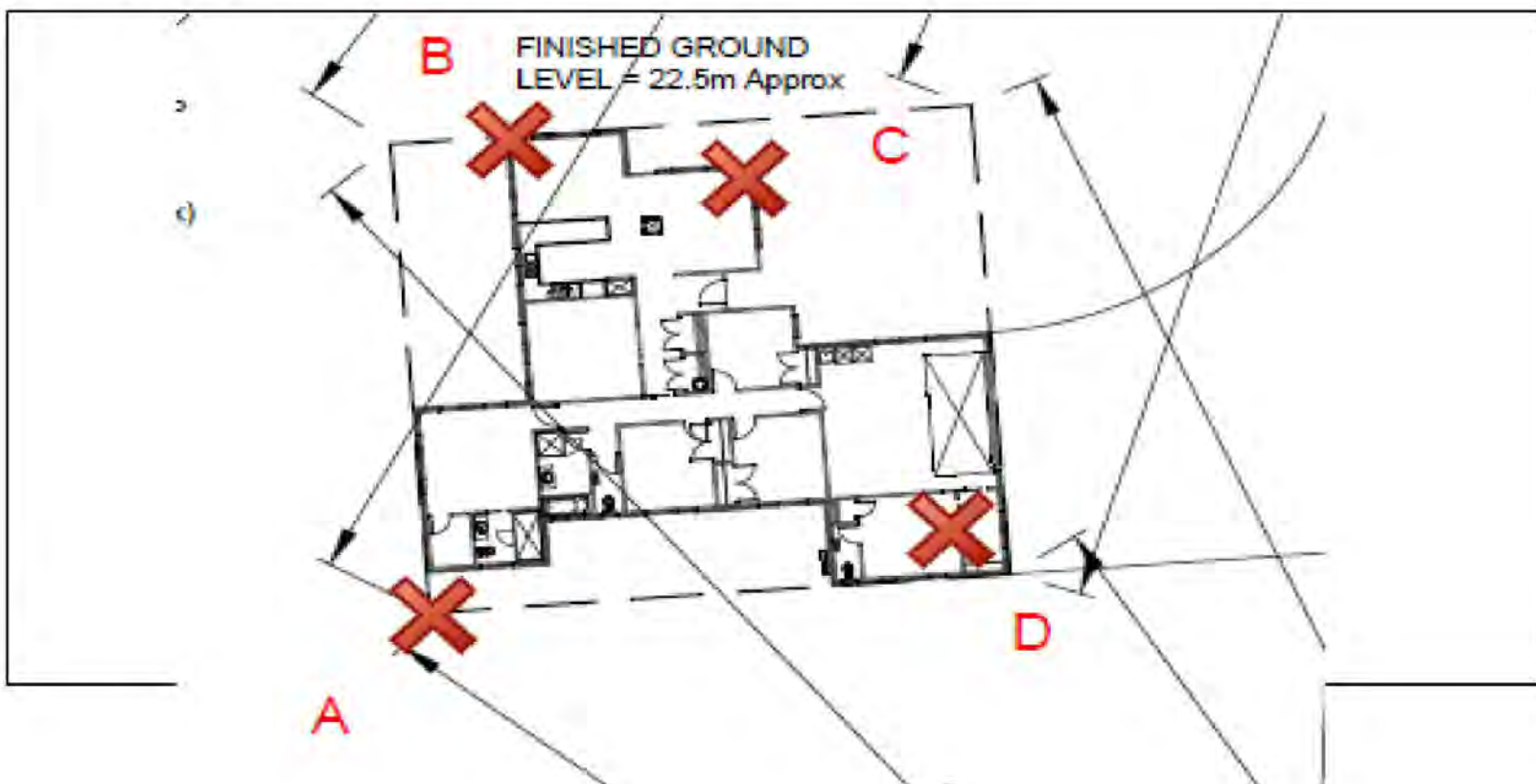
Wind Zone VH
Corrosion zone C
Earthquake zone 3
Site subsoil class D&E

Topography Moderate contour Cut Site

Basic soil type Clay gravels

NZGS data NA
Tested by DE

Site Plan showing test locations



SCALA PENETROMETER FIELD SHEET - SUMMARY

Property: Lot 3 Hadfield Road

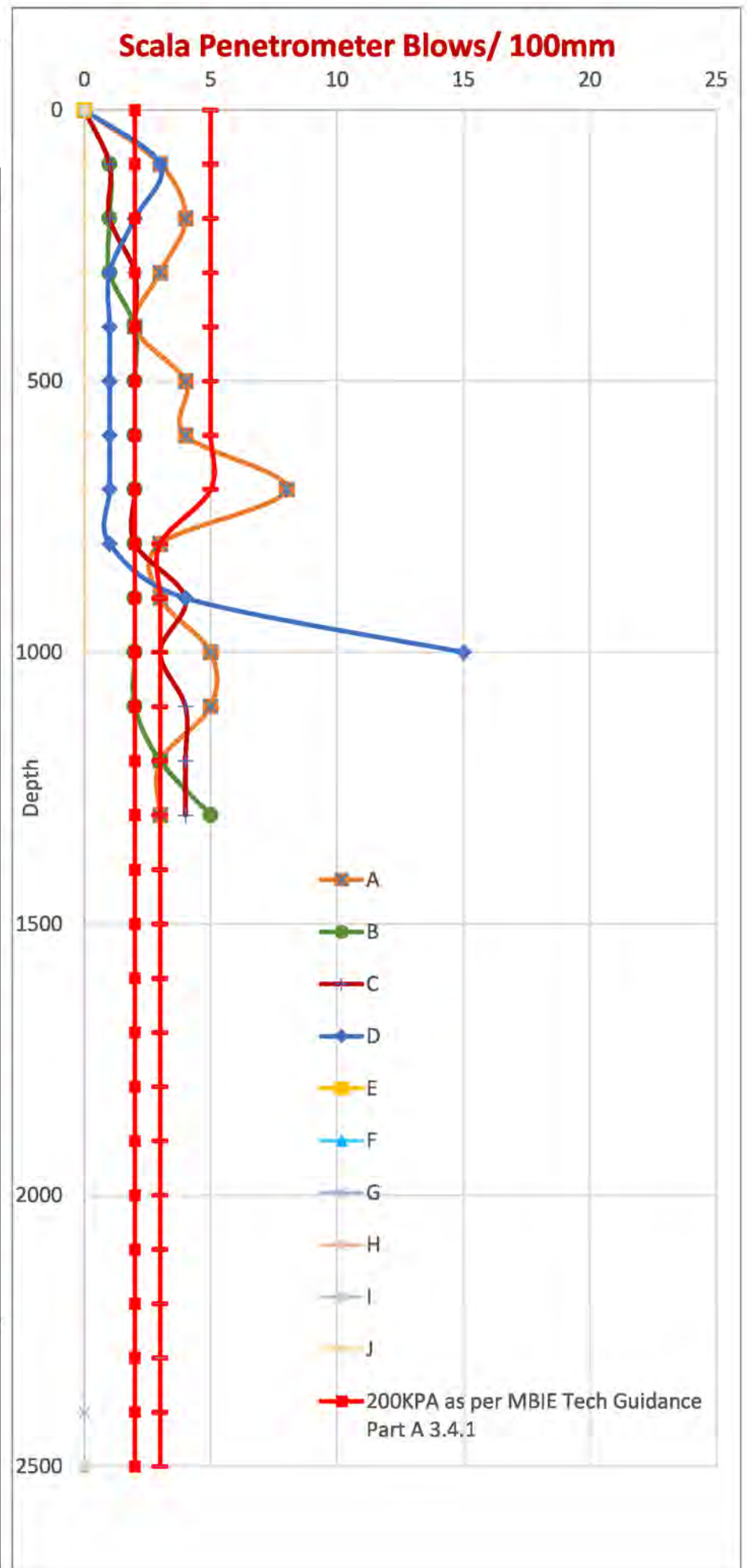
BY DE

Client: GJ Gardner

Depth (m)	A	B	C	D	E	F	G	H	I	J	G.G.
0	0	0	0	0	0	0	0	0	0	0	5
100	3	1	1	3							5
200	4	1	1	2							5
300	3	1	2	1							5
400	2	2	2	1							5
500	4	2	2	1							5
600	4	2	2	1							5
700	8	2	2	1							5
800	3	2	2	1							3
900	3	2	4	4							3
1000	5	2	3	15							3
1100	5	2	4								3
1200	3	3	4								3
1300	3	5	4								3
1400											3
1500											3
1600											3
1700											3
1800											3
1900											3
2000											3
2100											3
2200											3
2300											3
2400											3
2500											3

Additional Notes:

G.G. = Good Ground as per NZS3604:2011



Test data analysis and comments for 3604:2011 type foundations systems

Symbol	Meaning
Y	Yes
N	No
Blank	Not applicable
P	Part
A	All
SED	Specific Engineering Design

Typical 3604:2011 compliant foundation systems

Timber subfloor		Slab on ground		
Standard piles	Driven timber piles	Ring Foundation	3604 Type	Non SED RibRaft
N		N	N	N

1 Do the test results comply with NZS 3604:2011 Section 3 Site requirements?

2 Reasons / causes of non compliance?

- a) Peat or other organic materials
- b) Clays or/and soft silts
- c) Shallow poorly consolidated sands
- d) Deep poorly consolidated sands
- e) Uncertified fills
- f) Unstable ground, adjacent slips, erosion
- g) Proximity to banks
- h) Ground water issues
- i) Other issues see summation para 7

✓

✓

✓

✓

3 Is specific foundation design required ?

- a) Part of the site
- b) All of the site

Y	Y	Y	Y	Y

4 Can the site soils be mechanically stabilised to provide a complying site?

- a) Required digout depth mm
- b) Required digout area - footprint +
- c) Can the work be carried out with the soil still in situ (roll / compact with suitable heavy machinery)

N/A	N/A	N/A	N/A	N/A

Notes:

Site Cut & recompact retest. Specific Engineering Design will be required for this site

5 Piling options

- a) Driven timber piles
- b) Cast in situ concrete timber piles

YES	YES	YES	YES	YES
YES		YES	YES	YES

6 Slab options

- a) SED required for slab and foundations
- b) SED required for slab and foundations if the site is mechanically stabilised

YES YES YES YES YES

7 Summation

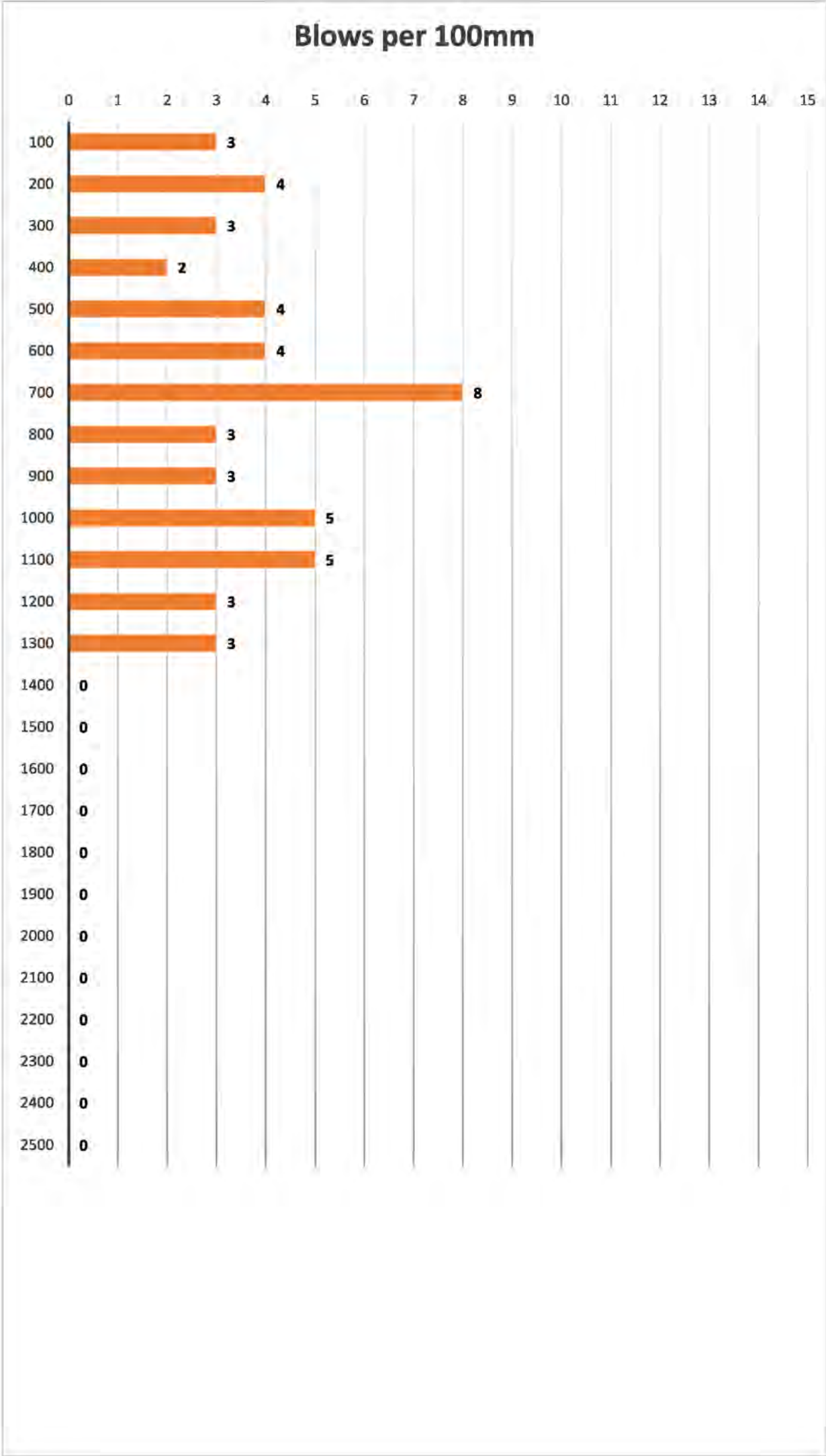
Site does not comply with NZS 3604:2011 Sec 3 Good ground requirements for standard foundation types and a Specifically Designed foundation will be required. Site is suitable for driven timber piles or cast in situ concrete piles, client preference.

SCALA A PENETROMETER FIELD SHEET - SUMMARY

Property: Lot 3 Hadfield Road	Logged by:	DE
	Date Tested:	20-08-19

Client: GJ Gardner

Water Table not encountered		
Soil Description	Depth (m)	Blows
Clay	100	3
	200	4
	300	3
	400	2
	500	4
	600	4
	700	8
	800	3
	900	3
	1000	5
	1100	5
	1200	3
	1300	3
	1400	0
	1500	0
	1600	0
	1700	0
	1800	0
	1900	0
	2000	0
	2100	0
	2200	0
	2300	0
	2400	0
	2500	0
Additional Notes:		



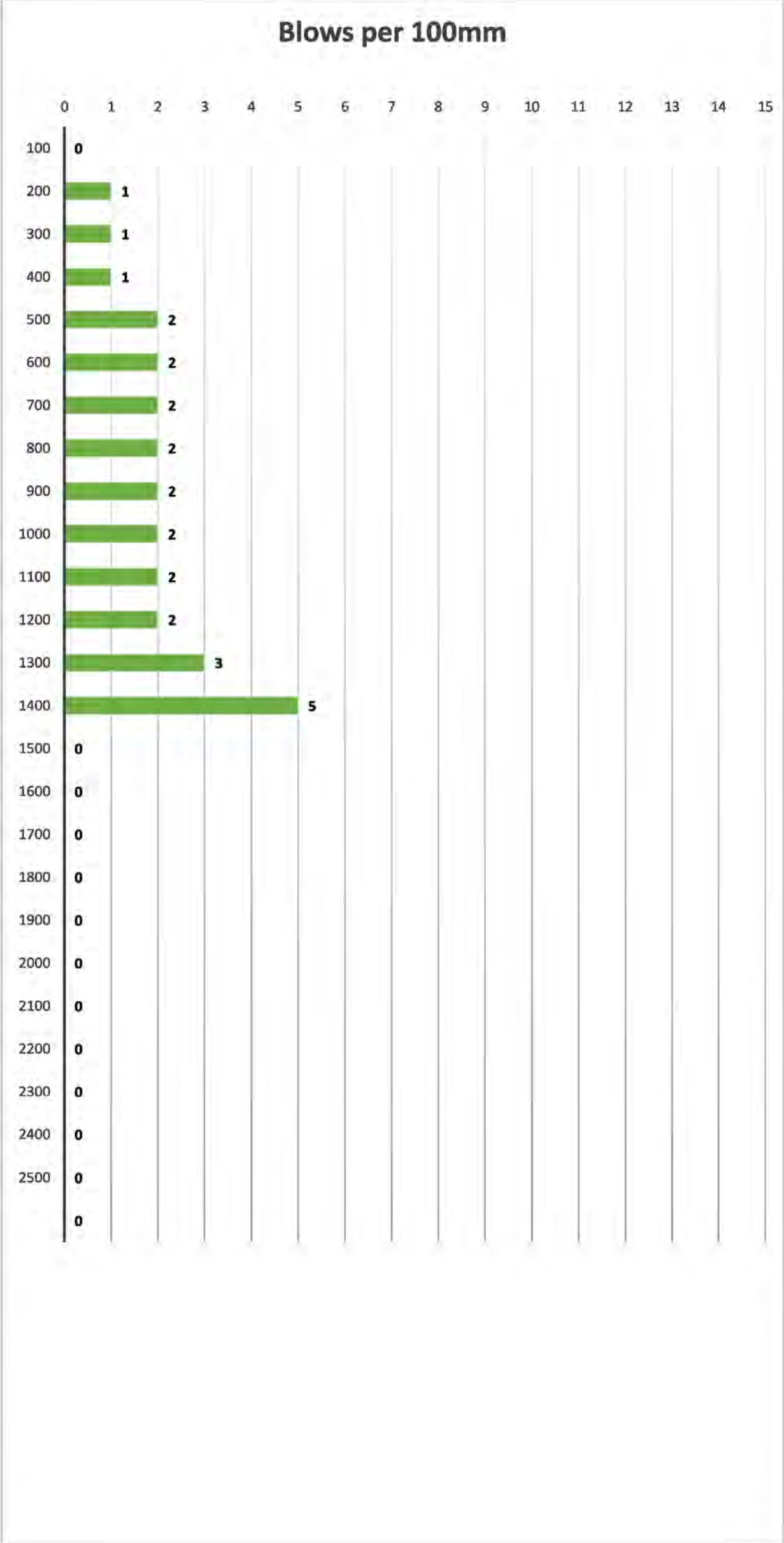
Notes & References

Field Descriptions of Soils and Rocks by NZ Geotechnical Society Dec 2005
NZS 4402 Test 6.5.2:1988 Determination of the Penetration Resistance of a Soil
Indicative Bearing Capacity is based on MJ Stockwell's "Determination of Allowable Bearing Capacity Under Small Structures" and converting to Ultimate Bearing Capacity

SCALA B PENETROMETER FIELD SHEET - SUMMARY

Property:	Lot 3 Hadfield Road	Logged by:	DE
Client:	GJ Gardner		

Water Table not encountered		
Soil Description	Depth (m)	Blows
Clay	0	0
	100	1
	200	1
	300	1
	400	2
	500	2
	600	2
	700	2
	800	2
	900	2
	1000	2
	1100	2
	1200	3
	1300	5
	1400	0
	1500	0
	1600	0
	1700	0
	1800	0
	1900	0
	2000	0
	3600	0
	3700	0
	3800	0
	3900	0
	4000	0
Additional Notes:		



Notes & References

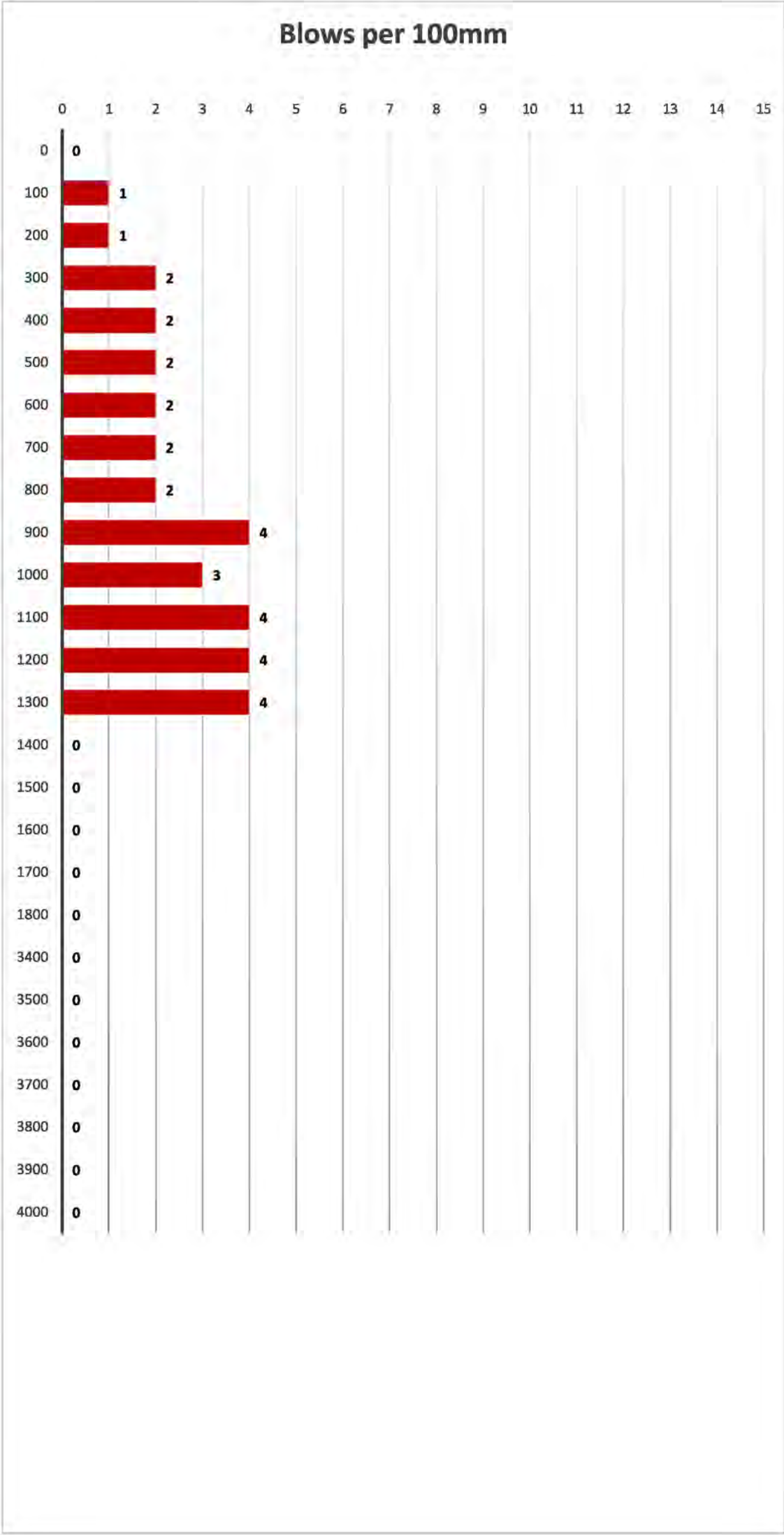
Property: Lot 3 Hadfield Road

Logged by: DE

Date Tested: 20-08-19

Client: GJ Gardner

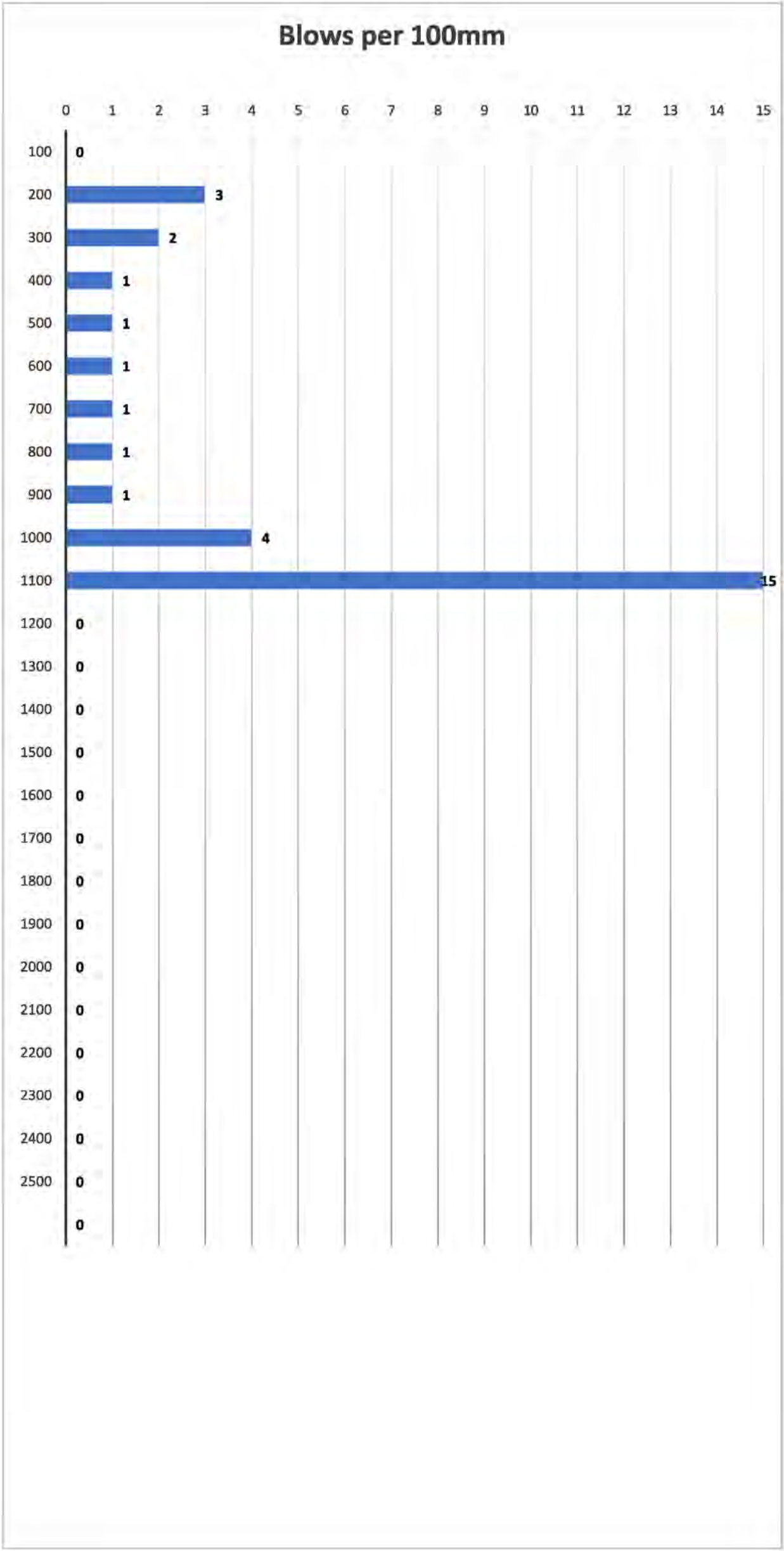
Water Table not encountered		
Soil Description	Depth (m)	Blows
Clay	0	0
	100	1
	200	1
	300	2
	400	2
	500	2
	600	2
	700	2
	800	2
	900	4
	1000	3
	1100	4
	1200	4
	1300	4
	1400	0
	1500	0
	1600	0
	1700	0
	1800	0
	3400	0
	3500	0
	3600	0
	3700	0
	3800	0
	3900	0
	4000	0
Additional Notes:		



Notes & References

SCALA D PENETROMETER FIELD SHEET - SUMMARY

Property:	Lot 3 Hadfield Road	Logged by:	DE
		Date Tested:	20-08-19
Water Table not encountered			
Soil Description	Depth (m)	Blows	
Clay	0	0	
	100	3	
	200	2	
	300	1	
	400	1	
	500	1	
	600	1	
	700	1	
	800	1	
	900	4	
	1000	15	
	1100	0	
	1200	0	
	1300	0	
	1400	0	
	1500	0	
	1600	0	
	1700	0	
	1800	0	
	1900	0	
	2000	0	
	2100	0	
	3700	0	
	3800	0	
	3900	0	
	4000	0	



Notes & References

Site Report Explanation Notes

Soils/Foundation Site Requirements

This testing was carried out in general accordance with the requirements of NZS 306:2011 Section 3 "Site Requirements". This general procedure was used as the end use of the site is residential housing and the method is the most appropriate for that use.

