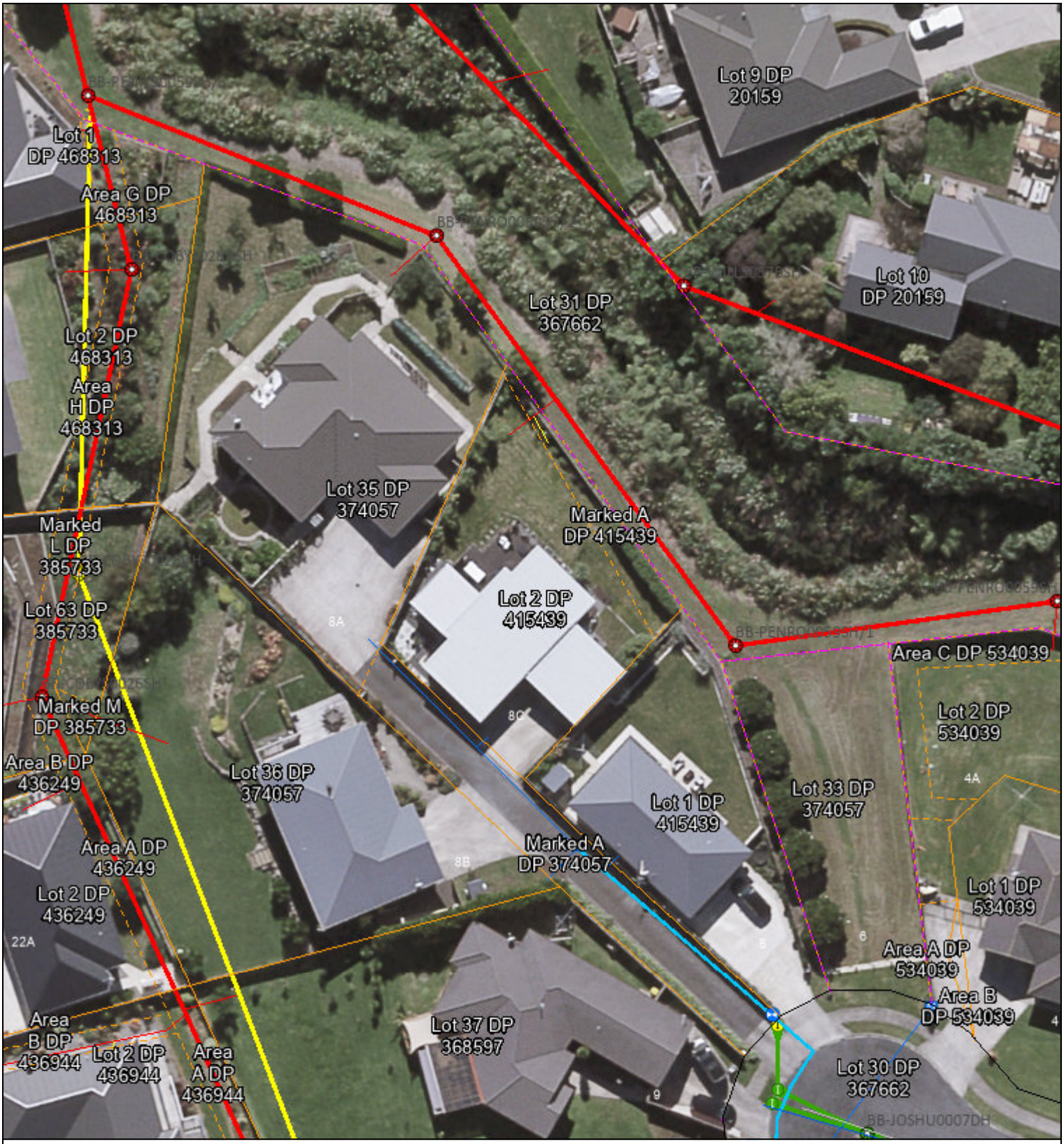


- Natural Source
- Treatment Plant
- Pumpstation
- Storage Unit
- Hydrant
- Manhole
- Alert Valve
- Air Valve
- Non-Return Valve
- Standard Valve
- Manifold Valve
- Backflow
- Meter
- Restricted Flow
- Wellup
- Inlet
- Outlet
- Soakhole
- End Point
- Node
- Misc Point
- Trunk
- Rise
- Main
- Lateral
- Open Drain
- Stream
- Overland Flow Path
- Misc Polygon
- Proposed Bund and Ponding Areas
- Storm Water Mgmt Plan

Yellow = Privately Owned
Grey = Out of Service/Closed
Stormwater
Water Supply
Waste Water

Te Kaunihera-ā-Rohe o Ngāmotu
NEW PLYMOUTH DISTRICT COUNCIL
newplymouthnz.com

MILES Print Map

HORIZONTAL DATUM
New Zealand Geodetic Datum 2000

MAP PROJECTION
New Zealand Transverse Mercator

0 5 10 20
m

Date: 4/14/2021

1:500

1/6 MT

BUILDING CONSENT

106288S

PROPERTY ID **107870**

106288S

Construction Details

MARCH 2006

GIB® Bracing Systems Changes

GIB® Bracing Systems have undergone a thorough review as part of Winstone Wallboards ongoing programme to make GIB® systems simpler, easier and faster for customers to use. Users of the previous systems will notice some significant changes. Please review this technical literature in detail to make yourself aware of these changes. The key differences are as follows:

- The new EzyBrace™ Specification Numbering System is designed to make specification, installation and identification of GIB® Bracing Systems easier.
- A rationalised number of bracing element types and a more consistent construction method.
- Fasteners must not be placed closer than 18mm to a sheet end or a cut edge or no closer than 12mm to the tapered (paper bound) machine edge of the GIB® plasterboard sheets.
- Some hold down details and corner fastening details have changed.
- A new 35mm GIB Braceline® Nail replaces the 32mm GIB Braceline® Nail in GIB Braceline® bracing elements.
- GIB® plasterboard sheets used in GIB® Bracing Systems March 2006 must have a manufacturing date after 16 January 2006.
- No additional framing is required for narrow panels.
- Introduction of a shorter 0.4m bracing element.
- Ability to substitute GIB Aqualine® for GIB Braceline® with modified fastener patterns.

Note: The bracing systems in the GIB® Bracing Systems 1999-2003 technical literature will remain valid, however, transfer to the systems contained in this publication is recommended for new designs for the benefits these systems offer.

Framing

General framing requirements such as grade, spacings and installation shall comply with the provisions of NZS 3604:1999. Winstone Wallboards Ltd recommends the use of kiln-dried machine stress graded framing (KD MSG). To achieve the published bracing performance the minimum actual framing dimensions are 90 x 35mm for external walls and 70 x 35mm for internal walls.
Wall bracing tests on GIB® Bracing Systems were undertaken without nogs. Nogs are not considered to add to the bracing performance of the wall.

Fastening GIB® plasterboard Linings

GIB® Standard Plasterboard bracing systems must be fastened using minimum length 32mm x 6g GIB® Grabber® Drywall Screws or 30 x 2.8mm GIB® Nails. GIB Braceline® bracing systems must be fastened with 32mm x 7g GIB Braceline® screws, or 35mm GIB Braceline® nails.
GIB® plasterboard linings for designated bracing elements are fastened at 150mm centres around the perimeter of the bracing element. For GIB® Standard bracing elements fasteners are placed at 50 and 150mm from the sheet corner (see page 30). For GIB Braceline® bracing elements fasteners start at 50, 100 and 150mm from the sheet corner (see page 31). Fasteners must be placed 12mm from the tapered edge (paper bound) and 18mm from the cut edge.
Fastening in the field of the bracing element is conventional and the screw and glue method is recommended as outlined in the "GIB® Site Guide".
When fixing part sheets of GIB® plasterboard, a minimum width of 300mm applies for bracing elements.
Horizontal fixing is recommended. If fixing vertically, full height sheets shall be used where possible. Where sheet end butt joints are unavoidable they must be formed over nogs or over the studs and fastened at 200mm centres. Alternatively, the sheet end butt joints may be back-blocked.

Plywood

'Plywood' specified in BLP is grade D-D 7mm construction plywood manufactured to AS/NZS 2269:2004, fixed with 30 x 2.8mm flat head nails at 150mm centres around the perimeter of the bracing element and at 300mm centres to intermediate framing.

Fire Resistance and Noise Ratings

10mm GIB Braceline®, 10mm GIB Aqualine®, 10mm GIB Noiseline®, 10mm and 13mm GIB Ultraline® and 10mm GIB Toughline® may be substituted for 10mm GIB Fyreline® in fire rated constructions. 10mm GIB Braceline® and 10mm GIB Toughline® may be substituted for 10mm GIB Noiseline® in GIB® Noise Control Systems.The fastener length for the fire rated system applies. The field of the braced element must also be fastened in accordance with the fire rated specification (adhesive not permitted).

Jointing and Stopping

All sheet joints must be paper tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

Fastening the Bracing Element to Timber Floors

Fastening the bottom plate of a GIB® wall bracing element to a timber framed floor must be in accordance with NZS3604:1999 with pairs of 100 x 3.75mm hand driven nails or three 90 x 3.15mm power driven nails at 600mm centres. In addition panel hold-downs, as detailed on page 29, must be installed when specified for the particular bracing element type (BL1, BL1a, BLG and BLP).

Fastening the Bracing Element to Concrete Slabs

Fastening the bottom plate of an external wall for bracing element GS1a is in accordance with NZS 3604:1999. On internal bracing lines, the bottom plate of wall bracing elements GS1a and GS2 may be fixed using minimum 65mm x 3.8mm shot fired fasteners fitted with 16mm discs, spaced at 150mm and 300mm from the end studs and thereafter at 600mm centres. Wall bracing elements BL1, BL1a, BLG and BLP installed on both external and internal walls require a panel hold-down connection at each end of the bracing element (see page 29). Within the length of the bracing element bottom plates are fixed in accordance with NZS 3604:1999.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.

Construction Details

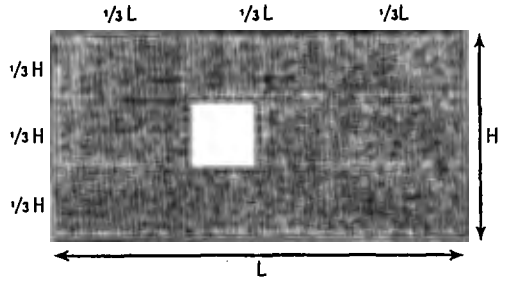
MARCH 2006

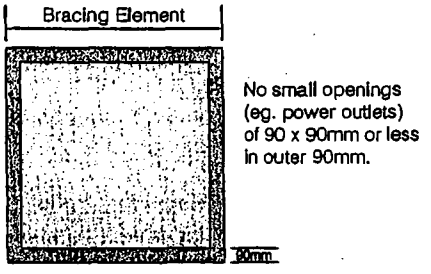
Panel Hold-Down Details

GIB® Standard Bracing Systems GS1a and GS2 do not require specific connections at the bracing element ends.
GIB Braceline® Bracing Systems BL1, BL1a, BLP and BLG all have panel hold-down connections at each end of the bracing element. Refer to page 29 for construction details.

Openings in Bracing Elements

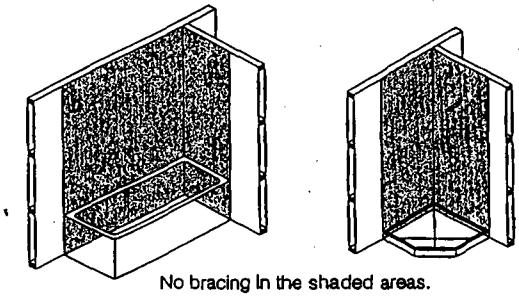
Openings are allowed within the middle third of a wall bracing element's length and height. Neither opening dimension shall be more than one third of the element height. Wall linings are fixed to opening trimmers at 150mm centres. Small openings (e.g. power outlets) of 90 x 90mm or less may be placed no closer than 90mm to the edge of the braced element.





GIB® Bracing in Water-Splash Areas

Bracing elements are required to have a durability of 50 years. Winstone Wallboards recommends that bracing elements are not located in shower cubicles or behind baths because of durability requirements, the likelihood of renovation, and practical issues associated with fixing bracing elements to perimeter framing members.
Otherwise GIB® Bracing Systems can be used in water-splash areas as defined by NZBC Clause E3, provided these are maintained impervious for the life of the building.
GIB Aqualine® can be used in place of GIB® Standard in bracing elements.
GIB Aqualine® can be used in place of GIB Braceline® in bracing elements 900mm or longer, provided the perimeter of the element is fixed with GIB Braceline® nails or screws at 100mm centres generally, using the GIB Braceline® corner fixing pattern.



No bracing in the shaded areas.

Renovation

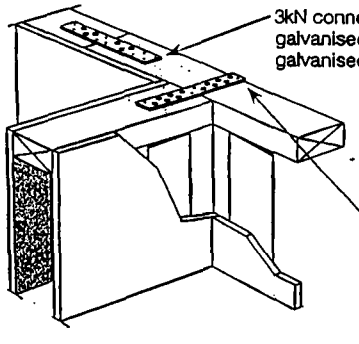
When relining walls during the process of renovation, ensure that bracing elements are reinstated (check the building plans).

Angle Braces

Angle braces serve to keep frames square during transport and construction. They also act as part of the temporary bracing of a building under construction.
Where specified, metal angle braces must be placed at an angle no steeper than 55 degrees, and within the designated length of the bracing element. For elements longer than 3.6 metres, pairs of angle braces (in opposite directions) are required. Fixing of angle braces is with three 30 x 2.8mm galvanised flat head nails to top and bottom plates, and two 30 x 2.8mm nails to intermediate framing.

Top Plate Connections

The top plate of a wall that contains one or more wall bracing elements shall be jointed according to the rating of the highest-rated individual wall bracing element as follows:
(a) Rating not exceeding 100 bracing units: A 3kN connection as shown or by an alternative fixing of 3kN capacity in tension or compression along the plate;
(b) Rating exceeding 100 bracing units: A 6kN connection as shown or by an alternative fixing of 6kN capacity tension or compression along the plate.

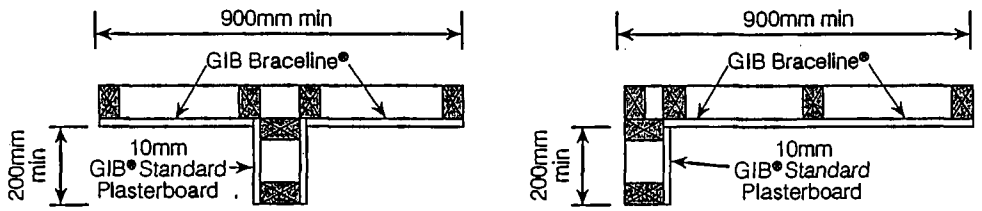


Construction Details

MARCH 2006

Guidelines for Intersecting Walls

GIB® Bracing Elements may have intersecting walls with a minimum length of 200mm. Bracing element sheets shall be fixed and jointed as given on pages 30 and 31. Fasteners are required around the perimeter of the bracing element. Vertical joints at T-junctions (illustrated below) shall be fixed and jointed as specified for intermediate sheet joints. **The bracing element length must be no less than 900mm.**



Where a Wall Bracing Element is interrupted by a T or L junction the element is deemed to be continuous for the whole length (900mm in the example illustrated above).

Fixing the Perimeter of a Bracing Element

A bracing element can consist of a part sheet (such as in a 600 mm long BL1 element), or multiple sheets (such as in a 2.4 metre or longer GS1a element). The critical fasteners are located around the perimeter of a bracing element as outlined on the fastener layout pages. The perimeter of a bracing element must be connected to a continuous member such as studs or plates. Connection to a row of nogs is not acceptable.

Fixing in the Field of the Bracing Element

Fixing in the field of a bracing element is conventional and for GIB® wall bracing elements this means that adhesive fixing is recommended, eliminating the need for mechanical fasteners in the body of the sheets.

For GIB® ceiling diaphragms the screw and glue method is recommended resulting in a minimum number of mechanical fasteners along the centre line in the body of the sheets.

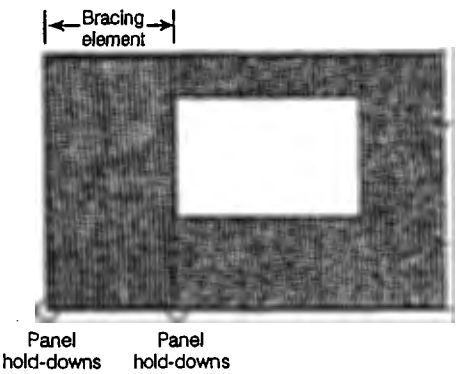
When applied correctly, paper-tape and stopped joints within the bracing element are strong enough to transfer loads within the element and conventional fixing of intermediate sheet joints to framing is sufficient.

Any sheet end butt joints within the field of the bracing element must be back-blocked in accordance with the "GIB® Site Guide".

Consult the "GIB® Site Guide" for further details on recommended fixing details.

Horizontal Fixing

GIB Braceline® linings may be fixed horizontally when linings extend under/over door or window openings. GIB Braceline® fasteners are provided around the perimeter of the bracing element.



GIB® Bracing Systems – EzyBrace™ Specification Numbering System

The EzyBrace™ Specification Numbering System is designed to make specification of GIB® Bracing Systems by designers and identification on site by builders and building officials more transparent. Note: the EzyBrace™ Specification Numbering System (and sub-components thereof) are protected by copyright.

GS = GIB® Standard Plasterboard
BL = GIB Braceline®
BLP = GIB Braceline® / Plywood
BLG = GIB Braceline® / GIB® Standard Plasterboard

1 = lined one side
2 = lined both sides
a = angle brace

Therefore,
GS1a = GIB® Standard Plasterboard one side with an angle brace
GS2 = GIB® Standard Plasterboard both sides
BL1 = GIB Braceline® one side
BL1a = GIB Braceline® one side with an angle brace
BLP = GIB Braceline® one side, Plywood on the other
BLG = GIB Braceline® one side, GIB® Standard Plasterboard on the other

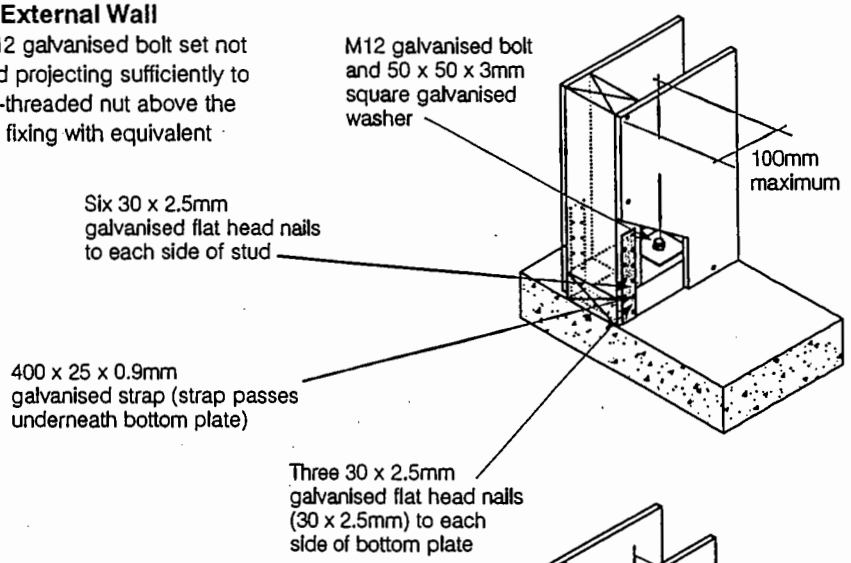
In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.

Panel Hold-down Details

MARCH 2006

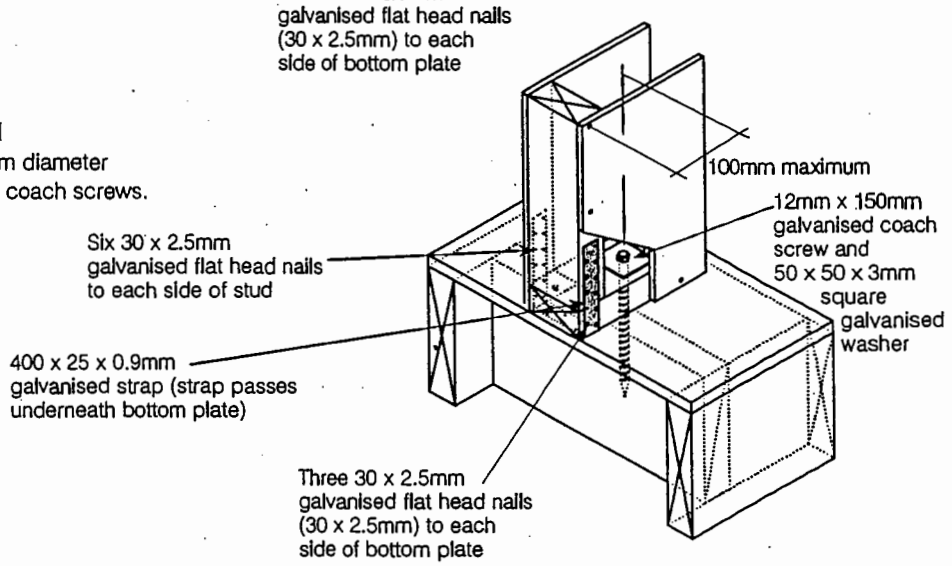
Concrete Floor – Internal / External Wall

Bottom plate is fixed using an M12 galvanised bolt set not less than 75mm into concrete and projecting sufficiently to allow for a 3mm washer and fully-threaded nut above the timber. Alternatively a proprietary fixing with equivalent capacity may be used.



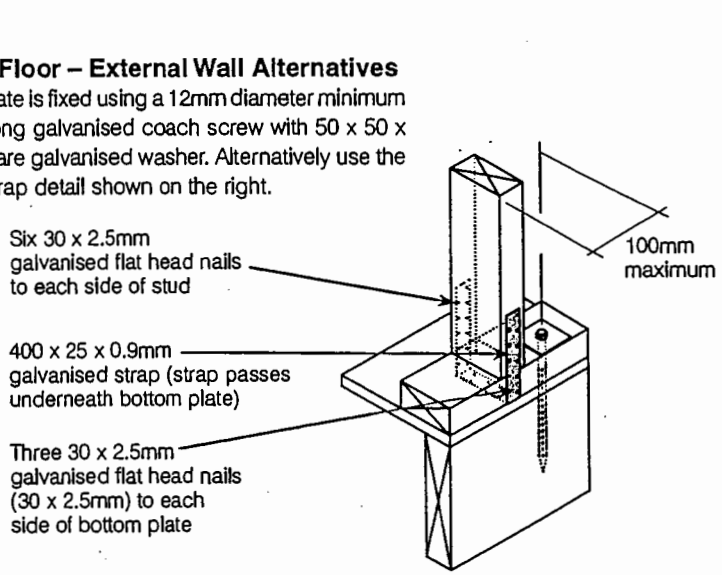
Timber Floor – Internal Wall

Bottom plate is fixed using a 12mm diameter minimum 150mm long galvanised coach screws.

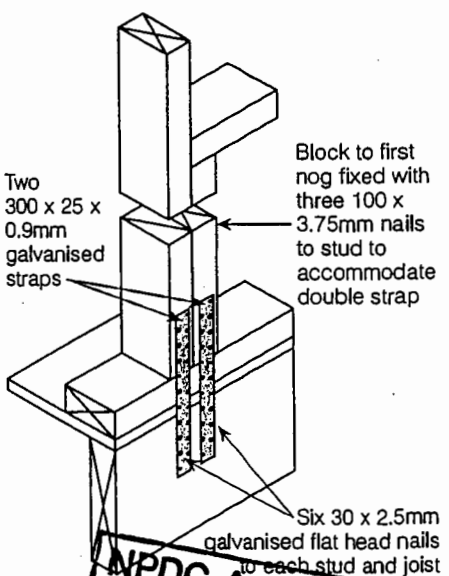


Timber Floor – External Wall Alternatives

Bottom plate is fixed using a 12mm diameter minimum 150mm long galvanised coach screw with 50 x 50 x 3mm square galvanised washer. Alternatively use the double strap detail shown on the right.



Option 1



Option 2

Notes:

Additional thickness and/or corrosion protection is required in exposed and sheltered applications. (Consult NZS 3604:1999).
To maintain a flush surface for the wall linings, it is recommended that hold down straps are chased into the framing.

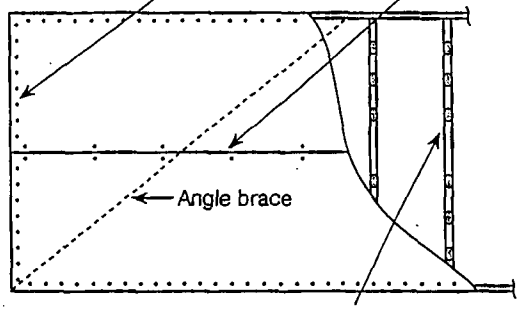
Fastener Layouts – GIB® Standard Bracing Elements

MARCH 2006

For 10mm GIB® Standard Plasterboard and any other 10mm and 13mm GIB® plasterboard

32mm x 6g GIB® Grabber® Drywall Screws or 30mm GIB® Nails at 150mm centres to perimeter of bracing element

Single 32mm x 6g GIB® Grabber® Drywall Screws or 30mm GIB® Nails where sheets cross studs

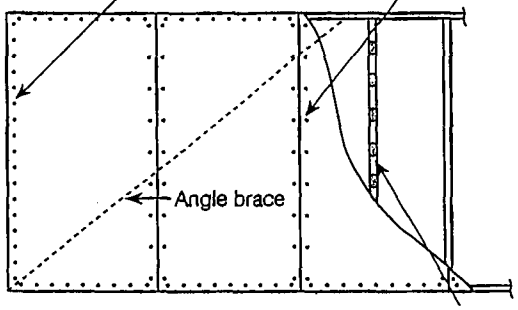


GS1a (lined one side) (Horizontal Fixing)

Daub of GIBFix® adhesive at 300mm centres to intermediate studs

32mm x 6g GIB® Grabber® Drywall Screws or 30mm GIB® Nails at 150mm centres to perimeter of bracing element

Single 32mm x 6g GIB® Grabber® Drywall Screws or 30mm GIB® Nails at 300mm centres

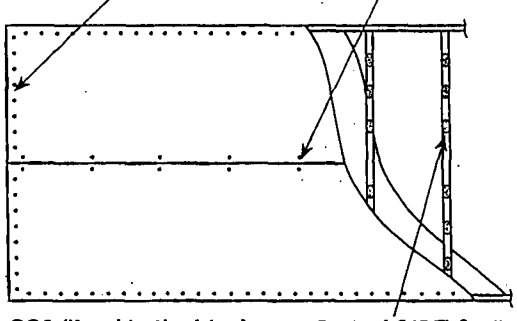


GS1a (lined one side) (Vertical Fixing)

Daub of GIBFix® adhesive at 300mm centres to intermediate studs and nogs

32mm x 6g GIB® Grabber® Drywall Screws or 30mm GIB® Nails at 150mm centres to perimeter of bracing element

Single 32mm x 6g GIB® Grabber® Drywall Screws or 30mm GIB® Nails where sheets cross studs

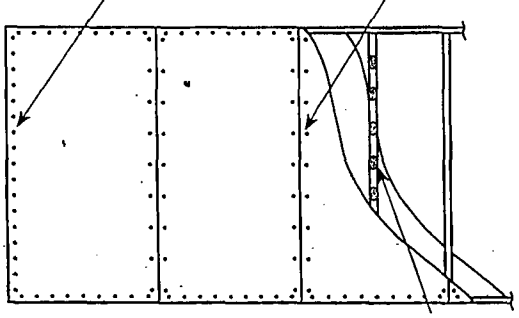


GS2 (lined both sides) (Horizontal Fixing)

Daub of GIBFix® adhesive at 300mm centres to intermediate studs

32mm x 6g GIB® Grabber® Drywall Screws or 30mm GIB® Nails at 150mm centres to perimeter of bracing element

Single 32mm x 6g GIB® Grabber® Drywall Screws or 30mm GIB® Nails at 300mm centres



GS2 (lined both sides) (Vertical Fixing)

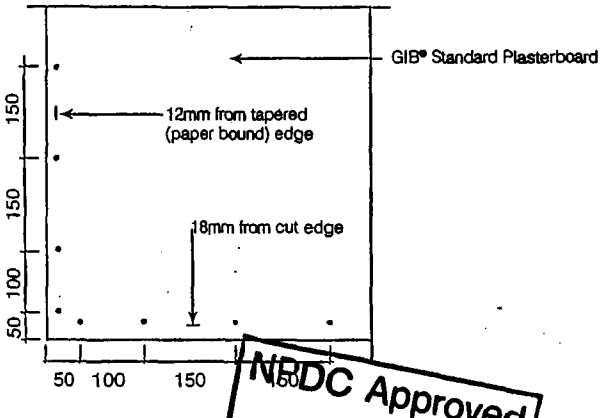
Daub of GIBFix® adhesive at 300mm centres to intermediate studs and nogs

Fixing the perimeter of a GIB® Standard Plasterboard bracing element

Fasteners are placed no closer than 12mm to the tapered (paper bound) machine edge of the GIB® plasterboard sheets. Fasteners are placed no closer than 18mm to a sheet end or a cut sheet edge.

For GIB® Standard bracing elements fasteners are placed at 150mm centres around the bracing element perimeter, starting at 50 and 150mm from the sheet corners.

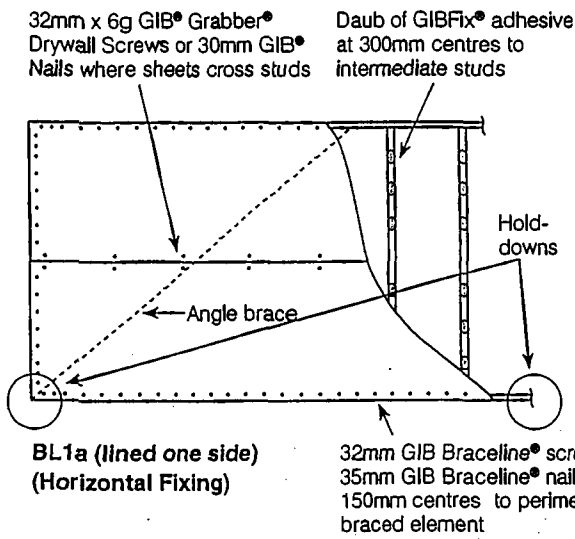
Fastening pattern for GIB® Standard bracing elements



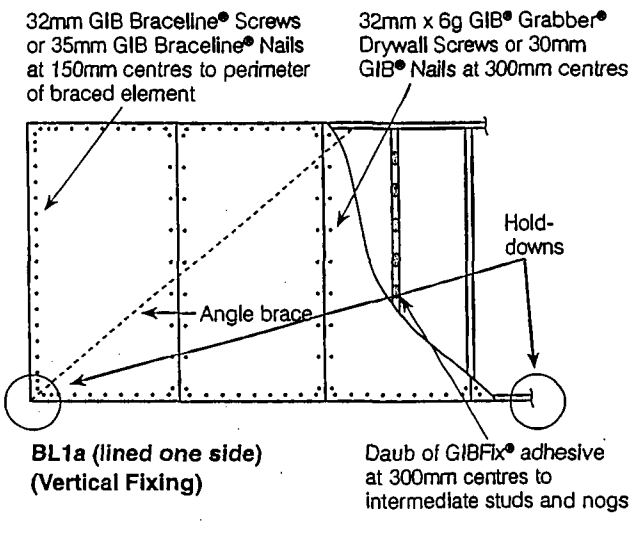
In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.

Fastener Layouts – GIB Braceline® Bracing Elements MARCH 2006

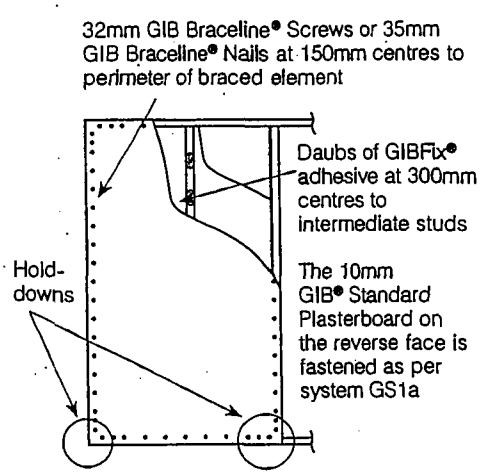
For 10mm GIB Braceline®, 10mm GIB Noiseline® and 10mm GIB Toughline®



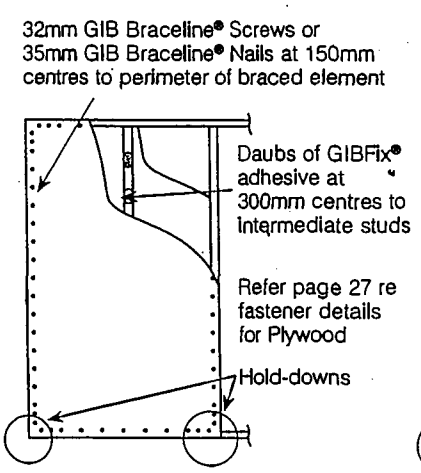
BL1a (lined one side) (Horizontal Fixing)



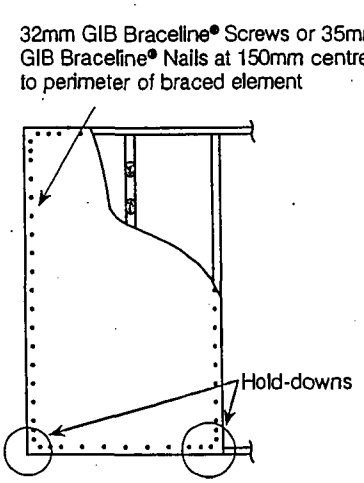
BL1a (lined one side) (Vertical Fixing)



BLG (lined both sides)



BLP (lined both sides)



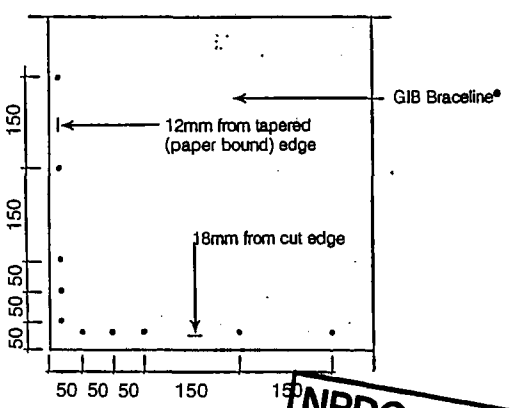
BL1 (lined one side)

Fixing the perimeter of a GIB Braceline® bracing element

Fasteners are placed no closer than 12mm to the tapered (paper bound) machine edge of the GIB® plasterboard sheets. Fasteners are placed no closer than 18mm to a sheet end or a cut sheet edge.

For GIB Braceline® systems, fasteners are placed at 150mm centres around the bracing element perimeter, starting at 50, 100 and 150mm from the sheet corners.

Fastening pattern for GIB Braceline® bracing elements



GIB® Bracing System Installation Checklist

MARCH 2006

Contract ID	
Site Address	
Specifier	
Building Contractor	
Plasterboard Installer	
Check carried out by	
Date	

Reference Material: GIB® Bracing Systems, GIB® Site Guide (Edition current at time of installation)

PREBRACING	Y	N	CHECKED BY	DATE
Bracing element position corresponds with the bracing plan				
Hold-down straps correctly positioned and installed *(systems incorporating "BL")*				
Hold-down straps checked in flush with framing				
Hold-down bolts correctly positioned and installed				
No power points or light switch outlets situated within 90mm of the edge of the element. *Easier to move now than later.*				
Any opening larger than 90 x 90mm is positioned in the middle third of the element both vertically and horizontally				
Braces extend from top to bottom plates. Angle braces installed correctly				
No bracing elements situated within a shower cubicle or above a bath				
POST LINING	**Y**	**N**	**CHECKED BY**	**DATE**
Correct corner fastening pattern has been used for the specified system				
Perimeter fastenings are correctly spaced for the system being used				
Correct fasteners have been used. *32mm GIB® Grabber® or GIB® Nails for all GS systems and 32mm GIB Braceline® screws or 35mm GIB Braceline® nails for BL systems.*				
Sheet end butt joints within the bracing element are back-blocked				
CEILING DIAPHRAGMS	**Y**	**N**	**CHECKED BY**	**DATE**
Steel battens are directly fixed to framing. *Clip system cannot be used in ceiling diaphragm applications.*				
Perimeter of the diaphragm is fixed to a single continuous member along each edge				
No sheets shorter than 1800mm used in diaphragm				
End sheets are a minimum of 600mm wide x 1800mm long				
Longitudinal joint adjacent to end sheet is back-blocked if end sheet is between 600mm and 900mm wide				
Corner fastenings correct				
Sheet end butt joints back-blocked				

BRANZ APPRAISED

SPECIFY WITH CONFIDENCE

BRANZ Appraisals

Technical Assessments of products for building and construction

BRANZ APPRAISAL CERTIFICATE No. 441 (2003)

THE BILDON 2000 SOLID TIMBER FASCIA SYSTEM

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Fax: +64 7 541 2575

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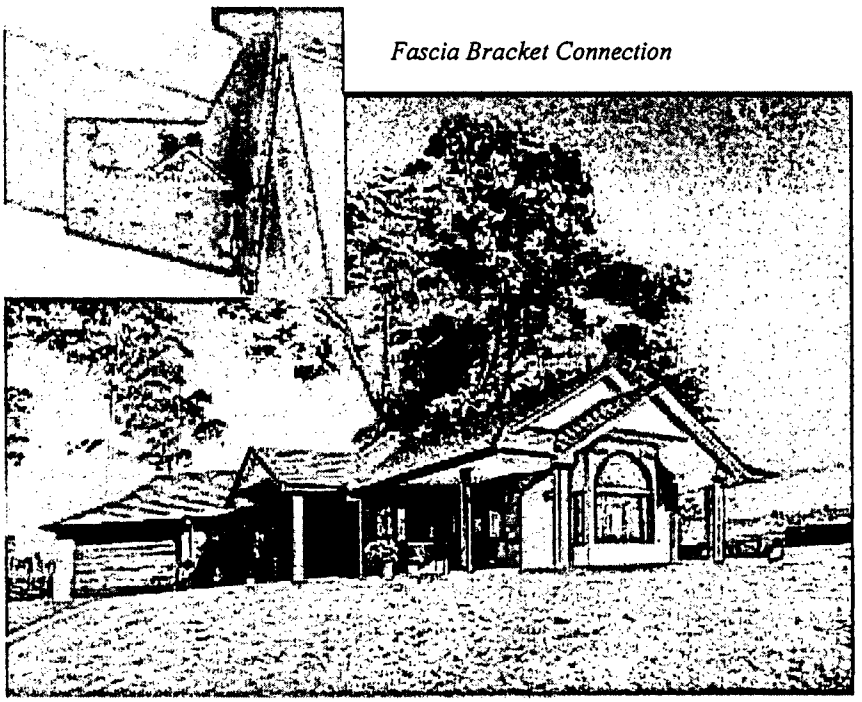
Porirua City
New Zealand
Tel: +64 4 237 1170
Fax: +64 4 237 1171
www.branz.co.nz

BRANZ Pty Ltd
P O Box 99
Collaroy
NSW 2097
Australia
Tel: +61 2 9972 9366
Fax: +61 2 9972 9322
www.branz.com.au

Product

- ***This Certificate relates to the Bildon 2000 Solid Timber Fascia System comprising timber fascia and barge board, metal fixing brackets, soakers and fastenings.***
- *The system is for use at the roof line of buildings which meet the scope of Clause 1.1.2 of NZS 3604.*
- *Installation of the system is carried out by fixers trained and registered with Total Fascia Ltd.*
- *The system must be used, installed and maintained in accordance with Total Fascia Ltd's technical information 'The Bildon 2000 Technical Manual', dated June 2003. This consists of drawing details, installation requirements and a brochure and is referenced throughout this Certificate as the 'Technical Information'.*



Fascia Bracket Connection

Building Regulations

1. New Zealand Building Code (NZBC)

In the opinion of BRANZ, the Bildon 2000 Solid Timber Fascia System, if used, installed and maintained in accordance with the statements and conditions of this Certificate, will meet, or contribute to meeting the following provisions of the NZBC:

Clause B1 STRUCTURE: Performance B1.3.1, B1.3.2 and B1.3.4 for the relevant physical conditions of B1.3.3. See Section 5.

Clause B2 DURABILITY: Performance B2.3.1(b), 15 years. See Section 6.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2. See Section 9.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. The system will not be harmful to people.

Product Information

2. Description

2.1 The Bildon 2000 Solid Timber Fascia System consists of pre-primed or pre-painted fascia and barge boards which are connected to framing using fascia and gable (barge) brackets of coil coated galvanised or stainless steel. Fascia and barge boards are supplied in 6 m lengths and are available in widths of 118, 135, 165 and 195 mm. The system includes the bracket screws and nails. It also includes continuity and ridge soakers and corner soakers to provide weather protection to fascia and barge board joints.

2.2 The fascia and barge boards are available with a profile, band sawn or classic surface finish. Pre-painted board is supplied in a range of colours.

2.3 The fascia bracket has a base tab which is configured to fit into a continuous trapezoidal shaped base groove at the bottom of the fascia board. Once the bracket is fitted to the rafter the base tab locks into the groove and the fascia is fixed from behind with stainless steel screws. The base tab groove is also used to accommodate the outer edge of the soffit lining. A tab at the top of the Bildon fascia bracket is bent over the top of the fascia board to allow the bracket to be nail fixed at the top. When using the 195 x 25 mm fascia board the top tab is used as an extra screw fixing to permit fixing to the back of the fascia board.

2.4 Once the fascia board is fixed in place, spouting may be fixed to it. Spouting has not been assessed and is outside the scope of this Certificate.

2.5 The gable bracket is designed to be screw fixed to the barge board and wrapped around and fixed to a flying rafter.

Components

2.6 Unless otherwise indicated components are supplied by Total Fascia Ltd.

2.7 The following components make up the system:

- Bildon 2000 fascia and barge boards manufactured from finger jointed 25 mm thick LOSP H3 treated Radiata pine timber.
- Stainless steel Grade 316 Bildon fascia and gable brackets.
- Galvanised steel Bildon fascia and gable brackets fabricated from 0.95 mm thick, Grade 250, Z275 galvanised coil.
- Stainless steel Grade 316 continuity joint, ridge joint and corner soakers (etch primed).
- Stainless steel Grade 316 - 3.0 x 20 mm screws for fixing Bildon fascia or gable brackets to fascia or gable boards.
- Stainless steel Grade 316 - 4.2 x 40 mm screws for fixing fascia boards together at corners and for fixing fascia and barge boards to back blocks at joints.
- Stainless steel Grade 316 - 2.8 x 30 mm clouts for side fixing Bildon fascia and gable brackets to roof framing.
- Stainless steel Grade 316 - 20 mm nails for fixing soakers in place over joints.
- Finishing Paints (not supplied) Pre-primed fascia and barge boards must be finished with a minimum of two coats of latex exterior paint system complying with any of Parts 7, 8, 9 or 10 of AS 3730.

3. Handling and Storage

3.1 The fascia and barge boards, brackets and soakers should be handled with care to avoid damage. In particular the painted timber surface of the fascia board and the galvanised bracket coating are more susceptible to damage.

3.2 Fascia and barge boards are supplied in wrapped pairs and in the short term must be stored in their wrapper under cover clear of the ground. For long term storage (12 months or more) they should be stored unwrapped under cover clear of the ground and filleted to allow air circulation. Brackets, fixings and other accessories must be stored so that they are kept clean, dry and undamaged.

Design Information

4. General

The Bildon 2000 Solid Timber Fascia System includes fascia and barge boards for light timber framed buildings which have been designed in accordance with NZS 3604 or to a specific design which meets the scope for buildings defined in Clause 1.1.2 of NZS 3604.

5. Structure

Substructure

5.1 Timber roof framing, in particular common rafters, outriggers and flying rafters, eaves bearers and roof truss chord members, must either comply with NZS 3604, or be to a specific design in accordance with NZS 3603 and NZS 4203.

Fixing Support

5.2 For fascia boards, roof framing members such as truss chords, rafters and eaves bearers must provide support for the fascia at maximum 1200 mm centres.

5.3 Barge boards must be fixed to a common rafter or a flying rafter supported by outriggers. Gable brackets must support the barge boards at maximum 900 mm centres. Cantilevered purlins must also not exceed this spacing.

5.4 The fascia system is not for fixing directly to wall framing.

Wind Loads

5.5 The Bildon 2000 Solid Timber Fascia System is suitable for use in all NZS 3604 Building Wind Zones up to and including Very High.

6. Durability

6.1 The Bildon 2000 Solid Timber Fascia System will have a serviceable life of at least 15 years, provided it is maintained in a weathertight condition.

6.2 The durability is dependent on the fascia or barge board moisture content being maintained at or below 18% to ensure the long term durability of the melamine urea formaldehyde finger joints.

6.3 When the system is installed in corrosive environments, stainless steel fascia and gable brackets must be used. In all other areas the galvanised steel fascia and gable brackets may be used. The stainless steel screw and nail fixings are for use in all areas as are stainless steel joiner and corner soaker plates. Corrosive environments are the Sea Spray Zone of coastal areas, areas of localised corrosive geothermal activity and corrosive industrial environments. The Sea Spray Zone is within 500 m of the coast and within 100 m of tidal estuaries and other areas as defined in Clause 4.2.3 of NZS 3604. Advice regarding the location of corrosive geothermal activity and corrosive industrial environments may be obtained from the local territorial authority.

6.4 Factory pre-painted fascia and barge board will have a similar durability to fascia board protected by a good quality exterior house paint that is applied on site.

6.5 For durability, the pre-primed board must be further painted with a minimum two coat paint system applied within 4 weeks of installation.

7. Maintenance

7.1 Checks must be made of the coating system and the soakers at least annually. Any cracked or damaged coating areas must have loose material removed, the area repaired and the exterior surface recoated with a three coat paint system (see 6.5). The ability of soakers to provide a weathertight seal to joints should also be assessed at this point and maintenance carried out as necessary to reinstate joint protection. All work must be carried out in accordance with the relevant manufacturer's instructions.
7.2 It is recommended that the exterior face of the system is painted at 5 to 8 year intervals to maintain appearance. This will normally be carried out at the same time as maintenance including painting of the building's external envelope.

8. Outbreak of Fire

Bildon fascia and barge boards together with associated framing must be protected or separated from sources of heat in accordance with the requirements of NZBC Acceptable Solution C/AS1 Part 9 for the protection of combustible materials.

9. External Moisture

To be weathertight the soffit lining must be tightly fitted into the fascia or barge board groove and all fascia and barge board joints must be covered by soakers. Where this is not possible, e.g. where the fascia board abuts the barge board, joints must be sealed using an appropriately detailed silicone sealant joint.

Installation Information

10. General

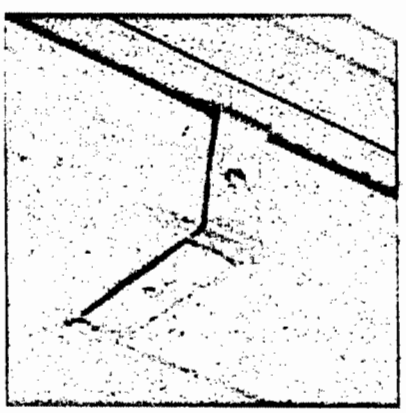
10.1 The Bildon 2000 Solid Timber Fascia System must be installed in accordance with this Certificate and the Technical Information.
10.2 Prior to installation, roof and eaves framing must be checked for adequacy. The variation in plan from the framing line that the fascia or barge board is fixed to must not be more than 10mm from a 1.8m straight edge.

