

STAGE: Consent

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idesignarchitecture

The following design elements have been specified by other designers:

- Truss Design / Placemakers
- Engineered Wingwall Footings

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Proposed New Home for:

Dylan Dickson and Hannah Gerrard

Job no: **CL002**

Address:

6 Pouakai Street

Lake Hawea

Date: 28/09/2026

Foundation (Firth RibRaft)

Firth RibRaft Floor System (Design not requiring specific engineering input for the Firth RibRaft Floor System): reinforced concrete waffle raft floor slab-on-ground, on 0.25 polythene DPM.
85mm thick slab supported by grid of ribs, 100mm wide at 1200crs each way. Overall depth 305mm.
300mm wide Edge beams under load bearing walls laid in strict accordance with the latest FIRTH specification. Firth Raftmix concrete to all foundations.

Min. 5mm - 25mm max. sand blinding to cover hardfill to ensure the vapour barrier is protected from any granular protrusions
Malthoid under all bottom plates, overlapping timber by min. 6mm.

External Walls (SG8)

140x45 H1.2 frame +140x45 top plate, studs @ 600crs max,

Axon Panel: nogs @ 800crs.
Vertical Hermpac Cedar: nogs @ 480crs max

James Hardie Scyon Axon Panel:
For timber cavity construction method the following framing is required:
• a minimum 70mm wide stud is required at vertical panel joint when fixing with HardieFlex 60 x 3.15mm nails.
• The framing must fully support all panel edges.
• The framing must be rigid and not rely on the cladding panel for stability.
• an extra stud is required in internal corners.

For CLD Structural Cavity construction method the following framing is required:
• A minimum 38mm wide stud is required at panel edges when using CLD Structural Cavity Battens.
• The framing must fully support all panel edges.
• The framing must be rigid and not rely on the cladding panel for stability.
• an extra stud is required in internal corners.

MARSHALL WATERPROOFING Tekton building wrap to all exterior frames

Standard 10mm GIB linings throughout, except wet areas. Fixed to comply with the latest Winstones GIB Manual - level 4 paint finish

Wall framing behind cavities
Where stud spacing's are greater than 400 mm, and flexible wall underlay's only are used, an intermediate means of restraining the flexible wall underlay and insulation from bulging into the drained cavity shall be installed.
An acceptable method to achieve this is using one of the following:
• intermediate cavity batten between the studs.
• 75mm galvanised mesh.
• Polypropylene tape or galvanized wire at 300 mm centres fixed horizontally and drawn taut
Bottom plate fixing: Refer to Ramset table (or equivalent fixing installed as per manufacturers specs). M12x140mm bolt/screw with 50mmx3mm sq washer min 90mm embedment. 150 mm off each end of the plate and be spaced at a max. of 900crs, or 600crs when used on slab edges formed by masonry header.

Exterior Cladding

James Hardie Axon installed, flashed and finished to the latest James Hardie specifications and in accordance with NZBC: E2/AS1 External Moisture. Merchant to include all flashings & fixings as required by cladding system.

CLD Structural cavity battens: (2450mm long, 70mm wide and 19mm thick)
The battens are fully sealed on all faces.
• Structural Cavity Batten must be fixed to the studs over building underlay or RAB Board.
• The battens are run continuously over the studs but they must have a gap at the floor joist level to allow for structural shrinkage and deflection in joists.
• The CLD Structural Cavity Batten can also be butt jointed over the studs within the floor height. The batten ends must be cut between 20°-45° and be installed to deflect the moisture to exterior.
• The ends must be sealed and butted using an adhesive sealant in the joint
• The minimum framing width required to fix CLD Structural Cavity Batten is 45mm
• All site cut ends of CLD Structural Cavity Battens must be sealed on site with Dulux Acraprime 501/1 sealer or Resene Quick Dry before installation.
• CLD Strutural Cavity Battens are not to be used in situations where design wind pressures are above 2.5kPa(uls).
• CLD Structural Cavity Battens must not be used to a length smaller than 300mm.

Refer to Table 2 for CLD Structural Cavity Batten spacing and fixing size and fixing centres. The fasteners must be driven at a minimum distance of 50mm from the batten ends.

Selected Herman Pacific Cedar Vertical Shiplap various sized cladding on CAVIBAT battens, installed, flashed and finished to the latest Manufacturers specifications and in accordance with NZBC: E2/AS1 External Moisture. Merchant to include all flashings & fixings as required by cladding system.

External Joinery

Aluminium joinery installed to comply with NZBC: E2/AS1.
Pre-primed jambs, architraves.
Approved window sealing tape to all openings.
Protecto Tape flashing tape over flashing fixings. Do not fix cladding through flashings.
Glazing to comply with NZS:4223:2008/2016 amendments.

Internal walls (incl. LBW) (SG8)

90x45 H1.2 frame + 90x45 top plate, studs @ 600crs max, nogs @ 800crs.
Standard 10mm gib linings throughout, except wet areas. Fixed to comply with the latest Winstones Gib Manual.- level 4 paint finish
Bottom plate fixing: Ramset HD875 drive pin + washer (or equivalent) @ 600crs (150 off each end) (or equivalent fixing installed as per manufacturers specs)

Wet Areas

Floor finish: Refer to Floor Plan, 'Floor Finishes Key'
Non-slip vinyl lining over sealed floor. Minimum slip resistance co-efficient for level surface between 0.25 - 0.50 acceptable in accordance with NZBC: D1/AS1 Access.
Option 1 - Cove vinyl up wall 100mm, fix skirting or vinyl smooth edge to wall junction
Option 2 - Waterproof seal vinyl to edge of painted skirting, contractor to comply with NZBC: E3/AS1 Internal Moisture.

Non-slip tiles over waterproofed floor. Minimum slip resistance co-efficient for level surface between 0.25 - 0.50 acceptable in accordance with NZBC: D1/AS1 Access.
Tiler to waterproof floor & wall to comply with NZBC: E3/AS1 Internal Moisture.
Approved waterproofer (nominated by tiler) applied to manufacturers instructions, non-slip ceramic tiles laid over with even grout lines. Use flexible MS sealant to internal corners, wall & floor – tiler to supply producer statement for waterproofing & tiling (Contractor/Owner to confirm finish)

Wall & Ceiling finish: BATHROOM & ENSUITE
GIB Aqualine: 10mm to walls and 13mm to ceilings 1/coat GIB Sealer with 2/coats semi-gloss or gloss, acrylic enamel paint

Ceilings (SG8)

Rondo battens on clips fixed to trusses as per manufacturers specifications @ 600crs.
Ensure battens are straight prior to lining. 13mm Gib linings with 32mm x 6g GIB® Grabber™Screws @ 600crs. Glue daubs to be minimum of 200mm from centre screw.
Do not screw where you glue. 32mm x 6g GIB® Grabber™ Screws @ 200crs around the perimeter. Gib stopping to level 4 paint finish. 1/850sq ceiling access to roof space.
Bottom chord restraints are required as per truss design.
Fix 90x45 runners to top of bottom chords.

Table 2

Batten fixing				
Fixing Type	**Framing**	**Basic Wind Pressure kPa (ULS)**	**Batten centres max. (mm)**	**Fixings centres max. (mm)**
65mm x 2.8mm RounDrive ring shank nail hot dip galv./ s.steel	Timber	Up to 1.5 (Up to and including VH wind zone)	600	250
		Up to 2.5 (>VH wind zone)	400	200
50mm x 9-10g Countersunk head steel screw class 3/4	*Steel 0.55 to 1.6mm BMT	Up to 1.5 (Up to and including VH wind zone)	600	250
		Up to 2.5 (>VH wind zone)	400	200

For fastener durability information, refer to Clause 6.2 of this document.

CLD Structural Cavity Battens less than 400mm in height must have fixings at maximum 150mm centres.

Battens must be fixed over studs.

Roof (SG8)

Truss Design:
Pre-fabricated GANGNAIL 33° pitch H1.2 trusses @ 900crs synthetic breathable type self supporting underlay laid vertically with min 150mm lap.
70x45 H1.2 purlins, spanning 900mm.
Purlin spacings - End Span - 600mm, Intermediate Span - 900crs.
Fixing - Type T - 1/10g self-drilling screw, 80mm long purlin/truss connection (2.4KN fixing)

Colorsteel valley trays fixed to ex 25mm H3.2 valley boards (see detail)
Lumberlok strip brace & tensioners tightened firmly across roof planes.

Longrun colorsteel Maxam roofing (BMT 0.40) as per elevations. Roofing fixed with compatible roofing nails or screws and sealing washers, by qualified persons with flashings as required to all junctions - flashings fixed with compatible roofing screws and sealing washers

Fixing pattern = T1 fixing pattern = fix every crest
Note: every sheet of roof cladding to span at least 3 supports)

8.4.8 Fixings: Trapezoidal
Fixings shall be as shown in Tables 11, 12, 14 and 15, and shall be a minimum 12-gauge screw, as shown in Figure 39, which complies with Class 4 of AS 3566: Part 2.
8.4.8.1 Fixing requirements
Fixings shall:
a) Be fixed through crests,
b) Penetrate purlins by a minimum of 40 mm for nail fixings and 30 mm for screw fixings,
c) Include sealing washers of:
i) neoprene (having a carbon black content of 15% or less by weight),
ii) profiled washer and EPDM washer where required to allow for expansion of the profiled metal roof cladding.

NZBC E2/AS1 8.4.10 Allowance for Expansion
Allowance shall be made for expansion of corrugated and trapezoidal roof cladding as shown in Table 16.
Refer also to the latest NZ metal roof & wall cladding code of practice

Insulation

R5C pink Batts insulation to all ceilings.
Maintain a 25mm gap clearance between the insulation and roof underlay.
Notch over trusses.
R3.2 115mm Skillion Batts to perimeters
R3.2W Pink Batts insulation to all 140mm exterior wall
R0.50 Joinery. (Low E_4 glass, Thermally broken frame, Argon gas)
R1.26 construction value - 220mm pods - no added insulation

Soffit

4.5mm Hardiflex soffit lining fixed to 90x45 soffit bearers & 90x45 stringer at wall.
Refer to roof plan for eave widths, 25x19pp soffit mould.
Colorsteel Fascia, spouting & Downpipe system.

Snow straps as required: Standard Metalcraft 30mm .55 gauge colorsteel straps fixed to roof with Tex screws and riveted to the gutter, fixed @ 600 crs.

Soffit linings framed & fixed in accordance with 'EAVES & SOFFITS by James Hardie, Installation Manual'

ARCHITECTURAL DRAWINGS TO BE READ IN CONJUNCTION WITH ALL RELEVANT PRODUCER STATEMENTS AND MANUFACTURERS SPECIFICATIONS.

All Construction in accordance with NZS 3604:2011 & NZBC

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PLAN NOTES

Scale:
Rev:
Sheet no: 1
Design: A1 | Drawn: RC/TN | Check: AC | LBP: AC | Date: 28/09/2026

Wind:	Earthq:	Exposure:	Snow:	Climate:
HIGH	3	B	N5 2kPa	6

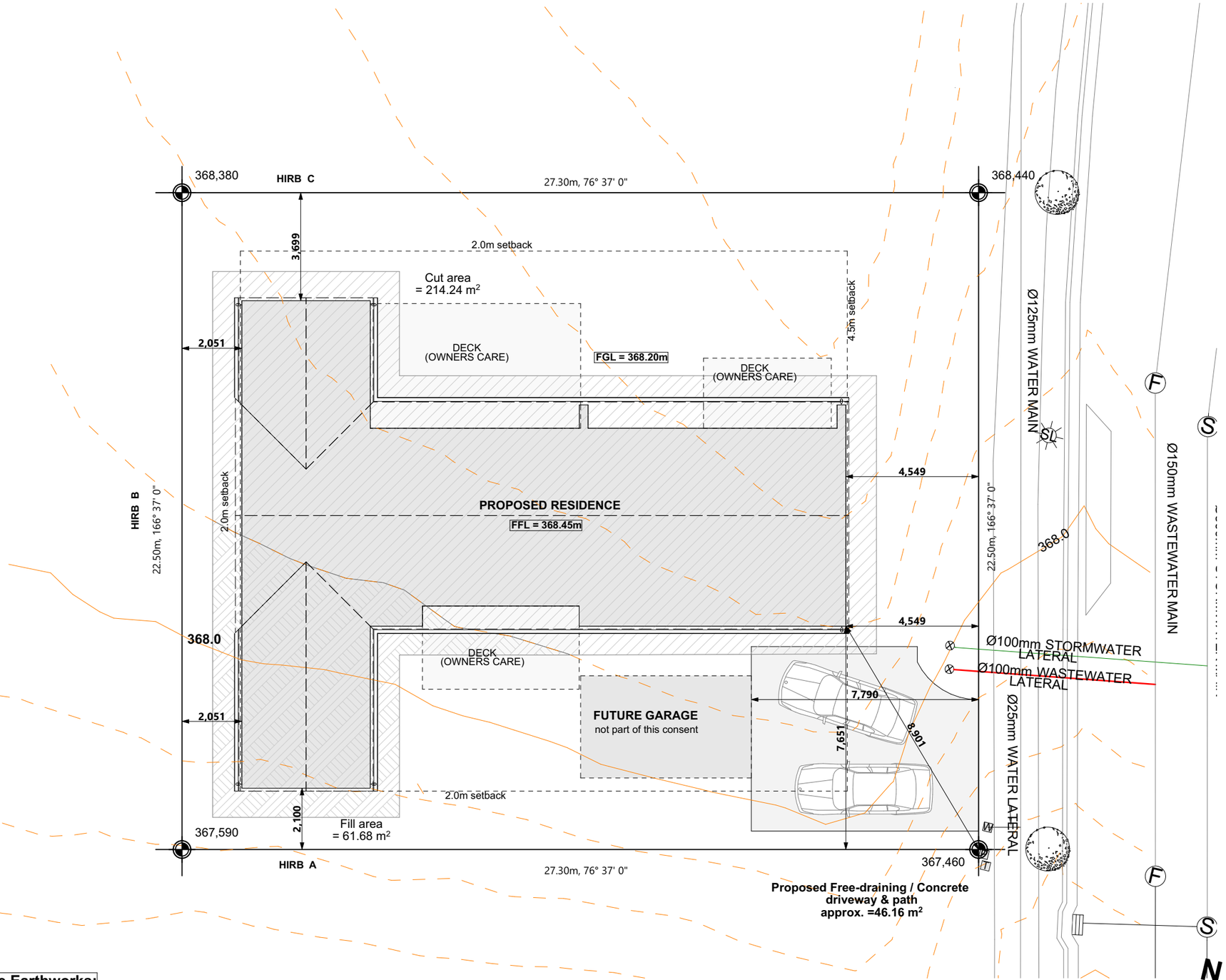
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Client Details:
Dylan Dickson and Hannah Gerrard

Address:
6 Pouakai Street
Lake Hawea

Job no: **CL002**

Bespoke



Cautionary Notes:
BUILDING CONTRACTOR TO ASSESS SITE TO ENSURE DAYLIGHTING & BUILDING RESTRICTIONS ARE COMPLIED WITH.
NO LIABILITY FOR ENCROACHMENT SHALL BE HELD BY DESIGNER IF SITE IS NOT SURVEYED BY A REGISTERED SURVEYOR PRIOR TO COMMENCEMENT OF FOUNDATIONS.

Construction Notes:
Before building is erected on site, all rubbish, noxious matter and organic matter shall be removed from the area to be covered by the building.

Ensure final building platform & finished ground have an even fall away from building to ensure water not be allowed to accumulate in buildings subfloor.
Any fill to be dry & approved by engineer & compacted down in accordance with NZS.3604.2011

Contractor to
- confirm ground is 'Good Ground' 300kPA bearing to comply with NZS 3604: 2011, except in the case of SED design, or when using Firth RibRaft Floor System (refer Ribraft manual).
- locate all service connections points on site prior to commencement of works. Check invert levels or pipes and manholes.
- confirm plumbing route and fixture positions on site prior to commencement of works.
- locate all electrical and water services on site.
- confirm on site all boundary bearings, lengths & peg locations on site prior to commencement of works, to ensure house position is correct.

HIRB = Height in Relation to Boundary

Sediment Control:
- No building work will be started on this project until the construction of an approved stormwater outfall has been completed for this proposed Lot
- All erosion and sediment control structures are to be inspected and maintained daily
- Prevent any backfill or debris from washing onto council or neighbouring properties
- All ground cover vegetation outside the immediate building area to be preserved during the building phase
- All erosion and sediment control measures are to be installed prior to commencement of earthworks
- Stockpiles of clay and materials are to be covered with impervious sheeting
- Roof water downpipes to be connected to the main stormwater system as soon as roof sheathing & spouting is installed

NZBC F5:
Construction and Demolition Hazards
Acceptable Solution F5/AS1

1.0 Work-Site Barriers
1.0.1 The necessity for barriers will depend mainly on the site location.
The need will be greater in areas with high levels of pedestrian traffic (i.e. in Central Business Districts), than in industrial or rural areas.
Barriers are not necessary for domestic dwellings up to 2 storeys above ground level unless specific hazards exist.
At all work-sites hazard evaluation will take account of:
1. Pedestrian counts adjacent to the site.
2. Car parking adjacent to the site.
3. Location of neighbouring buildings.
4. Presence of neighbouring work-sites or recreation areas.
5. Proximity to schools or early childhood centres.
6. Proximity to housing.
7. The depth of a water hazard.
8. The period of time for which ponded water will be present.
9. The accessibility and 'visibility' of the site.

1.0.2 If a work-site is not completely enclosed, and unauthorised entry by children is likely, it is acceptable for specific hazards to be fenced only when workers are absent from the immediate vicinity.

1.1 Site Fences and Hoardings
1.1.1 Fences and hoardings shall extend at least 2.0 m in height from ground level on the side accessible to the public.
1.1.2 An acceptable fence may be constructed with galvanised chainlink netting having a maximum sized grid of 50 mm x 50 mm. Post spacing shall be a maximum of 2.5 m, and the gap between the bottom of the fence and ground no greater than 100 mm.

Finished Floor Level (FFL) shall be:
a) For sites level with or above the road, no less than 150 mm above the road crown on at least one cross-section through the building and roadway
b) For sites below the road, no less than 150 mm above the lowest point on the site boundary
c) FGL to be a minimum of 225mm below FFL with a fall away from the building
d) FFL to be a minimum of 150mm above paving level at foundation, with a fall away from building
e) Minimum FFL required by council/ consent notices etc.. to be confirmed by main contractor

Approximate Earthworks:

Cut — plan area: approx 214m²
volume area: approx 41m³

Fill — plan area: approx 62m²
volume area: approx 10m³

Min. FFL 349.20 MASL

Lot:	**71**
DP:	**624962**
Site Area:	**610m²**
Gross Plan Area:	**192.92m² (includes covered areas)**
Site Coverage:	**31.6% (35% maximum)**
Maximum Building Ht:	**7m**
Territorial Authority:	**Queenstown-Lakes District Council**
Planning Zone:	**Township / Suburban Residential**

All Construction in accordance with NZS 3604:2011 & NZBC

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SITE PLAN

Scale: 1:150
Rev:
Sheet no: 2

Design: A1 | Drawn: RC/TN | Check: AC | LBP: AC | Date: 28/09/2026

Wind:	Earthq:	Exposure:	Snow:	Climate:
HIGH	3	B	N5 2kPa	6

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NOTES:

SERVICES HAVE BEEN LOCATED ON SITE WHERE VISIBLE AND ACCESSIBLE AT THE SURFACE, OTHERWISE THEY HAVE BEEN DERIVED FROM DESIGN.

UNDERGROUND UTILITY SERVICES HAVE NOT BEEN SHOWN.

DIMENSIONS AND AREAS ON THIS PLAN ARE SUBJECT TO LINZ APPROVAL AND SITE WILL BE SUBJECT TO CONSENT NOTICES AND LAND COVENANT. RECORD OF TITLE SHOULD BE CHECKED ONCE ISSUED.

DATUM INFO:

COORDINATE SYSTEM - NZGD 2000 (LINDIS PEAK CIRCUIT)
DATUM - DUND58

ORIGIN OF COORDINATES : SPIKE 108 (PATERSONS CONTROL)
ORIGIN OF LEVELS : SPIKE 108 (RL = 367.331)

LEGEND

- SUBJECT LOT BOUNDARY
- ADJACENT LOT BOUNDARY
- WASTEWATER LINE
- STORMWATER LINE
- WATER MAIN
- KERB / EDGE OF SEAL
- 311.0 EXISTING CONTOURS (0.2m INTERVAL)
- FOOTPATH
- 324.12 SPOT HEIGHT LABEL
- W WATER TOBY
- P POWER BOX
- T TELECOM CONNECTION POINT
- STREETLIGHT
- TREE
- S F STORMWATER / FOULSEWER MANHOLE

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TOPOGRAPHICAL PLAN

Scale:	Sheet no:
Rev:	3
Date: 28/09/2026	

Design: A1	Drawn: RC/TN	Check: AC	LBP: AC

Wind:	Earthq:	Exposure:	Snow:	Climate:
HIGH	3	B	N5 2kPa	6

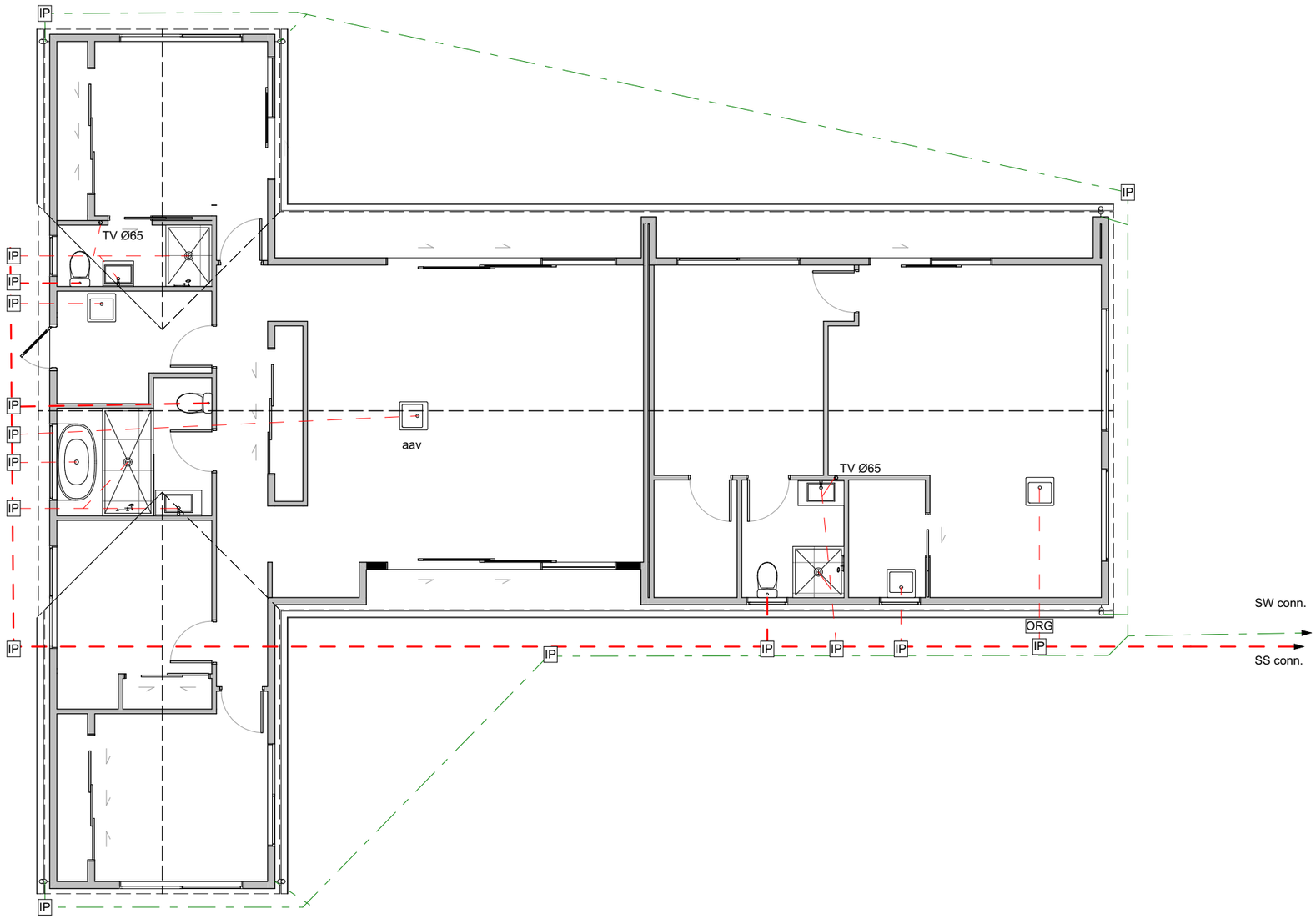
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Construction Notes:
Plumbing to AS/NZS:3500.2.2 (min 1:60 pipe gradient) by qualified tradesman.
Contractor to locate all service connections on site prior to earthworks confirm all boundary setbacks & restrictions comply with current regulations prior to commencement of foundations.
All waste pipes PVC. Sizes, fall, venting & discharge to be confirmed by NZ qualified plumber. Confirm positions of available services cabling etc on site prior to any excavation

Water Supply:
Internal water pipes to Polybutylene.
All pipework and pipes exposed to freezing to be lagged with closed cell foam
- Closed cell foam polymer insulation or fibre glass insulation which is preformed to the shape of the pipe and not less than 13 mm thick, is acceptable material for preventing pipes less than or equal to 40 mm diameter from freezing. Any insulation material that absorbs moisture shall be protected in a waterproof membrane.

Fixture unit rating: 34 units
Bathroom Group- 6 (x3)
Laundry tub - 5 (x2)
Kitchen sink - 3 (x2)

Table 3.9.3.1 — Size and rating of vents

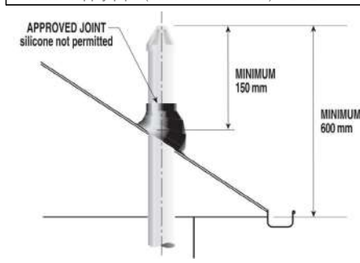
Size of vent pipe DN	Fixture units discharging to drain		Vent rating
40	> 1	≤ 10	0.5
50	> 10	≤ 30	1
65	> 30	≤ 175	2
80	> 175	≤ 400	3
100	> 400	≤ 600	6

TV min 50mm Ø NZS3500

Plumbing Legend as per AS/NZS 3500 part 2 : 2021

Symbol	Item	Symbol	Item
IP	Inspection point		DN100 uPVC SS pipe, DN100 min water closets (ref specs) min 1:60 gradient
	Downpipe		DN100 uPVC SW pipe, min 1:120 gradient
HT *	Hose Tap		min uPVC fixture waste pipe sizes: DN40 basins, single head showers, baths, sinks, dishwasher & ldy tubs, DN50 multiple heads showers, sinks + dishwashers, Ldy tub + washing machine (combined) DN65 unvented branch drains exceeding 2.5m long (max 5 fixture unit rating) DN65 to all wastes discharging directly into drain under slab min 1:40 gradient. 20mm HWC vent drain (copper)
org	Overflow relief gully		
oTV	Terminal vent		

Water supply pipe (from council mains) = DN20



NZBC: E1 Surface Water
3.7 Access for maintenance
3.7.1 Access for maintenance shall be provided on all drains. Access is to be achieved via an inspection point, rodding point, inspection chamber or access chamber, complying as appropriate with Figures 10, 11 or 12.
3.7.2 Points of access shall be spaced at no further than:
a) 50 m where rodding points are used.
b) 100 m where inspection points, inspection chambers or access chambers are used.
3.7.3 Points of access are required at:
a) Changes in direction of greater than 45°,
b) Changes in gradient of greater than 45°,and
c) Junctions of drains other than a drain, serving a single downpipe, that is less than 2.0 m long.
3.7.4 Inspection chambers or access chambers (see Figures 11 and 12) shall be provided where changes in both gradient and direction occur and where either is greater than 22.5°.
3.7.5 Where the depth to the invert of the drain exceeds 1.0 m, an inspection chamber is not acceptable and an access chamber shall be used.

All Construction in accordance with NZS 3604:2011 & NZBC

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DRAINAGE PLAN

Scale:
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Wind:	Earthq:	Exposure:	Snow:	Climate:
HIGH	**3**	**B**	**N5 2kPa**	**6**

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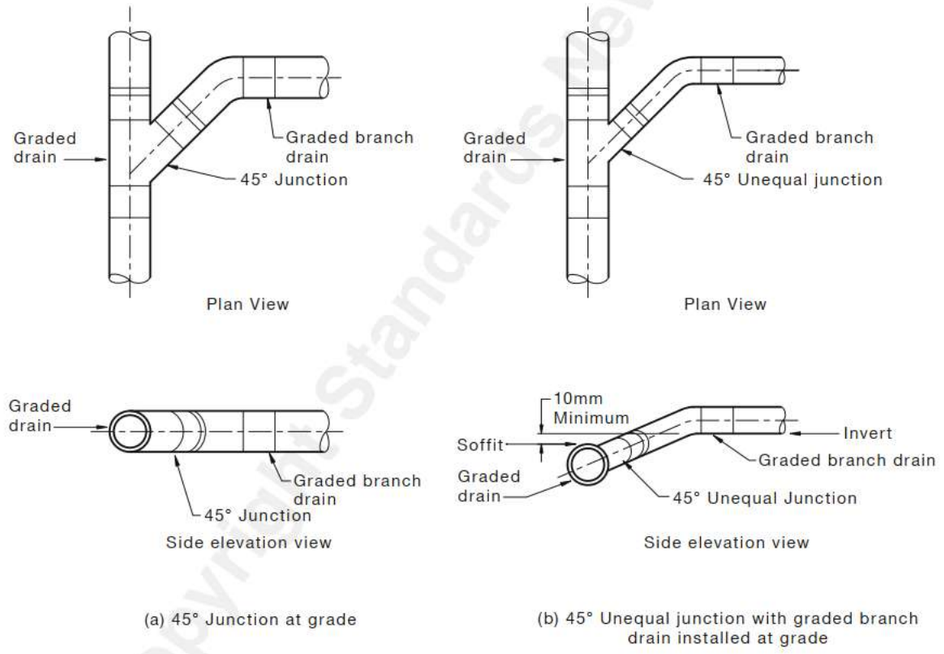
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4.26 JUNCTIONS IN DRAINS



(a) 45° Junction at grade

(b) 45° Unequal junction with graded branch drain installed at grade

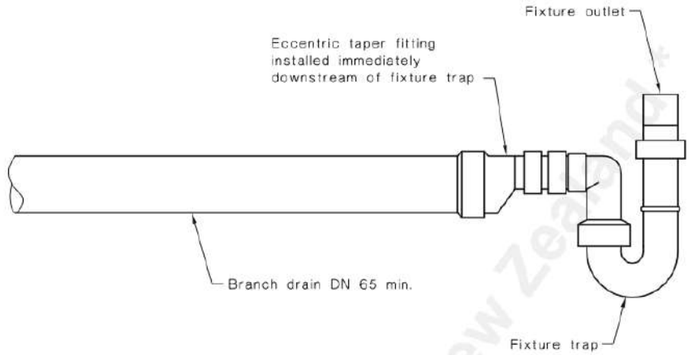
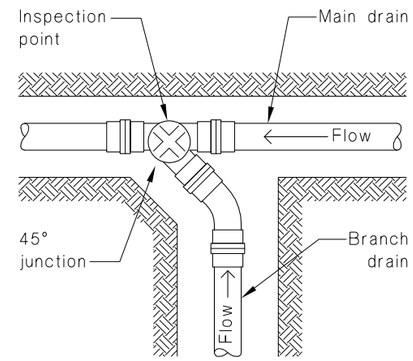
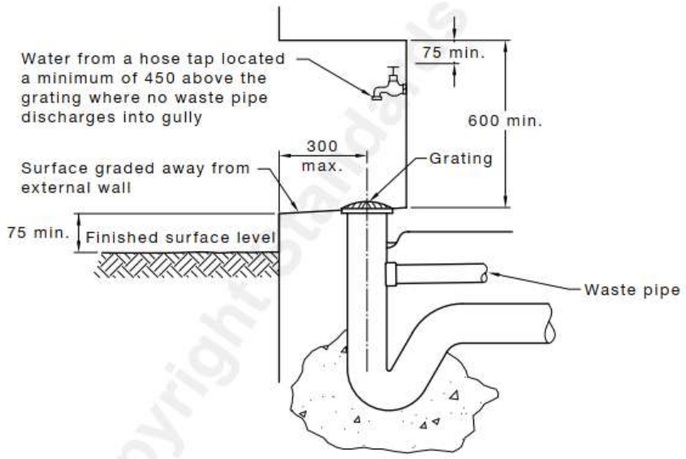


FIGURE 4.9.4 CONNECTION OF FIXTURE TRAPS (DN 40 OR DN 50) ON GRADE, TO BRANCH DRAINS

Figure 9: Inspection points
Paragraph 5.7.3



OVERFLOW RELIEF GULLY (ORG)



(b) Typical detail of overflow relief gully positioned in recess

DIMENSIONS IN MILLIMETRES

FIGURE 4.36.6.5 POSITIONING OF OVERFLOW RELIEF GULLY



FIGURE 6.3.2.2 TYPICAL SIGN FOR RAINWATER OUTLETS









NOTE: The signs shall be coloured in accordance with AS 1319.