- 1) **NZS 3604:2011 Section 3 Site Requirements** part 3.3 Test Method for soil bearing capacity, part 3.3.7 Ultimate Bearing Capacity defined ground as having 300kpa Ultimate bearing capacity (UBC) of not less than 300kpa as below.

3.3.7.1

The soil below the underside of the foundations shall be assumed to have an ultimate bearing capacity of not less than 300 kpa when:

- a) none of the following is encountered below the depth of the footing at any test site:

(i) Organic topsoil

(ii) soft or very soft peat

(iii) soft or very soft clay

(iv) fill material,except where a certficate of suitability has been issued under NZS 4431
- b) Scala penetrometer tests conducted in accordance with 3.3.2(a), where the number of blows per 100mm depth of penetrometer below the underside of the proposed footingat each test site exceed.

(i) Five down to a depth equal twice the width of the widest footing

(ii) Three at greater depths; and

(iii) Providing the set blow is relatively uniform, the number of blow per 100mm may be obtained by averageing the number of blow for depths not exceeding 300mm and
- c) Comparisons of the results at all test sites show thst conditions are closely similar at each test site.

Based on a standard slab on ground foundation width of 240mm for a masonry veneer clad dwelling (either 1 or 2 story) from figure 7.15 NZS 3604:2011 section 7 floors - Masonry veneer foundation edge detail - in situ concrete and a minimum in ground embedment of 300mm for the concrete foundation, the minimum requirements in terms of Scala blows/100mm penetration are:

Existing ground level to - 300mm	not applicable to the foundation but relevant to the slab see section 7.5 re granular base for slab, minimum 5 blows/100mm penetration in the in granular fill recommend
-300mm to 800mm below existing ground level	5 blows/100mm
-800mm + depth	3 blows/100mm

2) **Analysis of the scala for each lot in term of paragraph 4 above (NZS 3604:2011 compliance):**

- a) If site test comply with the requirements of NZS 3604:2011 section 3 "site requirements" and it is reasonable to assume,Not gauranteed, that based on the test carried out, are suitable for standard foundation designs in accordance with NZS 3604 or non specific Rib raft slab on ground foundation systems.
- b) If tests do not comply with NZS 3604:2011 section 3 "site requirements" and specifically designed foundations (typically driven timber piles) or ground improvement of the existing site soils (which are readily compacted) to provide a complying building platfform will be required.

3) **Ribraft foundation system: Ribraft** Ribraft systems are being increasingly specified for domenstic construction and nonspecific design Ribraft foundations (ie in compliance with firth Ribraft manual 2012) have a **lower soil soil bearing requirement** than standard slab on ground system in compliance with NZS 3604:2011 (note: all other aspects of the requirements. Section 3 must be complied with). This lower soil bearing strength requirements is based on building type and the Ribraft ability to better distribute load to the ground than conventional 3604 foundation solutions. There are four building types identified in the Ribraft design manual and their relative minimum foundation soil requirements are as below:

Building identifier

Building Type	Description	Ground Floor External walls	Second Story External walls
A	Single Story	Light	
B	Single Story	Heavy	
C	Two Story	Light	Light
D	Two Story	Heavy	Light

Scala Penetrometer Blows Required For Determining Ultimate Bearing Capacity

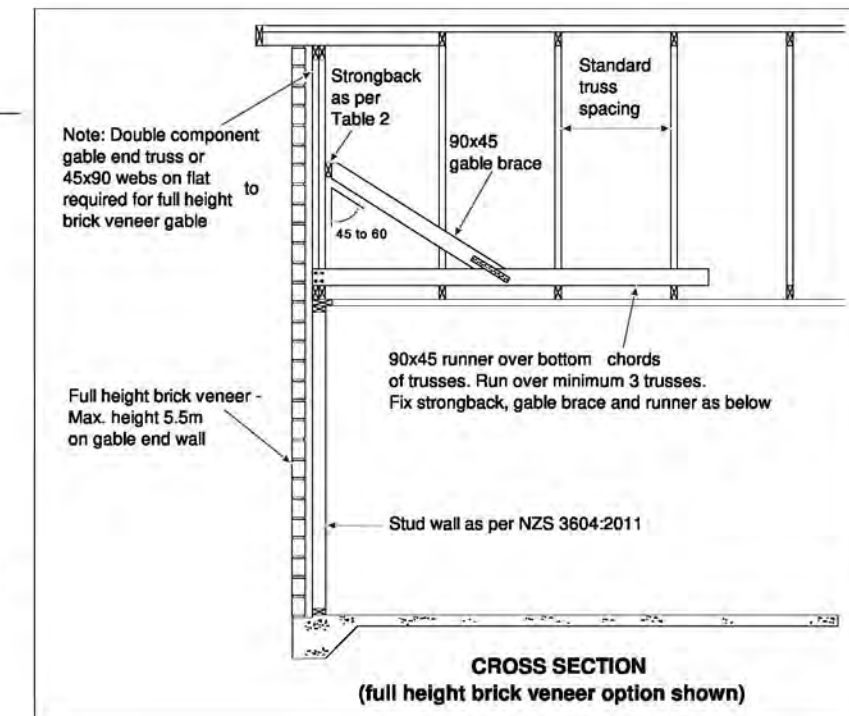
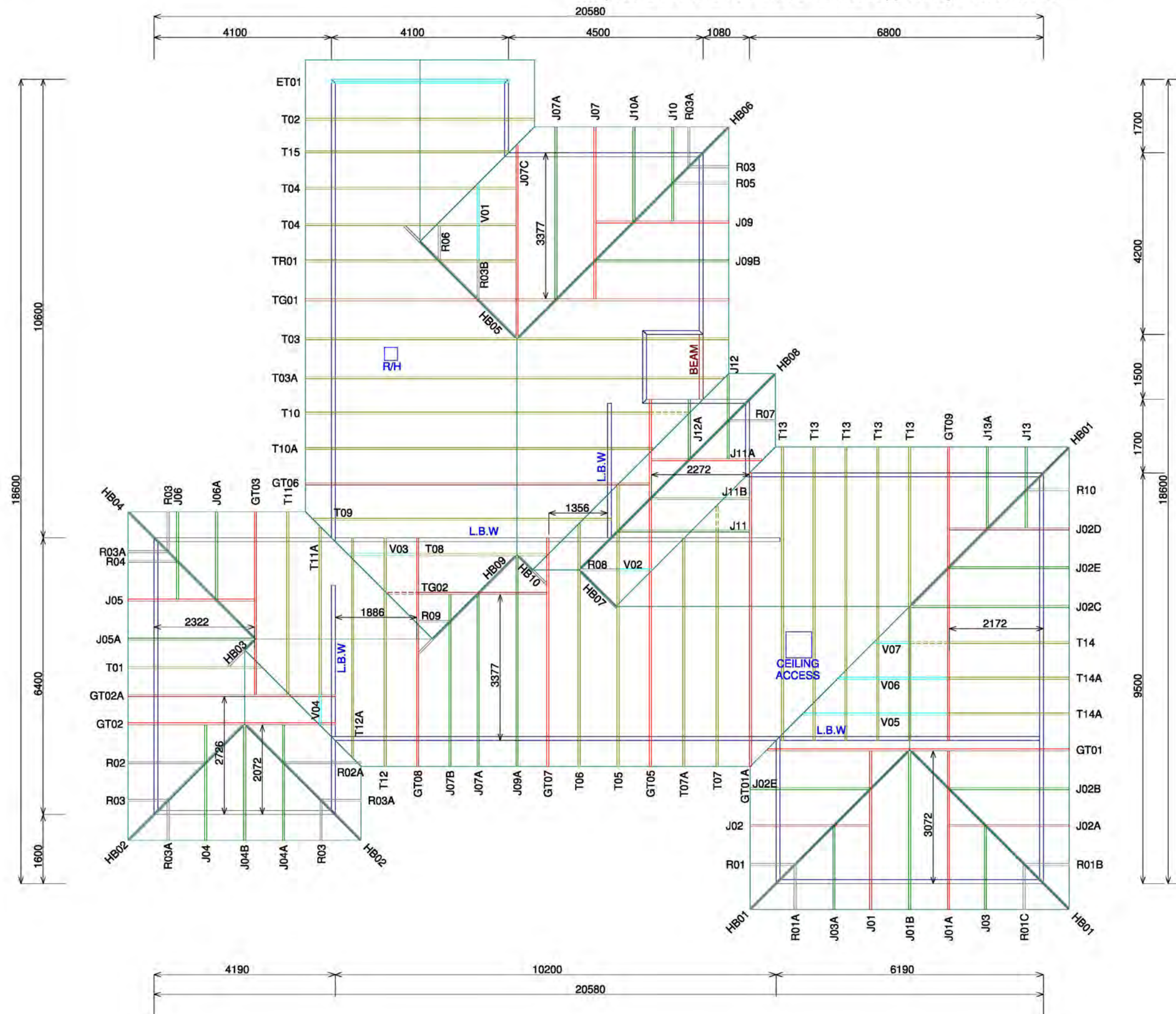
Building type	Min. blows per 300mm depth
A	6
B	7
C	8
D	9

In blows/100mm consistent with the appended Scala tests

- a) For type A 2 blows/100mm minimum
- b) For type B 2.33 blows/100mm minimum
- c) For type C 2.67 blows/100mm minimum
- D) For type D 3 blows/100mm minimum

This report is provided solely for the use of District Council and the consent holder. Should you require any further information please contact us directly.

Layout is null and void if trusses not supplied by PlaceMakers



BC190682
Further Information Received
10/09/2019

PlaceMakers
Know how. Can do.

Site Address :
Beattie
Lot 3, Hadfield Road
Peka Peka
Kapiti Coast

Sheet Title :
**For Building Consent
Buildable Truss Layout**
Date : 09 Sep, 2019
Scale : 1: 100
Drawn : Hoang Duong
System : MiTek 20/20

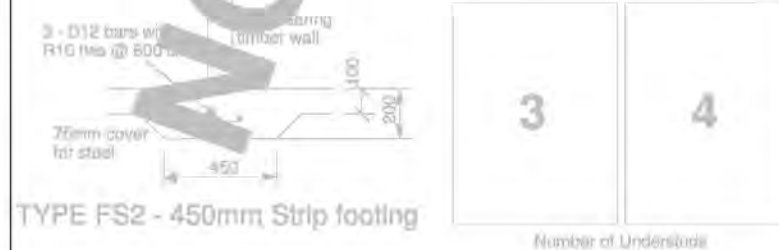
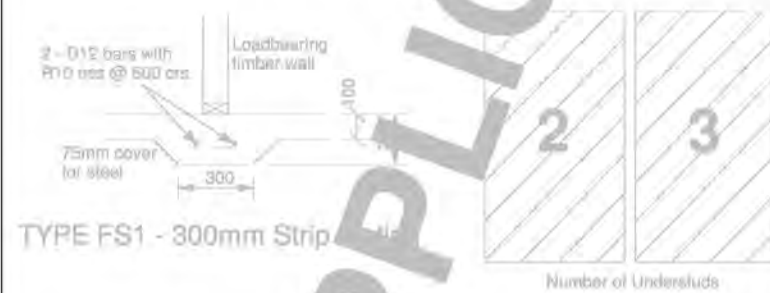
Job Details:
Roof Pitch : 25.0 Deg
Roof Material : Metal Tiles
Ceiling Material : Gib Board 13mm
Wind Zone : Very High
Roof Snow Load : 0.000 kPa

Truss Centres : 900 mm
Roof Live Load : 0.250kPa
Floor Live Load : kPa
Wind Speed : 50.0 m/s

PrimeCad v4.7.301
MiTek

Job Title :
BL171576
Sheet :
1
Revision Number :

Slab Thickening Details



NOTES:

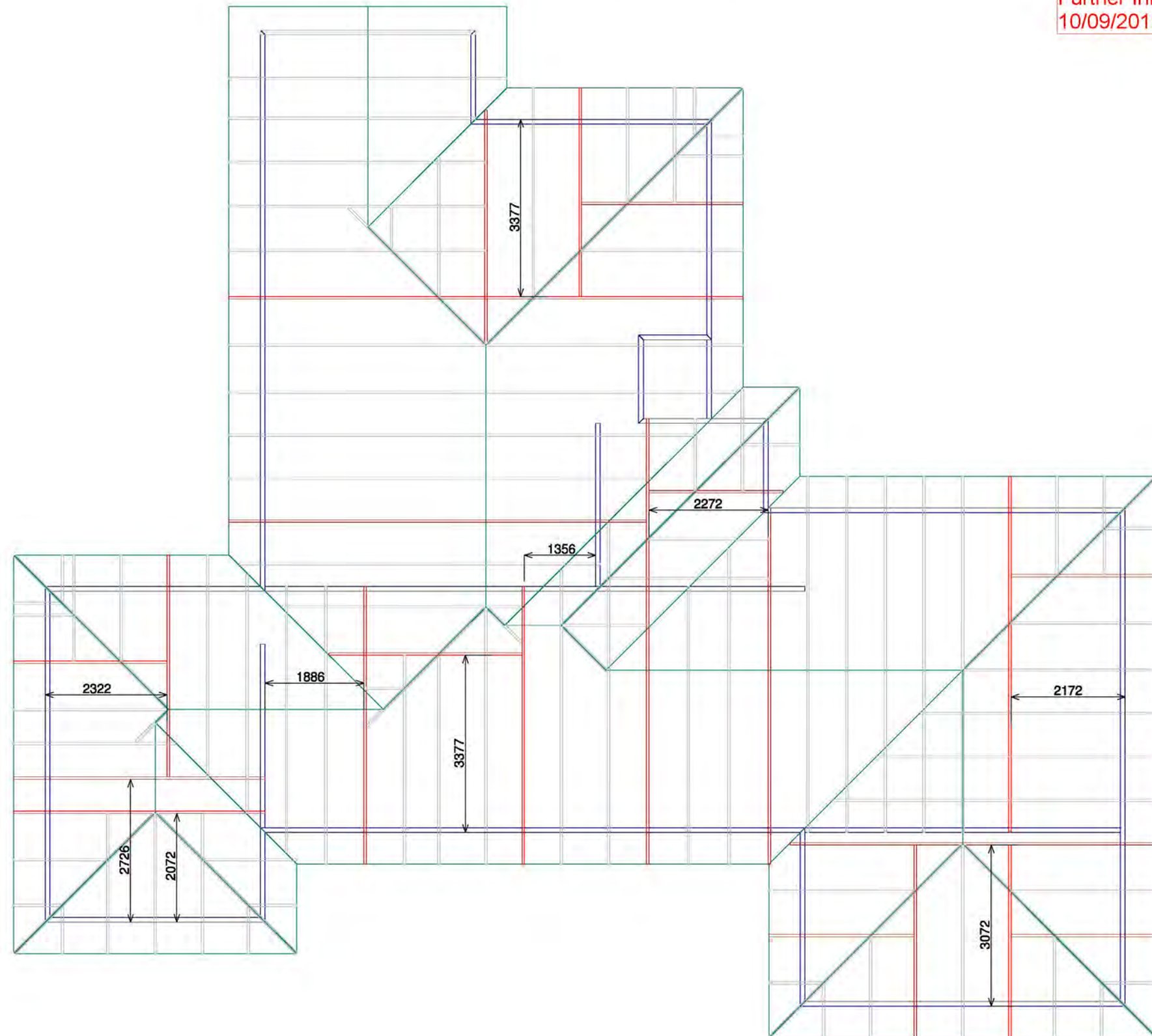
All point loads exceeding 8.0kN are indicated.

All walls shown to be considered load bearing.

Refer to Rib-raft floor design for slab thickening.

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10/09/2019



RIB-RAFT FLOOR TO BE CONFIRMED

PlaceMakers
Know how. Can do.

Site Address :
Beattie
Lot 3, Hadfield Road
Peka Peka
Kapiti Coast

Sheet Title :
**For Building Consent
Slab Thickening**

Date : 09 Sep,2019 Drawn : Hoang Duong
Scale : 1: 100 System : MiTek 20/20

Job Details:
Roof Pitch : 25.0 Deg
Roof Material : Metal Tiles
Ceiling Material : Gib Board 13mm
Wind Zone : Very High
Roof Snow Load : 0.000 kPa

Truss Centres : 900 mm
Roof Live Load : 0.250kPa
Floor Live Load : kPa
Wind Speed : 50.0 m/s

MiTek
MiTek

Job Title :
BL171576
Sheet :
2
Revision Number :

PrimeCad v4.7.301

Lintel Fixing Details

TYPE E
1.4kN

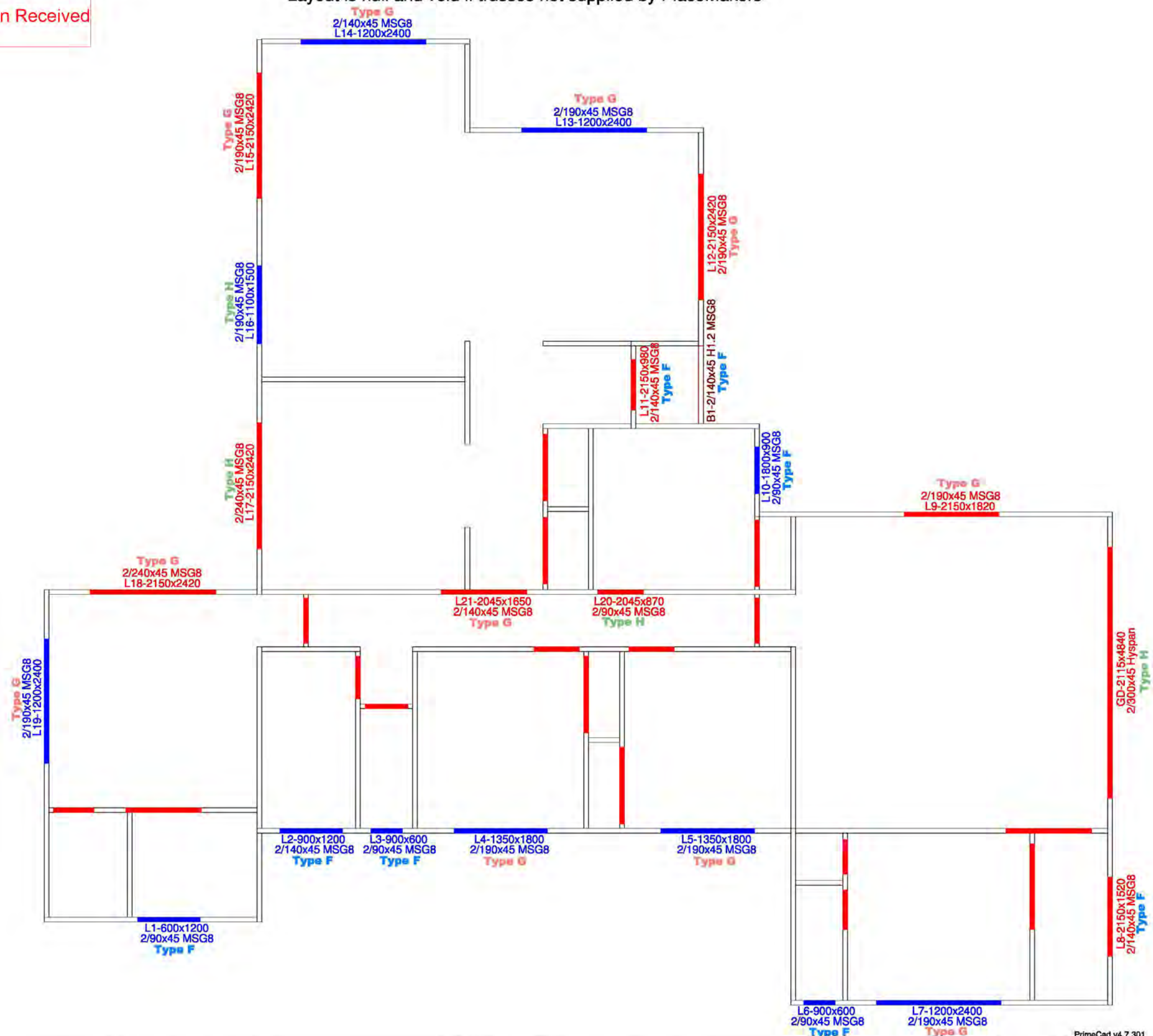
TYPE F
4.0kN

TYPE G
7.5kN

TYPE H
13.5kN

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NOTES:

Refer to:
Lintel Fixing Schedule 01/2018
pages 73 & 74, Structural Fixings
On-site Guide for Building Code
Compliance 2018 Edition

(Alternative to NZS 3604:2011
Table 8.14 & Figure 8.12)

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Site Address :
Beattie
Lot 3, Hadfield Road
Peka Peka
Kapiti Coast

Sheet Title :
**For Building Consent
Lintel Fixing**

Date : 09 Sep,2019 Drawn : Hoang Duong
Scale : 1: 100 System : MiTek 20/20

Job Details:
Roof Pitch : 25.0 Deg
Roof Material : Metal Tiles
Ceiling Material : Gib Board 13mm
Wind Zone : Very High
Roof Snow Load : 0.000 kPa

Truss Centres : 900 mm
Roof Live Load : 0.250kPa
Floor Live Load : kPa
Wind Speed : 50.0 m/s

MiTek

PrimeCad v4.7.301

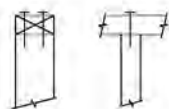
Job Title :
BL171576
Sheet :
3
Revision Number :

Stud to top plate fixing details

Type A is minimum fixing required unless specified otherwise

FIXING TYPE A 0.7kN

2/90x3.33 plain steel wire nails driven vertically into stud.

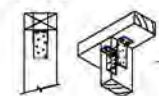


FIXING TYPE B 4.7kN

2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.

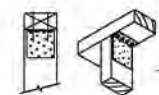
Plus 2x LUMBERLOK CPC40

AND



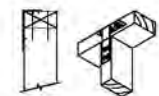
OR

Plus LUMBERLOK 6 kN Stud Anchor (CPC80)



OR

Plus LUMBERLOK Stud Strap (One face only)



Recommended for internal wall options to avoid lining issues.

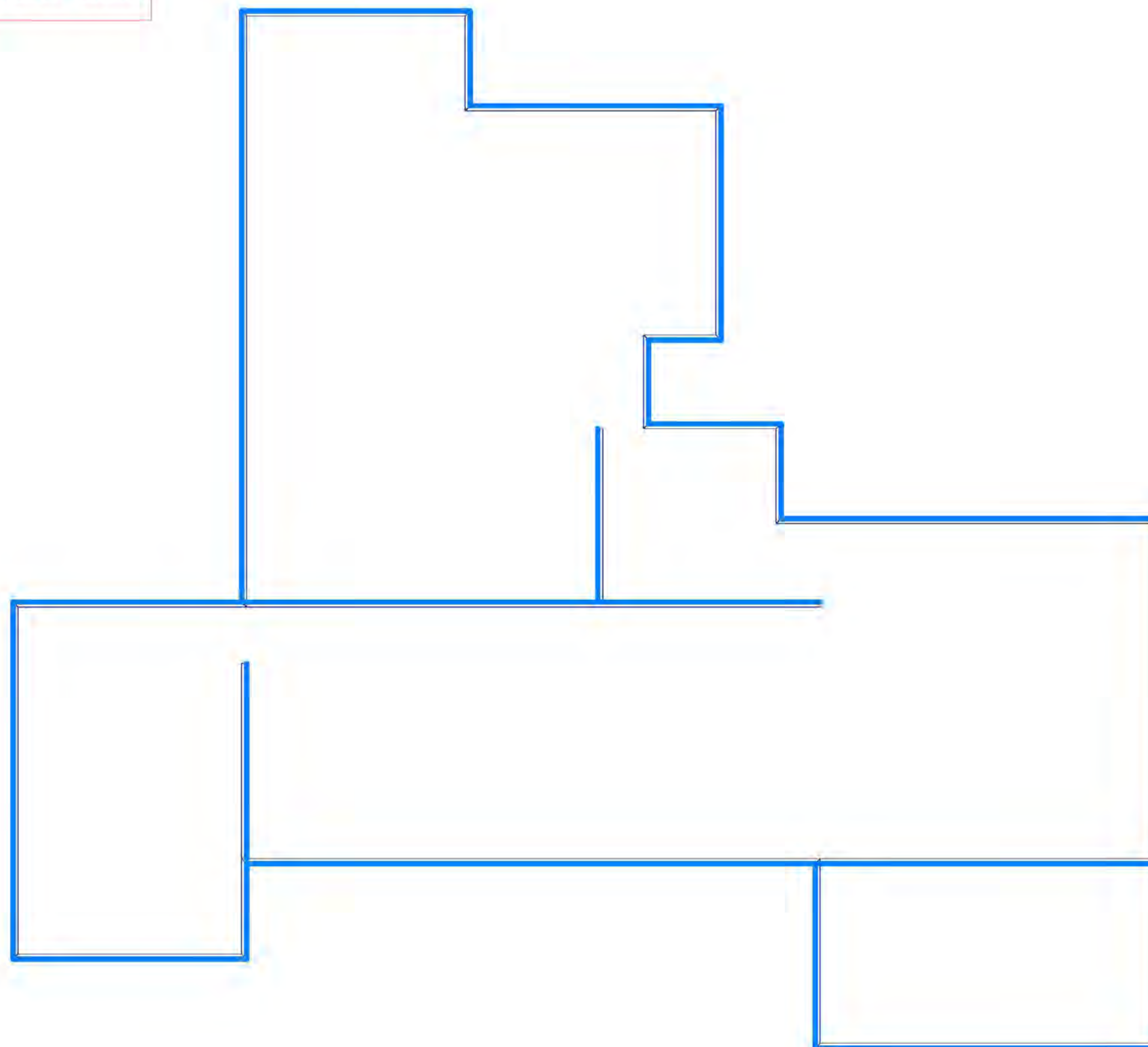
NOTES:

Refer to:
LUMBERLOK Wall Fixing Chart - Stud to Top Plate Fixing Schedule 09/2011

(Alternative to NZS3604:2011 Table 8.18)

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Further Information Received
10/09/2019



PlaceMakers
Know how. Can do.

