

Table 15.9 – Reference table for lintel load cases

Table No.	Supporting			Load type			
	Roof	Walls	Floor	Roof	Snow (kPa)	Walls	Floor (kPa)
15.2	✓			Light	1		
	✓			Heavy	1		
15.3	✓	✓		Light	1	Light	
	✓	✓		Light	1	Medium	
	✓	✓		Heavy	1	Light	
	✓	✓		Heavy	1	Medium	
15.4	✓	✓	✓	Light	1	Light	1.5 or 2
	✓	✓	✓	Light	1	Medium	1.5 or 2
	✓	✓	✓	Heavy	1	Light	1.5 or 2
	✓	✓	✓	Heavy	1	Medium	1.5 or 2
15.5	✓	✓	✓	Light	1	Light	3
	✓	✓	✓	Light	1	Medium	3
	✓	✓	✓	Heavy	1	Light	3
	✓	✓	✓	Heavy	1	Medium	3

Table 15.10 – Lintels supporting roof only (see figure 8.7)

	Loaded dimension* of lintel (m)	Maximum span for lintel sizes listed below (m)				
		100 x 100	150 x 100	200 x 100	250 x 100	300 x 100
Light roof	3	1.0	1.6	2.1	2.6	3.2
	4	0.9	1.4	1.9	2.4	3.0
	5	0.9	1.3	1.8	2.3	2.8
	6	0.8	1.3	1.7	2.2	2.6
Heavy roof	3	0.9	1.4	1.8	2.3	2.8
	4	0.8	1.3	1.7	2.1	2.6
	5	0.7	1.2	1.6	2.0	2.4
	6	0.7	1.1	1.5	1.9	2.3

* For definition of loaded dimension see 1.3.

Table 8.18 – Fixing of top plate of wall to supporting members such as studs and lintels at 600 mm centres (see 8.7.6)

Loaded dimension of wall (m)	Light roof								Heavy roof			
	<i>Roof member</i>				<i>Truss spacing</i> (mm)							
	900				1200				900			
	Wind zone				Wind zone				Wind zone			
	L	M	H	VH	L	M	H	VH	L	M	H	VH
Fixing type (see below)												
3.0	B	B	B	C	B	B	B	C	A	A	B	B
3.5	B	B	B	C	B	B	B	C	A	A	B	B
4.0	B	B	C	C	B	B	C	C	A	A	B	C
4.5	B	B	C	C	B	B	C	C	A	A	B	C
5.0	B	B	C	D	B	B	C	D	A	A	B	C
5.5	B	B	C	D	B	B	C	D	A	A	B	C
6.0	B	B	C	D	B	B	C	D	A	B	B	C

Fixing type	Fixing to resist uplift	Capacity of alternative fixing (kN)
A	2/100 x 3.75 skewed nails	0.7
B	2/100 x 3.75 skewed nails + 1 wire dog	2.7
C	2/100 x 3.75 skewed nails + 2 wire dogs	4.7
D	2/100 x 3.75 skewed nails + 3 wire dogs	6.7

8.7.6 Connection of plates to studs

The fixing of top plates supporting roof *members* to wall studs or lintels shall be in accordance with table 8.18 (see figure 8.12).

C8.7.6

Each additional fixing required should be as close as possible to a truss.

8.8 Dwangs and walings**8.8.1**

Dwangs, walings, and metal angle walings, where required by 8.5.4, shall be spaced at not more than 1350 mm centre-to-centre and shall be of not less than the following dimensions:

- (a) Dwangs: 50 mm x 50 mm or 75 mm x 40 mm;
- (b) Walings: 75 mm x 25 mm;
- (c) Metal angle walings: 22 mm x 22 mm x 1.2 mm angle.

8.8.2

Dwangs for the support of cladding or lining shall be flush with the face of studs.

8.8.3

Walings may be butt jointed on a stud anywhere along their length with the fixings required by table 8.19 on both sides of the butt joint.

C8.8.1

Dwangs may be staggered either side of a horizontal straight line by a centre-to-centre distance not exceeding 300 mm.

Table 10.10 – Capacity of fixings for purlins or battens (see 10.2.1.16.1 and 10.2.1.16.5)

Fixing description	Fixing capacity
	(kN)
1/100 x 3.75 nail or 1/90 x 3.15 power driven nails	0.4
2/100 x 3.75 skewed nails or 2/90 x 3.15 power driven nails	0.7
2/100 x 3.75 skewed nails + 1 wire dog or 2/100 x 3.75 skewed nails + 1/14 g Type 17 screw to AS 3566*	2.7
2/100 x 3.75 skewed nails + 2 wire dogs or 2/100 x 3.75 skewed nails + 2/14 g Type 17 screws to AS 3566*	4.7

* If screw fixed, screws shall be sufficiently long so as to penetrate rafter by at least 50 mm.

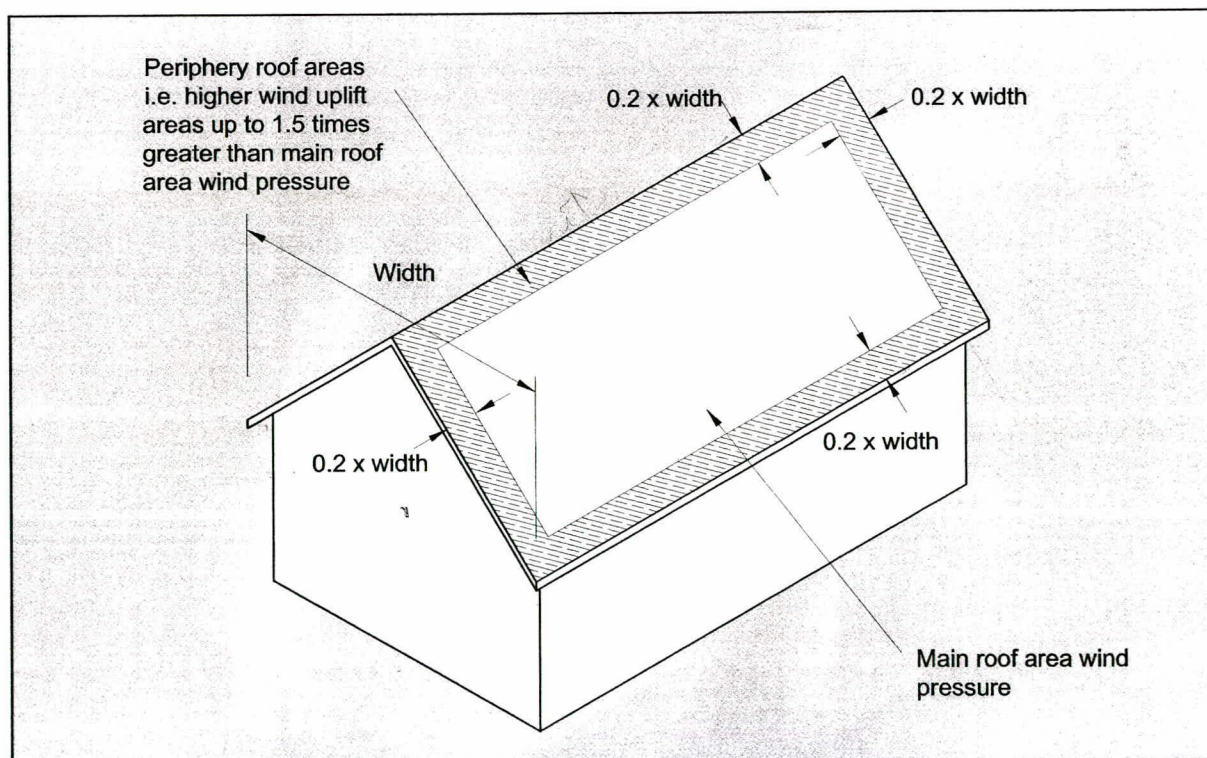
Amd 1
Dec '00

NOTE–

- (1) Purlins on flat may be substituted for the following sizes:

On flat	On edge
75 x 50	65 x 50
100 x 50	75 x 50

- (2) Alternative fixings with required uplift capacity determined in accordance with 2.4.6 may be used.
- (3) Where purlins are fixed over sarking or ceiling sheet lining material refer to 10.2.1.16.5(b).

Amd 1
Dec '00**Figure 10.16 – Gable roof showing higher wind uplift areas requiring extra purlin and batten fixings** (see table 10.9)Amd 1
Dec '00

C10.2.1.16.1

Purlin spacings should not be greater than those recommended by the manufacturer of the roof cladding.

C10.2.1.16.3

The strength of purlins is increased by being a continuous length over as many spans as is possible.

10.2.1.16 Purlins**10.2.1.16.1**

The size of purlins shall be taken from table 10.9 using *spacing* to suit the spanning capability of the *cladding*. Fixings shall be selected from table 10.10 to have a capacity equal to or greater than that required by table 10.9.

Amd 1
Dec '00

10.2.1.16.2

Purlins shall be laid directly over *rafters* or dummy *rafters* and parallel to the associated ridge or eaves line as shown in figures 10.18 and 10.19.

10.2.1.16.3

Purlins shall be continuous over at least 2 spans, and may be butt jointed over supports provided that no 2 adjacent purlins shall be jointed over the same truss or *rafter*.

10.2.1.16.4

Purlins may extend as cantilevers to form a *gable verge* as provided by 10.2.1.15.1.

10.2.1.16.5

Purlins shall be fixed in accordance with the following:

- (a) Laid directly over *rafters* and fixed to *rafters* in accordance with the fixing capacity set out in table 10.10;
- (b) Where purlins are laid directly over sheet *sarking* or ceiling sheet *lining material* of maximum 13 mm thickness, the purlin shall be fixed as shown in figure 10.20(B).

Amd 1
Dec '00

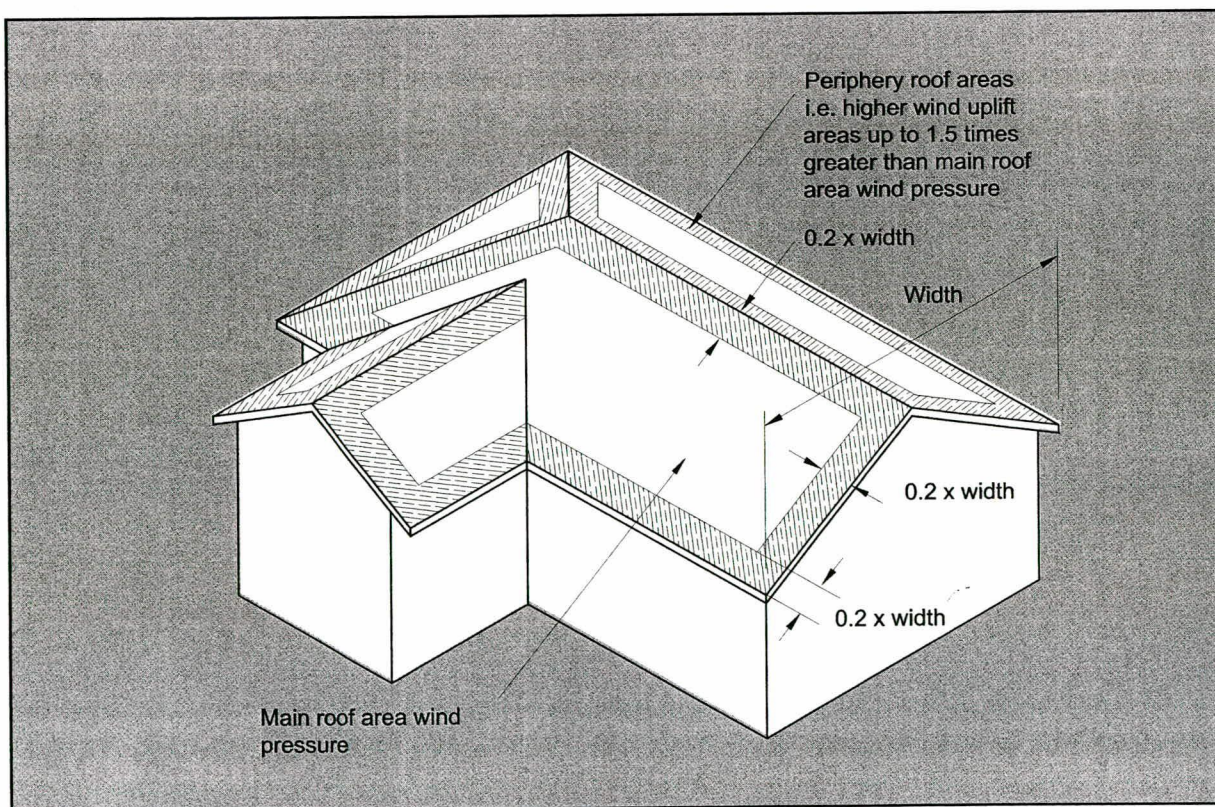


Figure 10.17 – Hip and valley roof showing higher wind uplift areas requiring extra purlin and batten fixings (see table 10.9)

Amd 1
Dec '00

PRODUCER STATEMENT

TRUSS DESIGN CRITERIA

Customer name : McRaeway Homes
PO Box 581
Timaru

Site address : Cantwell House
Te Anau

DESIGN CRITERIA

Roofing - Metal Tile
Ceiling - Gib Board (9.5mm)
Top chord restraints - 380 mm
Bottom chord restraints - 400 mm
Standard truss spacing - 900 mm
Standard roof pitch - 25.00 deg

Design wind speed - 43 m/s (permissible)
53 m/s (ultimate)

Region - V
Terrain category - 2.0
Height of Structure - 3 m
Shielding Classification - Full
Topographic Classification - T3
Internal pressure coefficient - 0.3
Snow Load (U.L.S.) - 600 Pa

The truss designs for this job have been determined using computer software provided by the Technical Division within Pryda Truss Systems. These designs are in accordance with sound and widely accepted engineering principles and comply with the following New Zealand Standards:-

NZ4203 : 1992 General Structural Design and Design Loadings for Buildings
NZ3603 : 1993 Timber Design
AS1649 : 1974 Determination of Basic Working Loads for
Metal Fasteners for Timber

These trusses shall be installed, connected and braced in accordance with the recommendations given in :-
AS4440-1997 Installation of nailplated timber trusses.