Access points
All drains shall be laid to allow easy access for maintenance and the clearance of blockages.
Drains shall be provided with access points to facilitate cleaning and the clearance of blockages. Such access points shall be constructed to prevent the ingress of ground water and tree roots.
Access points may comprise access chambers, inspection chambers, rodding points or inspection points.

Access points shall be provided at the following locations:
a) Immediately prior to drain outfalls,
b) Immediately inside the boundary of the property served,
c) At the junction of every drain with another drain except that no access point is required where the branch drain is less than 2.0 m long and only serves a gully trap,
d) Every change in horizontal direction of greater than 45°,
e) Every change in gradient greater than 45°,
f) At intervals (on straight lines) of no less than:
i) 50 m where rodding points are used, or
ii) 100 m where access chambers, inspection chambers or inspection points are used, and
g) Within 2.0 m outside the building where a drain enters or exits from under a building.

All Construction in accordance with NZS 3604:2011 & NZBC

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DRAINAGE ASNZ/3500.5

Design: A1	Drawn: RC/TN	Check: AC	LBP: AC	Date: 28/09/2026

Wind:	Earthq:	Exposure:	Snow:	Climate:
HIGH	3	B	N5 2kPa	6

Scale:
Rev:
Sheet no: 5

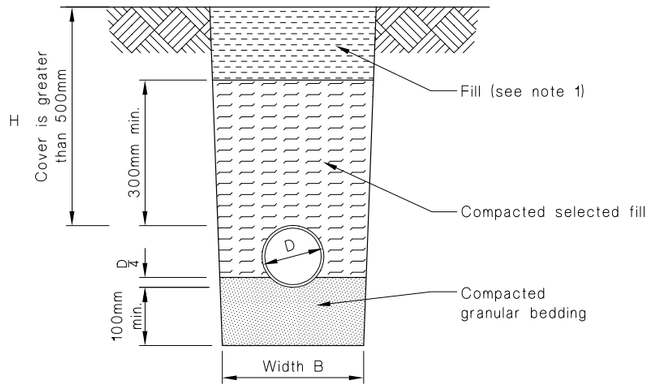
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Client Details:
Dylan Dickson and Hannah Gerrard

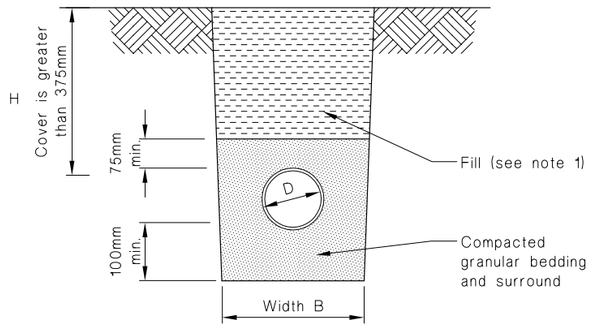
Address:
6 Pouakai Street
Lake Hawea

Job no: **CL002**
Bespoke

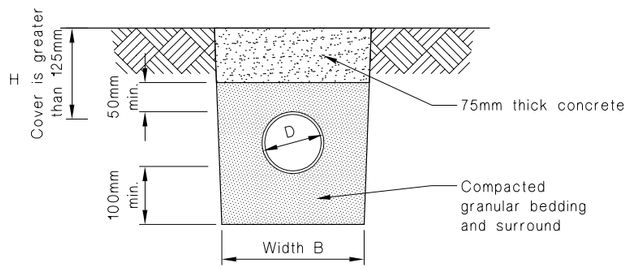
Figure 7: **Bedding and backfilling**
Paragraphs 2.1.1, 5.2.1, 5.3.1 and 5.4.1



(a) Cover greater than 500 mm



(b) Cover greater than 375 mm

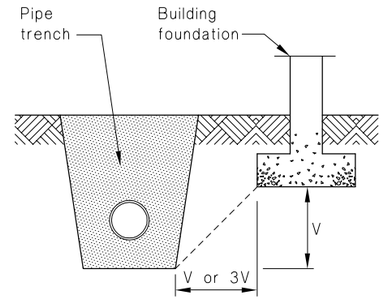


(c) Cover greater than 125 mm

NOTE:
1. Fill shall be:
-Ordinary fill where drains are located below gardens and open country.
-Compacted selected fill where the drains are located below residential driveways and similar areas subject to light traffic.

Proximity of trench to building
3.9.7 Proximity of trench to building
For light timber frame and concrete masonry buildings founded on good ground and constructed in accordance with NZS 3604 or NZS 4229, pipe trenches which are open for no longer than 48 hours shall be located no closer than distance 'V' (see Figure 14) to the underside of any building foundation. Where the trench is to remain open for periods longer than 48 hours, the minimum horizontal separation shall increase to 3V in all ground except rock.

Figure 8: **Relationship of pipe trench to building foundation**
Paragraph 5.6.1



Minimum horizontal seperation shall be V or 3V dependant on length of time trench open, see Paragraph 5.6.1

NZBC: E1 Surface water:
3.9 Bedding and backfilling
3.9.1 General
NZBC B1 requires all drains be constructed to withstand the combination and frequency of loads likely to be placed upon them without collapse, undue damage, undue deflection or undue vibration.
In addition, adequate support needs to be provided to prevent gradients becoming less than those required as a result of:
a) Differential settlement, or
b) Deflection of an unsupported span.
3.9.2 Bedding and backfilling
Figure 13 gives acceptable solutions for the bedding and backfilling of the drainage pipes
except where:
a) The trench is located within or above peat, or
b) Scouring of the trench is likely due to unstable soils, or
c) The horizontal separation between any building foundation and the underside of the pipe trench is less than that required by Paragraph 3.9.7, or
d) The cover H to the pipe is more than 2.5 m.
3.9.3 Trench slope
Where the slope of the trench is 1 in 8 or greater, anti-scour blocks shall be provided.
These anti-scour blocks shall be:
a) Constructed from 150 mm thick concrete (17 MPa),
b) Keyed into the sides and floor of the trench by 150 mm,
c) Extended to 300 mm above the drain or to ground level where the drain cover is less than 300 mm, and
d) Spaced at:
i) 7.5m centres for trench slopes between 1 in 8 and 1 in 5, or
ii) 5.0m centres for trench slopes greater than 1 in 5.
3.9.4 Trench width
The width B of the trench shall be no less than the pipe diameter D plus 200 mm.
Trench width at the top of the pipe shall be no more than 600 mm unless the pipe(s)
in the trench are covered with concrete, as shown in Figure 13 (c).
3.9.5 Acceptable materials
Acceptable fill materials shown in Figure 13 are:
a) Bedding material of clean granular noncohesive material with a maximum particle size of 20 mm, or
b) Selected compacted fill of any fine-grained soil or granular material which is free from topsoil and rubbish and has a maximum particle size of 20 mm, or
c) Ordinary fill which may comprise any fill or excavated material.
3.9.6 Placing and compacting
a) Granular bedding and selected fill shall be placed in layers of no greater than 100 mm loose thickness and compacted.
b) Up to 300 mm above the pipe, compaction shall be by tamping by hand using a rod with a pad foot (having an area of 75 ± 25 mm by 75 ± 25 mm) over the entire surface of each layer to produce a compact
layer without obvious voids.
c) More than 300 mm above the pipe, compaction shall be by at least four passes of a mechanical tamping foot compactor (whacker type) with a minimum weight of 75 kg.

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BEDDING AND BACKFILLING

Scale:
Rev:
Sheet no: 6
Design: A1 | Drawn: RC/TN | Check: AC | LBP: AC | Date: 28/09/2026

Wind:	Earthq:	Exposure:	Snow:	Climate:
HIGH	3	B	N5 2kPa	6

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Client Details:
Dylan Dickson and Hannah Gerrard

Address:
6 Pouakai Street
Lake Hawea

Job no: **CL002**

Bespoke

Downpipe calculations: NZBC:E1
Plan area of roof per single downpipe for roof pitch 25-35° = 70m² of roof area for (minimum internal size) DN74 downpipe.

Plan Roof area 1 =17.16m²
Calc. - Plan Roof area/area served by DP = DP's required
17.16/ 70 = 0.25 = 1 DP

Plan Roof area 2 =21.71m²
Calc. - Plan Roof area/area served by DP = DP's required
21.71/ 70 = 0.31 = 1 DP

Plan Roof area 3 =80.56m²
Calc. - Plan Roof area/area served by DP = DP's required
80.56/ 70 = 1.15 = 2 DP

Plan Roof area 4 =70.12m²
Calc. - Plan Roof area/area served by DP = DP's required
70.12/ 70 = 1.22 = 2 DP

Therefore minimum number of downpipes required = 6
Number of DP's provided = 6

Roof gutter profile calculations:
Metalcraft Quadline Gutter
Cross sectional area of gutter (CSAG) = 6290mm². 55m² of plan roof area (based on 100mm/hr.)

Rainfall intensity = 50mm/hr.

Plan Roof area 1= 17.16m²
Modified Plan Roof Area = 17.16 x 50 / 100 = 5.15 m²
Number of downpipes required to accomodate Modified Roof Area:
5.15 / 55 = 0.09 (1 DP)

Plan Roof area 2= 21.71m²
Modified Plan Roof Area = 21.71 x 50 / 100 = 6.51 m²
Number of downpipes required to accomodate Modified Roof Area:
6.51 / 55 = 0.12 (1 DP)

Plan Roof area 3= 80.56m²
Modified Plan Roof Area = 80.56 x 50 / 100 = 24.17 m²
Number of downpipes required to accomodate Modified Roof Area:
24.17 / 55 = 0.44 (1 DP)

Plan Roof area 4= 85.12m²
Modified Plan Roof Area = 85.12 x 50 / 100 = 25.54 m²
Number of downpipes required to accomodate Modified Roof Area:
25.54 / 55 = 0.46 (1 DP)

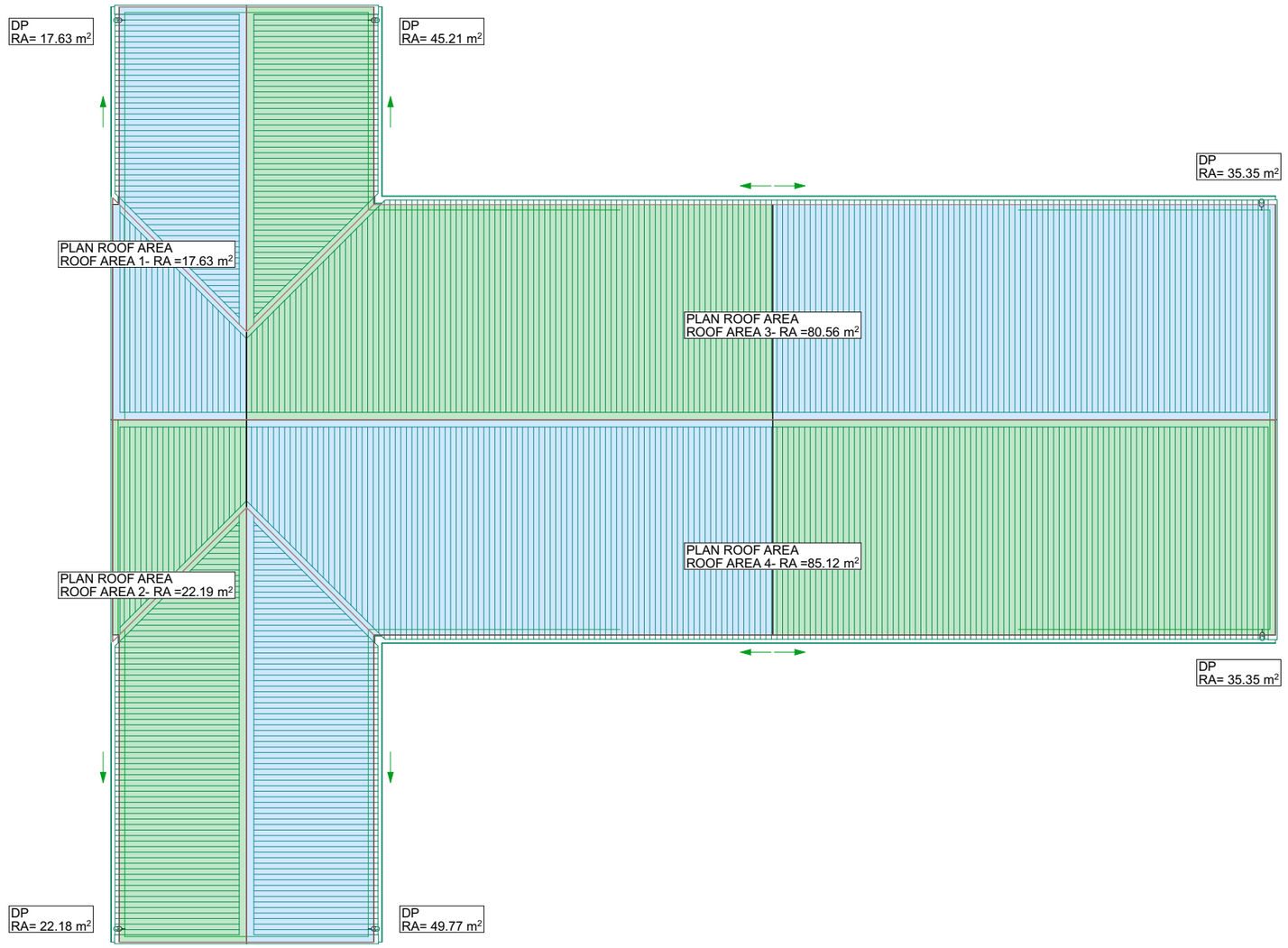


Table 5: Downpipe Sizes for Given Roof Pitch and Area
Paragraph 4.2.1

Downpipe size (mm) (minimum internal sizes)	Roof pitch 0-25°	25-35°	35-45°	45-55°
	Plan area of roof served by the downpipe (m²)			
63 mm diameter	60	50	40	35
74 mm diameter	85	70	60	50
100 mm diameter	155	130	110	90
150 mm diameter	350	290	250	200
65 x 50 rectangular	60	50	40	35
100 x 50 rectangular	100	80	70	60
75 x 75 rectangular	110	90	80	65
100 x 75 rectangular	150	120	105	90

Figure 15: Cross-sectional Area of External Gutter
Paragraphs 5.1.2 and 5.1.3

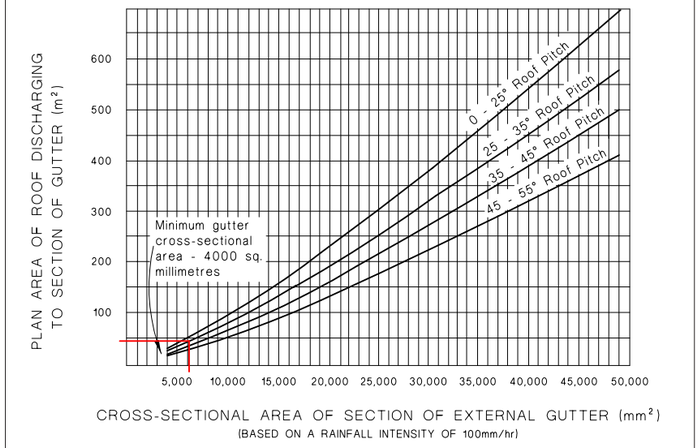
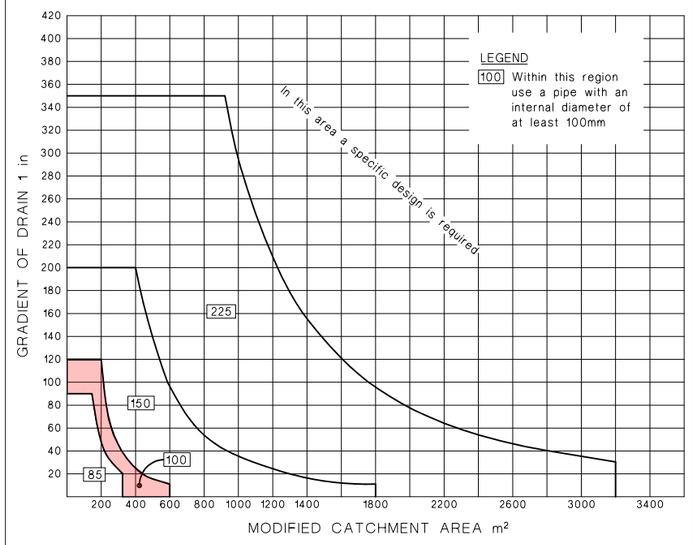


Figure 3: Sizing of Surface Water Drains
Paragraphs 3.2.2 and 3.2.3



All Construction in accordance with NZS 3604:2011 & NZBC

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ROOF DRAINAGE PLAN

Scale: 1:100 | Sheet no: 7
Rev:
Design: A1 | Drawn: RC/TN | Check: AC | LBP: AC | Date: 28/09/2026

Wind:	Earthq:	Exposure:	Snow:	Climate:
HIGH	3	B	N5 2kPa	6

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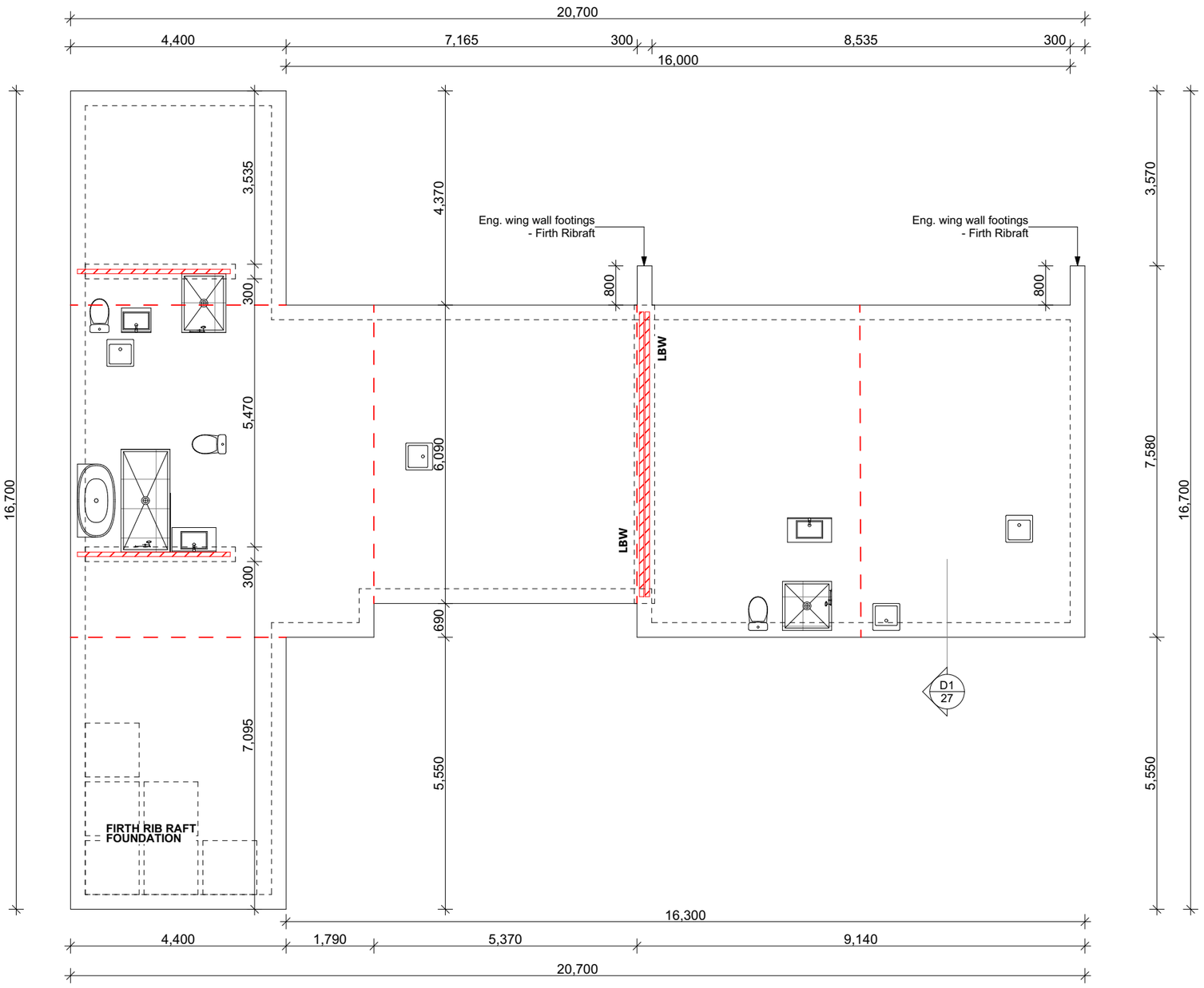
Client Details:
Dylan Dickson and Hannah Gerrard

Address:
6 Pouakai Street
Lake Hawea

Job no: **CL002**

Bespoke

A1homes



Cautionary Notes:
Always cross reference the foundation plan with the framing plan prior to setting out

The contractor shall accurately locate the position of all public drains on site prior to starting work, If any discrepancies are found in these drawings then the contractor must contact A1 Homes before proceeding with any further works.

Construction Notes:
• The site requirements of NZS 3604: 2011 are concerned with soil conditions under or adjacent to the building.
If a site does not comply with the definition of 'Good Ground' 300kPA, the foundations shall be the subject of specific engineering design (SED) and investigation as appropriate. When using the Firth RibRaft Floor System, good ground may be established using Firth's approved Scala Penetrometer test (refer Ribraft Manual).
• All foundations shall bear upon solid bottom in undisturbed good ground material or upon firm fill for which a certificate of suitability has been issued under NZS 4431
Where good ground is at a depth greater than 0.6 m, the excavation between the good ground and the foundation base may be filled with mass concrete having a minimum strength of 10 MPa at 28 days.
• Granular fill material complying with 7.5.3.2 shall be placed and compacted in layers of 150 mm maximum thickness, over the area beneath the proposed ground slab, so that the total thickness of granular base is not less than 75 mm nor more than 600 mm.
Compact each layer until the material is tightly bound together and does not visibly deform under the weight of a pressed adult heel. SED is required if filling is in excess of 600 mm.

7.5.3.2
Granular fill material shall be composed of rounded gravel, crushed rock, scoria or approved material.
(a) Not more than 5 % shall pass through a 2.2 mm sieve with the exception of the conditions in 7.5.3.3;
(b) 100 % shall pass either:
(i) A 19 mm sieve for any fill thickness; or
(ii) A 37.5 mm sieve for a fill thickness exceeding 100 mm.
Where it can be demonstrated that site conditions ensure that capillary water is unlikely to reach the underside of the slab, then the requirements of 7.5.3.2(a) can be waived.

• Min. 5mm - 25mm max. sand blinding to cover hardfill to ensure the vapour barrier is protected from any granular protrusions. Conc. floor to comply with NZS.3109, surface tolerances, & NZS.3114, maximum deviations of 3mm

As per the latest FIRTH RibRaft® Manual Firth Raftmix concrete to all foundations.
The bay dimensions formed by either construction or shrinkage control joints shall be limited to a maximum length:width ratio of 1.5:1. Maximum bay dimensions in exposed concrete, vinyl or tiled areas to be 5m x 5m. All cuts to be over internal ribs.
Free Joint required in concrete slabs where exceeding 30m for Firth RibRaft

Steel reinforcing within concrete floors and walls of rooms that contain a bath or shower must be bonded to the earth system as per AS/NZS 3000:2007 Electrical Installations. See clause 5.6.2.5

Confirm layout & fittings of kitchen & bathrooms etc before foundation commences

Firth RibRaft Floor System laid in strict accordance with the latest FIRTH specification
Design not requiring specific engineering input for the Firth RibRaft Floor System.

Always cross reference the foundation plan with the floor plan prior to setting out. If any discrepancies occur contact: admin@idesignarchitecture.co.nz immediately.

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FOUNDATION PLAN

Scale: 1:100
Sheet no: 8
Rev:
Design: A1 | Drawn: RC/TN | Check: AC | LBP: AC | Date: 28/09/2026

Wind:	Earthq:	Exposure:	Snow:	Climate:
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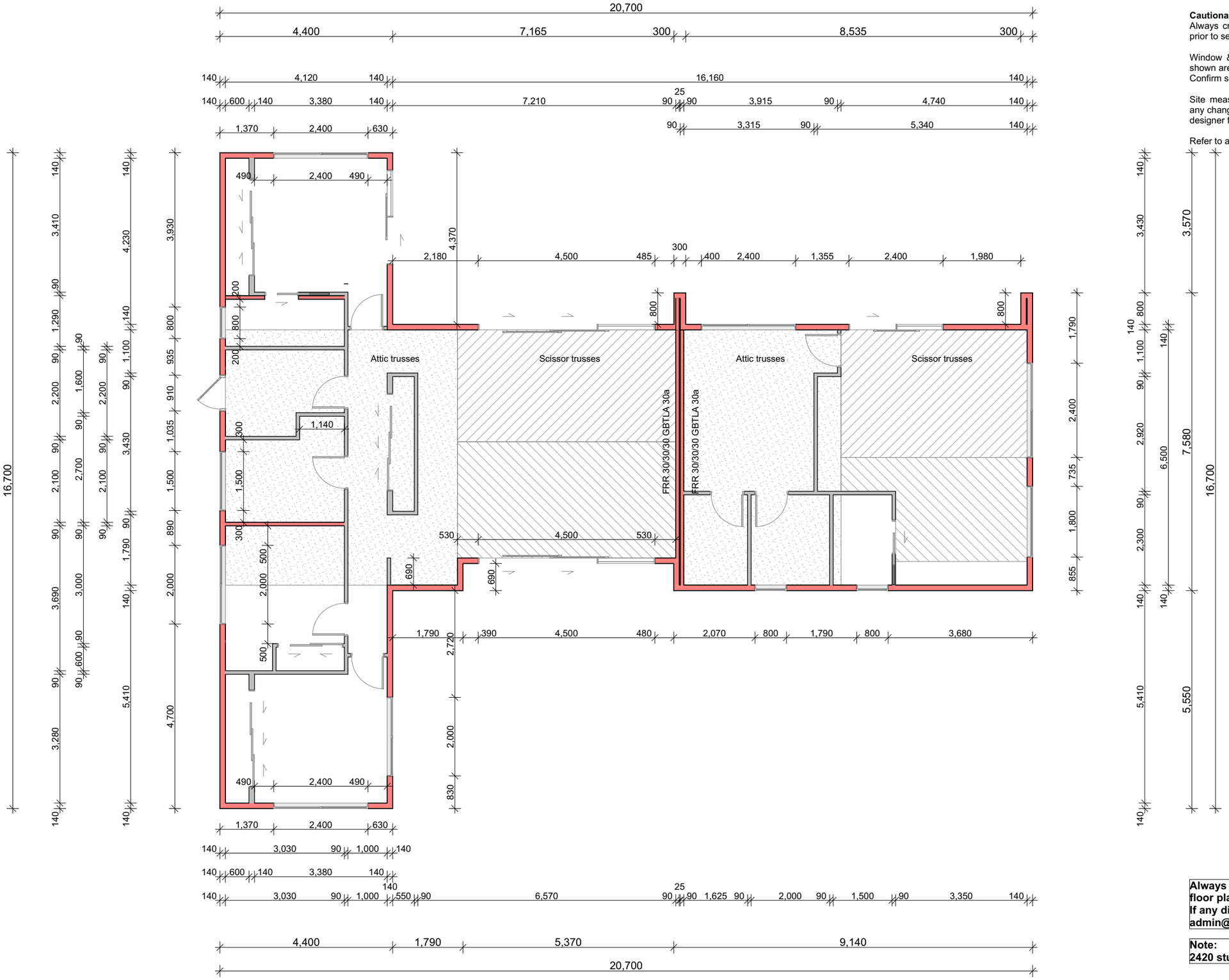
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Client Details:
Dylan Dickson and Hannah Gerrard

Job no: **CL002**

Address:
6 Pouakai Street
Lake Hawea

Bespoke



Cautionary Notes:
Always cross reference the foundation plan with the framing plan prior to setting out

Window & Door Joinery dimensions are shown to the unit itself, shown are box sizes & are preliminary only.
Confirm soffit drop & fascia height prior to site measure.

Site measure and confirm all joinery sizes, reporting to designer any changes, PRIOR to ordering joinery. No liability shall be held by designer for incorrect supply of joinery.

Refer to all written dimensions, DO NOT scale off drawings.

Always cross reference the foundation plan with the floor plan prior to setting out.
If any discrepancies occur contact:
admin@idesignarchitecture.co.nz immediately.