Site Address :
Beattie
Lot 3, Hadfield Road
Peka Peka
Kapiti Coast

Sheet Title :
**For Building Consent
Stud To Top Plate Fixing**

Date : 09 Sep,2019 Drawn : Hoang Duong
Scale : 1:100 System : MiTek 20/20

Job Details:
Roof Pitch : 25.0 Deg
Roof Material : Metal Tiles
Ceiling Material : Gib Board 13mm
Wind Zone : Very High
Roof Snow Load : 0.000 kPa

Truss Centres : 900 mm
Roof Live Load : 0.250kPa
Floor Live Load : kPa
Wind Speed : 50.0 m/s

MiTek














PrimeCad v4.7.301

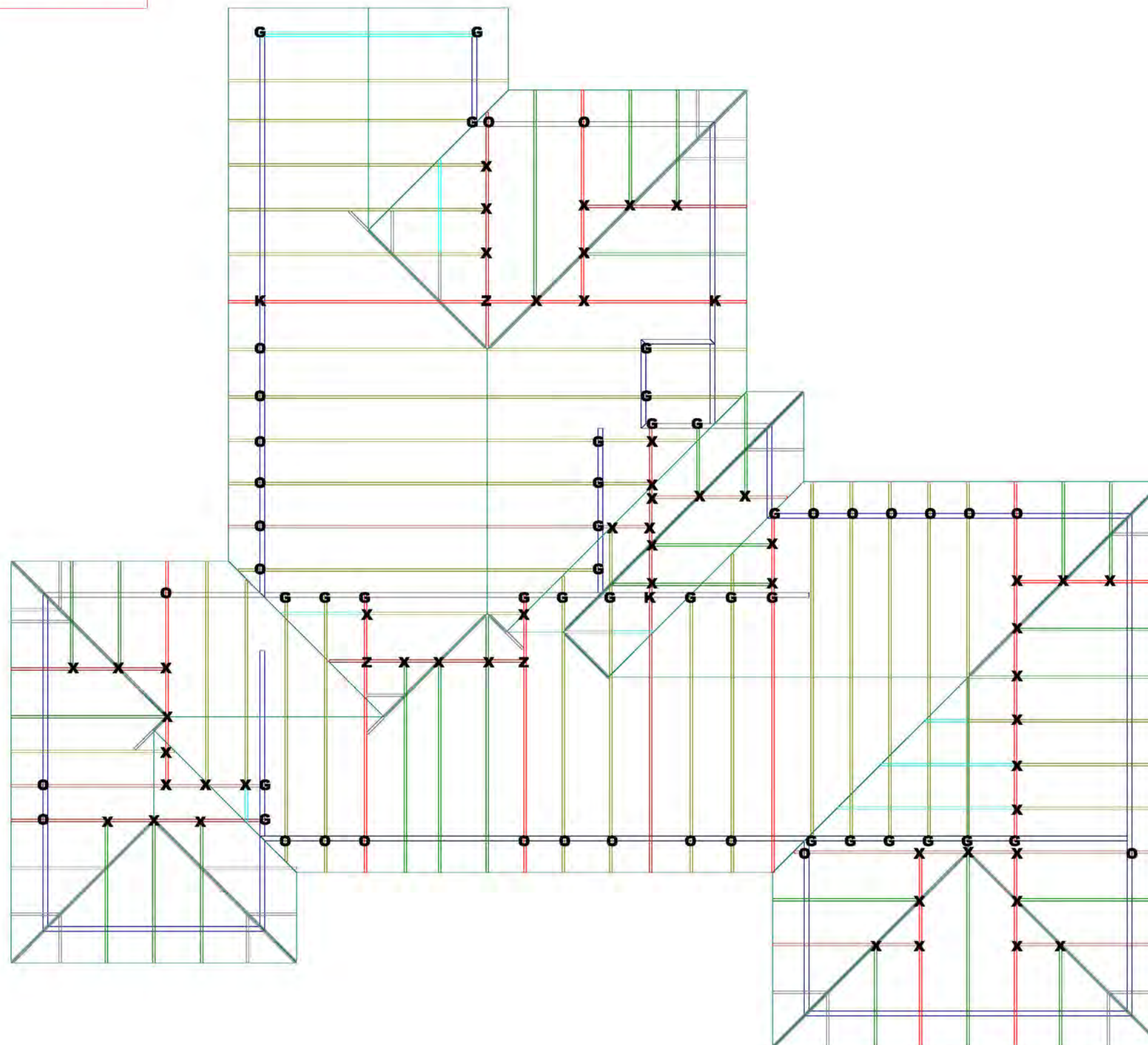
Job Title :
BL171576
Sheet :
4
Revision Number :

Truss Fixings

BC190682
Further Information Received
10/09/2019

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-  X - LUMBERLOK JH47x90 Joist Hanger
-  Z - LUMBERLOK JH47x120 Joist Hanger
-  P - LUMBERLOK JH47x190 Joist Hanger
-  E - LUMBERLOK JH95x165 Joist Hanger
-  O - Pair of LUMBERLOK CT200 Ceiling Ties
-  H - LUMBERLOK CT400 Cyclone Tie
-  B - LUMBERLOK CT600 Cyclone Tie
-  M - Pair of LUMBERLOK Multi Grips
-  NP - LUMBERLOK Nailon Plate
-  N - LUMBERLOK N21 Diagonal Cleat
-  W - Pair of LUMBERLOK CPC40 Cleats
-  K - LUMBERLOK TTP 16kN Truss to Top Plate set
-  G - LUMBERLOK TTP 9kN Truss to Top Plate set



NOTES:

All other areas must have at the minimum
2/ 90x3.15mm skew nails + 2 wire dogs (4.7kN)
for truss to top plate connections.

Refer to:
LUMBERLOK Timber Connectors Characteristic
Loadings Data brochure 03/4

PlaceMakers
Know how. Can do.

Site Address :
Beattie
Lot 3, Hadfield Road
Peka Peka
Kapiti Coast

Sheet Title :
**For Building Consent
Truss Fixings**

Date : 09 Sep,2019 Drawn : Hoang Duong
Scale : 1: 100 System : MiTek 20/20

Job Details:
Roof Pitch : 25.0 Deg
Roof Material : Metal Tiles
Ceiling Material : Gib Board 13mm
Wind Zone : Very High
Roof Snow Load : 0.000 kPa

Truss Centres : 900 mm
Roof Live Load : 0.250kPa
Floor Live Load : kPa
Wind Speed : 50.0 m/s

MiTek
MiTek

Job Title :
BL171576
Sheet :
5
Revision Number :

PrimeCad v4.7.301

LINTEL FIXING SCHEDULE ALTERNATIVE TO TABLE 8.14 & FIGURE 8.12 NZS 3604:2011

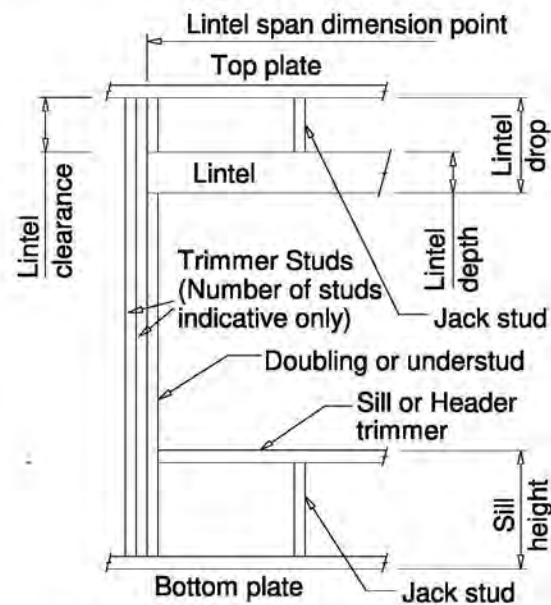
NOTE:

- ★ All fixings are designed for vertical loads only. Dead loads include the roof weight and standard ceiling weight of 0.20 kPa.
- ★ 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

SELECTION CHART FOR LINTEL FIXING

Lintel Span	Loaded Dimension (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	F	F	F	E	E	F	F	F
	4.0	E	F	F	F	G	E	F	F	F	F
	5.0	E	F	F	G	G	E	F	F	F	G
	6.0	E	F	F	G	G	E	F	F	F	G
1.2	2.0	E	E	F	F	F	E	E	F	F	F
	3.0	E	E	F	F	F	E	E	F	F	F
	4.0	E	F	F	G	G	E	F	F	F	G
	5.0	E	F	F	G	G	E	F	F	F	G
	6.0	F	F	G	G	H	E	F	F	G	G
1.5	2.0	E	E	F	F	F	E	E	F	F	F
	3.0	E	F	F	F	G	E	E	F	F	F
	4.0	E	F	F	G	G	E	F	F	F	G
	5.0	F	F	G	G	H	E	F	F	G	G
	6.0	F	F	G	G	H	E	F	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	F	F	G	G
	5.0	F	F	G	G	H	E	F	F	G	H
	6.0	F	G	G	H	H	E	F	F	G	H
2.4	2.0	E	F	F	G	G	E	F	F	F	G
	3.0	F	F	G	G	H	E	F	G	G	H
	4.0	F	F	G	G	H	E	F	G	G	H
	5.0	F	G	G	H	H	E	F	G	H	H
	6.0	F	G	H	H	-	E	F	G	H	H
3.0	2.0	E	F	F	G	G	E	E	F	F	G
	3.0	F	F	G	G	H	E	E	F	G	H
	4.0	F	G	G	H	H	E	F	G	H	H
	5.0	F	G	H	H	-	E	F	G	H	H
	6.0	F	G	H	-	-	E	F	F	G	H
3.6	2.0	F	F	G	G	H	E	E	F	G	G
	3.0	F	F	G	G	H	E	F	G	G	H
	4.0	F	G	H	H	-	E	F	G	H	H
	5.0	F	G	H	-	-	E	F	G	H	-
	6.0	G	H	H	-	-	E	F	H	-	-
4.2	2.0	F	F	G	G	H	E	E	F	G	G
	3.0	F	G	H	H	-	E	F	G	H	H
	4.0	F	G	H	-	-	E	F	G	H	-
	5.0	G	G	H	-	-	E	F	H	-	-
	6.0	G	H	-	-	-	E	F	H	-	-
4.5	2.0	F	F	G	H	H	E	E	F	G	H
	3.0	F	G	H	H	-	E	F	G	H	H
	3.4	F	G	H	H	-	E	F	G	H	H
	4.0	F	G	H	-	-	E	F	G	H	-
	5.0	G	H	-	-	-	E	F	H	-	-
4.8	2.0	F	F	G	H	H	E	E	F	G	H
	3.0	F	G	H	H	-	E	F	G	H	H
	3.2	F	G	H	H	-	E	F	G	H	H
	4.0	F	G	H	-	-	E	F	H	-	-
	5.0	G	H	-	-	-	E	F	H	-	-
5.1	2.0	F	F	G	H	H	E	F	G	G	H
	3.0	F	G	H	H	-	E	F	G	H	H
	3.5	F	G	H	-	-	E	F	G	H	-
	4.0	G	G	H	-	-	E	F	H	-	-
	5.0	G	H	-	-	-	E	F	H	-	-
5.4	2.0	F	F	G	H	H	E	F	G	G	H
	2.8	F	G	H	H	-	E	F	G	H	H
	3.0	F	G	H	-	-	E	F	G	H	-
	4.0	G	H	H	-	-	E	F	H	-	-
	5.0	G	H	-	-	-	E	F	H	-	-
	6.0	G	H	-	-	-	E	G	H	-	-

DEFINITIONS



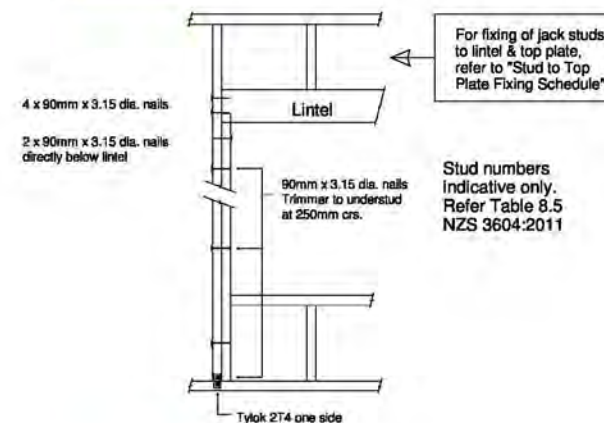
Lintel Supporting Girder Trusses:

Roof Tributary Area	Light Roof Wind Zone				Heavy Roof Wind Zone			
	L, M, H	VH	EH		L, M, H	VH	EH	
8.6 m²	G	G	H		G	G	H	
11.6 m²	G	H	H		G	G	H	
12.1 m²	G	H	H		G	H	H	
15.3 m²	H	H	-		G	H	H	
19.1 m²	H	-	-		G	H	-	
20.9 m²	H	-	-		H	H	-	
21.8 m²	H	-	-		H	-	-	
34.3 m²	-	-	-		H	-	-	

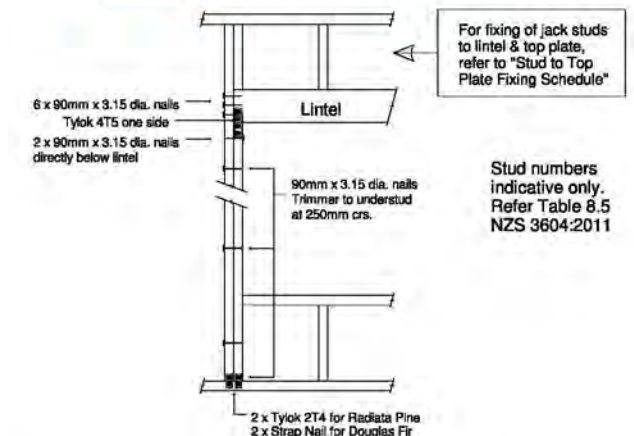
Notes:

- 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.

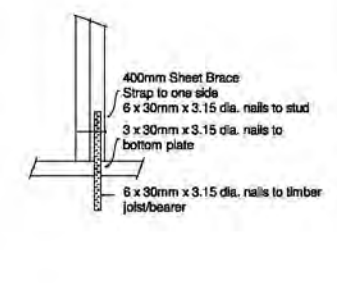
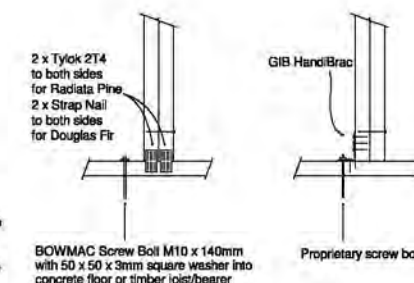
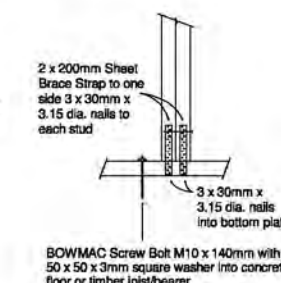
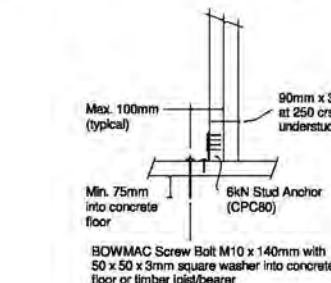
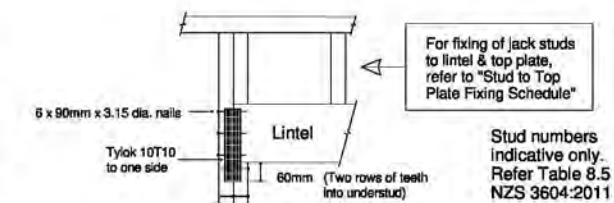
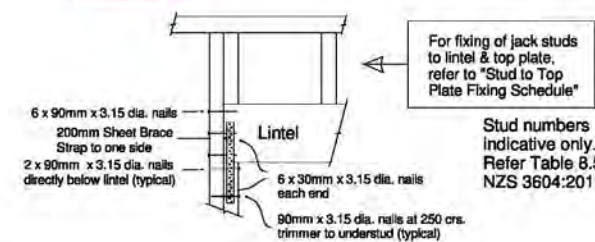
TYPE E 1.4kN



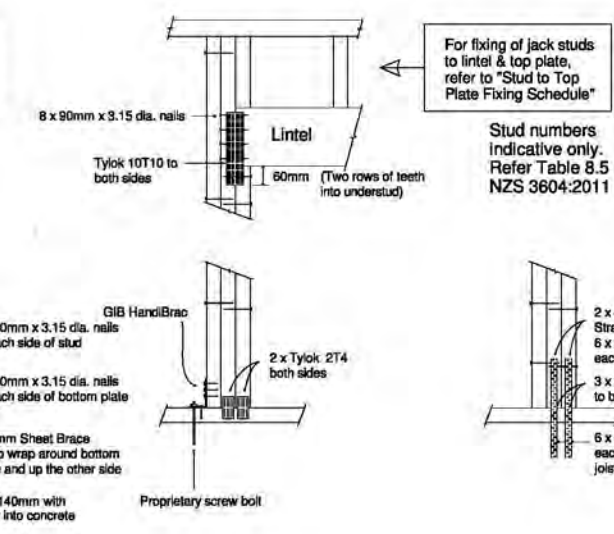
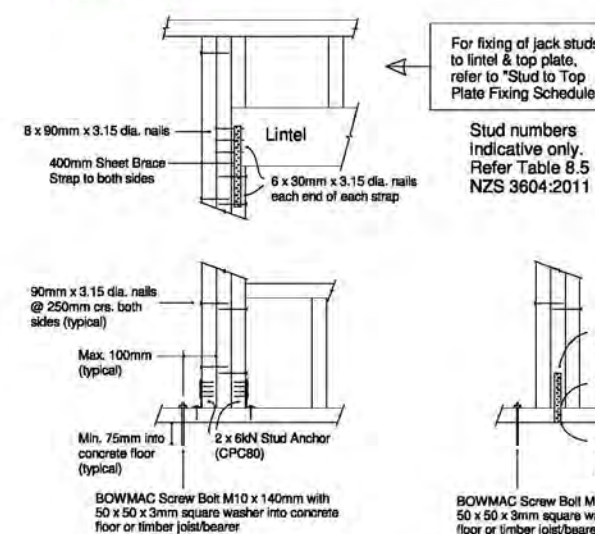
TYPE F 4.0kN



TYPE G 7.5kN



TYPE H 13.5kN





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 8387, Riccarton 8440
Phone: 03 348 8691
Fax: 03 348 0314

MiTek 20/20 Engineering 4.7.301.0

www.mitek.nz.co.nz
Printed: 15:27:23 09 Sep 2019

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

ISSUED BY: **MiTek New Zealand Limited**
TO: **Placemakers National Estimating Unit (NEU)**
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 **BL171576** 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, September 09, 2019**

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

BC190682
Further Information Received
10/09/2019

Placemakers National Estimating Unit (NEU)

Fabricator Design Statement : Page 1

Job: BL171576

Client: G J Gardner Homes Kapiti/Porirua

Site:

Beattie
Lot 3, Hadfield Road
Peka Peka
Kapiti Coast

Description:
Building Consent No.:

Phone:

MITek 20/20 Engineering 4.7.301.0

MITek New Zealand Limited

Printed: 15:27:29 09 Sep 2019

MITEK FABRICATOR DESIGN STATEMENT

This statement is issued by MITek accredited fabricator **Placemakers National Estimating Unit (NEU)**, 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: NEU-H1.2

Pitch: 25.0 deg

Nominal Overhang:

Roof		Ceiling		Wind	
Material:	Metal Tiles	Material:	Gib Board 13mm	Area:	Very High (50.0 m/s)
Dead Load:	0.210 kPa	Dead Load:	0.200 kPa	Pressure Coeff:	Cpe = varies; Cpi = -0.30, 0.20
Restraints:	400 mm centres	Restraints:	600 mm centres		
Live Load:	Q _{ur} = 0.250 kPa	Live Load:	Q _c = 1.400 kN		
	Q _c = 1.100 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, ~~xxx~~ = 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)	Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)	Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)
ET01	1D	4100	25.000	900	T07	1	4690	25.000	900	T10A	1	7363	25.000	900
*HB01	3	5194	18.249	900	T08	1	2968	25.000	900	T11A	1	3630	25.000	900
*HB02	2	3780	18.249	900	T09	1	6480	25.000	900	T12A	1	4690	25.000	900
*HB03	1	861	18.248	900	T10	1	7363	25.000	900	T14A	2	2172	25.000	900
*HB04	1	4133	18.249	900	T11	1	3629	25.000	900	GT02	1	4190	25.000	900
*HB05	1	3672	18.249	900	T12	1	4690	25.000	900	J02	1	2172	25.000	900
*HB06	1	6898	18.249	900	T13	5	6190	25.000	900	J05	1	2322	25.000	900
*HB07	1	1210	18.249	900	T14	1	2172	25.000	900	J09	1	2477	25.000	900
*HB08	1	6396	18.249	900	T15	1	4100	25.000	900	J11A	1	2272	25.000	900
*HB09	1	3191	18.249	900	TR01	1	4278	25.000	900	GT05	1	7890	25.000	900
*HB10	1	942	18.249	900	V01	1	1755	25.000	900	J02A	1	2172	25.000	900
J03	1	1322	25.000	900	V02	1	755	25.000	900	J02B	1	2172	25.000	900
J04	1	2072	25.000	900	V03	1	1609	25.000	900	J02C	1	2172	25.000	900
J06	1	1422	25.000	900	V04	1	694	24.999	900	J02D	1	2172	25.000	900
J10	1	1577	25.000	900	V05	1	3338	25.000	900	J02E	2	2172	25.000	900
J11	1	2272	25.000	900	V06	1	2511	25.000	900	J05A	1	2322	25.000	900
J12	1	1372	25.000	900	V07	1	805	25.000	900	J09A	1	3377	25.000	900
J13	1	1272	25.000	900	GT06	1	7363	25.000	900	J09B	1	2477	25.000	900
*R01	1	1035	25.000	900	J03A	1	1322	25.000	900	GT03	1	3629	25.000	900
*R02	1	1785	25.000	900	J04A	1	2072	25.000	900	GT09	1	6190	25.000	900
*R03	4	913	25.000	900	J04B	1	2072	25.000	900	J01	1	3072	25.000	900
*R04	1	1135	25.000	900	J06A	1	1422	25.000	900	J07	1	3377	25.000	900
*R05	1	1290	25.000	900	J10A	1	1577	25.000	900	GT02A	1	4190	25.000	900
*R06	1	809	25.000	900	J11B	1	2272	25.000	900	J01A	1	3072	25.000	900
*R07	1	1085	25.000	900	J12A	1	1372	25.000	900	J01B	1	3072	25.000	900
*R08	1	901	25.000	900	J13A	1	1272	25.000	900	J07A	2	3377	25.000	900
*R09	1	706	25.000	900	*R01A	1	1035	25.000	900	J07B	1	3377	25.000	900
*R10	1	985	25.000	900	*R01B	1	1035	25.000	900	J07C	1	3377	25.000	900
T01	1	2322	25.000	900	*R01C	1	1035	25.000	900	GT01	1	6190	25.000	900
T02	1	4100	25.000	900	*R02A	1	1785	25.000	900	TG01	1	8600	25.000	900
T03	1	8600	25.000	900	*R03A	4	913	25.000	900	TG02	1	2968	25.000	900
T04	2	4278	25.000	900	*R03B	1	914	25.000	900	GT01A	1	6190	25.000	900
T05	1	5914	25.000	900	T03A	1	8600	25.000	900	GT07	1	4690	25.000	900
T06	1	4690	25.000	900	T07A	1	4690	25.000	900	GT08	1	4690	25.000	900

Total quantity : 119

The computer design input has been carried out by:

Signed:

Date: ...Monday, September 09, 2019....