Fascia

10.3 Roof framing members are plumb cut 10 mm short of the rear face of the intended fascia board line to allow the fascia to be supported clear of the rafter ends by the fascia brackets.
10.4 The soffit level at corners of the building is determined and corner fascia brackets fixed in place by nailing to the sides of rafters.
10.5 A string line is erected to establish the line and level for remaining fascia brackets which are then fixed to the side of rafters.
10.6 Fascia boards are cut to length and a protective coat of primer applied to all ends.
10.7 Fascia boards are then fitted to the base tab of the fascia brackets at 45 degrees and rotated up into the final vertical position. The top bracket tab of several brackets is bent over onto the top of the fascia board and nailed to hold the board in place, or used to provide an additional screw fixing to the back of the 195 mm board.
10.8 All fascia brackets are then fixed to the back face of the fascia board with 20 mm screws. The 195 mm board is fixed using three screws per bracket. Other fascia boards are fixed with two screws per bracket.
10.9 H3 treated back blocks of minimum size 25 x 250 x 130 mm are positioned at the back of each joint and screwed into place with eight 40 mm stainless steel screws. The joiner/soaker plates are then fixed over the front face of the joints.

Barge Boards

10.10 Barge boards are fixed to hanging rafters by means of Bildon gable brackets.
10.11 Barge boards are first cut to length and the ends are protected with a coat of primer paint.
10.12 The brackets are then screw fixed to the rear face of the barge boards at maximum 900 mm centres.
10.13 The boards are lifted into position and the gable brackets are bent around the flying rafter and fixed with one nail into the top and one nail into the bottom of the flying rafter. Finally a single 20 mm Grade 316 stainless steel screw fixes both legs of the bracket into the rear face of the flying rafter.
10.14. Soakers are then fixed over the front of the barge board joints.
10.15 Pre-primed fascia or barge boards are finished with a good quality exterior house paint system.



Gable Bracket Connection

Basis of Appraisal

The following is a summary of the technical investigations carried out:

11. Tests

11.1 Finger joint glue bond tests have been carried out on fascia and barge boards by Orica Adhesives and Resins, New Zealand.
11.2 Tests to verify the strength of the fascia bracket connection were carried out by Total Fascia Ltd under the supervision of BRANZ.

12. Investigations

12.1 Total Fascia Ltd's Technical Information 'The Bildon 2000 Solid Timber Fascia System', dated June 2003 has been examined by BRANZ and found to be satisfactory.
12.2 Site visits were carried out to assess the practicability of installation.
12.3 A durability opinion on components of the system has been provided by BRANZ experts.
12.4 The history of performance of LOSP H3 treated radiata pine framing timber has been taken into account.

13. Quality

13.1 The manufacture of the galvanised and stainless steel fascia and gable brackets has been examined by BRANZ, including methods used for quality control, and details obtained of the quality and composition of the materials used. These are considered to be satisfactory.
13.2 The quality of painted fascia and barge boards and painted brackets and soakers has been assessed and found to be satisfactory.
13.3 Total Fascia Ltd are responsible for the quality of product supplied.
13.4 Quality on site is the responsibility of Total Fascia Ltd's registered installers.

14. References

- AS/NZS 1491: 1996 Finger jointed structural timber.
- AS 3566: 2002 Self-drilling screws for the building and construction industries.
- AS 3730.7, 8, 9 and 10: 1992 Guide to the properties of paints for buildings.
- New Zealand Building Code Handbook and Approved Documents, Building Industry Authority, 1992
- NZS 3603: 1993 Timber structures standard.
- NZS 3604: 1999 Timber framed buildings.
- NZS 4203: 1992 Code of practice for general structural design and design loadings for buildings.
- The Building Regulations, up to and including, January 2002 Amendment.

NPDC Approved
26 JAN 2009

BRANZ
BUILDING ON KNOWLEDGE

In the opinion of BRANZ, the Bildon 2000 Solid Timber Fascia System is fit for purpose and will comply with the Building Code to the extent specified in this Certificate provided it is used, installed and maintained as set out in this Certificate.

The Appraisal Certificate is issued only to the Certificate Holder, Total Fascia Ltd, and is valid until further notice, subject to the Conditions of Certification.

Conditions of Certification

1. This Certificate:
a) relates only to the product as described herein;
b) must be read, considered and used in full together with the technical literature;
c) does not address any Legislation, Regulations, Codes or Standards, not specifically named herein;
d) is copyright of BRANZ.
2. The Certificate Holder:
a) continues to have the product reviewed by BRANZ;
b) shall notify BRANZ of any changes in product specification or quality assurance measures prior to the product being marketed;
c) abides by the BRANZ Appraisals Services Terms and Conditions.
3. The product and the manufacture are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ.
4. BRANZ makes no representation as to:
a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
b) the presence or absence of any patent or similar rights subsisting in the product or any other product;
c) any guarantee or warranty offered by the Certificate Holder.
5. Any reference in this Certificate to any other publication shall be read as a reference to the version of the publication specified in this Certificate.

For BRANZ

G M Lawrance

M E Reed

Date of issue: 31 July 2003

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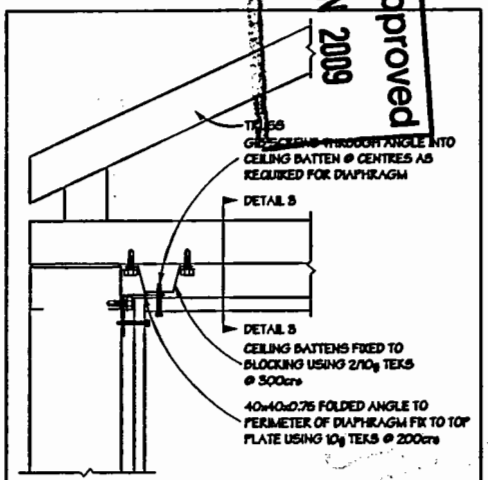
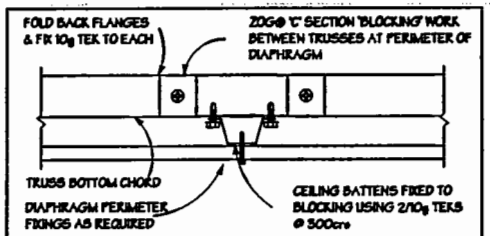
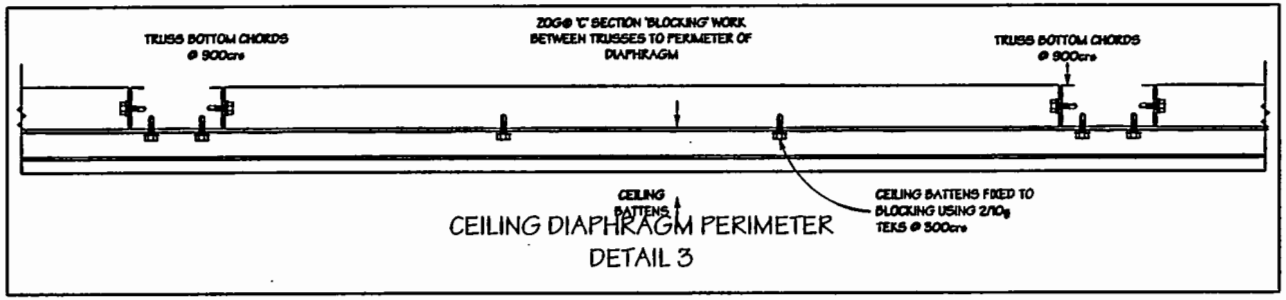


CEILING DIAPHRAGM PERIMETER
FIXINGS TO EXTERNAL WALL
DETAIL 1



CEILING DIAPHRAGM PERIMETER
FIXINGS TO INTERNAL POSITION
DETAIL 2



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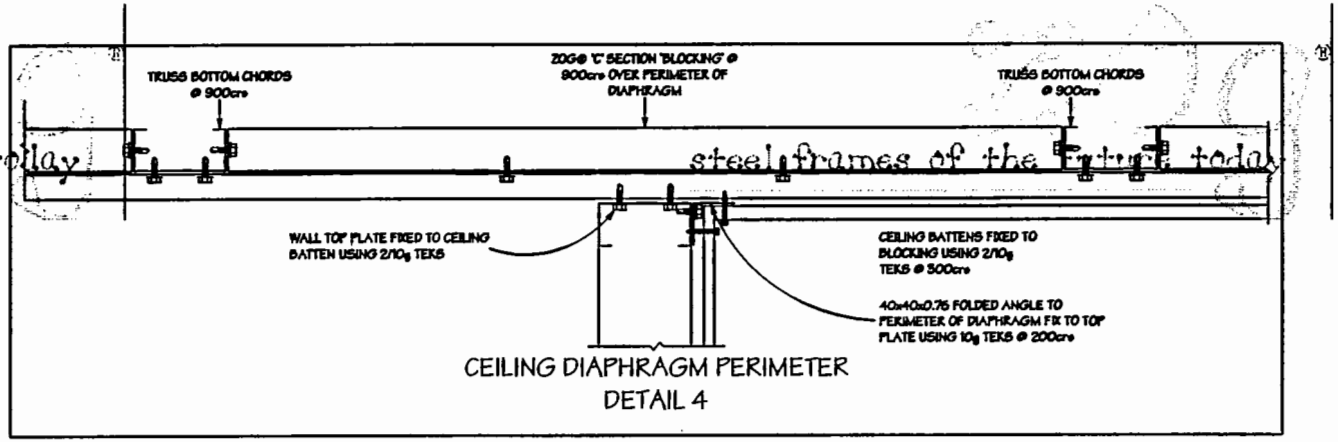

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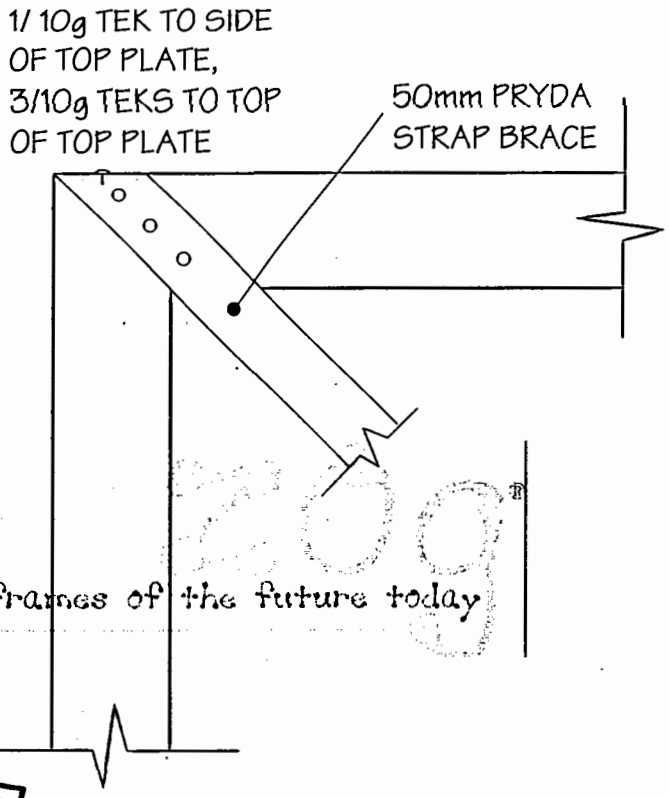
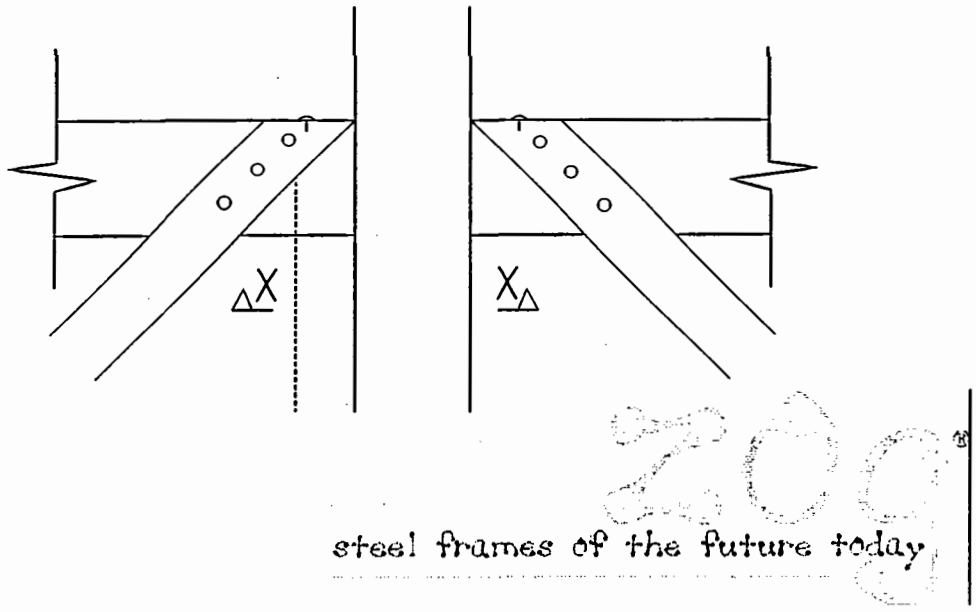
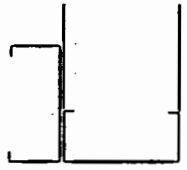
DETAIL 4





FIX ADDITIONAL CHANNEL TO
SIDE OF TRUSS BTM PLATE
@ 600c/c USING 10g TEKS



X - X

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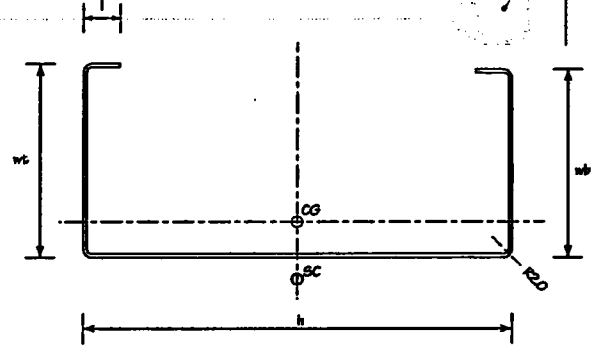
Name		55975
Grade		G550
Coating		AZ150
Yield Stress	Mpa	550
Tensile Strength	Mpa	550
Height	mm	89.0
Width Top	mm	39.0
Width Bottom	mm	39.0
Thickness	mm	0.75
Lip Top	mm	10.1
Feed	mm	152.0
Area	mm2	136.5
Mass	kg	1.072
Second Moment of Area Ix	mm4	174103
Second Moment of Area Iy	mm4	29996
Radius of Gyration rx	mm	35.7
Radius of Gyration ry	mm	14.8
Centroid Position x	mm	12.6
Centroid Position y	mm	44.0
Shear Centre xo	mm	33.2
Shear Centre yo	mm	0.0
Polar Radius of Gyration ro	mm	43.6
Torsion Constant J	mm4	25.6
Warping Constant Iw	mm6	46912422
Sectional Modulus Zxt	mm3	3957
Sectional Modulus Zxb	mm3	3869
Sectional Modulus Zyt	mm3	2381
Sectional Modulus Zyb	mm3	1056



All Calculations to AS/NZS 4600:1900

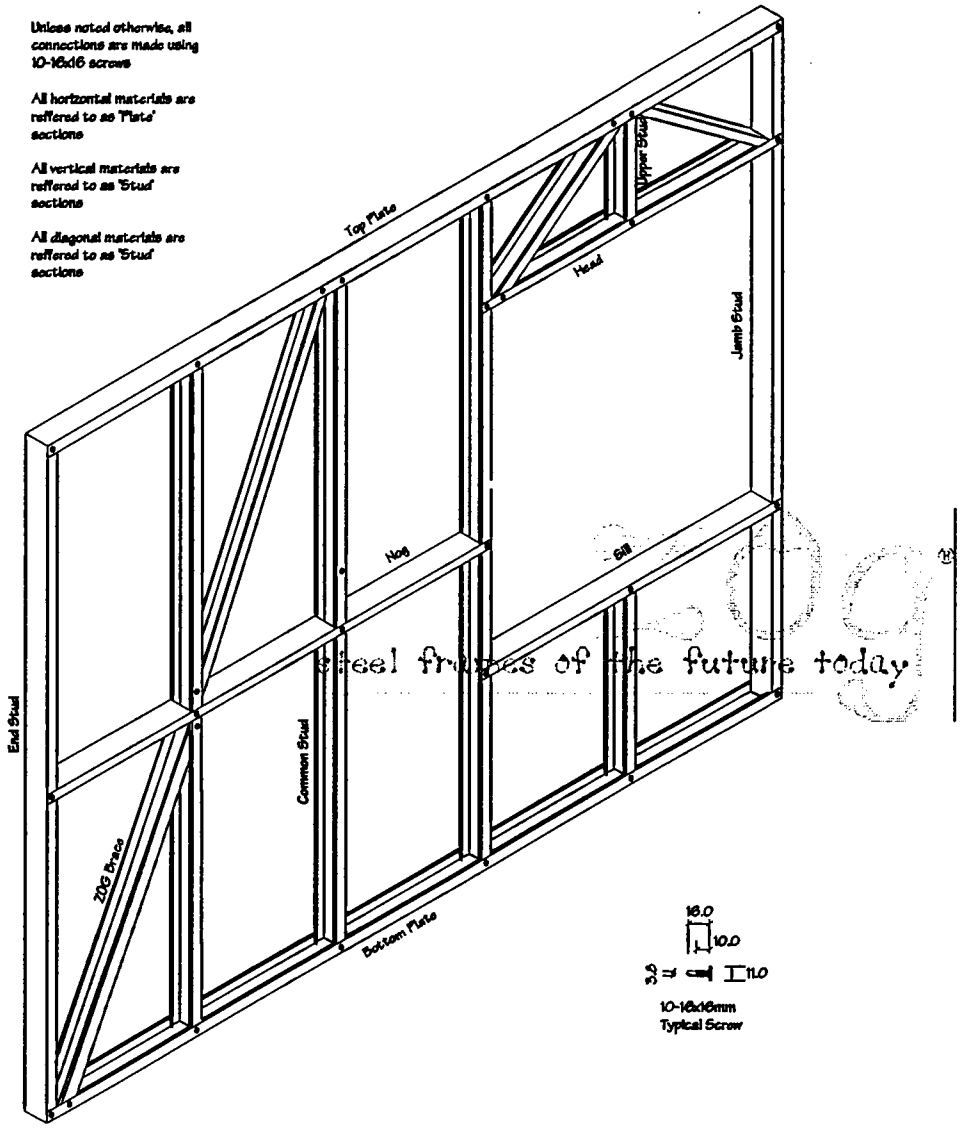
ZOG LIPPED C SECTION PROPERTIES

Unless noted otherwise, all connections are made using 10-16x16 screws

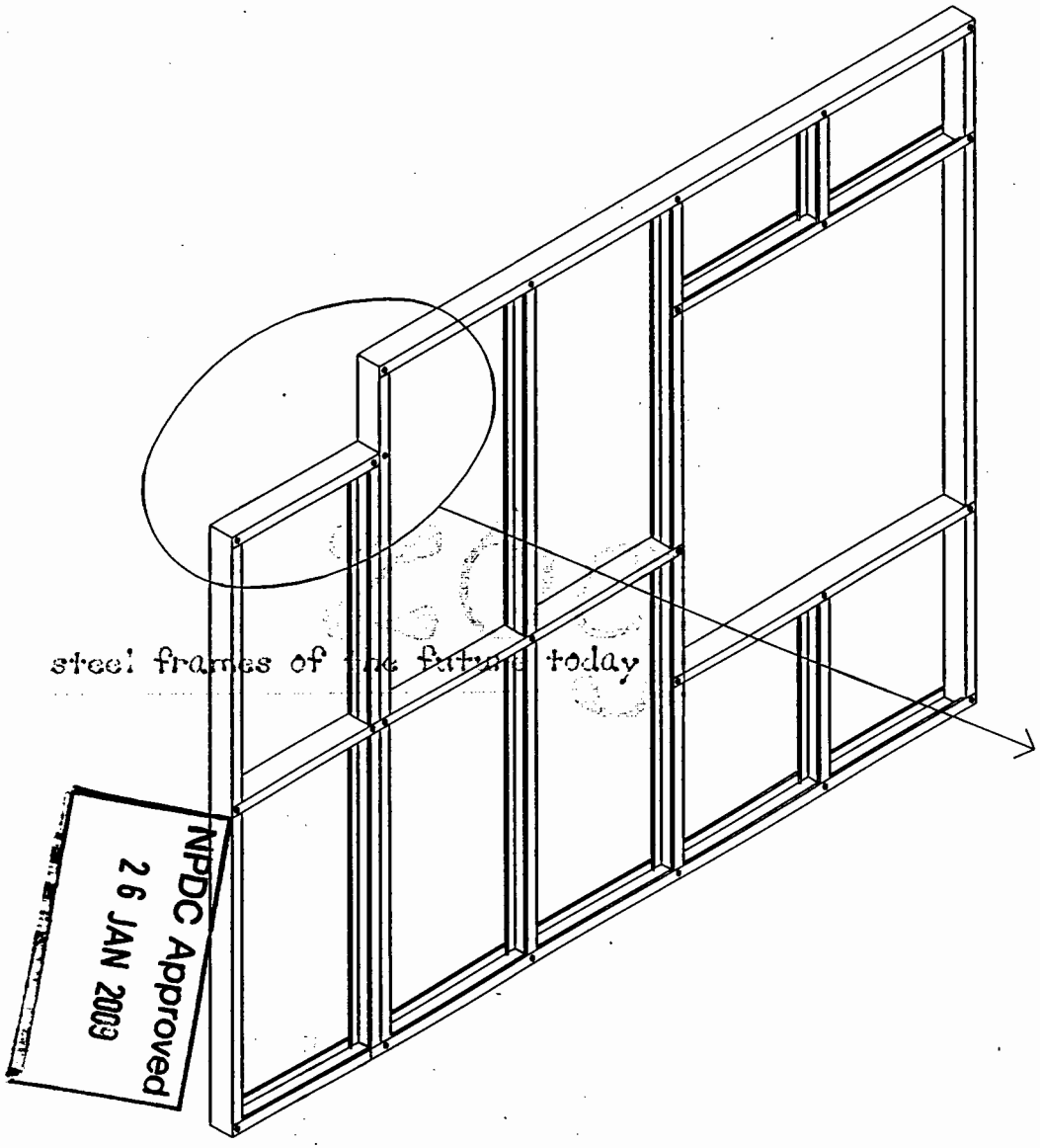
All horizontal materials are reffered to as 'Plate' sections

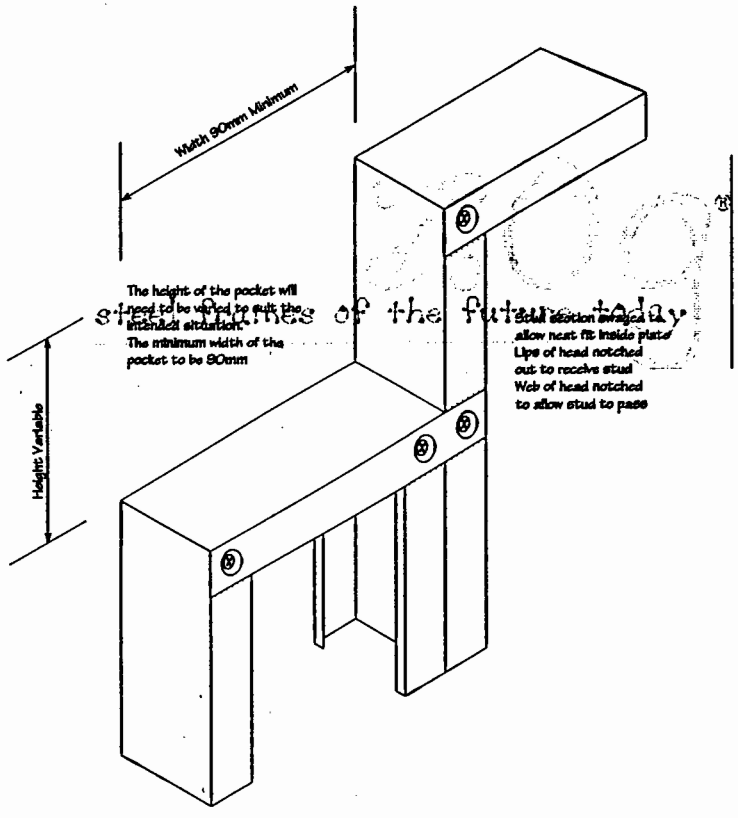
All vertical materials are reffered to as 'Stud' sections

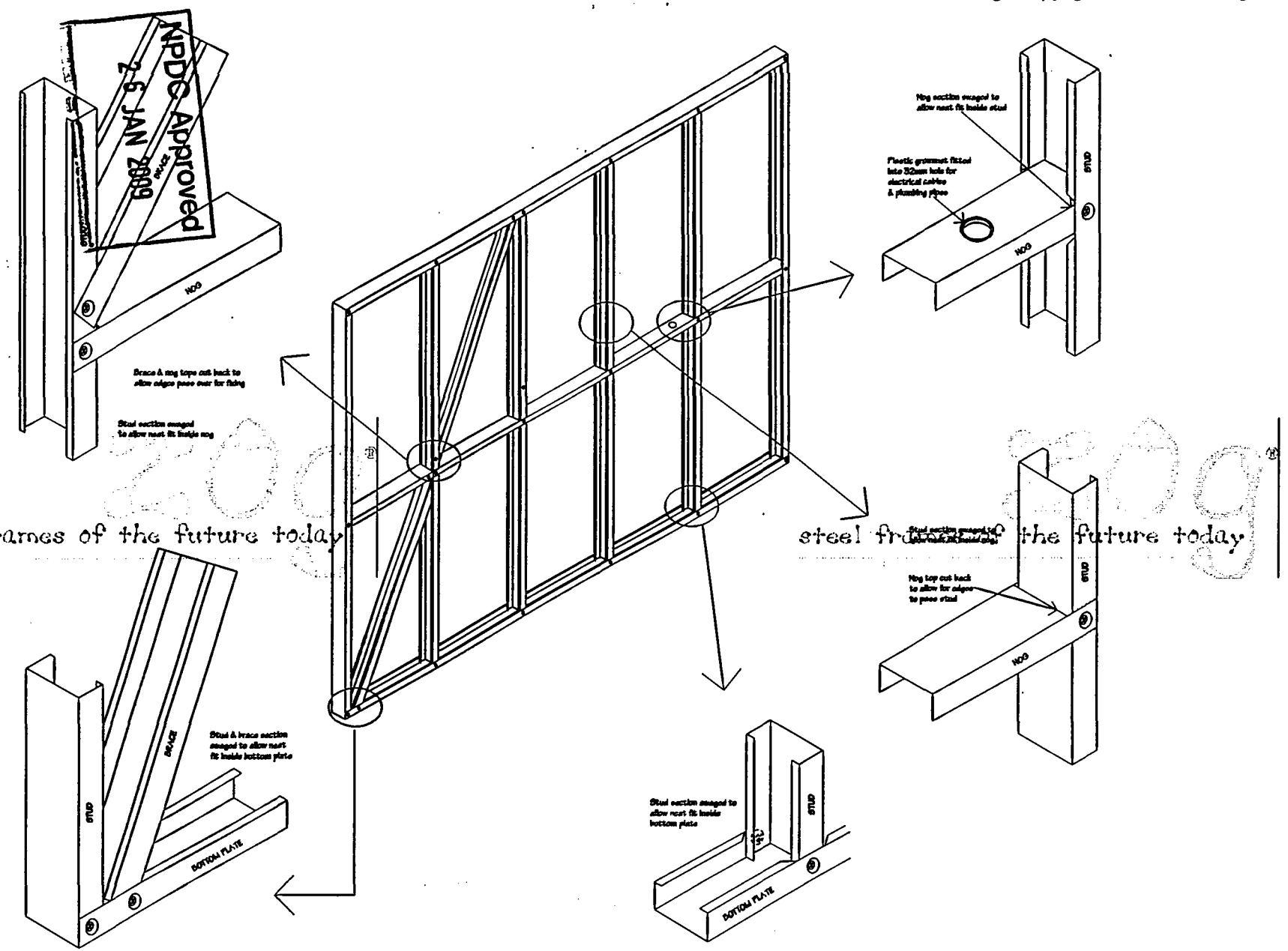
All diagonal materials are reffered to as 'Stud' sections



10-16x16mm
Typical Screw



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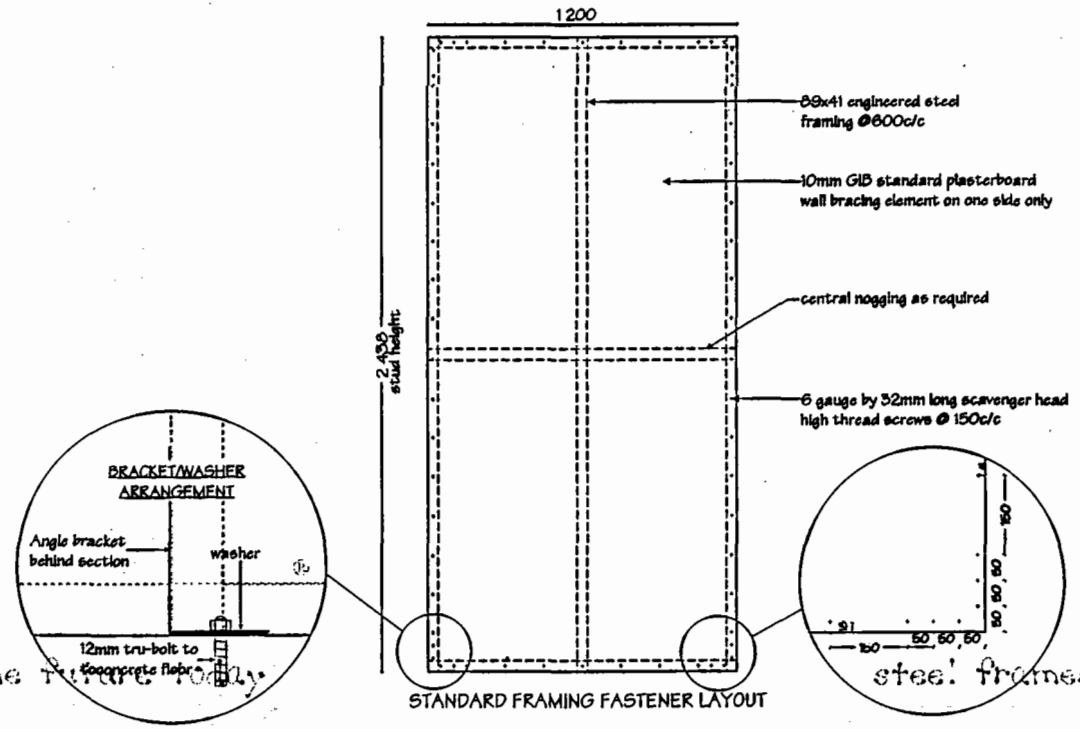
NOG
Brace & nog tape cut back to allow edges pass over for fixing
Stud section swaged to allow nest fit inside nog
Nog section swaged to allow nest fit inside stud
Plastic grommet fitted into 32mm hole for electrical cables & plumbing pipes
STUD
NOG
Nog top cut back to allow for edges to pass stud
STUD
NOG
Stud & brace section swaged to allow nest fit inside bottom plate
STUD
BRACE
BOTTOM PLATE
Stud section swaged to allow nest fit inside bottom plate
STUD
BOTTOM PLATE



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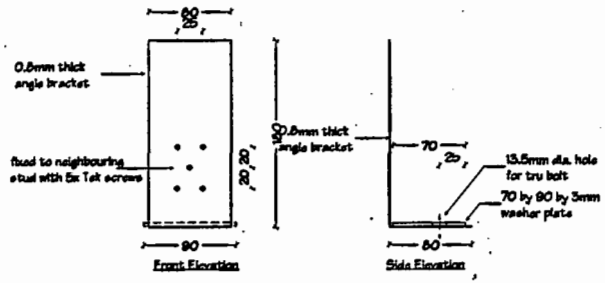
DETAILS OF STEEL FRAME AND GS1S FASTENER LAYOUT



ANGLE BRACKET

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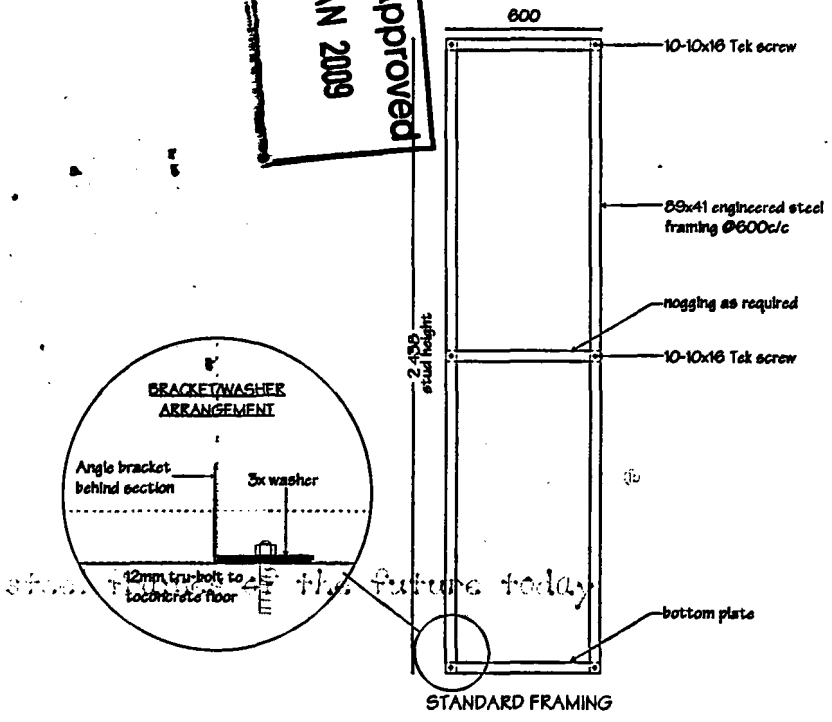
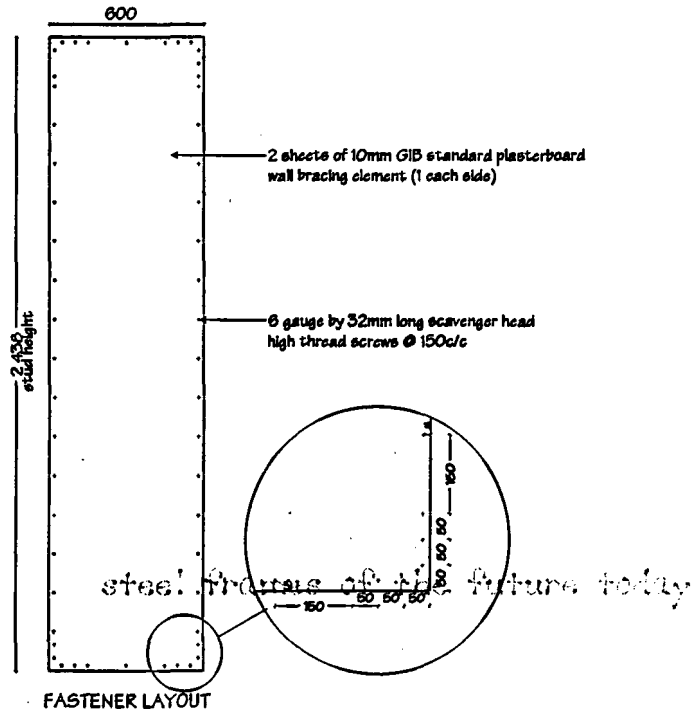
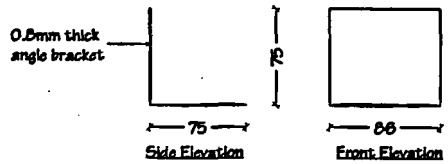




DETAILS OF STEEL FRAME AND GS2S FASTENER LAYOUT



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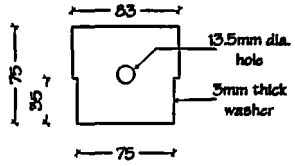
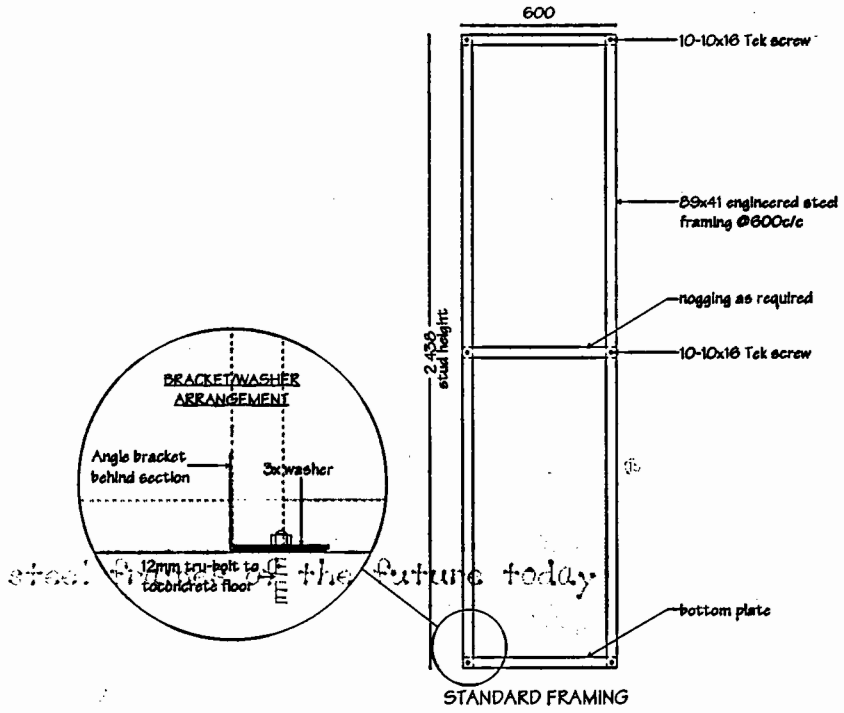
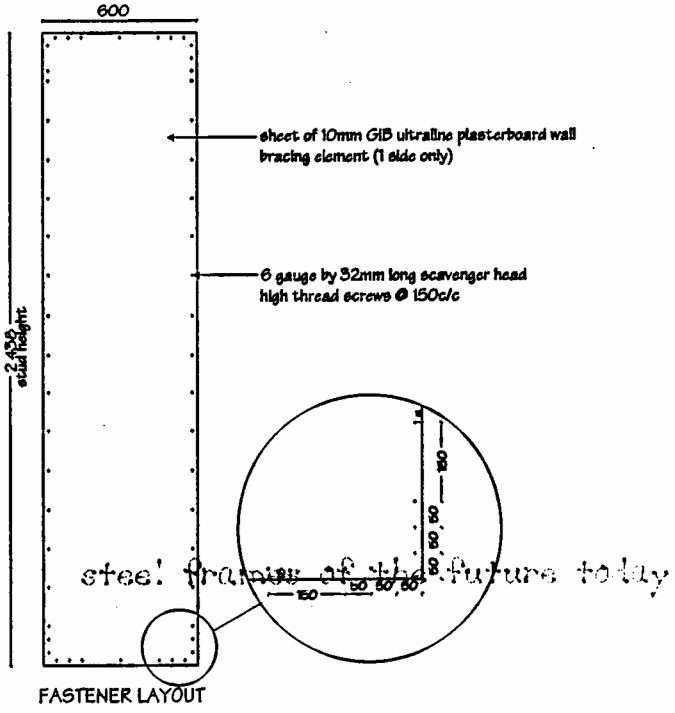


WASHER



STANDARD FRAMING



FASTENER LAYOUT

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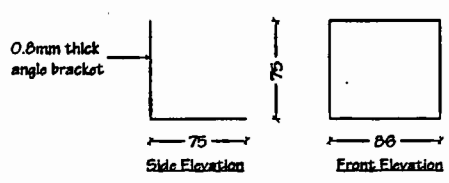
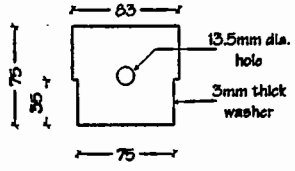
DETAILS OF STEEL FRAME AND GB1S FASTENER LAYOUT



ANGLE BRACKET



WASHER

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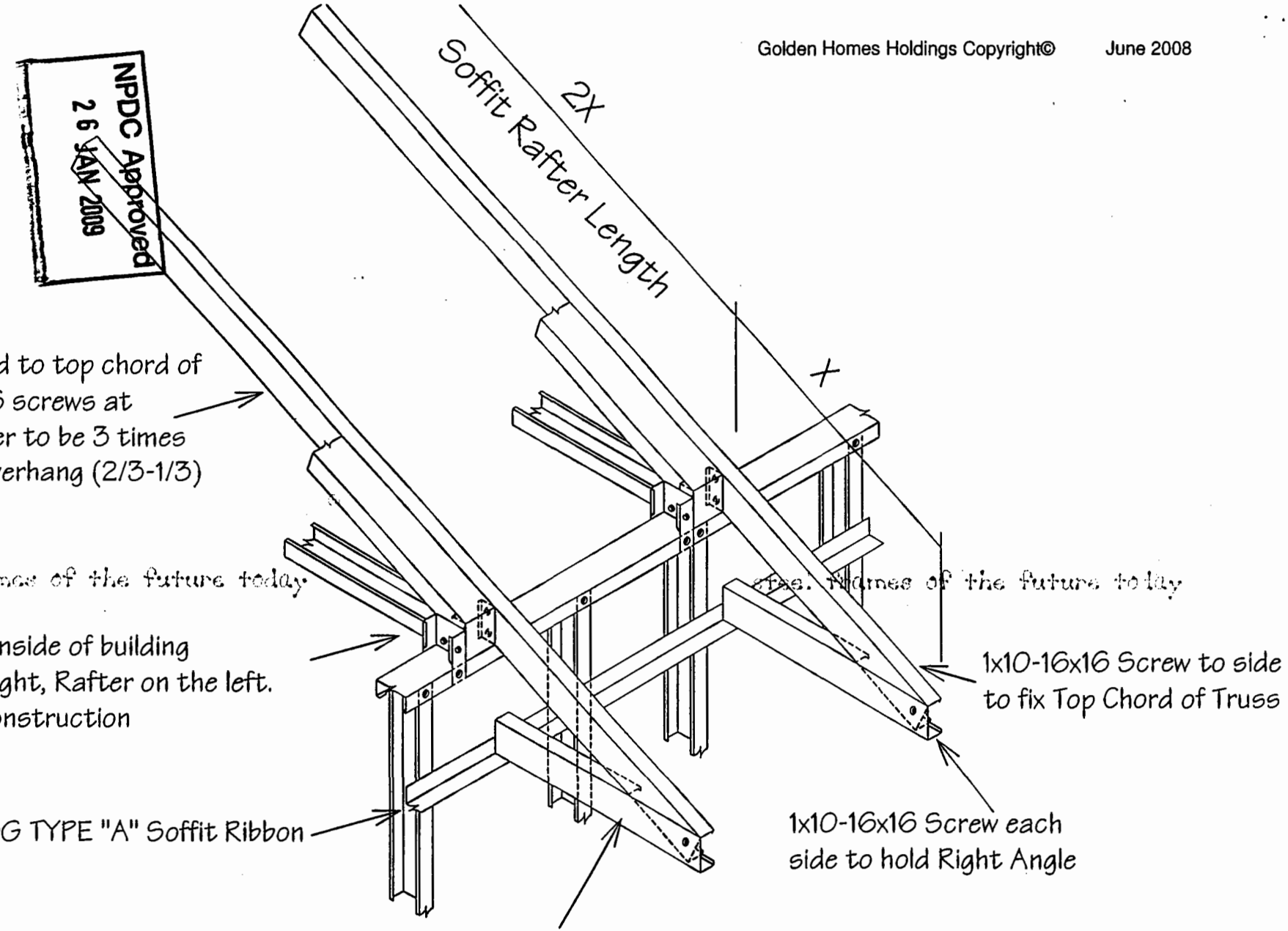


ZOG Lipped "C" fixed to top chord of truss with 10-16x16 screws at 300mm ctrs. Rafter to be 3 times the length of the overhang (2/3-1/3)

Viewed from the inside of building
ZOG Braket on right, Rafter on the left.
To ease fascia construction

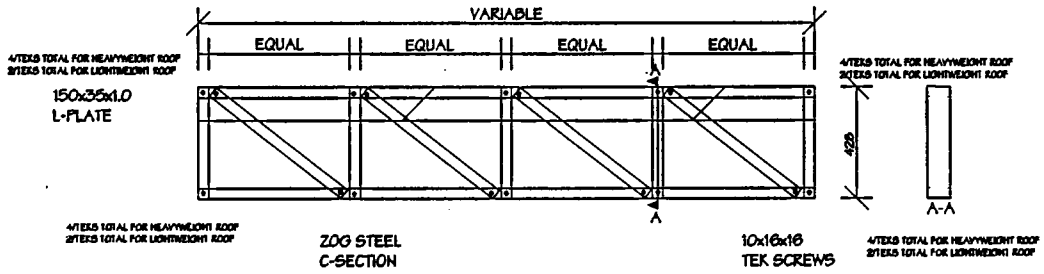
1x10-16x16 Screw to side to fix Top Chord of Truss

ZOG TYPE "A" Soffit Ribbon

1x10-16x16 Screw each side to hold Right Angle

ZOG Lipped "C" Soffit Bearer notched on site to allow rafter fixing

Patent No. 561859.