Note:
2420 stud ht. throughout

All Construction in accordance with NZS 3604:2011 & NZBC

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FRAMING PLAN

Scale: 1:100
Rev:
Date: 28/09/2026
Sheet no: 9

Design: A1 | Drawn: RC/TN | Check: AC | LBP: AC

Wind:	Earthq:	Exposure:	Snow:	Climate:
HIGH	3	B	N5 2kPa	6

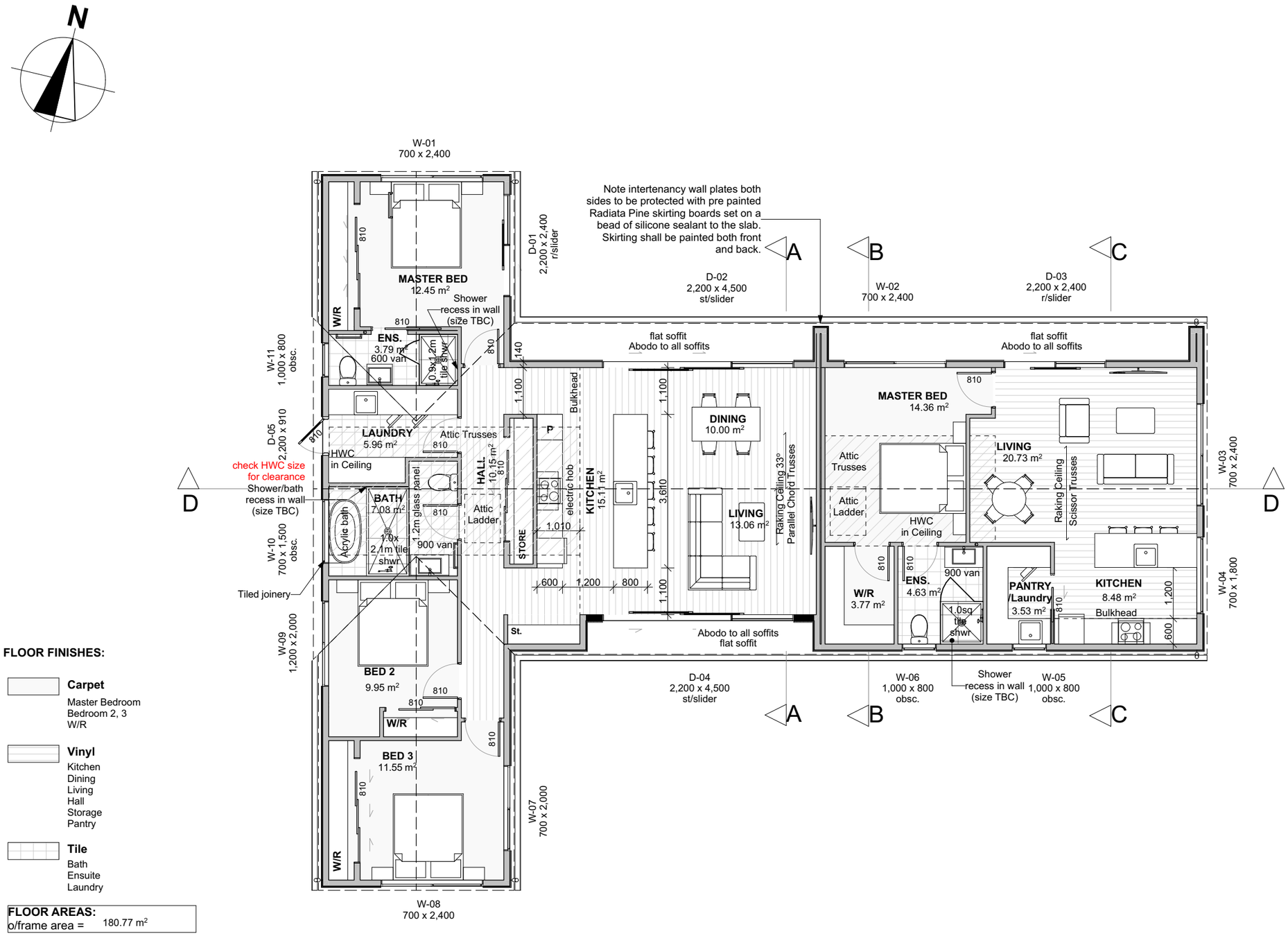
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Client Details:
Dylan Dickson and Hannah Gerrard

Address:
6 Pouakai Street
Lake Hawea

Job no: **CL002**

Bespoke



FLOOR FINISHES:

Carpet
Master Bedroom
Bedroom 2, 3
W/R

Vinyl
Kitchen
Dining
Living
Hall
Storage
Pantry

Tile
Bath
Ensuite
Laundry

FLOOR AREAS:
o/frame area = 180.77 m²

CLADDING KEY:
JH Axon 133mm
Vertical Cedar

Note:
2420 stud ht. throughout

Cautionary Notes:
Always cross reference the foundation plan with the framing plan prior to setting out

Joinery sizes shown are box sizes & are preliminary only.
Site measure and confirm all joinery sizes, reporting to designer any changes, PRIOR to ordering joinery. No liability shall be held by designer for incorrect supply of joinery.

Refer to all written dimensions, DO NOT scale off drawings.

Construction Notes:
Electric hobs with vented r/hood.
Polybutylene water supply pipes.
Hot water supply pipes shall be thermally insulated to comply with H1/AS1 5.0
Mains pressure 180L HWC with tempering valve & seismic restraint in accordance with NZBC: 2004 section G12.
The delivered hot water temperature at any sanitary fixture used for personal hygiene shall not exceed 50°C
*Check cylinder height for under stair locations

Tapered edge joints in ceilings
To reduce the risk of cracks caused by substrate movement, back-blocking of tapered edge joints is required in the following situations.
• When timber battens have been used:
Any area containing 3 or more tapered joints
• When steel battens have been used:
Any area containing 6 or more tapered joints

Please confirm layout & fittings of kitchen & bathrooms etc before foundation commences

Note:
- Kitchen layout diagramatic and only to be used for drainage reference, refer to kitchen plans for exact design.

Separation between electric hob and the Gib lined wall:
Cut out for hob: min. 55mm from back of bench top.
Overhead clearances: not less than 650mm from hob surface to range hood
Side clearances: Where dimension to any vertical combustible surface is less than 150 mm, surface shall be protected to a min. height of 150 mm above hob for full dimension (width or depth) of cooking surface area.
Protection of combustible surfaces: 5mm thick ceramic tiles or graphic glass is suitable to protect 10mm Gib board.

G3/AS1
1.1.3 Food preparation surfaces shall be easily maintained in a hygienic condition. Stainless steel, decorative high pressure laminate, and tiles are examples of suitable materials for these surfaces.

1.6 Wall linings
Wall linings adjacent to appliances and facilities shall have surfaces that can be easily maintained in a hygienic condition. Stainless steel, decorative high pressure laminate, tiles, wallboards with painted or applied impervious coatings or films, are examples of suitable materials for these surfaces.

All Construction in accordance with NZS 3604:2011 & NZBC

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FLOOR PLAN

Scale: 1:100
Rev:
Sheet no: 10
Design: A1 | Drawn: RC/TN | Check: AC | LBP: AC
Date: 28/09/2026

Wind:	Earthq:	Exposure:	Snow:	Climate:
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Address:
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Lake Hawea

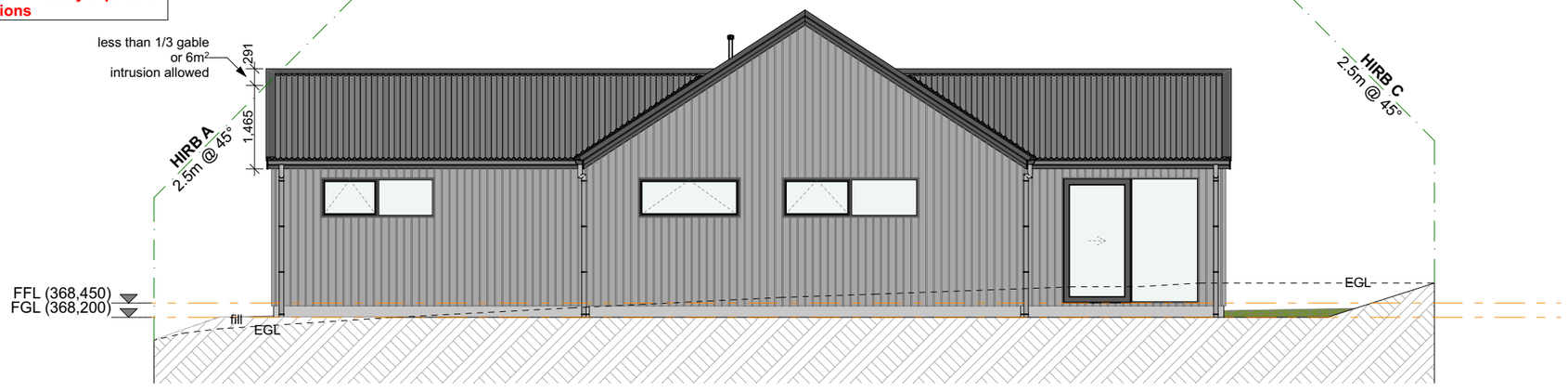
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Registered surveyor to confirm daylighting does not encroach prior to construction - No liability for encroachment shall be held by designer if site is not surveyed by a registered surveyor prior to commencement of foundations



NORTH ELEVATION

Registered surveyor to confirm daylighting does not encroach prior to construction - No liability for encroachment shall be held by designer if site is not surveyed by a registered surveyor prior to commencement of foundations



EAST ELEVATION

General Notes:

Any encroachments shown are to be confirmed by a registered surveyor prior to commencement of foundations. No liability shall be held by designer with this confirmation.

Cautionary Notes:
BUILDING CONTRACTOR TO ASSESS SITE TO ENSURE DAYLIGHTING & BUILDING RESTRICTIONS ARE COMPLIED WITH.
NO LIABILITY FOR ENCROACHMENT SHALL BE HELD BY DESIGNER IF SITE IS NOT SURVEYED BY A REGISTERED SURVEYOR PRIOR TO COMMENCEMENT OF FOUNDATIONS.

Construction Notes:
Glazing in accordance with NZS 4223:2008/2016 plus amendments
All glazing low-e clear float except for obscure glass to bathrooms & wc
Double glazing to all window and door joinery

Aluminium joinery head heights as per joinery schedule
Refer to floor plan for door & window sizes. Joinery schedule & sizes to be confirmed by pre-cut manufacturer & joinery fabricator PRIOR to manufacture by way of communication via e-mail, phone or other.

HIRB = Height in Relation to Boundary

NZBC D1/AS1 Access Routes:
Concrete (min 150mm below FFL, max 190mm) or H5 timber step to all access points (owners care)
Acceptable Slip Resistance for Walking Surfaces:
• Portland cement concrete
- Broomed (Class 5 or 6) or wood float finish (Class U2)
Concrete surface finishes complying with NZS 3114.
- Coated and sand/grit impregnated
The sand/grit, which is sprinkled over the complete surface of the final paint coating, should be a hard angular material such as silica sand or calcined bauxite. The particle size should not be less than 0.2 mm so that it is not submerged by the coating and not greater than about 2–3 mm so that it remains tightly bound to the surface.
- Exposed aggregate finish
crushed aggregate
• Asphaltic concrete
• Concrete pavers
- Dry press concrete
- Interlocking concrete block paving to NZS 3116.
• Anti-slip tapes
- will normally require regular replacement to remain effective. To ensure foot contact, tapes should be placed at right angles to the line of travel and be spaced at no more than 150 mm centres.

Risk Factor	Description	Risk	Score
Wind Zone	High	M	1
Number of Storeys	Single Storey	L	0
Roof/Wall Intersection Design	Fully protected (e.g. hip and gable roof with eaves)	L	0
Eaves Width	0-100mm wide	VH	5
Envelope Complexity	Moderately complex shape with no more than 2 cladding types.	M	1
Deck Design	None	L	0
			Total Score: 7
Selected Cladding:	Fibre cement weatherboard over nominal 20mm drained cavity		

Foundation:
Firth Ribraft Foundation

Wall Cladding:
James Hardie Axon Panel - 133 mm
Vertical Cedar

Roof Cladding:
33° pitch. NZS Colorsteel MAXAM Trapezoidal profile

Fascia and Spouting:
Metalcraft 185 Colorsteel fascia
Metalcraft Quadline Gutter
Colorsteel 80mmØ round downpipes

Joinery:
APL Residential suite Aluminium joinery

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ELEVATIONS

Scale: 1:100 | Rev: | Sheet no: **11**

Design: A1 | Drawn: RC/TN | Check: AC | LBP: AC | Date: 28/09/2026

Wind:	Earthq:	Exposure:	Snow:	Climate:
HIGH	**3**	**B**	**N5 2kPa**	**6**

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Client Details:
Dylan Dickson and Hannah Gerrard

Address:
6 Pouakai Street
Lake Hawea

Job no: **CL002**

Bespoke

Registered surveyor to confirm daylighting does not encroach prior to construction - No liability for encroachment shall be held by designer if site is not surveyed by a registered surveyor prior to commencement of foundations



SOUTH ELEVATION

Registered surveyor to confirm daylighting does not encroach prior to construction - No liability for encroachment shall be held by designer if site is not surveyed by a registered surveyor prior to commencement of foundations



WEST ELEVATION

General Notes:

Any encroachments shown are to be confirmed by a registered surveyor prior to commencement of foundations. No liability shall be held by designer with this confirmation.

Cautionary Notes:
BUILDING CONTRACTOR TO ASSESS SITE TO ENSURE DAYLIGHTING & BUILDING RESTRICTIONS ARE COMPLIED WITH.
NO LIABILITY FOR ENCROACHMENT SHALL BE HELD BY DESIGNER IF SITE IS NOT SURVEYED BY A REGISTERED SURVEYOR PRIOR TO COMMENCEMENT OF FOUNDATIONS.

Construction Notes:
Glazing in accordance with NZS 4223:2008/2016 plus amendments
All glazing low-e clear float except for obscure glass to bathrooms & wc
Double glazing to all window and door joinery

Aluminium joinery head heights as per joinery schedule
Refer to floor plan for door & window sizes. Joinery schedule & sizes to be confirmed by pre-cut manufacturer & joinery fabricator PRIOR to manufacture by way of communication via e-mail, phone or other.

HIRB = Height in Relation to Boundary

NZBC D1/AS1 Access Routes:
Concrete (min 150mm below FFL, max 190mm) or H5 timber step to all access points (owners care)
Acceptable Slip Resistance for Walking Surfaces:
• Portland cement concrete
- Broomed (Class 5 or 6) or wood float finish (Class U2)
Concrete surface finishes complying with NZS 3114.
- Coated and sand/grit impregnated
The sand/grit, which is sprinkled over the complete surface of the final paint coating, should be a hard angular material such as silica sand or calcined bauxite. The particle size should not be less than 0.2 mm so that it is not submerged by the coating and not greater than about 2–3 mm so that it remains tightly bound to the surface.
- Exposed aggregate finish
crushed aggregate
• Asphaltic concrete
• Concrete pavers
- Dry press concrete
- Interlocking concrete block paving to NZS 3116.
• Anti-slip tapes
- will normally require regular replacement to remain effective. To ensure foot contact, tapes should be placed at right angles to the line of travel and be spaced at no more than 150 mm centres.

Risk Factor	Description	Risk	Score
Wind Zone	High	M	1
Number of Storeys	Single Storey	L	0
Roof/Wall Intersection Design	Fully protected (e.g. hip and gable roof with eaves)	L	0
Eaves Width	0-100mm wide	VH	5
Envelope Complexity	Moderately complex shape with no more than 2 cladding types.	M	1
Deck Design	None	L	0
			Total Score: 7
Selected Cladding:	Fibre cement weatherboard over nominal 20mm drained cavity		

Foundation:
Firth Ribraft Foundation

Wall Cladding:
James Hardie Axon Panel - 133 mm
Vertical Cedar

Roof Cladding:
33° pitch. NZS Colorsteel MAXAM Trapezoidal profile

Fascia and Spouting:
Metalcraft 185 Colorsteel fascia
Metalcraft Quadline Gutter
Colorsteel 80mmØ round downpipes

Joinery:
APL Residential suite Aluminium joinery

All Construction in accordance with NZS 3604:2011 & NZBC

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ELEVATIONS

Scale: 1:100
Rev:
Sheet no: **12**

Design: A1 | Drawn: RC/TN | Check: AC | LBP: AC | Date: 28/09/2026

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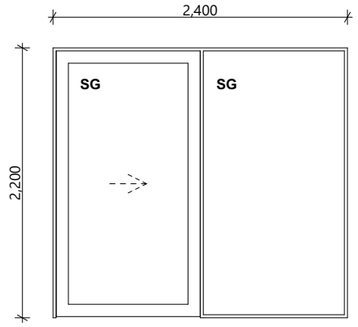
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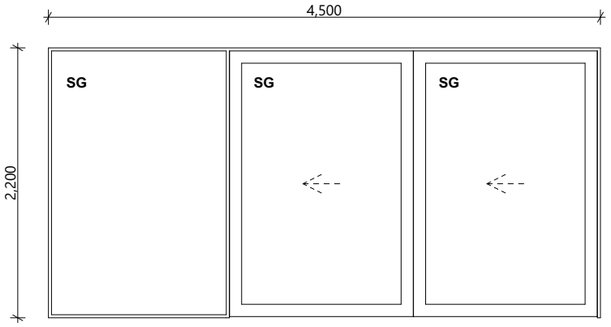
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Lake Hawea

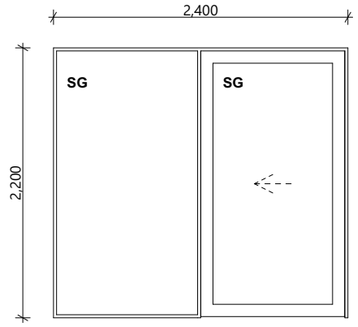
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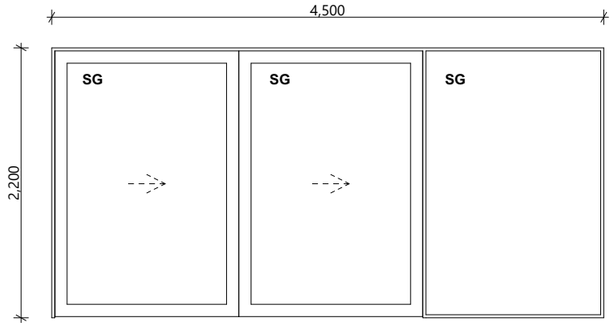
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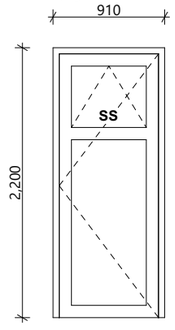
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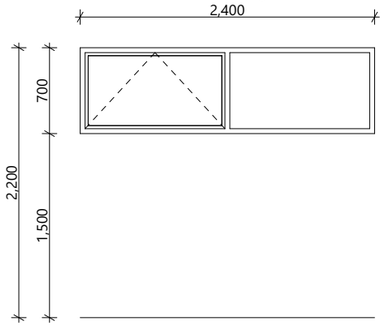
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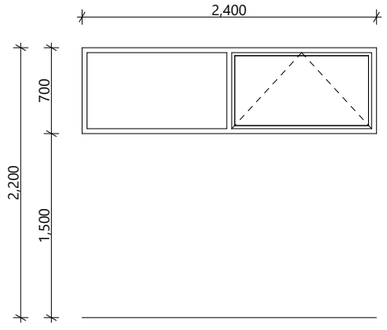
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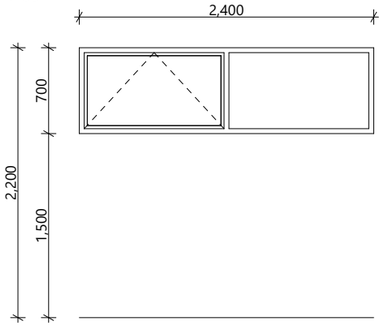
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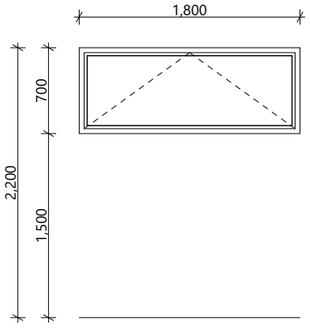
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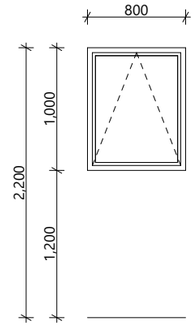
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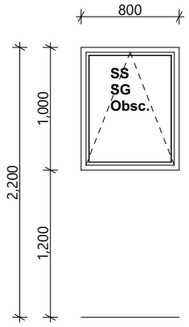
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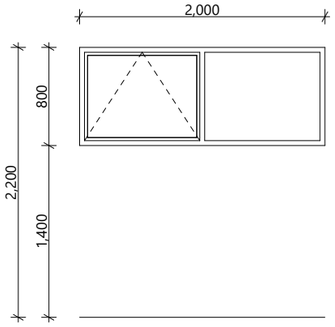
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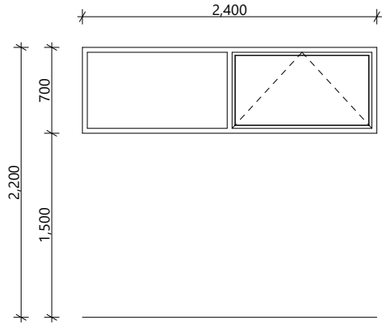
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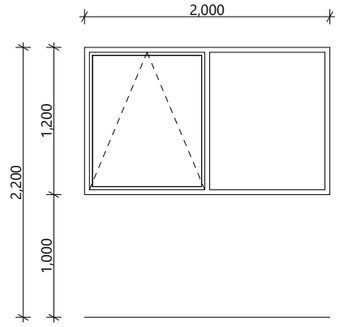
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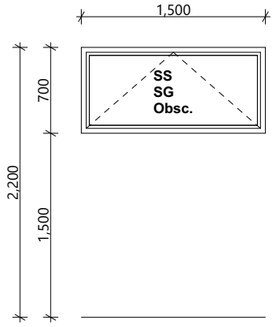
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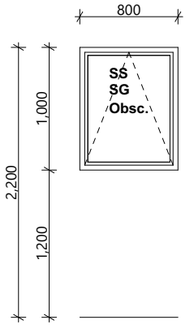
W-08



W-09



W-10



W-11

SAFETY GLASS & OR TOUGHENED GLASS SPECIFIED BY ACCREDITED JOINERY MANUFACTURER IN ACCORDANCE WITH NZS 4223: 2016
REFER TO ATTACHED MANUFACTURERS JOINERY SCHEDULE. Joinery Manufacturer to verify all trim openings & unit final dimensions prior to manufacture

Safety restrictor stays:
ss = safety stays
- a restrictor fitted to limit the maximum opening so that a 100mmø sphere cannot pass through

Window restrictors are required to the following sized openings where the adjacent Ground Level is 1.0m below FFL or greater;
- openings less than 1.0m wide with sill ht within 760mm of FFL
- openings more than 1.0m wide with sill ht within 1000mm of FFL

Window restrictors are also required to outward opening windows that may protrude into walk paths
- Refer to Site plan for 'walk paths'
sg = safety glass

All Construction in accordance with NZS 3604:2011 & NZBC

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JOINERY SCHEDULE

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Rev:
Sheet no: **13**

Design: A1 | Drawn: RC/TN | Check: AC | LBP: AC | Date: 28/09/2026

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HIGH	**3**	**B**	**N5 2kPa**	**6**

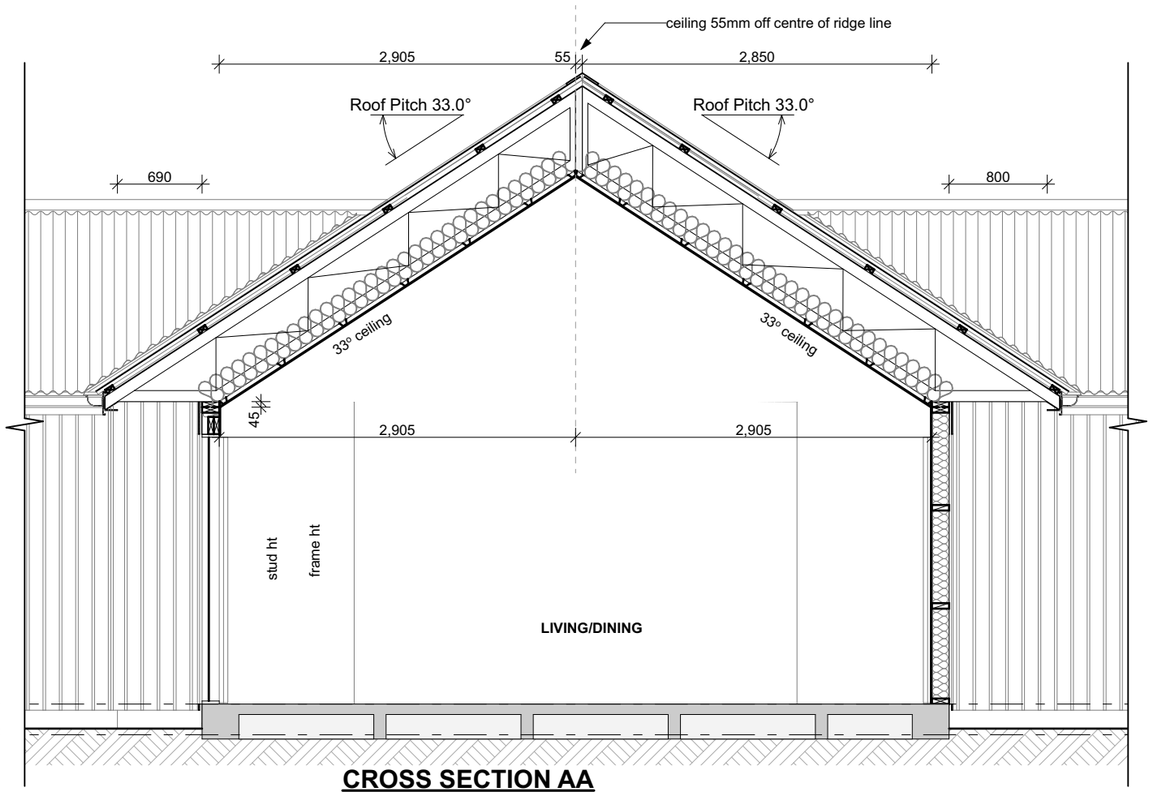
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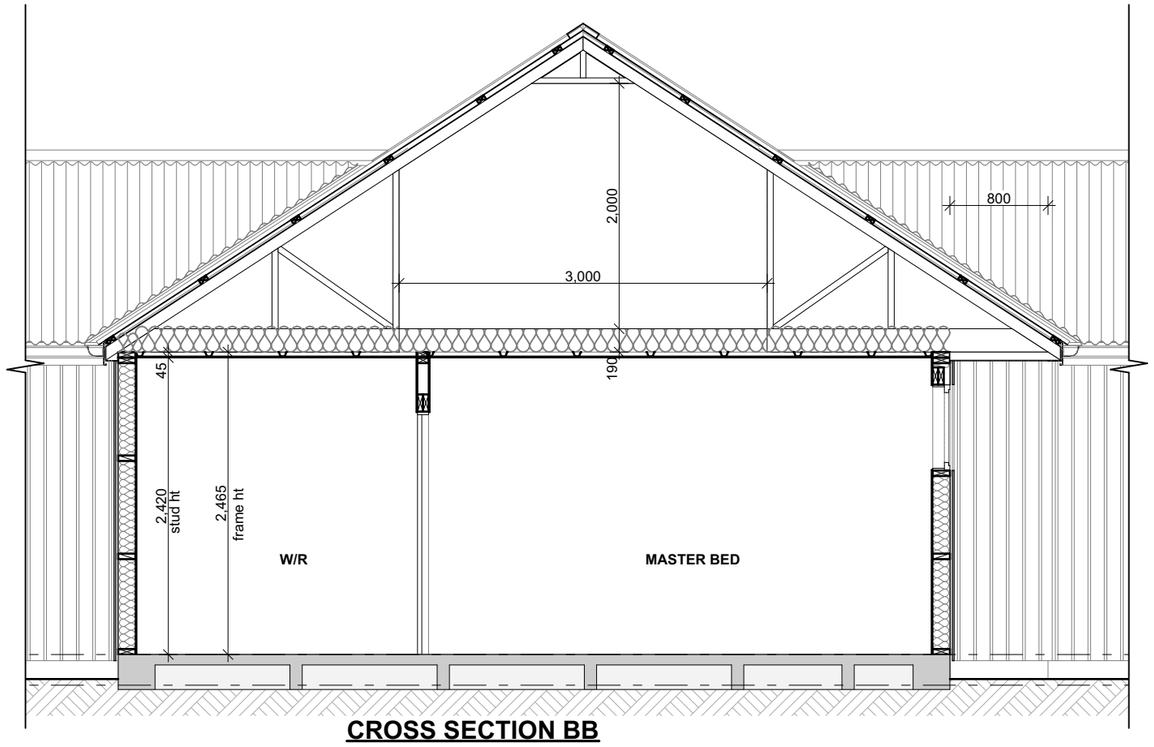
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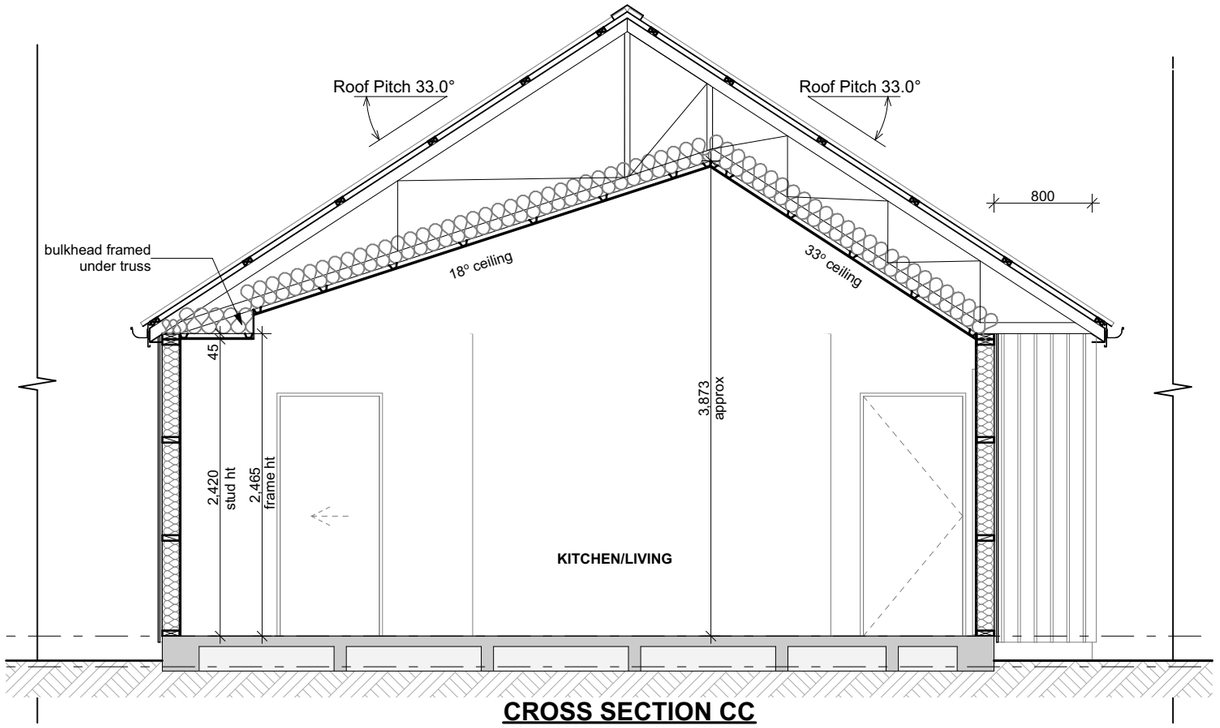
Bespoke



CROSS SECTION AA



CROSS SECTION BB



CROSS SECTION CC

Firth RibRaft Floor System laid in strict accordance with the latest FIRTH specification
Design not requiring specific engineering input for the Firth RibRaft Floor System.