Name of Detailer: Hoang Duong

Qualifications and Title:

On behalf of:

Placemakers National Estimating Unit (NEU)
25 Vickery St, Te Rapa, Hamilton,
Phone:

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 1170:2002 Structural design actions, Parts 0 and 1.
4. AS/NZS 1170:2011 Structural design actions, Part 2: Wind actions.
5. AS/NZS 1170:2003 Structural design actions, Part 3: Snow and ice actions.
6. AS 1720.1:2010 Timber structures. Part 1: Design methods.
7. 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: 6 February 2019

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:	Hoang Duong
Business name:	PlaceMakers
Email:	neuadmin@placemakers.co.nz

Project & site details:

Project:	19-00171576
Site address:	Lot 3, Hadfield Road, Peka Peka Kapiti Coast
Design wind zone	Very high
Snow loading	Design snow zone: N0

MEMBER DESIGN DETAILS

Member 1

- | | |
|--------------------------------|---|
| 1) Member code and description | L1 - Lintels - In single or upper storey load bearing walls |
| 2) Date prepared | 15 July 2019 |
| 3) Serviceability criteria | AS 1720.1: 2010 and AS 1720.3: 2016 |

4) Design inputs

Span	1.2 m
Roof load width 'RLW'	1.8 m
Roof type and mass	Light roof and ceiling - 40 kg/m ²
Nominal wall thickness	90 mm

5) Member specification

Size, stress grade/product	Use 2/90 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - G + $\Psi_L Q^*$	4.0 mm	1.4 mm (long term)	2.8
Live load - $\Psi_S Q$	4.8 mm	0.4 mm	11.2
Wind load - W_s	6.0 mm	1.7 mm	3.6

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3} End kN ⁴
1.35G	0.60	-1.1
1.2G + 1.5Q	0.80	-1.7
1.2G + W_u + $\Psi_c Q$	1.00	-2.8
0.9G + W_u	1.00	2.2

8) Installation requirements

- Provide at least 30 mm bearing at end supports

Member 2

1) Member code and description

L2 - Lintels - In single or upper storey load bearing walls

2) Date prepared

15 July 2019

3) Serviceability criteria

AS 1720.1: 2010 and AS 1720.3: 2016

4) Design inputs

Span	1.2 m
Roof load width 'RLW'	3.3 m
Roof type and mass	Light roof and ceiling - 40 kg/m ²
Nominal wall thickness	90 mm

5) Member specification

Size, stress grade/product	Use 2/140 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - $G + \Psi_L Q^*$	4.0 mm	0.9 mm (long term)	4.3
Live load - $\Psi_S Q$	4.8 mm	0.3 mm	17.1
Wind load - W_s	6.0 mm	1.1 mm	5.5

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1 ¹	Limit States Design Reaction ^{2,3} End kN ⁴
1.35G	0.60	-1.8
1.2G + 1.5Q	0.80	-2.8
1.2G + W_u + $\Psi_c Q$	1.00	-4.7
0.9G + W_u	1.00	3.7

8) Installation requirements

- Provide at least 30 mm bearing at end supports

Member 3

- Member code and description** L3 - Lintels - In single or upper storey load bearing walls
- Date prepared** 15 July 2019
- Serviceability criteria** AS 1720.1: 2010 and AS 1720.3: 2016
- Design inputs**
 - Span 0.6 m
 - Roof load width 'RLW' 2.5 m
 - Roof type and mass Light roof and ceiling - 40 kg/m²
 - Nominal wall thickness 90 mm
- Member specification**
 - Size, stress grade/product Use 2/90 x 45 SG8
 - Material type Dry softwood, machine stress graded and verified (NZS 3622)
 - Assumed design density < 480 kg/m³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - $G + \Psi_L Q^*$	2.0 mm	0.2 mm (long term)	8.3
Live load - $\Psi_S Q$	2.4 mm	0.1 mm	32.3
Wind load - W_s	3.0 mm	0.3 mm	10.4

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1 ¹	Limit States Design Reaction ^{2,3} End kN ⁴
1.35G	0.60	-1.3
1.2G + 1.5Q	0.80	-2.0

1.2G + W _u + Ψ _c Q	1.00	-3.3
0.9G + W _u	1.00	2.6

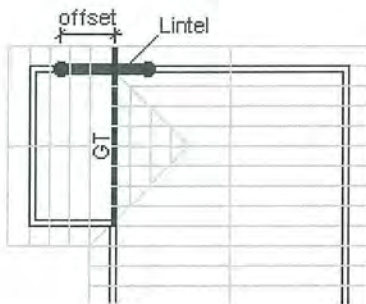
8) Installation requirements

- Provide at least 30 mm bearing at end supports

Member 4

1) Member code and description

L4 - Lintels - Supporting girder truss / truncated girder truss



2) Date prepared

15 July 2019

3) Serviceability criteria

AS 1720.1: 2010 and AS 1720.3: 2016

4) Design inputs

Roof type	Light roof and ceiling - 40 kg/m ²
Roof pitch	25.0 °
Truss spacing	900 mm
Eaves overhang	600 mm
Common truss span	2968 mm
GT span	4690 mm
GT offset	562 mm
Lintel span	1800 mm
Nominal wall thickness	90 mm

5) Member specification

Size, stress grade/product	Use 2/190 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - G + Ψ _L Q*	6.0 mm	1.8 mm (long term)	3.3
Live load - Ψ _S Q	7.2 mm	0.6 mm	12.9
Wind load - W _s	9.0 mm	2.2 mm	4.1

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-2.4
1.2G + 1.5Q	0.80	-3.8
1.2G + W_u + $\Psi_c Q$	1.00	-6.2
0.9G + W_u	1.00	4.9

8) Installation requirements

- Provide at least 30 mm bearing at end supports
- Nail lamination required - refer AS 1684

Member 5

1) Member code and description	L5 - Lintels - In single or upper storey load bearing walls
2) Date prepared	15 July 2019
3) Serviceability criteria	AS 1720.1: 2010 and AS 1720.3: 2016
4) Design inputs	
Span	1.8 m
Roof load width 'RLW'	3.5 m
Roof type and mass	Light roof and ceiling - 40 kg/m ²
Nominal wall thickness	90 mm
5) Member specification	
Size, stress grade/product	Use 2/190 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - $G + \Psi_L Q^*$	6.0 mm	1.5 mm (long term)	4.1
Live load - $\Psi_s Q$	7.2 mm	0.4 mm	16.6
Wind load - W_s	9.0 mm	1.7 mm	5.3

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-2.4
1.2G + 1.5Q	0.80	-3.7
1.2G + W_u + $\Psi_c Q$	1.00	-6.2
0.9G + W_u	1.00	4.8

8) Installation requirements

- Provide at least 30 mm bearing at end supports

Member 6

- 1) Member code and description L6 - Lintels - In single or upper storey load bearing walls
- 2) Date prepared 15 July 2019
- 3) Serviceability criteria AS 1720.1: 2010 and AS 1720.3: 2016
- 4) Design inputs
- | | |
|------------------------|---|
| Span | 0.6 m |
| Roof load width 'RLW' | 1.5 m |
| Roof type and mass | Light roof and ceiling - 40 kg/m ² |
| Nominal wall thickness | 90 mm |
- 5) Member specification
- | | |
|----------------------------|---|
| Size, stress grade/product | Use 2/90 x 45 SG8 |
| Material type | Dry softwood, machine stress graded and verified (NZS 3622) |
| Assumed design density | < 480 kg/m ³ |

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - G + $\Psi_L Q^*$	2.0 mm	0.1 mm (long term)	13.7
Live load - $\Psi_S Q$	2.4 mm	0.0 mm	53.8
Wind load - W_s	3.0 mm	0.2 mm	17.3

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-0.8
1.2G + 1.5Q	0.80	-1.2
1.2G + W_u + $\Psi_c Q$	1.00	-2.0
0.9G + W_u	1.00	1.6

8) Installation requirements

- Provide at least 30 mm bearing at end supports

Member 7

- 1) Member code and description L7 - Lintels - In single or upper storey load bearing walls
- 2) Date prepared 15 July 2019
- 3) Serviceability criteria AS 1720.1: 2010 and AS 1720.3: 2016
- 4) Design inputs
- | | |
|------------------------|---|
| Span | 2.4 m |
| Roof load width 'RLW' | 2.4 m |
| Roof type and mass | Light roof and ceiling - 40 kg/m ² |
| Nominal wall thickness | 90 mm |

5) Member specification

Size, stress grade/product	Use 2/190 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - $G + \Psi_L Q^*$	8.0 mm	2.5 mm (long term)	3.2
Live load - $\Psi_S Q$	9.6 mm	0.7 mm	13.6
Wind load - W_s	12.0 mm	2.8 mm	4.4

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-2.1
1.2G + 1.5Q	0.80	-3.2
1.2G + $W_u + \Psi_c Q$	1.00	-5.3
0.9G + W_u	1.00	4.1

8) Installation requirements

- Provide at least 30 mm bearing at end supports

Member 8

1) Member code and description L8 - Lintels - In single or upper storey load bearing walls

2) Date prepared 15 July 2019

3) Serviceability criteria AS 1720.1: 2010 and AS 1720.3: 2016

4) Design inputs

Span	1.5 m
Roof load width 'RLW'	1.9 m
Roof type and mass	Light roof and ceiling - 40 kg/m ²
Nominal wall thickness	90 mm

5) Member specification

Size, stress grade/product	Use 2/140 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - $G + \Psi_L Q^*$	5.0 mm	1.1 mm (long term)	4.7
Live load - $\Psi_S Q$	6.0 mm	0.3 mm	19.0
Wind load - W_s	7.5 mm	1.2 mm	6.1

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-1.2
1.2G + 1.5Q	0.80	-1.8
1.2G + W_u + $\Psi_c Q$	1.00	-3.0
0.9G + W_u	1.00	2.4

8) Installation requirements

- Provide at least 30 mm bearing at end supports

Member 9

1) Member code and description L9 - Lintels - In single or upper storey load bearing walls

2) Date prepared 15 July 2019

3) Serviceability criteria AS 1720.1: 2010 and AS 1720.3: 2016

4) Design inputs

Span	1.8 m
Roof load width 'RLW'	4.1 m
Roof type and mass	Light roof and ceiling - 40 kg/m ²
Nominal wall thickness	90 mm

5) Member specification

Size, stress grade/product	Use 2/190 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - $G + \Psi_L Q^*$	6.0 mm	1.7 mm (long term)	3.5
Live load - $\Psi_S Q$	7.2 mm	0.5 mm	14.1
Wind load - W_s	9.0 mm	2.0 mm	4.5

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-2.8
1.2G + 1.5Q	0.80	-4.4
1.2G + W_u + $\Psi_c Q$	1.00	-7.2
0.9G + W_u	1.00	5.6

8) Installation requirements

- Provide at least 30 mm bearing at end supports

Member 10

- 1) Member code and description L10 - Lintels - In single or upper storey load bearing walls
- 2) Date prepared 15 July 2019
- 3) Serviceability criteria AS 1720.1: 2010 and AS 1720.3: 2016
- 4) Design inputs
- | | |
|------------------------|---|
| Span | 0.9 m |
| Roof load width 'RLW' | 1.9 m |
| Roof type and mass | Light roof and ceiling - 40 kg/m ² |
| Nominal wall thickness | 90 mm |
- 5) Member specification
- | | |
|----------------------------|---|
| Size, stress grade/product | Use 2/90 x 45 SG8 |
| Material type | Dry softwood, machine stress graded and verified (NZS 3622) |
| Assumed design density | < 480 kg/m ³ |

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - G + $\Psi_L Q^*$	3.0 mm	0.6 mm (long term)	4.8
Live load - $\Psi_S Q$	3.6 mm	0.2 mm	18.9
Wind load - W_s	4.5 mm	0.7 mm	6.1

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3} End kN ⁴
1.35G	0.60	-1.1
1.2G + 1.5Q	0.80	-1.7
1.2G + W_u + $\Psi_c Q$	1.00	-2.8
0.9G + W_u	1.00	2.2

8) Installation requirements

- Provide at least 30 mm bearing at end supports

Member 11

- 1) Member code and description L11 - Lintels - In single or upper storey load bearing walls
- 2) Date prepared 15 July 2019
- 3) Serviceability criteria AS 1720.1: 2010 and AS 1720.3: 2016
- 4) Design inputs
- | | |
|-----------------------|-------|
| Span | 1.0 m |
| Roof load width 'RLW' | 4.8 m |

Roof type and mass Light roof and ceiling - 40 kg/m²
Nominal wall thickness 90 mm

5) Member specification

Size, stress grade/product Use 2/140 x 45 SG8
Material type Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density < 480 kg/m³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - G + $\Psi_L Q^*$	3.3 mm	0.8 mm (long term)	4.3
Live load - $\Psi_S Q$	4.0 mm	0.2 mm	16.9
Wind load - W_s	5.0 mm	0.9 mm	5.4

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-2.5
1.2G + 1.5Q	0.80	-3.9
1.2G + W_u + $\Psi_c Q$	1.00	-6.5
0.9G + W_u	1.00	5.2

8) Installation requirements

- Provide at least 30 mm bearing at end supports

Member 12

1) Member code and description L12 - Lintels - In single or upper storey load bearing walls

2) Date prepared 15 July 2019

3) Serviceability criteria AS 1720.1: 2010 and AS 1720.3: 2016

4) Design inputs

Span 2.4 m
Roof load width 'RLW' 2.4 m
Roof type and mass Light roof and ceiling - 40 kg/m²
Nominal wall thickness 90 mm

5) Member specification

Size, stress grade/product Use 2/190 x 45 SG8
Material type Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density < 480 kg/m³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - G + $\Psi_L Q^*$	8.0 mm	2.5 mm (long term)	3.2

Live load - $\Psi_s Q$	9.6 mm	0.7 mm	13.6
Wind load - W_s	12.0 mm	2.8 mm	4.4

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-2.1
1.2G + 1.5Q	0.80	-3.2
1.2G + W_u + $\Psi_c Q$	1.00	-5.3
0.9G + W_u	1.00	4.1

8) Installation requirements

- Provide at least 30 mm bearing at end supports

Member 13

1) Member code and description	L13 - Lintels - In single or upper storey load bearing walls
2) Date prepared	15 July 2019
3) Serviceability criteria	AS 1720.1: 2010 and AS 1720.3: 2016
4) Design inputs	
Span	2.4 m
Roof load width 'RLW'	2.5 m
Roof type and mass	Light roof and ceiling - 40 kg/m ²
Nominal wall thickness	90 mm
5) Member specification	
Size, stress grade/product	Use 2/190 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - $G + \Psi_L Q^*$	8.0 mm	2.6 mm (long term)	3.1
Live load - $\Psi_s Q$	9.6 mm	0.7 mm	13.1
Wind load - W_s	12.0 mm	2.9 mm	4.2

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-2.2
1.2G + 1.5Q	0.80	-3.4
1.2G + W_u + $\Psi_c Q$	1.00	-5.5
0.9G + W_u	1.00	4.2

8) Installation requirements

- Provide at least 30 mm bearing at end supports

Member 14

1) Member code and description	L14 - Lintels - In single or upper storey load bearing walls
2) Date prepared	15 July 2019
3) Serviceability criteria	AS 1720.1: 2010 and AS 1720.3: 2016
4) Design inputs	
Span	2.4 m
Roof load width 'RLW'	1.0 m
Roof type and mass	Light roof and ceiling - 40 kg/m ²
Nominal wall thickness	90 mm
5) Member specification	
Size, stress grade/product	Use 2/140 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - G + $\Psi_L Q^*$	8.0 mm	2.6 mm (long term)	3.1
Live load - $\Psi_S Q$	9.6 mm	0.7 mm	14.1
Wind load - W_s	12.0 mm	2.7 mm	4.5

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3} End kN ⁴
1.35G	0.60	-1.0
1.2G + 1.5Q	0.80	-1.4
1.2G + W_u + $\Psi_c Q$	1.00	-2.4
0.9G + W_u	1.00	1.7

8) Installation requirements

- Provide at least 30 mm bearing at end supports

Member 15

1) Member code and description	L15 - Lintels - In single or upper storey load bearing walls
2) Date prepared	15 July 2019
3) Serviceability criteria	AS 1720.1: 2010 and AS 1720.3: 2016
4) Design inputs	

Span	2.4 m
Roof load width 'RLW'	3.1 m
Roof type and mass	Light roof and ceiling - 40 kg/m ²
Nominal wall thickness	90 mm

5) Member specification

Size, stress grade/product	Use 2/190 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - G + $\Psi_L Q^*$	8.0 mm	3.2 mm (long term)	2.5
Live load - $\Psi_S Q$	9.6 mm	0.9 mm	10.5
Wind load - W_s	12.0 mm	3.6 mm	3.4

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3} End kN ⁴
1.35G	0.60	-2.7
1.2G + 1.5Q	0.80	-4.1
1.2G + W_u + $\Psi_c Q$	1.00	-6.8
0.9G + W_u	1.00	5.3

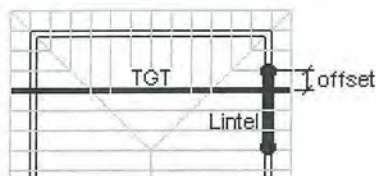
8) Installation requirements

- Provide at least 30 mm bearing at end supports

Member 16

1) Member code and description

L16 - Lintels - Supporting girder truss / truncated girder truss



2) Date prepared

15 July 2019

3) Serviceability criteria

AS 1720.1: 2010 and AS 1720.3: 2016

4) Design inputs

Roof type	Light roof and ceiling - 40 kg/m ²
Roof pitch	25.0 °
Truss spacing	900 mm
Eaves overhang	600 mm

TGT span	8600 mm
TGT setback	3377 mm
TGT offset	707 mm
Lintel span	1500 mm
Nominal wall thickness	90 mm

5) Member specification

Size, stress grade/product	Use 2/190 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - G + $\Psi_L Q^*$	5.0 mm	2.0 mm (long term)	2.5
Live load - $\Psi_S Q$	6.0 mm	0.6 mm	9.6
Wind load - W_s	7.5 mm	2.4 mm	3.1

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-2.9
1.2G + 1.5Q	0.80	-4.6
1.2G + W_u + $\Psi_c Q$	1.00	-7.5
0.9G + W_u	1.00	5.9

8) Installation requirements

- Provide at least 30 mm bearing at end supports
- Nail lamination required - refer AS 1684

Member 17

1) Member code and description L17 - Lintels - In single or upper storey load bearing walls

2) Date prepared 15 July 2019

3) Serviceability criteria AS 1720.1: 2010 and AS 1720.3: 2016

4) Design inputs

Span	2.4 m
Roof load width 'RLW'	4.3 m
Roof type and mass	Light roof and ceiling - 40 kg/m ²
Nominal wall thickness	90 mm

5) Member specification

Size, stress grade/product	Use 2/240 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - $G + \Psi_L Q^*$	8.0 mm	2.2 mm (long term)	3.6
Live load - $\Psi_S Q$	9.6 mm	0.6 mm	14.9
Wind load - W_s	12.0 mm	2.5 mm	4.8

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-3.5
1.2G + 1.5Q	0.80	-5.4
1.2G + W_u + $\Psi_c Q$	1.00	-9.0
0.9G + W_u	1.00	6.9

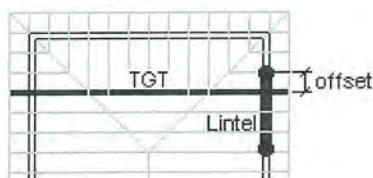
8) Installation requirements

- Provide at least 30 mm bearing at end supports

Member 18

1) Member code and description

L18 - Lintels - Supporting girder truss / truncated girder truss



2) Date prepared

15 July 2019

3) Serviceability criteria

AS 1720.1: 2010 and AS 1720.3: 2016

4) Design inputs

Roof type	Light roof and ceiling - 40 kg/m ²
Roof pitch	25.0 °
Truss spacing	900 mm
Eaves overhang	600 mm
TGT span	4644 mm
TGT setback	2322 mm
TGT offset	1482 mm
Lintel span	2420 mm
Nominal wall thickness	90 mm

5) Member specification

Size, stress grade/product	Use 2/240 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - $G + \Psi_L Q^*$	8.1 mm	2.4 mm (long term)	3.4
Live load - $\Psi_S Q$	9.7 mm	0.7 mm	13.4
Wind load - W_s	12.1 mm	2.8 mm	4.3

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_t^1	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-3.4
1.2G + 1.5Q	0.80	-5.3
1.2G + W_u + $\Psi_c Q$	1.00	-8.8
0.9G + W_u	1.00	6.8

8) Installation requirements

- Provide at least 30 mm bearing at end supports
- Nail lamination required - refer AS 1684

Member 19

1) Member code and description	L19 - Lintels - In single or upper storey load bearing walls
2) Date prepared	15 July 2019
3) Serviceability criteria	AS 1720.1: 2010 and AS 1720.3: 2016
4) Design inputs	
Span	2.4 m
Roof load width 'RLW'	2.0 m
Roof type and mass	Light roof and ceiling - 40 kg/m ²
Nominal wall thickness	90 mm
5) Member specification	
Size, stress grade/product	Use 2/190 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - $G + \Psi_L Q^*$	8.0 mm	2.1 mm (long term)	3.8
Live load - $\Psi_S Q$	9.6 mm	0.6 mm	16.3
Wind load - W_s	12.0 mm	2.3 mm	5.2

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Limit States Design Reaction ^{2,3}

Load case	k_1^1	End kN ⁴
1.35G	0.60	-1.8
1.2G + 1.5Q	0.80	-2.7
1.2G + W_u + $\Psi_c Q$	1.00	-4.4
0.9G + W_u	1.00	3.4

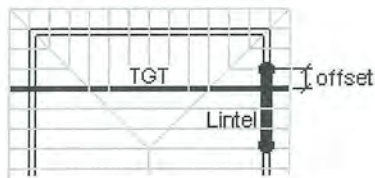
8) Installation requirements

- Provide at least 30 mm bearing at end supports

Member 20

1) Member code and description

L20 - Lintels - Supporting girder truss / truncated girder truss



2) Date prepared

15 July 2019

3) Serviceability criteria

AS 1720.1: 2010 and AS 1720.3: 2016

4) Design inputs

Roof type	Light roof and ceiling - 40 kg/m ²
Roof pitch	25.0 °
Truss spacing	900 mm
Eaves overhang	600 mm
TGT span	7890 mm
TGT setback	2272 mm
TGT offset	52 mm
Lintel span	870 mm
Nominal wall thickness	90 mm

5) Member specification

Size, stress grade/product	Use 2/90 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - $G + \Psi_L Q^*$	2.9 mm	0.5 mm (long term)	5.7
Live load - $\Psi_S Q$	3.5 mm	0.2 mm	22.4
Wind load - W_s	4.4 mm	0.6 mm	7.2

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-3.7
1.2G + 1.5Q	0.80	-5.9
1.2G + W_u + $\Psi_c Q$	1.00	-9.8
0.9G + W_u	1.00	7.8

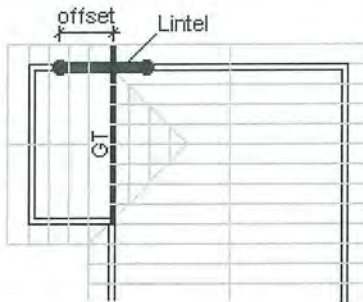
8) Installation requirements

- Provide at least 30 mm bearing at end supports
- Nail lamination required - refer AS 1684

Member 21

1) Member code and description

L21 - Lintels - Supporting girder truss / truncated girder truss



2) Date prepared

15 July 2019

3) Serviceability criteria

AS 1720.1: 2010 and AS 1720.3: 2016

4) Design inputs

Roof type	Light roof and ceiling - 40 kg/m ²
Roof pitch	25.0 °
Truss spacing	900 mm
Eaves overhang	0 mm
Common truss span	2968 mm
GT span	4690 mm
GT offset	163 mm
Lintel span	1650 mm
Nominal wall thickness	90 mm

5) Member specification

Size, stress grade/product	Use 2/140 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - G + $\Psi_L Q^*$	5.5 mm	1.2 mm (long term)	4.6

Live load - $\Psi_s Q$	6.6 mm	0.4 mm	18.3
Wind load - W_s	8.3 mm	1.4 mm	5.9

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-2.9
1.2G + 1.5Q	0.80	-4.5
1.2G + W_u + $\Psi_c Q$	1.00	-7.4
0.9G + W_u	1.00	5.9

8) Installation requirements

- Provide at least 30 mm bearing at end supports
- Nail lamination required - refer AS 1684

Member 22

1) Member code and description GD - Lintels - In single or upper storey load bearing walls

2) Date prepared 15 July 2019

3) Serviceability criteria AS 1720.1: 2010 and AS 1720.3: 2016

4) Design inputs

Span	4.9 m
Roof load width 'RLW'	1.9 m
Roof type and mass	Light roof and ceiling - 40 kg/m ²
Nominal wall thickness	90 mm

5) Member specification

Size, stress grade/product	Use 2/300 x 45 hySPAN
Material type	Structural Laminated Veneer Lumber to AS/NZS 4357

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - $G + \Psi_L Q^*$	10.0 mm	5.0 mm (long term)	2.0
Live load - $\Psi_s Q$	15.0 mm	1.3 mm	11.7
Wind load - W_s	24.5 mm	5.0 mm	4.9

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-3.2
1.2G + 1.5Q	0.80	-4.7
1.2G + W_u + $\Psi_c Q$	1.00	-7.5
0.9G + W_u	1.00	5.3

8) Installation requirements

- Provide at least 30 mm bearing at end supports
- Vertical lamination in accordance with Detail H1.

Member 23

1) Member code and description	B1 - Bressumer
2) Date prepared	15 July 2019
3) Serviceability criteria	AS 1720.1: 2010 and AS 1720.3: 2016
4) Design inputs	
Span	1.7 m - single span
Roof load width 'RLW'	1.4 m
Roof type and mass	Light roof and ceiling - 40 kg/m ²
5) Member specification	
Size, stress grade/product	Use 2/140 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - $G + \Psi_L Q^*$	5.7 mm	1.3 mm (long term)	4.4
Live load - $\Psi_S Q$	6.8 mm	0.3 mm	19.9
Live load - $\Psi_S Q$	6.8 mm	1.0 mm	6.7
Wind load - W_s	11.3 mm	1.3 mm	8.6

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3} End kN ⁴
1.35G	0.60	-0.8
1.2G + 1.5Q	0.80	-2.3
1.2G + W_u + $\Psi_c Q$	1.00	-1.8
0.9G + W_u	1.00	1.3

8) Installation requirements

- Provide at least 30 mm bearing at end supports

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
SG grades - mechanically graded to AS/NZS 1748
GL grades for glulam to AS 1328
LVL to AS/NZS 4357 (includes hySPAN and hyJOIST)

Average + 100%
Average + 43%
Average + 33%
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!