TYPE 1 LINTEL
SCALE 1:20

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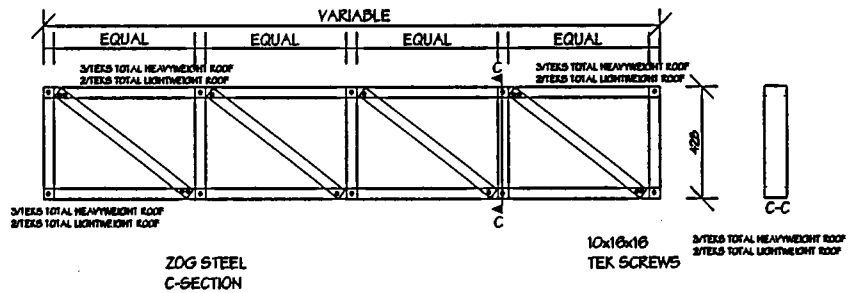

TYPE 3 LINTEL
SCALE 1:20

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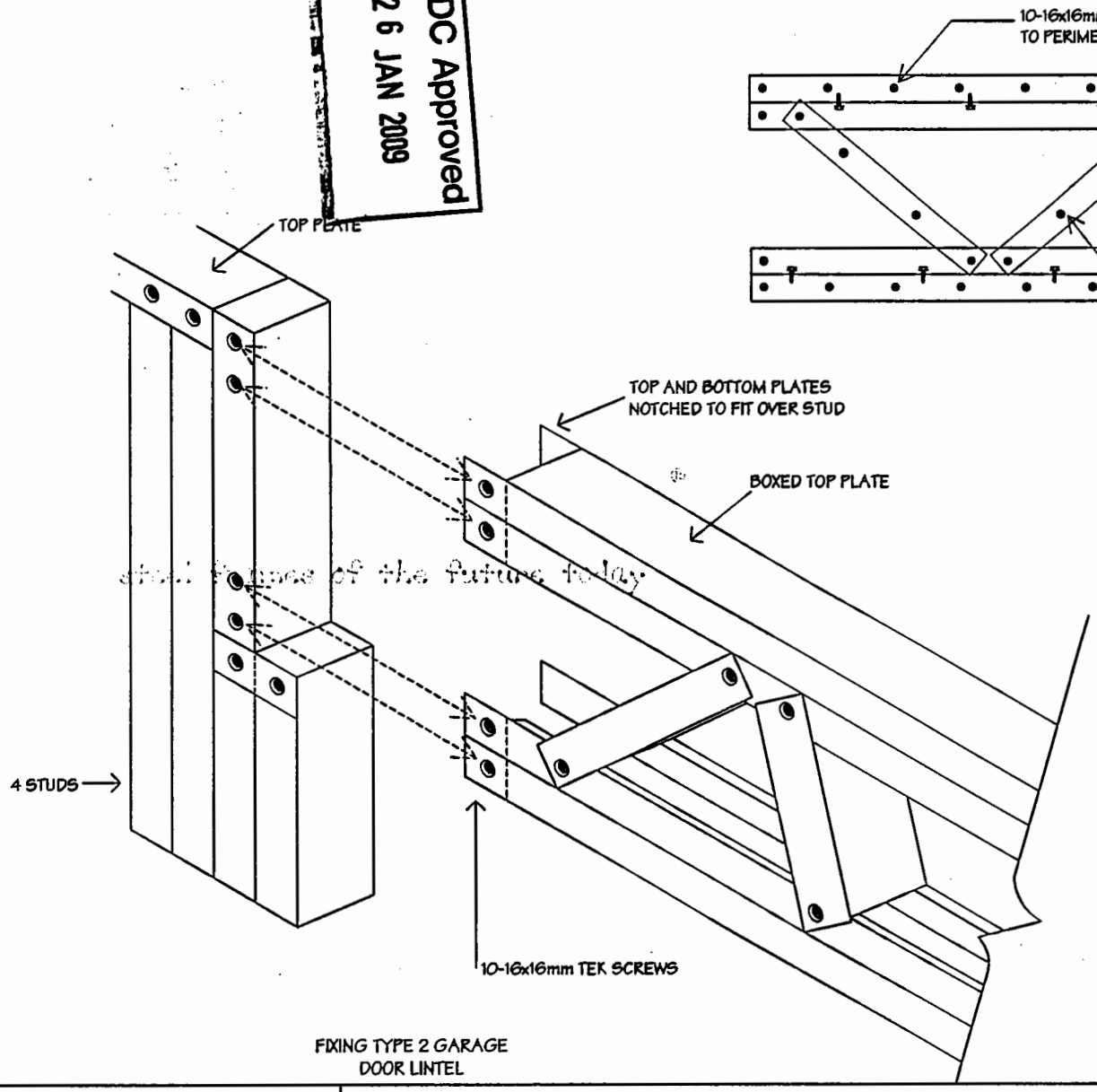
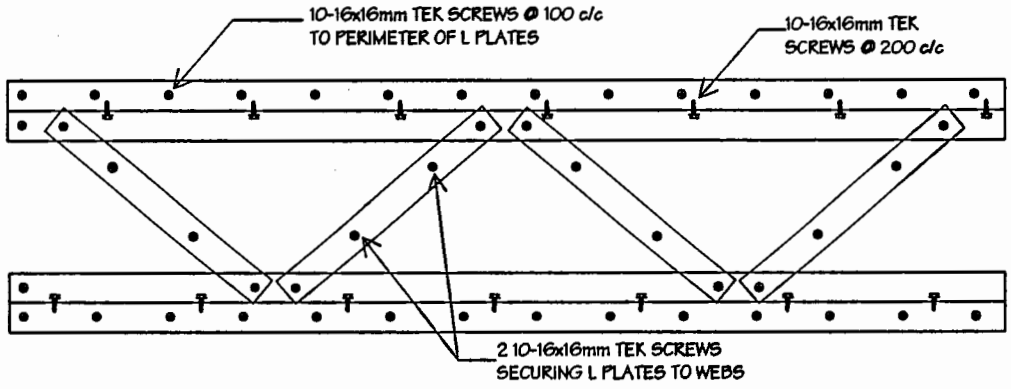
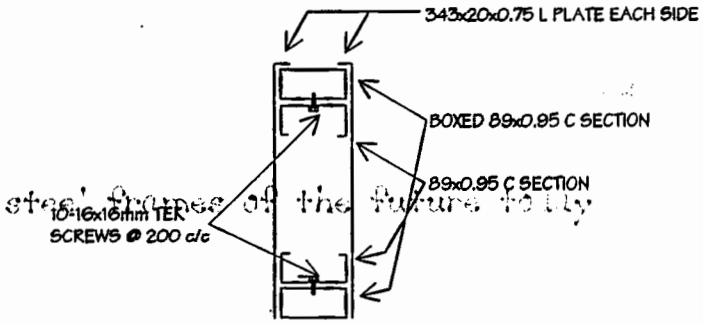
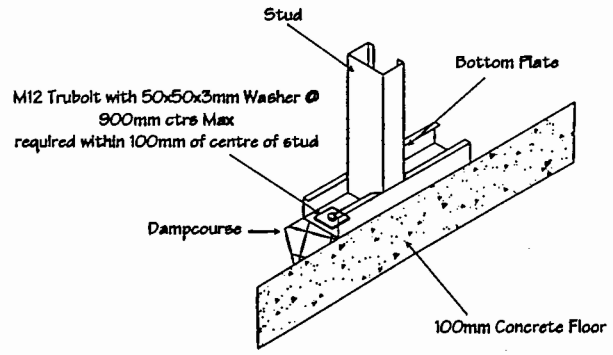
26 JAN 2009







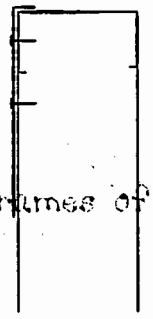
FIXING TYPE 2 GARAGE
DOOR LINTEL



BOTTOM PLATE FIXING TO EXTERNAL WALLS

PROVIDE 160x20x0.75
ANGLE TOP PLATE STRENGTHENER
TO ALL LOAD BEARING WALLS

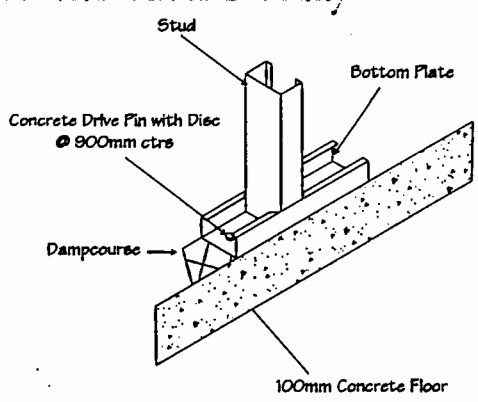
10g TEKS



TOP PLATE STRENGTHENER
REQUIRED FOR:
- CONCRETE TILE
- SNOW
- VERY HIGH WIND

steel frames of the future today

steel frames of the future today



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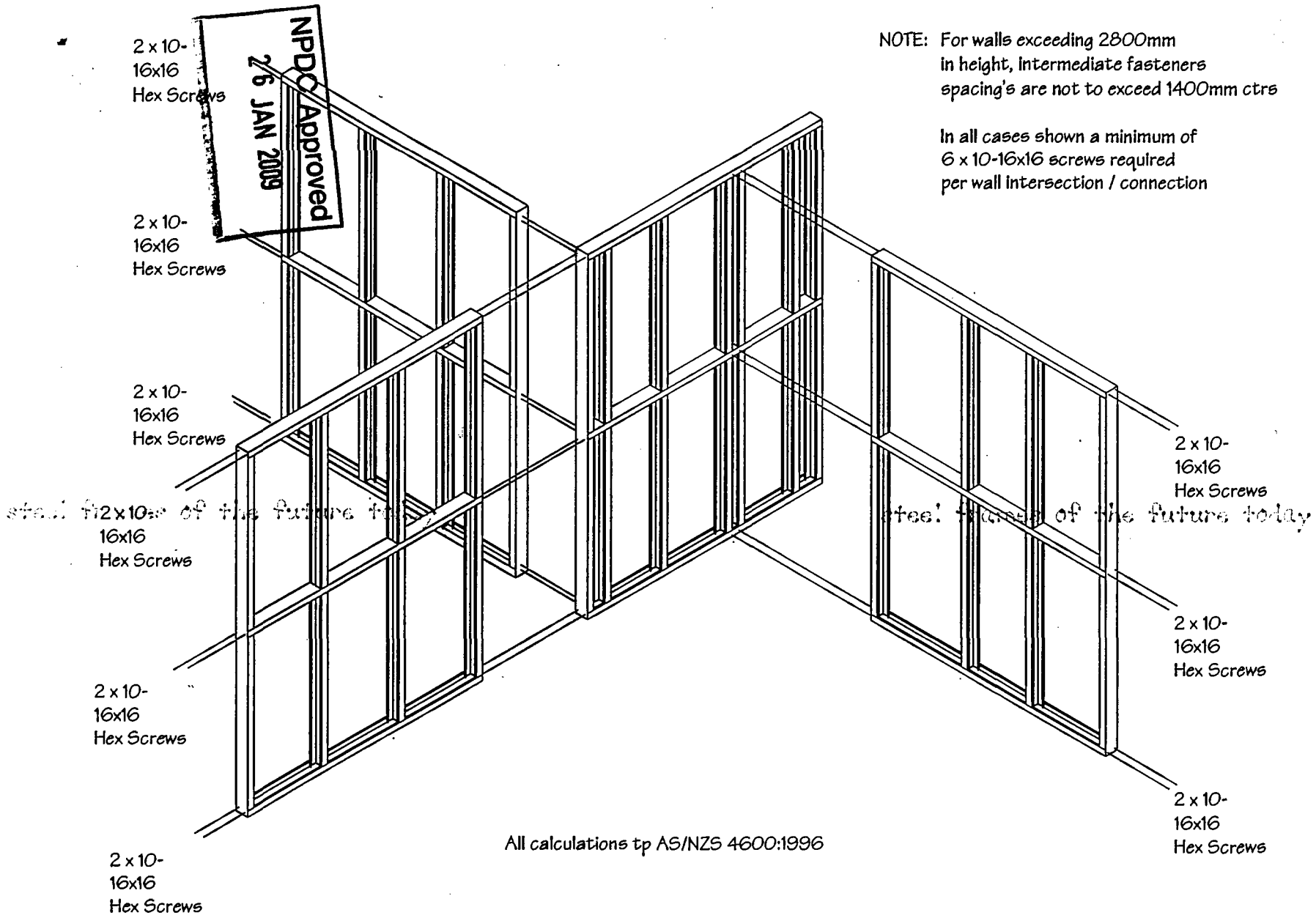
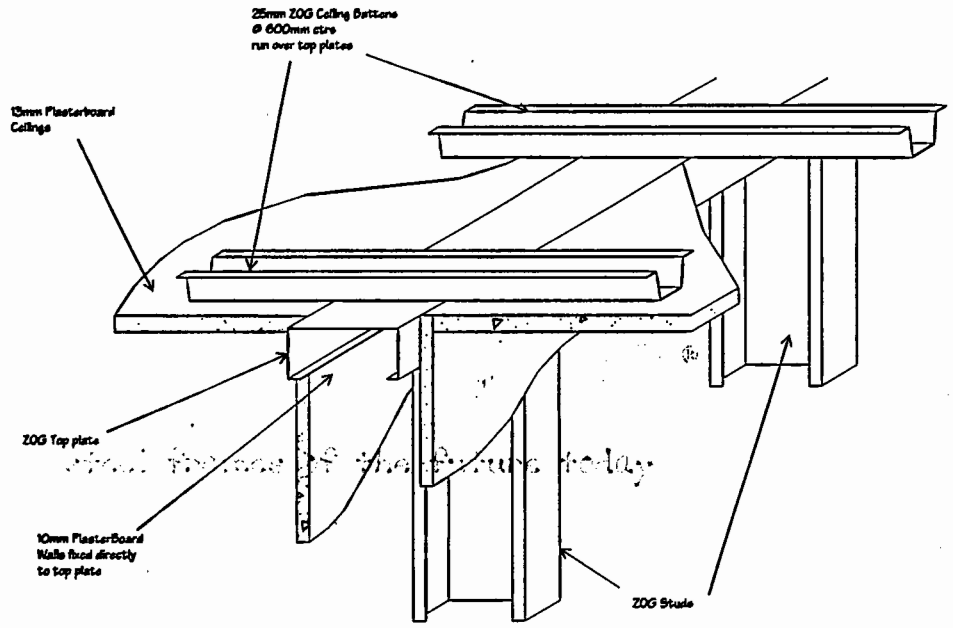
BOTTOM PLATE FIXING TO INTERNAL WALLS

NOTE: For walls exceeding 2800mm in height, intermediate fasteners spacing's are not to exceed 1400mm ctrs

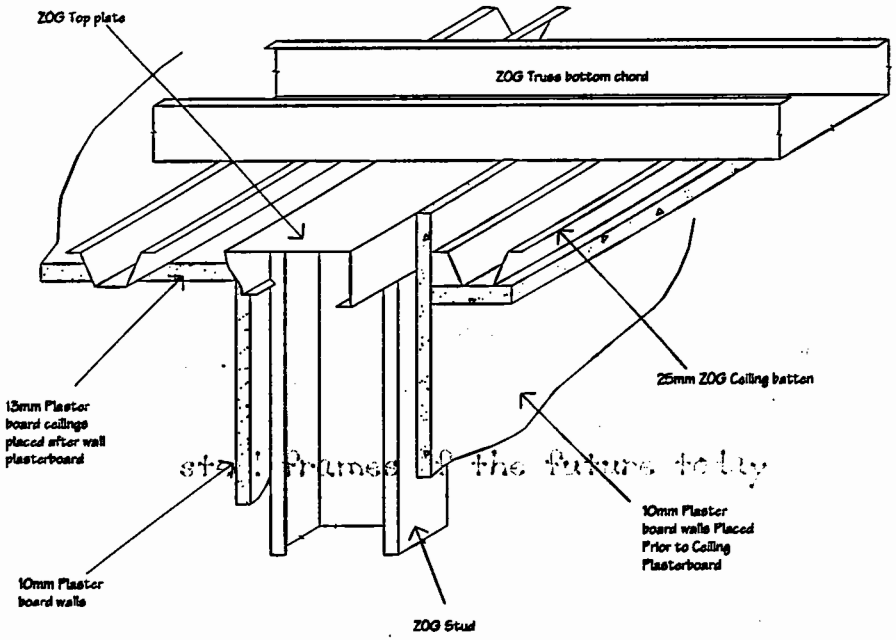
In all cases shown a minimum of 6 x 10-16x16 screws required per wall intersection / connection



All calculations tp AS/NZS 4600:1996



NON LOAD BEARING TOP PLATE



LOAD BEARING TOP PLATE

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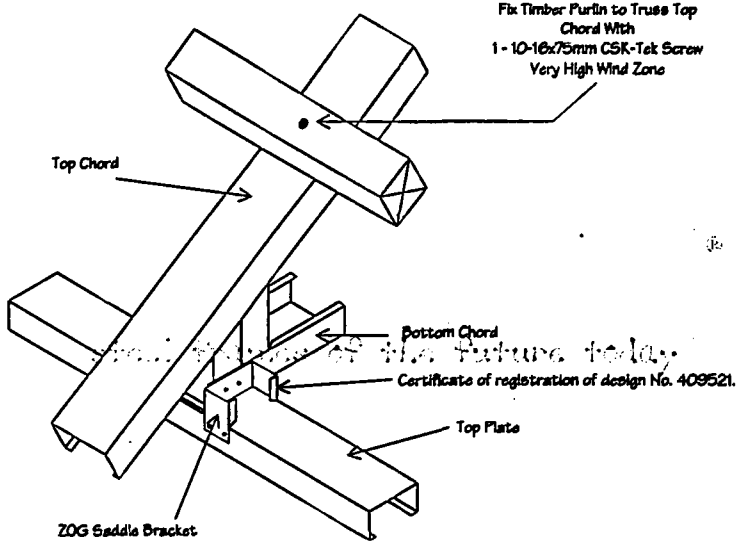
ZOG Saddle Bracket to Truss Chord or Top Plate				
Screw Quantity per Face	One ZOG Saddle Bracket		Two ZOG Saddle Brackets	
	10-16x16	12-14x20	10-16x16	12-14x20
2	5.00	7.00	10.00	14.00
3	7.50	10.50	15.00	21.00
4	10.00	14.00	20.00	28.00

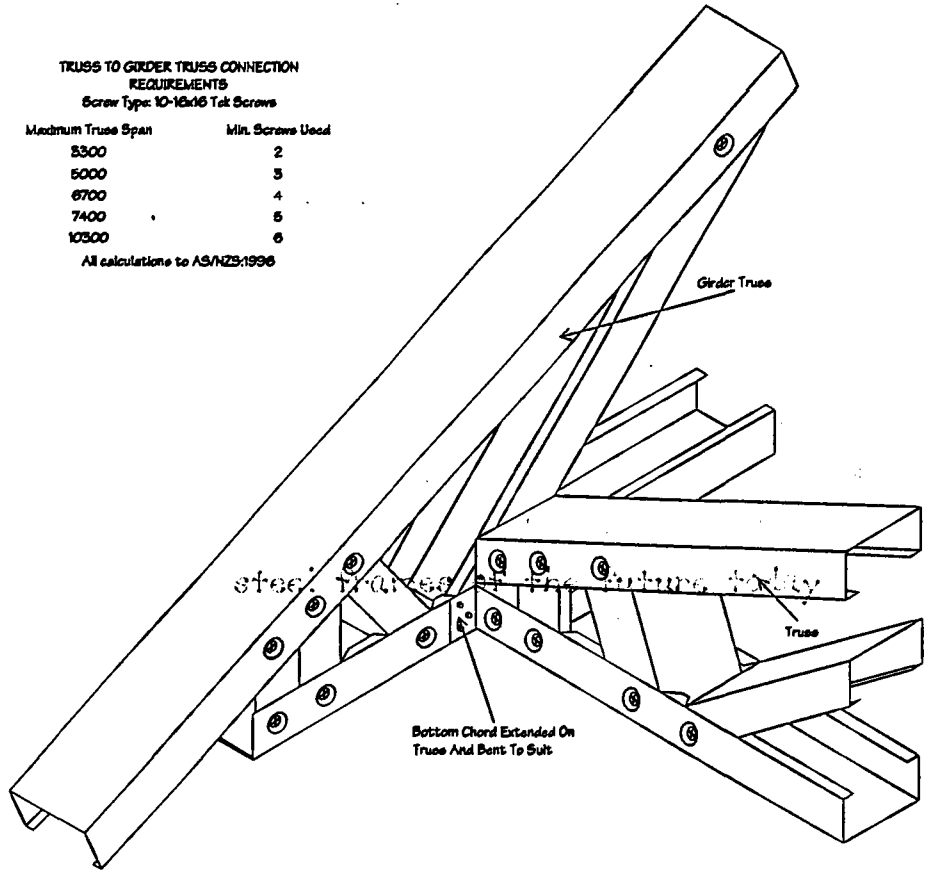


TRUSS TO TOP PLATE CONNECTION
All Calculations to AS/NZS 4600:1996

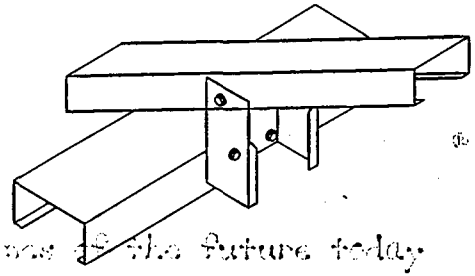
TRUSS TO GIRDER TRUSS CONNECTION
REQUIREMENTS
Screw Type: 10-16x16 Tek Screws

Maximum Truss Span	Min. Screws Used
3300	2
5000	3
6700	4
7400	5
10300	6

All calculations to AS/NZS:1996



TRUSS TO GIRDER TRUSS CONNECTION



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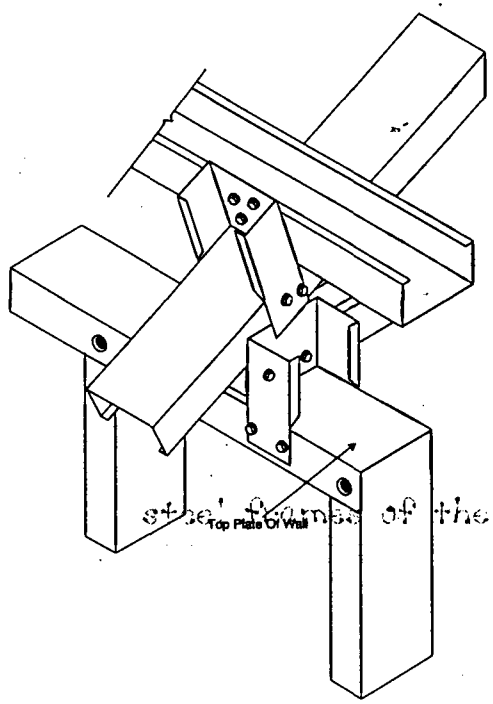
RAFTER TO TRUSS



steel frames of the future today

VALLEY TRUSS TO TRUSS

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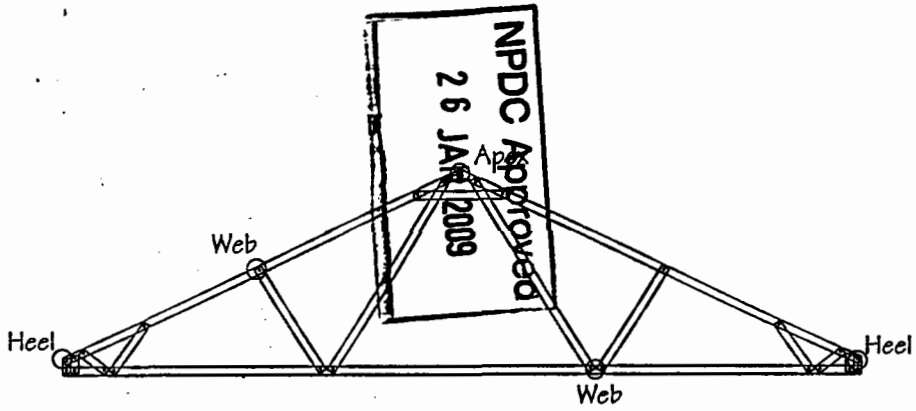
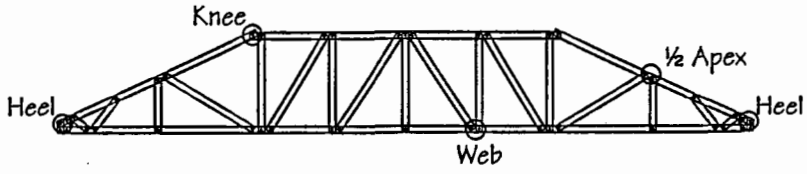
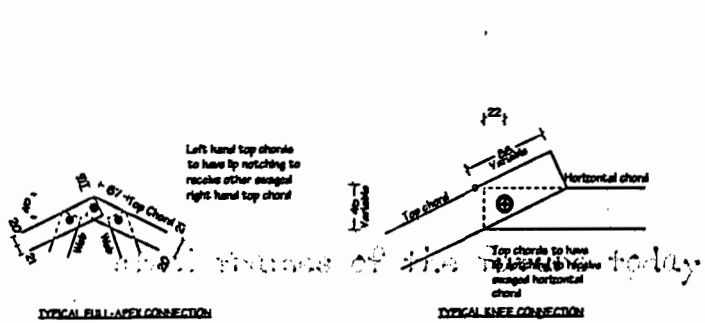


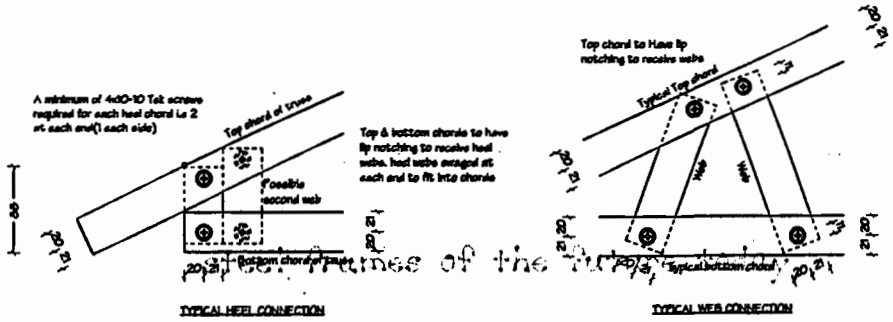




TYPICAL FULL-APEX CONNECTION

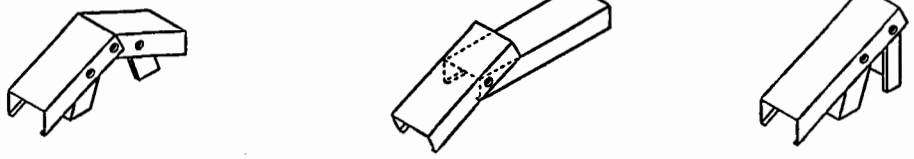
TYPICAL KNEE CONNECTION

TYPICAL HALF-APEX CONNECTION



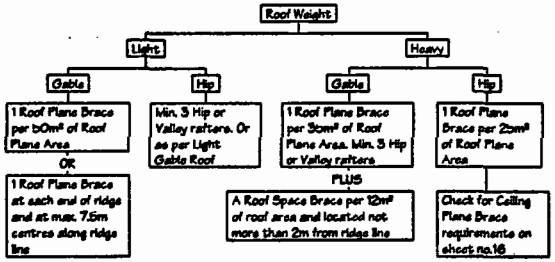
TYPICAL HEEL CONNECTION

TYPICAL WEB CONNECTION

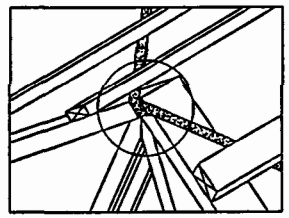


Roof Plane & Roof Space Brace Requirements Flow Chart

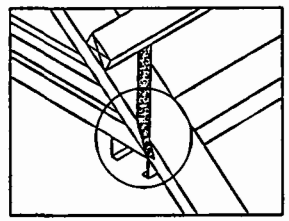
Covers roof bracing requirements to resist horizontal loads as set out in NZS 3604:1999 Section 10/NASH 3405:2006 Section 10.4



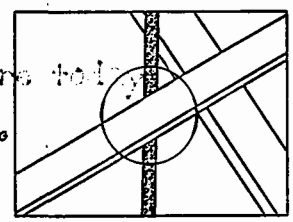
5 of 10x16-16 TEK SCREWS EACH END



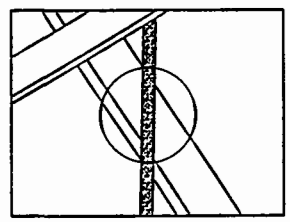
5 of 10x16-16 TEK SCREWS EACH END



1 of 10x16-16 TEK SCREWS AT CROSSING



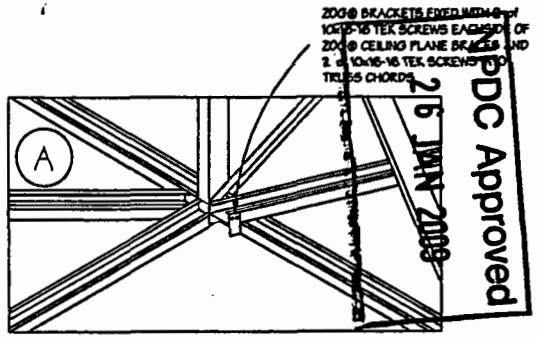
WHEN PURLIN DEPTH IS 50mm OR LESS, STRIP BRACE CAN BE INSTALLED OVER THE TOP OF PURLINS



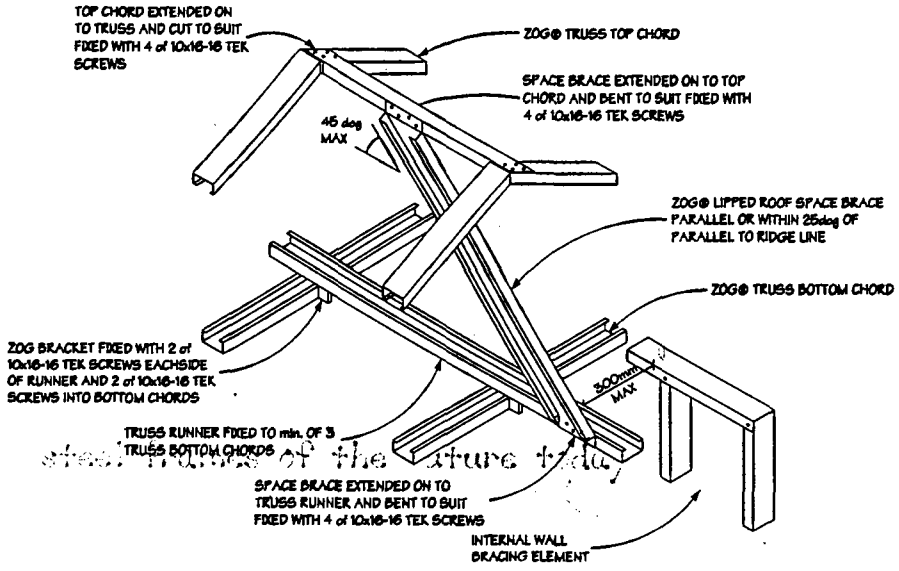
Roof Bracing - Rules & Definitions

The bracing described in this brochure covers both framed roofs and fully trussed roofs.
Roof plane areas less than 6m (e.g. dormers & porches) do not require bracing.
The definition of a hip roof is one having a sloping roof on part of all sides rafting over the exterior walls.
The definition of a gable roof is one having at least one vertical face above an exterior wall.
Roof plane area is the actual area of the roof normal to the slope and can exclude the overhang section but not the verge overhangs.
A hip or valley rafter running clear from plate to top plate can be classed as one roof plane brace.
A crossed row of 25mm Pryda Strip Brace (referred for ease of installation) can be classed as one roof plane brace and shall be installed as detailed in this brochure.
A hip or valley rafter used as a roof plane brace can be considered to act in both directions of the respective roof planes that they close.

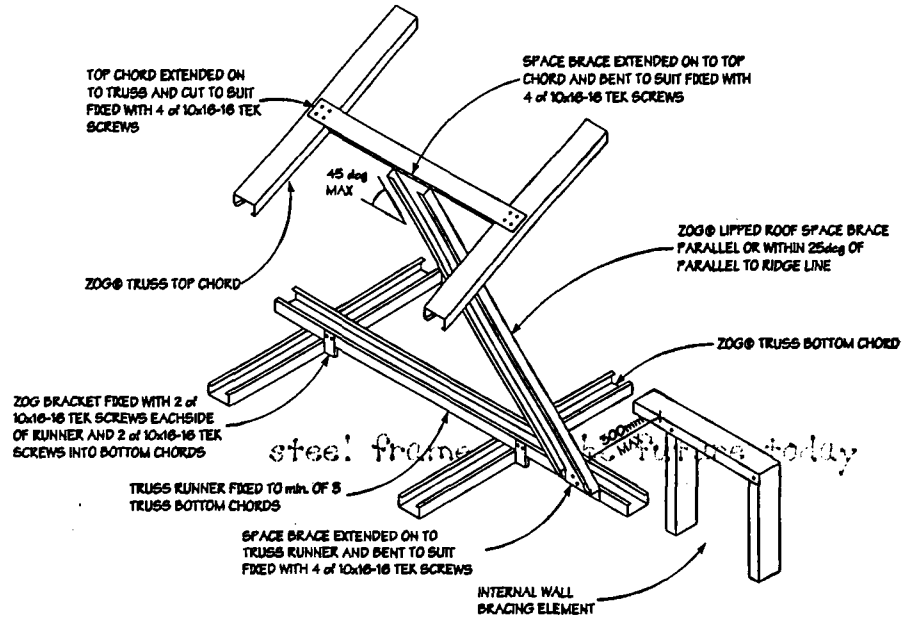
SINGLE TENSIONED CROSSED 25mm Pryda Strip Brace OVER TOP CHORDS/RAFTERS



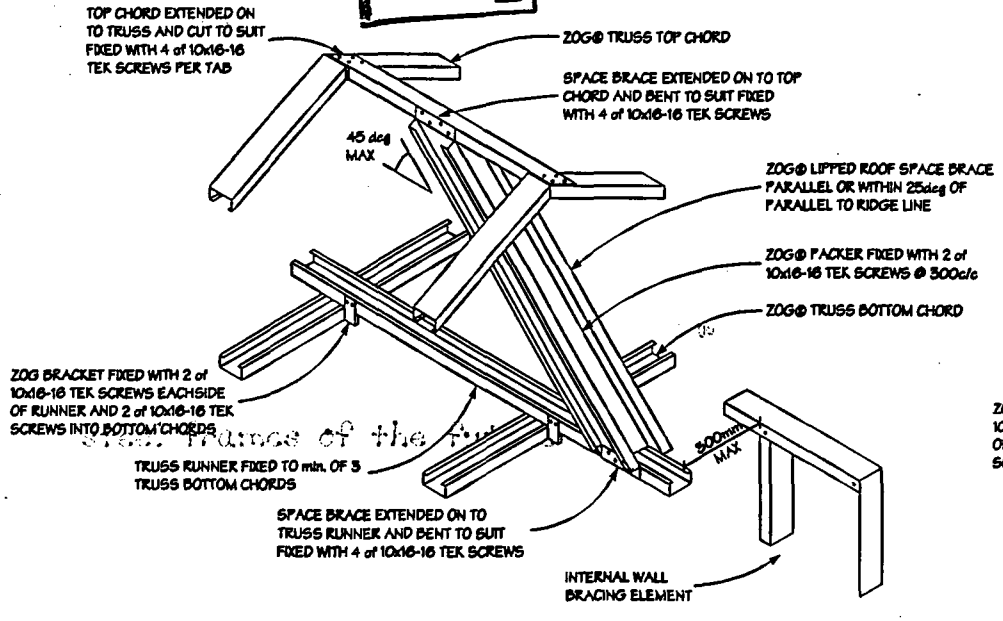
- Ceiling plane braces are required on HEAVY HIP roofs.
- Ceiling plane braces are not required where ceiling diaphragms complying with NZS 3604:1999, Clause 13.b are used and the top plate is on the boundary of that diaphragm.
- Ceiling plane braces are not required on top plates where rafter trusses or jack trusses are installed at 1200mm crs.



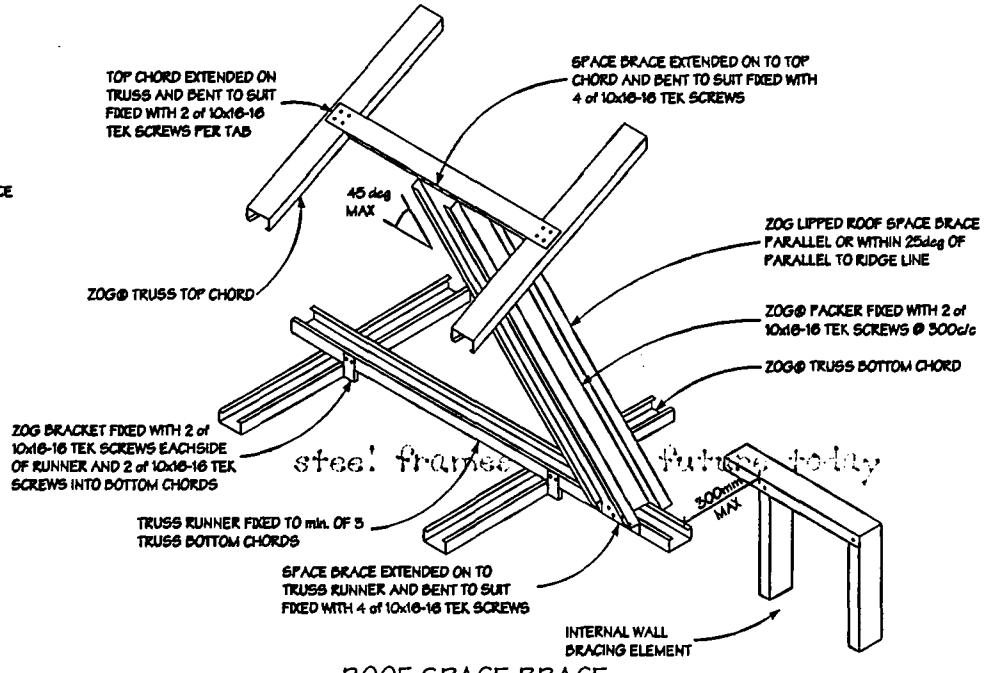
ROOF SPACE
BRACE
less than 2m long



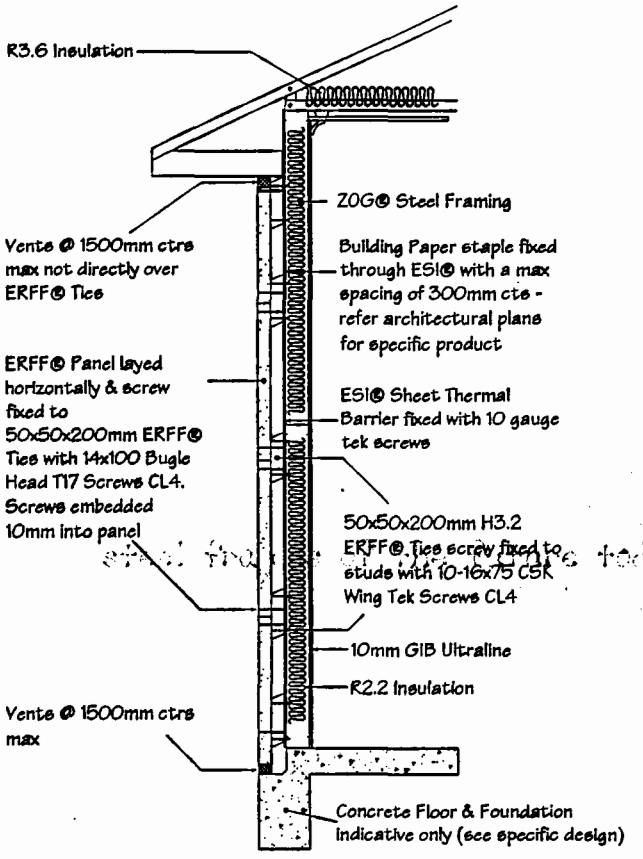
ROOF SPACE BRACE
not directly under ridge
less than 2m long



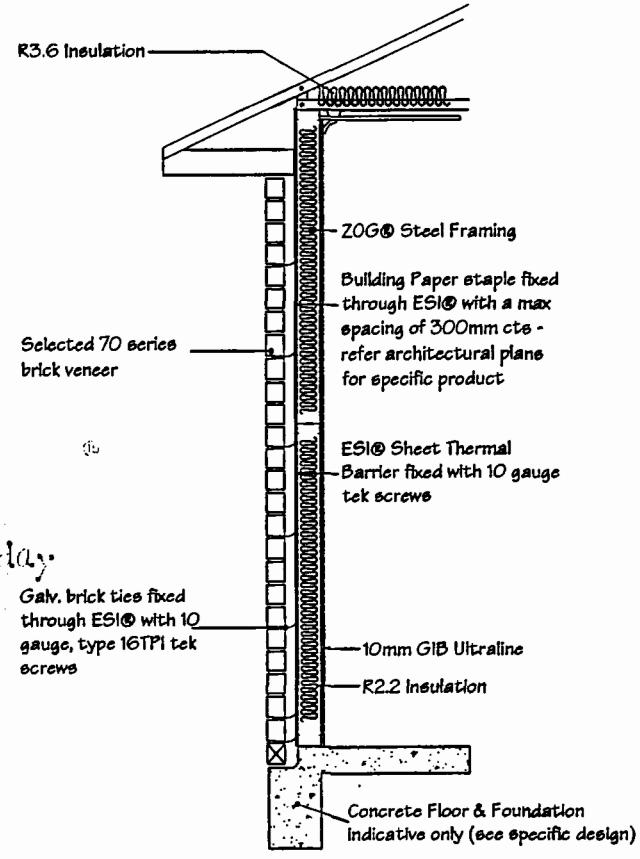
ROOF SPACE BRACE
more than 2m long



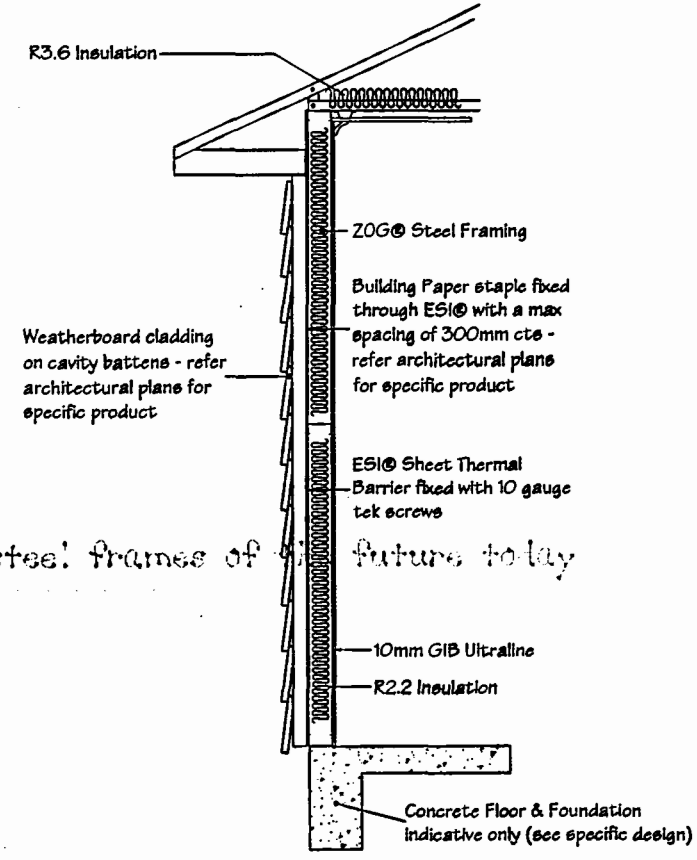
ROOF SPACE BRACE
not directly under ridge
more than 2m long



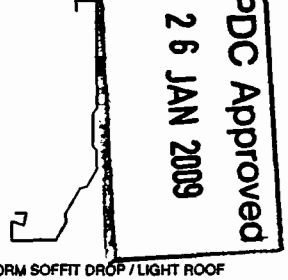
Standard ERFF Board Section Detail



Standard Brick Section Detail



Weatherboard Section Detail

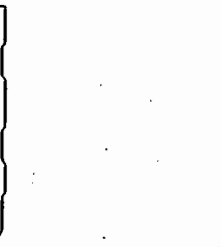


STRATCO CLICKFORM SOFFIT DROP / LIGHT ROOF
THIS INCLUDES 10mm ESI

ROOF PITCH IN DEGREES	SOFFIT WIDTHS		
	450	600	750
22.5	238	301	363
25	263	333	403
26	273	346	420
27	284	360	
28	294	374	
29	304	388	
30	315	402	
31	326	416	
32	337		
33	348		
34	360		
35	371		

STRATCO CLICKFORM SOFFIT DROP / HEAVY ROOF
THIS INCLUDES 10mm ESI

ROOF PITCH IN DEGREES	SOFFIT WIDTHS		
	450	600	750
22.5	206	268	330
25	230	300	370
26	240	313	386
27	250	326	403
28	260	340	410
29	270	353	
30	280	367	
31	291	381	
32	302	395	
33	312	410	
34	323	425	
35	335		



STRATCO CONCEPT SOFFIT DROP / LIGHT ROOF
THIS INCLUDES 10mm ESI

ROOF PITCH IN DEGREES	SOFFIT WIDTHS		
	450	600	750
22.5	226	288	350
25	249	319	389
26	259	332	405
27	268	345	421
28	278	358	
29	288	371	
30	298	384	
31	308	398	
32	318	412	
33	329	426	
34	339		
35	350		

STRATCO CONCEPT SOFFIT DROP / HEAVY ROOF
THIS INCLUDES 10mm ESI

ROOF PITCH IN DEGREES	SOFFIT WIDTHS		
	450	600	750
22.5	194	256	318
25	216	286	356
26	225	298	372
27	235	311	387
28	244	324	403
29	254	337	420
30	263	350	
31	273	363	
32	283	377	
33	293	390	
34	303	404	
35	314		

BILDON FASCIA SOFFIT DROP
THIS INCLUDES 10mm ESI

ROOF PITCH IN DEGREES	SOFFIT WIDTHS		
	450	600	750
22.5	191	253	315
25	215	284	354
26	224	298	371
27	234	311	387
28	245	324	404
29	255	338	421
30	266	352	439
31	276	367	
32	287	381	
33	299	396	
34	310	411	
35	322	427	

Bracing System Specification

GS1s

Specification Number	Length (m) minimum	Lining requirements	Other requirements	BU rating per metre	
				Wind	Earthquake
GS1s	1.2	10 mm GIB® Standard Plasterboard one side	Hold-down	75	60

WALL FRAMING

Wall framing to comply with,

- NZBC B1 – Structure
- NZBC B2 – Durability

Steel framing dimensions and height as determined by Specific Engineering Design. C section studs shall have a minimum thickness of 0.55 mm and minimum nominal depth of 75 mm with 35 mm wide flanges.

BOTTOM PLATE FIXING

Timber floor

0.95BTM bracket and 5mm washer as illustrated, fixed to timber floor framing using a 12 mm x 100 mm galvanised coach screw.

Concrete floor

0.95BTM bracket and 5mm washer as illustrated, fixed to the concrete slab using a proprietary concrete anchor with a minimum uplift capacity of 8kN taking into consideration concrete slab thickness (*internal walls*) and edge distance (*external walls*).

WALL LINING

One layer of 10 mm GIB® Standard plasterboard.
Vertical or horizontal fixing permitted. Sheet joints shall be touch fitted. Use full height sheets where possible

PERMITTED SUBSTITUTION

The Bracing Unit ratings for system GS1 apply to 10mm GIB® Standard plasterboard and any other 10 or 13mm GIB® plasterboard

FASTENING THE LINING

Fasteners

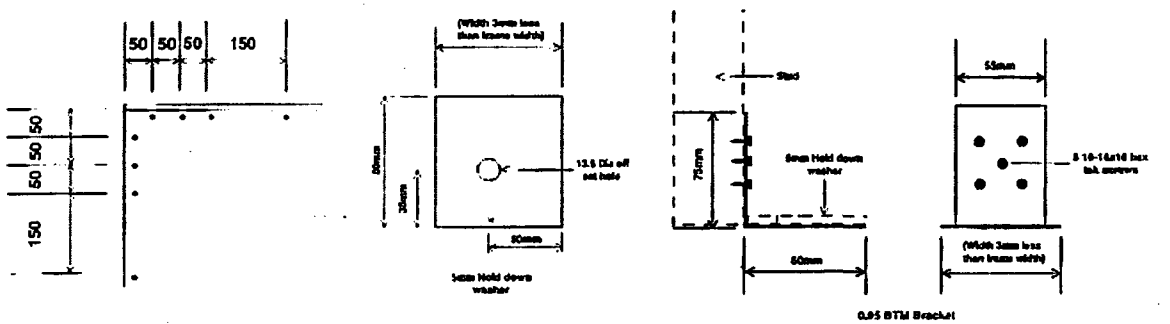
32mm x 6g GIB® Grabber® Drywall Screws or 32 x 6g Bugle Head Drywall tek screws

Fastener Centres

150mm around the perimeter of the bracing element starting at 50 - 50 mm from the bracing element corners
For vertical fixing place fasteners at 300 mm centres at sheet joints in the tapered sheet edges in the field of the bracing element
For horizontal fixing place single fasteners in the tapered edge where sheets cross studs
Use daubs of GIBFix® All-Bond Adhesive at 300mm centres to intermediate studs in the body of the sheets
Place fasteners a minimum of 12 mm from vertical sheet edges and 18 mm from horizontal sheet edges

JOINTING

All fastener heads stopped and all sheet joints paper-tape reinforced and stopped in accordance with the "GIB® Site Guide"



Lining Fixing Detail

End Brace Hold Down Detail

In order for systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow the specifications.