All Construction in accordance with NZS 3604:2011 & NZBC

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CROSS SECTION AA, BB, CC

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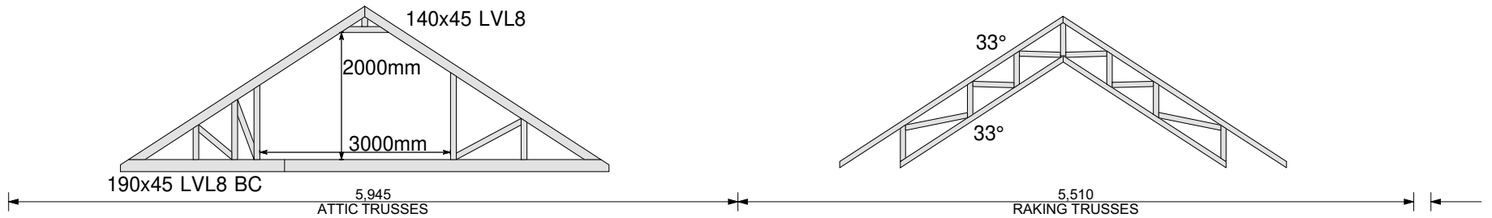
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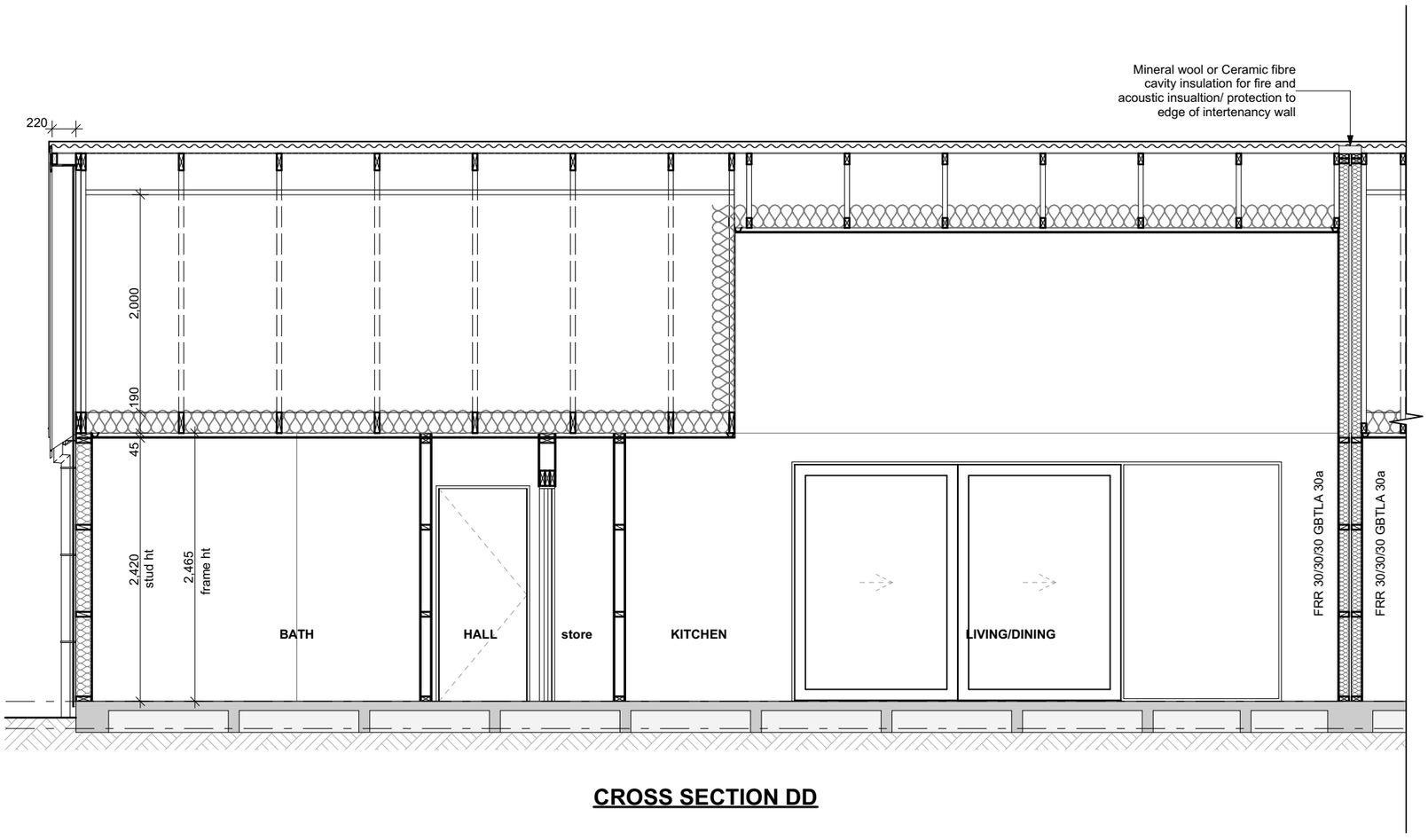
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Lake Hawea

Job no: **CL002**

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TRUSS EXAMPLES





CROSS SECTION DD

Note: Exposure Zone B
(exposure environments as defined by NZS 3604 : fig 4.2 & table 4.1)

Fixings & Fastenings (excludes nails and screws):
Nail Plates - In 'closed' & 'roof space' environments - continuously coated galv. steel
Wire Dogs & Bolts - In 'closed' & 'roof space' environments - hot-dip galv. steel
All other structural fixings - In 'closed' environments - mild steel (uncoated, non-galvanized)

All other structural fixings (except fabricated brackets (1))
- In sheltered environments - hot-dip galv. steel
- In exposed environments - type 304 stainless steel (2)

*1. - "fabricated brackets" shall be made from 5mm (minimum thickness) mild steel and shall be hot-dip galv.

Nails & screws used for framing & cladding:
Structural cladding acting as bracing (50 year durability) - galv. steel (2)
Non-structural cladding (15 year durability) - galv. steel (2)
Framing in 'closed' areas including roof spaces - mild steel (3)
Framing in 'exposed or sheltered' areas - galv. steel (3)

*2. - where cladding is a corrosive timber, such as western red cedar or redwood, or is treated with copper based ACQ or CuAz preservatives, use type 304 stainless steel or silicon bronze

*3. - steel fixings and fastenings in contacts with timber treated with copper-based timber preservatives (H3.2 or higher) shall be minimum of type 304 stainless steel (exposed and Sheltered environments), and hot-dip galv. steel (all other locations)

Minimum concrete strength after 28 days shall be:
17.5 MPa for unreinforced concrete applications & for reinforced concrete
20 MPa (Ribraft Foundation)

Fixing Materials:
(as per Acceptable Solution E2/AS1) - for defination refer to E2/AS1

Hidden/Exposed/Sheltered:
Aluminium , or Bronze, or type 304 stainless steel
Nails - galv. steel (2)
Screws - galv. steel (2), Painted or unpainted to AS 3566: Part 2

* The use of stainless steel fixings is not recommended by steel manufacturers for use with coated steel in severe marine and industrial environments, as they are considered to cause deterioration

Firth RibRaft Floor System laid in strict accordance with the latest FIRTH specification
Design not requiring specific engineering input for the Firth RibRaft Floor System.

All Construction in accordance with NZS 3604:2011 & NZBC

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CROSS SECTION DD

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Sheet no: **15**

Design: A1 | Drawn: RC/TN | Check: AC | LBP: AC | Date: 28/09/2026

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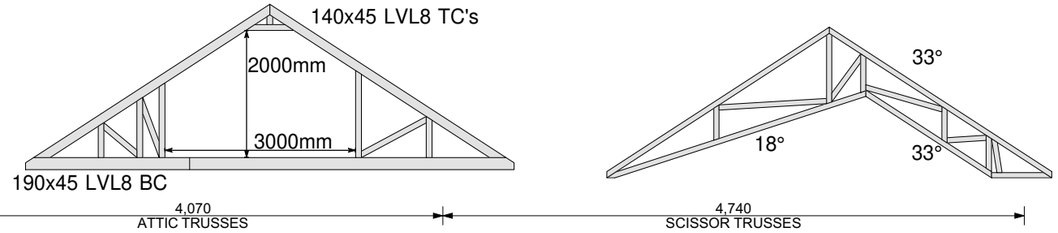
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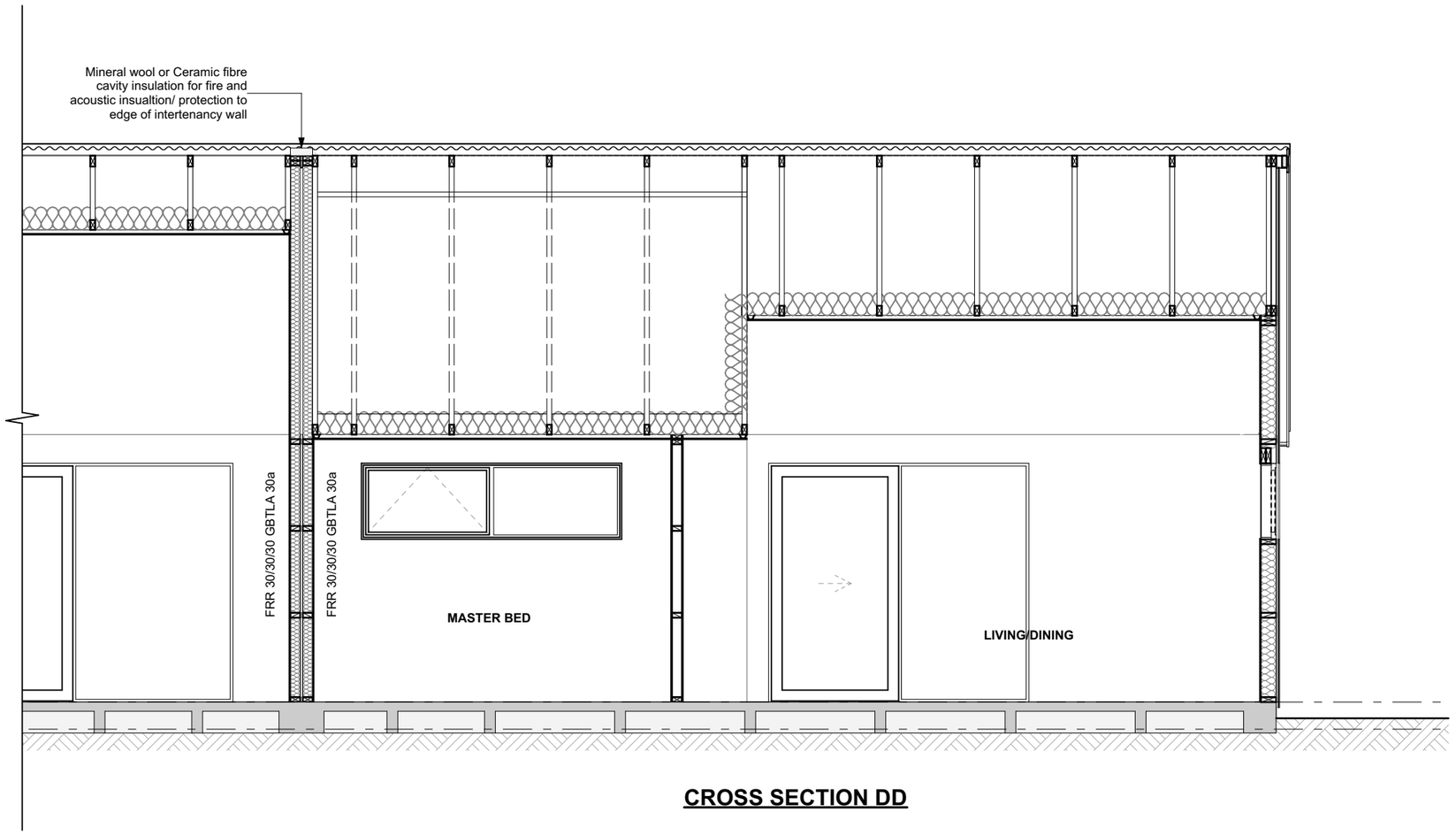
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TRUSS EXAMPLES





CROSS SECTION DD

Table 4 – Allowable moisture content (%)(1) at time of installation or in the case of framing timber at time of enclosure

	Use category level of finish	Air-conditioned or centrally heated buildings	Intermittently heated buildings(2)	Unheated buildings
1	Timber to which linings are attached to achieve a "level of finish" 4 to 5	8 – 18	12 – 18	12 – 18
2	Enclosed framing (including roof trusses) to achieve a "level of finish" 0 to 3	12 – 18	12 – 24	12 – 24
3	Load-bearing lintels and beams	8 – 18	12 – 20	12 – 20
4	Weatherboards, exterior joinery and finishing timbers	14 – 18	14 – 18	14 – 18
5	Flooring exposed to ground atmosphere	10 – 14	12 – 16	14 – 18
6	Interior joinery and finish, furniture, corestock	8 – 12	10 – 14	12 – 16
7	Flooring not exposed to ground atmosphere	8 – 12	10 – 14	12 – 16

NOTE –
(1) Allowable ranges of moisture content are specified on the basis that 90 % of pieces shall be within the specified range, the remainder shall be within a further 2 % moisture content above or below. The moisture content of individual boards shall be normally distributed within the range allowed. In special circumstances, e.g. flooring exposed in rooms with large window area, the upper limits may be reduced.

(2) Buildings periodically heated by open fires, electric heaters, etc., such as most domestic buildings.

Firth RibRaft Floor System laid in strict accordance with the latest FIRTH specification
Design not requiring specific engineering input for the Firth RibRaft Floor System.

Acceptable Solution E2/AS1
10.0 Construction Moisture

10.1 Moisture in materials
Moisture contained in the building structure at completion of construction shall not be permitted to damage the building elements.
Construction moisture includes the moisture contained in:
a) Timber products as a result of a treatment or manufacturing process,
b) Green timber, and timber or other materials that have been exposed to the weather, and
c) Concrete, mortar or plaster that is not completely cured.

10.2 Maximum acceptable moisture contents
The maximum moisture contents shall be:
a) For timber framing at the time of installing interior linings, the maximum acceptable moisture content shall be the lesser of:
i) 20% for insulated buildings, 24% for non-insulated buildings, or
ii) as specified in NZS 3602,
b) For timber weatherboards and exterior joinery, 20% at the time of painting,
c) For reconstituted wood products, 18% at all times, and
d) For concrete floors, sufficiently dry to give a relative humidity reading of less than 75%
at the time of laying fixed floor coverings.

• Where nail popping, joint peaking and ridges formed by stud warping and twisting are undesirable on the finished surfaces within 12 months of installation of wall linings, kiln dried timber shall be used, or alternatively the timber framing shall be dried to less than 18 % moisture content before wall linings are installed.

• Where timber framing is installed green or kiln dried timber that is wetted and allowed to dry, those members which are likely to deflect under their own weight shall be propped until they dry below a moisture content of 20 %.

Microclimatic Considerations:
In addition to exposure zones, evidence of local environmental effects (microclimates), and those produced by the erection of a structure or installation of equipment, shall be considered.

Significant acceleration of the corrosion of structural fasteners and fixings beyond what could be expected from the geographical location can occur in the following circumstances:

(a) Industrial contamination & corrosion atmospheres;

(b) Contamination from agricultural chemicals or fertilisers; and

(c) Geothermal hot spots. Hot spots are defined as being within 50m of a bore, mud pool, steam vent, or other souce.

Microclimatic conditions (a) to (c) require specific engineer design.

All Construction in accordance with NZS 3604:2011 & NZBC

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CROSS SECTION DD

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Sheet no: **16**
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Client Details:
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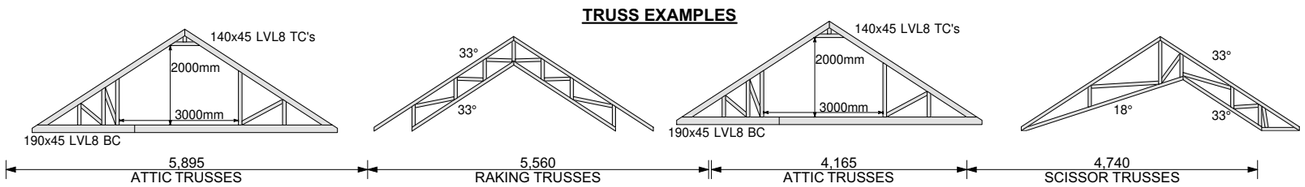
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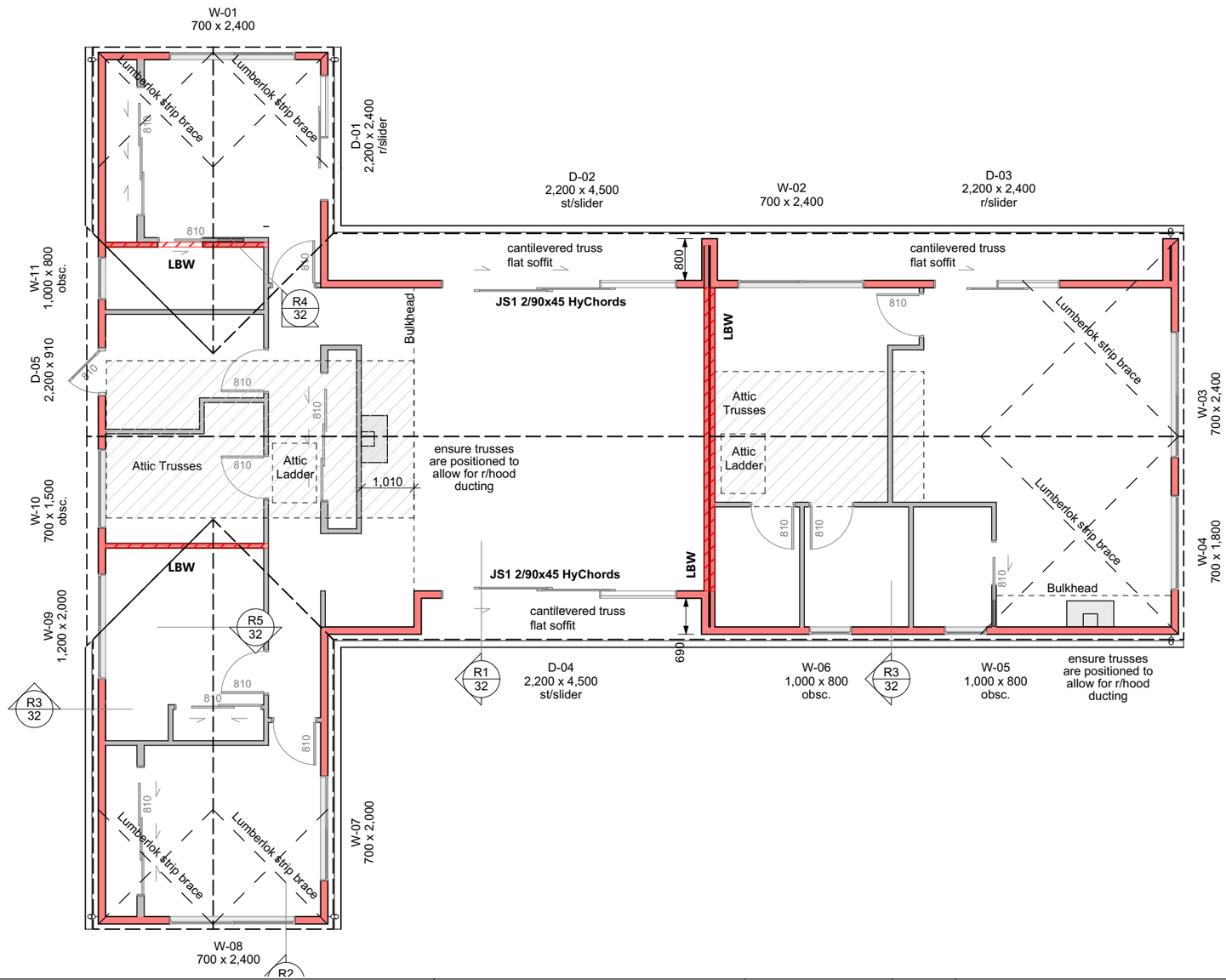
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Bespoke

NOTE TO PRENAIL:
Please clearly identify and advise of any Engineer designed members on plans and by email

TRUSS EXAMPLES





Cautionary Notes:
This layout is preliminary. Read in conjunction with final PS1 & pre-cut design & documents. Truss manufacturer to inform designer of any further load bearing footing / slab thickenings (piles or bearer lines) that are required to support roof loads. If a discrepancy occurs contact I Design Architecture immediately.

Construction Notes:
Ensure that all downpipes are positioned clear of Joinery units

Fixing Notes:
- refer to Lumberlok manual

Lintel Key:
190x90 - G ← Fixing
↑
└ Size

Trimming Studs:
JS1 = Jamb studs
- refer to CHH Design IT calcs
Refer to following page for trimming stud requirements
All Lintels GREATER than 1.8m span require an additional trimming stud

Rondo Clip System:
Bottom chord restraints are required as per truss design.
Fix 90x45 runners to top of bottom chords.

All Lintels and beams have been specified by Placemakers
- refer to documentation

33° pitch. NZS Colorsteel MAXAM Roofing

Roofing & associated flashings to comply with the NZ Metal Roof & Wall Cladding Code of Practice

Stud to Top Plate Fixings:

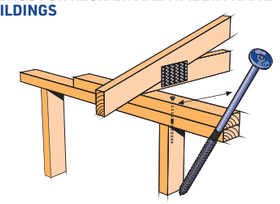
Stud to top plate:
As per Truss Design

MiTek BOWMAC

2024 EDITION V1

STUD-LOK SL170 (BLUE) TOP PLATE FIXING

PROVIDES A SOLUTION FOR TOP PLATE TO STUD FIXINGS FOR RESIDENTIAL TIMBER FRAME BUILDINGS



- Complies with fixing requirements in Section 8 NZS 3604:2011
- The BOWMAC STUD-LOK forms an integral part of the MiTek Truss & Frame design and layout

NOTE:
- Refer to Table 8.19 NZS 3604:2011 for nailing schedule to resist lateral loads
- The STUD-LOK connections assume that the correct choice of rafter/truss fixings have been made
- Wall framing arrangements under girder trusses are not covered in this schedule
- All timber selections are as per NZS 3604:2011 and include LVL8 timber grades

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ROOF PLAN

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Rev:
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Dylan Dickson and Hannah Gerrard

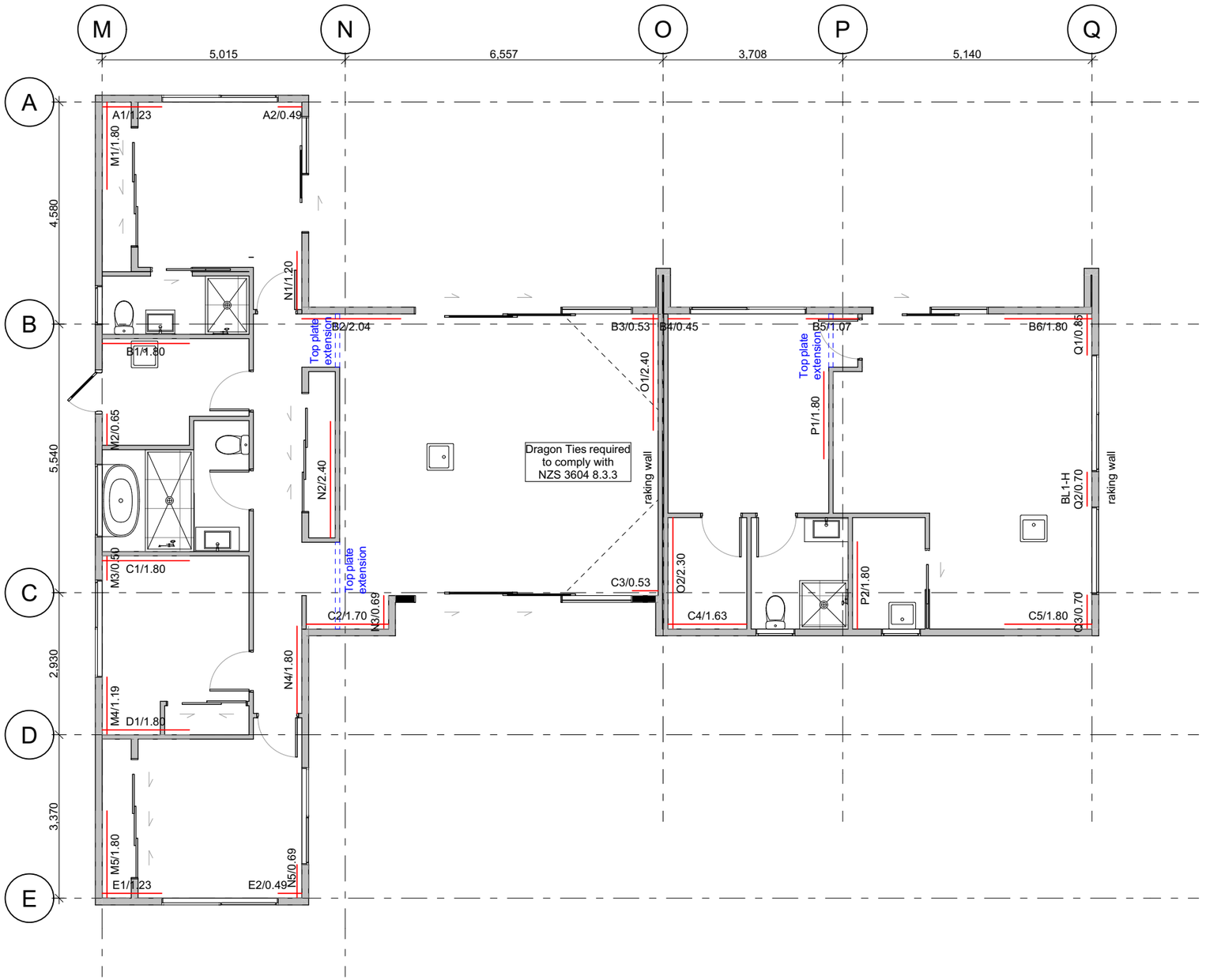
Address:
6 Pouakai Street
Lake Hawea

Job no: **CL002**

Bespoke

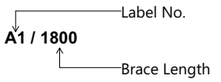
A1homes

All bracing elements are GS1-N unless otherwise stated



Cautionary Notes:
ALL GIB BRACES FIXED IN ACCORDANCE WITH THE LATEST WINSTONES GIB BRACING MANUAL & GIB SITE GUIDE

Bracing Element Table	
Brace Type	
GS1-N	10mm GIB std plasterboard on one side, min. length 0.4m
BL1-H	10mm GIB BRACELINE on one side, min. length 0.4m + GIB Handibrac hold down ea. end
All braces are GS1-N, unless otherwise stated	



Openings in Bracing Elements
(as per GIB Ezybrace System)
SMALL OPENINGS
Small openings (e.g. power outlets) of 90 x 90mm or less maybe placed no closer than 90mm to the edge of the braced element. A block may need to be provided alongside the perimeter stud as shown below.
LARGE OPENINGS
Openings above 90 x 90mm such as switch boards, recessed cabinets and TV's etc. should be placed outside of the bracing element or locate bracing on the other side of the wall framing.

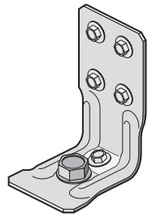
Connecting top plates to external walls:
Each wall that contains one or more wall bracing elements shall be connected at the top plate level, either directly, or through a framing member in the line of the wall, to external walls at right angles to it. - Refer to following page.

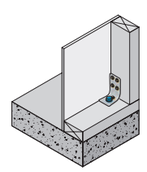
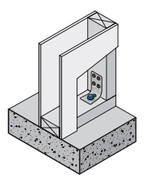
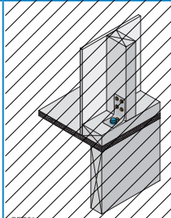
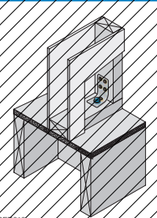
GIB HandiBrac® installation

Developed in conjunction with MiTek™, the GIB HandiBrac® has been designed and tested by Winstone Wallboards for use in GIB EzyBrace® elements that require hold-downs. The GIB HandiBrac® is a substitute for bottom plate hold-down straps.

- Quick and easy to fit.
- May be fitted at any stage before lining.
- Framing face is clear to allow flush lining.
- Easily inspected.

The GIB HandiBrac® with BOWMAC® blue head screw bolt is suitable for timber and concrete floors constructed in accordance with NZS 3604:2011.



Concrete floor		Timber floor	
External walls	Internal walls	External walls	Internal walls
 GEB009	 GEB010	 GEB011	 GEB012
Position GIB HandiBrac® as close as practicable to the internal edge of the bottom plate.	Position GIB HandiBrac® at the stud/plate junction and at mid-width of plate.	Position GIB HandiBrac® flush with the outside stud face, as close as practicable to the centre of the boundary joist.	Position GIB HandiBrac® in the centre of floor joist or full depth solid block.
Hold-down fastener requirements			
A mechanical fastening with a minimum characteristic uplift capacity of 15kN or use supplied BT10/140 screwbolt in GIB HandiBrac® pack.		12 x 150mm galvanised coach screw or use supplied BT10/140 screwbolt in GIB HandiBrac® pack.	