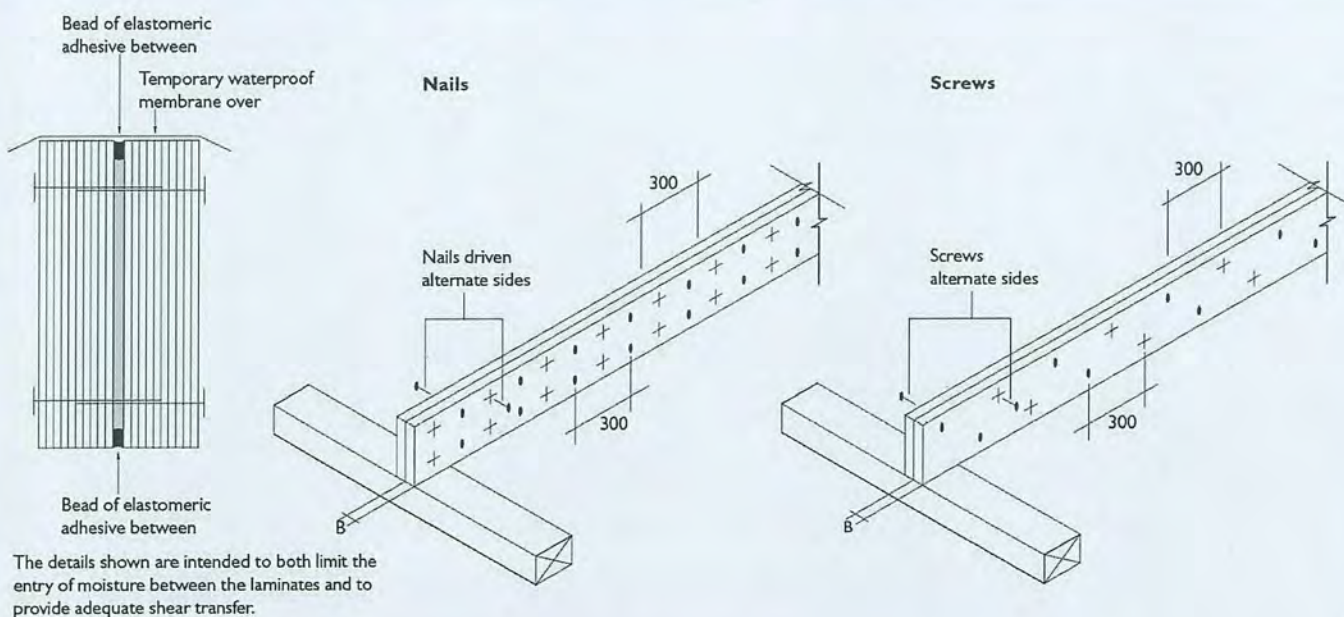
3. The limits referred are those specified in AS 1720.3 for the stated load case.

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

Detail H1: Vertical Lamination - Two Pieces



Section Size 'B'	Minimum Nail Diameter	Minimum Nail Length	Minimum Screw gauge	Minimum Screw Length
35	3.06 mm	75 mm	-	-
45	3.30 mm	90 mm	14 g	75 mm
63	3.30 mm	100 mm	14 g	100 mm
90	-	-	14 g	150 mm

Demand Calculation Sheet

J0020



Job Details

Name: Beattie
 Street and Number: 6 Hadfield Road
 Lot and DP Number: Lot 3
 City/Town/District: Peka Peka
 Designer: BF
 Company: Coastal Architecture
 Date: Friday, August 2, 2019

Building Specification

Number of Storeys: 1
 Floor Loading: 2 kPa
 Foundation Type: Slab

Cladding Weight: **Single** Heavy
 Roof Weight: Light
 Room in Roof Space: No
 Roof Pitch (degrees): 25
 Roof Height above Eaves (m): 2.5
 Building Height to Apex (m): 4.9
 Ground to Lower Floor (m): 0.3

Average Stud Height (m): 2.4
 Building Length (m): 20.6
 Building Width (m): 18.6
 Building Plan Area (m²): 219

Building Location

Wind Zone = Very High

Earthquake Zone 3

Soil Type: D & E (Deep to Very Soft)
 Annual Prob. of Exceedance: 1 in 500 (NZS3604:2011 Default)

Bracing Units required for Wind

	Along	Across
Single Level	1191	1319

Bracing Units required for Earthquake

	Along & Across
Single Level	1788

Single Level Along Resistance Sheet

Job Name: Beattie

									Wind	EQ
									Demand	
									1191	1788
									Achieved	
Line	Element	Length (m)	Angle (degrees)	Stud Ht. (m)	Type	Supplier	Wind BUs	EQ BUs	2537 213%	2526 141%
A	1	0.80		2.4	EP1 0.6	Ecoply	76	84		
	2	0.80		2.4	EP1 0.6	Ecoply	76	84		
	3	1.10		2.4	GS1-N	GIB®	74	66		
	4	1.00		2.4	GS1-N	GIB®	65	60		
									291 OK	293 OK
B	1	3.90		2.4	GS1-N	GIB®	269	234		
	2	3.00		2.4	GS1-N	GIB®	207	180		
									476 OK	414 OK
C	1	0.80		2.4	EP1 0.6	Ecoply	76	84		
	2	3.50		2.4	GS1-N	GIB®	242	210		
	3	2.20		2.4	GS1-N	GIB®	152	132		
	4	1.20		2.4	EP1 1.2	Ecoply	144	162		
	5	1.20		2.4	EP1 1.2	Ecoply	144	162		
									757 OK	750 OK
D	1	1.10		2.4	GS1-N	GIB®	74	66		
	2	2.20		2.4	EP1 1.2	Ecoply	264	297		
	3	3.00		2.4	GS1-N	GIB®	207	180		
									545 OK	543 OK
E	1	1.80		2.4	EP1 1.2	Ecoply	216	243		
	2	2.10		2.4	EP1 1.2	Ecoply	252	284		
									468 OK	527 OK

Single Level Across Resistance Sheet

Job Name: Beattie

									Wind	EQ
									Demand	
									1319	1788
									Achieved	
Line	Element	Length (m)	Angle (degrees)	Stud Ht. (m)	Type	Supplier	Wind BUs	EQ BUs	2042 155%	2124 119%
M	1	0.90		2.4	EP1 0.6	Ecoply	86	95		
	2	1.20		2.4	EP1 1.2	Ecoply	144	162		
									230 OK	257 OK
N	1	0.60		2.4	EP1 0.6	Ecoply	57	63		
	2	1.50		2.4	EP1 1.2	Ecoply	180	203		
	3	1.70		2.4	EP1 1.2	Ecoply	204	230		
									441 OK	495 OK
O	1	1.70		2.4	EP1 1.2	Ecoply	204	230		
	2	2.00		2.4	GS1-N	GIB®	138	120		
	3	3.40		2.4	GS1-N	GIB®	235	204		
									577 OK	554 OK
P	1	0.80		2.4	GS1-N	GIB®	49	47		
	2	0.80		2.4	GS1-N	GIB®	49	47		
	3	1.80		2.4	GS1-N	GIB®	124	108		
									222 OK	202 OK
Q	1	1.40		2.4	GS1-N	GIB®	97	84		
	2	1.20		2.4	EP1 1.2	Ecoply	144	162		
									241 OK	246 OK
R	1	0.70		2.4	EP1 0.6	Ecoply	67	74		
	2	1.50		2.4	EP1 1.2	Ecoply	180	203		
	3	0.90		2.4	EP1 0.6	Ecoply	86	95		
									332 OK	371 OK

Custom Wall Elements

Supplier	System	Min. Length m	Wind BUs/m	EQ BUs/m
Ecoply	EP1 0.4	0.4	80	95
Ecoply	EP1 0.6	0.6	95	105
Ecoply	EP1 1.2	1.2	120	135
Ecoply	EPG 0.4	0.4	100	115
Ecoply	EPG 1.2	1.2	150	150
RAB Board	JHD 0.4	0.4	83	107
RAB Board	JHD 0.6	0.6	99	107
RAB Board	JHD 1.2	1.2	154	140
RAB Board	JHD 2.4	2.4	135	150
Egger RAB	OSB 0.6	0.6	90	101
Egger RAB	OSB 1.2	1.2	131	118
Egger RAB	OSB 2.4	2.4	141	116
HomeRab	HPg 0.4	0.4	90	98
HomeRab	HPg 0.6	0.6	127	136
HomeRab	HPg 1.2	1.2	164	138



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 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**

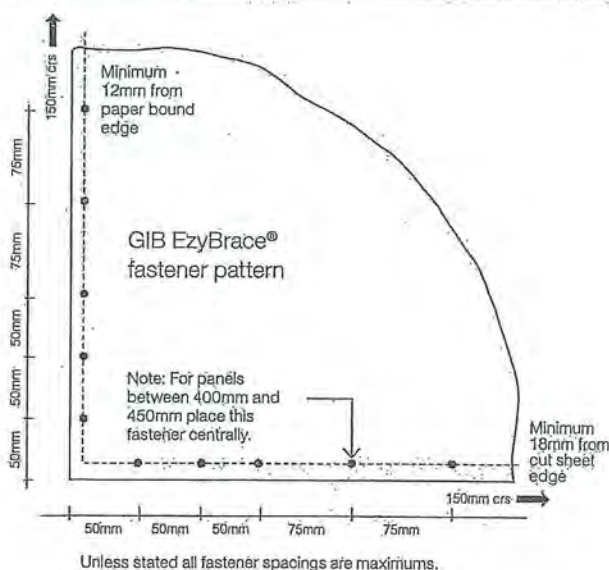
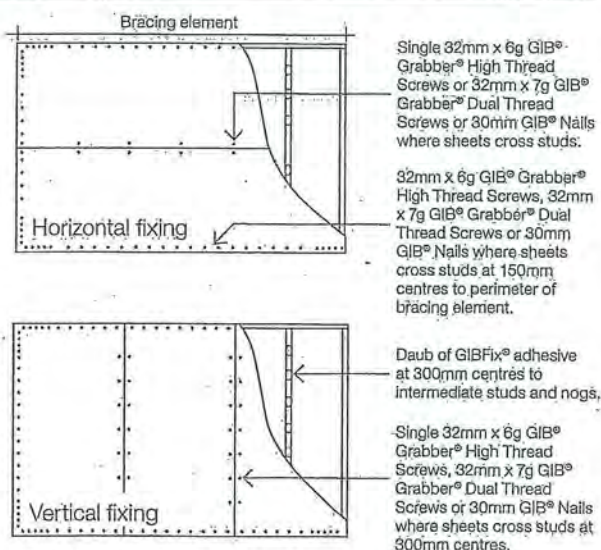
32mm x 6g GIB® Grabber® High Thread Screws, 32mm x 7g GIB® Grabber® Dual Thread Screws or 30mm GIB® Nails. If using the GIBFix® Adhesive use only 32mm x 7g GIB® Grabber® Dual Thread Screws.

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

7.6 STRUCTURAL BRACING

Ecoply Barrier is designed to comply with the New Zealand Building Code (NZBC).

Structure

NZS 3604 Timber Framed Buildings is listed as an Acceptable Solution under Clause 3.0 Timber in Acceptable Solution B1/AS1 Structure. CHH Woodproducts have developed a range of wall bracing elements tested using P21 testing methods referenced in NZS 3604.

Demand may be calculated by following section 5, Bracing Design of NZS 3604 or using the GIB EzyBrace® software, downloadable from www.gib.co.nz.

EPB bracing systems properties can be easily loaded into the EzyBrace software by way of a software patch downloadable from www.chhwoodproducts.co.nz together with loading instructions.

Specific Design

Ecoply® Barrier structural plywood panels are manufactured to AS/NZS 2269, and is suitable for design and use in earthquake and wind bracing systems constructed in accordance with NZS 3603 and AS/NZS 1170.

Structural plywood to AS/NZS 2269 is the only sheet brace material with properties defined in a published New Zealand timber design code, NZS 3603 Timber Structures, and so can be designed in compliance with Verification Method B1/VM1 under Clause 6.0 Timber for use in buildings over three storeys in height.

Timber Floors

When carrying out a bracing design for buildings with timber floor structures, the maximum bracing rating that can be accounted for when summing up the bracing units is 120BU/m. This does not exclude the installation of bracing elements that are rated higher than 120BU/m, however the extra bracing capacity can not be accounted for in the bracing design.

Specific design of floor and sub-floor framing is required for elements rated higher than 120BU/m.

Durability

Ecoply Barrier plywood panels are manufactured to meet the requirements of NZS 3602 Timber and Wood based products for use in Buildings. If the product is used, handled and installed in accordance with CHH Woodproducts product literature it will meet the durability requirements of the NZBC.

Adjustments for Wall Height

Adjustment of bracing capacity of walls of different heights and walls with sloping top plates shall be obtained by the following method:

(a) For wall bracing elements of heights other than 2.4m, the bracing rating determined by test or from table below should be multiplied by $2.4 \div$ element height in metres, except that elements less than 2.4m high shall be rated as if they are 2.4m high.

(b) Walls of varying heights, should have their bracing capacity adjusted in accordance with section 5 of NZS 3604 using the average height.

(c) Wall heights < 1.5m are to be subject to Specific Engineer Design (SED).

Joining Panels for Walls Higher than Maximum Sheet Length

Ecoply Barrier bracing panels must be fixed from top plate to bottom plate. For wall heights over 2.44m, Ecoply Barrier is available in 2.745m sheet lengths. Alternatively, a part sheet can be installed above a full sheet, in accordance with section 7.2 Installation - Sheet Joins (Three Options for Horizontal Sheet Joins) on a single row of common nogs with each sheet/part sheet independently nailed off as per the nail spacing in the Ecoply Barrier bracing specifications (e.g. 2.4m x 1.2m sheet with a 0.3 m x 1.2 m part sheet above it to give a 2.7m x 1.2m bracing element).

Table 4: Summary P21 Ratings for 2.4m High Ecoply® Barrier Wall Elements

Specification No.	Minimum Wall Length	Lining Requirements	Hold-Down	BU/s/m Wind	BU/s/m Earthquake
EPB1	0.4m	Ecoply® Barrier one side	Yes GIB HandiBrac®	80	95
	0.6m			95	105
	1.2m			120	135
EP2	0.6m	Ecoply Barrier or Ecoply each side	Yes GIB HandiBrac®	105	115
EPBS	0.4m	Ecoply Barrier one side	No additional fastening ¹	60	60
	0.6m			60	65
	1.2m			65	70
	2.4m			80	90
EPBG	0.4m	Ecoply Barrier one side and 10mm GIB® Standard plasterboard other side	Yes GIB HandiBrac®	100	115
	1.2m			150	150

¹ As per NZS 3604: 2011. No specific additional fastening required.

7.7 ECOPLY® BARRIER BRACING SPECIFICATION – EPBI

Table 5: Sided Structural Plywood Brace

Specification No.	Minimum Wall Length	Lining Requirements	Hold-Down	BU's/m Wind	BU's/m Earthquake
EPBI	0.4m	Ecoply® Barrier one side	Yes GIB HandiBrac®	80	95
	0.6m			95	105
	1.2m			120	135

Framing

Wall framing must comply with:

- NZBC B1 - Structure: AS1 Clause 3 Timber (NZS 3604).
- NZBC B2 - Durability: AS1 Clause 3.2 Timber (NZS 3602).

Framing dimensions and height are as determined by the NZS 3604 stud and top plate tables for load bearing and non load bearing walls. Kiln dried verified structural grade timber must be used. Machine stress graded timber of minimum SGB, such as Laserframe®, is recommended.

Bottom Plate Fixing

Use GIB HandiBrac® hold-down connections at each end of the bracing element. Refer to manufacturer installation instructions supplied with the connectors for correct installation instructions and bolt types to be used for either concrete or timber floors. Within the length of the bracing element, bottom plates are fixed in accordance with the requirements of NZS 3604.

Lining

One layer of 7mm Ecoply® Barrier vertically fixed directly to framing. If part sheets are used, ensure nailing at required centres is carried out around the perimeter of each sheet or part sheet. A 2-3mm expansion gap should be left between sheets.

Fastening Ecoply® Barrier Panels

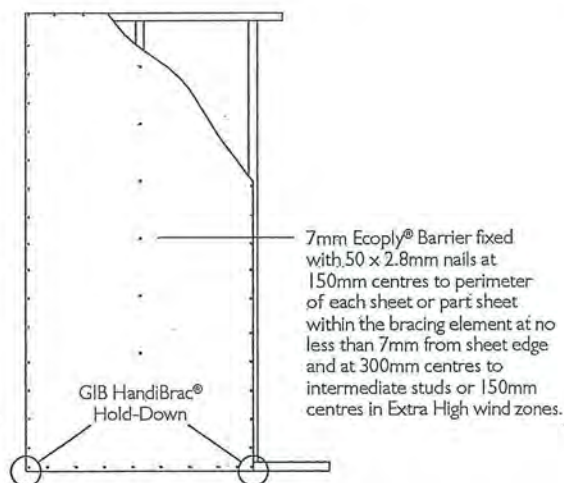
Fasteners

Fasten with 50 x 2.8mm galvanised or stainless steel flat head nails direct fix. Place fasteners no less than 7mm from sheet edges. Screws cannot be used. Power driven nails are suitable. Do not overdrive, nails must be full round head.

In certain circumstances stainless steel fasteners may be required. Refer to section 7.1 in the Ecoply Barrier Specification and Installation Guide for these circumstances and further fastener selection advice. Where stainless steel nails are required, annular grooved nails must be used.

Fastening Centres

Fasteners are placed at 150mm centres around the perimeter of each sheet and 300mm centres to intermediate studs or 150mm centres in Extra High wind zones. Where more than one sheet forms the brace element each sheet must be nailed off independently.



Ecoply® Bracing Systems are designed to meet the requirements of the New Zealand Building Code and have been tested and analysed using the P2.1 method referenced in NZS 3604:2011 listed as an acceptable solution B1/AS1 Structure. Testing was carried out using Ecoply Barrier manufactured by CHH Woodproducts and SGB timber framing and GIB® products manufactured by Winstone Wallboards Ltd. Substituting materials may compromise performance of the system. GIB® and GIB HandiBrac® are registered trade marks of Fletcher Building Holdings Ltd.

SEPTEMBER 2017

00022



Beattie - 6 Hadfield Road, Peka Peka

Insulation Calculations

Calculation Method
Zone 2

Reference Building Heat Loss

Building Thermal Envelope	Area (m2)	R-value	Heat Loss (Area/R-value)
Roof	181	2.9	62.4
Walls (excluding garage)	177	1.9	93.2
Floor (excluding garage)	181	1.3	139.2
Glazing ≤ 30%	48	0.26	184.6
Glazing > 30%	0	0.31	0.0
Skylights	0	0.31	0.0
<u>Total Heat Loss of Reference Building</u>			<u>479.4</u>

Proposed Building Heat Loss

Building Thermal Envelope	Area (m2)	R-value	Heat Loss (Area/R-value)
Roof - flat ceiling (excluding garage)	181	3.09	58.6
Walls - Brick (excluding garage)	150	2.01	74.6
Walls - Linea (excluding garage)	27	2.02	13.4
Floor - Ribraft	181	1.93	93.8
Glazing > 30%	48	0.26	184.6
<u>Total Heat Loss of Proposed Building</u>			<u>425.0</u>

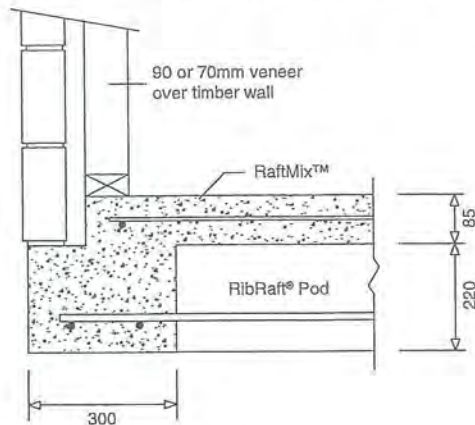
Summary

Roof	R3.2 Batts	3.8
Walls	R2.2 Batts	5.2
Floor	Ribraft	45.4
Glazing	Double Glazing	0

Total Heat Gain 54.4

SOLUTION 3

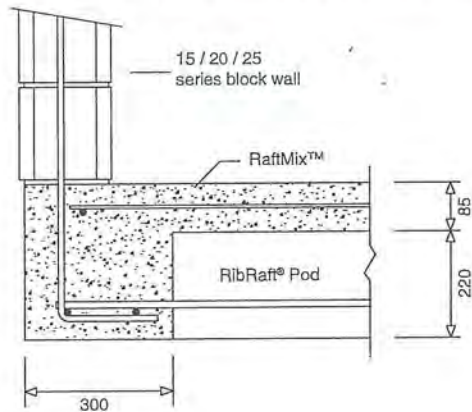
RibRaft® Floors with a 90mm Timber Frame and 70-90mm Veneer Wall with Cavity



	Floor Area To Perimeter Ratio m ² /m									
	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.50	4.00
R-value m ² °C/W	1.54	1.67	1.80	1.93	2.05	2.17	2.28	2.40	2.62	2.84

SOLUTION 4

RibRaft® Floors with a Firth Standard or HotBloc® Masonry External Wall



	Block	Floor Area To Perimeter Ratio m ² /m									
		1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.50	4.00
R-value m ² °C/W	15 series	1.48	1.60	1.73	1.85	1.96	2.08	2.19	2.30	2.51	2.72
	20 series	1.54	1.67	1.80	1.93	2.05	2.17	2.28	2.40	2.62	2.84
	25 series	1.59	1.73	1.86	1.99	2.12	2.24	2.37	2.49	2.72	2.95

SOLUTION 5

RibRaft® Heated Floors

Where in-floor heating is used, the combination of RaftMix™ and RibRaft® pods ensures that $(R_{IN})/(R_{OUT})$ is always less than 0.1. The R-value of the floor can

be established from the above tables. The Building Code requires that the floor has a R-value not less than 1.9 m² °C/W.



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 "iso-thermal 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 or use the [Design Navigator message board](#).

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 ☐

Element Name (optional)		2.01	m ² C/W
Type: Wall: Timber Frame with vented Cavity			
Timber Frame with vented Cavity		view detail	
external surface 0.03			
Cladding : 70mm brick		R-value: 0.06	
Air Barrier : Building paper		R-value: 0.01	
Timber Frame & Cavity : 90mm, studs @ 400mm, dwangs @ 800mm		R-value: 0.08	
Wall Frame Area: 17.9%		Cavity Area: 82.1%	
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®Batts® R2.2 Wall 2.2	
		still Airgap: 20-90mm airgap (non-reflective) R-value: 0.16	
Wall Lining : Gypsum plasterboard 10mm		R-value: 0.04	
internal surface 0.09			

[Print Page](#)

Current NZS4218:2009 Schedule Method minimum R-value Targets (non-solid construction) [i](#):

	Zone 1	Zone 2	Zone 3
Roof	R-2.9	R-2.9	R-3.3
Wall	R-1.9	R-1.9	R-2.0
Floor	R-1.3	R-1.3	R-1.3
Glazing (vertical)	R-0.26	R-0.26	R-0.26
Glazing (skylights)	R-0.26	R-0.26	R-0.31

Australian Building Code Targets [i](#):

	All Zones except NSW	NSW
Roof	R-4.1	R-6.3
Wall	R-2.9	R-3.8



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 "iso-thermal 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 or use the [Design Navigator message board](#).

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 ☐

Element Name (optional)		2.02	m ² C/W
Type: Wall: Timber Frame with vented Cavity			
Timber Frame with vented Cavity		view detail	
external surface 0.03			
Cladding :		James Hardie Linea weatherboard	
		R-value: 0.08	
Air Barrier :		Building paper	
		R-value: 0.01	
Timber Frame & Cavity :		90mm, studs @ 400mm, dwangs @ 800mm	
Wall Frame Area: 17.9%		Cavity Area: 82.1%	
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 :		Pink@Batts@ R2.2 Wall	2.2
R-value: 0.75		still Airgap:	20-90mm airgap (non-reflective)
		R-value: 0.16	
Wall Lining :		Gypsum plasterboard 10mm	
		R-value: 0.04	
		internal surface 0.09	

[Print Page](#)

Current NZS4218:2009 Schedule Method minimum R-value Targets (non-solid construction) :

	Zone 1	Zone 2	Zone 3
Roof	R-2.9	R-2.9	R-3.3
Wall	R-1.9	R-1.9	R-2.0
Floor	R-1.3	R-1.3	R-1.3
Glazing (vertical)	R-0.26	R-0.26	R-0.26
Glazing (skylights)	R-0.26	R-0.26	R-0.31

Australian Building Code Targets :

	All Zones except NSW	NSW
Roof	R-4.1	R-6.3
Wall	R-2.9	R-3.8



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 "iso-thermal 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 or use the [Design Navigator message board](#).

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 ☒

Element Name (optional)		3.09	m ² C/W
Type: Roof: Timber framed truss Roof, direct fixed or battened flat Ceiling			
Timber framed Roof, direct fixed or battened flat Ceiling		view detail	
external surface 0.03			
Roofing : Metal tiles with building paper			
		R-value: 0.01	
Insulation :			
Timber Frame & Cavity : 90mm rafters or joists @ 900mm, battens covered with insulation			
Roof Frame Area: 5.0%		Cavity Area: 95.0%	
Roof space (still air) 0.11		Roof space (still air) 0.11	
Framing : R-value: 0.75		Pink®Batts® R3.2 Ceiling 3.2	
Roof Lining : Gypsum plasterboard 13mm			
		R-value: 0.06	
internal surface 0.09			
Non-IC-rated recessed downlights			
Ceiling Area [m ²]:	Number of downlights:	Clearance from lamp holder side [m]:	

[Print Page](#)

Current NZS4218:2009 Schedule Method minimum R-value Targets (non-solid construction) [\[1\]](#):

	Zone 1	Zone 2	Zone 3
Roof	R-2.9	R-2.9	R-3.3
Wall	R-1.9	R-1.9	R-2.0
Floor	R-1.3	R-1.3	R-1.3
Glazing (vertical)	R-0.26	R-0.26	R-0.26
Glazing (skylights)	R-0.26	R-0.26	R-0.31

Australian Building Code Targets [\[1\]](#):

	All Zones except NSW	NSW
Roof	R-4.1	R-6.3
Wall	R-2.9	R-3.8



ON-SITE WASTEWATER DISPOSAL SITE EVALUATION



SEWAGE TREATMENT AND EFFLUENT DISPOSAL DESIGN

OWNERS NAME: Adam Beattie

LOCATION: Lot 03 – Hadfield Road, Peka Peka

FOR: Kapiti Coast District Council



SITE DESCRIPTION / OVERVIEW

The property is located at Lot 3 – Hadfield Road, Peka Peka. The proposed building platform is on a site yet to be levelled situated towards the middle of the property with a predominately East/West aspect. The site is currently vacant, and it is proposed to construct a 5-bedroom dwelling approximately 220m² on the build platform.