Bracing System Specification

GB1s

Specification Number	Length (m) minimum	Lining requirements	Other requirements	BU rating per metre	
				Wind	Earthquake
GB1s	0.6	10 mm GIB Braceline® one side	Hold-down	100	80

WALL FRAMING

Wall framing to comply with,

- NZBC B1 – Structure
- NZBC B2 – Durability

Steel framing dimensions and height as determined by Specific Engineering Design. C section studs shall have a minimum thickness of 0.55 mm and minimum nominal depth of 75 mm with 35 mm wide flanges.

BOTTOM PLATE FIXING

Timber floor

0.95BTM bracket and 5mm washer as illustrated, fixed to timber floor framing using a 12 mm x 100 mm galvanised coach screw.

Concrete floor

0.95BTM bracket and 5mm washer as illustrated, fixed to the concrete slab using a proprietary concrete anchor with a minimum uplift capacity of 10 kN taking into consideration concrete slab thickness (*internal walls*) and edge distance (*external walls*).

WALL LINING

One layer of 10 mm GIB Braceline® one side of the frame. Vertical or horizontal fixing permitted. Sheet joints shall be touch fitted. Use full height sheets where possible

PERMITTED SUBSTITUTION

The Bracing Unit ratings for system GB1s apply to 10mm GIB Braceline® and 10 mm GIB Noiseline®.

FASTENING THE LINING

Fasteners

32mm x 6g GIB® Grabber® Drywall Screws or 32 x 6g Bugle Head Drywall tek screws

Fastener Centres

150mm around the perimeter of the bracing element starting at 50 - 50 mm from the bracing element corners

For vertical fixing place fasteners at 300 mm centres at sheet joints in the tapered sheet edges in the field of the bracing element

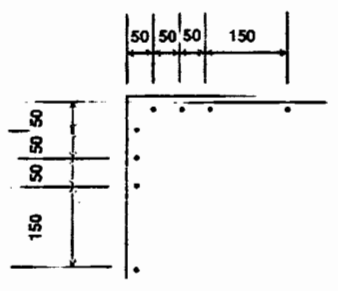
For horizontal fixing place single fasteners in the tapered edge where sheets cross studs

Use daubs of GIBFix® All-Bond Adhesive at 300mm centres to intermediate studs in the body of the sheets

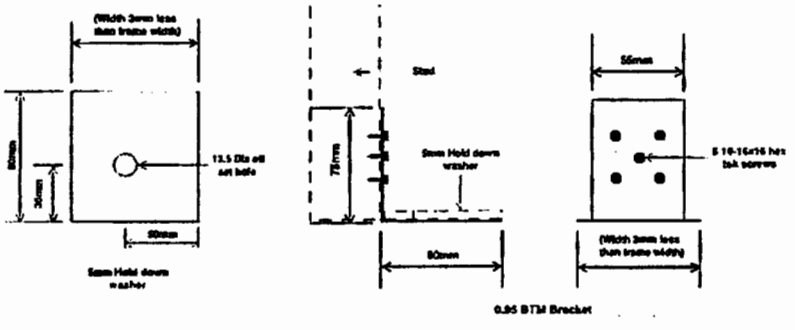
Place fasteners a minimum of 12 mm from vertical sheet edges and 18 mm from horizontal sheet edges

JOINTING

All fastener heads stopped and all sheet joints paper-tape reinforced and stopped in accordance with the "GIB® Site Guide"



Lining Fixing Detail



End Brace Hold Down Detail

In order for systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow the specifications.

Bracing System Specification

GS2s

Specification Number	Length (m) minimum	Lining requirements	Other requirements	BU rating per metre	
				Wind	Earthquake
GS2s	0.6	10 mm GIB® Standard Plasterboard both sides	Hold-down	100	90

WALL FRAMING

Wall framing to comply with,

- NZBC B1 – Structure
- NZBC B2 – Durability

Steel framing dimensions and height as determined by Specific Engineering Design. C section studs shall have a minimum thickness of 0.55 mm and minimum nominal depth of 75 mm with 35 mm wide flanges.

BOTTOM PLATE FIXING

Timber floor

0.95BTM bracket and 5mm washer as illustrated, fixed to timber floor framing using a 12 mm x 100 mm galvanised coach screw.

Concrete floor

0.95BTM bracket and 5mm washer as illustrated, fixed to the concrete slab using a proprietary concrete anchor with a minimum uplift capacity of 10 kN taking into consideration concrete slab thickness (*internal walls*).

WALL LINING

One layer of 10 mm GIB® Standard plasterboard on both sides of the frame.

Vertical or horizontal fixing permitted. Sheet joints shall be touch fitted. Use full height sheets where possible

PERMITTED SUBSTITUTION

The Bracing Unit ratings for system GS2s apply to 10mm GIB® Standard plasterboard and any other 10 or 13mm GIB® plasterboard

FASTENING THE LINING

Fasteners

32mm x 6g GIB® Grabber® Drywall Screws or 32 x 6g Bugle Head Drywall tek screws

Fastener Centres

150mm around the perimeter of the bracing element starting at 50 - 50 mm from the bracing element corners

For vertical fixing place fasteners at 300 mm centres at sheet joints in the tapered sheet edges in the field of the bracing element

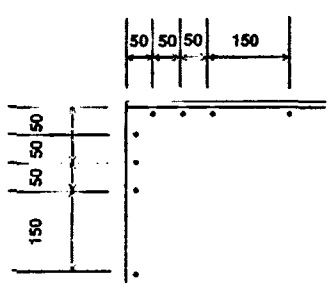
For horizontal fixing place single fasteners in the tapered edge where sheets cross studs

Use daubs of GIBFix® All-Bond Adhesive at 300mm centres to intermediate studs in the body of the sheets

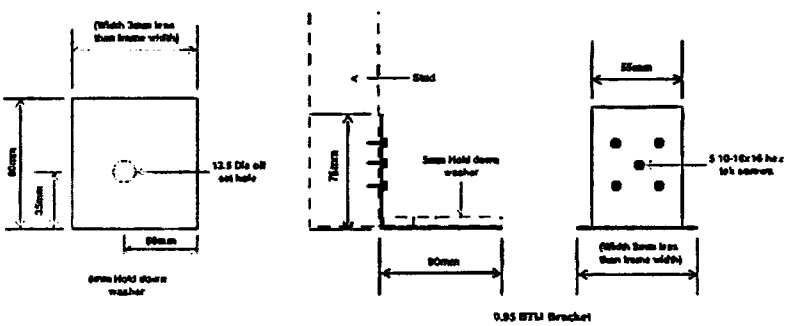
Place fasteners a minimum of 12 mm from vertical sheet edges and 18 mm from horizontal sheet edges

JOINTING

All fastener heads stopped and all sheet joints paper-tape reinforced and stopped in accordance with the "GIB® Site Guide"



Lining Fixing Detail



End Brace Hold Down Detail

In order for systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow the specifications.

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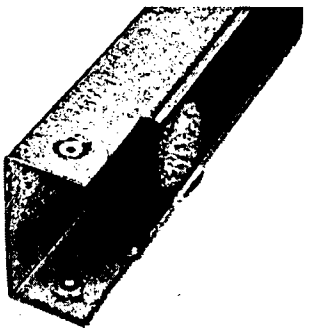
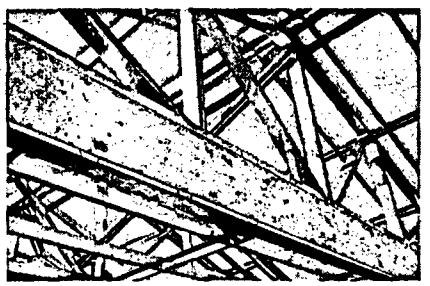
Zog Steel Frame Wall & Truss Framing Alternative Solution





Herlihy Residence
Lot 34
8 Joshua Place
Bell Block
New Plymouth

 May 2008

Contents

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References

1) NASH 3405:2008 - Steel Framed Buildings, An Alternative Solution. Document issued by Redco NZ Ltd and peer reviewed by Jones Gray Partners Limited.

2) NASH New Zealand Report N-04; Guidelines for Light-Weight Steel Framed House Construction: First Revision.

3) The Thermal Insulation Performance of Light-Weight Steel Framed External Wall Elements; HERA Report R4-72, 1993.

4) Gib Interior Solutions Site Guide; Winstone Wallboards Ltd Auckland, May 2006.

5) Gib Bracing Systems; Winstone Wallboards Ltd Auckland, November 2006.

6) New Zealand Building Code Acceptable Solution E2/AS1:2008 External Moisture.

7) BRANZ House Insulation Guide 3rd Edition October 2007.

8) NZS 3604:1999 Timber Framed Buildings.

9) NZS 4218:2004 Energy Efficiency – Small Building Envelope.

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26 JAN 2009

Introduction

Zog® Light Weight Steel Framed Building System is new to the market. It has been developed from the significant history of this form of construction in both New Zealand and Australia.

NZS3604:1999 – *Code of practice for Light Timer Framed building not requiring specific design* provides a formal basis for framed housing design and construction in New Zealand and is familiar to those involved in the trade, but is limited to timber construction.

Consequently steel framed buildings require specific design. Steel framed buildings also have different fabrication and construction methods.

This manual has been produced as a complementary document to NZS 3604:1999 to cover those aspects of a Zog® Light Weight Steel Framed Building System which are not covered by NZS 3604:1999 or NASH3405:2006.

The main objective to this manual is to provide the background to and the details of the Zog® Light Weight Steel Framed Building System to allow:

- Zog® architectural designers and specifiers to design and detail houses using the Zog® system.
- Territorial Authority staff and Building certifiers to review submitted building consent applications using the Zog® system.
- Builders to assemble and construct houses from fabricated Zog® steel frames and components.

Zog® has drawn on knowledge within the industry in establishing their light-weight steel framed housing and with their construction background are keen to ensure it is soundly based.

Accordingly each process of the steel framed home has been developed with constant checks through experienced engineers.

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Scope

This manual is applicable to the same range of buildings as NZS3604:1999 and shall be read in conjunction with that standard.

All aspects of the site, loadings and buildings outside the specific light weight steel framing requirements shall be taken from NZS3604:1999.

Buildings outside that range will require further specific design than what has been provided for the Zog® Light Weight Steel Framed Building System.

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2 6 JAN 2009

Design

The design of Zog® Light Weight Steel Framed Building System has been prepared by registered engineers and is based on the following codes and standards:

- New Zealand Building Code
- NZS3604:1999 – *Code of practice for Light Timer Framed building not requiring specific design*
- NASH3405:2006
- AS/NZS4600:1996 – *Cold Formed Steel Structures*
- AS/NZS4600:2005 – *Cold Formed Steel Structures*
- AS3623:1993 - *Domestic Metal Framing*
- AS1170.0:2002 - *Structural Design Actions – General Principals*
- AS 1397:2001 - *Steel Sheet and Strip Coated Products*
- NZS1170.5:2004 - *Earthquake Actions*

All design calculations assume a minimum intended life of 50 years.

A producer statement for the design of the steel structure is provided.

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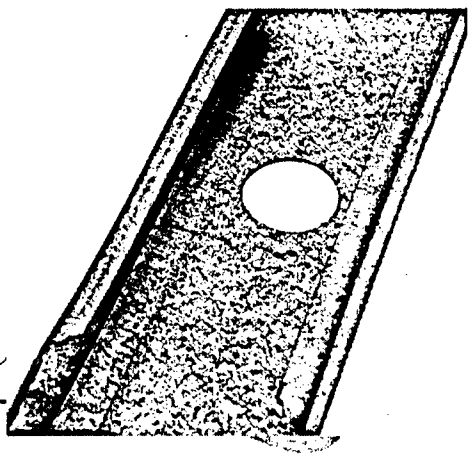
Component Development

Zog® use many components in the construction of the wall frames and trusses.

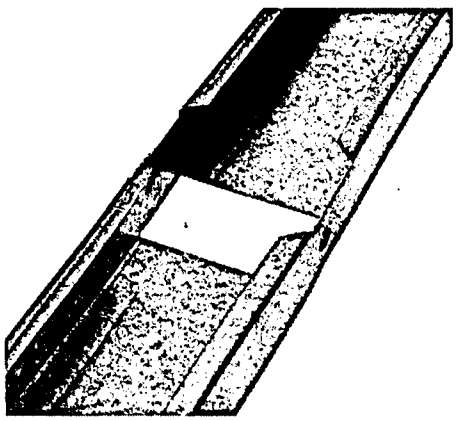
The standard steel connection is a precision pre-punched, notched, swaged, and dimpled connection. All required punches are performed on the fabrication machines, so no further manual cutting is required. It punches automatically plumbing services, at any position specified at the time of draughting, performed are as follows.

Services Hole
Provide routes through the framing for running of electrical and plumbing helps eliminate wasted time by tradesman punching or drilling holes onsite. The hole size is usually 34mm (1 11/32"). A plastic grommet is then inserted to cap the edge of the hole.

steel frames of the fi



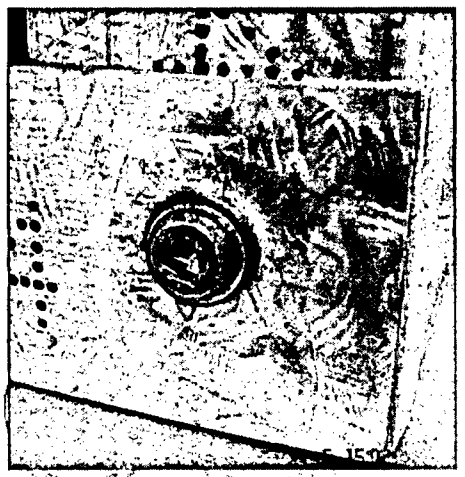
Web Notch
Allows a stud to pass through a block (nog), meaning the blocking or nog line can be continuous if required. This punch is also used for braces and automating cutting on areas where manual cutting would otherwise be needed.



Lip Notch
Allows sections to connect inside another section. Helps eliminate manual cutting.

Web Hole
Standard Punch is a 3.5mm (0.140") diameter hole punched in the centre of the web, used for locating truss members placed back to back.

Dimple
Locating and fastening points in the flange of the section, with a recessed hole, usually of 3.5mm (0.140") diameter. The screw (or rivet) fastening will sit in the recess leaving a flat surface for the finishing panels. The dimples also make assembly of the frames easy, by aligning and holding the joint prior to a fastening been placed.



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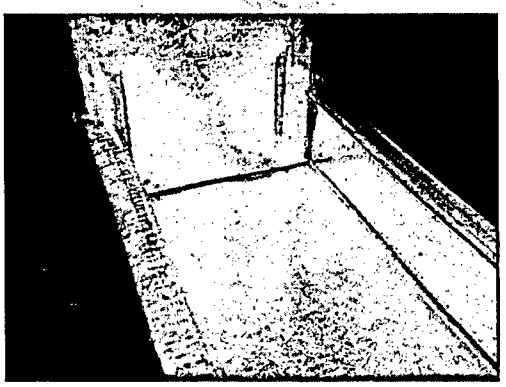
Swage
Used to reduce the width of the section to allow sections to fit easily inside another, and keeping the edge of the frame even. This swaging also allows the stud to sit flat on the track for full end bearing and load transfer.



Shear
Cuts every component precisely to length. On 1.6mm (16g) Steel rollformers, the shear also has a profile squaring tool which eliminates any profile distortion caused by the shear action in the heavy gauge profile.

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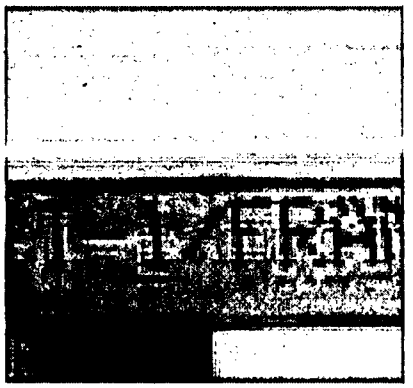
Load Bearing End Squaring Sage
Crimps the end of a section to allow it to fit firmly down on the web of the section, fitting into the radius.

Inkjet Printer
The FrameCAD software can automatically create wall and part numbers for every component of the structure. An Inkjet Printer is fitted to the Steel FrameMaster to automatically identify each component, saving time, and the possibility of mistakes.
The information printed by the Inkjet Printer details all the information required to identify and orientate the component and also gives the manufacturer opportunity to display additional information, such as material properties, company advertising, or production shift information. On the Single Phase Steel FrameMaster Rollformers, a Label Printer is available instead of an Inkjet Printer.



Roller Stamp Printer
A Roller Stamp Printer can be fitted to the machine to regularly place information on the section required to meet some building codes.

Steel Properties

The studs, plates and battens are rolled by Zog® steel forming machines from 0.75mm thick galvanised steel produced to AS1397:1993 by NZ Steel. The product GALVSTEEL™ is the name for New Zealand Steel's continuously hot-dipped galvanised steel products which are available in a variety of widths, gauges and mechanical grades.

GALVSTEEL™ products are particularly suited to applications where the corrosion resistance of zinc and the high strength to weight ratio of steel is required.

The performance of the GALVSTEEL™ product will be determined by the zinc coating thickness and the environment in which it is used. In dry neutral internal environments lower zinc coating (Z100, 100 g/m^2) can be considered appropriate for selected applications. However in more corrosive environments, as with under ground steel culverts, a Z600 coating should be used.

The mechanical grade specified refers to the minimum yield strength of the steel base metal.

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The Guaranteed Properties of GALVSTEEL™ are as below:

MECHANICAL PROPERTIES	GUARANTEED MINIMUM
Yield Strength, MPa	550
Tensile Strength, MPa	550
Elongation on 50mm % (≥0.6mm)	2

CHEMICAL PROPERTIES	GUARANTEED MAXIMUM %
Carbon (C)	0.05
Phosphorous (P)	0.02
Manganese (Mn)	0.22
Sulphur (S)	0.025

COATING ADHESION – 180° BEND TEST

COATING CLASS	GUARANTEED
Z100	0t
Z200	0t
Z275	1t
Z450	1t

FIRE HAZARD PROPERTIES

IGNITABILITY INDEX	(range 0-20)	0
SPREAD OF FLAME INDEX	(range 0-10)	0
HEAT EVOLVED INDEX	(range 0-10)	0
SMOKE DEVELOPED INDEX	(range 0-10)	0

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DIMENSIONAL CAPABILITIES

Thickness Ranges mm		Max. Width mm
≥0.30	<0.32	1000*
≥0.32	<0.35	1082*
≥0.35	<0.75	1230
0.75		1258
>0.75	≤1.00	1230

*All orders in the range 0.30 – 0.34 greater width than 1000/1040mm will be accepted on a trial basis, up to a maximum width 1230mm

Slitting and shearing available on request from New Zealand Steel.

These dimensions are a reflection of technical capability to produce. Supply conditions may be subject to dimensional restrictions and is subject to New Zealand Steel Marketing confirmation. Other dimensional combinations may be available by enquiry.

NORMAL/OPTIONAL SUPPLY CONDITIONS

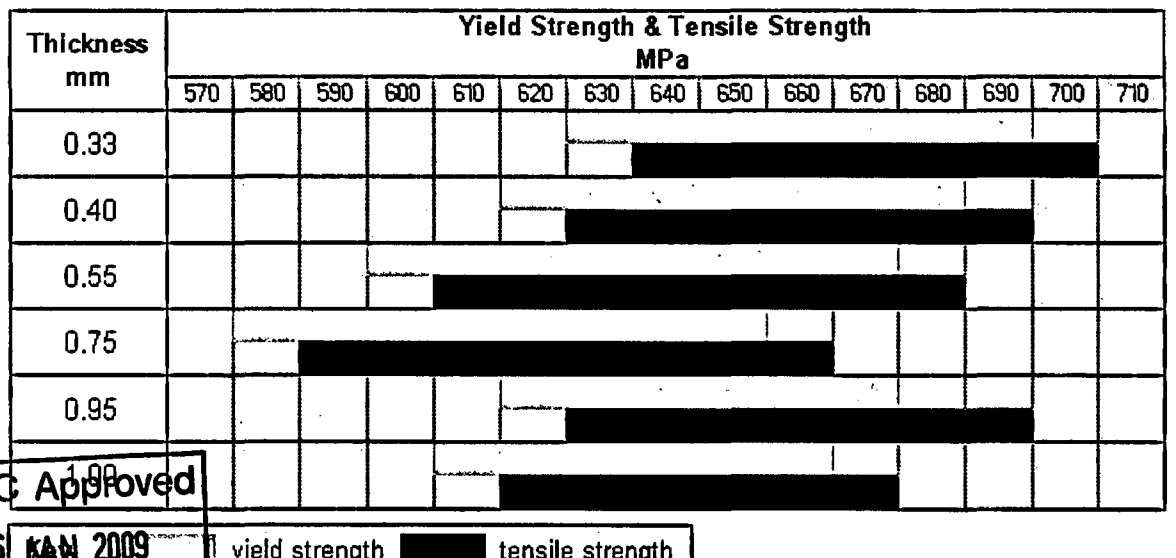
	NORMAL	OPTIONAL
Coating Class	Z275/Z450	As above
Surface Condition	Spangled	Minimised spangle
Surface Treatment	Passivated	Oiled
Branding	Branded	Unbranded

Important Notes

Material should be used promptly (within 6 months) to avoid the possibility of storage related corrosion.

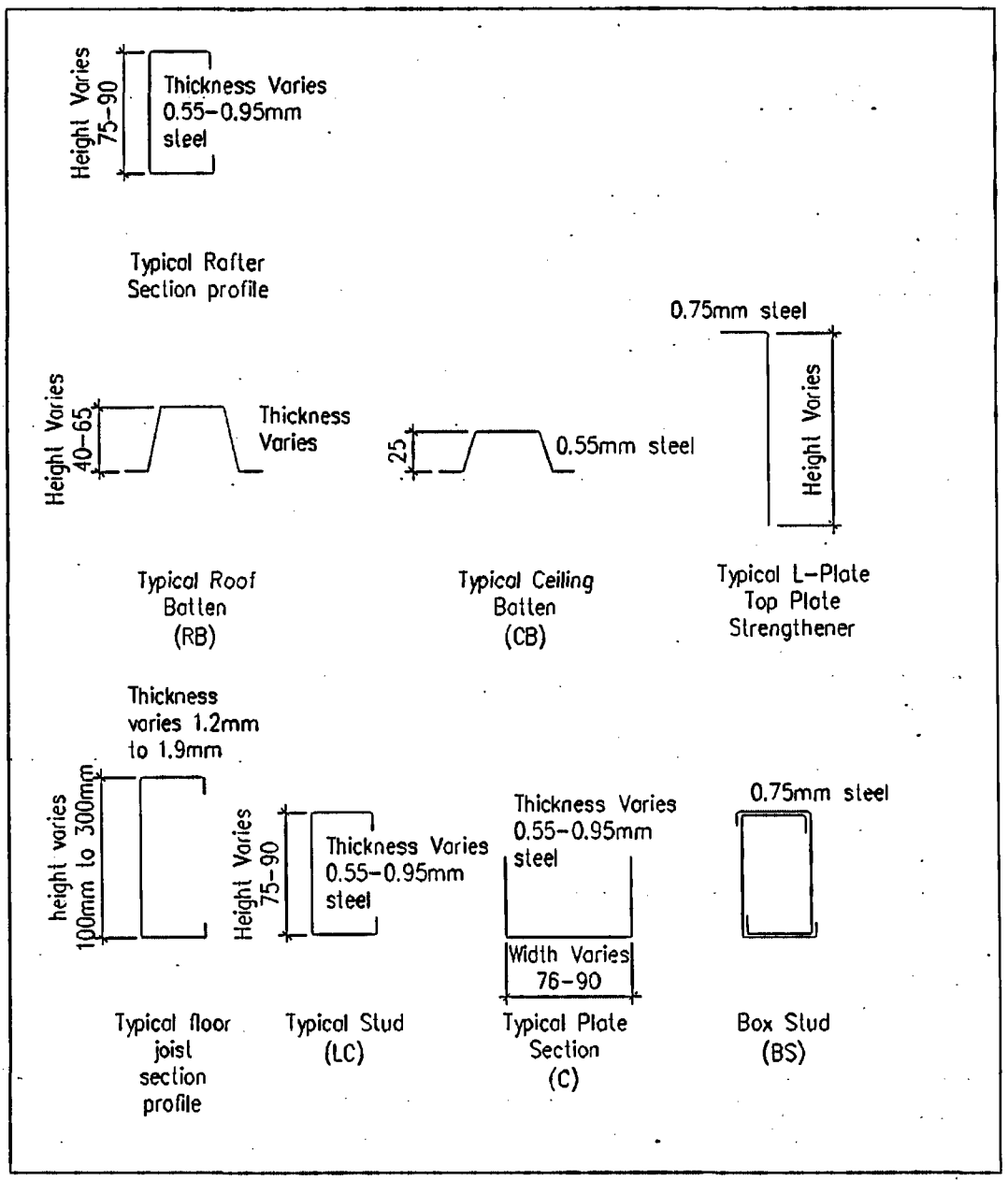
Mechanical properties are guaranteed at ambient/room temperatures. Please consult technical representatives at New Zealand Steel for high/low temperature use.

In the as-oiled state long term corrosion resistance cannot be guaranteed. Further surface treatment/coating is required.



Thickness mm	Total Elongation on 50mm %								
	4	5	6	7	8	9	10	11	12
0.33									
0.40									

The steel section used in the Zog system are shown below:



Bracing

Although each steel framing manufacturer has variations in section size and jointing methods, the basic systems are remarkably similar. The test that have been carried out on steel framing bracing panels have generally shown good performance with results similar and in some cases better than those of timber framed panels.

Two sets of results of tests that have been made available, provide a good basis on which to assess bracing values for the Zog® panels.

The first set of tests were carried out at BRANZ on Braceline faced panels of 1.2m and 2.4m lengths.

Some noticeable conclusions can be drawn:

1. The initial test had examples of both channel and strap bracing and the results were remarkably similar from each with higher values being exhibited by the channel braced panels, indication that the channel bracing is at least as good as the strap braced panels. This provides confidence for continuing to use the channel brace, which suits Zog® form of construction.
2. All the results were similar or better than the equivalent timber framed test.
3. The screw fixed Braceline gave results as good as those for clout and washer fixed Braceline.

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The second set of results was carried out in conjunction with Gib board and was for the panels 600 and 900 long.

The bracing units for each Zog® panel have been derived by MFT Ltd and calculated and approved by Zog® experienced engineers.

Using the approved method of Hbrace, these values have then been added in to provide the required bracing units. This process is identical to the working of bracing in NZS3604:1999 as stated in NASH 3604:2006, (refer appendix A).

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Insulation

Walls
90mm Steel frame, studs @ 600cts, dwangs @ 800cts with R2.6 insulation gives an R-value of 2.0, meeting the minimum requirement of 2.0 in climate Zone 3.
10mm ESI Extruded Sheet Insulation (polystyrene) foam thermal break is also required, this is fixed direct to the frame to reduce the thermal bridging effect.
Please note,
- sheet cladding direct fixed to frame (as shown on BRANZ page supplied) has the same R-value as brick veneer, No steel frame/brick cladding table is available in the BRANZ Insulation Guide.
- R-values increase when stud and dwang centres increase. The steel frames are built with dwangs @ 1200cts. The wall construction complies with dwangs @ 800cts (as shown on the BRANZ page supplied) therefore, dwangs @ 1200cts will comply.
- ESI has an R-value of 0.76
Roof

Gerard shingle roofing, steel trusses @ 900cts, R3.6 insulation and 10mm Gib ceiling gives an R-value of 3.4, meeting the minimum requirement of 3.3 in climate Zone 3.

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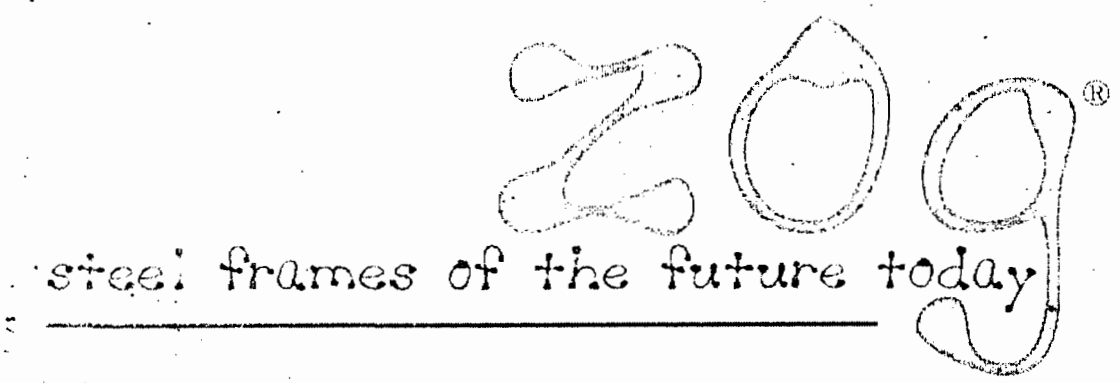
26 JAN 200

Construction Details

The following details are composed to describe the basic construction of Zog® steel frames. Any details in the Architectural plans are to be read precedence to the following.



Winstone Wallboards Ltd

Wellington
P O Box 36 024, Moera
Wellington, New Zealand
8 Burnham Street, Petone
Wellington, New Zealand
Telephone 64 4 570 8450
Facsimile 64 4 570 8451

Sales and Technical Enquiries
Freephone 0800 100 442
Freefax 0800 229 222

www.gib.co.nz

17 April 2008

ZOG Tauranga
PO Box 4411
TAURANGA

Attention: Dave Eddy

Dear Dave,

Re: Steel Framed Housing

The wording in our GIB®-Site-Guide, 2006 was never intended to preclude the use of 10 mm GIB® plasterboard for steel framed housing. We are currently looking at rewording the statement along the following lines,

For commercial construction the minimum sheet thickness for horizontal/vertical fixing on light steel gauge framing is 13 mm GIB® plasterboard. Steel gauge and lining thickness for steel framed housing is by specific design.

This better reflects the original intent which is to have a minimum thickness 13 mm GIB® plasterboard linings on non load-bearing 64 x 0.55 mm studs common in commercial construction. Using 10 mm GIB® plasterboard linings on light gauge steel framing can lead to quality of finish issues such as waviness and joint deformations.

Steel framed housing often uses heavier gauge steel with nogs to meet structural requirements. Because of the many different systems and details currently available it is difficult for Winstones to issue a general statement that 10 mm GIB® plasterboard is adequate for steel framed housing. Although we are working with NASH to get a better understanding of the various systems and in an attempt to get better national consistency, there are likely to remain detailing issues which are specific to a particular system, such as stud-to-plate and nog-to-stud connections which can telegraph through 10 mm linings.

The choice of lining thickness is therefore largely the responsibility of the supplier of a particular steel framed housing system. Your experience appears to confirm that the quality of finish meets customer expectations and that the use of 10 mm GIB® plasterboard linings on your steel frame system is acceptable.

Building Code compliance issues must be addressed separately.

I trust this information is of assistance.

Kind Regards

Hans Gerlich
Technical Manager - Building Systems
Winstone Wallboards Limited

 April 2008

To Whom It May Concern

Re. Golden Homes Zog® Steel frame insulation requirements

There currently seems to be some confusion regarding how Golden Homes Zog® steel frame house plans are meeting the insulation requirements set out in the third edition of the NZBC H1 compliance document.
This letter is intended to inform and aid in the processing of Golden Homes plans.

Construction –

Walls
Zog® steel frame utilises 89x41mm lipped sections of 0.75mm Galvsteel™ supplied by New Zealand steel, studs are placed at 600c/c and nogs at 1200c/c.
10mm ESI sheathing with an R value of 0.445, is then fixed to the entire exterior prior to the building paper, this acts as a thermal break and contributes to the overall performance of the system.
R2.6 Pink Batts are then installed between the studs and nogs (in the clear space only), and then 10mm plaster board is fixed to the interior.
The only variable to the wall construction is the exterior cladding, which consists of Brick veneer, Autoclaved Aerated Concrete, and weatherboards (linea or timber).

Roofs
Zog® steel frame utilises 89x41mm lipped sections of 0.75mm Galvsteel™ supplied by New Zealand steel, to produce steel trusses 89mm wide. These are installed at 900c/c, the thermal break to the roof is achieved by the roof battens or purlins, at a minimum depth of 40mm an approximate R value of 0.3 is achieved. R3.6 ceiling insulation is to be placed over the ceiling battens and bottom chord of roof trusses, and 13mm plaster board lines the ceilings.

Thermal break –
The purpose of the thermal break is to prevent any extreme changes in temperature to the steel frame. It allows the steel to thermally perform the same, if not better than timber frames. In particular with claddings like brick as the thermal break negates the effect of the vented cavity.

 April 2008

HERA report R4-72 –
The idea that steel frame can perform the same, if not better than timber frame is shown with the tests done in HERA report R4-72. Attached is appendix A from the report. In particular interest is the R – values for frames sheathed with 12mm EPS.

12mm EPS at R 0.3, is the closest type to the 10mm ESI at R 0.445.
As you can see when comparing values, they are the same, if not better in most cases than the equivalent construction using timber frames, shown in the Branz Insulation Guide - third edition.

R- Values used –
The R-values used in the calculations are the timber equivalents from the Branz Insulation Guide. This, in my opinion, is a very conservative approach, due to the results from the HERA report R4-72, also the thermal break Golden Homes is using has a higher R-value than those tested by HERA.

Method used -
The method from NZS:4218 used is the "Calculation method"

This allows an accurate answer every time. These figures are job specific and entered by the draughtsperson. The plan is then checked by our senior staff members to ensure the plans are as accurate as possible prior to being submitted to council.

I hope this clarifies any questions you may have in relation to the thermal performance of Golden Homes steel frame houses in relation to Clause H1, NZBC compliance document.
If you have any more questions regarding this letter please do not hesitate to contact me.

Thank you

Rex Collins
Director
RCDC Ltd.

r.collins@zog.co.nz

APPENDIX A

R-VALUES OF LIGHT-WEIGHT STEEL FRAMED EXTERNAL WALL ELEMENTS FOR USE IN DESIGN

Appendix A presents the design guidance parts of this report - ie Table 4 and Figure 2 - in a stand-alone format for use in design. Table 4 is presented as Table A1 and Figure 2 as Figure A1.

Table A1
Standard Total Thermal Resistances Of As-Built Light-Weight Steel Framed Exterior Wall Elements(1)

Cladding	Rated R-Value for Wall $m^2°C/W$ (filled with insulant R = 1.74$m^2°C/W$)					
	Thermal Break Details					
	None	Triple-S 12mm sheath (2)	Triple-S 12mm strips (3)	EPS 12mm sheath (2)	EPS 12mm strips (3)	PVC Clip(4)
Hardiflex (5)	1.0	1.6	1.5	1.7	1.6	1.6
12mm ply (5)	1.1	1.7	1.6	1.8	1.7	1.7
19mm Shiplap (5)	1.1	1.8	1.7	1.8	1.7	1.7
Hardiplank (6)	1.2	1.8	1.7	1.8	1.7	1.7
Permaline Plank (6)	1.3	1.8	1.7	1.9	1.8	1.8
19mm bevel weatherboard (6)	1.4	1.9	1.8	2.0	1.9	1.9

Notes to Table A1:

1. Refer to Fig. A1 for cross-section detail of exterior wall construction to which this table refers.
2. Thermal break sheathing denotes a continuous layer of material.
3. Thermal break strips denotes only strips of material along the face of the stud (as shown in Fig. A1).
4. PVC clip incorporates a 5mm air gap, as shown in Fig. 5(c).
5. The R-values calculated for these interior and exterior flat facings include a contact thermal resistance of 0.03 $m^2°C/W$ for both cases.
6. These values include a contact thermal resistance of 0.03 $m^2°C/W$ for the interior lining and a contact thermal resistance for the lapped exterior cladding that incorporates the influence of:
   (i) increased gap and bevel contact between stud and lining.
   (ii) increased thickness of planking at overlaps between planks.
   (iii) insulating effect of air pockets trapped between building paper or thermal break sheathing and lapped lining.
7. The rated R-values apply to walls in which the infill insulation fills the entire space between adjacent stud webs and also to walls in which the infill insulation fills only the clear space between studs. The latter detail will lower the R-value by approximately 0.03 $m^2°C/W$, however this is within the rounding down of calculated values for presentation in Table A1.

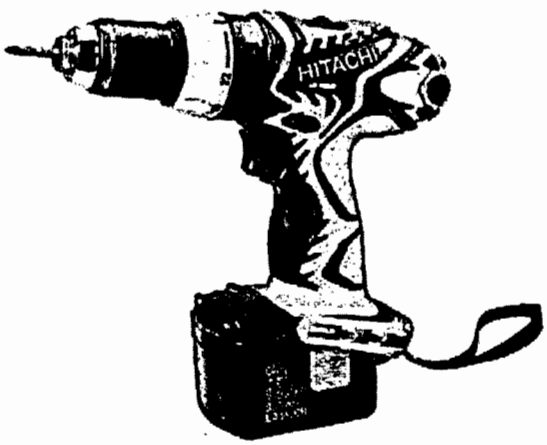
Hitachi Koki

HITACHI

DS 14DMR

14.4V Cordless Driver Drill

(Variable Speed, Reversible)



Click to enlarge photo

- Powerful and max. Tightening Torque: 50 Nm(442 in.lbs.)
- 13mm(1/2") single sleeve metal keyless chuck with ratcheting lock mechanism to prevent the chuck from loosening
- Automatic spindle lock mechanism for quick bit changes
- Large radial fan-cooled motor for high power and durability
- Electric feedback and brake for performing effective work
- 22-stage torque adjustable clutch and 10 Nm max. clutch torque for various works
- Two(2) speed transmission with one-touch speed knob
- Push button type reversing switch
- Comfortable and soft grip with convenient tool strap
- Convenient one-touch hook for being adjustable in five steps between 0°and 80°and holding a spare bit
- Externally replaceable carbon brushes and separate-type motor
- Advanced and injection type case for excellent accommodation
- 14.4V High Capacity Battery: 2.0Ah Ni-Cd EB14B, 2.4Ah Ni-Cd EB1424, 2.6Ah Ni-MH EB1426H, 3.0Ah Ni-MH EB1430H

Specifications:

Capacity	Mild Steel	13mm(1/2") Thickness 1.6mm(1/16")
	Soft Wood	44mm(1-3/4") Thickness 18mm(11/16")
	Wood Screw (D x L)	8.0 X 75 mm (#20 x 3")
	Machine Screw	6mm(1/4")
Voltage		DC 14.4V
No-Load Speed		0 - 400 / 0 - 1,500/min.
Torque Setting		22 stages 2.0 - 10.0 Nm (18 - 87 in.-lb.)
Overall Length		237 mm (9-21/64")
Weight		2.3kg(5.1 lbs.)
Standard Accessories		2 or 3 Batteries 1 Charger(UC24YFA) 1 Driver Bit 1 Injection type case (1 Slide Handle for USA and Canada)

Note: Manufacturer reserves the right to change specifications of parts and accessories without notice. Standard accessories of parts may vary from country to country.

NEW ZEALAND STEEL

DURABILITY STATEMENT: Revision 3, March 2003

Above – Floor, Steel Frame Construction

New Zealand Steel Galvanised and Zincalume® coated steel coil, when used in framing components of above-floor, steel frame cavity wall construction, will meet a **durability of 50 years**, subject to the following provisions:

Range

• Specification		AS 1397:2001[8]
• Coating weight and type		
Galvanised		275g/m^2 (Z 275)
Zincalume®		150g/m^2 (AZ 150)
• Steel thickness range		0.40 to 2.25mm (Galvanised)
		0.40 to 1.15mm (Zincalume®)
• Steel grade range		G550 for BMT $\leq$ 1.00mm
		G500 for BMT >1.0 < 1.5mm
		G450 for BMT >1.5mm
	or	G250 (Galv)/G300 (Zn/Al) for BMT $\leq$ 2.25mm
• Application		Above-floor steel framing systems for buildings using cavity wall construction

Requirements, Limitations and Exclusions

Environmental Categories

- Applicable to buildings in **Coastal Moderate and Severe, Inland Moderate, and Industrial Moderate and Severe environments** as described in references[1,2] where the framing components are protected from the external environment by both an external cladding and an internal lining.
- Applicable to the internal environment of residential buildings.
- Applicable to the internal environment of non-residential buildings where the building's use is such that the internal environment will not be more aggressive than that within a residential building.

Weather Proofness

- The external cladding must be weatherproof in accordance with E2/AS1[3] Paragraphs 1.0 to 3.0.

 May 2008

RCDC LTD
p. (07) 574 2340
f. (07) 574 9537
e.tauranga@zog.co.nz
51 Portside Drive.
PO Box 4411
Mt. Maunganui.

29 May 2008

To Whom It May Concern:

RE: Durability of the stainless steel fasteners into the zinc steel studs.

Please refer the attached email from Dr G Charles Clifton from the University of Auckland to Rex Collins (Director RCDC Ltd).

Please don't hesitate to contact me with any further queries.

Kind regards,

Dave Eddy
Operations Manager
RCDC

RCDC LIMITED

----- Original Message -----
From: Charles Clifton
To: Rex Collins
Sent: Wednesday, May 28, 2008 2:44 PM
Subject: RE: SCI Publication

Dear Rex,

I am pleased the information I provided was of use. I am very keen to provide as much support as I can within the resource limits that being at the University now imposes. Note that these limits are more severe for this my first year as I need to set up a lot of new course material. In subsequent years this will be reviewed and modified which I hope and expect will be a less time consuming task.

I have not seen a really good manufacturing operation, which is surprising. For example I have not seen any of the current NASH members' facilities.

I can give you definite advice on the durability of the stainless steel fasteners into the zinc steel studs. Given that this contact takes place on the warm side of the thermal break and with the thermal resistance of the thermal break you are using the durability of this interface will be satisfactory for the design life of the fastener or stud, whichever is the least. In other words the interface will not be a more severe problem. The reasons for this are as follows:

1. the interface is on the warm side of the dew point in winter and so the interface will not get damp except under exceptional circumstances (eg extreme weather events) and will then be able to dry out. Dissimilar metal corrosion at the interface will only occur when there is sufficient moisture and so will only occur in exceptional circumstances and for short durations of time
2. even when the interface surface is damp you have the most robust situation of the more reactive material (the steel stud) being present in the largest area. This significantly reduces the interface corrosion potential compared with that from a galvanized fastener into a stainless steel surface.

This advice is given to be passed onto appropriate third parties for the purpose of obtaining a Building Consent. In other words you can pass it onto anyone whom you wish. If this email reply is sufficient please advise at the NASH AGM.

Kind regards,
Charles

Dr G Charles Clifton
Associate Professor of Civil Engineering
Department of Civil and Environmental Engineering
University of Auckland
Room 1.612, Engineering Building
20 Symonds Street, Auckland

 May 2008

Private Bag 92019
Auckland, New Zealand
Phone: +64 (09) 3737599 ext 88529
Fax: +64 (09) 3737462
Email: c.clifton@auckland.ac.nz

RCDC LIMITED

www.esisheet.co.nz

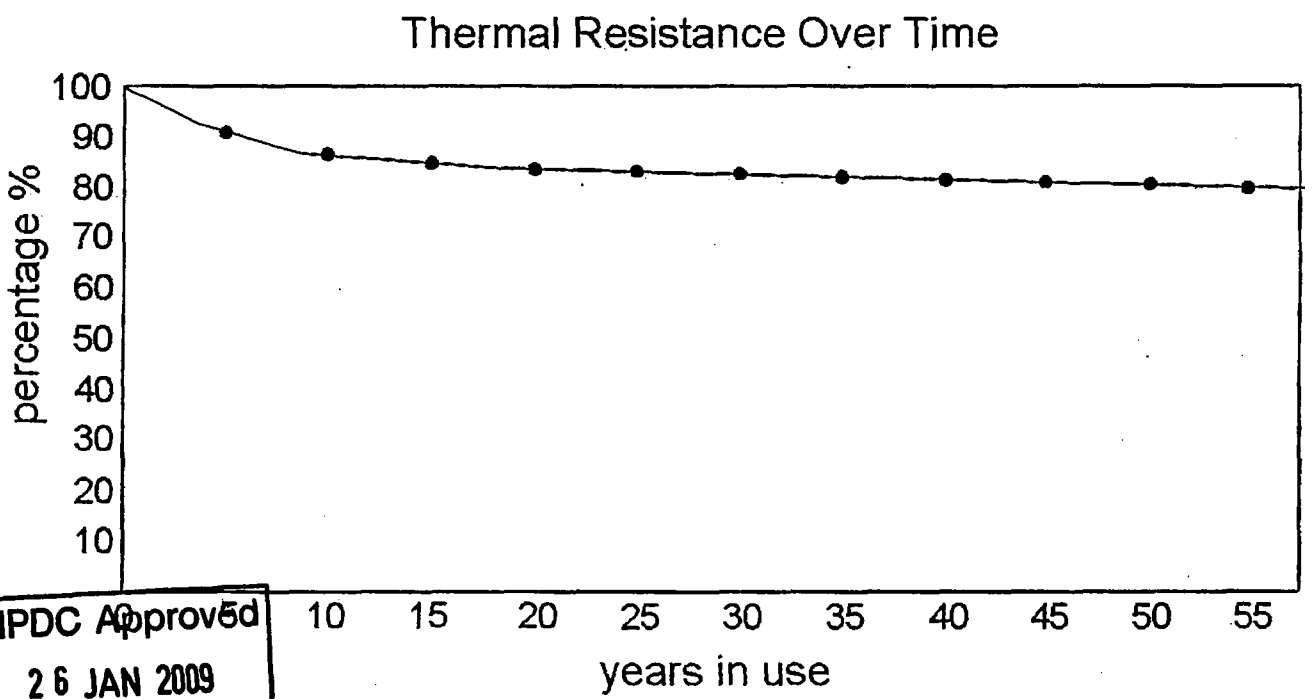
Phone (07) 574 2340
Fax (07) 574 9537
PO Box 4411
Mt. Maunganui.

DECLARATION

Dear User

Thank you for using ESI® Extruded Sheet Insulation (polystyrene).

Please see the chart below demonstrating the loss of ESI® thermal resistance over a period of time.



The time variation curve shows that after 50years the thermal resistance value of the ESI® sheet is 80% of the original value of R0.760 when installed, therefore at 50years a value of R0.608 is maintained.

Yours Sincerely

Rex Collins
Technical Director

www.esisheet.co.nz

Phone (07) 574 2340
Fax (07) 574 9537
PO Box 4411
Mt. Maunganui.