All Construction in accordance with NZS 3604:2011 & NZBC

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BRACING PLAN

Scale: 1:100 | Sheet no: 18 | Rev:

Design: A1 | Drawn: RC/TN | Check: AC | LBP: AC | Date: 28/09/2026

Wind:	Earthq:	Exposure:	Snow:	Climate:
HIGH	3	B	N5 2kPa	6

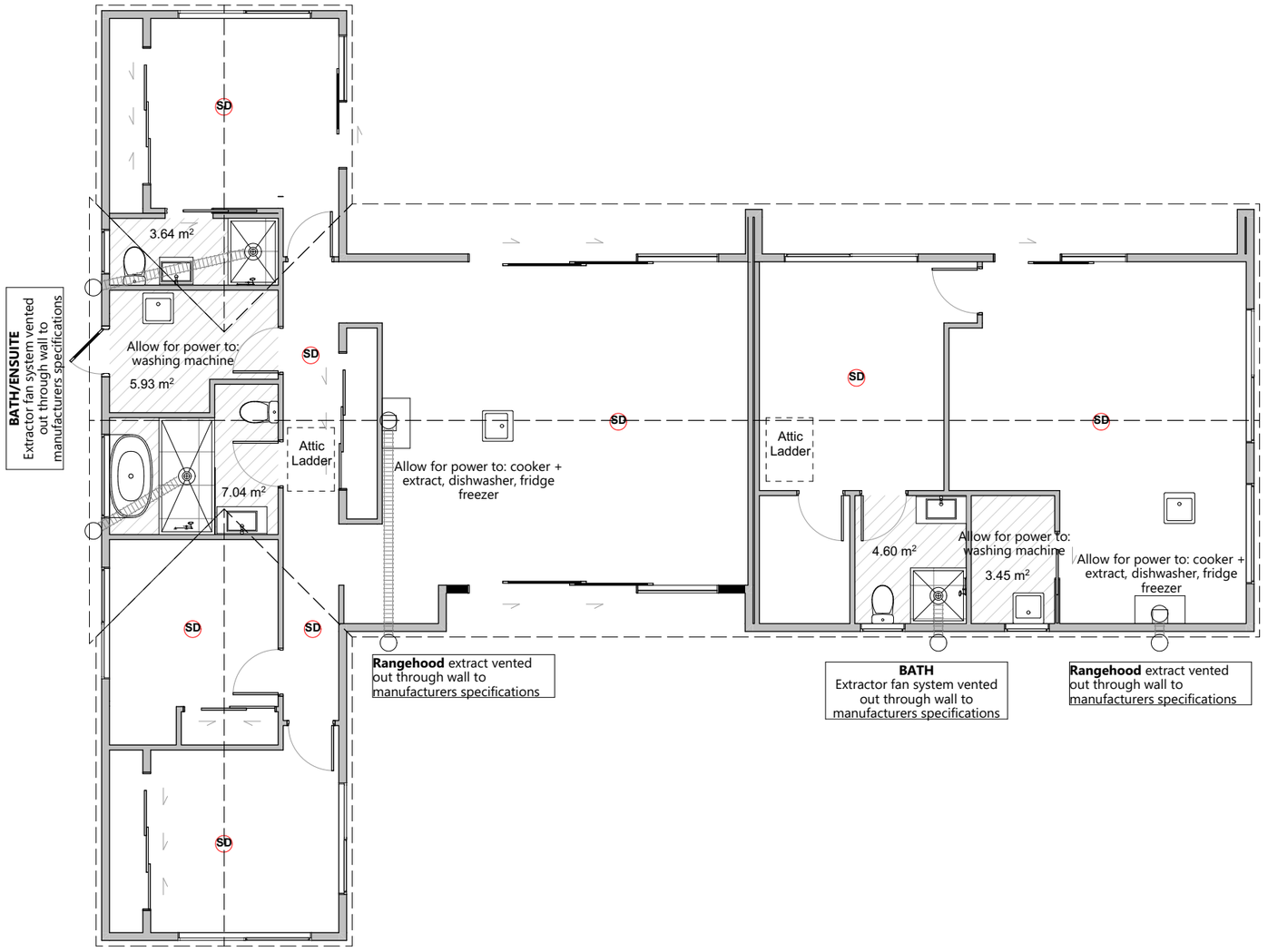
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Client Details:
Dylan Dickson and Hannah Gerrard

Address:
6 Pouakai Street
Lake Hawea

Job no: **CL002**

Bespoke



Notes:
All electrical work & items to comply with:
NZBC F7/AS1, AS/NZS 3000, AS/NZS 3008, AS 3786, AS/NZS 5000.2: 2006

SD - Approved smoke detectors

Smoke alarms shall be located:
- in all bedrooms, living spaces, hallways, and landings within the building.
- not more than 5m from a wall and 10m from another smoke detector

10 year min battery wireless interconnected smoke alarms.

Where more than one smoke alarm is needed to meet the requirements of this standard, these smoke alarms shall all be interconnected so that when one activates, all smoke alarm devices in the household unit will sound.

Down lights to be IC-F or IC-4 Rated (max 1 per 5m²).

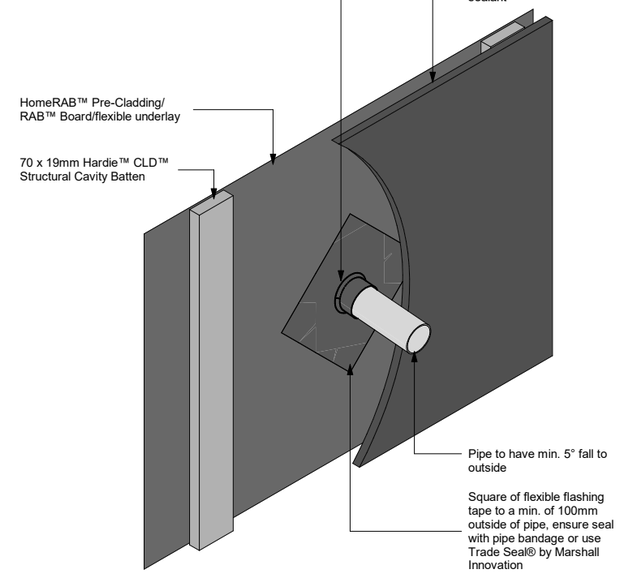
Ventilation system to vent ducts & r/hood to soffit outlet
Ventilation system to have mechanical exhaust rates in accordance with NZBC G4/AS1

Ventilation of Sanitary rooms
Percentage of ventilated opening to be minimum 5% of room floor area

Room	Floor Area	Window Opening	Percentage
Bath 1	7.04m²	700x1500 = 1.05m²	14.91%
Bath 2	4.60m²	1000x800 = 0.80m²	17.39%
Laundry	5.93m²	2200x910 = 2.01m²	33.76%
Ensuite	3.64m²	1000x800 = 0.80m²	21.98%
Pntry/Indry	3.45m²	1000x800 = 0.80m²	23.19%

Lighting & Electrical
NZBC: Clause G8 Artifical Light
Requirement applys to: All access routes
Spaces within buildings used by people, shall be provided with adequate artificial lighting which, when activated in the absence of sufficient natural light
•Illuminance at floor level shall be no less than 20 lux. will allow safe movement

PIPE PENETRATION



Note: Site cut edges to be primed

All Construction in accordance with NZS 3604:2011 & NZBC

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ELECTRICAL PLAN

Scale: 1:100 | Rev: | Sheet no: 19

Design: A1 | Drawn: RC/TN | Check: AC | LBP: AC | Date: 28/09/2026

Wind:	Earthq:	Exposure:	Snow:	Climate:
HIGH	3	B	N5 2kPa	6

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Client Details:
Dylan Dickson and Hannah Gerrard

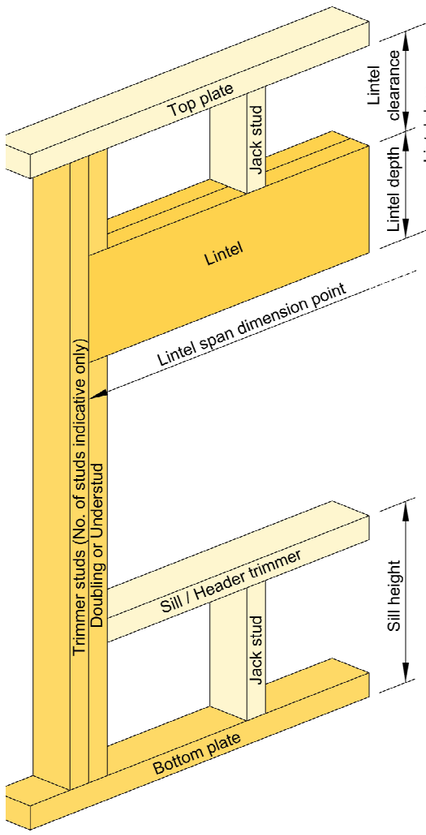
Address:
6 Pouakai Street
Lake Hawea

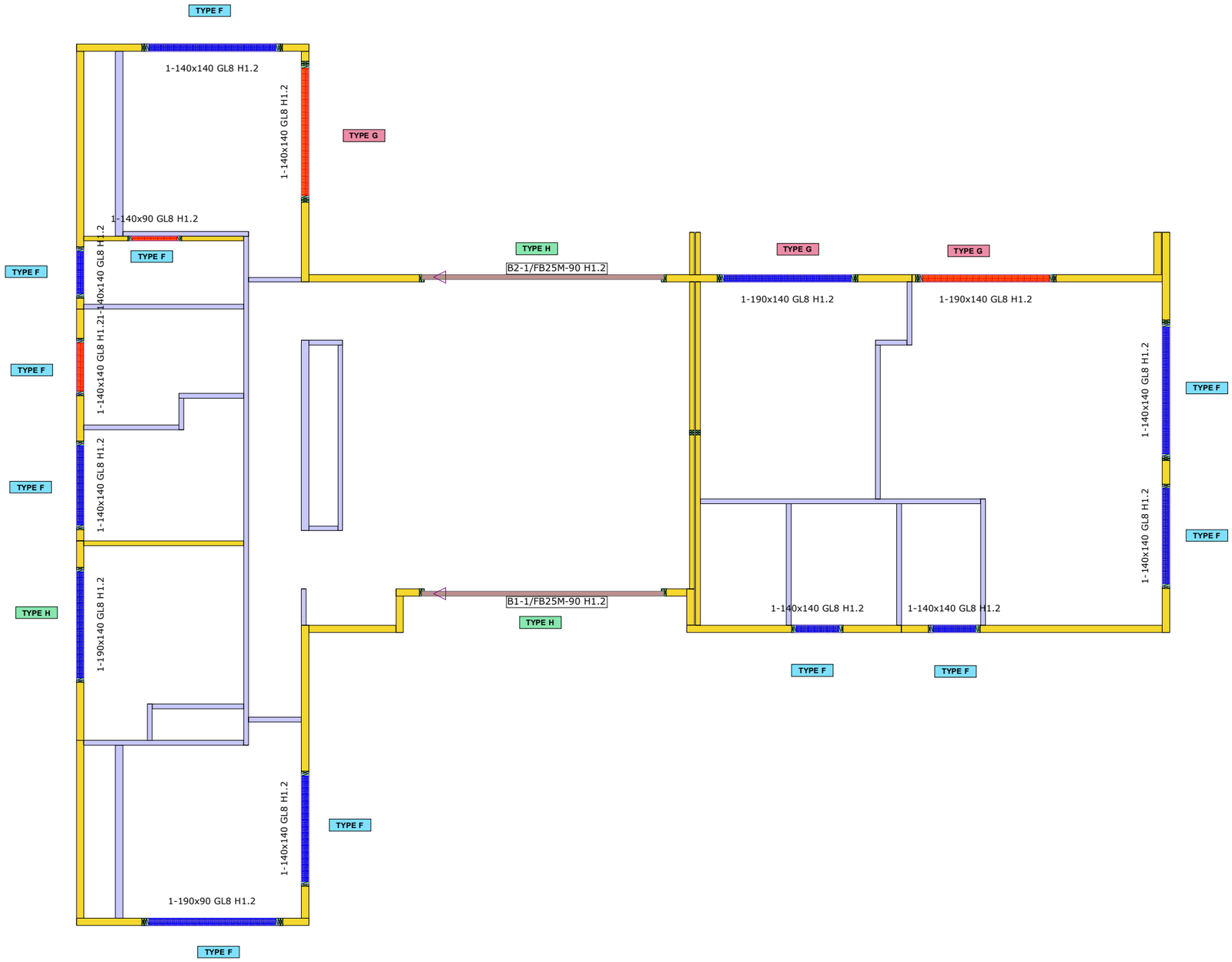
Job no: **CL002**

Bespoke

LINTEL FIXING

TYPE E	= 1.4kN
TYPE F	= 4.0kN
TYPE G	= 7.5kN
TYPE H	= 13.5kN
SED	= Specific Engineering Design





fer to:
MBERLOK Lintel Fixing Schedule 10/2011,
Tek Structural Fixings **On-Site Guide** for Building
de Compliance
ernative to Table 8.14 & Figure 8.12 NZS 3604:2011)

LINTELS BELOW UPPER FLOOR BY OTHERS

Heartland Prenail

2 Milward St
Washdyke Timaru 7910
New Zealand

OT No.: **0804PS1-Q-01**

Name: CL002 - Dickson & Gerrard

Address: 6 Pouakai Street Lake Hawea

Sheet Tittle: CONSENT - Lintel Fixing Layout

Snow Zone:	Wanaka (N5)	Snow Altitude:	350.000 m
Wind Area:	High	Design Wind Speed:	44.0 m/s
TC Restraints:	900 mm	BC Restraints:	1800 mm
Roof Material:	Galv Iron 0.55mm	Ceiling Material:	Standard Ceiling on Suspended Battens
Roof Live Load:		Ground Snow Load:	1.200 kPa

MiTek® SAPPHIRE Ver. 26.2.0.18
Better Technology. Better Building

Building Consent No.: | Structure: 0804PS1-Q 1

NZS 3604:2011 8.5.2 Trimming studs
A trimming stud shall be provided to each side of any opening as follows;
• must be the same width as the studs in the wall
• whether single or double, shall not contain holes, notches, checks, or cuts in the middle third of their length.
• Where a doubling stud which provides support for a lintel is shorter by 400 mm or more than the full stud height, its thickness shall not be included as contributing to the thickness of trimming studs from table 8.5

Table 8.5 – Trimming studs (see 8.5.2.1)

Maximum clear width of opening (span of lintel)	Stud thickness required for 600 mm spaced studs	Thickness of trimming studs*
(a) Single storey, top storey or non-loadbearing walls		
(m)	(mm)	(mm)
1.8	35	45
	45	45
	70	90
	90	115
3.0	35	45
	45	70
	70	90
	90	135
3.6	35	70
	45	90
	70	140
	90	180
4.2	35	105
	45	135
	70	210
	90	270
(b) Any other location		
0.9	35	45
	45	70
	70	90
	90	135
1.8	35	70
	45	70
	70	115
	90	135
3.0	35	70
	45	90
	70	140
	90	180

* For brick veneer openings add extra stud for fixing veneer ties.

NOTE – To use this table:

(1) Enter the row corresponding to the lintel span being considered.

(2) From the second column, select the thickness of the studs required for the body of the wall, assuming that they are spaced at 600 mm.

(3) Read the trimming stud thickness from the right side column.

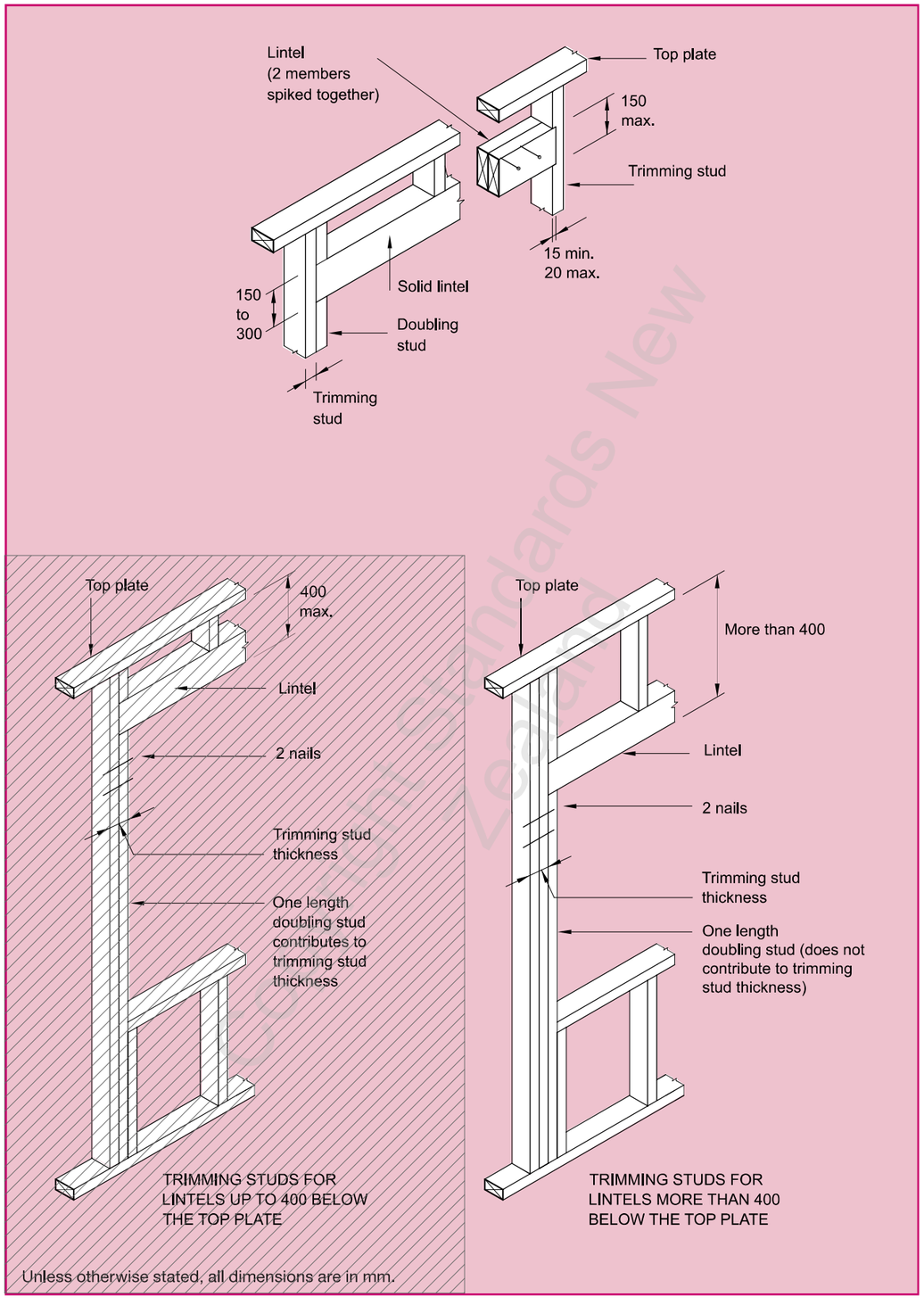


Figure 8.5 – Trimming studs and lintels (see 8.5.2.1)

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TRIMMING STUDS

Scale:
Rev:
Sheet no: 21
Design: A1 | Drawn: RC/TN | Check: AC | LBP: AC | Date: 28/09/2026

Wind:	Earthq:	Exposure:	Snow:	Climate:
HIGH	3	B	N5 2kPa	6

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Address:
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Lake Hawea

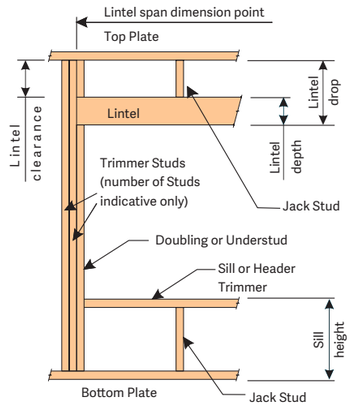
Job no: **CL002**

Bespoke

STUD-LOK LINTEL FIXING OPTIONS FOR ON-SITE

ALTERNATIVE TO TABLE 8.14 & FIGURE 8.12 NZS 3604:2011

- All fixings are designed for vertical loads only. Dead loads include the roof weight and standard ceiling weight of 0.20kPa.
- These fixings assume the correct choice of rafter/truss to top place connections have been made.
- All fixings assume bottom plate thickness of 45mm maximum
- Wall framing arrangements under girder trusses are not covered in this schedule
- All timber selections are as per NZS 3604:2011.



LINTEL SUPPORTING GIRDER TRUSSES

Roof Tributary Area	Light Roof Wind Zone: Low, Medium, High	Light Roof Wind Zone: Very High	Light Roof Wind Zone: Extra High	Heavy Roof Wind Zone: Low, Medium, High	Heavy Roof Wind Zone: Very High	Heavy Roof Wind Zone: Extra High
8.6m²	G	G	H	G	G	H
11.6m²	G	H	H	G	G	H
12.1m²	G	H	H	G	H	H
15.3m²	H	H	-	G	H	H
19.1m²	H	-	-	G	H	-
20.9m²	H	-	-	H	H	-
21.8m²	H	-	-	H	-	-
34.3m²	-	-	-	H	-	-

NOTES:

1. Roof Tributary Area = approx. 1/2 x (total roof area on girder and rafter trusses supported by lintel)

2. Assumed girder truss is at mid-span or middle third span of lintel

3. Use similar fixings for both ends of lintel

4. All other cases require specific engineering design

SELECTION CHART FOR LINTEL FIXING

Lintel Span (m)	Loaded Dimension (m)	Light Roof Wind Zone: Low	Light Roof Wind Zone: Medium	Light Roof Wind Zone: High	Light Roof Wind Zone: Very High	Light Roof Wind Zone: Extra High	Heavy Roof Wind Zone: Low	Heavy Roof Wind Zone: Medium	Heavy Roof Wind Zone: High	Heavy Roof Wind Zone: Very High	Heavy Roof Wind Zone: Extra High
1.0	2.0	E	E	E	F	F	E	E	E	E	F
	3.0	E	E	F	F	F	E	E	E	F	F
	4.0	E	F	F	F	G	E	E	F	F	F
	5.0	E	F	F	G	G	E	E	F	F	G
	6.0	E	F	F	G	G	E	E	F	F	G
1.2	2.0	E	E	F	F	F	E	E	E	F	F
	3.0	E	E	F	F	F	E	E	F	F	F
	4.0	E	F	F	G	G	E	E	F	F	G
	5.0	E	F	F	G	G	E	E	F	F	G
	6.0	F	F	G	G	H	E	E	F	G	G
1.5	2.0	E	E	F	F	F	E	E	E	F	F
	3.0	E	F	F	F	G	E	E	F	F	F
	4.0	E	F	F	G	G	E	E	F	F	G
	5.0	F	F	G	G	H	E	E	F	G	G
	6.0	F	F	G	H	H	E	E	F	G	H
2.0	2.0	E	F	F	F	G	E	E	F	F	F
	3.0	E	F	F	G	G	E	E	F	F	G
	4.0	F	F	G	G	H	E	E	F	G	G
	5.0	F	F	G	H	H	E	E	F	G	H
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	3.0	F	F	G	G	H	E	E	F	G	G
	4.0	F	F	G	H	H	E	E	F	G	H
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3.0	2.0	E	F	F	G	G	E	E	F	F	G
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	6.0	F	G	H	-	-	E	F	G	H	-
3.6	2.0	F	F	G	G	H	E	E	F	G	G
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	6.0	G	H	H	-	-	E	F	H	-	-
4.2	2.0	F	F	G	G	H	E	E	F	G	G
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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
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	6.0	G	H	-	-	-	E	G	H	-	-
5.4	2.0	F	F	G	H	H	E	F	G	G	H
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	5.0	G	H	-	-	-	E	F	H	-	-
	6.0	G	H	-	-	-	E	G	H	-	-

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FIXING CHARTS

Scale:

Rev:

Sheet no: **22**

Design: A1 | Drawn: RC/TN | Check: AC | LBP: AC | Date: 28/09/2026

Wind:	Earthq:	Exposure:	Snow:	Climate:
HIGH	3	B	N5 2kPa	6

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Address:

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Job no: **CL002**

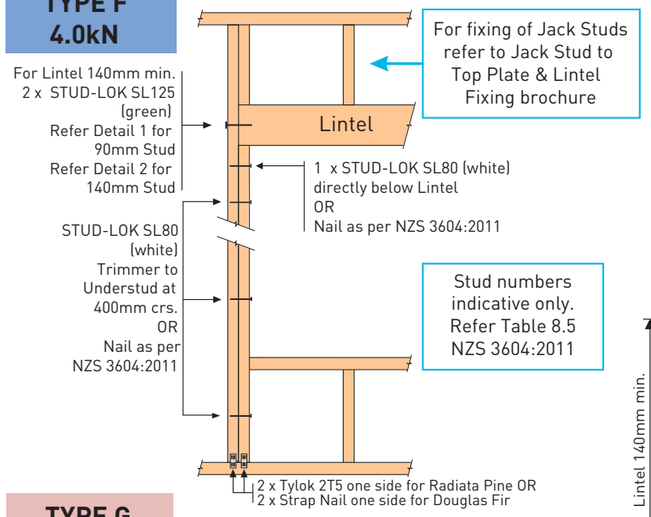
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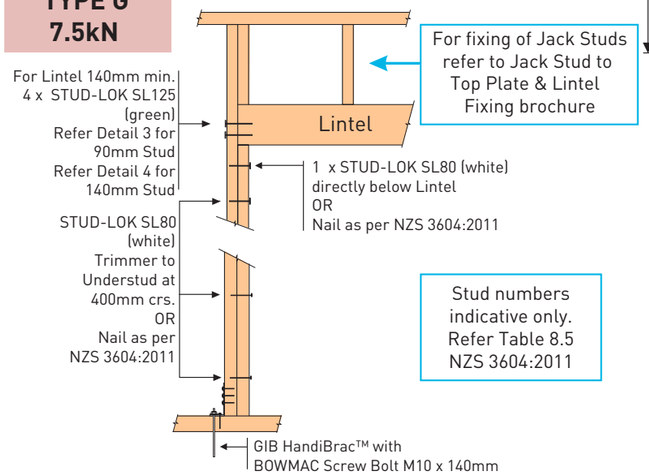
STUD-LOK LINTEL FIXING OPTIONS FOR ON-SITE

MiTek® BOWMAC®

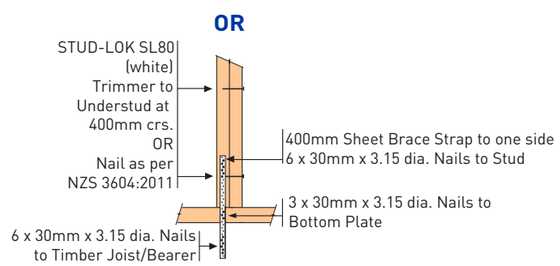
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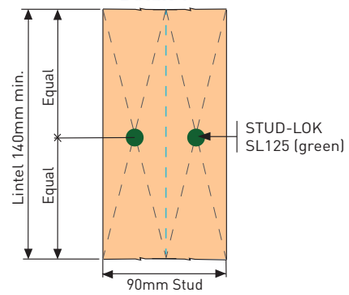
TYPE G 7.5kN



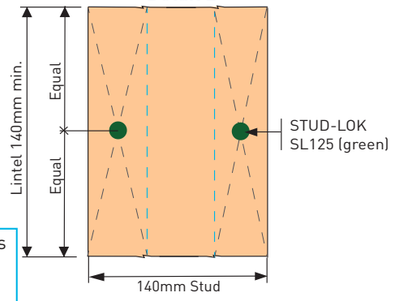
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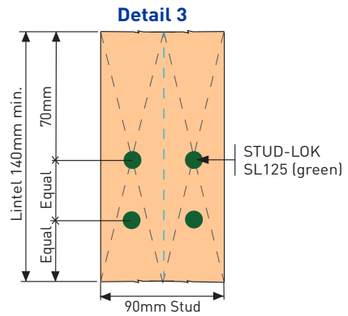
Detail 1



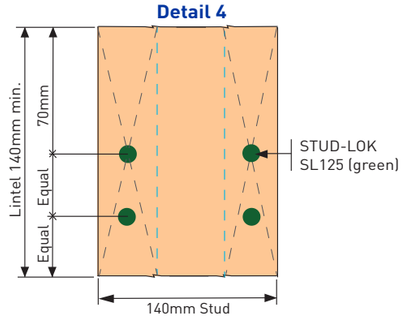
Detail 2



Detail 3



Detail 4

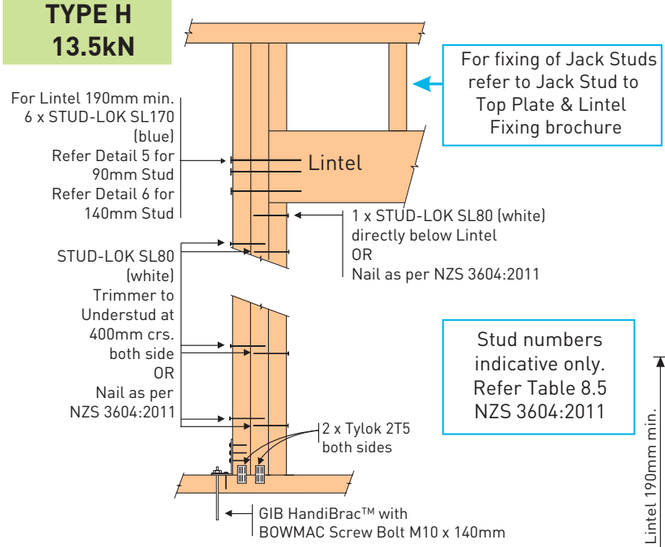


8. WALLS

STUD-LOK LINTEL FIXING OPTIONS FOR ON-SITE

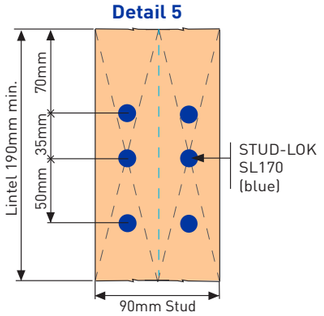
MiTek® BOWMAC®

TYPE H 13.5kN

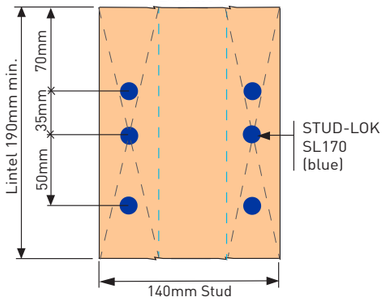


OR

Detail 5



Detail 6



NOTE: STUD-LOK TYPE F 4.0kN fixing can be used for TYPE E 1.4kN fixing

8. WALLS

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FIXING DETAILS

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Lake Hawea

Job no: **CL002**

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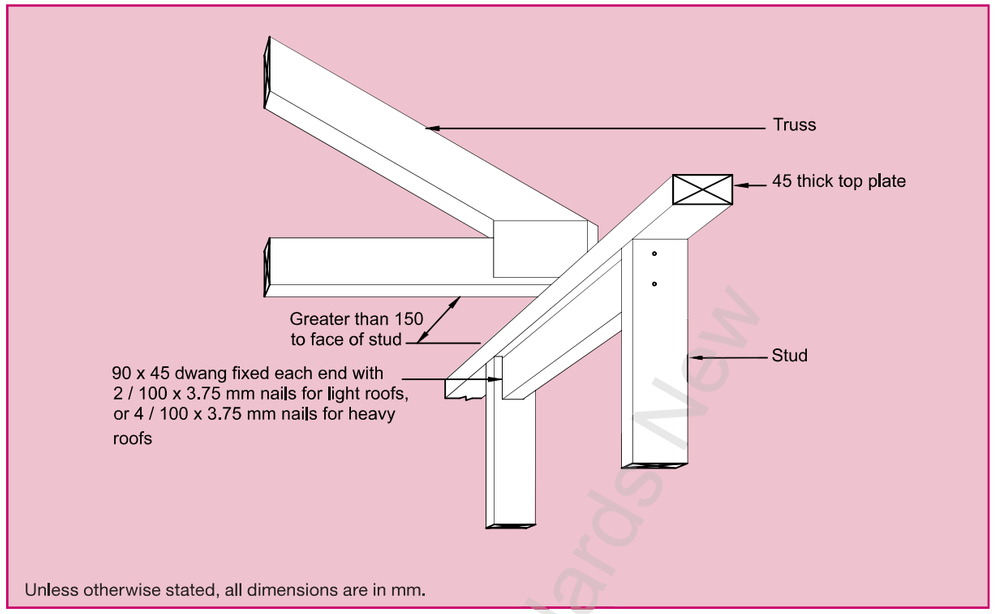


Figure 8.13 – Strengthening top plate (see 8.7.1.1 and table 8.16)

Joints in plates:
Joints in top plates shall be made only over supports being either a stud or blocking.
Joints in the top plate of a wall that does not contain any wall bracing elements (either in line or at wall intersections), shall be halved and nailed at the joints, see figure 8.14 (A), or be butted over blocking and nailed, see figure 8.14 (B), or be provided with an alternative fixing, having a capacity in tension or compression of 3 kN.