We confirm that the trusses for this project have been manufactured in accordance with the fabrication specifications provided by Pryda Truss Systems.

Signed : Rob Blue

Date : 13/5/02.

TRUSS REACTIONS REPORT

Client Details
McRaeway Homes
PO Box 581
Timaru
O/N :

Site Address
Cantwell House
Te Anau

Date Req'd:

Truss Mark	Support at Joint	Dead (1.4D) (kN)	Max. Reaction (1.2D+1.6L) (kN)	Uplift (0.9D-WUp) (kN)	Uplift fixing	Special Note
T2	1	1.0	2.5	-2.2	2/Z NAILS	
T2	3	0.9	2.5	-1.7	2/Z NAILS	
TS1	1	3.7	10.2	-6.1	1/WS6	
TS1	5	4.5	12.1	-7.9	2/WS6	
T4	1	1.7	4.8	-3.9	1/WS6	
T4	5	1.7	4.8	-3.9	1/WS6	
TS3	1	2.0	5.4	-4.2	1/WS6	
TS3	5	0.1	0.5	0.1	2/Z NAILS	
TS3	3	8.2	21.3	-17.6	Specified	
T1	1	1.3	3.4	-2.6	2/Z NAILS	
T1	5	1.3	3.4	-2.6	2/Z NAILS	
T3	1	1.1	3.1	-2.5	2/Z NAILS	
T3	5	1.1	3.1	-2.5	2/Z NAILS	
TS2	1	2.9	7.9	-4.9	1/WS6	
TS2	5	3.4	9.1	-6.0	1/WS6	
TGS3	1	6.3	16.0	-10.6	2/WS6	
TGS3	6	11.3	28.8	-20.8	Specified	
TGS2	1	6.0	15.2	-11.2	2/WS6	
TGS2	6	6.6	16.8	-12.2	2/WS6	
TGS1	1	5.8	14.8	-11.6	2/WS6	
TGS1	6	11.6	29.5	-22.6	Specified	
TG4	1	4.1	10.4	-8.9	2/WS6	
TG4	7	4.1	10.4	-8.9	2/WS6	
TG3	1	3.5	8.8	-7.7	1/WS6	
TG3	7	3.5	8.8	-7.7	1/WS6	
TG1	1	3.0	7.5	-6.3	1/WS6	
TG1	7	3.0	7.5	-6.3	1/WS6	
TG2	1	2.3	6.0	-5.2	1/WS6	
TG2	7	2.3	6.0	-5.2	1/WS6	
MTG1	1	1.6	3.8	-3.0	2/Z NAILS	
MTG1	4	3.1	7.8	-7.8	2/WS6	
H9	1	1.0	2.4	-1.8	2/Z NAILS	
H9	4	1.8	4.4	-4.1	1/WS6	
H3	1	1.2	2.9	-2.5	2/Z NAILS	
H3	4	1.8	4.4	-4.5	1/WS6	
H8	1	0.8	1.9	-1.4	2/Z NAILS	
H8	4	1.4	3.5	-3.2	2/Z NAILS	
H7	1	1.0	2.4	-2.2	2/Z NAILS	
H7	4	1.4	3.5	-3.6	1/WS6	
H4	1	0.9	2.2	-2.0	2/Z NAILS	
H4	4	1.3	3.1	-3.2	2/Z NAILS	
H1	1	0.9	2.2	-2.1	2/Z NAILS	
H1	3	1.2	2.9	-3.0	2/Z NAILS	
H2	1	0.8	1.8	-1.3	2/Z NAILS	
H2	3	1.2	2.9	-2.6	2/Z NAILS	
H5	1	0.7	1.9	-1.8	2/Z NAILS	
H5	3	0.9	2.2	-2.4	2/Z NAILS	
H6	1	0.6	1.6	-1.6	2/Z NAILS	
H6	3	0.8	1.8	-2.0	2/Z NAILS	

TRUSS REACTIONS REPORT

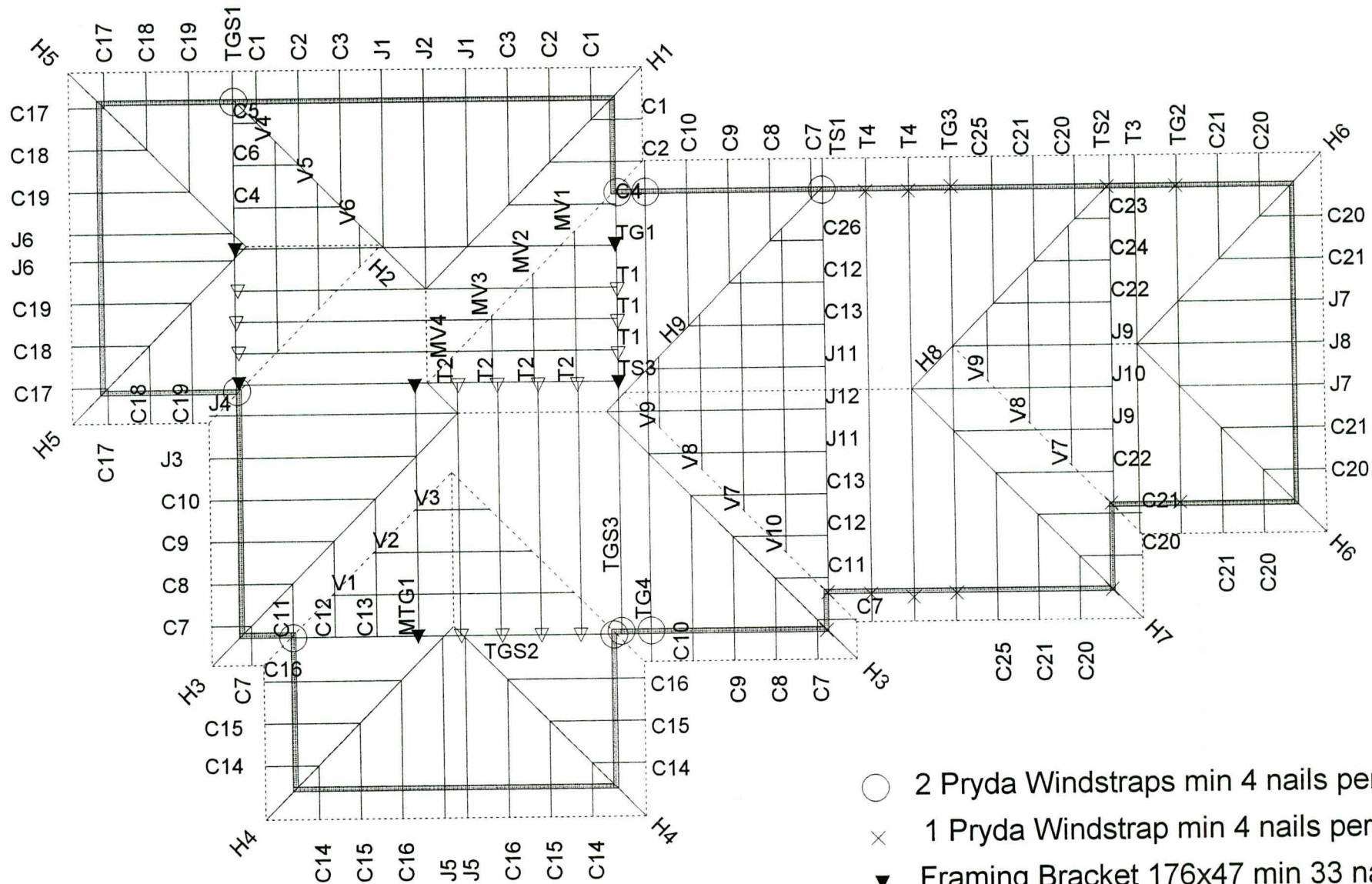
Client Details
McRaeway Homes
PO Box 581
Timaru
O/N :