Legal description **Lot 03, Hadfield Road, Peka Peka** - with a total site area of **12149 m²**

We visited the property on the **12th July 2019** and carried out a site assessment and evaluation for an On-site Domestic Wastewater Management.

The site is located by means of a driveway directly off Hadfield Road. There is a culvert running through the section conveying boundary water, so this means the field will need to be placed 20m clear of this area, so it is proposed to lay the dispersal field along the rear SE & SW boundary within the nominated 2m offset restriction as required. An approx. 300m² level building platform will be prepared, with the Eastern side acting as the entrance and parking etc. with the remaining section tapering off from the building platform at all corners to natural land levels, and northern boundary runs parallel with the main road North. The site is clear apart from natural vegetation and scrub.

Supply for water would be from harvesting roof water to tank.
No Wells or Bores are known to exist in the immediate vicinity.

SOIL ASSESSMENT / INVESTIGATION

Based on AS/NZS 1547:2012 "On-Site Domestic Wastewater Management"

On the day of my on-site evaluation, the weather was fine, with the preceding week being a mixture of fine/overcast conditions with no heavy rainfall encountered within the preceding week.

The topography is gently sloping at the house site towards the North and Western edges to natural run off areas, consisting of grass and natural vegetation, at the back and sides of the property. The Southern side is raised sloping back to the building platform. The eastern aspect provides access to the property.

Soil investigations in 3 different areas where the proposed irrigation field will be located at the Southern side of property, revealed 250 - 300mm of top soil overlaying a light to medium alluvial soil, crumbling & soft, with little moisture found in the top. The base below this is clay/loam so a conservative soil loading of 3.5 will need to be applied to this field.

The depth of seasonal ground water table was not encountered and is not expected to be a problem due to the elevated ground topography. The site indicates that there is no need for a surface water cut off drain at this stage.

Using AS/NZS 1547:2012 Table M1 Recommended Design Irrigation Rate (DIR), soil category has been assessed at 21mm per week = 3mm D.I.R / per day.

SUMMARY

Results of desk top study is confirmed and our assessment of the type of load application system considered best for the site is an aerated multi stage treatment plant with compensated dripper irrigation line for the distribution field.

The irrigation line can be installed on top of the ground and covered with bark or mulch, or mole ploughed 50-100mm into surface of irrigation area.

We propose that the irrigation field be installed at the South Western & South Eastern sides of the property with dripper lines staked to the ground and run through a cleared natural scrub area along the boundary- set back in 2 metres with an 10m x 30m dispersal field staked to the ground following the natural contour of the land – flush valves will be installed at the end of each loop and clearly identified for future maintenance.

This area can be planted with other suitable vegetation which will be maximise nutrient uptake and effluent dispersement.

RESERVE DISPOSAL AREA

There is adequate available reserve land area for disposal; this is not seen as concern with secondary treated waste water treatment system & dripper irrigation.

Layout sketch

As provided on separate drawing

SEWAGE TREATMENT AND EFFLUENT DISPOSAL DESIGN

Treatment Process	:	Aerated Wastewater Treatment System (A.W.T.S)
System Design	:	Air Tech™ 9000
Design Capacity	:	2000ltrs per day

DESIGN LOADINGS

Flow allowance are:

Number of Bedrooms	:	5 bedrooms
Number of persons	:	6
Water Supply	:	Tank
Wastewater Flow	:	200ltrs per person per day
Total Wastewater Flow :	:	6 x 200 = 1200 litres per day
Soil Category Type	:	Clay/Loam @3.5mm D.I.R per day/1000litres
1000 litres/3.5mm	=	Minimum 342 ² m of irrigation disposal area required

Description	Drainage	Soil Category	Loading Rate
Gravel, coarse sand	Rapid draining	1	5
Coarse to medium sand	Free draining	2	4.5
Medium-fine & loamy sand	Good drainage	3	4
Sandy loam, loam & silt loam	Moderate drainage	4	4
Sandy clay-loam, clay loam & silty clay-loam	Moderate to slow drainage	5	3.5
Sandy clay, non-swelling clay & silty clay	Slow draining	6	2.8
Swelling clay, grey clay, hardpan	Poorly or non-draining	7	2.2

EFFLUENT DISPOSAL

Clay Loam identified with disposal field site soil tests and house load bearing tests
This shows a consistent soil matrix in both the field and surrounding areas.

Though the loading indicates a rate of 4 we have allowed for a soil loading of 3 -3.5 moderate/slow draining to provide a safety margin.

Effluent dispersement will be NAAN purple compensating emitter irrigation lateral. Emitters will be at .600mm spacing's with a 2.3ltr per/hr flow rate.

The irrigation system will incorporate a vacuum break and line flushing valve.

An FlitMaster130micron inline ring disc filter will protect the dripper lateral.


Landscape trees and additional plantings will aid transpiration and nitrate uptake.

Blair Browne

Managing Director

W: www.streamlineplumbing.co.nz

P: 0212011599





00024



On-site Effluent Treatment National Testing Programme (OSET NTP)

PERFORMANCE CERTIFICATE

**RX Plastics Airtech 9000 On-site Domestic Wastewater Treatment System,
OSET NTP Trial 9, 2013/2014**

System Tested

The **RX Plastics Airtech 9000 system** is a submerged aerated filter wastewater treatment unit. The manufacturer's rated design capacity is 2,000 litres/day. Total liquid volume is 7,000 litres (primary treatment 3300 litres; aeration tank 1,500 litres; clarification: 1,200 litres; pump chamber 1000 litres). Emergency storage is 2,165 litres. No tertiary treatment (such as UV disinfection) is incorporated. It comprises 4 plastic tanks (primary, secondary, clarifier and effluent pump chamber). The manufacturer's stated service frequency is 6 monthly.

Test Flow Rate

The **RX Plastics Airtech 9000 system** was tested at 1,000 litres/day (equivalent to servicing a 3-bedroom 5 to 6 person household) over an 8 month (35 week) period November 2013 to July 2014 followed by a 1 month (4 week) high load effects test involving 5 days at 2,000 litres per day then 1,000 litres/day over the following 3 weeks.

Testing and Evaluation Procedures

A total of 37 treated effluent samples of organic matter (BOD₅) and 36 treated effluent samples of suspended solids (TSS) at generally six day intervals during weeks 9 to 35 were tested and evaluated against the secondary effluent quality requirements of the joint Australia/NZ standard AS/NZS 1547:2012.

A total of 16 treated effluent samples of organic matter (BOD₅), total 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 tested and the results 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 benchmarking period.

AS/NZS 1547:2012 Secondary Effluent Quality Requirements

These requirements are that 90% of all test samples must achieve a BOD₅ of ≤ 20 g/m³ and TSS of ≤ 30 g/m³ with no one result for BOD₅ being >30 g/m³ and no one result for TSS being >45 g/m³. The **RX Plastics Airtech 9000 system** achieved a performance level of **100%** for BOD₅ and **100%** for TSS based on the full set of test results in weeks 9 to 35, with no results exceeding the maximums. The **RX Plastics Airtech 9000 system** thus meets the secondary effluent quality requirements of AS/NZS 1547:2012.

Benchmark Ratings

The **RX Plastics Airtech 9000 system** achieved the following effluent quality ratings for the sixteen benchmarking results in weeks 20 to 35.

Indicator Parameters	Median	Std Dev	Rating	Rating System				
				A+	A	B	C	D
BOD (mg/L)	5	2	A	<5	<10	<20	<30	≥30
TSS (mg/L)	5	6	A	<5	<10	<20	<30	≥30
Total Nitrogen (mg/L)	23.1	3	B	<5	<15	<25	<30	≥30
NH ₄ - Nitrogen (mg/L)	6.5	4	B	<1	<5	<10	<20	≥20
Total phosphorus (mg/L)	4.4	0.4	B	<1	<2	<5	<7	≥7
Faecal Coliforms (cfu/100mL)	71,000	119,000	C	<10	<200	<10,000	<100,000	≥100,000
Energy (kWh/d) (mean)	1.49	0.04	B	0	<1	<2	<5	≥5

This Performance Certificate is specific to the **RX Plastics Airtech 9000** model as specified above when operated at a flow rate of 1,000 litres/day, and is valid for 5 years from the date below. For the full OSET NTP report on the performance of the **Airtech 9000 system** contact **RX Plastics Ltd**, Hamilton Branch office, Ph: +64 7 829 9350 .

Authorised By:

Ray Hedgland, Technical Manager, OSET NTP
20 February 2015

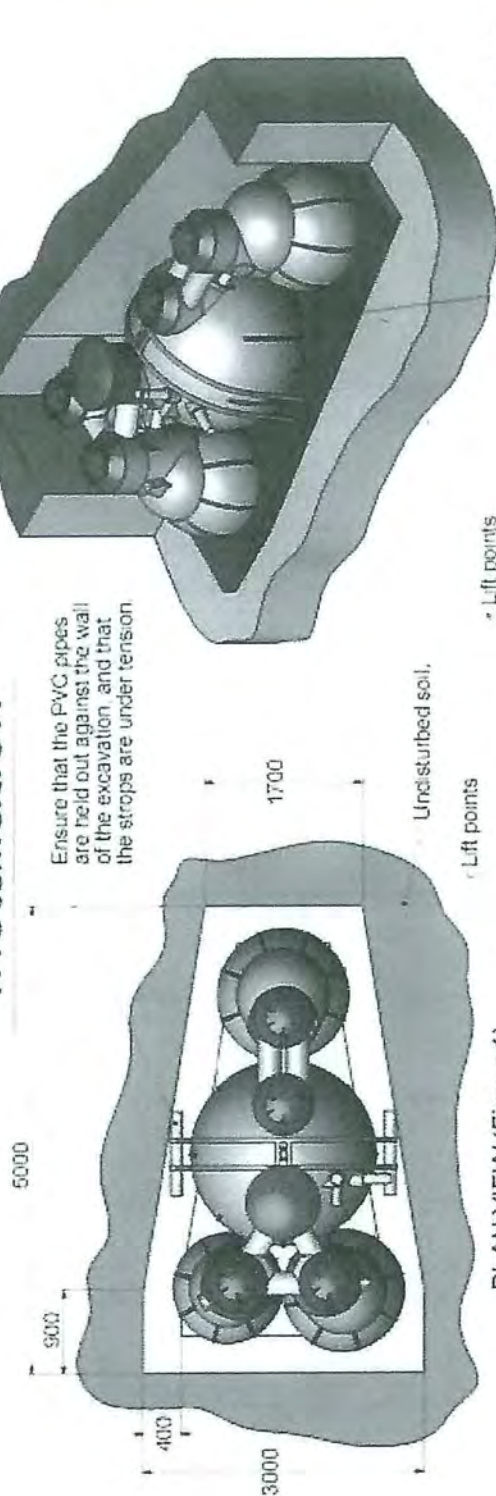
**On-site Effluent Treatment National Testing Programme, c/- Technical Manager, 2/12 Mt Blanc Pl, Northpark,
Howick, AUCKLAND 2013 Mob: 021 626 772 E-mail: ray@hedgland.co.nz**

19 AUG 2019
BY: *LA*

00025

Installation

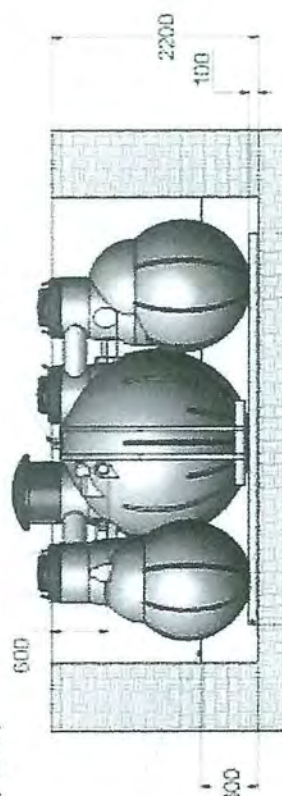
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PLAN VIEW (Figure 1)

ISOMETRIC VIEW (Cut away for clarity) (Figure 2)

Haunching to 600mm
Compact while backfilling.
Back fill to ground level with excavated soil
Note: Taper soil away from manhole lids to assist with water run off



SECTION VIEW (Figure 3)

Note: OSH guidelines must be followed when excavating hole
www.osh.doc.gov/

RX Plastics Ltd.		Air Tech 9000 Installation.	
Scale	1:40	Revision	1
Drawing No. RXSTAT 33 15 12 10		Rev. 1	
Drawing No. RXSTAT 33 15 12 10		Rev. 1	

00026

PRODUCER STATEMENT

19 AUG 2019

BY: 

In respect of: **AirTech™ 9000 A.W.T.S** Household Sewage Treatment Systems

ATT:	Council:
FOR:	

We believe that we have designed the above wastewater treatment system having regard to the basic performance criteria incorporated in the following standards and guidelines:

AS/NZ 1546:1	On-site Wastewater Treatment Units Part 1 – Septic Tanks
AS/NZ 1547	On-site Domestic-Wastewater Management
NZS 4610	Household Septic Tank Systems
ARC Environment:	TP 58 – On-site Wastewater Disposal from Household and Institutions <i>and the requirements of:</i>
NZ Building Code:	Section B2 Durability Section G13 Foul Water Section G14 Industrial Wastes

PERFORMANCE:

The system is designed to achieve the following quality of effluent treatment:

BOD	Less than 20mg/l
Total Suspended Solids	Less than 30mg/l
Faecal Coliforms- Soil	less than a 1000/fu/100ml (CRC GA Standard)
Faecal Coliforms	0 to 200/100ml (after disinfection/soil treatment)

SEWAGE TREATMENT AND EFFLUENT DISPOSAL DESIGN

Treatment Process	Aerated Wastewater Treatment System (A.W.T.S)		
System Design	AIRTECH™ 9000		
Design Capacity	1600L - 2000L per day (maximum)		
DESIGN LOADINGS AS/NZ 1547			
Number of Bedrooms			
Number of Persons *			
Water Supply	TOWN		
Wastewater Flow	180ltrs per person per day		
Total Wastewater Flow *	x 180 = Total litres per day		
Soil Category Type	mm D.I.R per day		
Therefore:			
litres/	mm	=	m of irrigation disposal area required

EFFLUENT DISPOSAL:

The design of the effluent disposal system is based on the discharge of litres per day of treated effluent, at a hydraulic loading of mm per square metre. The required disposal area is square metres.

The effluent is to be dispersed through a subsurface Naan Dripline irrigation system. m of Naan pipe will be laid. The proposed sitting and layout of the disposal area is shown on the attached plan. The irrigation line will be surface mounted, mulched and planted with suitable vegetation.

The on-site contractor is ultimately responsible for ensuring the system is installed in accordance with the Company's installation specifications.

An approved installation Agent will be responsible for the commissioning of the system.

Effluent dispersement will be NAAN DAN purple compensating emitter irrigation lateral. Emitters will be at .600mm spacing with a 2.1ltr per/hr flow rate.

The irrigation system will incorporate a vacuum break and line flushing valve.

A FiltMaster inline ring disc filter will protect the dripper lateral.

SOIL TYPE : (fill in aspects of the layout of the area) EG: North facing...sun

The soil condition is 200mm of topsoil overlying organic silt. Given the nature of the site, soil type has been assessed at – mm D.I.R per day.

RESERVE DISPOSAL AREA

There is available land and landscape for additional disposal if required.



RX PLASTICS

AIRTECH™ 9000

WASTEWATER TREATMENT SYSTEM - SITE PLAN

OWNER	
LOCATION	
DISTRICT	

	System location		Disposal area		Relevant measurements
	Slope		Embankments		Waterways
	Water supplies (wells etc)		Existing and proposed buildings		
	Vegetation (trees/shrubs)				

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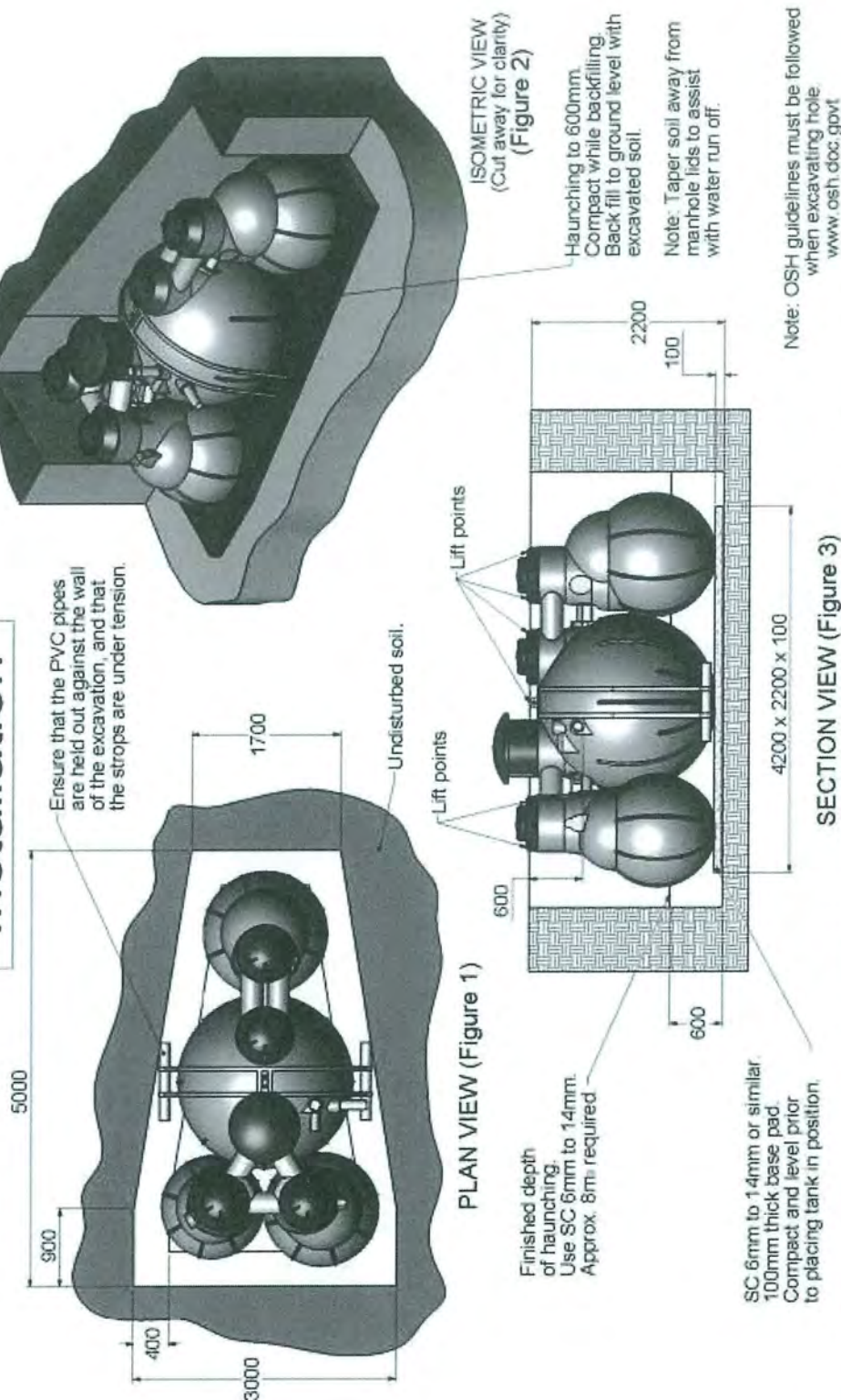
RX PLASTICS LTD
PO Box 360 Ashburton
Phone: 0443 302 9081
Email: sales@rxplastics.co.nz



RX PLASTICS

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For licensing and all other information, contact the property at 301 Plankton Lane. If you do not see your property, please contact the property manager. The property manager is responsible for the property and is not responsible for the property's condition.



Note: OSH guidelines must be followed when excavating hole.
www.osh.doc.gov/

SECTION VIEW (Figure 3)

RX Plastics Ltd.

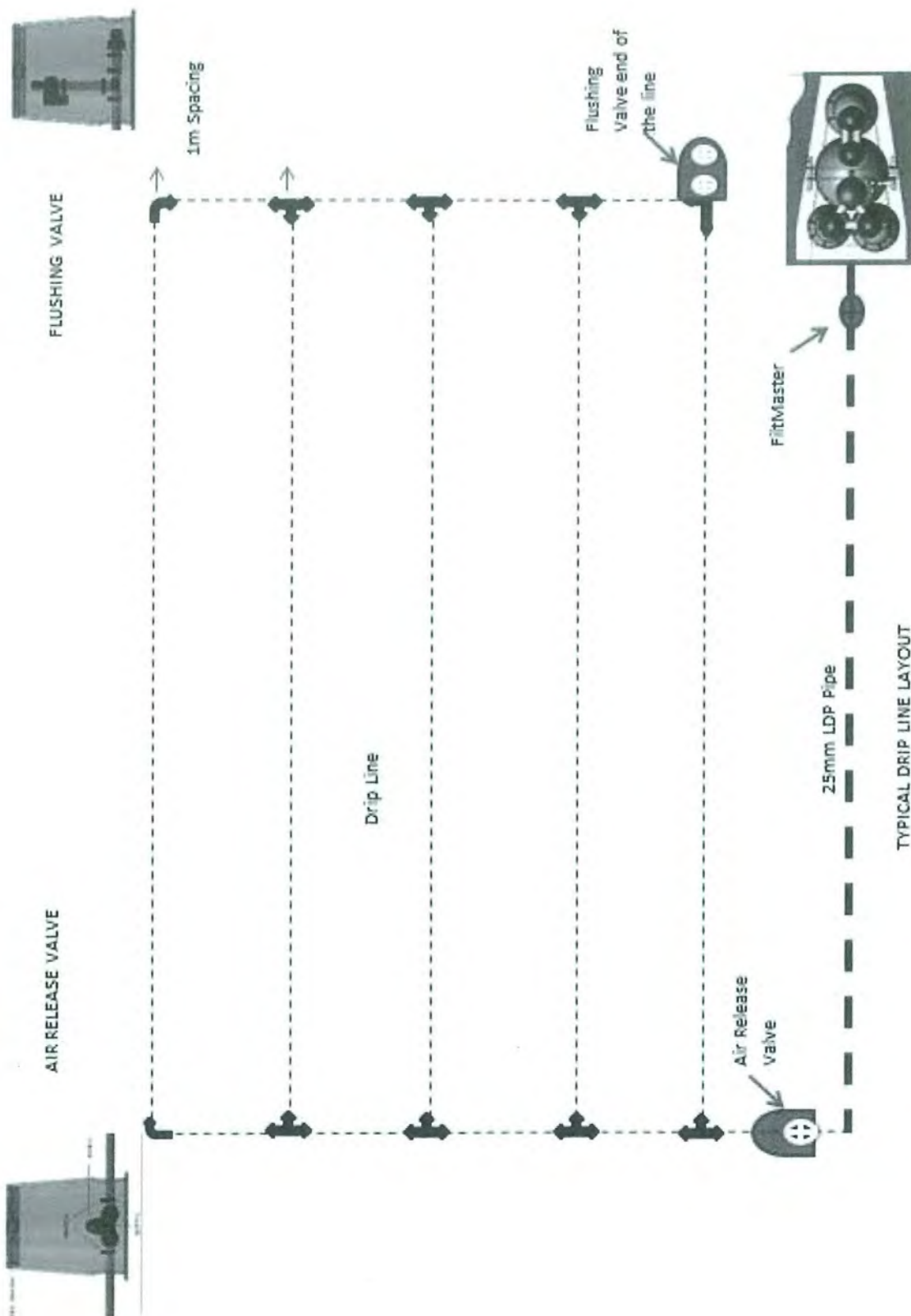
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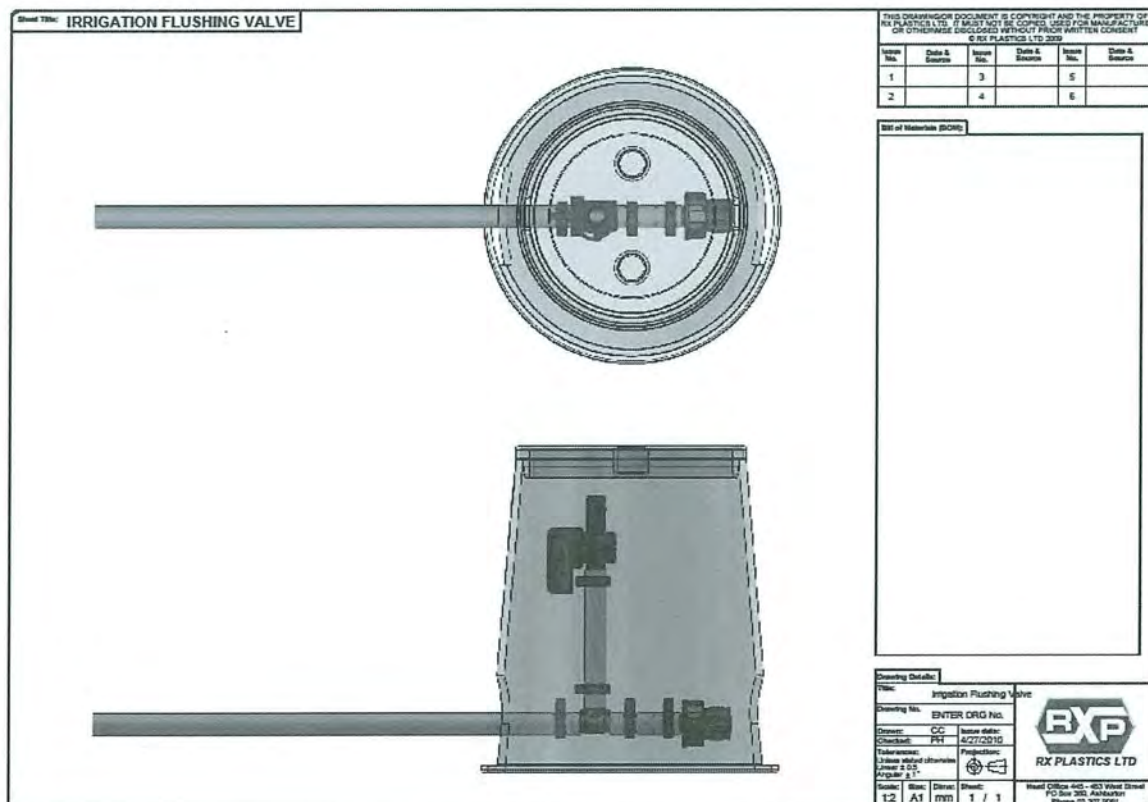
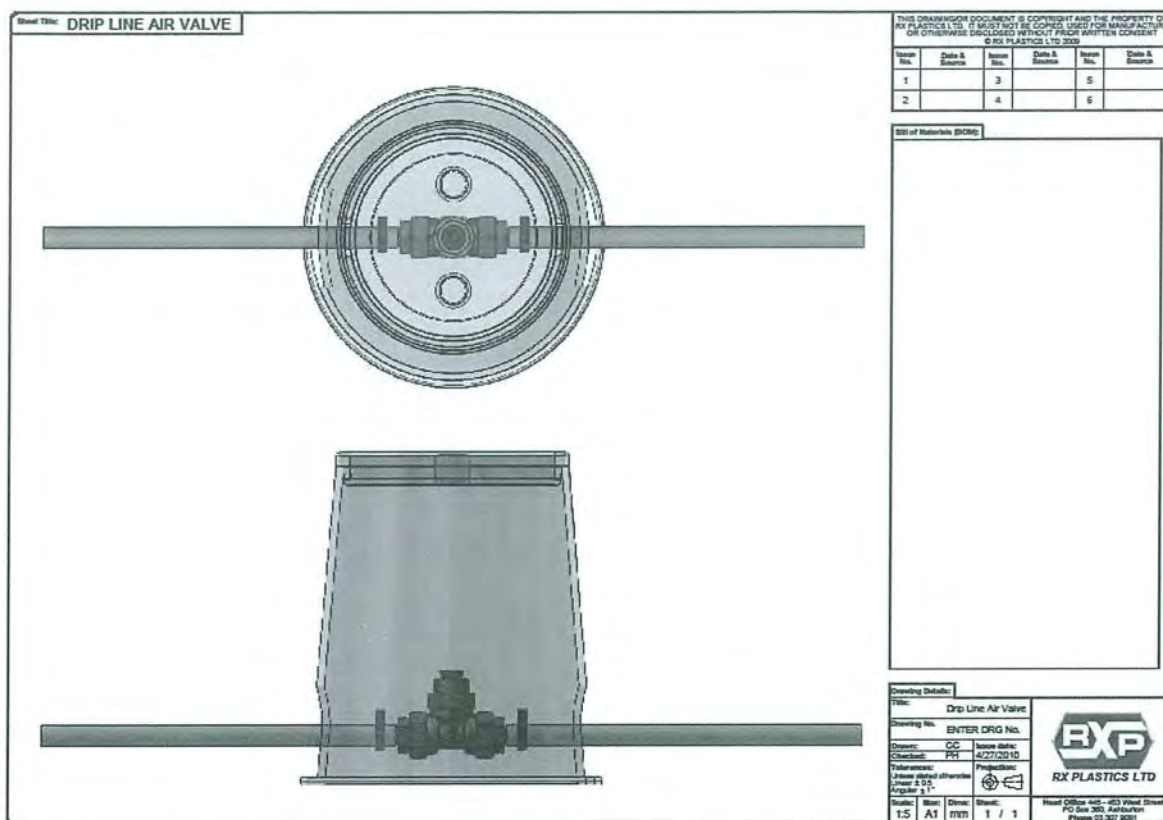
THIRD ANGLE PROJECTION

Air Tech 9000 Installation.