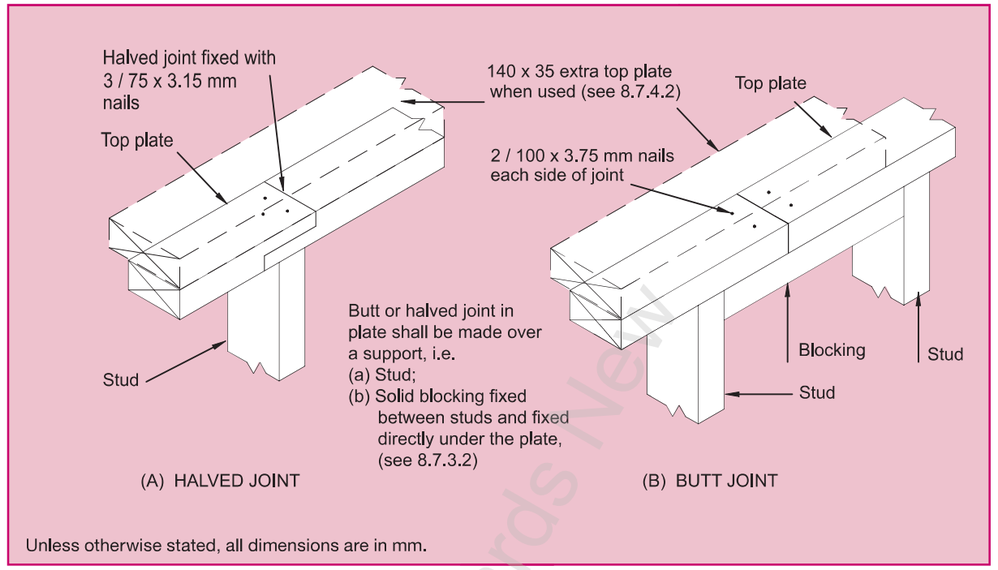


Figure 8.14 – Connecting top plates – Walls not containing bracing (see 8.7.3.2)

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TOP PLATE JOINTING

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Lake Hawea

Job no: **CL002**

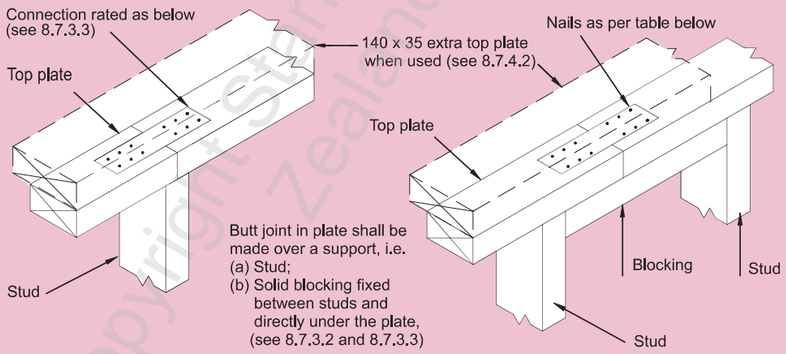
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Connecting top plates to external walls:

For single-storey buildings the connection in line of the top plate of a wall that contains one or more wall bracing elements shall be jointed according to the bracing capacity of the highest-rated individual wall bracing elements as follows:
(a) Bracing capacity not exceeding 100 bracing units: A 3 kN connection as shown in figure 8.15;
(b) Bracing capacity exceeding 100 bracing units: A 6 kN connection as shown in figure 8.15.
(c) Wall top plates to which ceiling diaphragms are attached:
A 6 kN connection as shown in figure 8.15

Each wall that contains one or more wall bracing elements shall be connected at the top plate level, either directly, or through a framing member in the line of the wall, to external walls at right angles to it. Top plate fixing(s) of the capacity in tension or compression along the line of the wall bracing element are given as follows:
(a) For each wall containing wall bracing elements with a total bracing capacity of not more than 125 bracing units: to at least one such external wall by a fixing as shown in figure 8.16 of 6 kN capacity;
(b) For each wall containing wall bracing elements with a total bracing capacity of not more than 250 bracing units: to at least 2 external walls by fixings as shown in figure 8.16 each of 6 kN capacity;
(c) For each wall containing wall bracing elements with a total bracing capacity of more than 250 bracing units: to at least 2 external walls by fixings as shown in figure 8.16 each having a rating of not less than 2.4 kN per 100 bracing units.



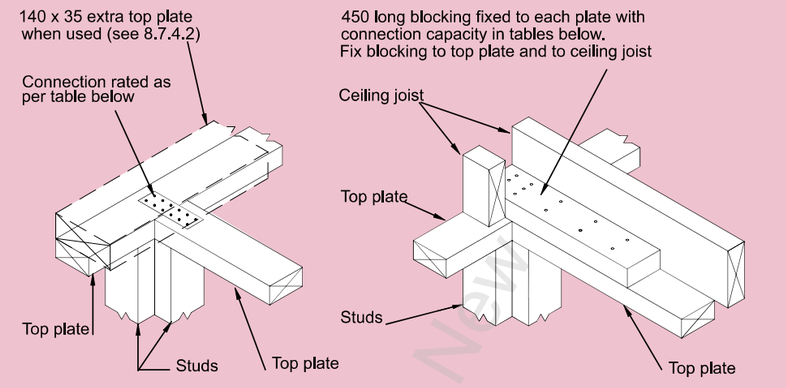
Capacities of metal plate joints(2)	
Up to 3 kN Up to 6 kN	3 / 30 x 3.15 mm nails per side 6 / 30 x 3.15 mm nails per side

Capacities of nailed joints(2)	
Up to 3 kN Up to 6 kN	3 / 100 x 3.75 mm nails per side 6 / 100 x 3.75 mm nails per side

NOTE –
(1) See section 4 for durability requirements.
(2) Not required when extra top plate is used.

Unless otherwise stated, all dimensions are in mm.

Figure 8.15 – Connecting top plates in line – Walls containing bracing (see 8.7.3.3)



Capacities of metal plate joints	
Up to 3 kN Up to 6 kN	3 / 30 x 3.15 mm nails per side 6 / 30 x 3.15 mm nails per side

Capacities of nailed joints	
Up to 3 kN Up to 6 kN	3 / 100 x 3.75 mm nails per side 6 / 100 x 3.75 mm nails per side

NOTE – See section 4 for durability requirements.

Unless otherwise stated, all dimensions are in mm.

Figure 8.16 – Connecting top plates to external walls at right angles – Walls containing bracing (see 8.7.3.4)

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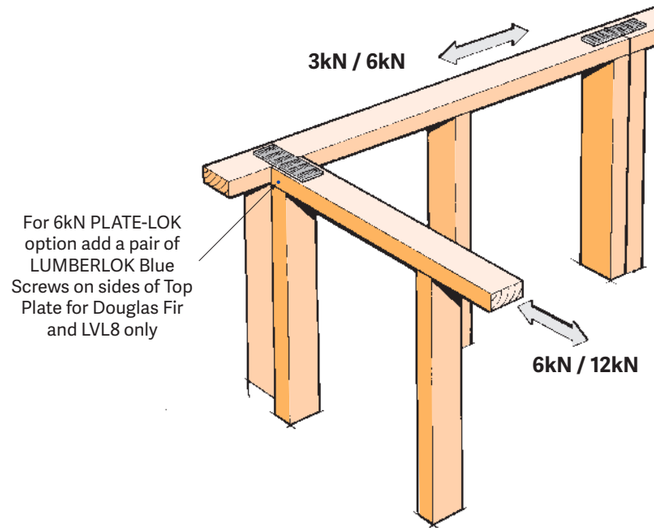
TOP PLATE JOINTING
AS PER CLAUSE 8.7.3 NZS 3604:2011

Top Plates at Right Angles

Connection capacity	LUMBERLOK Connector
6kN	Tylok 6T10 **OR** PLATE-LOK
12kN	2 x Sheet Brace Straps fixed with 6 x LUMBERLOK Product Nails 30mm x 3.15 dia. per end per strap (24 nails total)

Top Plates in Line

Connection capacity	LUMBERLOK Connector
3kN	Tylok 6T5
6kN	Tylok 6T10 **OR** PLATE-LOK



Available from leading Builders Supply Merchants throughout New Zealand

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TOP PLATE CONNECTIONS					Scale:	Sheet no: 25
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Dylan Dickson and Hannah Gerrard

Address:
6 Pouakai Street
Lake Hawea

Job no: **CL002**

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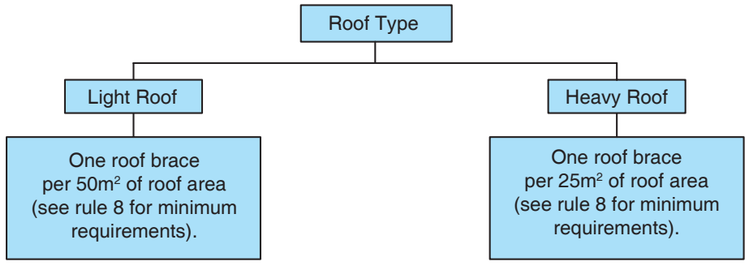
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ROOF BRACING SPECIFICATION
AS PER NZS 3604:2011

- Covers roof bracing requirements to resist horizontal loads as set out in Section 10 NZS 3604:2011
- A definitive guide to the description and installation of Roof Plane Braces and Roof Space Braces

Roof Bracing Requirements



Roof Bracing - Rules & Definitions

1. The bracing described in this brochure covers both framed roofs and fully trussed roofs.
2. Roof planes less than 6m² (e.g. dormers & porches) do not require bracing.
3. Roof braces can consist of either
   i) Roof Plane Brace or
   ii) Roof Space Brace or combination of the two.
4. Roof braces are not required on roofs where sarking is installed as per Clause 10.4.4 NZS 3604:2011 or where a ceiling diaphragm is installed and is attached to the rafters.
5. Roof area is the actual plan area of the roof and includes overhangs.
6. A hip or valley rafter running continuously from ridge to top plate can be classed as one roof plane brace.
7. A pair of crossed LUMBERLOK Strip Brace (preferred for ease of installation) can be classed as one roof plane brace and shall be installed as detailed in this brochure.
8. There must be at least one roof plane brace in each roof plane. Each ridge line shall have a minimum of two roof braces.
9. Every design effort should be made to distribute the roof braces as evenly as possible over the entire roof area and run alternately in opposite directions.

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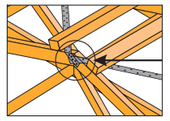
Roof Bracing Options

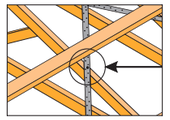
i) ROOF PLANE BRACE

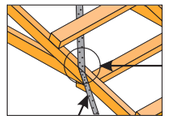
Each roof plane brace can be:
- A hip or valley rafter running continuously from ridge to the top plate in accordance with Clauses 10.2.1.3.2 or 10.2.1.3.3 NZS 3604:2011.

OR

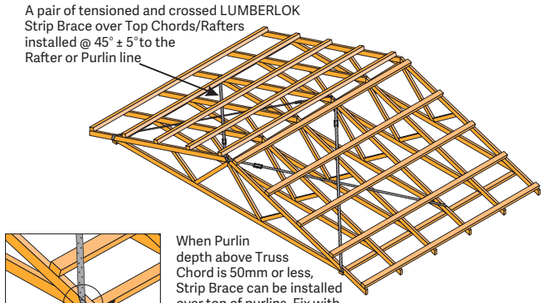
- A pair of tensioned and crossed LUMBERLOK Strip Brace running continuously from ridge to wall frame installed as detailed below.


5 x 30mm x 3.15 dia. Nails each end


1 x 30mm x 3.15 dia. Nail at crossing (after tensioning)


5 x 30mm x 3.15 dia. Nails each end

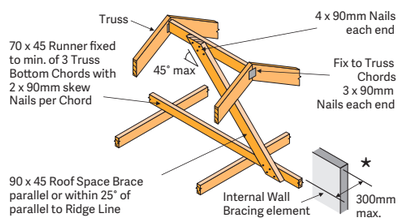
6 x 30mm x 3.15 dia. Nails to Wall Frame



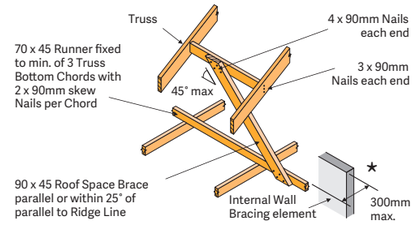
When Purlin depth above Truss Chord is 50mm or less, Strip Brace can be installed over top of purlins. Fix with 1 x 30mm x 3.15 dia. Nail at the Purlin closest to the Rafter/Truss crossing

ii) ROOF SPACE BRACE

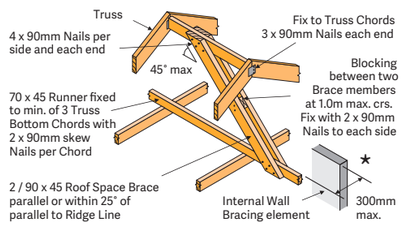
(A) Less than 2m long



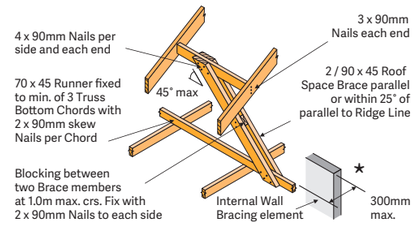
(C) Not directly under the ridge - less than 2m long



(B) More than 2m long (Max. 4.8m)



(D) Not directly under the ridge - more than 2m long



*Not required when a ceiling diaphragm complying with Clause 13.5 NZS 3604:2011 is used.

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ROOF BRACING

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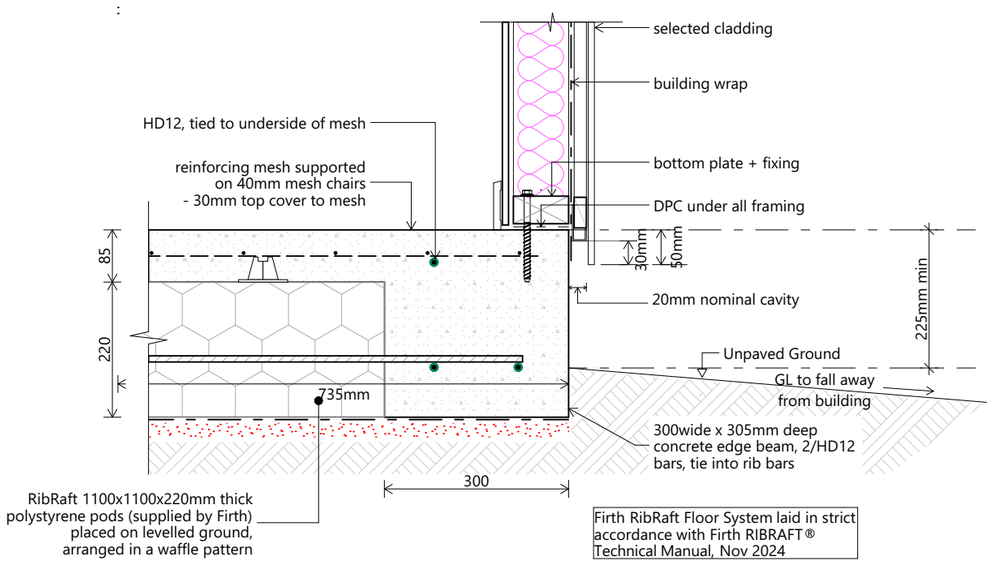
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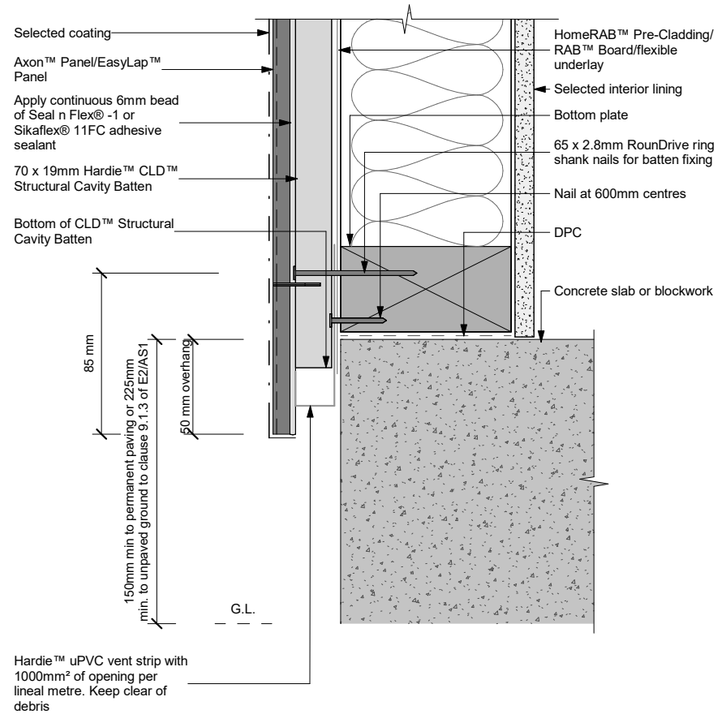
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:



D1 FOUNDATION EDGE



Note: Site cut edges to be primed

AXON DETAIL

Figure 65: Levels and garage openings
Paragraphs 9.1.3, 9.1.3.4, 9.2.5, Table 18

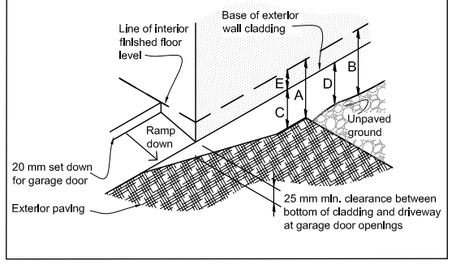


Table 18: Minimum clearances
Paragraphs 9.1.3, 9.1.3.1, 9.1.3.2, 9.1.3.3, 9.1.3.4, 9.1.3.5 and 9.2.7

Minimum clearances (mm)	Masonry veneer		Other claddings				
	A	B	A	B	C	D	E
Concrete slab	100	150	150	225	100	175	50
Timber floor Refer Note 1)					100	175	50 2)

NOTE: 1) Refer to NZS 3604 for requirements.

2) Cladding to extend minimum 50 mm below bearer or lowest part of timber floor framing.

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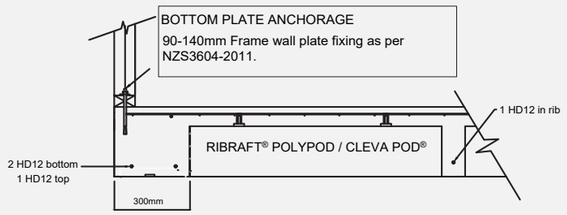
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Lake Hawea

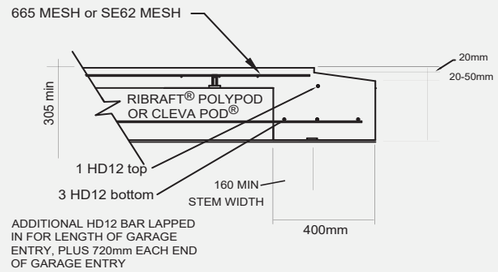
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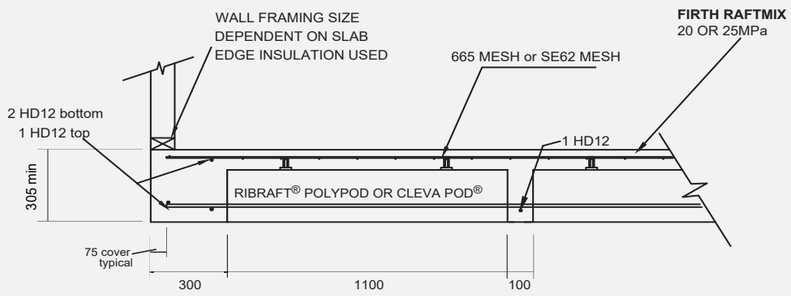
Figure 5. Standard RibRaft® Construction Details



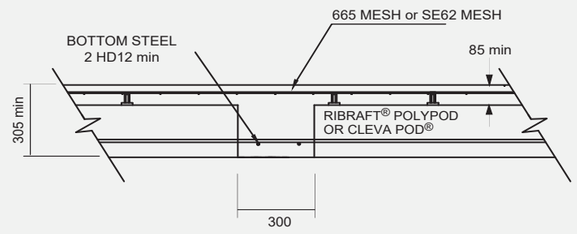
Ⓐ 220mm FIRTH RIBRAFT® POLYPOD
90-140mm WALL FRAME - NO INSULATION
FIRTH RAFTMIX 20 OR 25MPa



D GARAGE DOOR CONSTRUCTION DETAIL

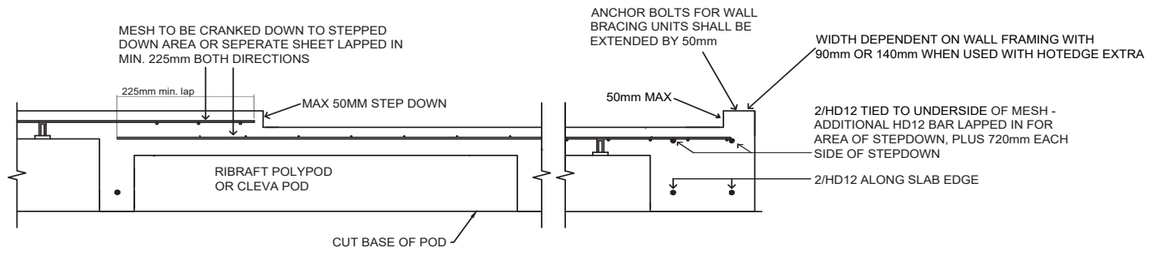


A PERIMETER BEAM & RIB CONSTRUCTION DETAIL



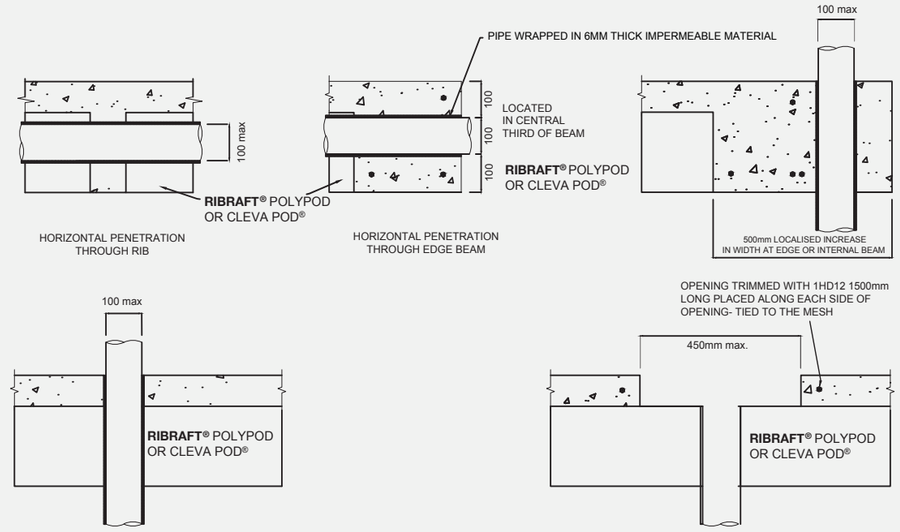
B SECTION UNDER INTERNAL LOAD-BEARING WALLS

Figure 11. Details where recesses of up to 50mm are required for rebated showers



RIB RAFT FLOOR - SET-DOWN DETAIL FOR MAX. 50mm REBATED SHOWER

Figure 9. Example of Detailing Requirements For Services



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FIRTH RIBRAFT DETAILS

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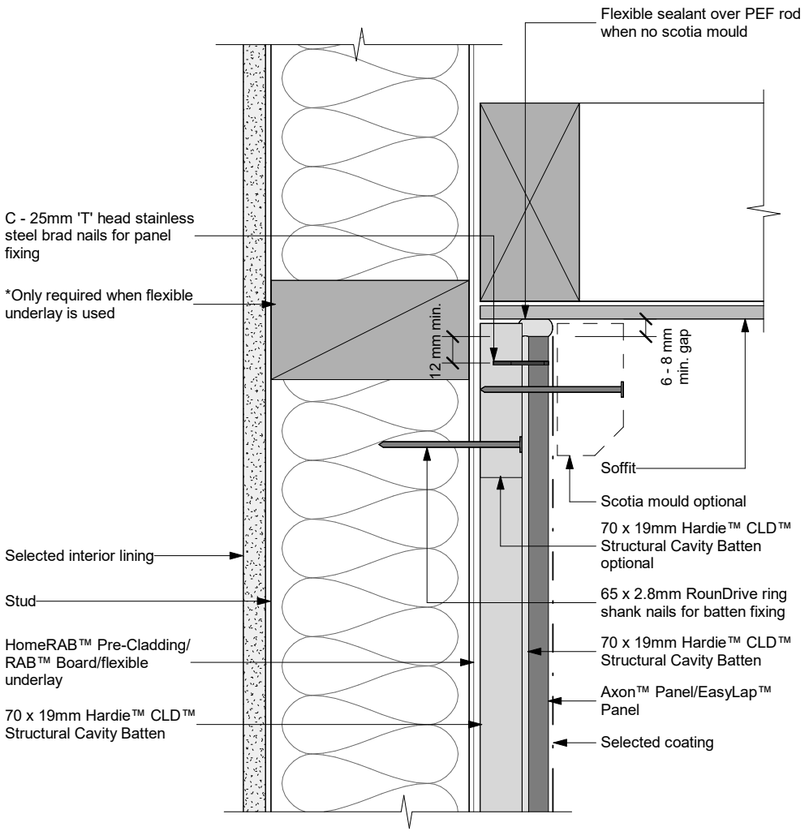
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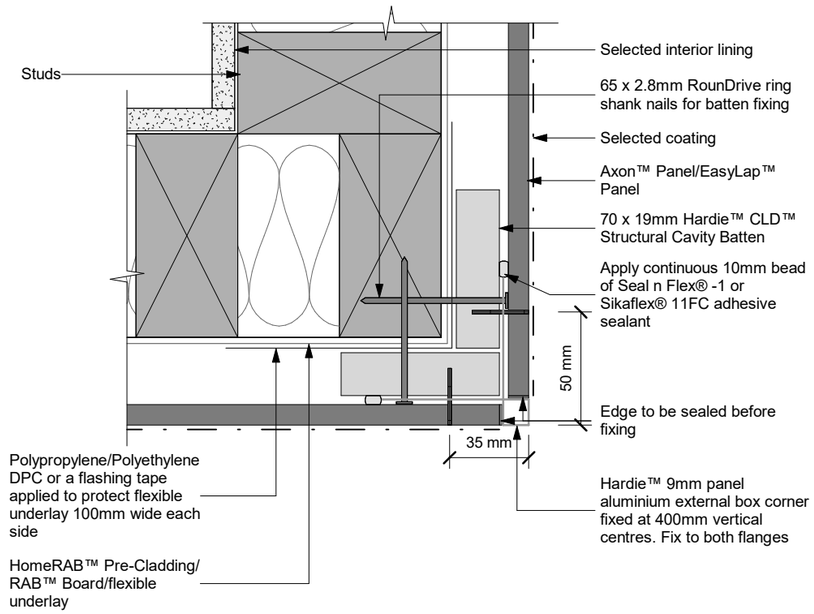
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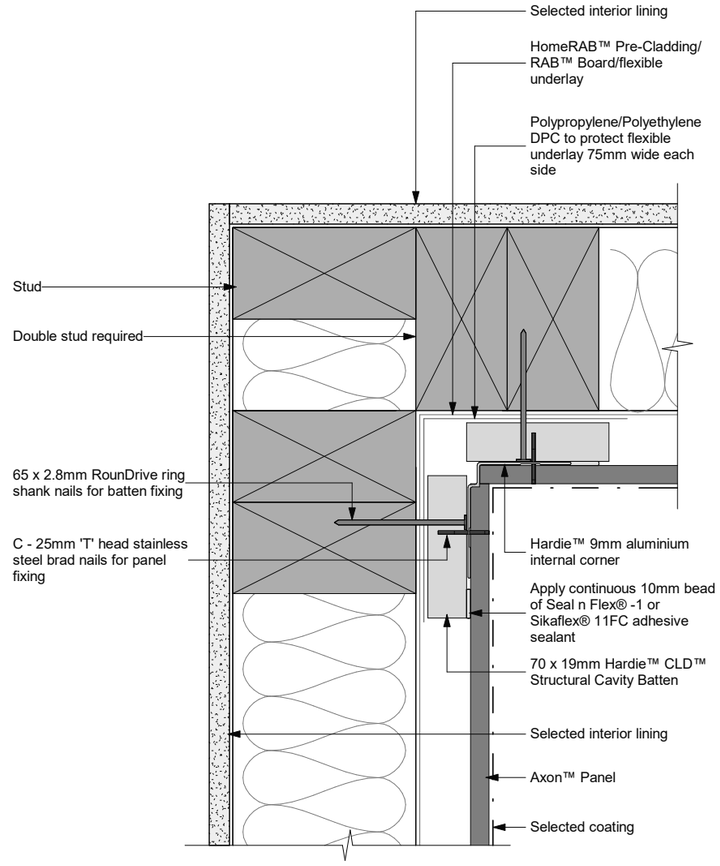


Note: Site cut edges to be primed.
Ensure cavity does not vent into roof space. Refer to E2/AS1 clause 9.1.8.2.

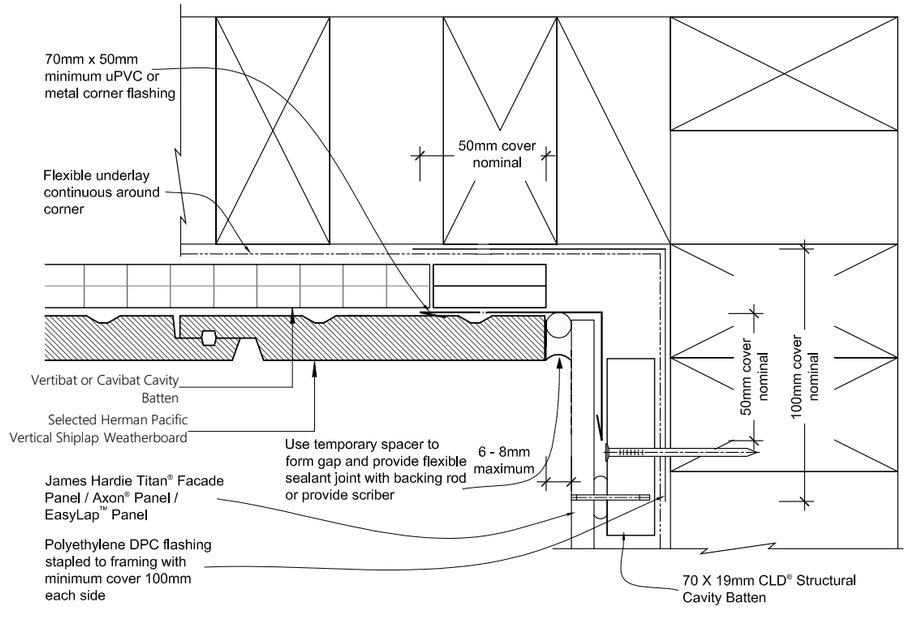
AXON SOFFIT DETAIL



AXON EXTERNAL CORNER



AXON INTERNAL CORNER



AXON/CEDAR INTERNAL CORNER

All Construction in accordance with NZS 3604:2011 & NZBC

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CLADDING DETAILS

Scale:
Rev:
Sheet no: **29**

Design: A1 | Drawn: RC/TN | Check: AC | LBP: AC | Date: 28/09/2026

Wind:	Earthq:	Exposure:	Snow:	Climate:
HIGH	3	B	N5 2kPa	6

www.A1homes.co.nz

Client Details:
Dylan Dickson and Hannah Gerrard

Job no: **CL002**

Address:
6 Pouakai Street
Lake Hawea

Bespoke

Two way FRR — double timber frame wall

Specification number	Performance		Specifications	
GBTLA 30a	**STC**	58	**Lining**	2 x 10mm GIB® Standard Plasterboard each side
	Rw	57	**LB/NLB**	Load bearing
	FRR	30/30/30	**Partition**	245mm wide

FRAMING

Stud size	Space between frames
70mm	65mm min
90mm	25mm min

Framing to comply with:

- NZBC B1 — Structure: AS1 Clause 3 — Timber (NZS 3604) or VM1 Clause 6 — Timber (NZS 3603).
- NZBC B2 — Durability: AS1 Clause 3.2 — Timber (NZ 3602).
- Studs at 600mm centres maximum.
- Nogs at 1350mm centres maximum.