Site Address
Cantwell House
Te Anau

Date Reqd:

Fixing Summary :

Z NAILS	/ 80	: Each side of truss
WS6	/ 18	: 4 nails per leg
WS6	/ 16	: 4 nails per leg



- 2 Pryda Windstraps min 4 nails per leg
- × 1 Pryda Windstrap min 4 nails per leg
- ▼ Framing Bracket 176x47 min 33 nails
- ▽ Framing Bracket 126x47 min 26 nails

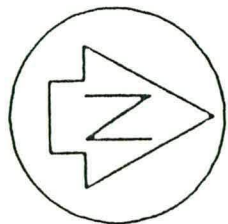


Customer : McRaeway Homes
 Site Address: Cantwell House
 : Te Anau

Roofing: Metal Tile
 Pitch : 25.00 deg
 Spacing: 900 mm
 Design Wind Velocity: 43.35 (m/s)
 Detailer:

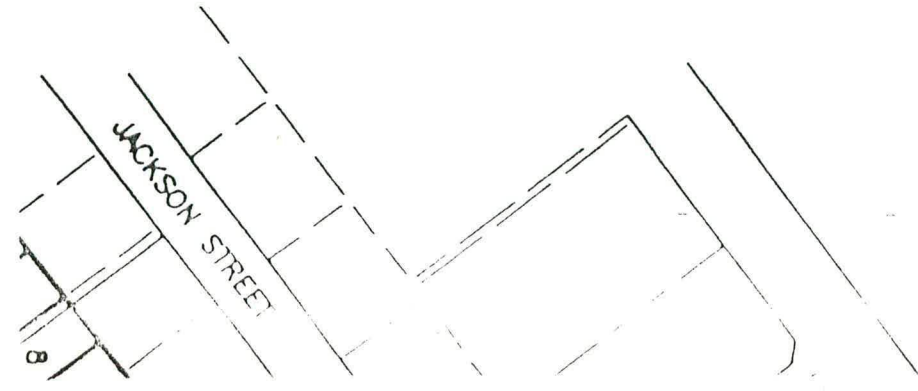
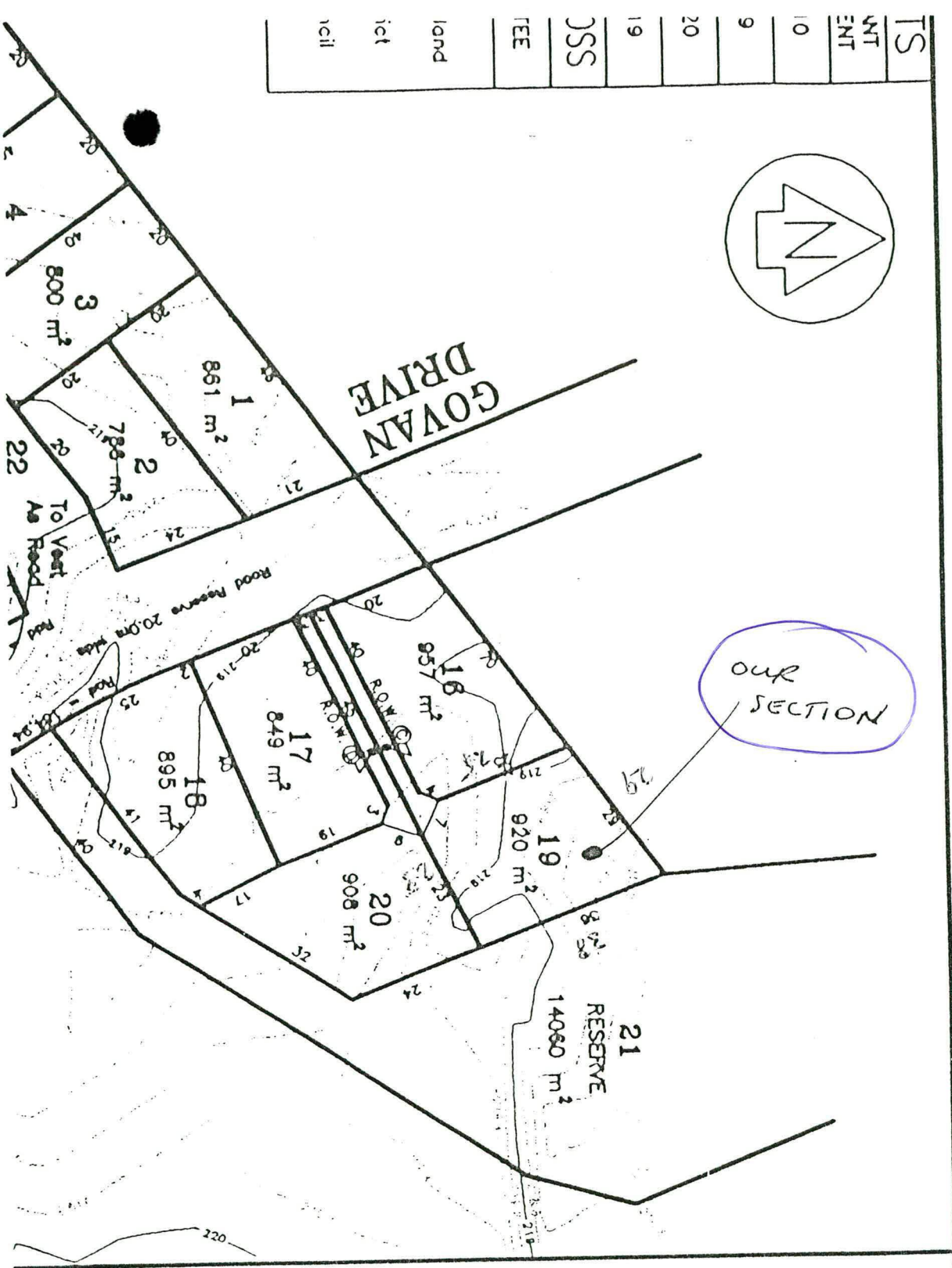
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OUR SECTION