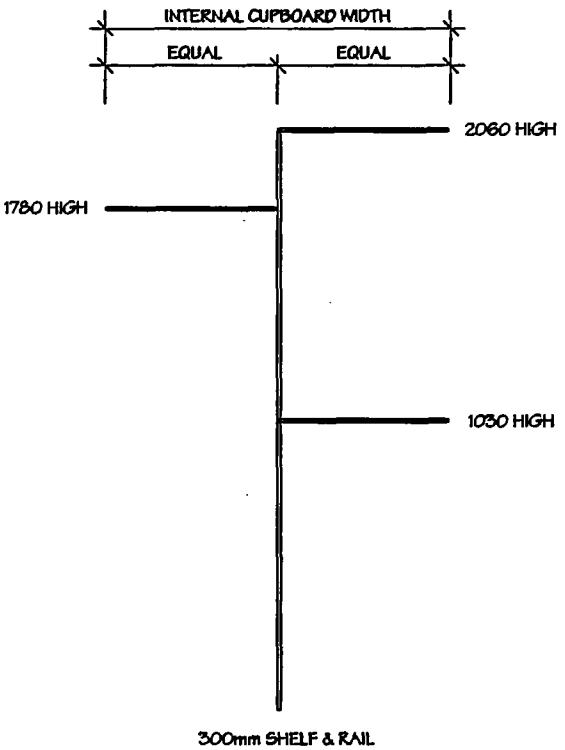
ESI® Extruded Sheet Insulation

Mode X250 (Compressive Strength 250KPa)

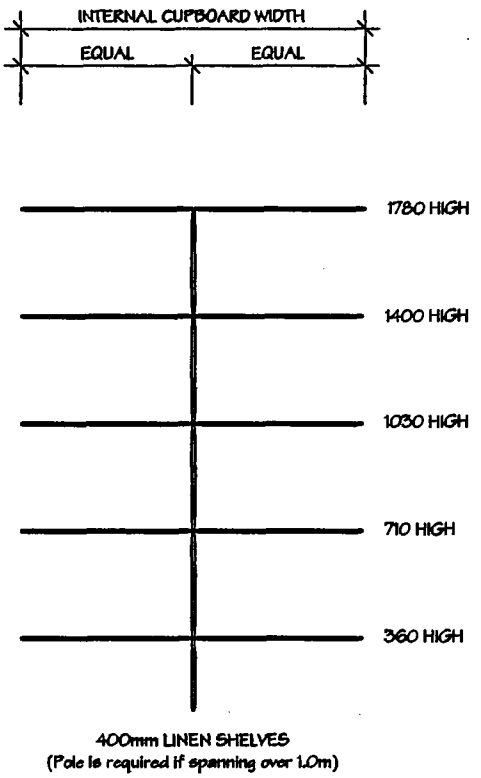
Dimension	: Thickness 10mm
R-value	: 10℃ ≥0.76 (m²·K)/W
Heat Conductivity	: 10℃ ≤0.033 W/(m·K)
Dimension Stability	: 48h ≤1.5%
Water Vapor	: 23℃±1℃ ≤3.0 ng/(m·s·Pa)
Water Absorption	: 96Hrs ≤1.0 %
Fire Retardant	: Grade B1

Rex Collins
Technical Director

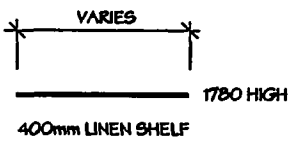
NPDC Approved
26 JAN 2010



BEDROOMS/STUDY



LINEN



STORAGE

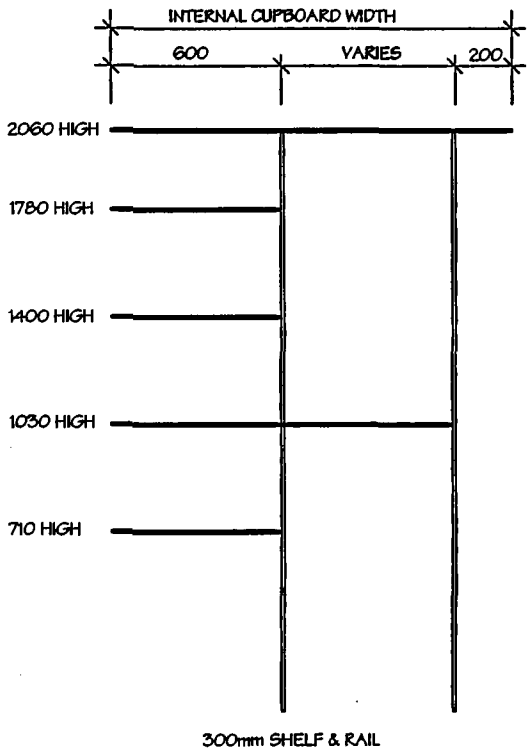
NPDC Approved
26 JAN 2009

TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS
ALL CUPBOARD WIDTHS TO BE SITE MEASURED AND CONFIGURATION CONFIRMED WITH CLIENT

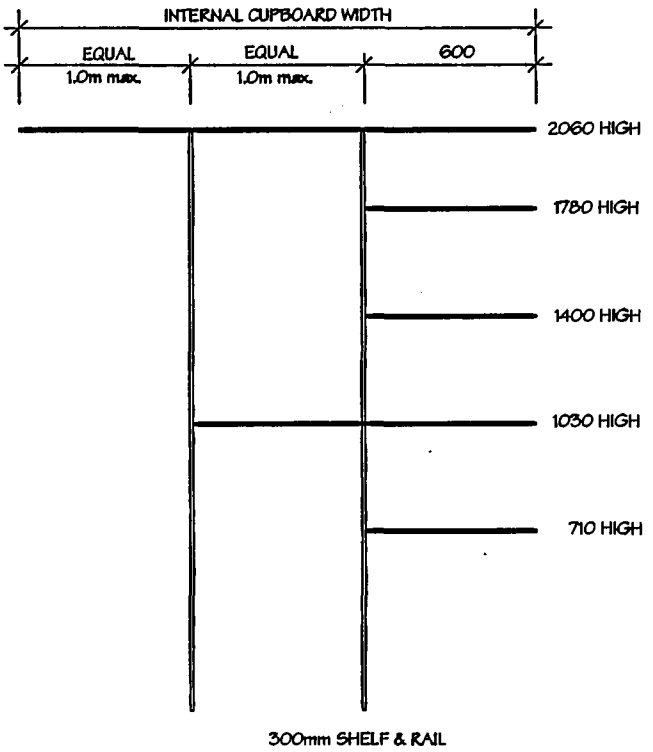
ZEN TEK SUPERIOR SHELVING SYSTEMS

GOLDEN HOMES STANDARD SHELVING UNITS

SCALE 1 : 25 | Page 1 of 2



MASTER BEDROOM
(short wall)



MASTER BEDROOM
(long wall)

TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS
ALL CUPBOARD WIDTHS TO BE SITE MEASURED AND CONFIGURATION
CONFIRMED WITH CLIENT

NPDC Approved
20 JA

ZEN TEK™ SUPERIOR SHELVING SYSTEMS

GOLDEN HOMES STANDARD
SHELVING UNITS

SCALE 1 : 25

red co
adding 'enginuity' to building projects
Consulting Professional Engineers

Redco NZ Ltd
Redco House
470 Otumoetai Road
TAURANGA 3110
Telephone: 07 571 7070
Facsimile: 07 571 7080
Email: red@redco.co.nz
www.redco.co.nz

CALCULATIONS

Client: **NZ BUILDING SUPPLIES LTD** 20 Oct '06

Project: **CEILING BRACING FOR NEW HOUSES** Project No. **6939**

Wind zone	Along BU's/wall	Across BU's/wall	X-brace force	Brace tension force	X-brace req'd	Brace end fixings
Mediun	113 BU's	138 BU's	3.4 kN	4.9 kN	Strap brace	2/10g Teks
High	113 BU's	195 BU's	4.9 kN	6.9 kN	Strap brace	3/10g Teks
V.high	126 BU's	252 BU's	6.3 kN	8.9 kN	2/Strap brace	4/10g Teks

Note: bracing units required in walls of garage are in addition to those required for main house

red co

adding 'enginuity' to building projects

Redco NZ Ltd
Redco House
470 Otumoetai Road
TAURANGA 3110
Telephone: 07 571 7070
Facsimile: 07 571 7080
Email: red@redco.co.nz
www.redco.co.nz

Chartered Professional Engineers

Ref: 8178 / 080728 Bracing orientation.doc

28 July, 2008

ZOG
PO BOX 4411
MOUNT MAUNGANUI SOUTH

Dear Sir/Madam,

re: BRACING

The bracing for the house is provided by Gib sheets as per attached Gib Nash specifications. This is not reliant on any diagonal bracing.

The diagonal bracing members are provided to ensure the frames remain true during transport and erection. These members are capable of taking both tension and compression, so the orientation of these braces is not critical. This is confirmed in the attached calculation sheets.

We trust you find these points in order, but should you have any queries on any aspect please do not hesitate to call.

Yours sincerely
Redco NZ Ltd

H. Pearse-Danker

Hamish Pearse-Danker

NPDC Approved
26 JAN 2009

(2) To ensure adequate thermal performance of external walls, where appropriate, and in accordance with HERA Report R4-72[4] typically a thermal break is required between the external face of the stud and the exterior cladding/building paper. The position of the exterior cladding, building paper, thermal break and steel stud, must be as shown in figure A1 of R4-72. For flat cladding systems used on light steel framing, synthetic building wraps must not be used instead of building paper under all cladding materials which have a thermal resistance of less that $0.2m^2°C/W$. The thermal break may be omitted when the following external claddings are used:

(i) Brick veneer, connected to the steel studs with ties at specified intervals.
(ii) Any externally insulated foam-backed/cladding system (EIFS) with a specified R rating complying with NZS 4218[5].
(iii) Any twin wall vinyl weatherboard system with an internal air gap at least 5mm thick.

History of Use

Galvanised and Zincalume® coated steel has been used in the building industry as a structural and roofing and cladding product for many years and has provided a history of dependable corrosion protection in a range of environments. See, for example, BBA Report No.20.[7] Details of this performance in the Australian/New Zealand environment may be obtained from New Zealand Steel.

References

1. Environmental Categories; New Zealand Steel, Auckland, March 2000.
2. AS/NZS 2312:1994 Guide to the Protection of Iron and Steel Against Exterior Atmosphere Corrosion; Standards New Zealand, Wellington.
3. E2/AS1:1994, Acceptable Solution for External Moisture, Building Industry Authority, Wellington.
4. The Thermal Insulation Performance of Light-Weight Steel Framed, External Wall Elements: HERA, Manukau City, 1993, HERA Report R4-72.
5. NZS 4218:1996, Energy Efficiency - Housing and Small Building Envelope; Standards New Zealand, Wellington.
6. E3/AS1:1993, Acceptable Solution for Internal Moisture, Building Industry Authority, Wellington.
7. Zinc Coated Steels in Buildings; BBA, Watford, England, 1983, BBA Report No.20.
8. AS 1397:2001, Steel Sheet and Strip - Hot-Dipped Zinc Coated or Aluminium/Zinc Coated; Standards Australia, Sydney.
9. Recommendations Regarding the Use of Synthetic Building Wraps on Light Steel Framed Buildings; NASH New Zealand, Manukau City, 2002.

Related Documents

Durability Statement for Galvanised Steel Floor Joists, jointly prepared by BHP New Zealand Steel Ltd and the New Zealand Chapter of NASH, Revision 3, March 2003.

Authorisation

Jointly prepared by the New Zealand Chapter of NASH and BHP New Zealand Steel Ltd, March 1997.

Revised and reissued by New Zealand Steel Ltd, March 2003

- The bottom plate detail must ensure that the bottom plate and its immediate support remains dry in-service (i.e. they are not subject to water ingress from internal or external sources).
- Bottom plates must be clean, with no corrosion, clear of debris and dry, prior to installation of external and internal linings.
- The framing should be lined on both sides (with a roof truss this involves a ceiling and the external roofing). See Additional Important Points to Consider, point (1).
- Fasteners shall be made from compatible materials with durability no less than that of the steel frame.
- Separation complying with E2/AS1[3] Paragraph 4.1.3 is required between any CCA treated timber and the steel framing, and between any concrete and the steel framing (this applies especially to the bottom plate).
- Contact between dissimilar metals must be avoided (e.g. between copper and galvanised or Zincalume® coated steel). Note: for this application, galvanised and Zincalume® framing materials are not considered to be dissimilar materials.
- For flat cladding systems, building paper and not synthetic building wraps shall be used under all cladding systems which have a thermal resistance of less than 0.2 $m^2°C/W$ in accordance with reference [9].

Internal Environment

- The thermal performance of the external wall and roof system must comply with established good practice, e.g. residential buildings as given by HERA Report R4-72[2] and NZS4218.[5] See Additional Important Points to Consider, Point (2).
- Extraction systems from internal sources of humidity such as bathrooms, showers and kitchens, laundry appliances and any wet process operations must be vented to the exterior of the building and not into the roof space.
- Internal ventilation for residential buildings must comply with E3/AS1[6] Paragraph 1.2.

Storage and Repair

- Site storage conditions must ensure that the framing components are kept dry when in a stacked condition and free of corrosion, prior to installation.
- Any weld areas shall be repaired using a zinc-rich primer.
- The surfaces of cuts made with a grinding wheel should be repaired, using a zinc-rich primer, where applicable.

Additional Important Points to Consider

(1) Where the framing is lined on the exterior face but not on the interior face, the 50 year durability will be met in all applicable environmental categories except Coastal Severe and Industrial Severe, provided that:

(i) The area enclosed by the framing does not contain a bathroom, shower, kitchen, laundry or wet process operations area, and
(ii) Any doors to the exterior are typically closed during inclement weather, and
(iii) All the other provisions given in the Requirements, Limitations and Exclusions are complied with.

GOLDEN HOMES

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f. (07) 574 9537
e.tauranga@zog.co.nz
51 Portside Drive.
PO Box 4411
Mt. Maunganui.

27th April, 2007

RE: Golden Home Jobs Bracing Calculations

To whom it may concern,

For Golden Homes bracing calculations we use the H-Brace software program which calculates the bracing in accordance with NZS.3604.1999.The figures are derived by the program, which actually interpolates Table 5.6 of NZS.3604.1999.

For example :

Table 5.6 stipulates 64 BU's/M for 2m roof height and 78 BU's/M for 3m roof height, therefore where we have a roof height of 2.1m we require 65.4 BU's/M.
((78-64)/10)+64.
So for a building length of 20.0m we have 20.0x65.4 = 1308BU's.

Obviously all this process is done "behind the scenes" within the program.

The bracing schedule provided includes, Wind zone, Earthquake zone, Building length/width, Floor area, Roof Cladding weight, Wall cladding weight, Roof pitch, Roof height toapex, and Roof height above eaves.

Therefore I can assure you that if these items are noted correctly on the schedule, the total BU's required will also be correct. With drawing over 1000 homes per year for Golden Homes the H-Brace program is a very accurate and efficient part of the draughting process for us, and is widely accepted throughout the country by all Territorial Authorities.

I hope that this explanation can eliminate any further issues in regards to the bracing calculations.

Please do not hesitate to contact me if you have any further queries or would like to discuss the information above.

Dave Eddy
Operations Manager
RCDC

Visual Windows Software

HBrace 4.0

House Bracing Design software developed to work in accordance with NZS 3604:1999.

HBrace Compile Version Number: 4.0.25

Brace Database Version: 5.4

Contact Details:
Visual Windows Software
"www.VisualWindows.co.nz"
Email:Support@VisualWindows.co.nz

NPDC Approved
26 JAN 2009

GIB® Residential Garage Boundary Walls:
Supplement to 'GIB® Fire Rated Systems'

Scope of Use

The construction offered in this bulletin is intended for use when NZBC Acceptable Solution C/AS1 requires a Fire Resistance Rating (FRR) for a single storey residential garage boundary wall within 1m from a property boundary. The garage or carport must have a Fire Hazard Category not more than 1 as defined in table 2.1 of C/AS1. This includes a standard single household garage for use by the household occupants only (SH purpose group).

For boundary walls outside this scope the designer must ensure that structural stability is maintained for the specified time of fire resistance. The solution will require project specific considerations and could involve fire rated return walls, a fire rated ceiling or a detail similar to the one presented in this Bulletin.

Compliance with the NZBC

- Under normal conditions of dry internal use GIB® Fire Rated Systems have a serviceable life in excess of 50 years and satisfy the requirements of NZBC Clause B2 — Durability.
- GIB® Fire Rated Systems provide passive fire protection in accordance with the requirements of NZBC Clause C3 — Spread of Fire.
- GIB® Residential Garage Boundary Walls satisfy the requirements of NZBC Clause C4 — Structural Stability during Fire and have been designed to fall inwards and away from the adjacent property boundary when collapse conditions are reached during a fire.

Selecting the FRR

If the garage meets the following conditions, the FRR of the boundary walls can be assessed from this Technical Bulletin. For situations outside these conditions Part 5 and 7 of NZBC Acceptable Solution C/AS1 must be followed with respect to establishing the required FRR and distance to the boundary.

i) For attached and detached garages less than 1m from the boundary, a 30/30/30 2-way FRR is required

ii) For garages 1m or more from the boundary no FRR is required

iii) A carport can have 100% unprotected walls and roof if 2 perimeter sides are open, and:

   a) the roof plan is less than 40m² and no part of the roof is closer than 0.3m to the boundary

   b) the roof plan is greater than 40m² and no part of the roof is closer than 1m to the boundary

If these conditions are not met, comply with the requirements of C/AS1 clause 7.8.10.

A garage or carport can be connected to a house without the need for a FRR (between the garage and house) provided that the house is under the same ownership as the garage/carport and solely for the use of the occupants of the household.

For further information please contact the GIB® Helpline on 0800 100 442.

[1] **Reference:** *MacDonald Barnett Partners, Consulting Civil and Structural Engineers, Report No 5109 CRB, dated 13 October 1993, Producer Statement dated 1 March 1994, and letters/faxes dated 12/6/02, 28/6/02, 2/12/02 & 17/12/02.*

Notes

i. A wall less than 1m from the boundary requires a 2-way FRR. Select the appropriate system and construct in accordance with 'GIB® Fire Rated Systems, 2006'.

ii. When less than 0.2m from the boundary, end return walls at 90° to the boundary must be fire rated within this 0.2m. The FRR is the same as for the boundary wall. Alternatively a fire rated wing wall complying with table 7.3 of NZBC C/AS1 could be constructed.

iii. Timber grade and treatment must be in accordance with NZS3604:1999 and NZS3602:2003.

iv. Sheet joints in GIB® plasterboard under external claddings do not require taping and stopping.

v. Cladding materials must be separated from GIB® plasterboard by means of a fire retardant building paper over the GIB® plasterboard and vertical timber battens with a nominal depth of 20mm. Follow the requirements of NZBC E2/AS1.

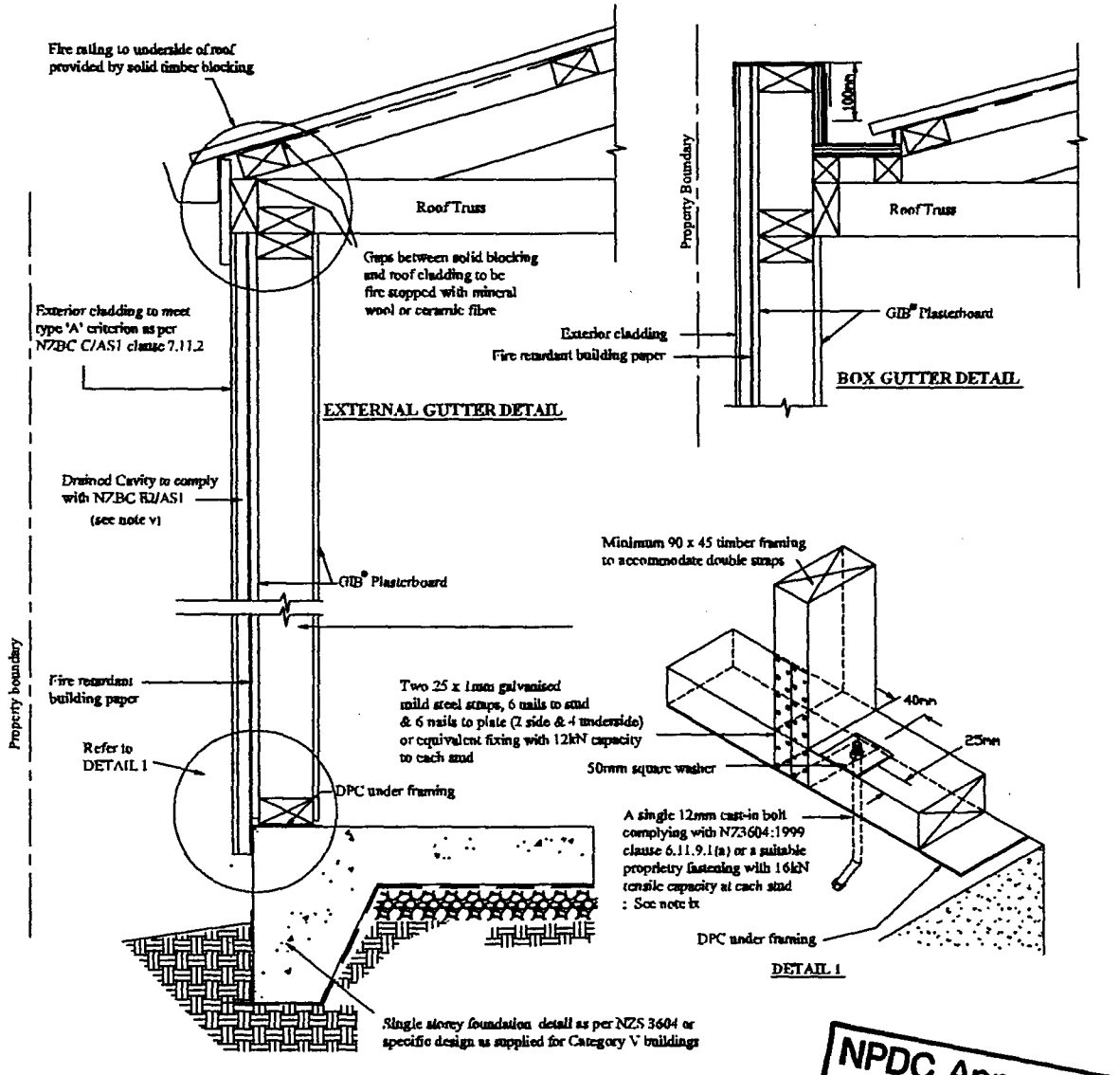
vi. Cladding materials must comply with NZBC C/AS1 clause 7.11.2. This requires a 'Type A' cladding when the wall is within 1m of the property boundary . 'Non-combustible' claddings, such as concrete, brick and steel, meet the Type A criterion. Cellulose fibre-cement with a coating less than 1mm is also classed Type A. Products such as plywood and timber or PVC weatherboards do not meet the Type A requirement and cannot be used within 1m of the boundary.

vii. The drawings below assume a standard wall height up to 2.4m and a stud spacing of 600mm. Walls from 2.4 to 2.8m require stud spacing at 450mm and walls from 2.8 to 3m require studs at 400mm.

viii. Construct finished floor levels and foundation edge in accordance with NZS3604 clause 7.5.2. Generally requirements are relaxed for Category V buildings. Contact your local Building Consent Authority.

ix. Suitable proprietary 16kN bottom plate fastenings include:

- A single M12 CHEMSET fastener set 90mm into concrete
- A single HSB12/150 Screw Bolt
- 2 wedge anchors with 8kN capacity (one each side of the stud)
  (Contact the fastener supplier for verification of performance)



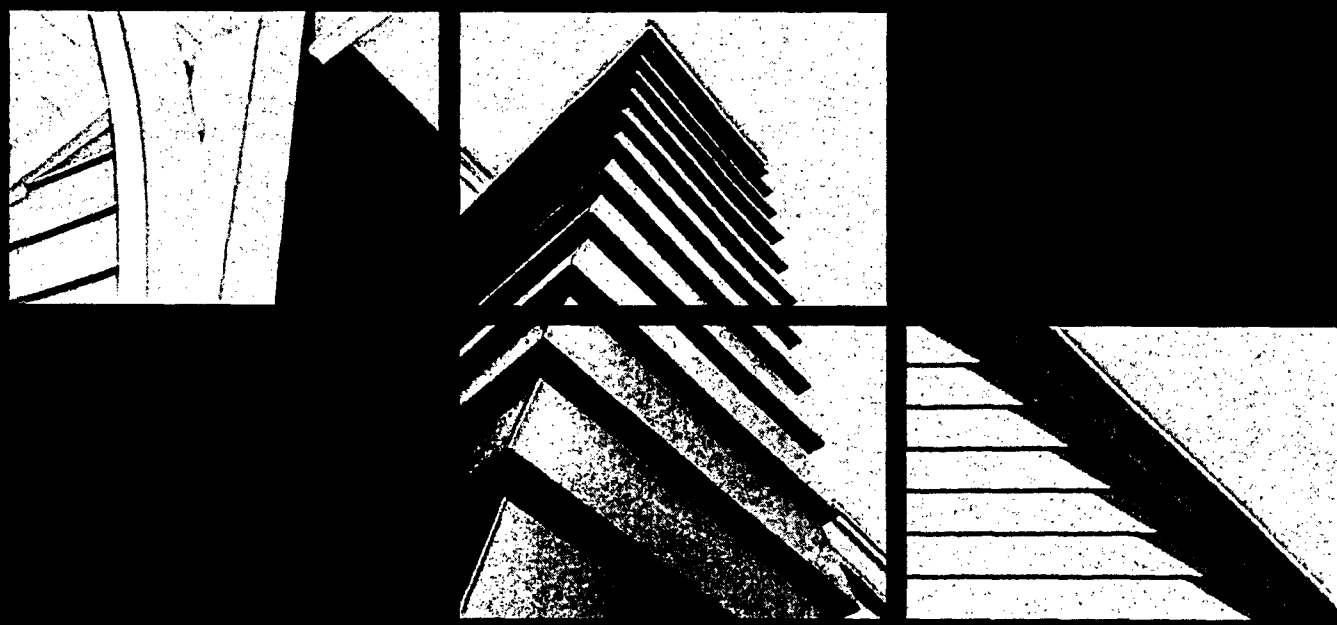
[2] *The cladding is tested to AS/NZS3837 at an irradiance of 50kW/m² for a duration of 15 minutes and also required to meet the requirements of C9.1 of the NZBC Acceptable Solution C/AS1.*

NPDC Approved 26 JAN 2009

Linea®
WEATHERBOARD

NEW ZEALAND
APRIL 2006

TECHNICAL SPECIFICATION



James Hardie®

CONTENTS

WE VALUE YOUR FEEDBACK

To continue with the development of our products and systems, we value your input. Please send any suggestions, including your name, contact details, and relevant sketches to:

James Hardie
Fax 0800 808 988
literaturefeedback@jameshardie.co.nz

1 APPLICATION AND SCOPE

1.1 APPLICATION

Linea® Weatherboard is a 16mm thick, preprimed fibre cement weatherboard and is classified as lightweight wall cladding suitable for residential and light commercial construction using timber framed external walls. Linea® Weatherboard is available in 135mm, 150mm and 180mm widths.

James Hardie also has available

- Fascia and barge in two widths. Fascia is a 16mm thick, pre-primed fibre cement product.
- Trim in a variety of widths for use as decorative trims around openings and external corners. Trim is a 16mm thick, pre-primed fibre cement product.

If you are a specifier...

Or other responsible party for a project ensure that the information in this document is appropriate for the application you are planning and that you undertake specific design and detailing for areas which fall outside the scope of these specifications.

If you are an installer...

Ensure that you follow the design, moisture management and associated figures and material selection provided by the designer and the James Hardie Installation Manual.

All the details provided in this document must be read in conjunction with the specifiers specification.

Make sure your information is up to date

When specifying or installing James Hardie products, ensure you have the current manual. If you're not sure you do, or, if you need more information, visit www.jameshardie.co.nz or Ask James Hardie on 0800 808 868.

1.2 SCOPE

This specification covers the use of Linea® Weatherboard for buildings that fall within the scope of limitations of NZBC Acceptable Solution 'E2/AS1', paragraph 1.1.

This specification includes the use of Linea® Weatherboard in both direct to stud and cavity construction method and must be read in conjunction with the current BRANZ Appraisal for Linea® Weatherboard.

1.3 DETAILS

Various Linea® Weatherboard details are provided at the rear of this document. This specification and details in CAD file are also available to download from our website at www.jameshardie.co.nz.

1.4 SPECIFIC DESIGN

For use of Linea® Weatherboard outside this published scope, the architect, designer or engineer must undertake specific design. For advice on designs outside the scope of this specification, Ask James Hardie on 0800 808 868.

2 DESIGN

2.1 COMPLIANCE

Linea® Weatherboard has been appraised by BRANZ.
Refer to Appraisal Certificate number 446 (2005) and 447 (2005) at www.branz.co.nz or www.jameshardie.co.nz
Note: the scope of the Appraisal Certificate takes precedence over the scope of this Specification.

2.2 RESPONSIBILITY

The specifier or other party responsible for the project must ensure that the information and details in this specification are appropriate for the intended application and that additional detailing is performed for specific design or any areas that fall outside the scope of this technical specification. For applications outside the scope of this literature and figures which are not provided herein, the architect, designer or engineer must undertake specific design and it should be ensured that the intent of their design meets the requirements of the NZBC.
All dimensions shown are in millimetres unless noted otherwise.
All New Zealand Standards referenced in this manual are current edition and must be complied with.
James Hardie conducts stringent quality checks to ensure that any product manufactured falls within our quality spectrum. It is the responsibility of the builder to ensure that the product meets aesthetic requirements before installation. James Hardie will not be responsible for rectifying obvious aesthetic surface variations following installation.

2.3 SITE & FOUNDATION

The site on which the building is situated must comply with NZBC (New Zealand Building Code) Acceptable Solution E1/AS1 'Surface Water'. Foundation design must comply with the requirements of NZS 3604 'Timber Framed Buildings' or be as per specific engineering design. The grade of adjacent finished ground must slope away from the building to avoid any possibility of water accumulating.

2.4 GROUND CLEARANCES

The floor must have a minimum clearance to paved or unprotected ground as required by NZS 3604.
Linea® Weatherboards must overhang the bottom plate on a concrete slab by a minimum of 50mm as required by NZS 3604.
The bottom of claddings must comply with NZBC Acceptable Solution, 'E2/AS1' section 9.1.3.

2.5 MOISTURE MANAGEMENT

It is the responsibility of the specifier to identify moisture related risks associated with any particular building design.
Wall construction design must effectively manage moisture, considering both the interior and exterior environments of the building, particularly in buildings that have a higher risk of wind driven rain penetration or that are artificially heated or cooled. Walls shall include those provisions as required by NZBC Acceptable Solution 'E2/AS1' 'External Moisture'. In addition all wall openings, penetrations, junctions, connections, window sills, heads and jambs must incorporate appropriate flashing for waterproofing. The other materials, components and installation methods used to manage moisture in the walls, must comply with the requirements of relevant standards and the NZBC. For information in relation to designing for weathertightness, refer to the Building Research Association of New Zealand (BRANZ) and the Department of Building & Housing (DBH) updates on the following websites, respectively www.branz.co.nz and www.dbh.govt.nz.

2.6 STRUCTURE

Timber-framed buildings must be designed in accordance with NZS 3604 (Timber Framed Buildings). When the framing is provided as per the specific engineering design, the framing stiffness must be equivalent to or more than the stiffness requirements of NZS 3604.

2.7 WIND LOADING

Linea® Weatherboard cladding is suitable for use in all New Zealand wind zones up to and including VH as defined in NZS 3604. A specific design is required for all situations when a building falls in a specific design (SD) wind zone.

2.8 STRUCTURAL BRACING

Linea® Weatherboard installed as per Linea® Weatherboard specific bracing details will provide bracings for buildings designed and constructed in accordance with NZS 3604. The Linea® Weatherboard bracing systems have been independently tested and certified by BRANZ using both construction methods i.e. direct fixed and cavity construction. The following range of bracings can be achieved

- Wind 68 – 120BU'S
- Earthquake 60 – 105 BU'S

Refer to the James Hardie Bracing information manual for details.

2.9 FIRE RATED WALLS

Walls clad with Linea® Weatherboard using a direct fix or cavity construction method can achieve fire ratings of up to 60/60/60 when constructed in accordance with the James Hardie 'Fire and Acoustic' Technical Specification Manual.
Refer to Fire and Acoustic technical literature for further information about fire rated systems.

2.10 ENERGY EFFICIENCY

The R-Value of Linea® Weatherboard walls constructed in accordance with this manual using bulk insulation, will comply with the Section 3.1 - 'Schedule Method' of NZS 4218 (Energy Efficiency – Small Building Envelope) required under Table 1. To meet these insulation requirements, bulk insulation as mentioned in Table 1 of this specification must be used. This calculation is based on a timber framing member size of 90 x 45mm and internal linings of James Hardie Villaboard® Lining or plasterboard.

TABLE 1:

INSULATION CAPABILITY		
Climate Zone*	R-Value Requirement	Cavity Insulation Infill Requirement
1 & 2	1.5 m^2 °C/W	R1.8 Fibreglass batts.
3	1.9 m^2 °C/W	R2.2 Fibreglass batts.

*as defined in NZS4218

3 FRAMING

3.1 GENERAL
This Linea® Weatherboard technical specification is only suitable for timber-framed buildings. Other framing materials are outside the scope of this specification.

3.2 DIMENSIONS
A 35mm minimum stud width is required unless noted otherwise in this specification.

3.3 TIMBER GRADE
Minimum timber grade requirements are No.1 framing grade in accordance with NZS 3631 'New Zealand Timber Grading Rules' or equivalent.

3.4 DURABILITY
To comply with NZBC requirements the external framing must be treated to a minimum H1.2 treatment. Refer to NZBC Acceptable Solution B2/AS1 'Durability' for further information about the durability requirements. For timber treatment information refer to NZS 3602 (Timber and Wood-Based Products for use in Buildings) and NZS 3640 (Chemical Preservation of Round and Sawn Timber) for minimum timber treatment selection and treatment requirements. Also refer to framing manufacturer's literature for further guidance on timber selection.
Framing must be protected from moisture at sites in accordance with the recommendations of framing manufacturers.
Note: refer to NZS 3602 for information about the allowable moisture content in timber.

3.5 FRAME CONSTRUCTION
All timber framing sizes and set-out must comply with NZS 3604 and stud, nogs / dwangs centres as required by this specification.

3.5.1 DIRECT FIXED CONSTRUCTION METHOD
The following framing must be provided for direct fixed construction method:
- Studs must be provided at 600mm centres maximum.
- Nogs must be provided at 1200mm centres maximum.
- Double studs are required at internal corners.
- Extra packers may be required at external corners.
- Extra studs are required for aluminium internal corner sections.

3.5.2 CAVITY CONSTRUCTION METHOD
The following framing must be provided for cavity construction method:
- When studs are at 600mm centres the nogs must be provided at 800mm centres maximum.
- When studs are at 400mm centres the nogs may be provided at 1200mm centres maximum.
- Double studs are required at internal corners.
- Extra packers may be required at external corners.
- Extra studs are required for aluminium internal corner sections.

3.6 TOLERANCES
In order to achieve an acceptable wall finish, it is imperative that framing is straight and true. Framing tolerances must comply with the requirements of NZS 3604. All framing must be made flush.

4 PREPARATION

4.1 BUILDING WRAP
Building wrap must be provided as per the requirements of NZBC Acceptable Solution 'E2/AS1' 'External Moisture' and NZS 3604. The building wrap must comply with Table 23 of 'E2/AS1'. The building wrap must be fixed in accordance with 'E2/AS1', NZS 3604 and the wrap manufacturer's recommendations. Walls which are not lined on the inside face e.g. garage walls or gable ends must include a rigid sheathing or an air barrier behind the cladding which complies with the requirements of NZBC Acceptable Solution 'E2/AS1'.

4.2 FLASHING
All wall openings, penetrations, intersections, connections, window sills, heads and jambs must be flashed prior to weatherboard installation. Please refer to moisture management requirements in Clause 2.5. The building wrap must be appropriately incorporated with penetration and junction flashings. Materials must be lapped in such a way that water tracks down to the exterior on the face of building wrap. James Hardie will assume no responsibility for water infiltration within the wall due to poor installation of flashings or building wraps.The selected flashing materials must comply with the durability requirements of table 20 of Acceptable Solution 'E2/AS1'.

4.3 VENT STRIP
The James Hardie uPVC cavity vent strip must be installed at the bottom of all walls constructed using the drained and ventilated cavity construction method. James Hardie uPVC vent strip has an opening area of 1000mm²/m length. It is important that the openings in the vent strip are kept clear and unobstructed to allow free drainage and ventilation of cavities.

4.4 CAVITY BATTENS
Buildings with a risk score of 13-20 calculated in accordance with NZBC Acceptable Solution 'E2/AS1' Table 2 require Linea® Weatherboards to be installed on a cavity.
The cavity battens provide airspace between the frame and cladding and are considered a "packer" only in this specification.
The timber battens must be minimum H3.1 treated in accordance with NZS 3640 (Chemical preservation of Round and sawn timber) to comply with the durability requirements of B2/AS1.
Cavity battens must comply with 'E2/AS1' and:
- be minimum 18mm thick.
- be minimum as wide as the width of studs.
- be fixed by the cladding fixings to the main framing through the building wrap.
- until claddings are fixed the battens need only to be tacked to framing.

(Batten fixing is required temporarily to keep them straight on the wall during construction.)
The cavity battens are installed as described below:
- Fix cavity battens to studs.
- Battens should be fixed with 40mm x 2.8mm nails at 800mm centres maximum.

4.5 INTERMEDIATE SUPPORT

Where studs are at 600mm centres an intermediate means of restraining the building wrap and insulation from bulging into the cavity shall be installed. An acceptable method to achieve this is using a:

- intermediate cavity batten between the studs.
- 75 mm galvanized mesh.
- polypropylene tape.

No intermediate supports are required:

- where studs are at 400mm centres. Or;
- when rigid sheathings instead of building wraps are used.

4.6 CORNERS

Anticipated joist shrinkage must be allowed for in the design process. Do not run trims or aluminium extrusions continuously across solid floor joists. There are a number of options to select from when detailing external corners:

- 90° corner soaker in aluminium, copper or stainless steel. Refer to Figures 7 and 32.
- Box corners using James Hardie Trim. Refer to Figures 3, 4 and 29.
- Mitred corners to weatherboards. Refer to Figures 5 and 30.
- Aluminium boxed corners. Refer to Figures 6 and 31.

There are a number of options to select from when detailing internal corners:

- Scribed corner. Refer to Figures 8 and 33.
- 90° or 135° Aluminium W-mould. Refer to Figures 9, 10, 34 and 35.

4.7 JUNCTIONS & PENETRATIONS

Refer to Clause 2.5 of this specification for moisture management requirements. All windows and doors must be detailed as per the requirements of this specification. James Hardie has developed the window details for Linea® Weatherboards which meet the requirements of E2 'External Moisture', an approved document of the NZBC. Refer to Figures 11 to 24 and 36 to 53.

5 FIXING LINEA® WEATHERBOARD

5.1 GENERAL

The horizontal lap of Linea® Weatherboards must be 30mm. Linea® Weatherboards must be kept dry and under cover whilst in storage prior to and during fixing. Cut ends which are exposed or where sealant is applied to the boards must be primed prior to installation. Dust and loose material must be removed before priming.
An H3.1 treated timber cant strip must be provided to support the bottom board on the wall. Refer to Figure 1 and Figure 26.

5.2 FASTENER DURABILITY

Fasteners must meet the minimum durability requirements of the NZ Building Code. NZS 3604 specifies the requirements for fixing's material to be used in relation to the exposure conditions and are summarized in Table 2.

TABLE 2:

EXPOSURE CONDITIONS & NAIL SELECTION PRESCRIBED BY NZS 3604

NAIL MATERIAL		
Sea Spray Zones *	Zone 1 outside sea spray zone and Zones 2 – 4 & Geothermal hot spots	Bracing – All zones
Grade 316 Stainless	Hot-dipped galvanised or 316 stainless	Grade 316 Stainless

** (Zone 1 areas where local knowledge dictates that increased durability is required, appropriate selection shall be made)*

Also refer to NZBC Acceptable Solution 'E2/AS1' Table 20 and 21 for information regarding the selection of suitable fixing materials and their compatibility with other materials.

5.3 NAIL SIZE AND FIXING METHOD

Linea® Weatherboards and Trim must be fixed to timber with the types of nails specified in Tables 3 and 4, in accordance with the following requirements:

- All concealed nails must be driven flush with the board surface.
- When concealed fixing Linea® Weatherboards, nails must be driven behind the lap of the boards, except at all corners and vertical edges of openings where Linea® Weatherboards must be face fixed/exposed nailed. Ref Figure 2 and Figure 28.
- Nails must be fixed 25mm from the end of the board when hand nailing.
- Linea® Weatherboards may be face fixed when site conditions create a gap under the lap.

TABLE 3:

NAIL REQUIREMENTS FOR LINEA® WEATHERBOARDS

DIRECT TO STUD FIXING	
Concealed Nailing	
40 x 2.8mm HardiFlex® nails	Finish flush with the board surface
Face Nailing	
60 x 3.15mm jolt head nails	Hot-dipped galvanised may be driven through both thicknesses at board lap without pre-drilling
	Stainless steel jolt heads will require pre-drilling*

CAVITY FIXING	
Concealed Nailing	
60 x 3.15 mm HardiFlex® nails	Finish flush with the board surface.
Face Nailing	
75 x 3.15mm jolt head nails	Hot-dipped galvanised may be driven through both thicknesses at board lap without pre-drilling
	Stainless steel jolt heads will require pre-drilling*

** Use a 3.0mm drill bit*

TABLE 4:

NAIL REQUIREMENTS FOR TRIM	
Single Thickness	60 mm jolt head nails. If fixing over Linea® Weatherboard use predrilled* 75 x 3.15mm jolt head nails.
Double Thickness	60mm jolt head nails.
Single plus packer	If fixing over Linea® Weatherboard use 75 x 3.15mm jolt head nails through a pre-drilled* hole. When fixing to timber support use 60mm jolt head nails.

** Use a 3.0mm drill bit*

Note: Special fixing arrangements are required for bracing and fire-resistance rated wall systems. For more information Ask James Hardie on 0800 808 868.

5.4 GUN NAILING

Linea® Weatherboard can also be gun-nailed when concealed fixing method is used.

- Gun-nailing must not be used when Linea® Weatherboard is used for bracing.
- Nails must be no closer than 50 mm from the ends of boards when gun nailing is used – double studs will be required.

6 JOINTING

The ends of Linea® Weatherboards are jointed off-stud by means of a tongue-and-groove (T&G) joint. T&G joints may be located centrally between studs but no closer than 100mm from the edge of a stud. The joints must be staggered by 600mm minimum. Sealant must be provided in the T&G joint.

7 FINISHING

Note: Protective coating of Linea® Weatherboard and Trim is required in order to meet the durability requirements of the New Zealand Building Code.

7.1 PREPARATION & PRIMING

The Linea® Weatherboard and Trim must be dry before painting. Punch and fill all exposed nails a maximum of 2mm below the surface. Fill the hole with an exterior grade builders fill, allow to cure and sand smooth ready for priming. Prime the filled holes in accordance with paint manufacturer's specifications.

7.2 SEALANTS

All sealants must demonstrate the ability to meet the relevant requirements of the NZBC and hold a current BRANZ Appraisal certificate. Application and use of sealants must comply with manufacturer's instructions. Sealants, if coated, must be compatible with the paint system.

7.3 PAINTING

All Linea® Weatherboards are pre-primed on their face and bottom edge with a factory applied acrylic base coat.
Linea® Weatherboard must be painted within 90 days of installation.
All exposed faces, including the top edges under the sills and bottom edges of Linea® Weatherboard, Trim and accessories must be finished with latex exterior paint system complying with any of parts 7, 8, 9, and 10 of AS 3730.
Dark coloured paints can be used on Linea® Weatherboard and Trim. Some environments require special coatings.
Paint selection and the preparation required is dependant on paint chosen. Refer to the paint manufacturer for information before starting painting.

8 STORAGE AND HANDLING

Linea® Weatherboards and Trim must be laid flat on a smooth level surface. To ensure optimum performance, store weatherboards under cover and keep dry prior to fixing. If the weatherboards should become wet, allow to dry thoroughly before fixing. Do not carry weatherboards on the flat, carry in the vertical position to avoid excessive bending.

9 MAINTENANCE

It is the responsibility of the specifier to determine normal maintenance requirements to comply with NZBC Acceptable Solution B2/AS1. The extent and nature of maintenance will depend on the geographical location and exposure of the building. As a guide, it is recommended that basic normal maintenance tasks shall include but not be limited to:

- Washing down exterior surfaces every 6-12 months*,
- Re-applying exterior protective finishes*,
- Maintaining the exterior envelope and connections including joints, penetrations, flashings and sealants.
- Cleaning out gutters, blocked pipes and overflows as required,
- Pruning back vegetation close to or touching the building.

**Refer to your paint manufacturer for washing down and recoating requirements related to paint performance.*

10 PRODUCT INFORMATION

10.1 MANUFACTURING & CLASSIFICATION

James Hardie New Zealand is an ISO 9001(2000) Telarc certified manufacturer. Linea® Weatherboard and Trim are manufactured to meet the requirements of AS/NZS 2908.2: 2000 'Cellulose-Cement Products', Linea® Weatherboard has a classification of Type A Category 3 in accordance with this Standard. Linea® Weatherboard is a reduced density cellulose cement formulation incorporating James Hardie patented CLD™ (Ceramic Low Density) technology. Linea® Weatherboard has a bevel back and tongue-and-groove (T&G) at the ends for jointing. The bottom front edge of Linea® Weatherboard is chamfered. The weatherboards are supplied pre-primed on their face and bottom edge with an acrylic primer. Linea® Weatherboards and Trim are identified by the printing at regular intervals of the name LINEA® on the back face.

10.2 JAMES HARDIE TRIM

The Trim, used for box corners, around windows and doors as well as special architectural features, is also made with the CLD™ technology and is supplied pre-primed with an acrylic primer.

10.3 DURABILITY

Linea® Weatherboard and Trim, when installed and maintained as per the technical specification, will meet the durability requirements for claddings as required in the NZBC Approved Document B2 'Durability'.

10.3.1 RESISTANCE TO MOISTURE/ROTTING

Linea® Weatherboard and Trim have demonstrated resistance to permanent moisture-induced deterioration (rotting) by passing the following tests in accordance with AS/NZS2908.2:

- Water Permeability (Clause 8.2.2)
- Warm Water (Clause 8.2.4)
- Heat Rain (Clause 6.5)
- Soak Dry (Clause 8.2.5).

10.3.2 RESISTANCE TO FIRE

Linea® Weatherboard and Trim has the following Early Fire Hazard Indices (tested to AS 1530 Part 3).

TABLE 5:

EARLY FIRE HAZARD INDICES	
Ignition Index	0
Flame Spread Index	0
Heat Evolved Index	0
Smoke Developed Index	0 -1

10.4 PRODUCT SIZES & MASS

Available sizes of Linea® Weatherboard and Trim and its weight are given in Table 6.

10.5 SIZE AND WEIGHT

Linea® Weatherboard is categorised as a Light Weight Wall Cladding as described in NZS 3604. Physical properties of Linea® Weatherboard and Trim are provided in Table 6.