Framing dimensions and height as determined by NZS 3604 stud and top plate tables for load-bearing walls.

SOUND CONTROL INFILL

Pink® Batts® R2.2 (90mm) glass wool insulation installed between the studs and nogs on one side of the double frame.

WALL LINING

2 layers of 10mm GIB® Standard Plasterboard fixed vertically each side of the frame.

Vertical joints of the outer layer are offset 600mm from those of the inner layer. Use full height sheets where possible. Sheet joints are touch fitted and must occur over framing. Where sheet end joints are unavoidable they must be over nogs and outer layer joints offset from those on the inner layer.

ACOUSTIC SEALANT

A bead of GIB Soundseal® acoustic sealant is required around the perimeter of the inner lining. The outer lining is then bedded onto the bead.

FASTENING THE LINING

Fasteners

Inner layer: 25mm x 6g GIB® Grabber® High Thread Drywall Screws.

Outer layer: 41mm x 6g GIB® Grabber® High Thread Drywall Screws.

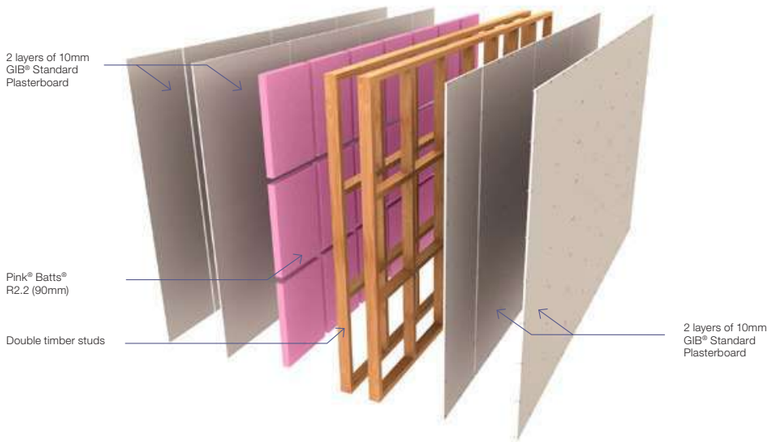
Fastener centres

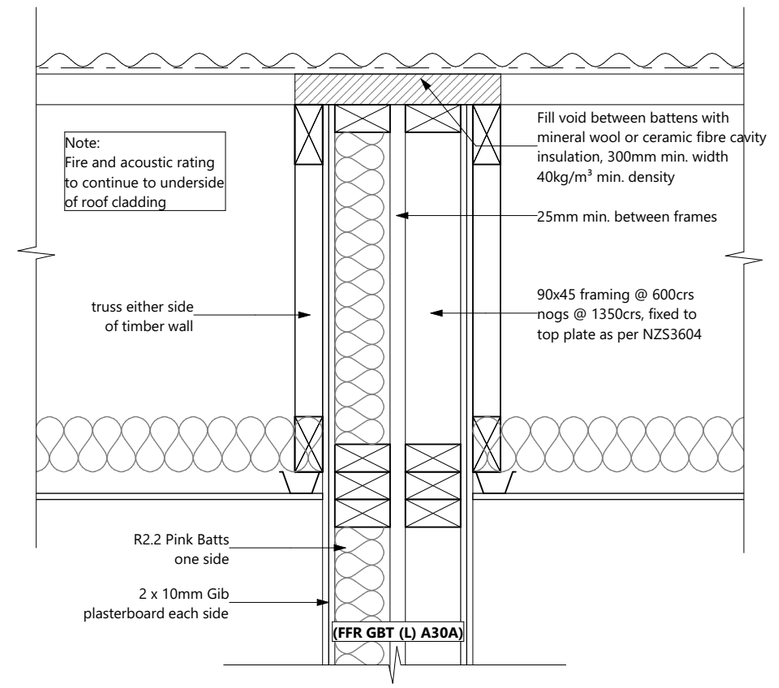
Inner layer and outer layer: 300mm centres around sheet perimeter and 300mm to intermediate studs. Place fasteners 12mm from sheet edges.

JOINTING

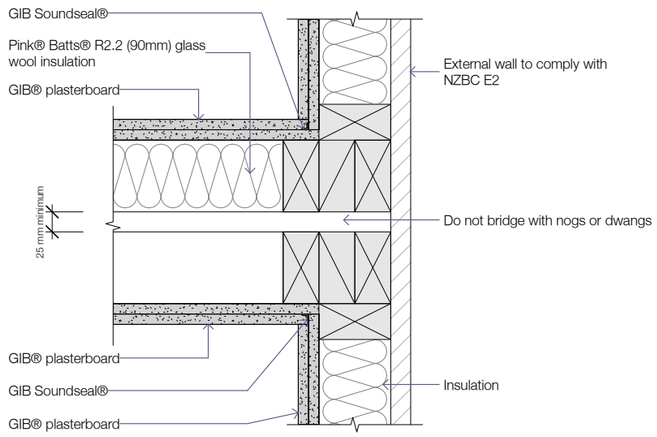
Inner layer: Unstopped.

Outer layer: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled GIB® Site Guide. Wall to ceiling junctions are to be reinforced with paper tape and square stopped or finished with GIB-Cove®.





ROOF DETAIL



1
2

Unit layout

EXTERNAL WALL JUNCTION

All Construction in accordance with NZS 3604:2011 & NZBC

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FIRE RATED DETAILS

Scale:

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Sheet no: **30**

Design: A1 | Drawn: RC/TN | Check: AC | LBP: AC | Date: 28/09/2026

Wind:	Earthq:	Exposure:	Snow:	Climate:
HIGH	**3**	**B**	**N5 2kPa**	**6**

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Client Details:
Dylan Dickson and Hannah Gerrard

Address:
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Lake Hawea

Job no: **CL002**

Bespoke

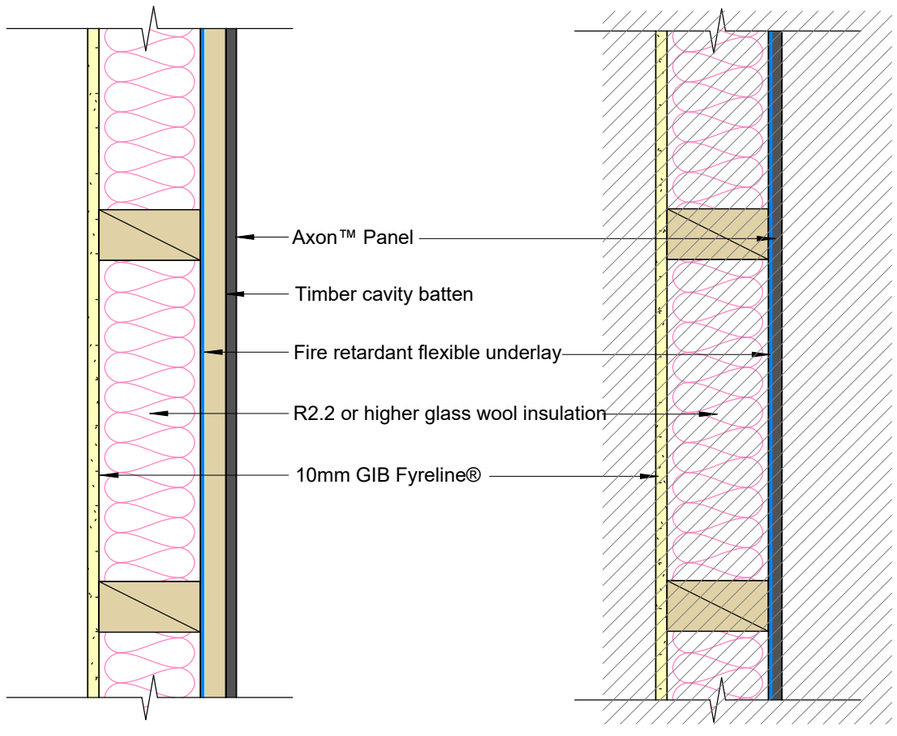
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JHETGA30

Fire Resistance 30/30/30 **STC** 41

Cladding	Axon™ Panel	**Lining**	10mm GIB Fyreline®
Framing	Timber framing to be in accordance with NZS 3604 or SED complying with AS/NZS 1170 and NZS 3603. Framing size 90 x 45mm minimum. Studs at 600mm centres and nogs at 800mm centres maximum	**Insulation**	Glass wool insulation 90mm thick, R2.2 or higher.
Cavity Batten	Timber cavity batten nominal 20mm	**Underlay**	A flexible underlay that complies with Table C.2.1.1 of E2/AS1 and has a 'flammability index' not exceeding 5 can be used
Cladding Fixing	**Direct Fix:** 40 x 2.8mm round head nail at 150mm centres to entire frame **Cavity Fix:** 60 x 3.15mm round head nail at 150mm centres to entire frame	**Lining Fixing**	Fix GIB Fyreline® with 41mm x 6g GIB® Grabber® High Thread Drywall Screws 300mm centre around the sheet perimeter and intermediate studs Fixing to be 12mm from bound sheet edges and 18mm from sheet ends

For further information refer to Axon™ Panel Timber Cavity Batten or Direct Fix Technical Specification



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FIRE RATED DETAILS

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Wind:	Earthq:	Exposure:	Snow:	Climate:
HIGH	**3**	**B**	**N5 2kPa**	**6**

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Client Details:
Dylan Dickson and Hannah Gerrard

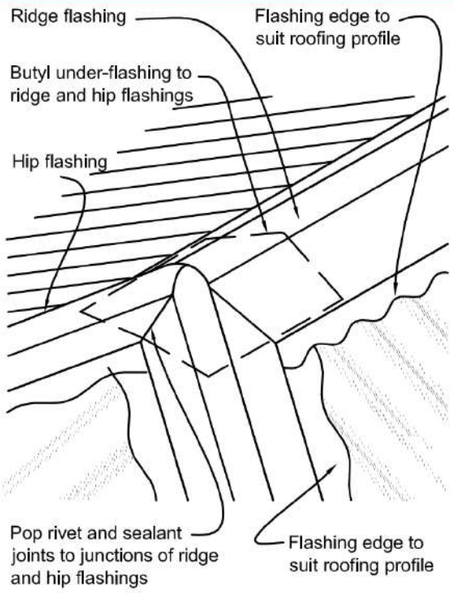
Address:
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Lake Hawea

Job no: **CL002**

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Figure 8.4.9.7A: Ridge to hip flashings

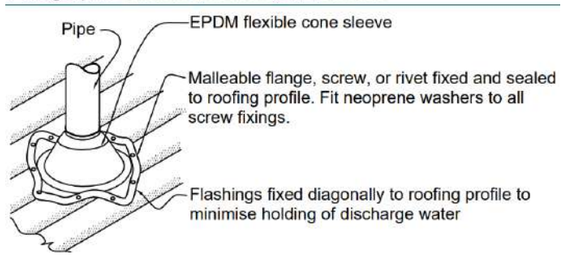
Paragraph 8.4.9.7 and Table 4.5.1.1



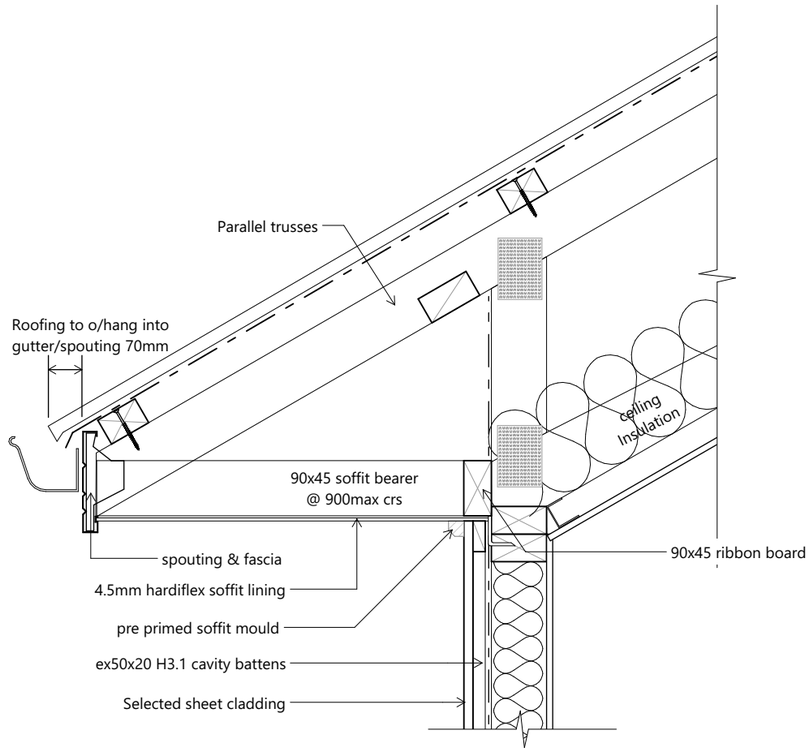
Notes:
(1) Flashing cover varies according to the wind zone (refer to Table 4.5.1.1).
(2) For other ridge-to-hip flashings, refer to the New Zealand Metal Roofing and Wall Cladding Code of Practice

Figure 8.4.12.3A: Flashing for small pipes

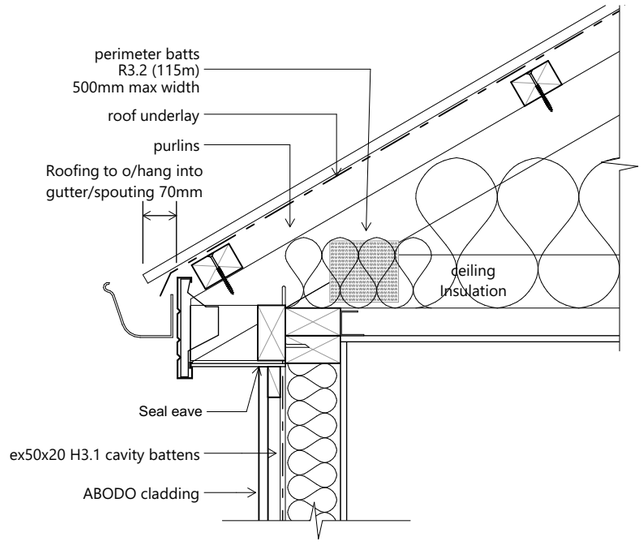
Paragraphs 8.4.12.3, 9.6.6.6, and 9.6.7.7



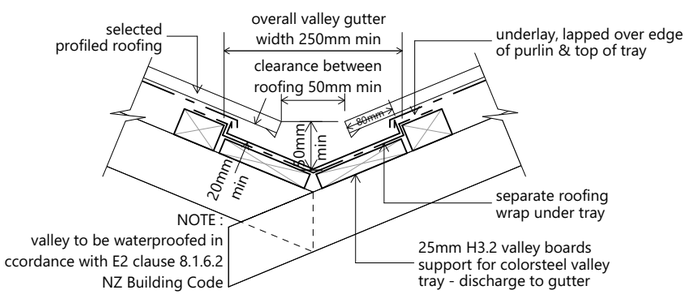
Notes:
(1) The maximum roof pitch for this flashing is 45°.
The minimum pitch is 10° if the base of the flange covers one or more complete troughs.
(2) This detail is suitable for pipes up to 85 mm in diameter.



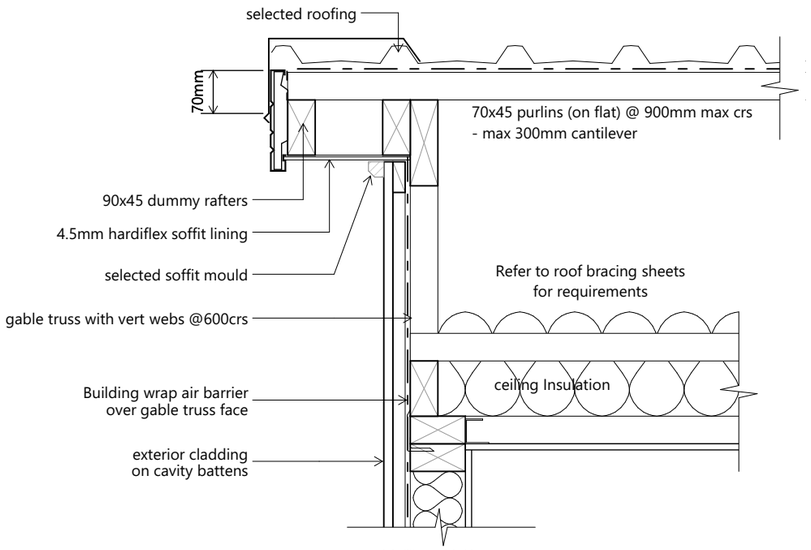
R1 EAVE DETAIL



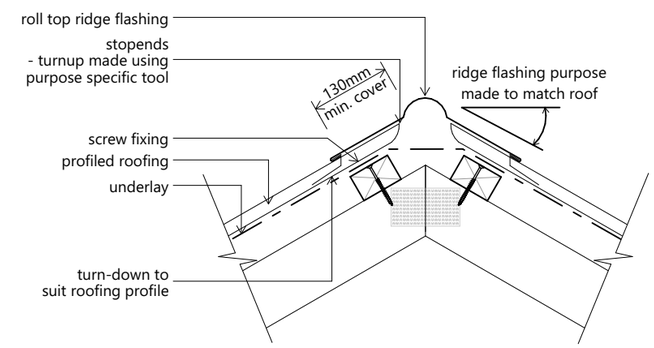
R3 EAVE DETAIL



R4 VALLEY DETAIL



R2 GABLE EAVE



R5 RIDGE DETAIL

Roofing & associated flashings to comply with the NZ Metal Roof & Wall Cladding Code of Practice

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ROOF DETAILS

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Wind:	Earthq:	Exposure:	Snow:	Climate:
HIGH	3	B	N5 2kPa	6

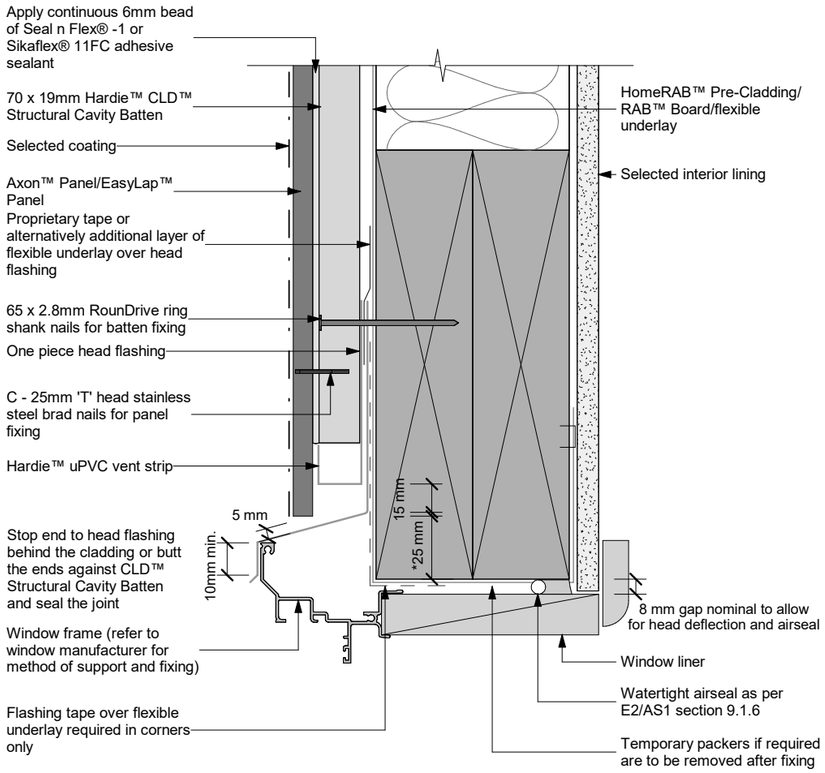
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Client Details:
Dylan Dickson and Hannah Gerrard

Address:
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Lake Hawea

Job no: **CL002**

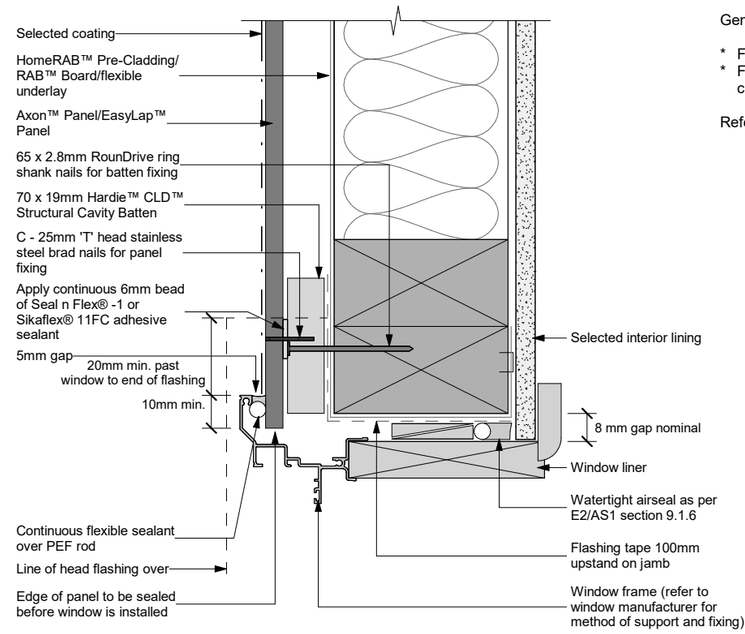
Bespoke



Note:

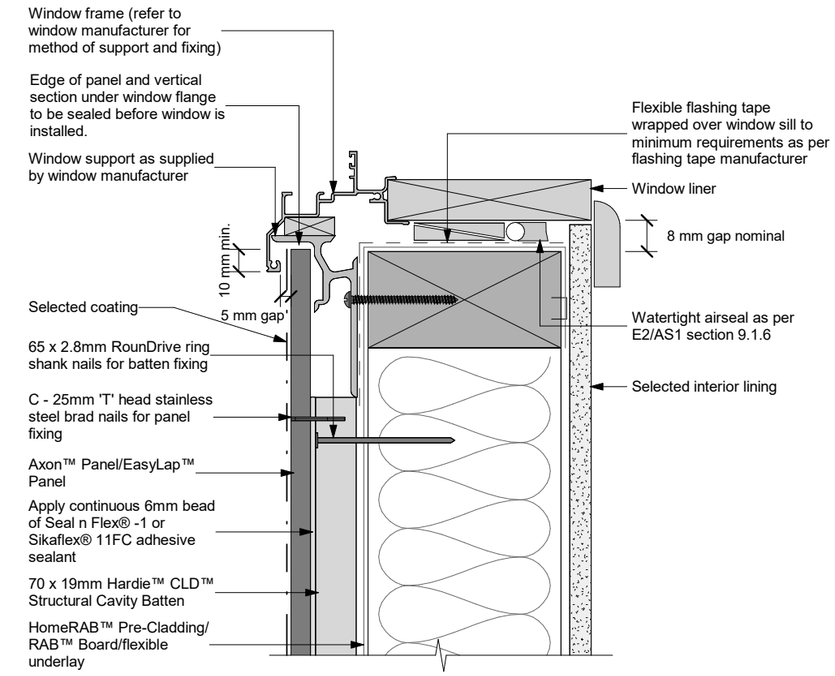
* When HomeRAB™ Pre-Cladding/RAB™ Board is used flashing tape to be applied to the entire window opening.
* Also refer to Figure 116 NZBC clause E2/AS1 for head and jamb details
* Sealant must be applied between head flashing and window flange VH and EH wind zones and SED wind pressures

AXON JOINERY HEAD DETAIL



Note: When HomeRAB™ Pre-Cladding/RAB™ Board is used flashing tape to be applied to the entire window opening.

AXON JOINERY JAMB DETAIL



General notes for materials selection

* Flexible underlay must comply with acceptable solution E2/AS1.
* Flashing tape must have proven compatibility with the selected flexible underlay and other materials with which it comes into contact.

Refer to the manufacturer or supplier for technical information for these materials.

AXON JOINERY SILL DETAIL

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JOINERY DETAILS

Scale:

Rev:

Sheet no: **33**

Design: A1 | Drawn: RC/TN | Check: AC | LBP: AC | Date: 28/09/2026

Wind:	Earthq:	Exposure:	Snow:	Climate:
HIGH	**3**	**B**	**N5 2kPa**	**6**

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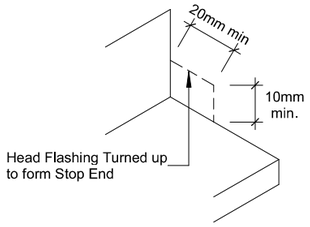
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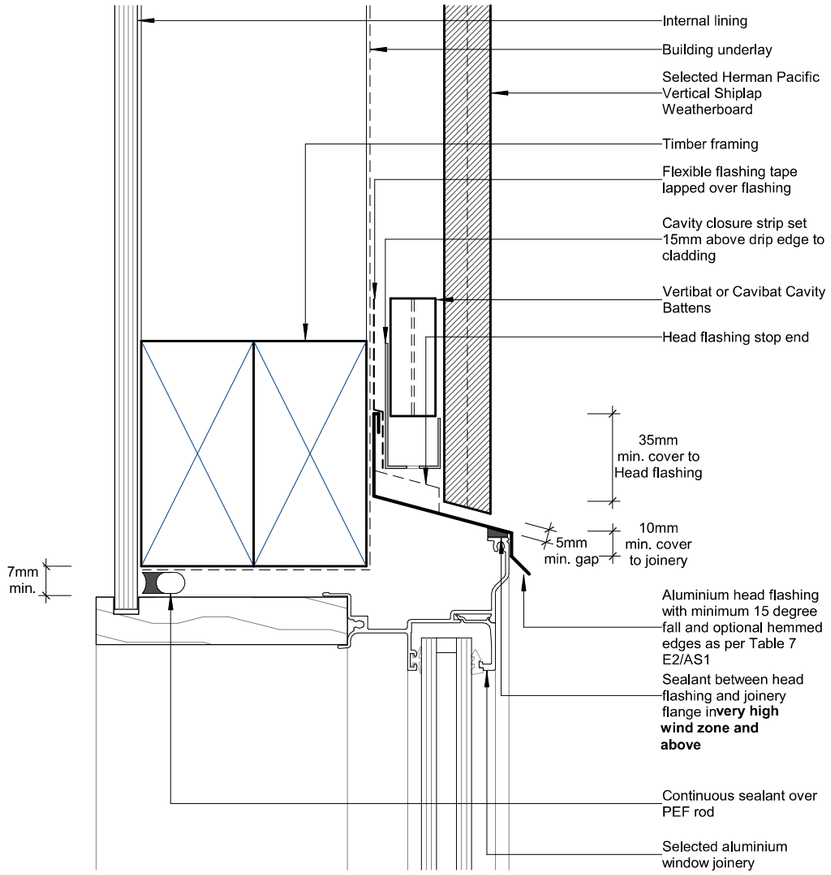
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Lake Hawea

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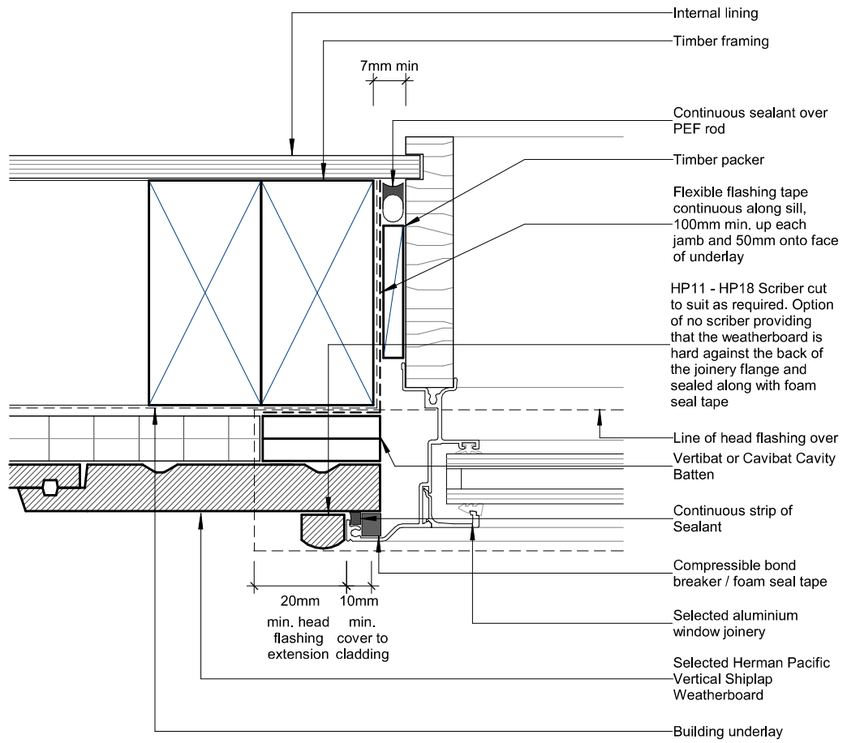
Notes:
- All nail fixings pre-drilled minimum 1mm diameter smaller than the nail gauge.
- All Herman Pacific timber products to be precoated & cut ends and edges and all fresh cut surfaces double coated and sealed before fixing.
- All materials and fixtures are to comply with E2/AS1 Clause 2.2
- For non-hemmed corner flashings, ensure a minimum 75mm cover to Weatherboards beyond the point where BRANZ bulletin 411 compliant Weatherboard lap or rebate combinations terminate at the corner junction. In Extra High Wind Zone and above, the 75mm cover requirement remains and hemmed edges must also be used.
- Refer to NZBC Acceptable Solution E2/AS1 Table 21 for the separation requirements between CCA treated battens and metal flashings.





CEDAR WINDOW/DOOR HEAD

Notes:
- All nail fixings pre-drilled minimum 1mm diameter smaller than the nail gauge.
- All Herman Pacific timber products to be precoated & cut ends and edges and all fresh cut surfaces double coated and sealed before fixing.
- All materials and fixtures are to comply with E2/AS1 Clause 2.2
- For non-hemmed corner flashings, ensure a minimum 75mm cover to Weatherboards beyond the point where BRANZ bulletin 411 compliant Weatherboard lap or rebate combinations terminate at the corner junction. In Extra High Wind Zone and above, the 75mm cover requirement remains and hemmed edges must also be used.
- Refer to NZBC Acceptable Solution E2/AS1 Table 21 for the separation requirements between CCA treated battens and metal flashings.