Code:	1:40	Eng Part No.	RXSTAT 33 15 12 10	1/1	NO	A
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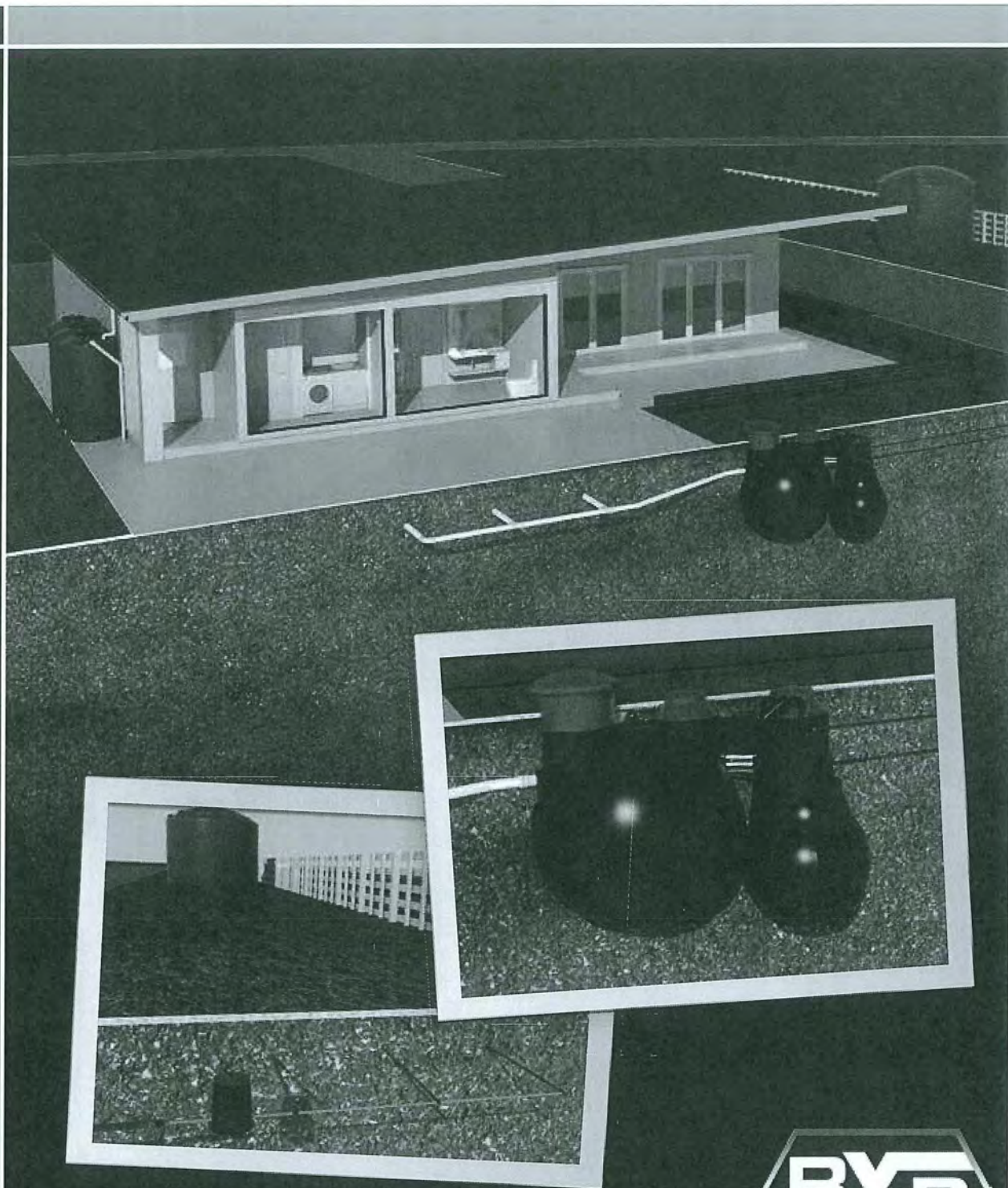
Re	A	V025	Practical - Prepared for Discussion	P.C.	
Re		DATE	REVISION OF SPECIFICATION	By	C.D.





Homeowner's Manual

AirTech™ 7000/9000 and 9000NR



an *Aliaxis* company

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Email sales@rxplastics.co.nz
www.rxplastics.co.nz

RXP
RX PLASTICS



Contents

System and process	3
Guidelines to using your AirTech™ system.....	6
Alarm features and operation	8
AirTech™ alarm and electrical components.....	10
AirTech™ wiring diagram	12
Cleaning your filter / Bio Starter.....	14
Technical specifications	15
Performance certification	16
Commission/servicing report	17
Performance certification	18
Compliance and certification	19

Installer:

Service contractor:

Introduction

Thank you for installing an AirTech™ aerated waste water treatment system. The AirTech™ system is an efficient, lightweight sewerage treatment plant that safely and effectively processes your disposables and wastewater. The unit recycles it as clear, odourless nutrient enriched water to irrigate landscape, shelter belts, coppice wood lots or existing planted areas.

For the environmentally minded this means that the sewage and wastewater is treated on the property where it's produced and then recycled for reuse with little environmental impact on the land.

So welcome to your new wastewater system. It will give you years of reliable service. It is backed and supported by our network of independently trained and approved installation and service technicians.

Our independent, friendly, expert technicians have extensive product and system knowledge and are happy to take your call to provide support wherever you are. It is all part of our commitment to your total satisfaction and peace of mind.

The AirTech™ has been designed recognising the industry's latest Australia/New Zealand joint standard 1546 Part 1 septic tanks –1547 onsite Wastewater Management and A.R.C TP 58. It is local body approved and has been through, and passed all on-site Effluent Treatment National Testing (OSET NTP).

The AirTech™ system meets world health organisation (WHO) effluent quality standards.

The AirTech™ is a tough, robust and effective domestic wastewater system and has been designed by New Zealanders for New Zealand conditions. The design utilises innovative sewage treatment technology and together with modern rotomoulding manufacturing processes at our factories in Ashburton and Hamilton, we can deliver a reliable and efficient wastewater system to you.

Warranty

The AirTech™ aerated wastewater treatment unit is covered by the RX Plastics extended warranty and covers all polyethylene rotomoulded tanks to be free of defects in workmanship and materials for a period of 15 years.

The electrical componentry, including the alarm, is covered by a two year warranty only. The manufacturers own warranty applies to the Airblower and Disposal Pump, and is a one year warranty.

RX Plastics Ltd hold no responsibility for the installation including the design and care of the installation, this is between the independent installer/service agent and the customer.

Servicing arrangements

Your AirTech™ aerated waste water treatment system requires service and maintenance inspections every six months for continuity of warranty. RX Plastics recommends the system be serviced every six months, by our trained independent service agents/installers. This is a warranty requirement.

Your system alarm set will notify you every six months for you to arrange a suitable time to attend to your AirTech™ system servicing needs.

A record sheet will be completed by your service agent at the time of service. The customer copy is for you, another is made available to your local council and a third copy will be retained by the service agent.

Please call your installer/service agent for servicing costs in your area. Servicing is usually carried out every six months, unless heavy usage occurs, during holiday periods for example, where your system may need to be serviced sooner.

Servicing generally includes:

1. A general inspection of tank area, irrigation and drainage
2. Cleaning internal bio filter and external filter
3. Inspection of all chambers for correct operation and usage
4. Checking air blower, submersible pump switch and alarm operation
5. Checking sludge return and adjusting if necessary
6. Ensuring all lids are secure before leaving area

Note: As with any septic tank, the primary tank will need to be de-sludged (pumped out) every three to nine years.

- The cost of de-sludging is the home owner's responsibility
- Never pump out in wet weather as flotation may occur



Your responsibility

As the owner of the system you are responsible for the correct operation and maintenance and to conform to regional and local council requirements.

Council requirements

Now that your AirTech™ system has been installed there are a few council regulations that you must adhere to:

- Irrigated water must not be allowed to run off onto other properties or into waterways
- No fruit or vegetables grown on your property are to be irrigated with effluent from the system. The irrigated water is to be used only for irrigation purposes. It is not suitable for human or animal consumption
- To avoid confusion, use only the purple coloured drip line as this identifies waste water
- The council must approve that the area being landscaped or planted is to their standards
- All storm water and groundwater seepage should be diverted around the disposal and tank areas to avoid entering the system and irrigation area

Holiday precautions

If you are away for more than six weeks please contact your service agent so they can monitor your system.

When you return consider the use of bio starter to restart the biological process, as the anaerobic bacteria in the system would have died due to lack of nutrients.

System and process

So how does it work?

As the proud owner/user of an AirTech™ aerated wastewater sewage treatment system, it is important that you read this manual.

The AirTech™ system has been designed to include a simple owner service programme carried out at six month intervals (depending on usage).

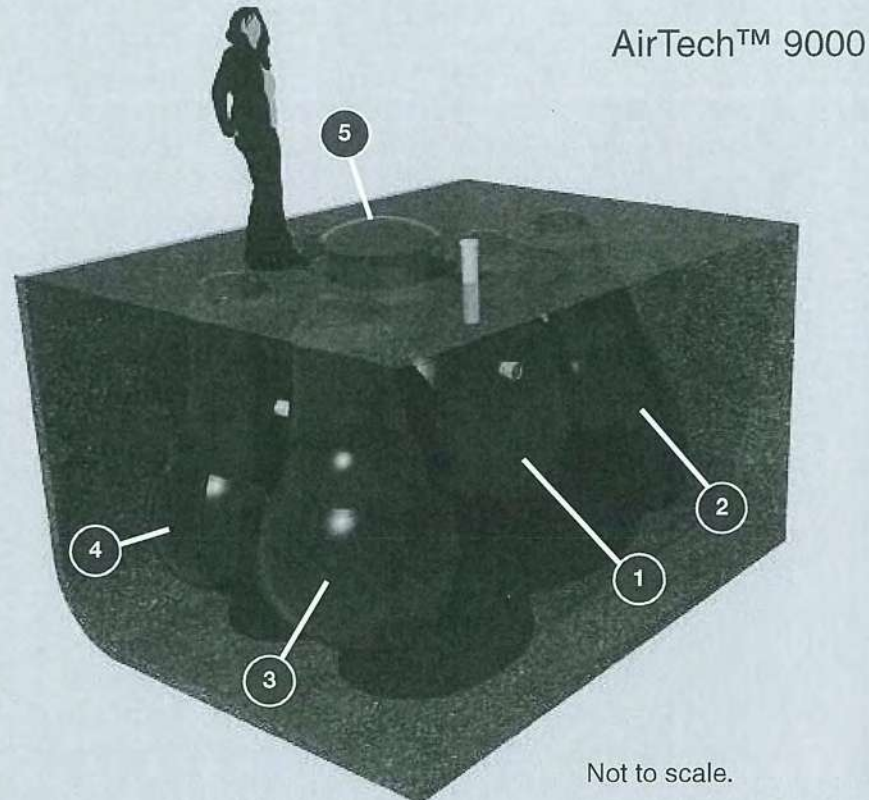
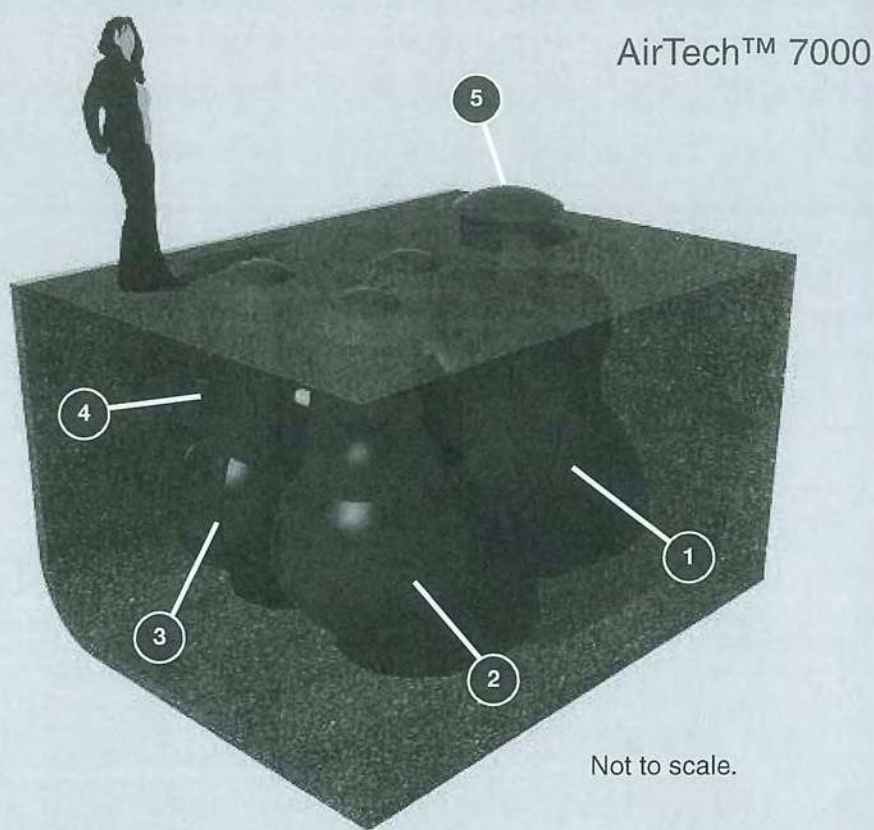
The service requirements of the system should be carried out by an independent, approved qualified service technician.

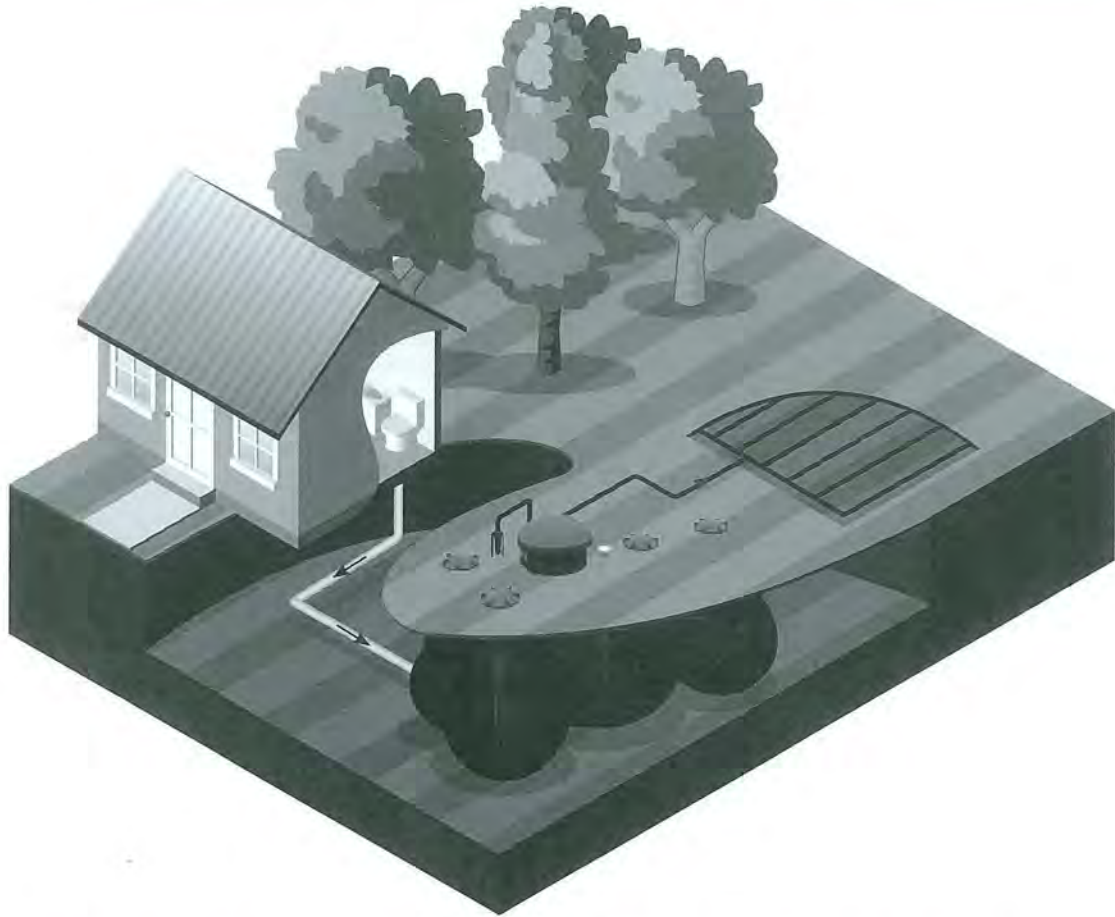
Following and understanding the instructions in this manual will ensure long term trouble free performance of the AirTech™ system.

System and process

The unique AirTech™ multi-tank system process is as follows:

- 1** Primary septic chamber (anaerobic digestion).
- 2** Aeration chamber (aggressive aerobic digestion).
- 3** Clarification chamber (dormant settling of suspended solids and sludges).
- 4** Irrigation pump chamber.
- 5** Blower box: housing for Air Blower and Electronics.





1 Primary septic chamber

This is the main chamber where all household sewage and wastewater is discharged and the settling out of up to 95% of solid waste occurs. There is also a reduction in the biochemical oxygen demand (bod⁵) of up to 40%.

The primary chamber has a large liquid working capacity ensuring maximum retention time allowing anaerobic digestion of the accumulated solid waste. The primary chamber is a sealed chamber making sure there is no crossflow contamination between the separate treatment processes within the system. The outlet is fitted with an industry proven 3mm biofilter minimising solid waste carry-over integrating a flow modulation baffle to manage peak flow levels limiting shock loading of the system.

2 Aeration chamber

The partially treated wastewater flows into the aeration chamber where aggressive digesting aerobic bacteria can further reduce the suspended solid sludge. Efficient oxygen transfer through fine air diffusion maintains high aerobic activity and population. Increased surface area through additional submerged media enhances and accommodates a greater growth of bacteria.

3 Clarification chamber

Wastewater effluent is gravity fed into the clarification chamber where, in quiescent conditions, any remaining sludge and suspended material settle and are returned to the primary chamber through a venturi airlift manifold. This continual flow of enhanced activated sludge ensures a healthy treatment plant in periods of low or zero flow to the system.

4 Irrigation pump chamber

The gravity flow of clean, clear, odourless effluent into the irrigation pump chamber is nutrient enriched and is recycled through a designed irrigation system to enhance landscape, shelter belt or coppice tree woodlots on your property. This chamber is protected with an alarm that will activate in the event of a pump failure, and has a large capacity effluent storage.

5 Blower box

This houses all of the electronic connections (including the alarm set), required for the AirTech™. Connection from the house is terminated on the outside of this box. The blower provides all of the air required for the aerobic digestion of your waste and must constantly run to achieve best results.

Guideline for using your AirTech™ system



Guidelines for using your AirTech™ septic tank

Your home has a modern waste water treatment plant. This plant treats your household waste water to a high quality and requires bacteria (bugs), to break down the waste matter. The wrong products going down your drains will kill the bugs and the system will not operate correctly.

- Do not turn the power off to the AirTech™ advanced septic tank system (unless you are rinsing your external filter) the bacteria will die and the system will smell

Items not to be flushed down drains

- **No bleaches or chlorine (i.e. Napisan – Bleach – Janola)**

These products are designed to kill bugs and will kill off the bacteria in the tank causing smells and constant blocking of the Bio (internal) filter. You can use these products if used in a bucket and tip on the lawn or safe place, not down your drain

- **No fats or oils**

Fats and oils may block the tank filters and kill the bacteria in the tank

- **No tea leaves or coffee grounds**

These may block the filters in the tank and the external filter

- **No washing paint brushes or disposing of paints**

These products will not only kill bacteria in the tank, but the residue is very difficult and costly to remove

- **No disposable nappies, sanitary napkins, tampons or condoms**

These products do not break down and cause a mass build up in the tank, which can cause blockages that can be costly to clean

- **Do not have a waste disposal unit**

This waste takes a long time to break down and the system will require frequent emptying which is very costly

- **Use low sudsing laundry powder/liquid and non-caustic dish washing powder**

Other household items not to be flushed

- Cat litter, kitty litter
- Clothes dryer sheets
- Diapers, baby-wipes
- Antibiotics, medicines
- Hair
- Liquor, whiskey
- Paper towels
- Photo chemicals
- Swimming pool chemicals
- Washing machine lint
- Condoms
- Cigarettes, butts and filters
- Cotton swabs, dental floss
- Dirt
- Food scraps, ground food
- Latex, gloves and similar
- Motor oil
- Pesticides
- Plastic bags
- Trash, toys and scrap
- Water in large quantities

Suitable products to use

Please note: all products should be used in moderation. This list is a suggestion only as there are other products available not listed. Liquid laundry detergents are better suited to septic and waste treatment systems than powder laundry detergents (powder fillers are used in power laundry detergents).

Dish washing liquids

- Ecostore Dishwash Liquid
- Morning Fresh
- Palmolive
- Sunlight

Surface cleaners

- Ecostore spray cleaners
- Nifty
- Swipe
- H7
- Spray and Wipe (limited quantity)
- Jif Cream Cleanser
- Shower Power
- Windex
- Bio Zyme

Dish wash powders

- Ecostore Auto Dishwash Powder

Toilet cleaners

- Ecostore Toilet Cleaner
- Cream cleaners (Jif)
- H7

Clothes washing powders

- Ecostore Laundry Powder
- Cold Power liquid and concentrate
- Ecostore Oxygen Whitener (soaking)
- EarthOn
- Dynamo

The above list is not intended to promote or discredit the product of any company. It is provided to assist in ensuring the correct operation of your waste water treatment system.

Guideline for using your AirTech™ system



General do's and don'ts

- Don't turn your system off
- Do call your service agent when you encounter a problem
- We recommend that you do your washing up on a daily basis so as not to shock load the system
- Try to avoid using showers, washing machines, dishwashers etc. all at the same time
- Don't try to service the system yourself as there are health risks to consider and you may compromise your warranty
- Do use common sense, adhering to the basic rules provided throughout this manual, will guarantee a trouble free, and cost effective system

Suitable plants for Evapo-transpiration systems

Evapo-transpiration systems employ the combined effects of evaporation from soil and transpiration from plants to dispose of wastewater effluent. Moisture is wicked up to plant roots and to the soil surface. The plants use the moisture in their growing processes and subsequently transpire the excess through their leaves.

Native shrubs and trees

Coprosma	Coprosma Propinqua
Hebe	Lacebark (fast)
Manuka	Leptospermum Scoparium
Flax (fast)	Phormium Tenax

Grasses

Jointed Twig Sedge	Baumea Articulata
Longwood Tussock	Carex Comans
Pukio	Carex Secta

Introduced Species

Canna Lillies	Taro
Aralia	Fuschia
Philodendrons	Begonias

Most frequently asked questions:

• What does the alarm do?

The alarm system doesn't run the AirTech™ system, it is an audible and visual alarm to alert the homeowner of possible issues with the system

• My septic tank is starting to smell, what do I do?