11 SAFE WORKING PRACTICES

WARNING

DO NOT BREATHE DUST AND CUT ONLY IN WELL VENTILATED AREA

James Hardie products contain respirable crystalline silica which is considered by some international authorities to be a cause of cancer from some occupational sources. Breathing excessive amounts of respirable silica dust can also cause a disabling and potentially fatal lung disease called silicosis, and has been linked with other diseases. Some studies suggest smoking may increase these risks. During installation or handling: (1) work in outdoor areas with ample ventilation; (2) minimise dust when cutting by using either 'Score and Snap' knife, fibre cement shears or, where not feasible, use a HardiBlade® Saw Blade and dust-reducing circular saw attached to a HEPA vacuum; (3) warn others in the immediate area to avoid breathing dust; (4) wear a properly-fitted, approved dust mask or respirator (e.g. P1 or P2) in accordance with applicable government regulations and manufacturer instructions to further limit respirable silica exposures. During clean-up, use HEPA vacuums or wet cleanup methods - never dry sweep. For further information, refer to our installation instructions and Material Safety Data Sheets available at www.jameshardie.co.nz. FAILURE TO ADHERE TO OUR WARNINGS, MATERIAL SAFETY DATA SHEETS, AND INSTALLATION INSTRUCTIONS MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.

JAMES HARDIE RECOMMENDED SAFE WORKING PRACTICES
CUTTING OUTDOORS
▪ Position cutting station so that wind will blow dust away from user or others in working area. ▪ Use a dust reducing circular saw equipped with HardiBlade® Saw Blade and HEPA vacuum extraction.
DRILLING/OTHER MACHINING
When drilling or machining you should always wear a P1 or P2 dust mask and warn others in the immediate area.
IMPORTANT NOTES:
1. NEVER use a power saw indoors 2. NEVER use a circular saw blade that does not carry the HardiBlade® logo 3. NEVER dry sweep – Use wet suppression or HEPA Vacuum 4. NEVER use grinders 5. ALWAYS follow tool manufacturer's safety recommendations
P1 or P2 respirators can be used in conjunction with above cutting practices to further reduce dust exposures. Additional exposure information is available at www.jameshardie.co.nz to help you determine the most appropriate cutting method for your job requirements. If concern still exists about exposure levels or you do not comply with the above practices, you should always consult a qualified industrial hygienist or contact James Hardie for further information.

WORKING INSTRUCTIONS

Refer to Recommended Safe Working Practices before starting any cutting or machining of product.

HARDIBLADE® SAW BLADE

The HardiBlade® Saw Blade used with a dust-reducing saw is ideal for fast, clean cutting of James Hardie fibre cement products. A dust-reducing saw uses a dust deflector or a dust collector connected to a vacuum system. When sawing, clamp a straight-edge to the sheet as a guide and run the saw base plate along the straight edge when making the cut.

HOLE-FORMING

For smooth clean cut circular holes:
Mark the centre of the hole on the sheet.
Pre-drill a 'pilot' hole.
Using the pilot hole as a guide, cut the hole to the appropriate diameter with a hole saw fitted to a heavy duty electric drill.
For irregular holes:
Small rectangular or circular holes can be cut by drilling a series of small holes around the perimeter of the hole then tapping out the waste piece from the sheet face.

Tap carefully to avoid damage to sheets, ensuring that the sheet edges are properly supported.

STORAGE AND HANDLING

All James Hardie building products should be stored to avoid damage, with edges and corners of the sheets protected from chipping.
James Hardie building products must be installed in a dry state and be protected from rain during transport and storage. The product must be laid flat under cover on a smooth level surface clear of the ground to avoid exposure to water or moisture, etc.

QUALITY

James Hardie conducts stringent quality checks to ensure that any product manufactured falls within our quality spectrum. It is the responsibility of the builder to ensure that the product meets aesthetic requirements before installation. James Hardie will not be responsible for rectifying obvious aesthetic surface variations following installation.

12 PRODUCT SIZES

TABLE 6:

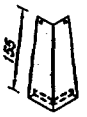
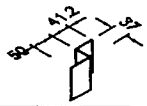
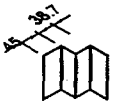
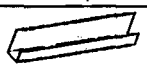
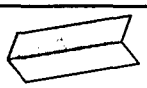
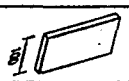
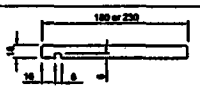
LINEA® WEATHERBOARD AND TRIM SIZES

						COVERAGE INFORMATION			
Product	Length (mm)	Width (mm)	Thickness (mm)	End Details	Effective Cover (mm)	No. of planks/ metre height (approx.)	Mass kg/lineal m (approx. at EMC)	Mass kg/m² approx. at EMC)	weight/pack (60 units/ pack)
135 Linea® Weatherboard	4200*	135	16	T & G	105	9.5	2.62	24.93	660.00
150 Linea® Weatherboard	4200*	150	16	T & G	120	8.3	3.1	25.70	781.00
180 Linea® Weatherboard	4200*	180	16	T & G	150	6.7	3.57	23.92	899.00
84mm Linea® Trim	2600	84	16	Square	N/A	N/A	1.6	N/A	N/A
100mm Linea® Trim	2600	100	16	Square	N/A	N/A	1.9	N/A	N/A
135mm Linea® Trim	4200	135	16	T & G	N/A	N/A	2.6	N/A	N/A
180mm Linea® Trim	4200	180	16	T & G	N/A	N/A	3.4	N/A	N/A

*Length is 4200mm plus 5mm for the tongue and groove (T & G) making overall length 4205mm
*The effective thickness of finished Linea cladding on the wall at the lap is approximately 33 to 35mm

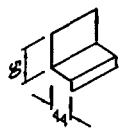
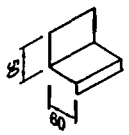
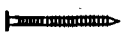
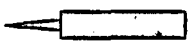
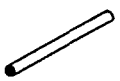
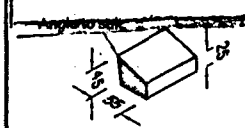
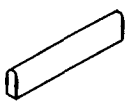
13 ACCESSORIES

ACCESSORIES/TOOLS SUPPLIED BY JAMES HARDIE

	ACCESSORY AND MATERIAL NUMBER		SIZE (MM)	MATERIAL / APPEARANCE
	External corner soaker 90° for 180 mm weatherboards • Aluminium • Copper • Stainless Steel	 301186 301188 301197	200 long	Self colour
	External corner soaker 90° for 150 mm weatherboards • Aluminium • Stainless Steel	 302820 302821	170 long	Self colour
	External corner soaker 90° for 135 mm weatherboards • Aluminium • Copper • Stainless Steel	 301185 301187 301196	155 long	Self colour
	External Slimline Box Corner Mould	301195	2700 long	Etch Primed Aluminium
	Box Corner 'Z' Flashing	301203	2700 long	PVC Grey
	Internal 'W' Mould 90°	301184	2700 long	Etch Primed Aluminium
	Internal 'W' Mould 135°	301183	2700 long	Etch Primed Aluminium
	Vent Strip	302490	3000 long	PVC White
	JH Corner Under Flashing	303745	3000 long	PVC White
	Jolt Head Nail 316 Stainless Steel	301233	60 x 3.15	Self colour
	Jolt Head Nail 316 Stainless Steel	301234	75 x 3.15	Self colour
	Inseal 3109 Sealing Strip	302324	5 x 3 x 25	Black compressible foam
	Trim 16mm	401943	84 x 2600 long	Fibre Cement primed
	Trim 16mm	401930	100 x 2600 long	Fibre Cement primed
	HardiFlex® nail - Jar - 5kg	302781 302782	60 x 3.15 ø x 6.8mmø head size	316 Stainless Steel
	HardiFlex® nail - Jar - 5kg	302783 302784	60 x 3.15 ø x 6.8mmø head size	Hot Dip Galvanised
	HardiBlade® Saw Blade	300660	4 tooth - 184mm	Diamond Tipped
	Fascia & Barge - 180mm - 230mm	401843 402230	4200 long	Fibre cement Primed
	Linea® and Fascia Screw	303480	40mm x 9 gauge	Stainless Steel

ACCESSORIES NOT SUPPLIED BY JAMES HARDIE

James Hardie recommends the following products for use in conjunction with its Linea® Weatherboard and Linea® Trim.
James Hardie does not supply these products. Please contact component manufacturer for information on their warranties and further information on their products.

	ACCESSORY AND MATERIAL NUMBER	SIZE (MM)	MATERIAL / APPEARANCE
	Head Flashing for Direct Fixed without Linea® Trim facings	2700 long	Etch Primed Aluminium
	Head Flashing for Direct Fixed with Linea® Trim facings	2700 long	Etch Primed Aluminium
	HardiFlex® nail	40 x 2.8 ø	316 Stainless Steel
	HardiFlex® nail	40 x 2.8 ø	Hot Dip Galvanised
	Flexable Sealant or Expandable foam	Tube	Fosroc, Holdfast or similar
	PEF Rod	Polyethylene foam	Fosroc or similar
	Flashing Tape	Proprietary tape to adhere to building wrap	Tyvek, Protecto wrap or similar
	Flashing material as per table 20, 'E2/AS1'		Flashing Fabricator
NPDC Approved 26 JAN 2009	Bolt Head Nail - Hot Dip Galvanised or 316 Stainless Steel	50 x 2.8 St.Steel 50 x 2.8 Galvanised 60 x 3.15 Galvanised 75 x 3.15 Galvanised	Self colour
	Planted Sill	As shown	H3.1 Treated Timber Timber Merchant or cut on site
	Titanium Coated High Speed Drill Bit	3.0mm ø	
	Timber Scriber	As required	H3.1 Treated Timber Timber Merchant or cut on site
	Fibre Cement Cutting Blade	254mm	Diamond Tipped
	Fibre Cement Cutting Blade	305mm	Diamond Tipped

14 DETAILS

Various details outlined in the following table are available on Pages 12 to 34.

TABLE 7:

DETAILS

DESCRIPTION	DIRECT FIXED	CAVITY CONSTRUCTION
Concrete Slab and Soffit	Figure 1	Figures 26
Weatherboard Fixing	Figure 2	Figure 28
Boxed Corners	Figures 3 & 4	Figure 29
Mitre Corner	Figure 5	Figure 30
Aluminium Box Corner	Figure 6	Figure 31
Corner Soaker	Figure 7	Figure 32
Internal Corner	Figure 8	Figure 33
Internal 135° Aluminium 'W' Mould Corner	Figure 9	Figure 34
Internal 90° Aluminium 'W' Mould Corner	Figure 10	Figure 35
Window Sill with Facings	Figure 11	Figure 37
Window Head with Facings	Figure 12	Figure 38
Window Jamb with Facings	Figure 13	Figure 39
Window Sill without Facings	Figure 14	Figure 40
Window Head without Facings	Figure 15	Figure 41
Window Jamb without Facings	Figure 16	Figure 42
Head Flashing Termination	Figure 17	Figure 43
One Piece Apron Flashing Joint	Figure 18	Figure 44
Pipe Penetration	Figure 19	Figure 46
Meter Box at Head	Figure 20	Figure 47
Meter Box at Sill	Figure 21	Figure 48
Meter Box at Jamb	Figure 22	Figure 49
Parapet Flashing	Figure 23	
Deck Junction	Figure 24	
Batten Fixing		Figure 25
Soffit Junction		Figure 27
Batten Layout at Window Opening		Figure 36
One Piece Gutter/Wall Junction		Figure 45
Interstorey Drainage Joint		Figure 50
Enclosed Deck Balustrade to Wall		Figure 51
Enclosed Balustrade to Wall		Figure 52
Enclosed Deck	Figure 53	Figure 54

15 WARRANTY

Linea®
WEATHERBOARD

PRODUCT WARRANTY

April 2006

WARRANTY: James Hardie New Zealand Limited ("James Hardie") warrants for a period of 25 years from the date of purchase that the Linea® Weatherboard (the "Product"), will be free from defects due to defective factory workmanship or materials and, subject to compliance with the conditions below, will be resistant to cracking, rotting, fire and damage from termite attacks to the extent set out in James Hardie's relevant published literature current at the time of installation. James Hardie warrants for a period of 12 months from the date of purchase that the accessories supplied by James Hardie will be free from defects due to defective factory workmanship or materials.

Nothing in this document shall exclude or modify any legal rights a customer may have under the Consumer Guarantees Act or otherwise which cannot be excluded or modified at law.

CONDITIONS OF WARRANTY: The warranty is strictly subject to the following conditions:

(a) James Hardie will not be liable for breach of warranty unless the claimant provides proof of purchase and makes a written claim either within 30 days after the defect would have become reasonably apparent or, if the defect was reasonably apparent prior to installation, then the claim must be made prior to installation.

(b) This warranty is not transferable.

(c) The Product must be installed and maintained strictly in accordance with the relevant James Hardie literature current at the time of installation and must be installed in conjunction with the components or products specified in the literature. Further, all other products, including coating and jointing systems, applied to or used in conjunction with the Product must be applied or installed and maintained strictly in accordance with the relevant manufacturer's instructions and good trade practice.

(d) The project must be designed and constructed in strict compliance with all relevant provisions of the current New Zealand Building Code ("NZBC"), regulations and standards.

(e) The claimant's sole remedy for breach of warranty is (at James Hardie's option) that James Hardie will either supply replacement product, rectify the affected product or pay for the cost of the replacement or rectification of the affected product.

(f) James Hardie will not be liable for any losses or damages (whether direct or indirect) including property damage or personal injury, consequential loss, economic loss or loss of profits, arising in contract or negligence or howsoever arising. Without limiting the foregoing James Hardie will not be liable for any claims, damages or defects arising from or in any way attributable to poor workmanship, poor design or detailing, settlement or structural movement and/or movement of materials to which the Product is attached, incorrect design of the structure, acts of God including but not limited to earthquakes, cyclones, floods or other severe weather conditions or unusual climatic conditions, efflorescence or performance of paint/coatings applied to the Product, normal wear and tear, growth of mould, mildew, fungi, bacteria, or any organism on any Product surface or Product (whether on the exposed or unexposed surfaces).

(g) All warranties, conditions, liabilities and obligations other than those specified in this warranty are excluded to the fullest extent allowed by law.

(h) If meeting a claim under this warranty involves re-coating of Products, there may be slight colour differences between the original and replacement Products due to the effects of weathering and variations in materials over time.

DISCLAIMER: The recommendations in James Hardie's literature are based on good building practice, but are not an exhaustive statement of all relevant information and are subject to conditions (c), (d), (f) and (g) above. Further, as the successful performance of the relevant system depends on numerous factors outside the control of James Hardie (eg quality of workmanship and design) James Hardie shall not be liable for the recommendations in that literature and the performance of the relevant system, including its suitability for any purpose or ability to satisfy the relevant provisions of the NZBC, regulations and standards.

Ask James Hardie™
Call 0800 808 868
www.jameshardie.co.nz

James Hardie®

Timber Frame
(30)/30/30
LB/NLB

Two Way FRR – Timber Frame

JANUARY 2006

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBT 30a	NLB	-/30/30	1 x 10mm GIB Fyreline® each side	STC 36	22kg/m²
GBTL 30	LB	30/30/30			

FRAMING

GBT30a Non Loadbearing and GBTL30 Loadbearing
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 (NZS 3602).
- Studs at 600mm centres maximum.
- Nogs at 800mm centres maximum for Vertical fixing.
- Nogs at 1200mm centres for Horizontal fixing.

WALL HEIGHTS AND FRAMING DIMENSIONS

GBT30a Non Loadbearing – Framing dimensions and height as determined by NZS 3604 stud tables for non loadbearing partitions.
GBTL30 Loadbearing – Framing dimensions and height as determined by NZS 3604 stud and top plate tables for loadbearing walls.

LINING

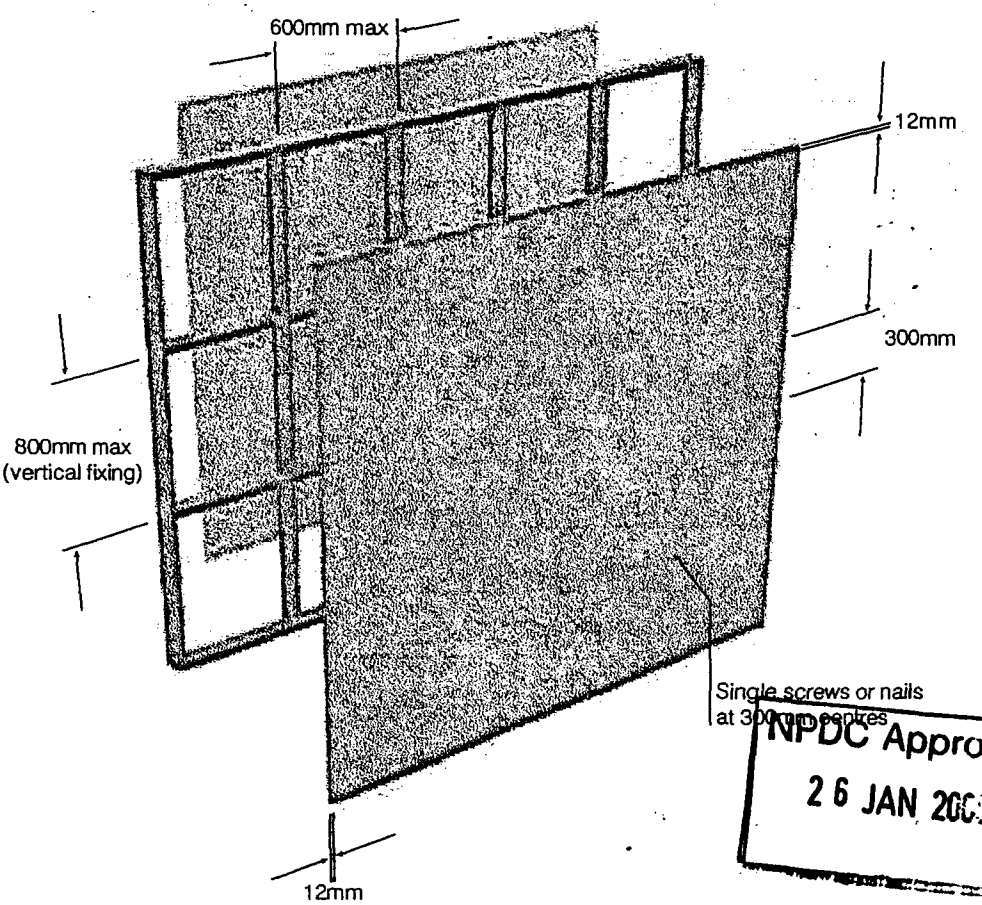
1 layer of 10mm GIB Fyreline® each side of the frame.
Vertical or Horizontal fixing permitted.
Sheets shall be touch fitted.
When fixing vertically, full height sheets shall be used where possible.
All sheet joints must be formed over solid timber framing.

FASTENING THE LINING

Fasteners
41mm x 6g GIB® Grabber® High Thread Drywall Screws or 40mm x 2.8mm GIB® Nails.
Fastener Centres
300mm centres around the sheet perimeter.
Place fasteners 12mm from sheet edges.
Single screws or nails at 300mm centres to intermediate studs.

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".



In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.

STANDARD SPECIFICATON

AUGUST 29, 2008

NZ BUILDING SUPPLIES
LIMITED

Herlihy Residence
LOT 34
8 Joshua Place
New Plymouth

STANDARD SPECIFICATON

NZ BUILDING SUPPLIES
LIMITED

STANDARD SPECIFICATON

GENERAL

1. Approximate ground lines are shown on the drawings but the Contractor is advised to visit the site to ascertain any variations regarding levels for foundations, boundaries, etc. The Contractor shall perform all setting out work and shall be responsible for the accuracy thereof.

2. Unless specifically noted in the contract documents, all work shall conform to the NZ Building Code Handbook and approved documents. The Contractor and all Sub-contractors shall observe and adhere to all requirements as set out in the NZ Building Code and in the Building Act 2004.

3. The Contractor shall supply all materials and labour necessary to complete the construction of the work, including attending on sub-contractors as required.

4. All materials shall be the best of their respective kinds and shall conform to their respective N.Z. Building Code and relevant New Zealand standards. Any labour or materials not covered in this specification or on the drawings, but which is necessary for the proper and effectual completion of the work, shall be taken as part of the drawings and specification, and shall be carried out according to the best trade practice.

5. All work shall be carried out under the supervision of qualified and experienced tradesmen and shall be executed in accordance with the best trade practices. All work shall comply with the New Zealand Building Code and relevant New Zealand standards.

6. The Contractor shall check all dimensions on site before starting work and shall report any discrepancies to The Designer for clarification.

7. Where any discrepancies occur between the specification and the drawings, the Contractor shall notify the owner for clarification before proceeding with the section of work affected.

8. The building shall be founded on firm ground with a minimum allowable bearing capacity of 100kPa unless noted otherwise.

9. All proprietary building materials shall be used strictly in accordance with the manufacturer's recommendations.

10. Manufacturers & Suppliers requirements, instructions, specifications and / or details are those issued by them for their particular material, product or component and are the latest edition.

11. The Contractor shall ensure that all employees and sub-contractors fully comply with the Occupational Safety and Health Regulations, including all amendments.

STANDARD SPECIFICATON

EARTHWORKS

1. The Earthworks Contractor shall excavate the building site down to the underside of the foundations and base-course level, and excavate any soft ground as directed by the engineer. All topsoil is to be removed from beneath the foundations and floor and conform to NZS.3604.1999 section 3.5.

2. Any low areas shall be filled and compacted with hardfill.

3. Hardfill shall be clean, evenly graded rock-fill.

4. Base-course shall be 40mm standard base-course of 100mm compacted thickness.

5. The excavated sub-base shall be compacted prior to the placement of hardfill, base-course or concrete.

6. Hardfill and Base-course shall be placed in 100mm maximum thickness loose layers and compacted with a minimum of six passes of a vibrating roller or plate compactor to each layer to achieve a dense, tightly compacted fill.

7. The top surface of the hardfill shall be blinded with a 10mm maximum thickness layer of clean, washed sand **(when required by Local Authority)** to allow for the laying of a damp proof membrane under the floor slab.

WATER PROOFING

1. Provide a 0.25mm Polyethylene damp proof membrane with all joints lapped 150mm and fully taped to the underside of the floor slab and foundations. Where pipes etc. penetrate the membrane, adequate waterproofing shall be provided by sealing the membrane to the penetration with tape, to ensure a complete waterproof barrier is formed.

2. Waterproofing shall be carried out to areas as noted on the drawings or specifications using "Mulseal" or equivalent and applied in accordance with Manufacturers recommendations. In addition to areas noted on drawings the following area shall be coated.
   Concrete Floors – Top of foundation walls where wall slab or brick veneer will rest.

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STANDARD SPECIFICATON

CONCRETE & REINFORCING STEEL

1. All concrete construction shall comply with NZS 3109.

2. Concrete shall be ordinary grade in accordance with NZS 3109, having a compressive strength of 20Mpa (or 25Mpa for Sea Spray Zones) at 28 days using standard cured using standard cured 300x150mm diameter cylinders.

3. Concrete shall be water cured for a minimum of 7 days.

4. Concrete surface finishes shall comply with NZS 3114 and shall be:

Foundations	concealed	F1
	Revealed	F3
Floor Slabs	formed	F3
	Unformed	U2 + Kelly float

5. The Concretor shall allow to accurately position, level and secure all bolts, proprietary fixings etc. before pouring concrete.

6. Formwork shall be securely braced and held in position. Use an approved release agent for all formwork.

7. The floor shall be cut within 36 hours using a 30x5mm cut. The reinforcing mesh shall not be cut. Cuts to be positioned as per NZS.3604.1999, Section 7.5.8

8. Reinforcing bars shall be round and deformed Grade 300 MPa mild steel or Grade 430 MPa high yield steel bars complying with AS/NZS 4671:2001.

9. Reinforcing mesh shall be Grade 485 MPa high yield welded steel wire mesh complying with AS/NZS 4671:2001.

10. All bends, laps and covers to the reinforcing steel shall comply with AS/NZS 4671:2001.

11. Reinforcing steel and mesh shall be tied at each intersection with black soft mild steel wire (1.2mm dia. Minimum), with ends turned away from the concrete surface.

12. Reinforcing steel and mesh shall be supported on plastic chairs at spacings appropriate to the bar and mesh size to maintain the specified concrete cover.

STANDARD SPECIFICATON

CONCRETE BLOCKWORK

1. Carry out all masonry work with people competent and experienced in this type of work, under the supervision of a registered mason or a suitably qualified tradesperson as required in NZS 4229 and NZS 4210. Blocklayers are to hold a current NZ Masonry Trades Association Certificate.

2. Masonry units to AS/NZS 4455

3. Reinforcement to AS/NZS 4671 and as detailed

4. Mortar to AS/NZS 4671 and as detailed, joints shall be straight, clean, and uniform in thickness.

5. The masonry contractor shall allow for chases, openings, framing anchors, and pipe work.

6. At the conclusion of masonry work the contractor shall clean down masonry and clean up surplus materials and debris.

CARPENTRY

Documents referred to in this section are:

NASH 3405.2006	Steel Construction
NASH 3405.2006	Steel Grading – G550 Z275
NASH 3405.2006	Durability for specifying steel products for use in building
NZS 3604.1999	Section 4 – Durability for bolts & steel fixings

EXTERIOR WALL BATTENS OR STRAPPING
Merchantable grade or better, treated H3.1 to NZS 3602, table 1, reference 1D.10.

DAMP COURSE
Thermakraft Cromford Supersourse 300 under all bottom plates in contact with Concrete or CCA treated timber.

BOTTOM PLATES
Bottom plates must be cleaned of all debris. Metal filings & dust must not be sitting in the bottom plate prior to fixing of internal lining.

BUILDING PAPER
Is to be breather type Bitumous Building paper secured with 18mm Danband strapping tape.

FIXINGS
Steel and galvanized steel of pattern to suit the location and to BRANZ Bulletin 453 Fasteners selection.
Type to NZS 3604, section 4 Durability, and of the size and number for each particular types of joint as laid down in the nailing schedules of NZS 3604, sections 6 Foundations and subfloor framing, 7 Floors.

STANDARD SPECIFICATON

BOLTS & SCREWS
Steel, stainless steel and galvanized steel of pattern to suit the location and to BRANZ Bulletin 453 Fasteners selection.

NAIL PLATES
Stainless steel and/or galvanized steel toothed or nailed plates to the plate manufacturer's design for the particular locations as shown on the drawings.

CONNECTORS
Stainless steel and/or Galvanized steel connectors and structural brackets to the connector manufacturer's design for particular locations shown on drawings.

EXECUTION
To NZS 3603 and NZS 3604 and the Carter Holt Harvey Woodproducts Builder's Site Guide, except as varied in this specification. Execution to include those methods, practices and processes contained in the unit standards for the National Certificate in Carpentry and the National Certificate in Joinery (cabinetry, exterior joinery, stairs).

SET OUT
Set-out framing generally in accordance with the requirements of NZS 3604

FRAMING WALLS
Frame to required loading and bracing complete with lintels, sills and nogs, all fabricated and fastened to NASH 3405.2006, section 8 Walls.

FRAMING ROOFS
Frame to required loading and bracing complete with valley boards, ridge boards and purlins. Design and fit roof trusses complete with anchorage. All fabricated and fastened to NASH 3405.2006, section 9 Posts and 10 Roof framing.

FRAMING CEILINGS
Frame to required loading and bracing complete with runners and battens set out to support ceiling lining. All fabricated and fastened to NASH 3405.2006, section 13, Ceilings. Trim for openings in ceilings and hatches to NASH 3405.2006 section 13.3, Openings in ceilings.

FRAMING TREATMENTS

Member	Timber grade	Treatment
Purlins:	Radiata Pine MSG8 RS	H1.2
Valley boards:	150x25	H3.2
Posts:	Radiata Pine	H5
Fascia/barge boards:	Pinex finger jointed	H3.2 CCA
Exterior mouldings:	Pinex finger jointed	H3.2 CCA
Architraves:	Pinex pine	None
Skirtings:	Pinex pine	None
Cornices:	Pinex pine	None
Cavity Battens	Radiata Pine	H3.1

STANDARD SPECIFICATON

JOINER

1. Aluminium Doors & Windows shall be from an approved manufacturer, and shall conform to NZS 3504 – Specification for Aluminium Windows. All units are to have grooved H3.1 treated Finger jointed pine reveals.

2. Interior Doors shall be as shown on plan, hung on three loose pin butt hinges, Frames shall be Finger jointed Pine.

3. Glass and Glazing shall be in accordance with the NZ Building Code Handbook and NZS.4223 – Code of Practice for Glazing in Buildings.

4. Kitchen Joinery shall be as indicated on the drawings. Final design shall be by an approved manufacturer as per client's individual requirements.

JAMES HARDIE LINEA CLADDING

Documents referred to in this section are:

NZBC E2/AS1 External moisture, 9.0 Wall claddings

AS/NZS 1170 Structural design actions, Part 2: Wind actions
AS/NZS 2908 Cellulose-cement products, 2908.2 Flat sheet
NZS 4203 General structural design and design loadings for buildings

Documents listed above and cited in the clauses that follow are part of this specification. However, this specification takes precedence in the event of it being at variance with the cited document.

James Hardie® documents relating to work in this section are:
Linea® sheet technical specification April 2005
BRANZ Appraisal certificate No. 466 (2005) Linea® weatherboard - cavity construction

Copies of the above literature are available at www.jameshardie.co.nz or Ask James Hardie™ on 0800 808 868.

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Design and use the fixings appropriate for the wind zone (R) and topographical classification (T) of this site and building height, as required by NZS 3604 and the wind loads on various wall areas as given by NZS 4203 or AS/NZS 1170.

BUILDING PAPER
Waterproof, breather type to NZBC E2/AS1, Table 23: Properties of roof underlays and building wraps.

EXTERIOR WALL CAVITY BATTENS
Radiata pine battens, minimum 45 mm wide x 18 mm thick, H3.1 treated, height to match timber framing studs. To NZS 3602, table 1, reference 1D.10.

EXTERIOR WALL CAVITY VERMIN PROOFING
Perforated uPVC, with upstands.

STANDARD SPECIFICATON

LINEA WEATHERBOARD
James Hardie® Linea® weatherboard, resistant to damage from water and moisture, manufactured from treated cellulose fibre, Portland cement, sand and water and cured by high pressure autoclaving manufactured to AS/NZS 2908.2.

FASTENER TYPES
Fasteners to minimum durability requirements of the NZBC. Refer to NASH 3405.2006, section 4.4 Durability of Steel fixings & fastenings, for requirements for fixing's material to be used in relation to the exposure conditions.

Exposure conditions & screw selection prescribed by NZS 3604, section 4, table 4.3 Steel items such as screws used for framing and cladding.

Zone 1 outside sea spray zone
and Zones 2 - 4 & Geothermal
hot spots
Hot-dipped galvanised

Refer to NZBC E2/AS1, Table 20, Material selection, and Table 21, Compatibility of materials in contact, for selection of suitable fixing materials and their compatibility with other materials.

GALVANISED SCREWS
Csk tek 8gx65 cl:4 galv screws for Linea
Tek flat head (drill point) 10x15x15 cl:2 galv screws for soffit cladding

SOFFIT JOINTERS
Extruded PVC jointer, 2 way jointer.

SEALANT & PRIMER
Fosroc MS sealant or similar. Refer to the sheet manufacturer's technical literature for selection and use requirements.

Sealant must be provided in the Linea T&G joint.

Prime all weatherboard cut edges with exterior grade primer.

Countersink screws to a maximum 2mm below the surface. Fill the hole with an exterior grade builders fill, allow to cure and sand smooth ready for priming. Prime the filled holes in accordance with paint manufacturers specifications.

Keep weatherboards & sheets dry and under cover whilst in storage or during the installation.

Take delivery of weatherboards & sheets dry and undamaged in pallets and lay horizontally on a smooth level surface. Protect edges and corners from damage and cover to keep dry until fixed. Avoid distortion and contact with potentially damaging surfaces. Do not drag sheets across each other, or across other materials. Protect edges, corner and surface finish from damage.

Do not commence work until the substrate is of the standard required by the sheet manufacturer for the specified finish, plumb, level and in true alignment.

STANDARD SPECIFICATON

PENETRATIONS AND FLASHINGS
Confirm that exterior wall openings have been prepared ready for the installation of all window and door frames and other penetrations through the cladding. Required preparatory work includes the following:

- Building wrap appropriately incorporated with penetration and junction flashings.
- Materials lapped in a way that water tracks down to the exterior face of the building wrap.
- Wall cladding underlay/building wrap to openings finished and dressed off ready for the installation of window and door frames and other penetrations.
- Claddings neatly finished off to all sides of openings
- Installation of flashings (those required to be installed prior to installation of penetrating elements).

INSTALL DRAINED CAVITY
20 mm minimum thickness ventilated and drained cavity to NZBC E2/AS1. 9.0 Wall claddings, where required. Fix vertical cavity battens to wall framing studs. The battens are fixed by the cladding fixings which will penetrate the wall framing studs over the building wrap. Seal the top of the cavity and install vermin-proofing at base.
Do not use horizontal cavity battens. Use cavity spacers where fixing is required between cavity battens.

BUILDING PAPER
Run and fix building wrap in full height rolls to wall framing, with fixing and end laps to NZS 3604 and the wrap manufacturer's requirements and with the wrap not damaged in any way.

CLADDING SYSTEM
Brand/type: James Hardie® Linea® weatherboard
Thickness: 15.0 mm
Fixing system: Cavity Construction
Fastener type: Csk tek 8g x 65 cl:4 galv screws
Finish type: Paint

BATTEN SYSTEM
Timber species: Radiata pine
Treatment: H3.1

SOFFIT LININGS
James Hardie® 4.5 mm Hardisoffit® Lining, soffit manufactured from treated cellulose fibre, Portland cement, sand and water and cured by high pressure autoclaving manufactured to AS/NZS 2908.2.

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26 JAN 2009

Brand/type: James Hardie Hardifex Soffit
Type: 4.5mm
Jointer type: Extruded PVC

Aluminium Doors and Windows shall be securely fixed in place, install all necessary flashings and scribers to weatherproof

STANDARD SPECIFICATON

GIB PLASTERBOARD LININGS & FINISHES

To be in accordance with AS/NZS 2588, AS/NZS 2589, AS/NZS 2592:1983, NZS.3604.1999

1. 10mm Gib Plasterboard wall linings shall be fixed to the framing in accordance with the manufacturer's specifications.

2. 13mm Gib Plasterboard ceiling linings shall be fixed to the framing in accordance with the manufacturer's specifications.

Location	Plasterboard type / Lining requirements	Thickness	Finish level
Walls	GIB® Standard Plasterboard	10 mm	4
Ceilings	GIB® Standard Plasterboard	13 mm	5
Walls – wet areas	GIB Aqualine® Plasterboard	10 mm	4
Ceilings – wet areas	GIB Aqualine® Plasterboard	13 mm	5

3. All stopping shall be carried out using the manufacturer's recommended products and to the manufacturer's recommendations for the finishing required by the customer.

4. Skirtings, cornices, doors, trim, etc. shall be as specified in the Drawings and Variation Schedule.

PLASTERER

1. Plastering shall be carried out by qualified and experienced tradesmen and conform to their associated Codes of Practice.

2. Stopping shall be carried out to the finish level required in accordance with Gib Living Solutions recommendations.

3. External Plaster Systems shall be applied in accordance with manufacturers recommendations

STANDARD SPECIFICATON

ROOFING (Longrun Colorsteel)

Documents referred to in this section are:

NZBC E2/AS1	External moisture 4.0 Flashings 5.0 Roof/wall junctions 6.0 Parapets 8.0 Roof claddings 8.1 General 8.4 Profiled metal
AS 1397	Steel sheet and strip - hot-dipped, zinc-coated, or aluminium/zinc-coated
NZS 3403	Specification for hot-dipped galvanized corrugated steel sheet for building purposes
NZS 3602	Timber and wood-based products for use in building
NZS 3604	Timber framed buildings
AS/NZS 4534	Zinc and zinc/aluminium-alloy coatings on steel wire

NZ Metal Roofing Manufacturers Inc: NZ metal roofing & wall cladding code of practice

Carry out roofing work using experienced, competent roofers familiar with the materials and techniques specified.
Use fixings and methods capable of sustaining the loads appropriate to the area as set out in NZS 3604, section 5.

1. Install Dimond Styline ZR8 .4 Colourcote profiled metal roofing and fix complete with all matching accessories, flashed to all roof features and penetrations; and in accordance with the requirements in the NZ Metal Roofing Manufacturers Inc: NZ metal roofing and wall cladding code of practice

2. Roofing underlay shall be Dimond Self supporting underlay and shall comply with AS/NZS 4200.

3. Install and fix flashings as detailed and to the roofing manufacturer's details and to comply with NZBC E2/AS1: 4.0 Flashings, 5.0 Roof/wall junctions.

4. Ensure the work is complete with all flashings, undercloaks, valleys, ridges and hips properly installed so the finished roof is completely weathertight.

STANDARD SPECIFICATON

SANITARY PLUMBING

1. All plumbing work shall comply with the New Zealand Building Code Sections G12 & G1 with all work being carried out by or under the supervision of qualified and currently registered tradesmen.

2. All installations shall be carried out strictly in accordance with the manufacturer's specifications and complying with the NZ Building code and its approved documents.

3. UPVC Waste, Soil, and vent pipes shall be complete with fittings brand matched to the pipe manufacturer's requirements in accordance with NZBC G13 Foul Water and its approved documents. Install back vents as required.

4. Sanitary fixtures and accessories as selected.

5. Install traps, wastes, and vent pipes to New Zealand Building Code Sections G12 & G1, Discharge wastes into the drainage system soil pipe or gully trap as shown. Bird proof mesh to roof vents and vermin proof mesh to untrapped waste pipes. All waste pipes to be of approved PVC. Run waste pipes from all fittings to gully traps. At penetrations through construction provide and fit collars and escutcheon plates to match pipe work.

6. Test soil and waste disposal systems to ensure no leakage exists and leave in working order.

7. Ensure all sanitary plumbing fittings and pipe work are complete and operational.

RAINWATER SYSTEM

1. Marley Stormcloud PVC spouting. Profile, jointing, brackets and fittings brand matched and complete to Marley specifications. Set falls to outlets,
2. Marley 80mm PVC Downpipes. Tubes, stand off brackets and fittings brand matched and complete to Marley specifications. Screw fix stand off brackets, set pipes plumb and clear of wall, discharge into stormwater bends,
3. Flashings – all flashings as per compatibility and design requirements of BRANZ Bulletin 304 "Flashing design" and 305 "Domestic flashing installation"
4. Ensure all rainwater services are operational, flashings complete and the building weather tight.

STANDARD SPECIFICATON

WATER

1. All water piping is to be 1.0mm thick copper joined by an approved brazing or welding system, or an approved polybutylene system. Size the piping to eliminate loss of pressure at any point by simultaneous draw off. Run pipes in straight runs, firmly fixed with long radius bends. Where a hot water storage cylinder is installed, this shall be fed by a 20mm branch. Pressure test before wall linings are fixed.

2. Supply and install 180L Rheem Mains Pressure Hot water cylinder complete with element, thermostat, and associated connections and valves as per manufacturer's recommendations. Support cylinder as detailed in the NZ Building Code suitable seismic restraint.

3. Avoid Electrolytic action by eliminating contact or continuity of water between dissimilar metals.

4. At penetrations through construction provide and fit collars and escutcheon plates to match pipe work.

5. Install taps and faucets in accordance with the manufacturer's requirements, flush out on completion. Check that washers and/or ceramic discs are operating correctly.

6. Upon completion pressure test to ensure no leakage and leave in proper working order. Clean tapware and fittings.

DRAINAGE

1. All Drainage work to comply with AS/NZ 3500.2.2 (foul water) and AS/NZ 3500.3.2 (Stormwater) as modified by NZBC acceptable solution B1/AS1, 6.0
2. UPVC pipes, bends, junctions, fittings and joints to be brand matched and complete to the manufacturers specifications.
3. Excavate for drains to a firm even base with correct gradients set in straight runs.
4. Install Gully traps to NZBC acceptable solution G13/AS2, 3.2 complete with grating 50mm above ground.
5. Lay Foul water drains in straight lines to correct gradients, to discharge into the network utility sewer system. Set inspection fittings on a concrete base.
6. Lay Stormwater drains in straight lines to correct gradients, to discharge into the network utility stormwater system. Confirm the required location of downpipes and finished ground levels before commencing pipework.
7. Lay Subsoil drains with perforated coil piping firmly in granular bed in straight runs to correct gradients discharging into a cesspit. Continue granular fill up over pipes without disturbing them, to a total depth of 300mm and cover with geotextile fabric, all to the pipe manufacturer's requirements.
8. Strip Drain Channel to be installed in accordance with the manufacturer's requirements.
9. Field test drains for watertightness to the satisfaction of Territorial Authority inspector.
10. Provide 1:100 as built drawing to the Territorial Authority and owner upon completion.

STANDARD SPECIFICATON

ELECTRICAL

1. All electrical work shall be carried out by or under the supervision of a registered electrician.

2. All electrical work shall comply with the requirements of the local power authority and in accordance with the Handbook to the NZ Electrical Wiring Regulations 1997, NZS 3000 and the NZ Electrical Codes of Practice.

3. Provide fittings and connections as shown on the plan and the variation schedule and install as per manufacturers recommendations.

4. Install main earth to the installation and bond all exposed and accessible metal to earth continuity conductor.

GAS (when applicable)

1. All gas work to be carried out by experienced competent craftsman gasfitters, or registered gasfitters working under the direction of a craftsman gasfitter familiar with the materials and techniques specified.
2. All gas work shall comply with the Gas Regulations and other network utility operator's requirements. Give notices for inspections and carry out tests as required.
3. Provide a Gas fitting Certification Certificate as required by Regulation 24 of the Gas regulations Act 1993.
4. Design the piping system with pipe sizes to give a minimum pressure at any appliance inlet of 1.13kPa for natural gas when all appliances are in use, and with a maximum design pressure drop from meter outlet to any appliance of 80 Pa. All to NZS 5261.
5. Install all piping, joints, and fittings in accordance with NZS 5261
6. Pressure test the system for leakage to NZS 5261 prior to lining.
7. Submit the work for inspection and test and prove to the satisfaction of the gas retailer that the installation complies with all Acts and regulations.
8. Install gas appliances, complete with flues where required to manufacturer's specifications and in accordance with NZS 5261.
9. Upon completion leave the installation including the appliances clean and in full working order.

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STANDARD SPECIFICATON

PAINTING & PAPERHANGING

1. All Painted surfaces shall be prepared in accordance with manufacturers specifications.
2. All paints used shall be from an approved manufacturer and applied in accordance with manufacturers specifications
3. Work shall only be carried out by competent tradesman; all surfaces shall be checked prior to commencing work to ensure that they are ready to receive paint or paper.
4. Paperhanging shall be carried out in accordance with manufacturer's specifications.
5. Cleaning, On completion of work, clean down all areas where paint has been splashed or spilled, Clean off all paste marks from paintwork.

FLOOR LININGS

CARPETING

1. All carpet to be in accordance with The New Zealand Carpet Manufacturers Association (NZCMA) Conditions of Warranty and installation guide. To be installed by a competent, experienced layer familiar with the NZCMA instructions for the specified carpet.
2. Protect adjoining work surfaces and finishing's during installation and make good any damage.
3. Upon completion thoroughly vacuum the finished carpet.

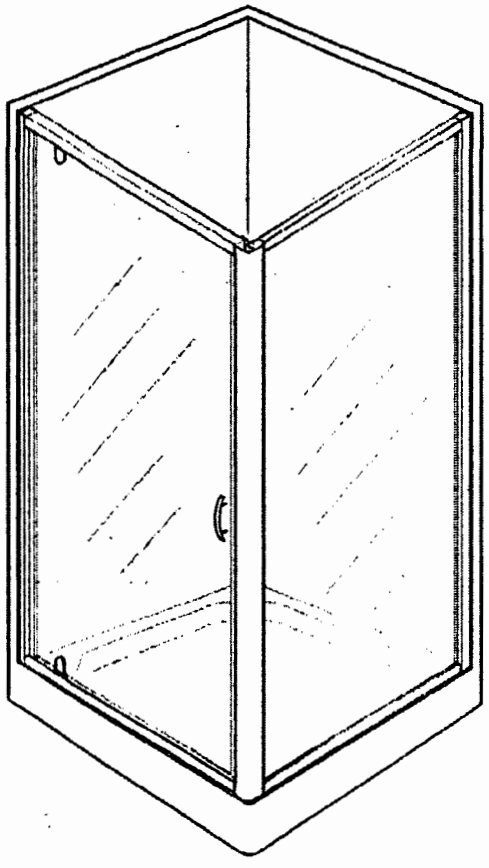
VINYL FLOOR LININGS

1. Preparation - Check that each colour supplied is from the same batch; ensure floor surface is free of dust and debris.
2. Apply approved adhesive as required by the vinyl manufacturer without trowel marks; Follow the requirements for open time, noting the substrate porosity, ambient temperature and relative humidity. Remove excess adhesive as work proceeds.
3. Roll out and cut vinyl to the manufacturer's requirements, ensure no air bubbles or twisting, keep seams clear of adhesive.
4. Upon Completion thoroughly ensure surface is free of dust and debris, vacuum off, damp mop with a low foam neutral detergent.

TILES

All tiles to be installed as per manufacturers requirements, ensuring correct use of adhesive and grouts for the specific tile and situation.

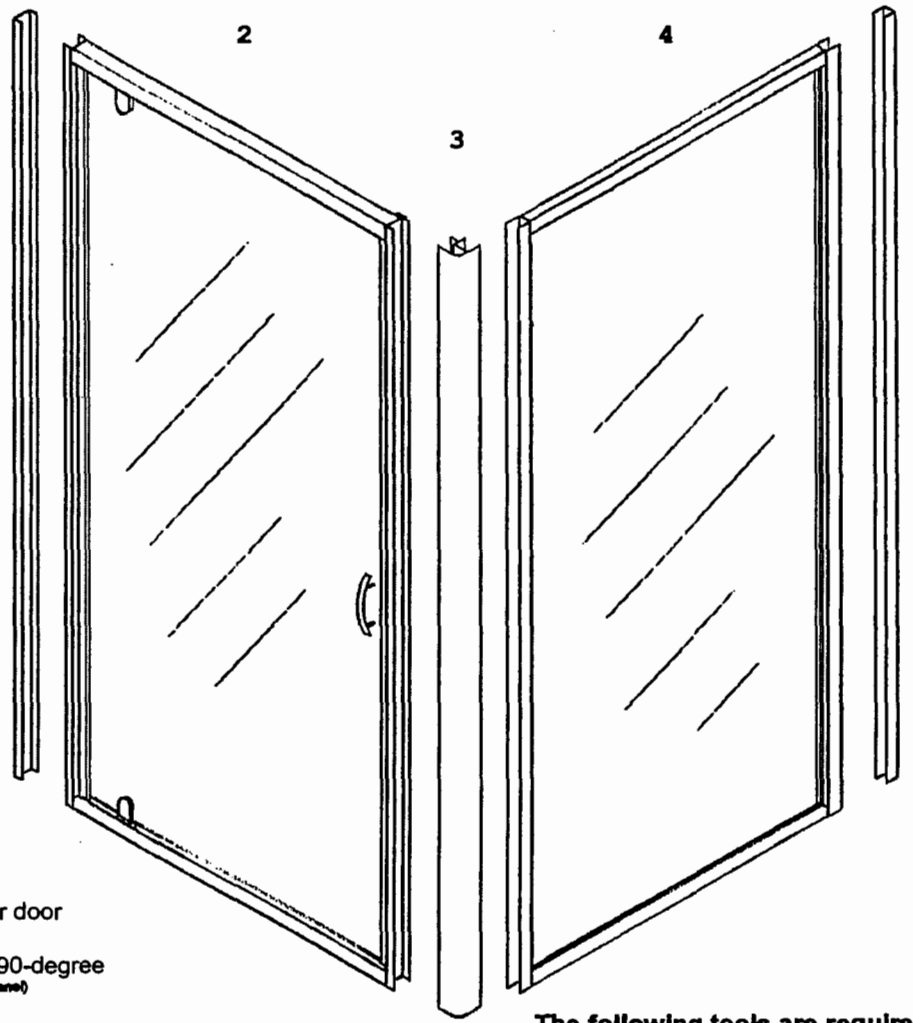
Installation Instructions



Door & Return

Note:
Please read these instructions carefully.