CEDAR WINDOW/DOOR JAMB

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JOINERY DETAILS

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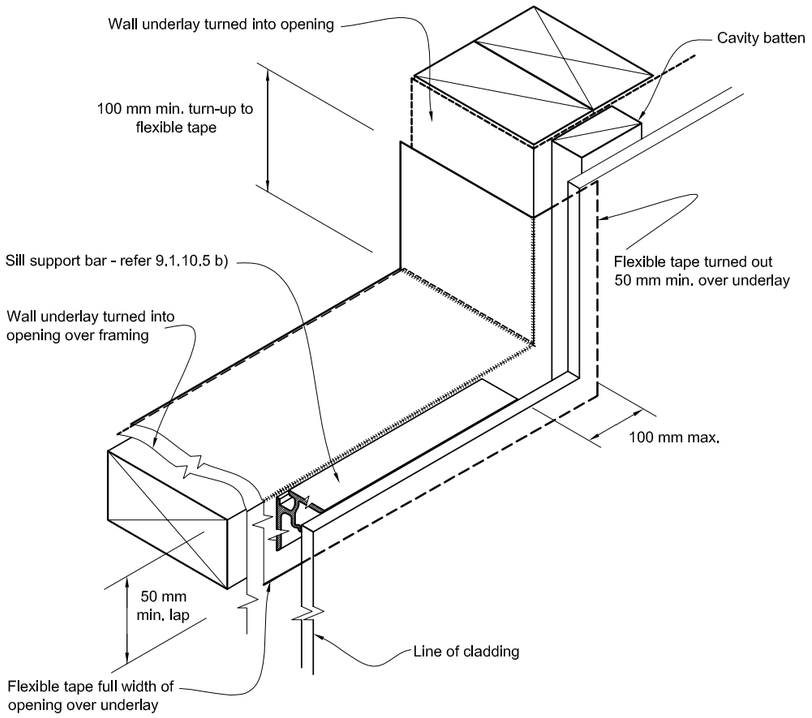
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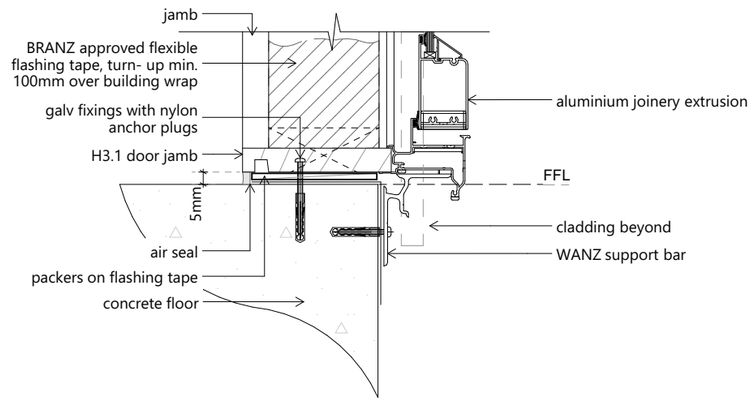
Job no: **CL002**

Bespoke

Figure 72B: **General window and door opening with drainage cavity**
Paragraphs 9.1.5, 9.1.9.3, 9.1.10.2, Figures 73C, 76, 85, 86, 91, 99, 116 and 128

NOTE:
(1) Detailed *cladding* omitted for clarity, refer to specific *claddings*.
(2) Head to be treated similarly with continuous *wall underlay* and *flexible tape* at corners.
(3) Refer individual cladding details for jamb flashings.





DOOR SILL

Flexible air seals;
The air seal shall be installed over a closed cell polyethylene foam (PEF) backing rod, or similar and made of self-expanding polyurethane foam

Backing rods are used for self-expanding polyurethane foam as there is a danger foam will expand to the outside of the wall and form a moisture bridge to the interior.

9.1.10.8 Attachments for windows and doors
Install windows and doors using pairs of minimum 75 x 3.15 galvanised jolt head nails or 8 gauge x 65 mm stainless steel screws, through reveals into surrounding framing at:
a) Maximum 450 mm centres along sills, jambs and heads, and
b) Maximum 150 mm from reveal ends.
Install packers between reveals and framing at all fixing points, except between head reveals and lintels.

Flashing tape must be proven compatibility with selected building underlay
and other building materials with which it comes into contact as per table
21 of 'E2/AS1'

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JOINERY DETAILS

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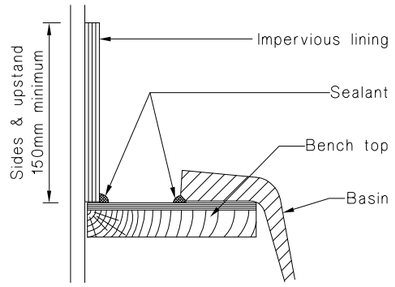
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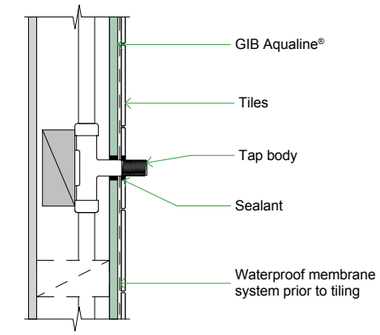
Job no: **CL002**

Bespoke



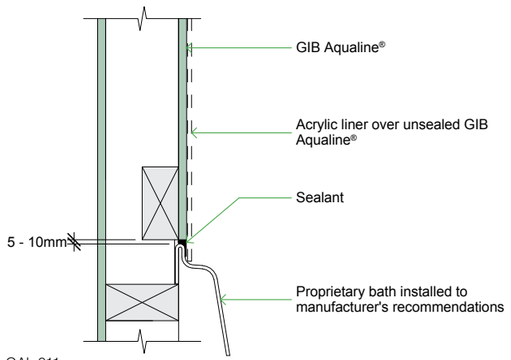
(b) Tub, sink and basin

B: SEALING SEMI WET AREA PENETRATION



GAL-020

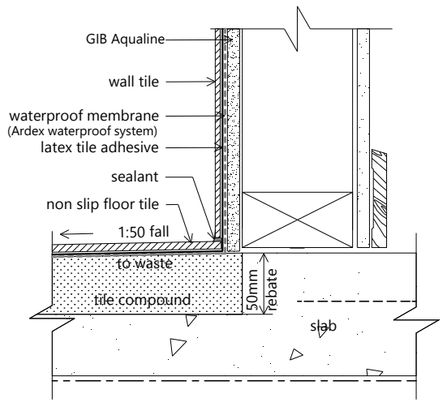
A: BATH LINING JUNCTION



GAL-011

Sealant:
Tile compatible, continuous bead of Branz appraised wet area clear silicone sealant. Sealant & application to comply with E3/AS1 Section 2.1.1 & Section 3.0
(includes vertical joints of skirting at corner)

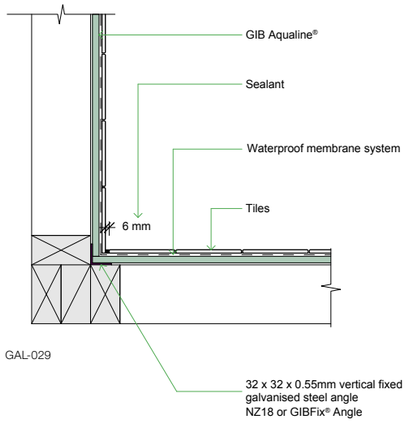
SHOWER – TILED WALL AND BASE DETAILS



PREFORMED SHOWER BASE JUNCTIONS

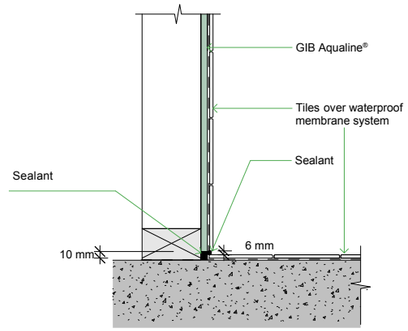
Refer to the shower base manufacturer for proprietary shower tray installation detailing including wet wall lining junction detailing.

B: TILED INTERNAL CORNER



GAL-029

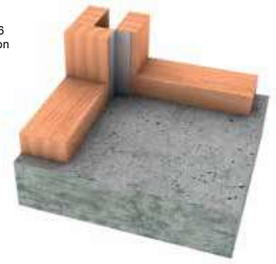
C: CERAMIC FLOOR LINING JUNCTION



GAL-002A

D: TILED INTERNAL CORNER METAL ANGLE POSITION

Refer to page 16 of this publication for specification and installation guidance.



E: SHOWER MIXER PENETRATION IN WET WALL LININGS

Refer to the shower mixer manufacturer for shower mixer installation detailing including the use of proprietary products to prevent water or moisture ingress behind the wet wall lining.



TILED WALLS – TIMBER FRAMING

TIMBER WALL FRAMING

Framing dimensions and spacing must be appropriate for the tile weight and comply with the requirements of NZS 3604:2011 Timber Framed Buildings, or relevant specific design Standard.

NOGS

For impact protection in shower cubicles or shower over bath situations it is important that all sheet joints are made on solid framing. This may require vertical fixing or the installation of additional nogs. Also provide nogs:

- Adjacent to each pipe penetration and behind sink and tub flashings
- Between all studs above bath flanges and preformed shower bases

CORNER REINFORCING

- Prior to lining in tiled areas (shower cubicles and shower over bath only) the internal corners shall be reinforced with a minimum
- 32 x 32 x 0.55mm NZ18 or 45 x 45 x 0.55mm GIBFix® Angle. Each leg shall be fastened to the framing at 300mm centres

FASTENERS

- Minimum 32mm x 6g GIB® Grabber® High Thread Screws

FASTENER CENTRES

- 150mm centres to perimeter of wall and all intermediate studs
- Adhesive is not to be used in place of mechanical fasteners
- Place fasteners 12mm from sheet edges and 18mm from sheet ends
- Single fasteners to each stud where the horizontal joint crosses the studs
- Where relevant, fastener lengths must comply with the requirements of GIB® Fire Rated Systems or GIB® Noise Control Systems

For bracing, noise control or fire rating applications including fastener lengths consult the relevant GIB® technical publication.

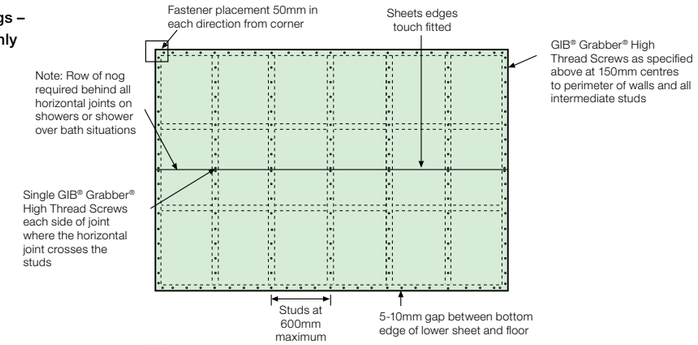
LINING AND TILE WEIGHTS

- Use minimum 10mm GIB® plasterboard
- For maximum permitted tile weights refer to pg 16 of this manual
- GIB® Wet Area linings may be fixed vertically or horizontally
- Sheets are touch fitted
- Provide a 5-10mm gap at the wall/floor junction and between the bottom edge of the lining and any bath rim or preformed shower base to allow for placement of sealant
- Do not tile on the resilient side of GIB Rail® or STWC Acoustic Clip (ST001) and channel noise control system
- GIB® Wet Area linings are suitable for tiling full height of walls, but if a wall is to be partially tiled (e.g. half high), only the area of wall under the tiles needs to be fixed as required for tiled areas. The remainder of the wall may be fixed as for non-tiled areas

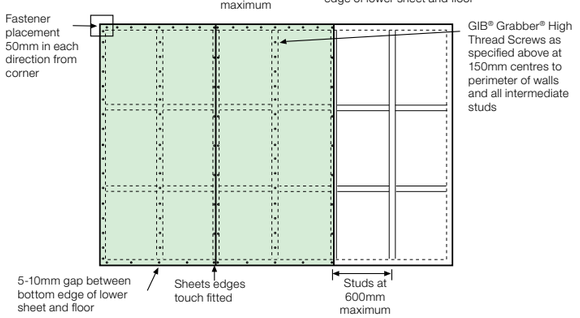
JOINTING

- Jointing shall be carried out in accordance with the instructions of the GIB® Site Guide

Fastening the Linings – Horizontal Fixing Only



Fastening the Linings – Vertical Fixing Only



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Dylan Dickson and Hannah Gerrard

Address:
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Lake Hawea

Job no: **CL002**

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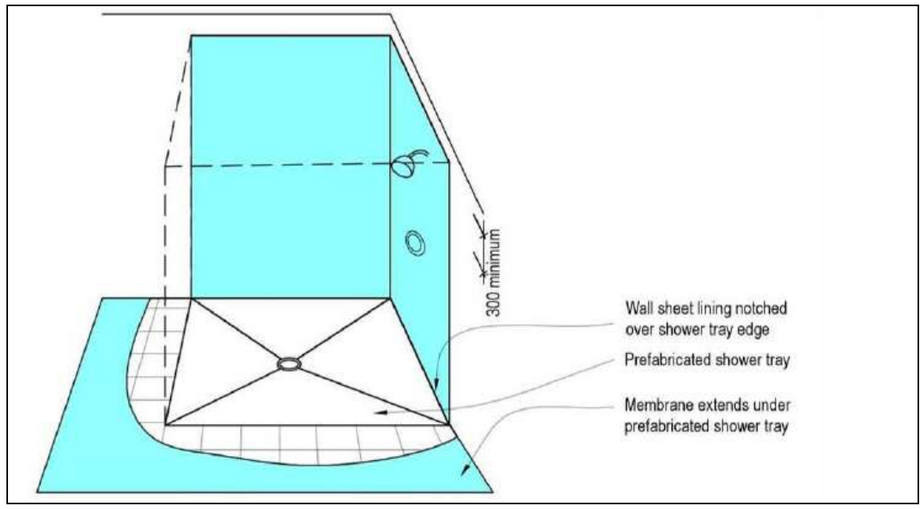


Figure 7: Wall lining termination height with a prefabricated shower base

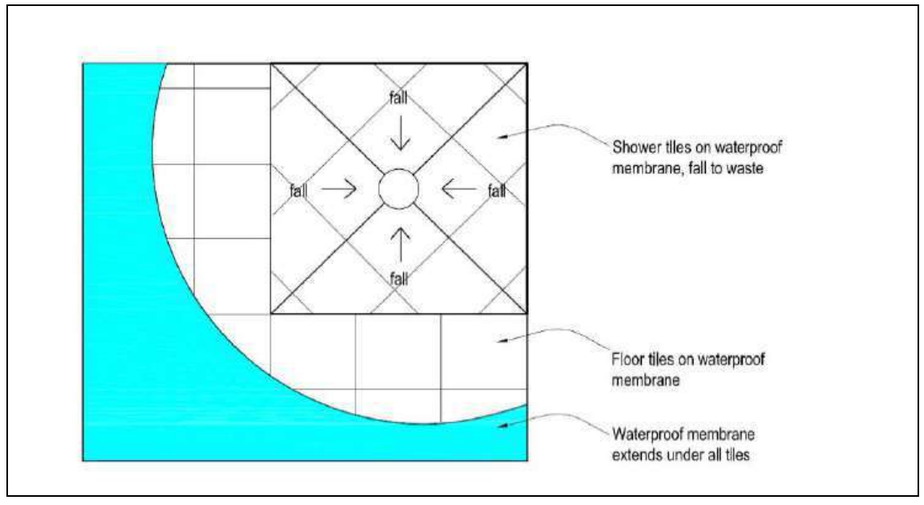


Figure 8: Recommended layout for tiles in a shower with a centre waste

Note that cut tile edges can pierce the membrane. This tile layout minimises the cut edges on direction changes in the membrane.

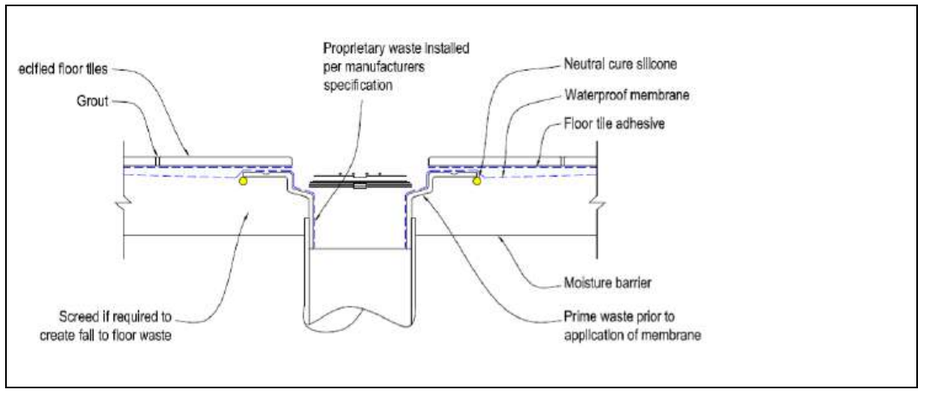


Figure 9: A membrane into a floor waste outlet

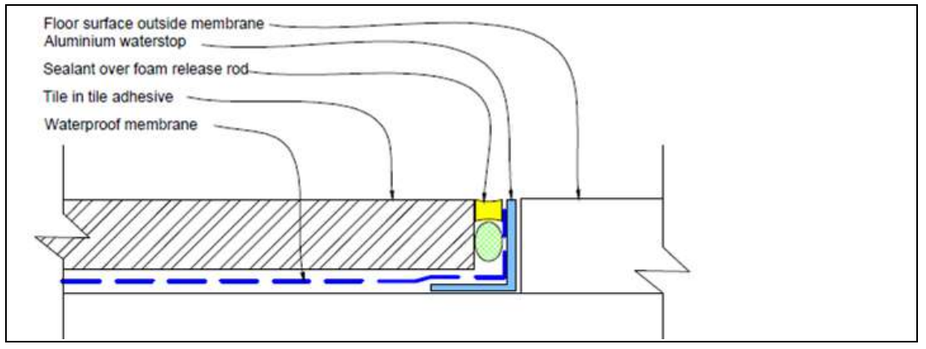


Figure 10: A waterstop at the termination of a membrane

The membrane must cover the whole of the floor area and terminate at the change of flooring material, generally at doorways. However, in some open plan situations, particularly when tiling is carried through, the termination point can be pre-determined and used as the set-out with the waterstop located at a grout line. Where possible, a floor drain should be installed, and the floor should fall from the waterstop toward the drain.

See attached to specification documents the full version of ;

Code of Practice for Internal Wet Area Membranes

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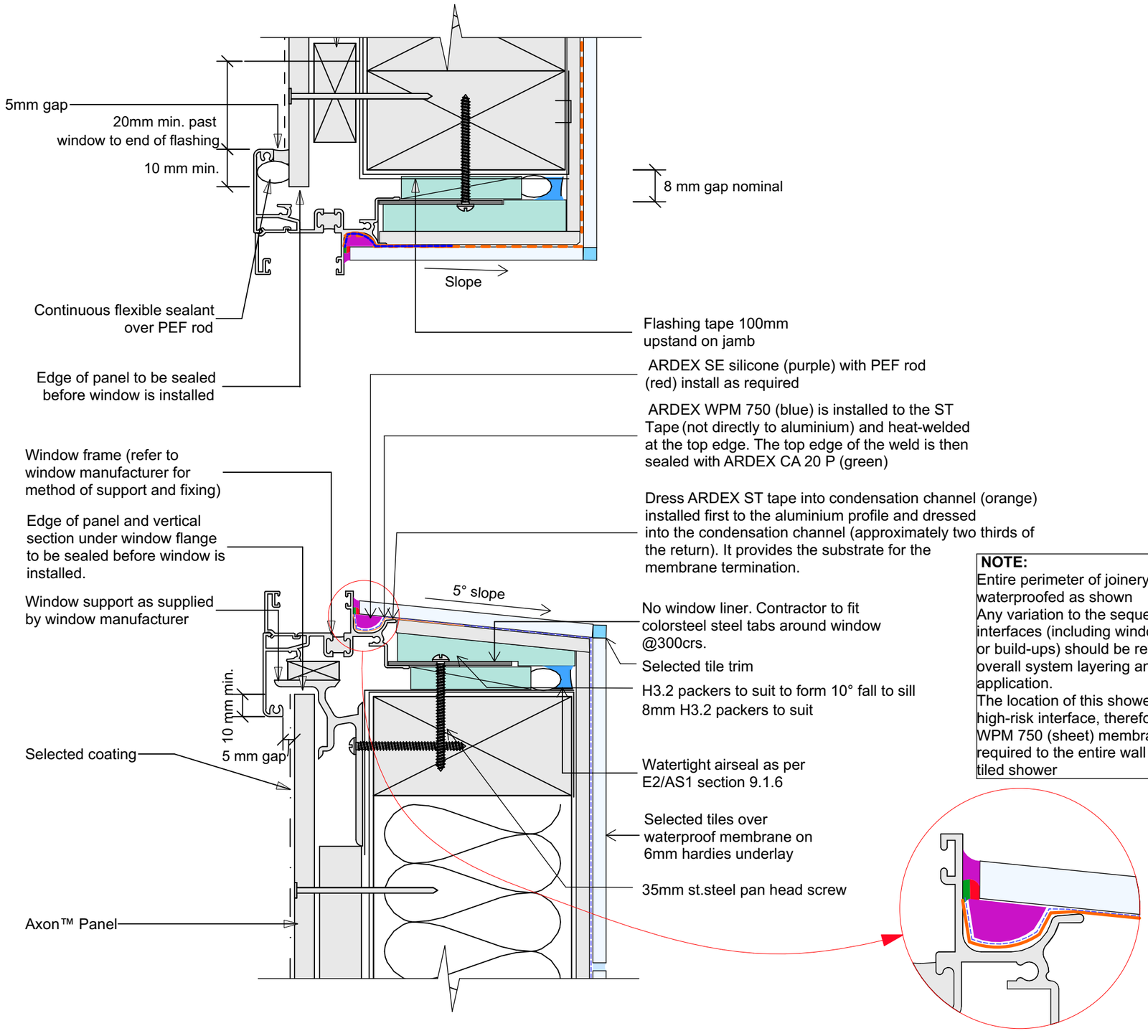
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NOTE:
Entire perimeter of joinery / tile substrate to be waterproofed as shown
Any variation to the sequencing, finishes, or interfaces (including window joinery configuration or build-ups) should be reviewed in context of the overall system layering and resolved prior to application.
The location of this shower window represents a high-risk interface, therefore the use of ARDEX WPM 750 (sheet) membrane for this application is required to the entire wall that contains a window in a tiled shower

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Table 4: Tempering Valve or Thermostatic Mixing Valve and Nominal Pipe Diameters
Paragraphs 5.4.1 and 6.12.1

	Low pressure (i.e. header tank supply or low pressure)	Low pressure unvented (valve vented) and open vented	Mains pressure
Pressure of water at Tempering Valve or Thermostatic Mixing Valve (kPa)	20 – 30	30 – 120	over 300
Metres head (m)	2 – 3	>3 – 12	over 30
Minimum Tempering Valve or Thermostatic Mixing Valve size	25 mm	20 mm	15 mm
Pipes to Tempering Valve or Thermostatic Mixing Valve	25 mm (see **Note 3**)	20 mm	20 mm (15 mm optional) (see **Note 1**)
Pipes to shower	20 mm	20 mm (see **Note 4**)	20 mm (see **Note 5**) (15 mm optional) (see **Note 1**)
Pipes to sink/laundry (see **Note 2**)	20 mm	20 mm	15 mm
Pipes to bath (see **Note 2**)	20 mm	20 mm	15 mm
Pipes to basins (see **Note 2**)	15 mm	15 mm	10 mm

Notes:

1. If supplied by separate pipe from *storage water heater* to a single outlet.
2. This table is based on maximum pipe lengths of 20 metres.
3. 2 m maximum length from *water heater* outlet to tempering valve or thermostatic mixing valve
4. 15 mm if dedicated line to shower.
5. 10 mm if dedicated line to shower.
6. Pipe sizes in this table have been calculated to deliver water simultaneously to the kitchen sink and one other *fixture.*

Figure 8(b): Mains Pressure Storage Water Heater System (unvented) - Expansion Control Valve
Paragraphs 6.1.2 and 6.2.1 c)

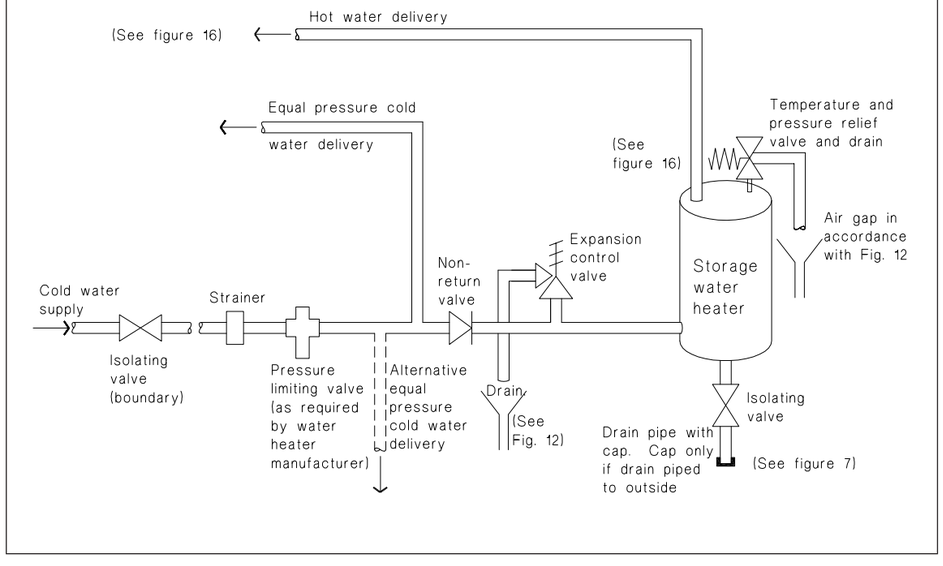
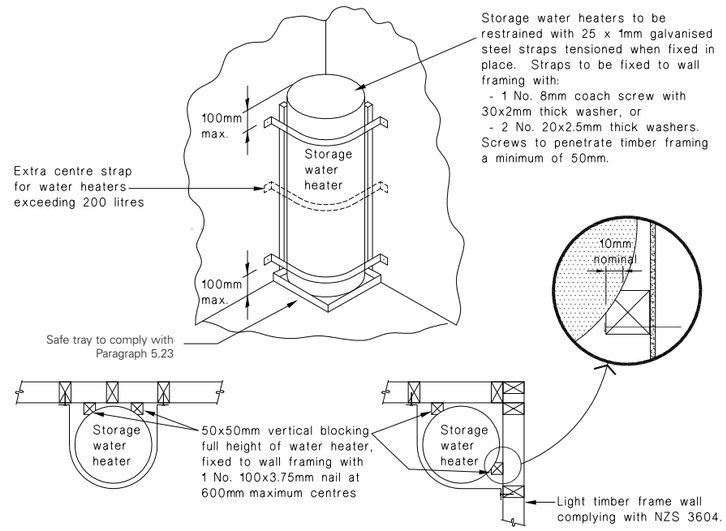


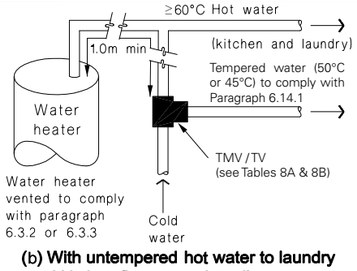
Figure 14: Seismic Restraint of Storage Water Heaters 90 – 360 litres
Paragraph 6.11.4



Notes:

1. An additional centre strap is required where a *storage water heater* is located more than 12 m above finished ground level.
2. Additional timber framing may be required in retrofit situations to ensure adequate strap fixing is available.
3. Straps shall not be installed where they clash with water heater inlets, outlets or controls.
4. Where the 100 mm maximum strap distance from the top or bottom of the *storage water heater* cannot be achieved, straps may be placed within the top and bottom 25% with one additional strap placed centrally for water heaters < 200 litres, and two additional evenly spaced straps for water heaters 200 - 360 litres.
5. A maximum total of four straps are required when complying with both Note 1 and Note 4.

Figure 16: Tempering Valve or Thermostatic mixing Valve Installation



(b) With untempered hot water to laundry and kitchen fixtures and appliances

Notes:

1. For optimum system efficiency the temperature control device, for other than a mains pressure system, may be located as low as practicable to achieve the manufacturer's recommended head, at the temperature control device.
2. 1.0 m minimum copper pipe length from storage water heater to temperature control device.

6.14.2 Hot water delivered from storage water heaters
a) An acceptable method of limiting hot water temperature delivered from storage water heaters is to install a mixing device between the outlet of the water heater and the sanitary fixture (see Figure 16).
b) Tempering valves shall comply with NZS 4617 or AS 1357.2.

Irrespective of whether a mixing device is installed, the storage water heater control thermostat shall be set at a temperature of not less than 60°C to prevent the growth of Legionella bacteria.

Safe trays for hot water cylinders shall be installed in accordance with the manufacturer's installation instructions

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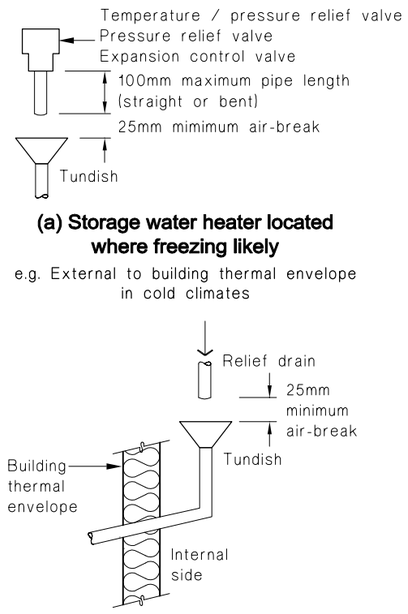
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Figure 12: **Relief Valve Drains – Freezing Protection**
Paragraphs 6.7.1, 6.7.4 and 6.7.5



(a) Storage water heater located where freezing likely

e.g. External to building thermal envelope in cold climates

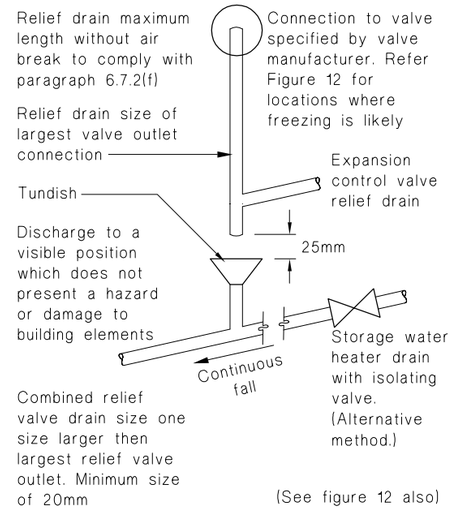
(b) Relief drain located where freezing likely

e.g. Internal storage water heater with drain discharging externally
(See figure 13 also)

Note: Tundishes and tundish drains shall be sized and installed to prevent overflow when the relief valve discharges.

6.7.5 Relief drains located where freezing is likely
Additional requirements for relief drains located where freezing is likely (see Figure 12) are that:
a) Relief valve drain pipes shall discharge over a tundish with a 25 mm air break before the drain pipe enters a zone where freezing is likely, and
b) Relief valve drains from a tundish shall be one size larger than the outlet diameter of the relief valve.

Figure 13: **Relief Valve Drains – Combined**
Paragraphs 6.7.1, 6.7.2 f) and 6.7.3



Note: Tundishes and tundish drains shall be sized and installed to prevent overflow when the relief valve discharges.

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