Your systems anaerobic bacteria has died or is dying – check the points in the guidelines section (pages 6 & 7) of this manual. If you are still not happy with the results, please consult your independent service agent/installer for assistance

• My septic tank is overflowing, what do I do?

Either the filter is blocked and needs cleaning, the power is off, or the pump has failed. Firstly, check that the power is turned on to your system, if it is, check to see if the outlet filter is blocked and needs cleaning. If the pump has failed, call your independent service agent/installer for assistance

• What is the maximum wireless range of the Smart Water System?

2km – 4km is the standard range, with 10km – 15km possible with the optional extended range Yagi Antenna

• Will reception be reduced if trees or walls are in between the AirTech™ and LCD unit?

Any wireless system will have range and reception reduced by obstacles. Similar to the poor reception of radio stations in valleys and near power lines. It is recommended to minimise obstructions in the direct path of the wireless signal. Metal clad walls will cause a drop in signal and use of an external aerial should be considered

• What happens if there is a power cut or the power to the LCD is interrupted?

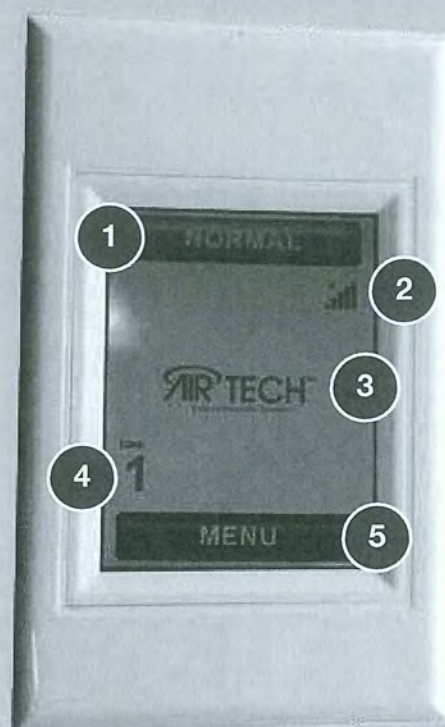
Nothing. Once power is restored the LCD unit will communicate with the tank and previous readings/data will be restored to the screen automatically. No data will be lost and you will not need to re-connect the LCD to the AirTech™ unit

Alarm features and operation

The alarm panel

In 'Normal' mode, your screen should look like this.

- 1 Status button.
- 2 Tank signal strength.
- 3 AirTech™ icon.
- 4 Tank number / Tank 1 = AirTech™.
- 5 Menu button.



Troubleshooting



If you have a fault, your touch screen will be beeping and at the top, in red, it will say 'FAULT'.

- 1 AirTech has a fault, press to see fault.
- 2 Warning icon.



The screen will indicate the fault, either as:

- A High Water Alarm** which can mean that your irrigation filter is blocked and needs cleaning, or that you have a problem with your irrigation pump or
- B Aeration Fault** which means that your aeration blower is not working or blowing enough air, please call your service agent. The buzzer will go off every 24 hours until the problem is resolved.

Alarm features

The AirTech™ is equipped with a wireless alarm system with sensor interface, this will alert you with an audible and visual alarm so you can contact the service agent network in the event of system malfunction.

This wireless alarm system will also alert you to your six monthly servicing. This alarm will go off every six months and can only be re-set by your service agent after he has serviced the AirTech™ unit.

The face plate should be installed in the laundry or garage, and has a "one glance" LCD display screen with graphics designed for the ultimate in simple, user friendly operation.

Please contact your independent service agent/installer in the event of any alarm alert, this is a sewerage system and may be harmful to health.

General

The system will already be paired by your service agent upon installation of your system. The installation process will ensure your AirTech™ unit is connected wirelessly to your base station.

The base station will either be the supplied Wallmount unit or extra option of the Deskmount unit will start flashing to remind you it is time for a service.

Installation

To add an additional AirTech™ (or a water tank)

1. The Faceplate will say ...ADD TANK waiting ... the tank unit will have a RED connect light on solid, then press TANK → ADD.
2. For an AirTech™ unit, under the blower box, press the CONNECT button below the RED light (Figure 1) for 2-3 seconds until it flashes green then it turns back to solid red.

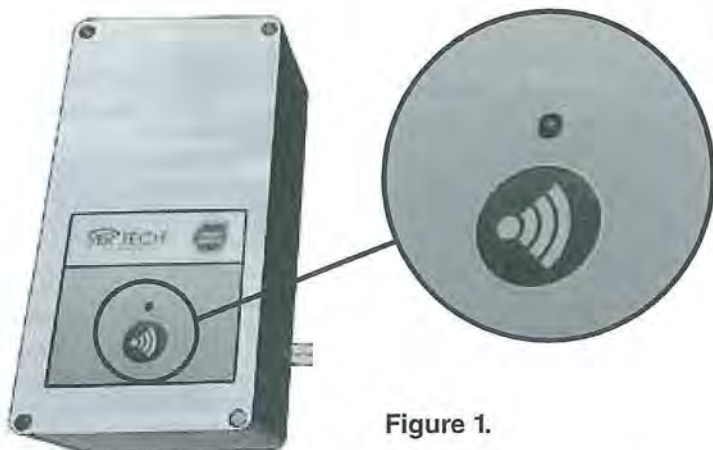


Figure 1.

3. Wireless Alarm is now PAIRED and ready for use.

4. On the Alarm Faceplate it will say Septic 1 added, this is now paired with the Tank unit, Touch EXIT on the screen and the AIRTECH™ symbol will be displayed showing the top bar in green and displaying NORMAL.

AirTech™ alarm testing

1. Test Air Switch

In Tank unit, this has a 10 second delay before alarming. The RED connect light in the tank unit will flash once and the Alarm Faceplate will display the TOP BAR in RED reading FAULT, there will also be an audible alarm with a WARNING triangle flashing on the left hand side above Tank 1, when the FAULT bar is touched it will SNOOZE the alarm sound for 24 hours, and the display will show what the fault is and who to contact, this is the same when the float switch eventually alarms.

2. Test float switch

Lift the float switch and watch the Tank unit CONNECT light, it will flash GREEN back to solid RED. The faceplate will show nothing as there is a 30 minute delay on alarming to prevent false alarming. If you want to check the float switch is working at the faceplate touch MENU, then MORE, then ABOUT, tap the centre of the screen saying SMARTWATER 5 times. It will show DIAGNOSTICS, the bottom line INPUTS will show 00000010 for float switch and 00000001 for Air switch of 000000011 for both Float and Air switch.

To remove AirTech™

1. To remove AIRTECH™ tank 1 from faceplate, touch MENU, TANK, REMOVE, on SELECT TANK screen select 1 and then YES, exit out and you will be back to original ADD TANK screen ready to PAIR a unit.

To add an additional water tank

1. Follow the information provided with the Tank Unit Kit.

Points to Note

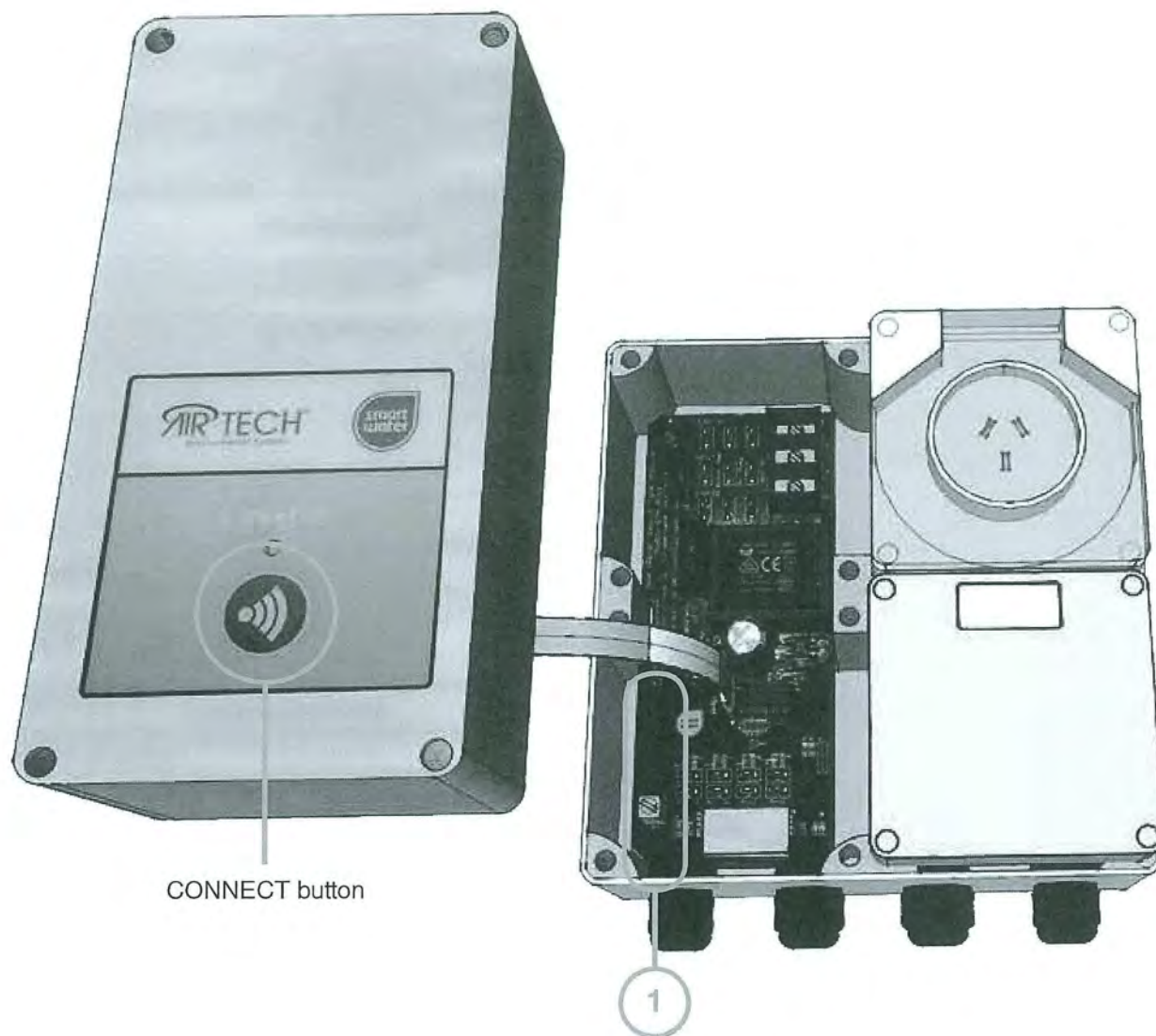
- Any faceplate can be paired to AirTech™ Tank unit, they ALL have AirTech™ software
- You add water tanks the same way
- Can monitor up to 9 AirTech™s with one Faceplate or 1 AirTech™ and 8 Water Tanks and a Pump controller

AirTech™ alarm and electrical components

AirTech™ Waste Water Controller

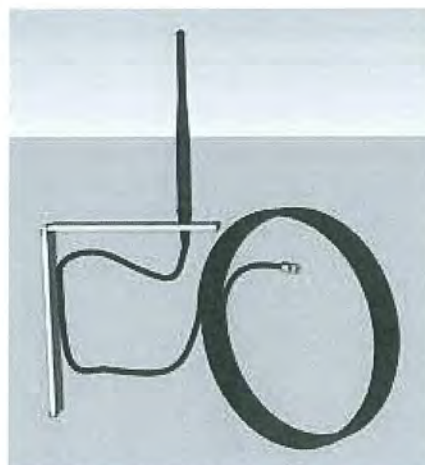
Figure 1.

SW800-SEPTIC – Smart water control unit.



Welcome to your new smart water alarm set. This operates on wireless signals so there are a few considerations to keep in mind:

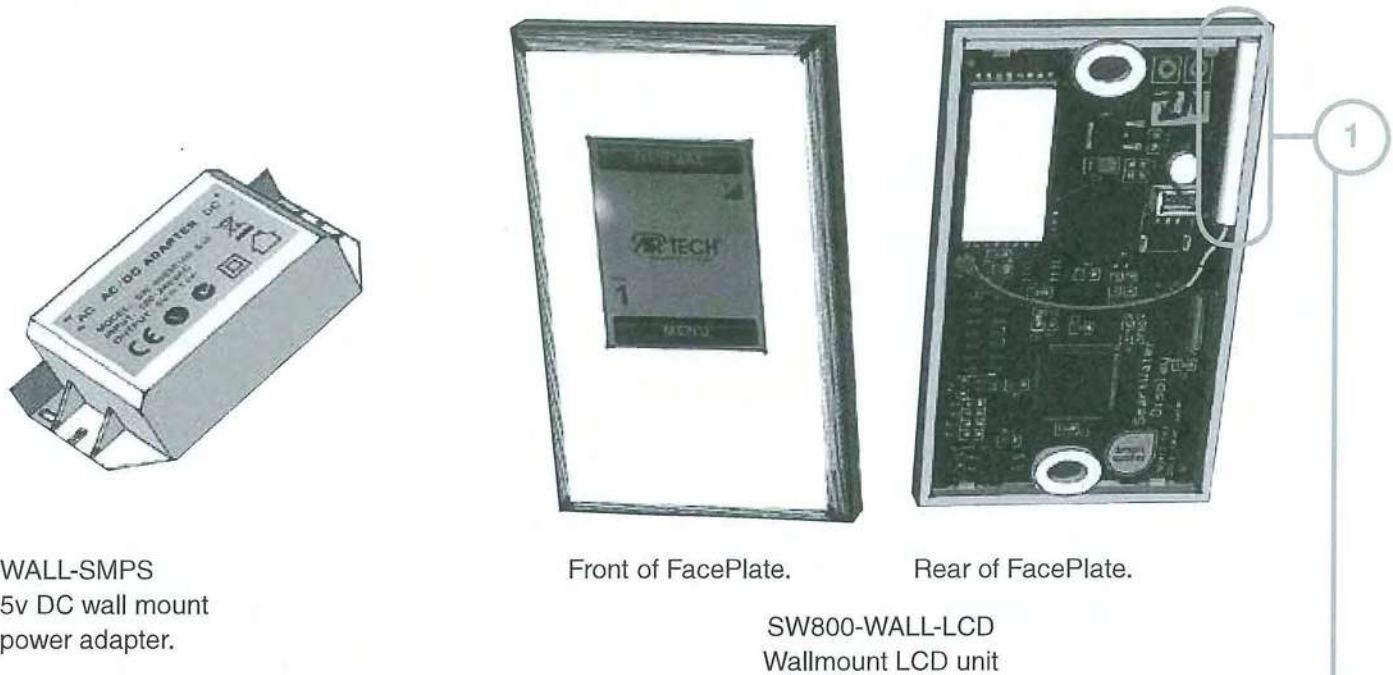
1. Installation of the AirTech™ system generally requires line of sight between the ground tank unit and the LCD base station. If there are significant obstacles affecting reception, this can normally be resolved with the use of higher gain antenna. The antennas can be externally mounted for better reception.
2. The signal is strong but may be affected by having the antenna ① of the AirTech™ below ground. Water and soil absorb the radio waves and can affect connection to the AirTech™ unit.



Externally mounted antenna.

Supplied with the AirTech™ as Standard

Figure 2.



Optional extras to an AirTech™ – bought separately

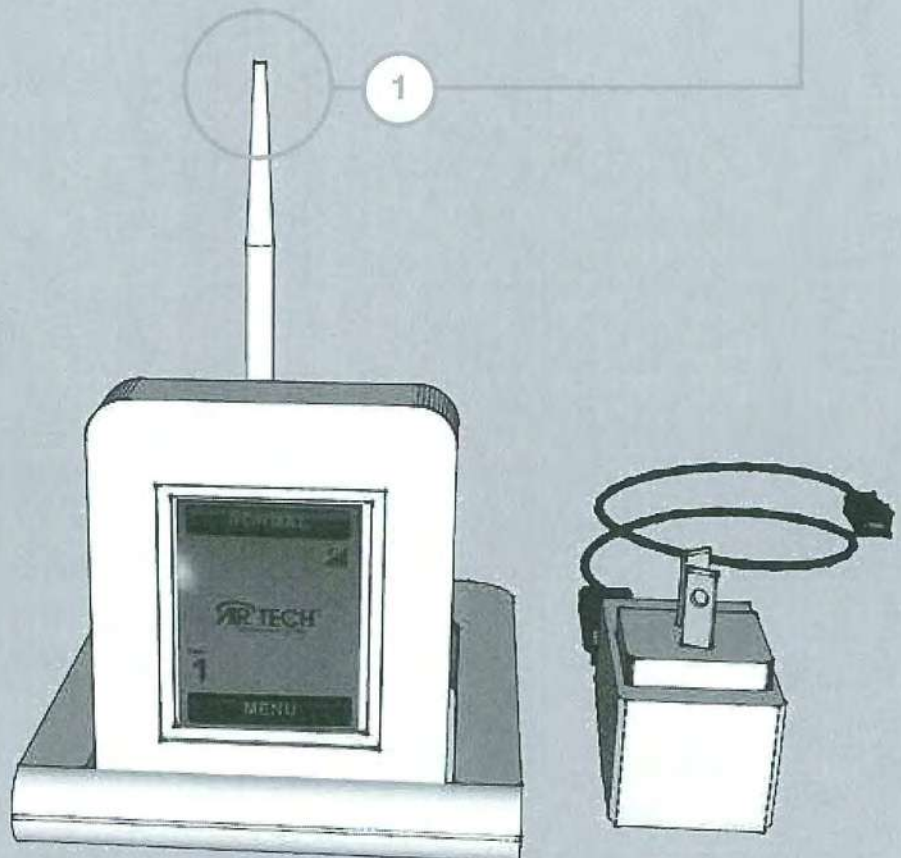
Figure 3.

SW800-DESK-LCD. Desktop LCD unit.

Antenna

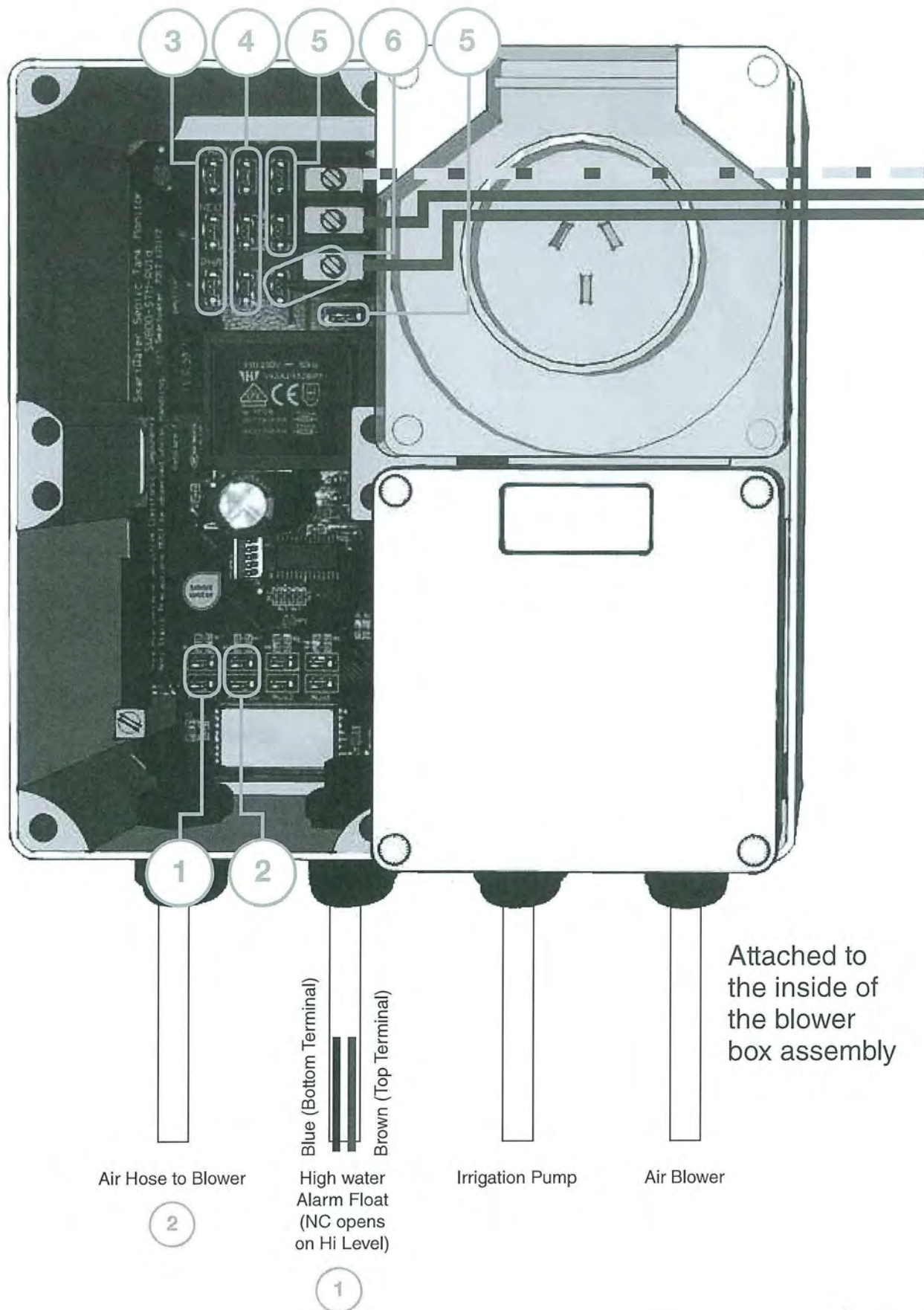
Should be installed vertically and should be as high above ground as possible (Figure 2 and Figure 3).

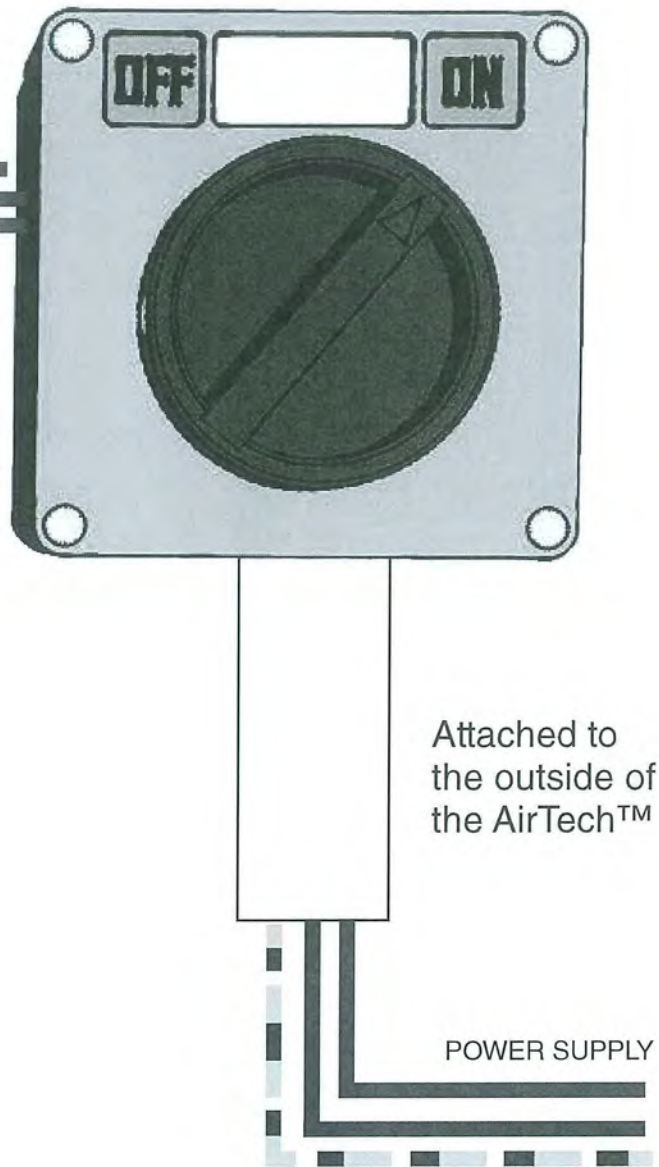
This AirTech™ alarm system can monitor up to 8 other units (AirTech™ or Tanks) by the addition of either more AirTech™ systems or the Smartwater Tank Unit Kit (RXST-TANK KIT4M).



AirTech™ wiring diagram

AirTech™ Waste Water Controller

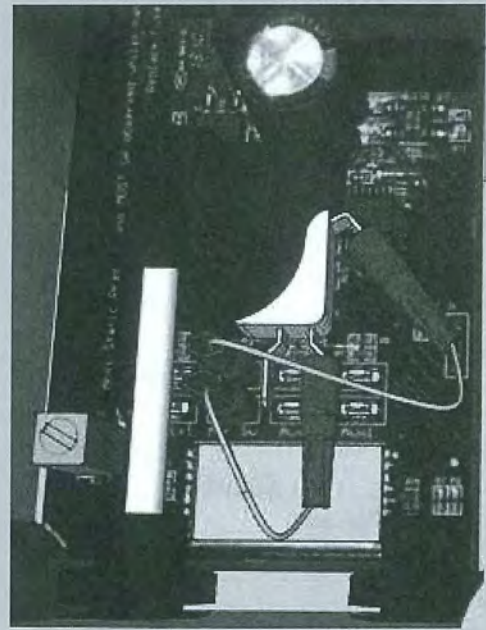




Power supply to be installed as per AS/NZS 3000:2007 RCD to be installed at the local DB.

RCBO or MCB/RCD combination rating is to be minimum of 16Amp.

- 1 High water Alarm Float (NC opens on Hi Level) – brown wire to the top and blue to the bottom terminal.
- 2 AirSwitch connected to the terminals and the air hose connecting to the air blower via a gland (see image below).



- 3 Irrigation Discharge pump is connected here (terminals top to bottom – Earth, Neutral, Phase).
- 4 Air Pump (blower) connected here (terminals top to bottom – Earth, Neutral, Phase).
- 5 3 pin socket connected here (terminals top to bottom - Earth & Neutral, Phase is connected to the bottom of the terminal block).
- 6 Electrician to connect link here to live the smartwater board between the Phase from the switch to the first Phase terminal.

Notes:

1. Installer or electrician to size cabling to suit.
2. Terminations can work loose during shipping.
Please check all terminations prior to livening of this unit.
3. RCD unit must be installed for warranty of this product