Door & Return
Component View



Components:

1. Wall receiver for door
2. Door
3. Corner section 90-degree
   (attached to return panel)
4. Return panel
5. Wall receiver for return
6. Cover trim (not shown)

Installation kit, which contains:

- 6 gauge x 38mm stainless steel screws (6) (Use 3.0mm drill)
- 6 gauge x 10mm stainless steel screws (15) (Use 3.0mm drill)
- Screw cover caps (15)
- Clamp block covers (2 plus 2 fitted to door)
- Chrome handle set (Luxury Only)
- Plastic drip strip

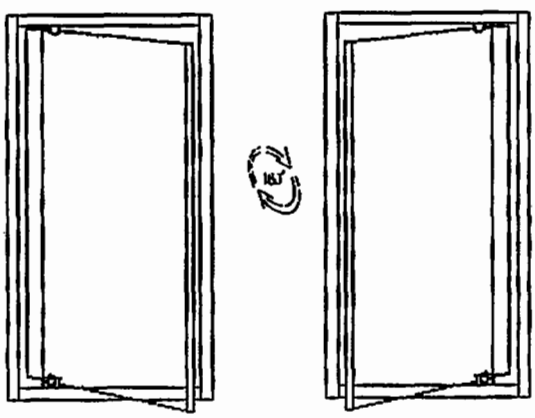
The following tools are required:

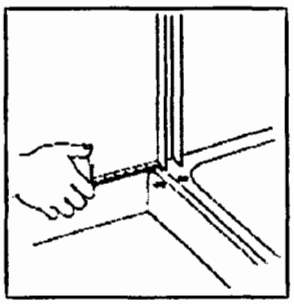
- Drill
- Spirit level
- Tape measure
- Pencil
- Silicone gun
- Masking tape
- Screwdriver (#1 square drive)
- Cleaning cloth
- Silicone sealant (supplied with liner)
- 3.0mm & 4.5mm drill bits

Note:

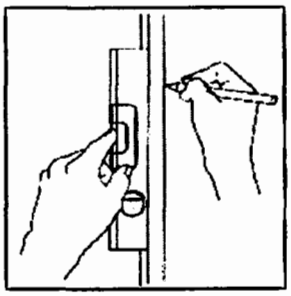
Your shower door can be installed to open from the left hand or right hand side by rotating the door 180 degrees, and the return panel can be fitted on either side. You must decide which way the door is to open before starting the installation.

For your safety, the door is designed to open to 90 degrees do not force it to open past this point.

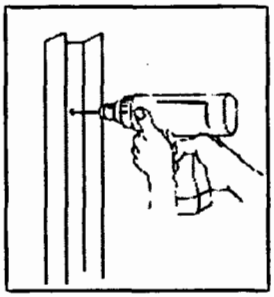




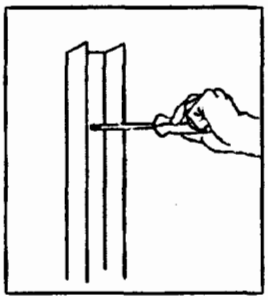
1) For Sureseal trays position wall receiver hard against the inside edge of the upstand of the tray.
For other trays you will need to set the doors parallel to the front edge of the tray.



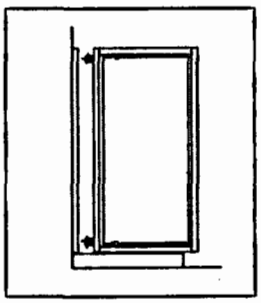
2) Mark 2 vertical lines up the shower wall receiver, using your spirit level to ensure that the wall receivers are plumb.



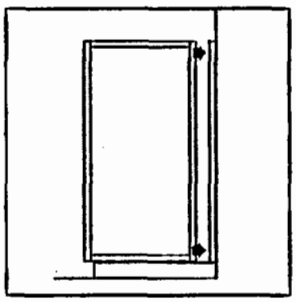
3) Pre drill three equally spaced clearance holes (i.e. top, bottom and centre) in your door & return wall receivers using 4.5mm drill bit. Reposition the wall receivers onto the wall. *Drill into the wall through the* clearance holes using the 3.0mm drill bit.
N.B. The holes preferably locate into a stud or nog. As an alternative, a toggler system can also be used.



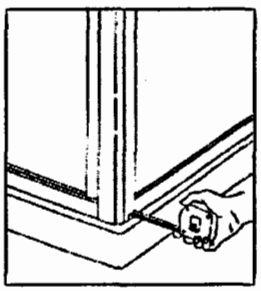
4) Fix the wall receivers to the walls using the 6 gauge x 38mm stainless steel screws provided.
NB As an extra precaution you can seal holes with silicone.



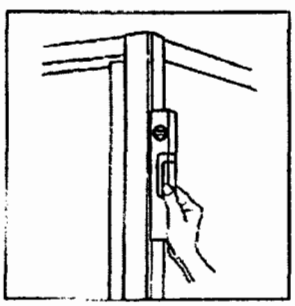
5) Lift the door onto the shower step and slide it into the wall receiver ensuring that the door opens out from the shower enclosure.



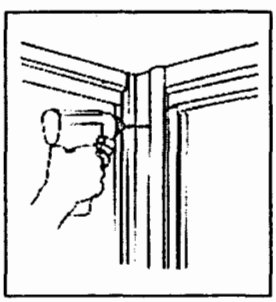
6) Position the return panel into the wall receiver ensuring the corner post engages over the door section, but do not fix in place at this time.



7) For Sureseal trays the door and return corner section should be hard against the inside edge of the upstand of the tray.
For other applications, check that the doors are parallel with the front edge of the tray.

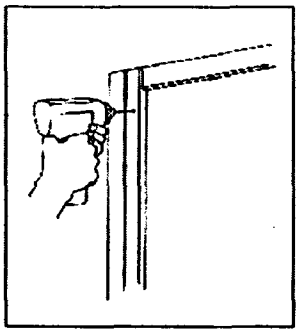


8) Ensure that each section is square to the shower base and plumb.
This is the most important part of the installation. Mark the plumb positions with your pencil.

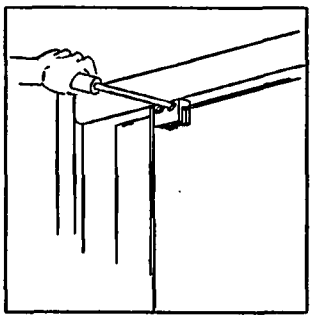


9) Using the 3.0mm drill bit, drill through the corner section and into the aluminium frame. (Use the "V" line as a guide)
Ensure that the return panel and door do not shift then proceed using the 6 gauge x 10mm screws. Cover screw head with cover caps provided.

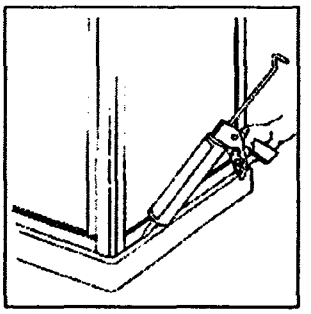
All fixing screws should be fitted from inside the shower.



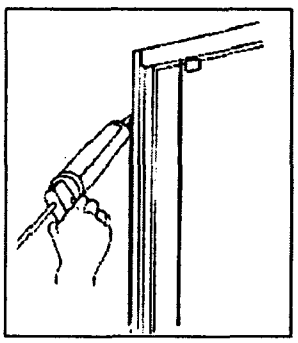
10) Now fix the panel and door to the wall channels. Using a 3.0mm bit, drill through the vertical section on the inside of the door and return, into the wall receivers. (The wall receivers are already fixed to the wall: Step 4). You must have a minimum of 10mm overlay and the holes must be drilled no more than 5mm from the edge of the vertical aluminium sections.
Fix in place using the 6 gauge x 10mm screws. Cover screw head with cover caps provided.



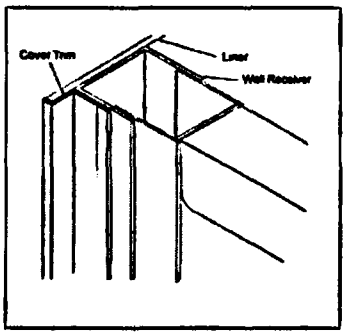
11) Using a screwdriver, adjust the door as required, by loosening the screws on each pivot block.
Once the door is adjusted ensure the screws are retightened. Cover the screws with the clamp block covers provided.
Note Now trim and fit the plastic water deflector along the bottom edge of the door before completing door adjustments.



12) Test the operation of your door and make a final check that everything is square and plumb. The door and return can now be sealed in place using silicone sealant. Seal between the tray upstand and your door set along the bottom outside edges Ensure all surfaces are cleaned first with dry clean cloth.
Note MASKING the area to be sealed will give you a better finish
DO NOT seal along the inside edge of your door set.



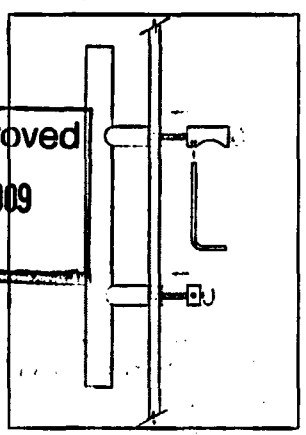
13) Seal the vertical edges of the door and liner. Ensure all surfaces are cleaned first with dry clean cloth.
Note MASKING the area to be sealed will give you a better finish
DO NOT seal along the inside edge of your door set.



14) The cover trim is provided to cover the vertical exposed edge of the wall liner and will need to be trimmed to the required length.
The trim is to be fitted after the shower installation is completed, it can be fitted in two ways

1) Embedded in the vertical bead of silicone or,
2) Fixed in place using the screws and cover caps provided

If your liner extends more than 10mm it will need to be trimmed prior to fitting the cover trim

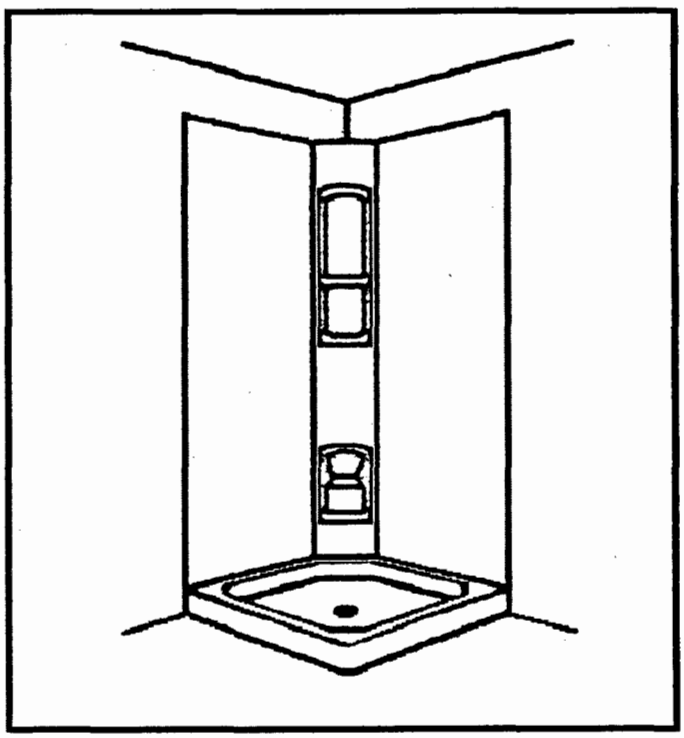


Chrome Handle Model Only

Fitting Chrome handles can be done at any time. First take note of how they are pre-assembled.
Note the nylon washers must go between the handles and the glass on both sides of the door.
Fit the handle with the connecting rods through the holes from the front of glass door ensuring you have nylon washers between the handle and the glass. Repeat on the other side with the washers between the glass and the knobs. Tighten the knobs firmly onto washers with the allen key provided but don't over tighten.

CLEARLITE
Bathrooms

ACRYLIC SHOWER TRAY AND ACRYLIC SHOWER LINING INSTALLATION INSTRUCTIONS



Important note for Tiled Wall Installations.

Please check for any special installation requirements that may be required for the doors. Some doors will require the wall receivers to be fitted on top of the waterproof membrane prior to tilie application.

Dear Purchaser/Installer

Thank you for purchasing a Clearlite Bathrooms product. We are proud to be 100% NZ owned and operated with over 30 years experience in the bathroomware industry. We hope you enjoy your Clearlite Bathroom experience.

You are about to install a Clearlite Bathrooms product. The unit that you have purchased has been designed and manufactured to the highest possible standard. Please read and ensure that you fully understand the installation principals and how they apply to your unit. Bear in mind that useful old adage - "measure twice and cut once".

Please note that before wrapping this product it was cleaned and polished under bright lights.

For your own peace of mind, please unwrap and check the product carefully. We cannot accept responsibility for damage that may occur in handling or installation.

Important Note :- For ease of installation and best visual appearance you should ensure that the walls and floor are square, level and plumb.

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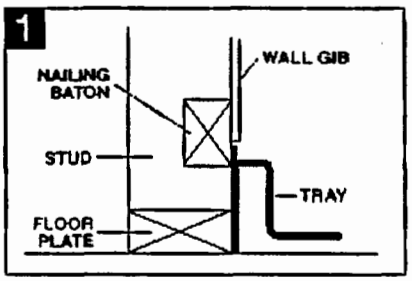
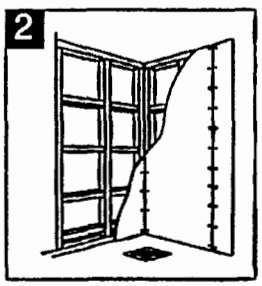
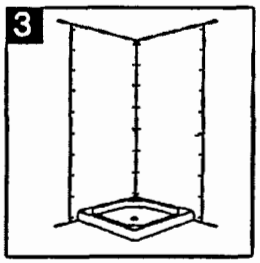
26 JAN 2009



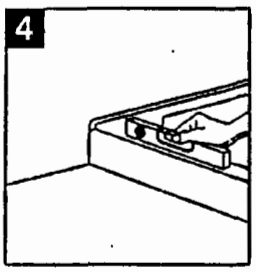
Please read the complete installation instructions before proceeding.



Use wet wall gib to line your walls and double nail into studs with a 200mm minimum centre. Do not stop, seal or sand the surface, as this will affect adhesion.
At this stage, the hole in diagram 2 in which the waste is located needs to be filled with sand or dry mix on concrete floors, nogs on timber floor and levelled, this is to ensure tray and waste are supported on all load bearing areas particularly around the waste.



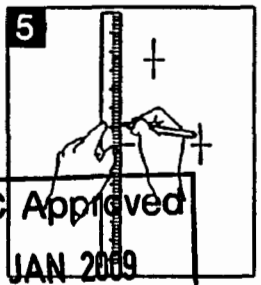
Place the shower tray into position, and mark around the tray. Cut away the gib 10mm above your pencil line and rebate the tray into the wall. Refer to diagram 1.
Note: Ensure walls are square and plumb and that the floor is level. If walls are not square, you may need to rebate the tray into the bottom plate and studs of the wall to ensure the wall lining fits properly.



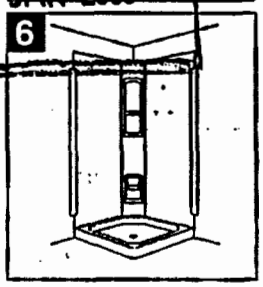
Place the tray into position and check that it is level and that the tray and floor waste holes line up. Remove tray, apply "no more nails" or similar product to PVC rings, and a bead of silicone along the bottom plate of the walls(this will prevent squeaking),place tray into position.

Warning

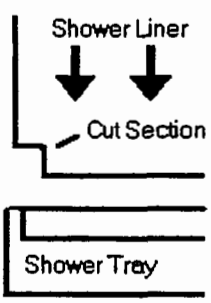
Warranty will be void if the base is not fully supported

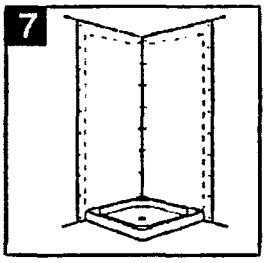


Have a plumber install the shower fittings, and then mark the position of the holes on the liner. Carefully drill holes in the liner for the shower fittings.
Refer to page 4 for drilling details.

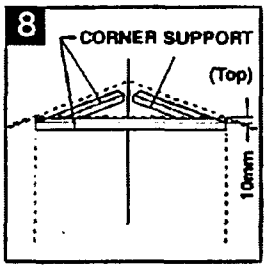


Trial fit the liner by taping it temporarily into position. If for any reason the liner requires cutting to the bottom corners (Pictured right) Use a fine tooth hacksaw and proceed with caution. Edges can be smoothed with a second cut file and medium fine sandpaper.

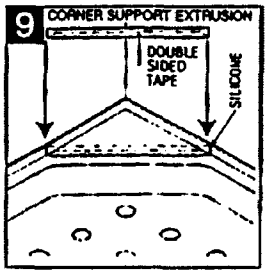




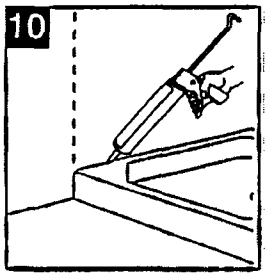
Mark around the liner before removing from wall.
Before gluing, ensure the gib surface is flat, clean and dry.
Any dust, protruding nails, loose paint or plaster will prevent the wall liner from adhering properly.



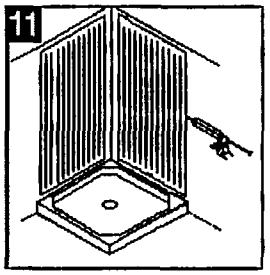
Steps 8 & 9 apply to **Millennium corner moulded liners only**.
Mark the wall where the liner cuts across the corner and fit top support extrusion strips (supplied with the liner) as shown in diagram 8. The diagonal strip should be fixed to the back of the liner. Once the liner is in position, fit and seal the plastic triangle cover supplied with the liner, over the support extrusion strips and seal in place within the white NG silicone



Having fitted the top support strips, fit bottom support extrusion to tray. This should be set at 45° across the corner of the tray to support the bottom edge of the corner liner. N.B. the corner support extrusion has double-sided tape fixed to one side to hold it in place on the tray. Refer to page 4.

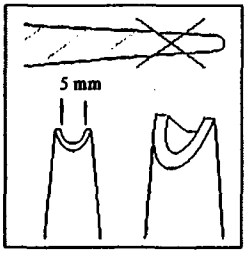


Before fitting the liner, ensure both surfaces to be bonded are clean, dry and grease free. Apply a bead of silicone sealant along the top of the shower trays upstand as illustrated on page 4. This includes the bottom corner support extrusion for Millennium corner moulded liners. (See over page for more details).



Use only the adhesive supplied.
Apply an adhesive bead of 5-6mm in vertical lines at approximately 50 mm centres, then a continuous bead 10 mm inside the perimeter of shower liner. As illustrated in diagram 11. Now place shower liner onto wall and firmly press over the entire sheet, ensuring that complete contact with all beads of adhesive is achieved. It is recommended that 3-sided liners be braced in position. Bracing if required should remain in position for not less than 18 hours. Do not use the shower for at least 24 hours after installation.
Poor adhesion may occur if instructions are not followed.
Refer to adhesive tube for manufactures recommendation.

- **The wallboard/gib should not be plastered/stopped as this will reduce adhesion.**
- **Do not attempt to adhere to painted or sealed wall boards/gib.**
- **Do not apply blobs of adhesive as these may cause unsightly undulations in the liner.**



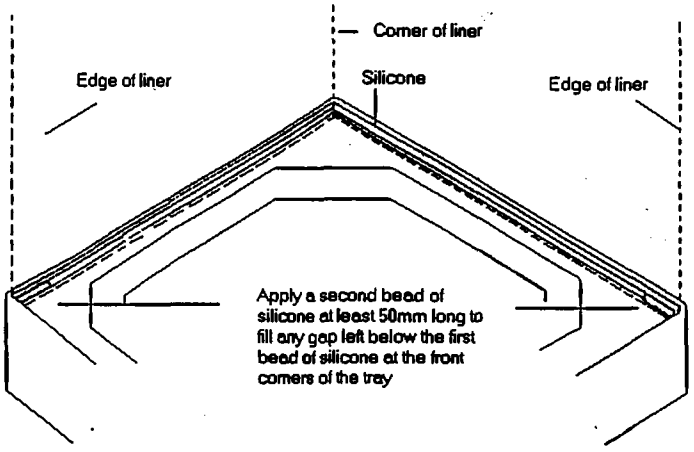
Finally, once liner is installed remove any silicone or adhesive that has been forced out during liner installation.

DETAIL APPLICATION OF SILICONE

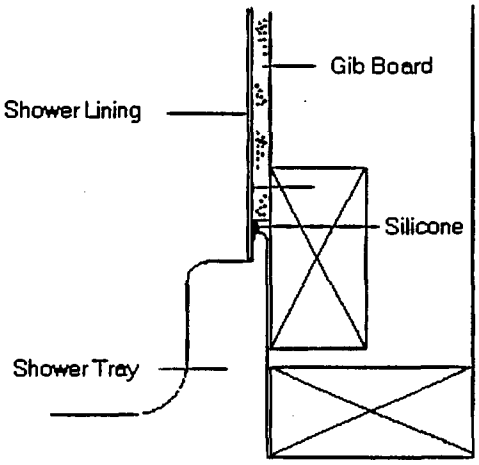
(Refer diagram 10 from page 3)

Silicone Application

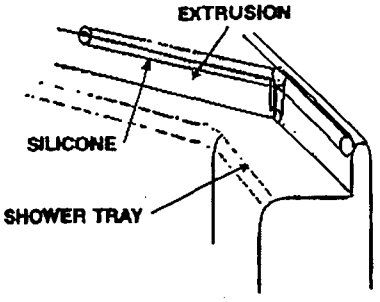
Note: No silicone should be visible inside shower.



Recessed Tray

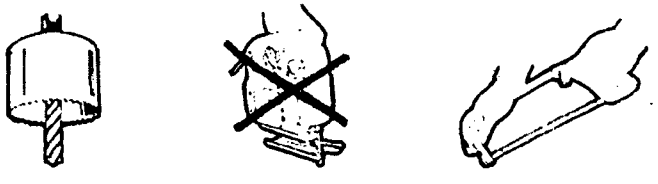


Corner Support Extrusion Millennium Corner Moulded



In line with BRANZ recommendation, we suggest that silicone be applied to the top of the acrylic liner. This is to prevent any moisture penetrating down behind the lining.

If the acrylic is to be cut, use a fine tooth hacksaw and very carefully cut the acrylic.
To smooth edges off use a fine tooth file or wet & dry sand paper. For a high sheen finish, use an abrasive cleaner such as Brasso to burnish.
Small holes can be drilled using a twist drill with the cutting edge backed off with an oilstone (the sharp edge dulled) to prevent 'grabbing'. For larger holes, use a fine tooth hole-saw.



Clearlite Bathrooms
54-58 Hillside Road
Private Bag 40 902 Glenfield
Auckland 1310, New Zealand

CLEARLITE Bathrooms

Telephone 09 444 3780
Facsimile 0800 88 00 11
Email info@clearlite.co.nz
Website www.clearlite.co.nz

Issue Date:- Aug 06

Producer Statement – Technical basis for structural design methodology contained in designIT for houses – New Zealand.

DesignIT for houses, New Zealand has been developed by Timberbuilt Pty Ltd (for Carter Holt Harvey) to assist designers select appropriate sizes of structural laminated veneer lumber products manufactured by Carter Holt Harvey (including hySPAN and hyJOIST) and other generic stress grades of timber, for use as structural elements for the construction of buildings falling within the scope and limitations of NZS 3604.

Timberbuilt certifies that the design methodology used for the software includes compliance with the loading and general design requirements contained within AS/NZS 1170:2002 and with timber structural design in accordance with NZS 3603:1993 including Amendment 4 (Verification method B1/VM1, 6.1).

Serviceability and other criteria for design have been selected using the most up to date information available from joint Australian/New Zealand standards technical committees to ensure designIT solutions correspond to performance levels implied by design solutions given in NZS 3604:1999 (Acceptable Solution B1/AS1, 4.1).

For the nominated application/s and subject to the limitations on span and loading, the specified product and/or stress grade in the size given will comply with the structural requirements of the New Zealand Building Code, provided the installation is in accordance with the details provided or referred and/or product literature or NZS 3604, as appropriate.

References:

NZS 3603:1993 Timber Structures Standard.
NZS 3604:1999 Timber Framed Buildings.
AS 1720.1 – 1997 Timber structures. Part 1: Design methods.
AS/NZS 1170:2002 Structural design actions, Parts 0, 1 and 2.
AS/NZS 1170:2003 Structural design actions, Part 3: Snow and ice actions.
AS 1684.1 – 1999 Residential timber framed construction. Part 1: Design criteria.

10 December 2008

For further information or advice please contact either of the following:

Software/design information
Timberbuilt Pty Ltd
58a Whiteside Rd., Clayton. Victoria. Australia. 3168.
Telephone (613) 9543 3733.
Facsimile Facsimile (613) 9543 3766.
Email: Email: designit@timberbuilt.com.au

Product/design information
Carter Holt Harvey Wood Products
173 Captain Springs Road, Onehunga, Auckland
Telehone 0800 808 131
Facsimile 0800 808 132
Email: designit@chh.co.nz

Specifier details:

Specifier:	Shirley Thomson	
Business name:	Shirley Thomson Design Ltd	
Address:		
Phone:	**Mobile:**	**Facsimile:**

Project & Site details:

Project:	New Residence	**Ref. no.:**
At (address):	8 Joshua Place, Bell Block	
For (owner/s):	M Herlihy	
Wind Zone: High	Snow load not considered	

MEMBER DESIGN DETAILS

Member 1

1) Member code and description L1 - Lintels - In single or upper storey load bearing walls

2) Date prepared 20/01/2009

3) Design inputs

Span	4.2 m
Roof load width 'RLW' & type	2.4 m - Sheet roof & ceiling - 40 kg/m²
Roof load width 'RLW' & type	3.6 m - Sheet roof & ceiling - 40 kg/m²
Serviceability criteria	AS 1684.1-1999

NPDC Approved
26 JAN 2009

4) Member specification

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

Continued 2/

5) Installation requirements	Provide at least 30 mm bearing at end supports Nail lamination in accordance with Detail H1.

Member 2

1) Member code and description	R1 - Common rafters
2) Date prepared	20/01/2009
3) Design inputs	
Span	4.8 m - single
Maximum rafter spacing	600 mm
Roof mass	30 kg/m²
Lateral restraint condition	Bottom edge restrained by ceiling / ceiling battens at 600 crs max.
Serviceability criteria	AS 1684.1-1999
4) Member specification	
Size, stress grade/product	Use 170 x 45 hySPAN
Material type	Structural Laminated Veneer Lumber to AS/NZS 4357
5) Installation requirements	Minimum bearing - end supports, 45 mm (for required span).

Member 3

1) Member code and description	L2 - Lintels - In single or upper storey load bearing walls
2) Date prepared	20/01/2009
3) Design inputs	
Span	4.5 m
Roof load width 'RLW' & type	.3 m - Sheet roof & ceiling - 40 kg/m²
Roof load width 'RLW' & type	.1 m - Sheet roof & ceiling - 40 kg/m²
Serviceability criteria	AS 1684.1-1999
4) Member specification	
Size, stress grade/product	Use 200 x 45 hySPAN
Material type	Structural Laminated Veneer Lumber to AS/NZS 4357
5) Installation requirements	Provide at least 30 mm bearing at end supports

Member 4

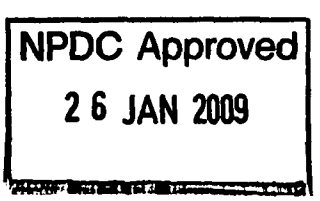
1) Member code and description	R2 - Common rafters
2) Date prepared	20/01/2009
3) Design inputs	
Span	5.9 m - single
Maximum rafter spacing	600 mm
Roof mass	30 kg/m²
Lateral restraint condition	Bottom edge restrained by ceiling / ceiling battens at 600 crs max.
Serviceability criteria	AS 1684.1-1999
4) Member specification	
Size, stress grade/product	Use 200 x 45 hySPAN
Material type	Structural Laminated Veneer Lumber to AS/NZS 4357
5) Installation requirements	Minimum bearing - end supports, 45 mm (for required span).

NPDC Approved
26 JAN 2009

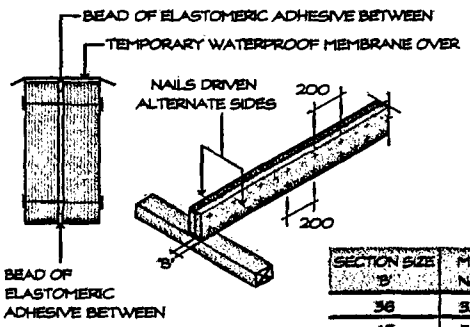
Continued 3/

Member 5

1) Member code and description	L3 - Lintels - In single or upper storey load bearing walls
2) Date prepared	20/01/2009
3) Design inputs	
Span	4.5 m
Roof load width 'RLW'	3.0 m
Roof type and mass	Light roof & ceiling - 40 kg/m²
Serviceability criteria	AS 1684.1-1999
4) Member specification	
Size, stress grade/product	Use 300 x 90 hy90
Material type	Structural Laminated Veneer Lumber to AS/NZS 4357
5) Installation requirements	Provide at least 30 mm bearing at end supports



Vertical nail lamination - two pieces



SECTION SIZE 'B'	MINIMUM NAIL DIA	MINIMUM NAIL LENGTH
38	3.06 mm	75 mm
45	3.90 mm	90 mm
63	3.90 mm	100 mm

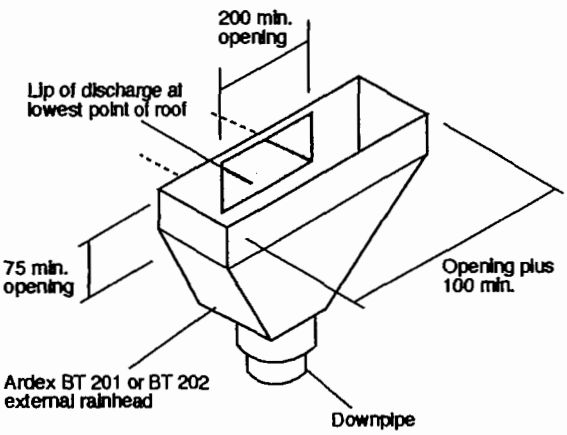
DETAIL H1

The details shown are intended to both limit the entry of moisture between the laminates and to provide adequate shear transfer.

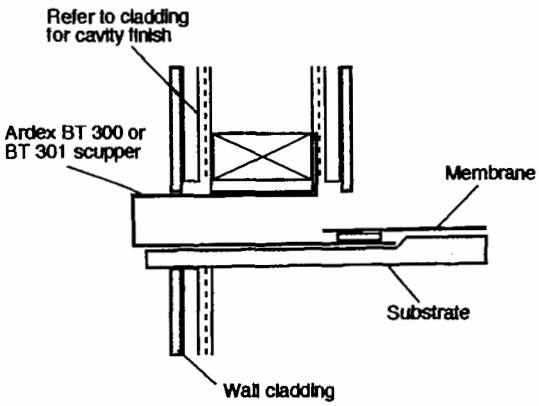
NPDC Approved
26 JAN 2009

RAINWATER HEAD AND SCUPPER OPENING IN MEMBRANE USING ARDEX BT 300 OR BT 301 SCUPPER

Deck outlet

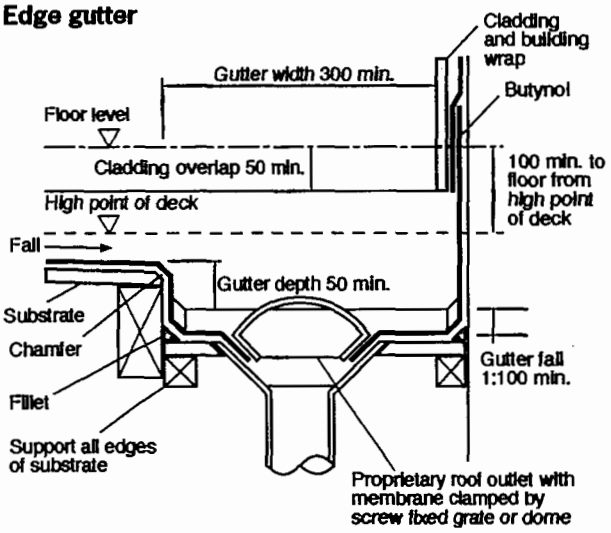


Overflow

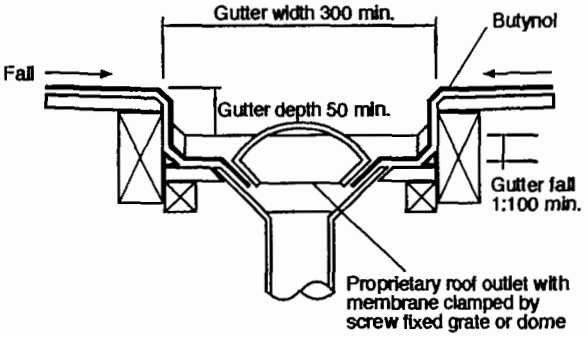


GUTTERS AND OUTLETS IN MEMBRANE

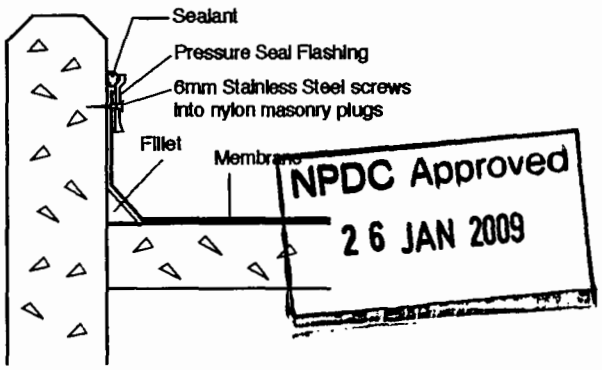
Edge gutter



Central gutter



Aluminium Pressure Bar Seal



S2 M7

BUILDING CONSENT

106288P

PROPERTY ID **107870**

106288P

NEW PLYMOUTH DISTRICT COUNCIL
newplymouthnz.com

Application for Building Consent Amendment

Building Act 2004

1. Project reference

1a. Building consent number: 106288

1b. Site address: 8 Joshua Place, Bell Block

AMENDMENT 01 _ 180509

1c. Reason for amendment
- ○ Change by owner
- ○ Other, please specify
- ○ Information request by council

2. Changes covered by this submission

KT 12.20
15 MAY 2009
New Plymouth District Council

To minimise chargeable processing time, clearly identify all changes to plans and documentation:
- Hatch around the change with a "revision cloud"
- Include a revision reference which relates to the schedule of changes on this form
- **Two sets of plans must be supplied**

Plan affected by amendment (old plan number)	New plan number	Description of change
	S1-01	TSE foundation design as some footings are 1400mm high.
		(no calc's provided?)
		For additional information, please turn over

3. Building warrant of fitness

Commercial only - Are there any amendments to systems for which a compliance schedule has been/will be issued? ○ Yes ○ No

4. Applicant's declaration

This amendment to the abovementioned building consent is made by me, as
- ○ the owner of the property
- ✓ the applicant, authorised by the owner to make this amendment

Signature: Shirley Thomson — Date: 14/5/09

Name (print clearly): Shirley Thomson

Office use only

Approved	Refused
PIM Co-ordinator	
Building	
18-5-09.	
Engineer	

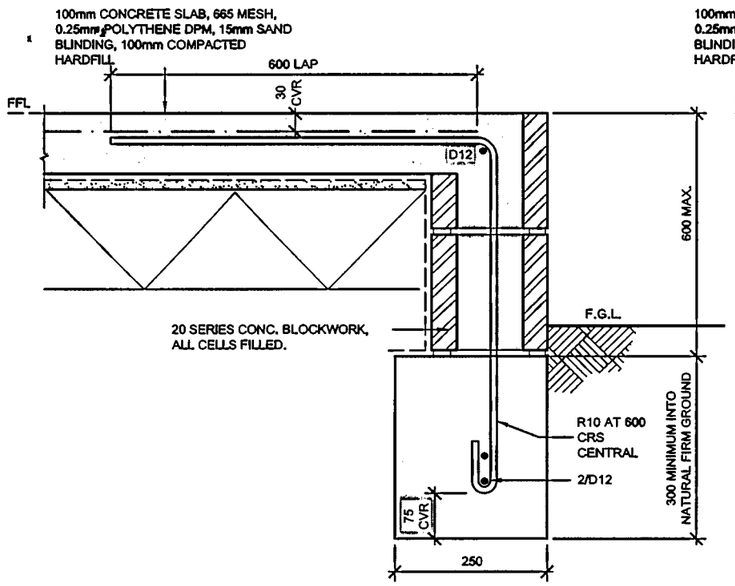
Comments:

PTO

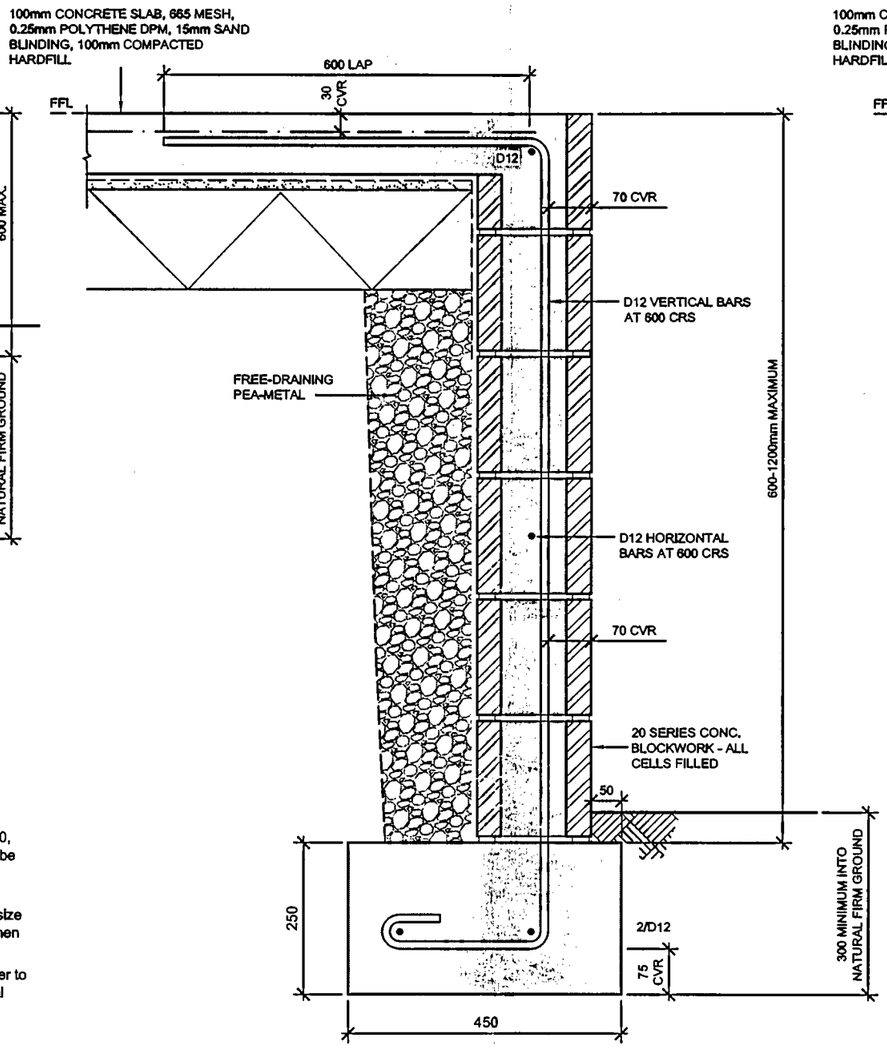
Liardet Street, Private Bag 2025, New Plymouth 4310, NZ. Telephone (06) 759 6060, Facsimile (06) 759 6072, Email enquiries@npdc.govt.nz, Website www.newplymouthnz.com

AMENDMENT

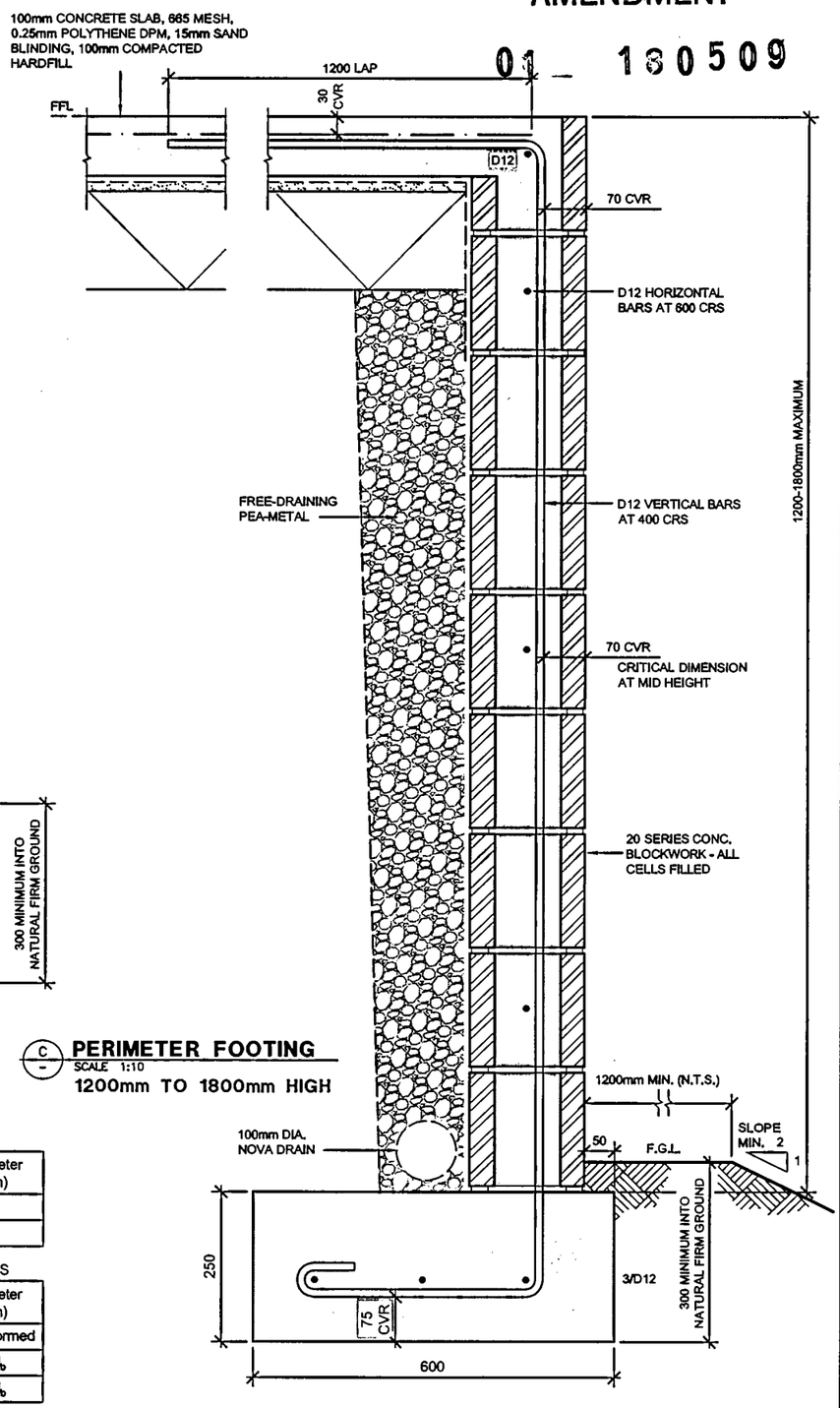
01 – 130509



A – **TYPICAL PERIMETER FOOTING**
SCALE 1:10
UP TO 600mm HIGH



B – **PERIMETER FOOTING**
SCALE 1:10
600mm TO 1200mm HIGH



C – **PERIMETER FOOTING**
SCALE 1:10
1200mm TO 1800mm HIGH

CONCRETE

1. All concrete work to conform to NZS 3109.
2. Extend foundations to a minimum of 300mm into good ground.
3. All concrete shall be ordinary, high or special grade to conform to NZS 3109.
4. Concrete shall have a minimum compressive strength at 28 days of:
   17.5 MPa for reinforced concrete in Zones 2 & 3;
   20 MPa for reinforced concrete in Zone 1;
   25 MPa for reinforced concrete in Sea Spray Zone;
   to specific engineering design in Geothermal areas.
5. Minimum concrete cover to steel reinforcement shall be:
   75mm when concrete is placed directly on or against the ground;
   50mm in all other situations where the concrete is placed in formwork;
   30mm from the top of a wall or floor slab which is in a closed area;
   50mm from the top of any exposed wall or floor slab.
6. Lay floor slab on DPM, 15mm sand blinding and 100mm minimum compacted hardfill.
7. Compaction of hardfill to be carried out in maximum layers of 150mm to 98% Maximum Dry Density under buildings and 95% Maximum Dry Density elsewhere.

CONCRETE BLOCKWORK

1. All concrete work shall conform to NZS 4210, NZS 4229 & NZS 4230. All blockwork shall be Grade B.
2. Concrete for filling masonry cavities to be ordinary grade with a maximum aggregate size of 10mm. Pencil vibrators are to be used when pouring concrete.
3. Concrete masonry shall have minimum cover to steel reinforcement from a masonry external face and a minimum grout strength of:
   60mm and 25 MPa for Sea Spray Zone;
   60mm and 17.5 MPa for Zone 1;
   45mm and 17.5 MPa for Zones 2 and 3;
   35mm and 17.5 MPa for interior conditions.
4. Mortar strength to be 12.5 MPa at 28 days.
5. All Block cavities to be filled.

RETAINING WALLS

1. Retaining walls have not been designed to be stable under full load until the wall concrete and the slab on top of the wall have reached their designed strength. Provide adequate shoring and/or strutting to prevent any damage to the walls occuring during backfilling and compacting behind walls. Compacting machinery used adjacent to the walls shall be such that the wall is not damaged.
2. Compaction of hardfill to be carried out in maximum layers of 150mm.
3. Provide 100mm dia. Novaflo pipe behind wall, backfill with free draining material.

REINFORCING

1. Mild steel plain and deformed reinforcing bars shall conform to AS/NZS 4671: Steel Reinforcing Materials.
2. All plain (round) bars shall be Grade 300. All deformed bars nominated as 'D' shall be Grade 300 and all deformed bars nominated as 'H' shall be Grade 500E, unless noted otherwise.
3. Take special care to achieve the minimum inside diameter of bends as shown in the charts at right. Do NOT allow re-bending of Grade 500E steel and do NOT carry out site welding, including tack welding.
4. HRC mesh to conform to AS 4671. Mesh shall be lapped 225mm minimum unless specified otherwise by manufacturer.