IS	MT	ENT	10	9	20	19	JSS	TEE	land	ict	ncil
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I. R. McRae Ltd., P. O. Box 581 Timaru, New Zealand
Head Office/Factory, Rothwell St. Timaru, NZ.
☎ 03 688 4700, Fax: 03 684 6461, A/H ☎ 03 688 0917
Auckland Show Home Village, 8 Cowley Place, Albany
☎ 09 415 8400, Fax 09 415 8401

Council Copy 1

SPECIFICATION FOR MCRAEWAY 'SOMERSET' HOMES

FOR RESIDENCE OF: Mr/Mrs Sean & Judith Cantwell
Site Address: Lot No. 19 D.P. No. _____

Govan Drive, TE ANAU.

GENERAL

These specifications are to be read in conjunction with the assembly instructions and Schedule of Materials supplied with the 'KITSET'. They are supplied for the erection of the dwelling and include components which are part of the 'KITSET' AND components NOT supplied with the 'KITSET' but which are necessary to complete the dwelling.

The detail contained in these specifications is of a general nature. Should owners wish to add other specific building materials they are at liberty to do so, and it is recommended that instruction to the builder covering these items should be documented either as an Adenda to these specifications or as a clause in the Building Agreement.

Kitset frames are prenailed at the factory, according to standard or revised plans as provided – except in some cases should there be a garage option, in which case the framing timber could be random length.

ERECTION

Workmanship must comply with the Trades Practice and a lesser standard than that set out by the N.Z Master Builders Association will not be accepted. If substandard work is proved, the Contractor may be dismissed and completion of works done by another, all costs involving labour and replacement of materials borne by the former.

BUILDING CONSENT

McRaes will provide (for a minimal fee) the necessary floor plans, Engineers Producer Statement and Bracing Calculations as required by Council when submitting for Building Consent. The Owner shall make application for the Consent along with providing a Site Plan detailing the house position in relation to boundaries and storm water/sewer connections. The Owner will pay Consent fees. The Contractor shall pay all fees for the proper execution of the work (unless otherwise arranged with the owner) and carry out this work in conformation with the particular building site and the Building Regulations. The "Approved Documents" under the Regulations which apply, are: B1, B2, E1, E2, E3, G1, G2, G3, G4, G5, G7, G8, G9, G10, G12, G13, G15, H1.

DIMENSIONS

The Contractor shall verify all dimensions shown or figured on the drawings. **DISTRICT COUNCIL**
dimensions are to be taken in preference to scaled dimensions.

INSURANCE

The Contractor shall insure the works with a Builders 'All Risk' policy. This insurance shall cover the full value of the premises when completed. The Contractor shall be held responsible for any damage or loss to the works and such as are covered by the policy during the construction period.

CONCRETE SLAB FOUNDATIONS

Unless client has chosen to arrange, McRaeway Homes will provide foundation plans as part of Building Consent working drawings. Contractor to refer to these plans.

Notes – Where the plan dimension of slab cast in one operation is less than 15m, use M668 mesh. If plan dimension of slab cast in one operation exceeds 15m but not 25m, use M665

12m

24m

continued ...2

mes Mesh lapped 225mm with 30mm top cover. The maximum plan dimension between joints shall be 4m. Floor slab to be minimum of 150mm above permanent paving or 225mm above unprotected ground. The finished ground level surrounding the building shall have a fall of 1 in 25 away from the building for at least 1m. All concrete to be 17.5MPa at 28 days. The vapour barrier shall have a vapour flow resistance not less than 90MNs/g. See Appendix E, NZS 3604:1999 for further details.

N.B Materials forming the foundations are NOT part of the 'kitset' componentry, and ideally should be in place before the 'kitset' is delivered.

CARPENTER

All timber provided with the 'kitset' conforms to grades defined by NZS 3602:1999 and amendments, and which shall form part of this specification. The construction method is as detailed in the assembly manual and defined by NZS 3604:1999 and amendments, and which shall form part of this specification.

Dampcourse Between timber and concrete, lay approved Dampcourse - supplied with 'kitset'.

SCHEDULE OF TIMBER GRADES

Use: wall framing - studs/plates/dwangs
trusses

Laserframe

Laserframe

Designation:

Sizes

top/bottom plates

90 x 45 Laserframe

studs/dwangs

90 x 45 Laserframe

roof purlins

75 x 50 Rad. Pine

certified GANGNAIL roof trusses

90 x 45 Laserframe

ribbon boards

150 x 40 H1

fascia boards

200 x 32 H3

Wall Framing

All framed walls and partitions have top and bottom plates against which the studs bear evenly. Frames are prenailed at McRaes factory. Details in assembly manual.

Wall Bracing

Each exterior wall, bearing partition and every partition wall more than 3m long shall be braced, at least one brace to each wall or two to each 5m wall. BRACELINE gibraltar board may also be required to some walls (if this is the case, McRaes will supply). Please refer to Bracing Schedule provided by McRaes as part of Building Consent plans.

Wall Linings (exterior)

70mm brick veneer, with Hardies FRONTIER weatherboard above doors (windows up to soffit line).

Wall Linings (interior)

Interior wall linings are 10mm gypsum board including water-resistant gypsum board for all bathroom walls.

Ceilings

All ceilings are 3.6 x 1.2 x 10mm gypsum board. Clouts and GIBFIX are supplied for fixing.

Finishings

Fix MDF customwood skirtings and architraves to each room. Mitre external angles and scribe internal angles. Supplied with kitset.

Hardware

The Contractor shall fit the whole of the hardware supplied with the kitset. - Hardware allowance detailed in Schedule of Materials to be read in conjunction with the First Schedule of Agreement Contract if kitset has been altered from standard. Please note that no foundation hardware is allowed for.

JOINER

All kitchen joinery and interior doors are supplied with the kitset. No assembly is necessary.

only fitting.

Kitchen 'Melamine' exterior, prefinished white interior. Includes fitted towel rails/cutlery & utensil trays. 38mm bullnose 'Formica' tops.

Interior doors: paintgrade 4 panel doors, MDF jambs.

All prehung room doors have latches fitted. All accessories are supplied for any cavity sliders.

Hardware All door handles and cupboard knobs are supplied, to be fitted by Contractor. Kitchen joinery handles are 'BOW' type.

ALUMINIUM JOINERY

All aluminium joinery is 'RYLOCK' brand, manufactured by McRaes and is included in the kitset. Windows and doors are glazed in accordance with NZS 4223:Part 3:1993 and amendments (all clear glass, except bathroom/ensuite/w.c obscure glazed). Reveals 19mm Pine, fitted. Powdercoat finish. Double-glazed except garage.

PLUMBER

All plumbing and drainage to comply with the NZ Building Code. Note that only the sink/mixer, vanities/tapware, bath/tapware, shower/mixer/rose, laundry tub, w.cs, heated towel rails are supplied with the kitset. The plumbing contractor is to provide all remaining material, labour and plant required to complete the dwelling, in accordance with the drawings and Local Body By-Laws.

Flashings Generally provide all flashings required by all other trades to make the building weatherproof, except roof flashings which are supplied to suit Gerard 'Tuffcoat' tile roof. Flash all pipes, vents and exhausts with lead or other approved materials as permitted by the Building Code.

Hot Water Cylinder To be supplied and fitted by the plumber, where shown on the working drawings. Install Tempering Valve as required by N.Z Building Code Clause G12.

Spouting & Downpipes Metal spouting/fascia to be supplied and fitted by the plumber or approved supplier. PVC downpipes.

Vents, Soil Stacks These shall be provided by the plumber as required by NZ Building Code Clause G13.

Pipework All tubing carrying hot water shall be of sealess cold drawn copper or of approved manufactured alternative. Support all pipes vertically and horizontally throughout their length to avoid sagging in any direction. All pipes must be concealed.

Hot & Cold Water Cocks and Valves shall be of an approved manufacture. All exposed taps and stop cocks inside the builder shall be steamlined C.P on brass (or as specified by the owner). Provide all taps and valves as required by the owner.

Cold Water Supply Water shall be obtained from the local water supply. Within the limits of the building, all cold water shall be conveyed in 20mm dia. PVC with 15mm dia. branches to all fittings except the bath and laundry tub..

Sewer Drains The whole of the drainage work to be carried out in accordance with the NZ Building Code and satisfaction of Inspectors. Work to be carried out in accordance with NZ Building Code Acceptable Solution G13-AS2. Consult with Local Authority with regard to any septic tanks and effluent disposal systems.

Storm Water drains to be installed in accordance with NZ Building Code Acceptable Solution E1-AS1

ELECTRICAL

No electrical material or labour or plan is included in the kitset. Electrical plan should be provided by the owner or builder indicating the required points, plugs etc. and all work should be carried out in conformation with NZ Building Code and provide a Certificate of Compliance upon completion.

PAINTER

Nothing is supplied in the kitset for this trade. All material and colour schemes should be selected between owner and painter, and carried out in an approved manner.

INSULATION

Is supplied with the kitset. BRADFORD GOLD in accordance with Approved Document H1. Walls/Ceiling Fit approved Fibreglass "BRADFORD GOLD" insulation as per cross section of working drawings.

continued ...4

ROOFING

GERARD 'Tuffcoat' tiles with mission trim supplied with kitset package. Builder may fit purlins however tiles must be fitted by an approved AHI Roofing fixer. Warranty is void if not fitted by an accredited roofer.

NOTICE TO OWNER: The owner of this house should keep and maintain all exterior and interior sheathings in good repair, and in accordance with the manufacturers specifications and/or recommendations to ensure that the expected durability of all material can be achieved. This includes such general maintenance as washing down of aluminium joinery, exterior painting and/or staining, tile roof should be treated for moss every 3-4 years depending on location.

PRODUCER STATEMENT - PS1 - DESIGN

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

ISSUED BY: G. R. LITTLE
(Suitably qualified Design Professional)

TO: CANTWELL
(Owner)

TO BE SUPPLIED TO: SOUTHLAND DISTRICT COUNCIL
(Territorial Authority)

IN RESPECT OF: BRACING, BEAM, GIRDER FOUNDATION
(Description of Building Work)

AT: GORVAN DRIVE
TE ANAU
(Address)

LOT DP SO
G. R. LITTLE has been engaged by MCRAELOV HOMES
(Design Firm) (Owner/Developer/Contractor)

to provide DESIGN services in respect of the
(Extent of Engagement)

requirements of Clause(s) B1 STRUCTURE of the Building Regulations 1992 for

☐ All

☒ Part only as specified

of the building work. The design has been prepared in accordance with B1/VM B1/OS1
(verification method(s)/acceptable solutions(s))

(respectively) of the approved documents issued by the Building Industry Authority and the work is described on

MCRAELOV HOMES drawings titled PROPOSED RESIDENCE
(Design Firm)

and numbered 01/00091 and the specification and other documents according to which the building is proposed to be constructed.

As an independent design professional covered by a current policy of Professional Indemnity Insurance to a minimum value of \$200,000, I BELIEVE ON REASONABLE GROUNDS that subject to:

(i) the site verification of the following design assumptions B1/VM B1/OS1 (SUBJECT TO SITE CONDITIONS)

and (ii) all proprietary products meeting the performance specification requirements, the drawings, specifications, and other documents according to which the building is proposed to be constructed comply with the relevant provisions of the building code.

G. R. LITTLE
(Signature suitably qualified Design Professional)

Date 1/5/02

BE (HONS) NZCE REG. ENG
(Professional Qualifications)

ERB/AERB Reg No. 8768

Member

ACENZ ☒

IPENZ ☒

☐ NZIA

PO BOX 574, TIMARU
(Address)

GUIDANCE ON USE OF PRODUCER STATEMENTS

This producer statement has been prepared by a combined task committee consisting of members of the New Zealand Institute of Architects, Institution of Professional Engineers New Zealand, Association of Consulting Engineers New Zealand and the Building Officials Institute of New Zealand.

Four producer statements are available and brief details on the purpose of each are as follows:

- | | |
|-----------------------------|---|
| Design: | Intended for use by the person responsible for the design in circumstances where the Territorial Authority will rely on the producer statement to issue a Building Consent. |
| Design Review: | Intended for use by a suitably qualified independent design professional where the territorial authority does not undertake an internal review and relies on the independent design professional's review to issue the building consent. |
| Construction: | Intended for the use by the contractor of the building works where the territorial authority requires a producer statement at the completion of construction. |
| Construction Review: | Intended for use by the person required by the Building Consent to undertake construction monitoring of the building works in circumstances where the Territorial Authority will rely on the producer statement to issue a Code Compliance Certificate. |

The producer statements system is intended to provide territorial authorities with reasonable grounds for the issuing of a Building Consent or Code Compliance Certificate without having to duplicate design or construction checking by others.

The following criteria are recommended to Territorial Authorities with respect to the use of the producer statements.

Definition of Suitably Qualified Design Professional

A suitably qualified design professional should have recognised qualifications and experience for the work undertaken and should be either:

- (i) an active member of the Association of Consulting Engineers New Zealand (ACENZ) or;
- (ii) a corporate member of the Institution of Professional Engineers New Zealand (IPENZ) having a current policy of Professional Indemnity Insurance for a sum not less than \$200,000 or;
- (iii) a member of the New Zealand Institute of Architects (NZIA) having a current policy of Professional Indemnity Insurance for a sum of not less than \$200,000.

Design Build Contracts

If the design professional is engaged by the contractor, the territorial authority should satisfy itself that it is appropriate for the territorial authority to rely upon a producer statement from the design professional.

Consulting Services during Construction Phase

There are several levels of service which a design professional may provide during the construction phase of a project. The territorial authority is encouraged to require that the service to be provided by the design professional is appropriate for the project concerned.

Requirement to provide Producer Statement

Territorial authorities should ensure that the applicant is aware of any circumstances in which there may be a requirement for producer statements for the construction phase of building work at the time the building consent is issued as no design professional should be expected to provide a producer statement unless such a requirement forms part of the design professional's engagement.

Attached Particulars

Attached particulars referred to in this producer statement refer to supplementary information appended to the producer statement.

Design Steps 4 and 5 – Bracing Units Achieved (Wind and Earthquake)

The next step is to place selected wall bracing systems on the bracing lines. A range of Gib® bracing systems have been tested and the specifications and Bracing Unit ratings are listed below. Standard Gib® plasterboard systems often represent the majority of the wall bracing elements. Gib® Braceline or Gib® Toughline systems are used for narrow walls or when high Bracing Unit ratings are required. Gib® Noiseline and Gib® Ultraline Bracing Unit ratings generally fall between Standard Gib® plasterboard and Gib® Braceline.

Wall Heights Other Than 2.4m

The published Bracing Unit ratings are based on a 2.4 metre height. For other heights, the ratings must be multiplied by a factor $f = 2.4$ divided by actual wall height. The Bracing Unit ratings for walls higher than 2.4 metres will reduce, and the Bracing Unit rating for lower walls will increase. Factor f must not be greater than 1.3.

TABLE 1: Bracing Unit ratings for 9.5mm & 12.5mm Standard Gib® plasterboard, 9.5mm Gib® Ultraline, 9.5mm Gib® Aqualine, 9.5mm Gib® Fyreline, 9.5mm Gib® Noiseline.

Type	Minimum length (m)	Lining Requirement	Additional Requirement	Bracing Units per metre (wind)	Bracing Units per metre (Earthquake)
Standard 9.5mm Gib® plasterboard bracing systems (these ratings also apply to 9.5mm Gib® Aqualine, and 9.5mm Gib® Fyreline)					
GIB1a	1.8-2.4	Standard 9.5mm Gib® plasterboard one face, fixed horizontal or vertical	diagonal brace	55	50
GIB1b	Over 2.4			75	50
GIB2a	1.8-2.4	Standard 9.5mm Gib® plasterboard both faces, fixed horizontal or vertical	diagonal brace	75	60
GIB2b	Over 2.4			80	70
GIB3	1.2	Standard 9.5mm Gib® plasterboard both faces, fixed horizontal or vertical	N/A	65	60
Standard 12.5mm Gib® plasterboard bracing systems					
GIB10	1.8	Standard 12.5mm Gib® plasterboard one face, fixed horizontal or vertical	N/A	65	60
GIB11	1.2	Standard 12.5mm Gib® plasterboard both faces, fixed horizontal or vertical	N/A	65	65
9.5mm Gib® Ultraline bracing systems (these ratings also apply to 9.5mm Gib® Noiseline)					
UL1	1.2	Gib® Ultraline one face, fixed horizontal or vertical	6kN connections	70	60
UL2	1.2	Gib® Ultraline both faces, fixed horizontal or vertical	6kN connections	100	85

Design Steps 4 and 5 – Bracing Units Achieved (Wind and Earthquake)

TABLE 2: Bracing Unit ratings for 9.5mm Gib® Braceline and 9.5mm or 12.5mm Gib® Toughline.

Type	Minimum length (m)	Lining Requirement	Additional Requirement	Bracing Units per metre (wind)	Bracing Units per metre (Earthquake)
9.5mm Gib® Braceline bracing systems (these ratings also apply to 9.5mm or 12.5mm Gib® Toughline)					
BR1a	1.8-2.4	Gib® Braceline one face, fixed horizontal or vertical	diagonal brace	70	60
BR1b	Over 2.4			90	75
BR2a	1.8-2.4	Gib® Braceline one face, fixed vertical	N/A	75	60
BR2b	Over 2.4			85	60
BR3a	1.8-2.4	Gib® Braceline one face, fixed horizontal	N/A	60	45
BR3b	Over 2.4			95	65
BR4	0.9-1.2	Gib® Braceline one face, fixed vertical or horizontal*	6kN connections	100	85
BR5	1.2	Gib® Braceline one face, fixed vertical or horizontal*	6kN connections	115	85
BR6	1.2	Gib® Braceline one face, Standard 9.5mm Gib® plasterboard on the other, fixed vertical or horizontal*	12kN connections	150	110
BR7	0.9	Gib® Braceline one face, 7.5mm plywood on the other, fixed vertical or horizontal*	6kN connections	145	145
BR8	0.9	Gib® Braceline one face, 4.75mm hardboard on the other, fixed vertical or horizontal*	6kN connections	120	95
BR9	0.6	Gib® Braceline one face, fixed vertical or horizontal*	6kN connections	110	95

Notes: 1) Where linings are specified on both faces (Systems GIB2, GIB3, GIB11, UL2, BR6, BR7, BR8) each face must be fastened as a braced element. Refer page 12 for fastening systems relating to Plywood and Hardboard.

2) See notes on Hold-Down Strap Placement, Page 12.

*3) For horizontal fixing of linings in Systems BR4, BR5, BR6, BR7, BR8, BR9, see page 18.

Job Details

Name : CANTWELL 01/00091
 Street and Number : Gorvan Drive
 Lot and DP Number : Lot 19
 City/Town/District : Te Anau
 Designer and date : M.G. Lowen 29/4/02
 Company Name : G.R. LITTLER

Building Specification

Location of Storey	single	▼	not applicable (single storey building) not applicable (slab)
Floor Loading	2 kPa	▼	
Foundation Type	slab	▼	
Building Height to Apex (m)	5	▼	
Roof Height above Eaves (m)	2	▼	
Stud Height (m)	2.4	▼	
Cladding Weight (top or single)	heavy	▼	
Cladding Weight (lower)	light	▼	
Cladding Weight (subfloor)	light	▼	
Roof Weight	light	▼	
Roof Pitch (degrees)	0-25	▼	
Room in Roof Space	no	▼	
Building Length (m)	25.8		
Building Width (m)	14.8		
Gross Building Plan Area (m2)	254.45		

Building Location

Wind Zone	High		Earthquake Zone	
Region	R2	▼	B	▼
Terrain	Inland	▼		
Exposure	Exposed	▼		
Topography	Gentle	▼		
Enter at least 'moderate' in a Lee Zone				

Bracing Units required for Wind

per m	subfloor	walls
W along	n/a	54.64 BUs/m
W across	n/a	54.54 BUs/m
Totals	subfloor	walls
W along	n/a	947 BUs
W across	n/a	1393 BUs

Bracing Units required for Earthquake

per m2	subfloor	walls
E	n/a	3.9 BUs/m2
Totals	subfloor	walls
E along	n/a	992 BUs
E across	n/a	992 BUs

Medium wind area

bracing figures active

2.5 roof height

Ab® Wall Bracing Calculation Sheet B

single storey

V104A

Along								
Wall or Bracing Line	Bracing Elements provided						Wind	Earthq.
1	2	3	4	5	6	7	8W	9EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Supplier	Bracing Type	Element Length (m) L	Element Height H (m)	BUs Achieved	BUs Achieved
A	92	1	Gib®	BR9	0.6	2.4	66	57
line totals		2	Gib®	Gib1a	1.8	2.4	99	90
W	165	3						
EQ	147	4						
B	258	1	Gib®	BR9	0.8	2.4	88	76
line totals		2	Gib®	Gib1a	2	2.4	110	100
W	314	3	Gib®	Gib1a	2.1	2.4	116	105
EQ	281	4						
C	70	1	Gib®	Gib1a	1.8	2.4	99	90
line totals		2	Gib®	Gib1a	2	2.4	110	100
W	209	3						
EQ	190	4						
D	70	1	Gib®	Gib1a	1.8	2.4	99	90
line totals		2	Gib®	BR9	0.7	2.4	77	67
W	176	3						
EQ	157	4						
E	70	1	Gib®	BR4	0.9	2.4	90	77
line totals		2	Gib®	BR4	1	2.4	100	85
W	190	3						
EQ	162	4						
F	70	1	Gib®	BR4	0.9	2.4	90	77
line totals		2	Gib®	BR4	0.9	2.4	90	77
W	180	3						
EQ	153	4						
G	enter	1						
line totals		2						
W		3						
EQ		4						
H	enter	1						
line totals		2						
W		3						
EQ		4						
I	enter	1						
line totals		2						
W		3						
EQ		4						
J	enter	1						
line totals		2						
W		3						
EQ		4						

Wind	Earthq.
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
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98	98
99	99
100	100

Totals Achieved						1234	1089
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OK OK

Totals Required (from Sheet A)					947	992
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Gib® Wall Bracing Calculation Sheet B

single storey

V104A

Across								
Wall or Bracing Line		Bracing Elements provided					Wind	Earthq.
1	2	3	4	5	6	7	8W	9EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Supplier	Bracing Type	Element Length (m)	Element Height H (m)	BUs Achieved	BUs Achieved
M	63	1	Gib®	Gib1a	1.8	2.4	99	90
line totals		2	Gib®	Gib1a	1.8	2.4	99	90
W	198	3						
EQ	180	4						
N	70	1	Gib®	BR9	0.6	2.4	66	57
line totals		2	Gib®	BR9	0.7	2.4	77	66.5
W	143	3						
EQ	123.5	4						
O	70	1	Gib®	Gib1a	1.8	2.4	99	90
line totals		2	Gib®	BR4	0.9	2.4	90	76.5
W	189	3						
EQ	166.5	4						
P	70	1	Gib®	BR9	0.6	2.4	66	57
line totals		2	Gib®	Gib1a	1.8	2.4	99	90
W	165	3						
EQ	147	4						
Q	70	1	Gib®	Gib1a	1.8	2.4	99	90
line totals		2	Gib®	Gib1a	1.8	2.4	99	90
W	198	3						
EQ	180	4						
R	70	1	Gib®	Gib1a	1.8	2.4	99	90
line totals		2	Gib®	Gib1a	1.8	2.4	99	90
W	198	3						
EQ	180	4						
S	70	1	Gib®	Gib1a	1.8	2.4	99	90
line totals		2	Gib®	Gib1a	1.8	2.4	99	90
W	198	3						
EQ	180	4						
T	70	1	Gib®	Gib1a	1.8	2.4	99	90
line totals		2	Gib®	BR4	1.1	2.4	110	93.5
W	209	3						
EQ	183.5	4						
U	enter	1						
line totals		2						
W		3						
EQ		4						
V	enter	1						
line totals		2						
W		3						
EQ		4						

						Wind	Earthq.
Totals Achieved						1498	1340.5
						OK	OK
Totals Required (from Sheet A)						1393.2	992.355

Dwelling Check List

Concrete floor:

Flowers light
concrete grade.

- ① Clearing top soil
- ✓ ② Footings
- ✓ ③ Reinforcing
- ④ Mesh
- ⑤ Polystyrene
- ⑥ Slab thickening

Timber floor:

- ① Strip foundation width
 - ② Strip foundation reinforcing
 - ③ Pile type
 - ④ Pile height
 - ⑤ Pile diameter
 - ⑥ Anchor piles
 - ⑦ Ventilation to subfloor
-
- ① Support beams
 - ✓ ② Bearers
 - ✓ ③ Joists
 - ④ Solid blocking
 - ✓ ⑤ Flooring
 - ✓ ⑥ Sigiulation

Fråning:

(Lazer frame)

- ① Timber/species/Treatment.
- ② Damp proof course
- ③ Anchorage to bottom plate
- ④ Plates
- ⑤ Studs
- ⑥ Drawings

- ⑦ Lintels
- ⑧ Building paper
- ⑨ Wall & roof bracing
- ⑩ Wall & roof insulation
Check 30% window ratio

Roofing:

- ① Cladding
- ② Sarking
- ③ Support for sarking

Trusses:

* Nail top plate steel
for trusses over 6m span.

- ① H or L roof
- ② Support beams
- ③ Truss code No
- ④ Truss span
- ⑤ Truss spacing
- ⑥ I rails
- ⑦ Bottom cord ties
- ⑧ Purlins

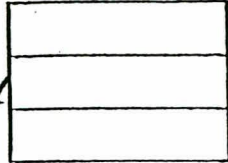
Pitched roof:

- ① Hork roof.
- ② Support beams
- ③. Rafter span.
- ④ Rafter spacing
- ⑤ Purlins
- ⑥ Underpurlin
- ⑦ Strutting beam
- ⑧ Ceiling joists

Wall cladding:

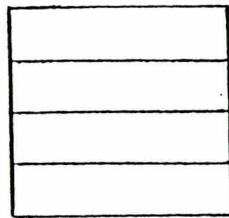
Weather-boards:

- ① Timber species & treatment
- ② Hardplank or similar



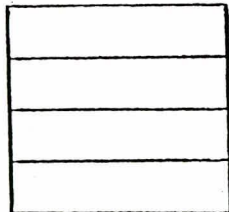
Veneer:

- ① Cavity width
- ② Cavity ventilation
- ③ Cavity drainage
- ④ Brick ties



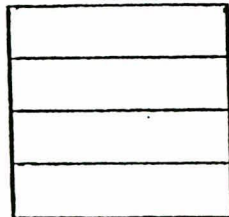
Heating:

- ① Type of heating unit
- ② Chimney type
- ③ Chimney reinforcing
- ④ Chimney foundations



Room sizes:

- ① Ventilation required to each room
- ② Laundry, bathroom, toilet ventilation.



Brick veneer

Energy Cost

Stair

Glazing

G13

G12