MINIMUM BENDS FOR MAIN STEEL

GRADE	Bar diameter, d_b (mm)	Minimum diameter of bend, d_i (mm)
300 or 500E	6 - 20	5 d_b
	25 - 40	6 d_b

MINIMUM BENDS FOR STIRRUPS & TIES

GRADE	Bar diameter, d_b (mm)	Minimum diameter of bend, d_i (mm)	
		Plain	Deformed
300 or 500E	6 - 20	2 d_b	4 d_b
	25	3 d_b	6 d_b

ISSUE	AMENDMENT	DATE	BY
A	FOR APPROVAL	14.05.09	BW

NOTES

CONTRACTORS TO:
Verify all dimensions and check all levels on site before commencing any work;
Refer to figured dimensions;
Refer any discrepancies to the Drawing Office;
Check that all workmanship and materials conform with the Building Act 2004 & The New Zealand Building Code.

Tse Taranaki & Associates Limited
STRUCTURAL & CIVIL ENGINEERS
PROJECT MANAGERS
148 Powderham Street - PO Box 237
NEW PLYMOUTH - NEW ZEALAND
TEL 64.6.7568390 - FAX 64.6.7579404
E-MAIL tse@tsetaranaki.co.nz

TITLE
M. HERLIHY RESIDENCE
8 JOSHUA PLACE
BELL BLOCK
NEW PLYMOUTH

SHEET CONTENTS
PERIMETER FOOTING DETAILS & NOTES

Drawn	B. WALKER	MAY 2009
Design	F. KERSLAKE	MAY 2009
Checked		
Approved		

A1 SCALE	
A2 SCALE	
A3 SCALE	1:10
ISSUE	A
JOB No.	3951-154
SHEET No.	S1-01

E: CAD\3951.395 - 154 Herlihy - S1-01 FOOTINGS.dwg, 14.05.2009 1:01:57 p.m.

DO NOT SCALE
IF IN DOUBT ASK
CHECK ALL DIMENSIONS
ORIGINAL SIZE = A3

NEW PLYMOUTH DISTRICT COUNCIL
newplymouthnz.com

Application for Building Consent Amendment

Building Act 2004

1. Project reference

1a. Building consent number: 08/106288

1b. Site address: 8 Joshua Place, Bell Block.

1c. Reason for amendment:
- ○ Change by owner
- ○ Other, please specify
- ⊘ Information request by council

2. Changes covered by this submission

To minimise chargeable processing time, clearly identify all changes to plans and documentation:
- Hatch around the change with a "revision cloud"
- Include a revision reference which relates to the schedule of changes on this form
- **Two sets of plans must be supplied**

2.35
NEW PLYMOUTH DISTRICT COUNCIL
21 JAN 2009

Plan affected by amendment (old plan number)	New plan number	Description of change
104		Subfloor braces added.
301		Subfloor ventilation noted.
104		Flooring noted.
		Mid span blocking noted.
103		Lintel fixing is already noted

For additional information, please turn over

3. Building warrant of fitness

Commercial only - Are there any amendments to systems for which a compliance schedule has been/will be issued? ○ Yes ○ No

4. Applicant's declaration

This amendment to the abovementioned building consent is made by me, as
- ○ the owner of the property
- ⊘ the applicant, authorised by the owner to make this amendment

Signature: S Thomson — Date: 20/1/09

Name (print clearly): Shirley Thomson

Office use only

Approved	Refused
PIM Co-ordinator	
Building	
26-01-09.	
Engineer	

Comments:

PTO

Liardet Street, Private Bag 2025, New Plymouth 4310, NZ. Telephone (06) 759 6060, Facsimile (06) 759 6072, Email enquiries@npdc.govt.nz, Website www.newplymouthnz.com

Additional information

Plan affected by amendment (old plan number)	New plan number	Description of change
402		Internal gutter width changed.
		Rainwater & overflow noted plus details attached.
201		Glazing & plumbing noted.
104		Drainage layout shown., kitchen sink gf moved.
201, 6, 7		Insulation changed.
104		Timber floor insulation noted
		Design IT calc's attached and some members revised

Office use only - continued

Additional comments

PIM Review	Accept	Decline
○ Planning		
○ Development Engineer		
○ Environmental Health		

Comments:

NEW PLYMOUTH DISTRICT COUNCIL
newplymouthnz.com

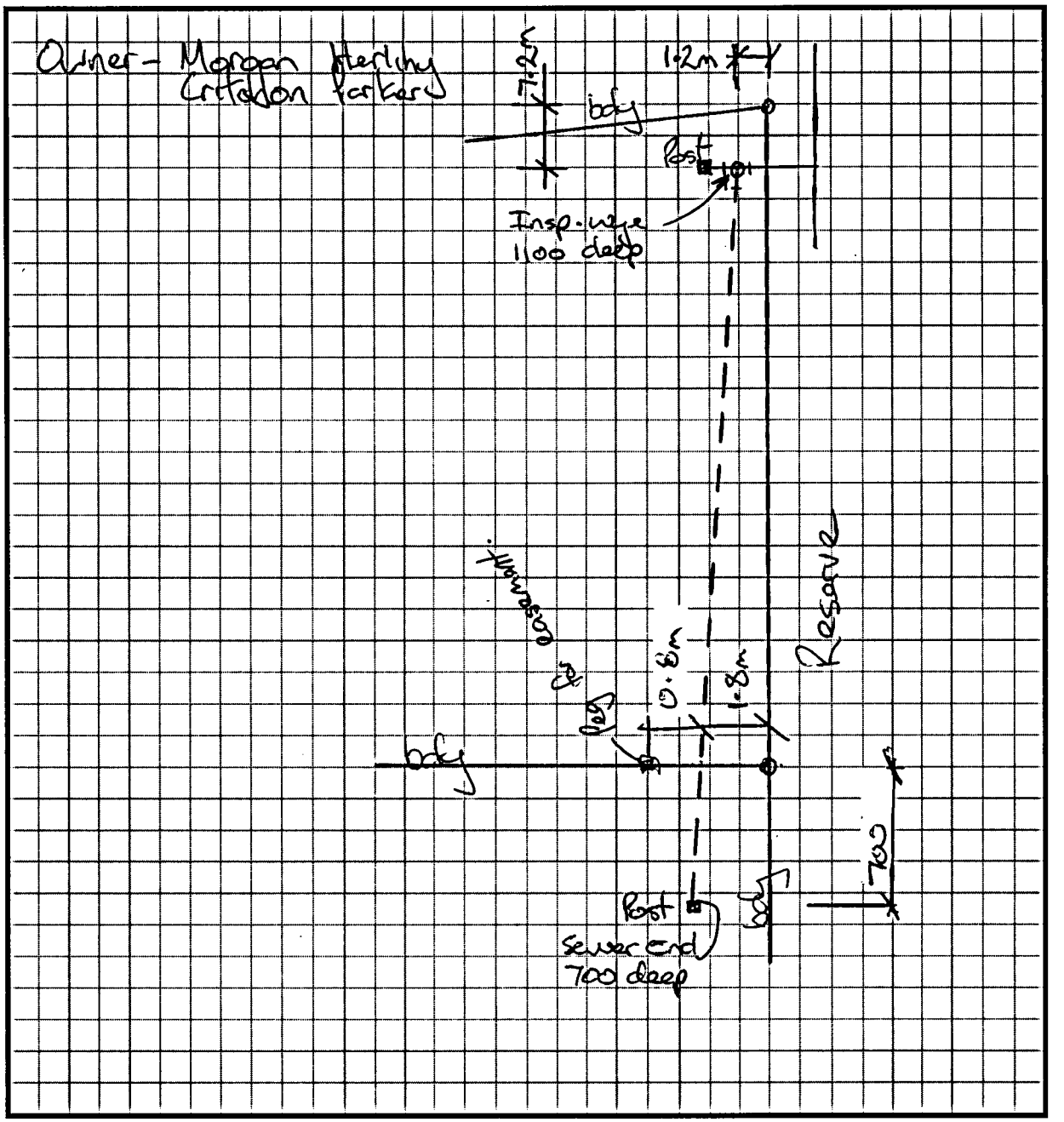
Building Consent Authority

AS-BUILT DRAINAGE PLAN

Building Consent BC: 08/106288 Address: 8 Joshua Place, Bell Block

Drainlayer: Nelson James Registration No. 11208

Date: 12th March 2008 PI 106288



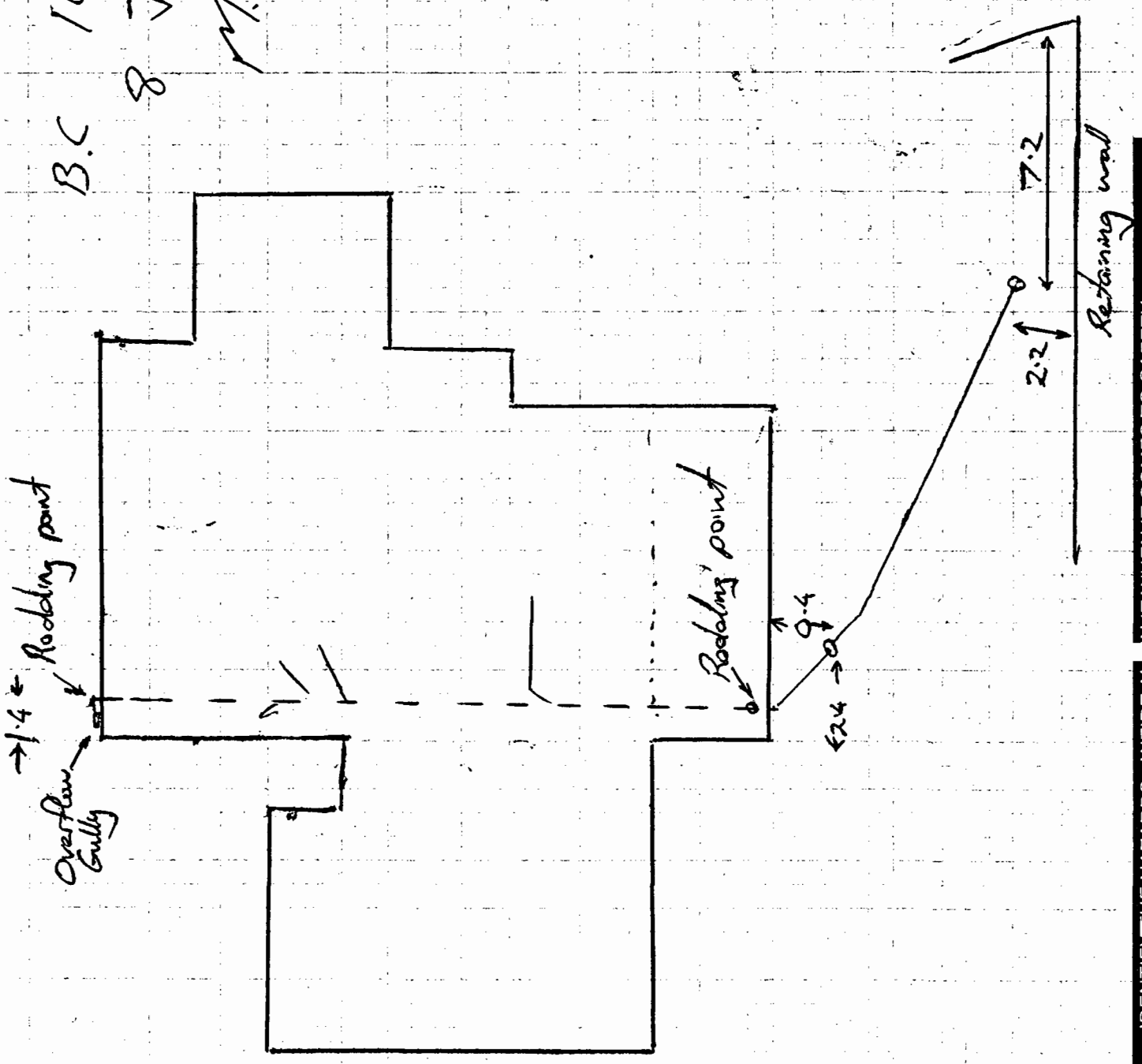
Specify system used:

- ☐ G13/AS1
- ☐ AS/NZS: 3500

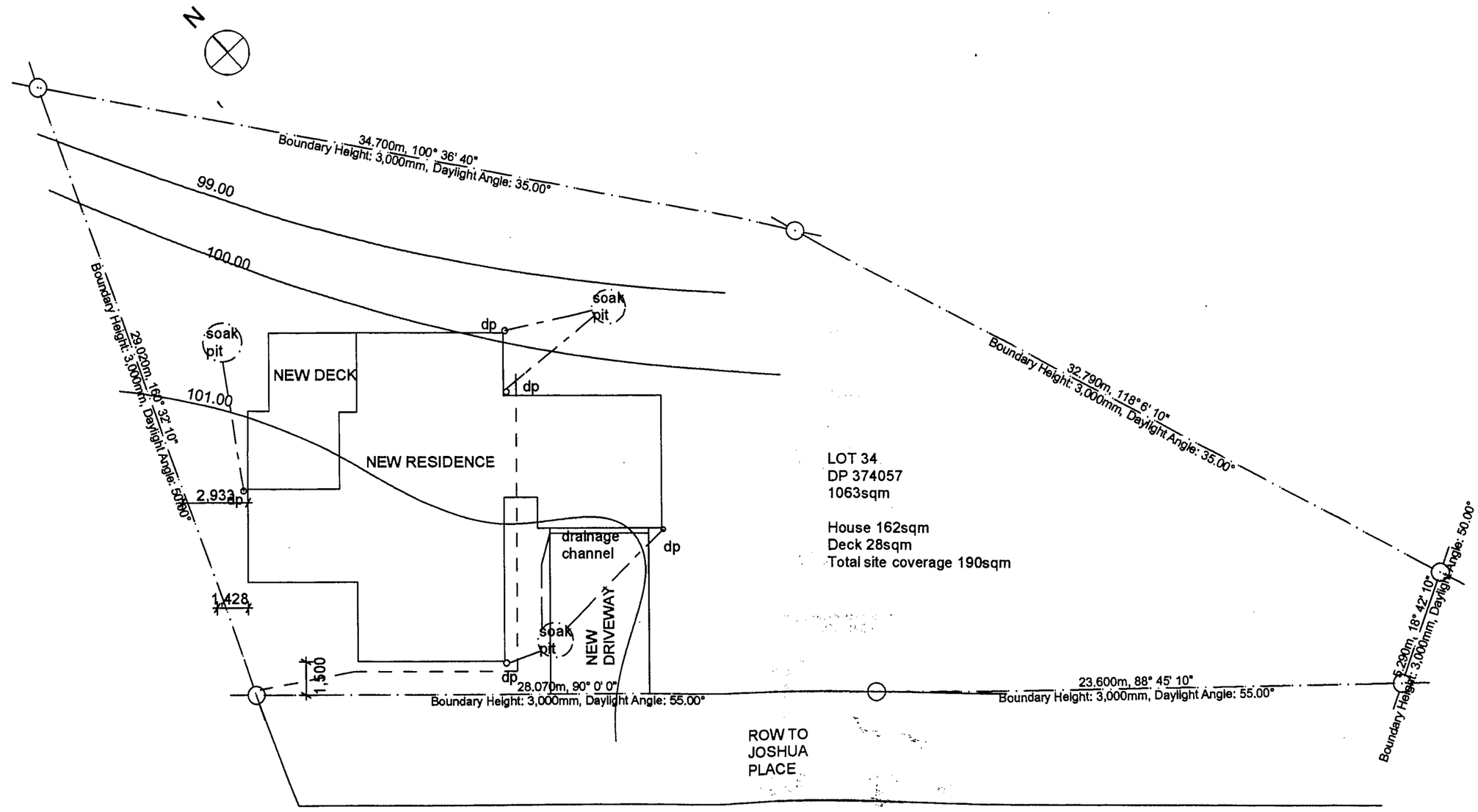
Note: Show terminal vent size, location, and all relevant dimensions to inspection points

REFERENCE	DATE DRAWN	COMPLETED BY	DATE COMPLETED	NO
				9573
RECORDED BY	DATE RECORDED	PLAN REFERENCE	PLEASE FORWARD TO TECHNICAL RECORDS OFFICE WHEN WORK COMPLETED	

B.C. 1062288
8 Joshua Pl
M. Hemiltng.



IDENTIFY THE HAZARDS - WE'RE ALL IN IT WHEN IT COMES TO SAFETY



Job Title: NEW RESIDENCE	For: M HERLIHY	At: 8 JOSHUA PLACE BELL BLOCK	Drawn: Shirley Thomson; Revised: ; Creation Date: 29/09/2008; Plot Date: 24/11/2008
ALL DIMENSIONS TO BE VERIFIED ON SITE DRAWING COPYRIGHT SHIRLEY THOMSON DESIGN LTD			Drawing Title: SITE PLAN; Drawing Number: 101; Scale at A3 size: 1:200

SHIRLEY THOMSON DESIGN LTD
45a Wallace Place
NEW PLYMOUTH 4310
shirleythomson@xtra.co.nz
Phone: 06 758 9687
Fax: 06 758 9687
Mobile: 027 4750 475

NEW RESIDENCE FOR

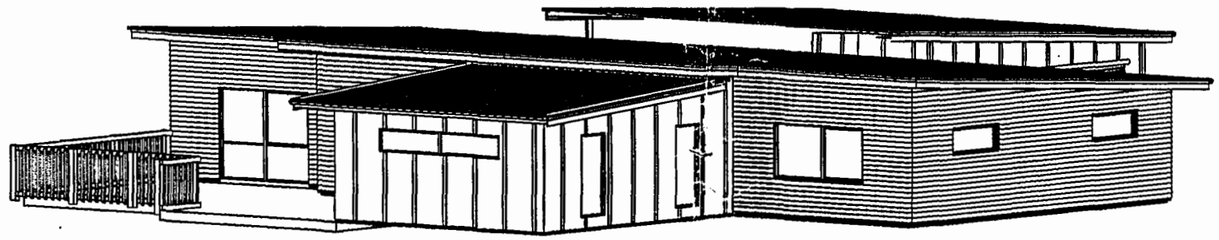
M HERLIHY

8 JOSHUA PLACE

BELL BLOCK

NPDC OFFICE COPY
This Building Consent is approved under the Building Act and is limited to new work only as shown on these plans and related specifications
Approved... Date 27/1/09
BC08/106288

NPDC Approved
26 JAN 2009

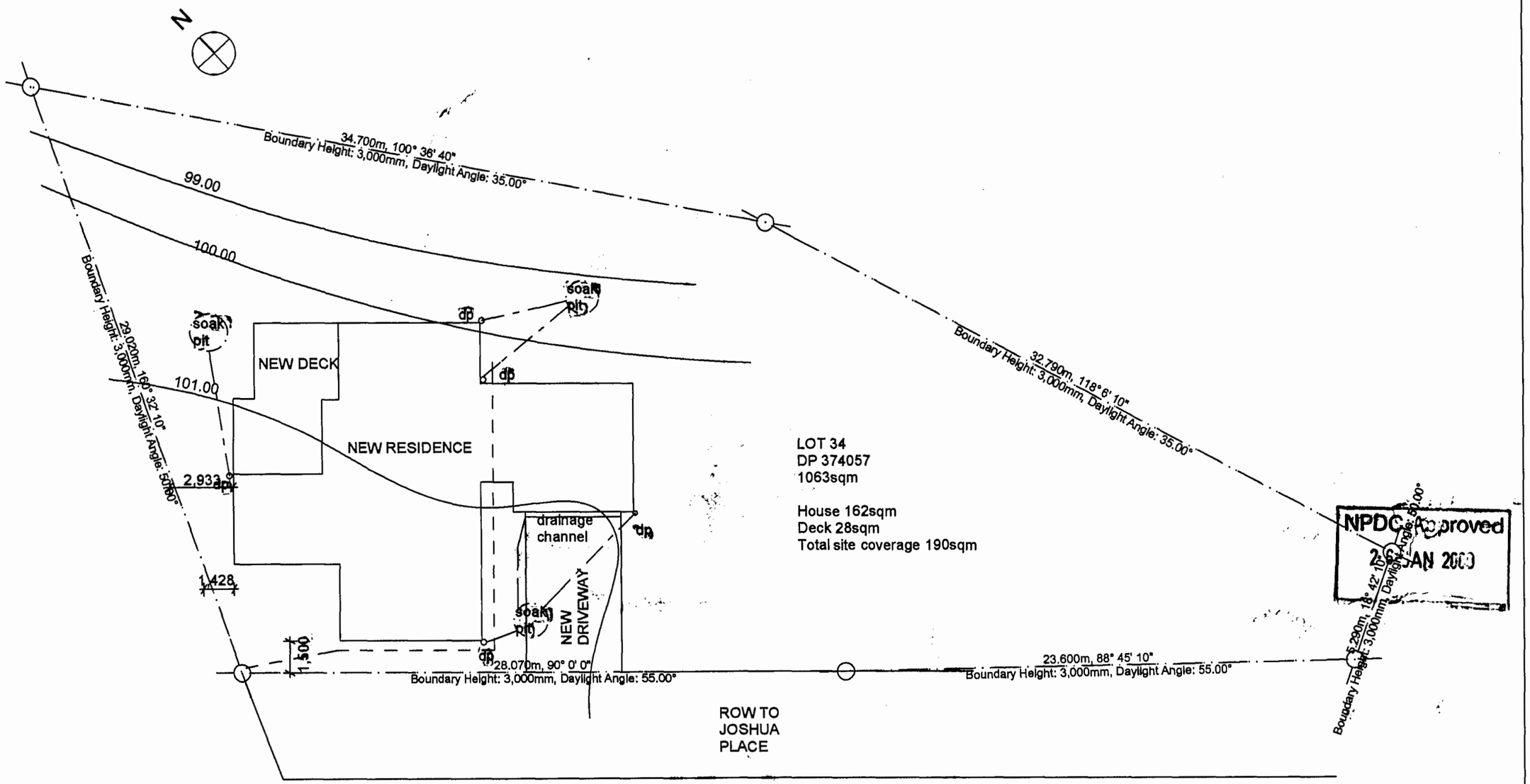


THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH NZ BUILDING SUPPLIES DRAWING, THE CENTRAL PART OF THE HOUSE IS NZBS STEEL FRAMED KITSET 'ASBURTON' WITH THE GARAGE AND LIVING TO BE TIMBER FRAMED EXTENSIONS.

Sheet Index

Layout ID	Layout Name	Published	Remark
	Sheet Index	☒	
101	SITE PLAN	☒	
102	FLOOR PLAN	☒	
103	ROOF PLAN	☒	
104	FOUNDATION PLAN	☒	
105	BRACING PLAN	☒	
201	SECTIONS A:A, B:B, C:C	☒	
301	NORTH & EAST ELEVATIONS	☒	
302	SOUTH & WEST ELEVATIONS	☒	
401	WINDOW & JUNCTION DETAILS	☒	
402	DETAILS 1-5	☒	

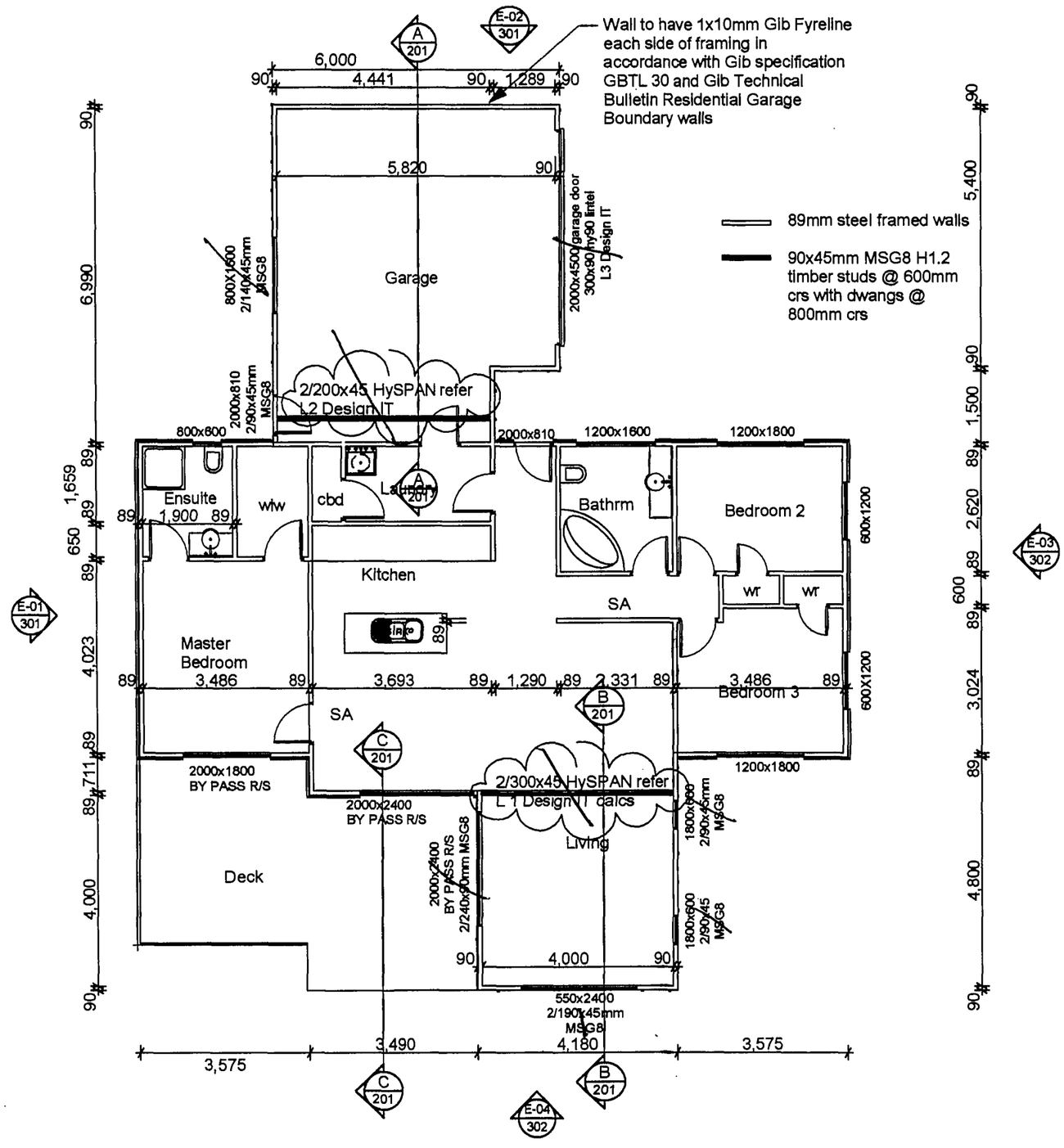
Shirley Thomson Design Ltd
Phone: 06 758 9687
Mobile: 027 4750 475
Email: Shirleythomson@xtra.co.nz



Job Title: NEW RESIDENCE	For: M HERLIHY	At: 8 JOSHUA PLACE BELL BLOCK	Drawn: Shirley Thomson	Drawing Title: SITE PLAN
			Revised:	Drawing Number: 101
			Creation Date: 29/09/2008	Scale at A3 size: 1:200
			Plot Date: 24/11/2008	

ALL DIMENSIONS TO BE VERIFIED ON SITE

SHIRLEY THOMSON DESIGN LTD
45a Wallace Place
NEW PLYMOUTH 4310
shirleythomson@xtra.co.nz
Phone: 06 758 9687
Fax: 06 758 9687
Mobile: 027 4750 475



install fan in laundry to provide minimum ventilation of 300 cubic metres per hour, fan to ventilate to exterior of house

Where fall is more 1m or more from deck construct balustrade as detailed

SA Smoke detectors with approved hush facility within 3m radius of all bedroom windows

NPDC Approved
26 JAN 2009

Job Title: NEW RESIDENCE	For: M HERLIHY	At: 8 JOSHUA PLACE BELL BLOCK	Drawn: Shirley Thomson	Drawing Title: FLOOR PLAN
			Revised:	
			Creation Date: 29/09/2008	Drawing Number: 102
			Plot Date: 20/01/2009	Scale at A3 size: 1:100

ALL DIMENSIONS TO BE VERIFIED ON SITE

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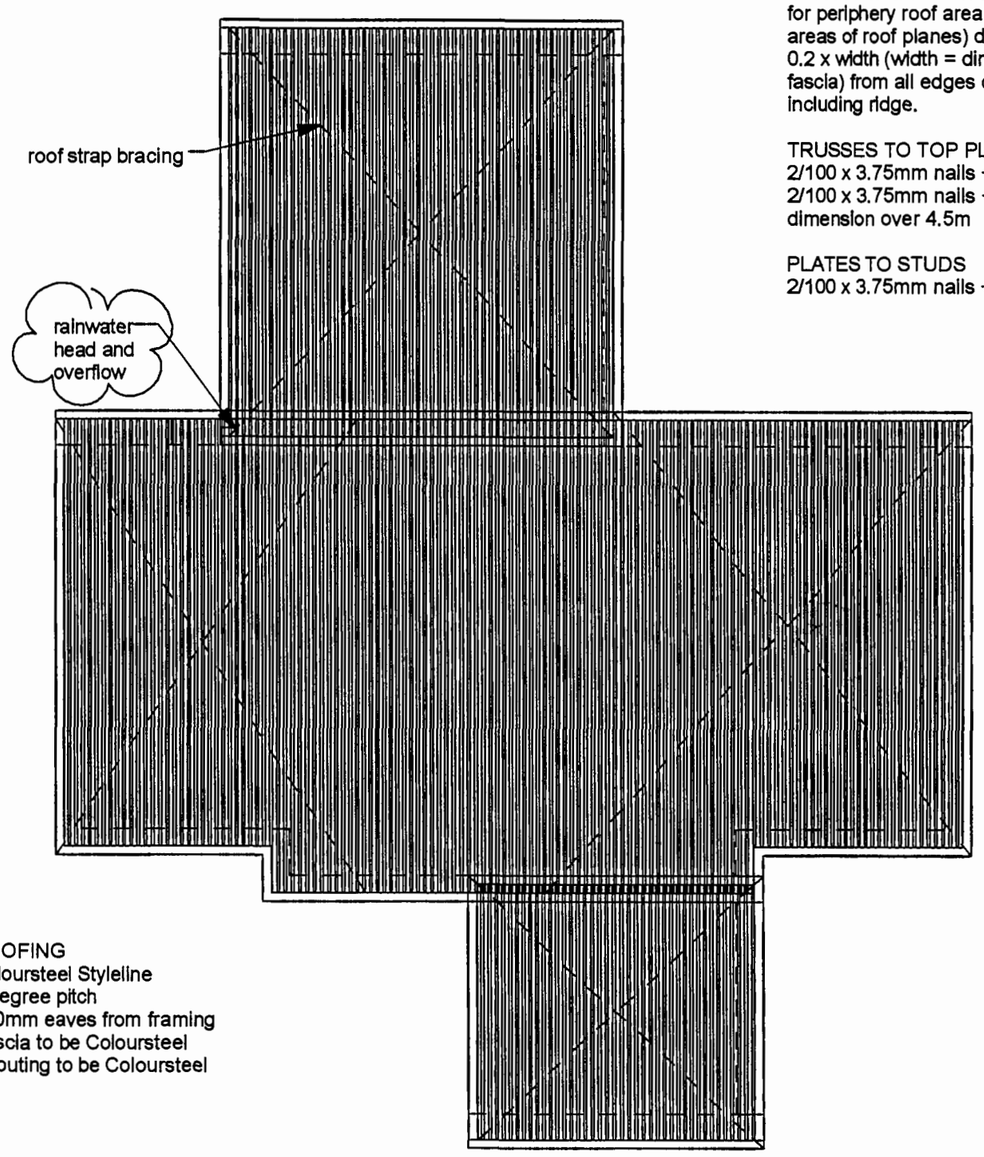

FIXINGS

PURLINS TO TRUSSES
2/100x3.75mm nails
Increase to 2/100x3.75mm nails and 1 Z nail for periphery roof area (IE higher wind uplift areas of roof planes) defined as a setback of 0.2 x width (width = dimension from fascia to fascia) from all edges of all roof planes including ridge.

TRUSSES TO TOP PLATES
2/100 x 3.75mm nails + 2 Z nails (staples)
2/100 x 3.75mm nails + 3 Z nails if loaded dimension over 4.5m

PLATES TO STUDS
2/100 x 3.75mm nails + 1 D nail (staples)

TOP PLATE TO JACK STUDS
25x1mm strap taken over top plate and 150mm onto each side of lintel 6/30 x 2.5mm nails each side of lintel.

LINTEL TO TRIMMING STUDS
25 x 1mm strap - 6/30 x 2.5mm nails into both lintel and stud

TRIMMING STUDS TO FLOOR
25 x 1mm strap - 6/30 x 2.5mm nails inot both stud & joist or blocking

FINAL TRUSS DESIGN SUPPLIED BY MANUFACTURERS

ROOFING
Coloursteel Styleline
5 degree pitch
450mm eaves from framing
Fascia to be Coloursteel
Spouting to be Coloursteel

NPDC Approved
26 JAN 2009

Job Title: NEW RESIDENCE	For: M HERLIHY	At: 8 JOSHUA PLACE BELL BLOCK	Drawn: Shirley Thomson	Drawing Title: ROOF PLAN
			Revised:	Drawing Number: 103
			Creation Date: 29/09/2008	Scale at A3 size: 1:100
			Plot Date: 20/01/2009	

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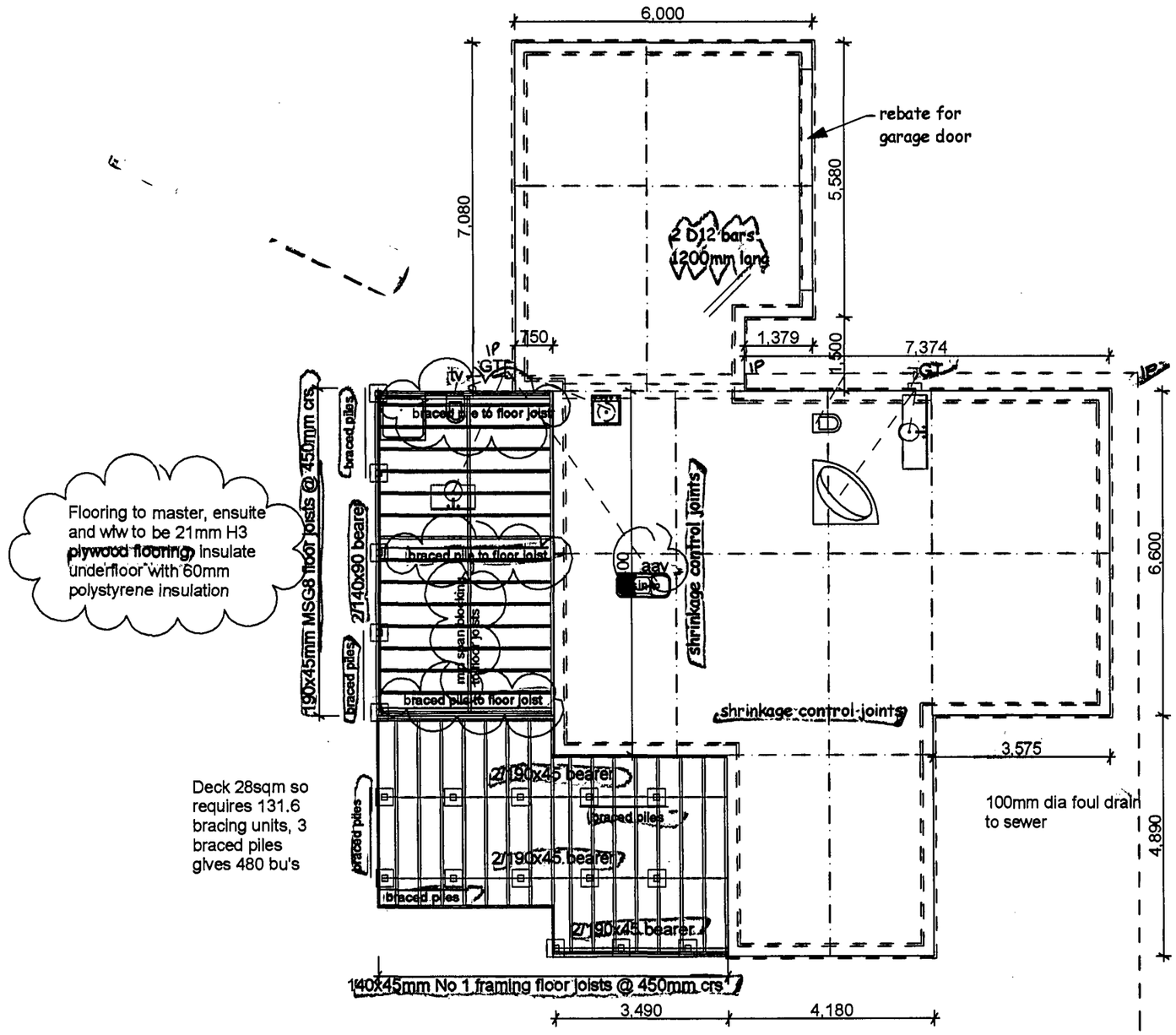

1. All constructin to compy with NZS 3604 & the NZ Building Code Medium wind and Earthquake A.

2. All foundations are to bear inot firm undisturbed subsoils with a minimum safe bearing capacity of 75 KPa or onto hardfilling or backfilling thoroughly compacted to an equivalent standard.

3. Refer to Section 4 NZS 3604:1999 protection required for fixings and fastenings.

4. Min 5mm - 25mm max sand blinding layer to cover hardfill to ensure the vapour barrier is protected from any granular protusions.

5. Insulate slab with 50mm polystyrene laid on sand blinding layer

6. Form shrinkage control joints 25mm deep saw cuts to form max 4m bays with a ratio of 1:2

WASTES

Shower	50mm dia	1:40 fall
Vanity	32mm dia	1:20 fall
Sink	40mm dia	1:40 fall
Bath	80mm dia	1:60 fall

DRAINS

Foul	100mm dia 1:100 fall
Stormwater	100mm dia 1:120 fall

NPDC Approved
26 JAN 2009

Job Title: NEW RESIDENCE	For: M HERLIHY	At: 8 JOSHUA PLACE BELL BLOCK	Drawn: Shirley Thomson; Revised: ; Creation Date: 29/09/2008; Plot Date: 20/01/2009
			Drawing Title: FOUNDATION PLAN; Drawing Number: 104; Scale at A3 size: 1:100

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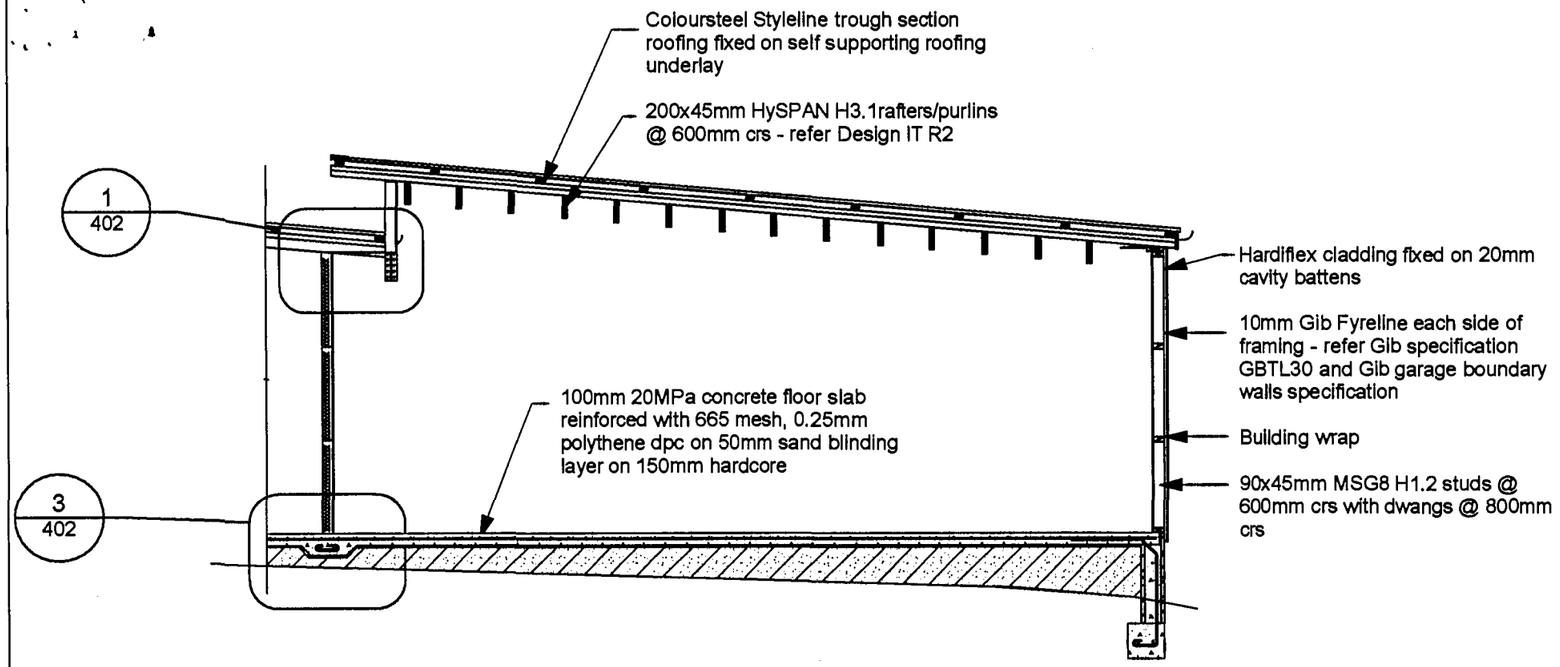
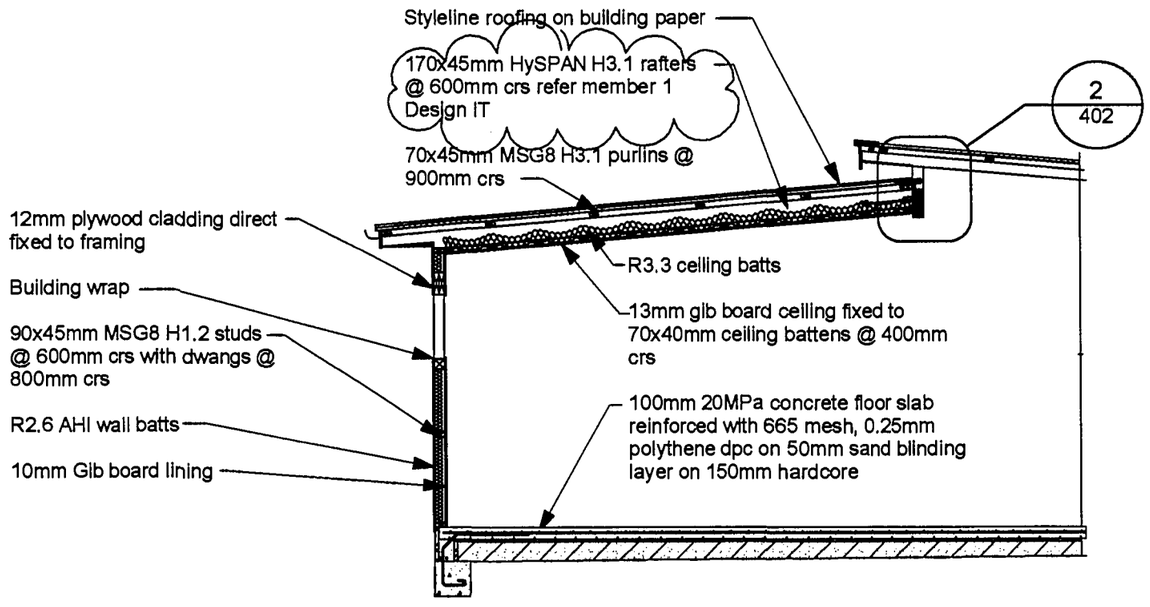
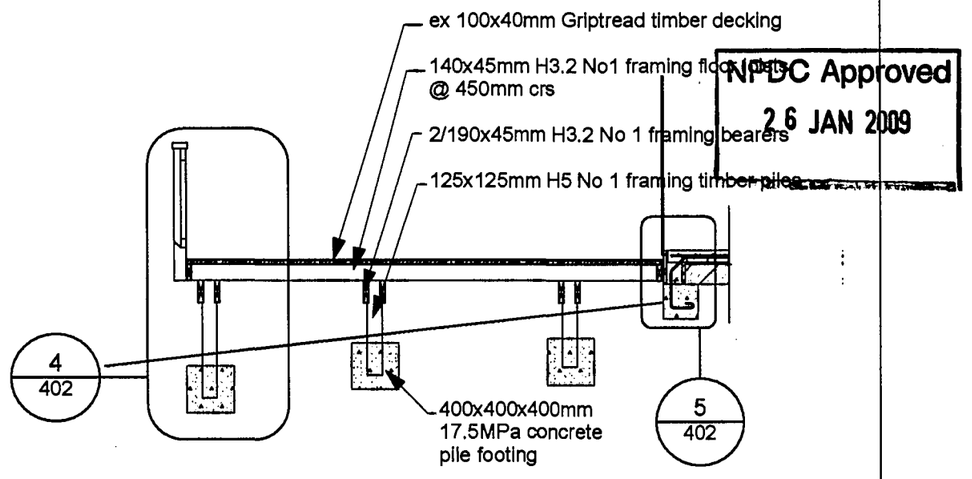


1 SECTION A:A 1:50

All workmanship and materials shall comply with the Building Act and Regulations and the Construction Act and Regulations.
Contractors are required to comply with the Building Act 2004 and the Health and Safety in Employment Act 1992 including all current ammendments together with any reasonable requirements by the Owner, Engineer or Designer.
All materials shall comply with the current NZS 3602,
All materials to be installed in accordance with the manufacturers specifications.
All glazing is to comply with the current NZS 4223 Parts 1-2
The builder shall have a copy of the current NZS 3604 and all approved drawings and specifications on site at all times.
All carpentry shall comply with NZS 3604:1999 and subsequent ammendments.
All structural timber shall comply with NZS3604 Amendment 2.
All Plumbing and Drainage to comply with NZBC G12 & G13 AS1.
Water reticulation to be copper pipe.
Waste and sewer pipes to be PVC piping.
All fixings to be in accordance with NZS 3604 Table 4.1
Wall and ceiling linings to wet areas to be Gib Aqualine.
Confirm all dimensions on site before commencing work or ordering materials, no liability will be accepted by the Designer or Owner for any discrepancies.
All framing to be No1 framing timber unless otherwise specified.



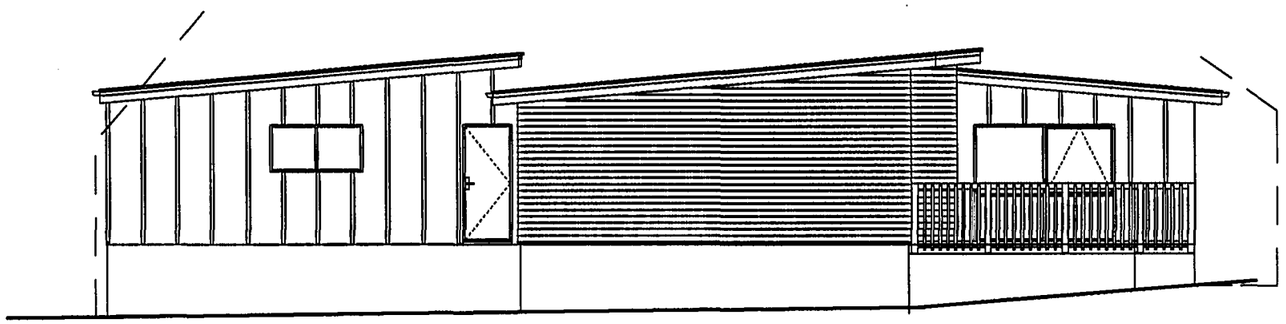
2 SECTION B:B 1:50



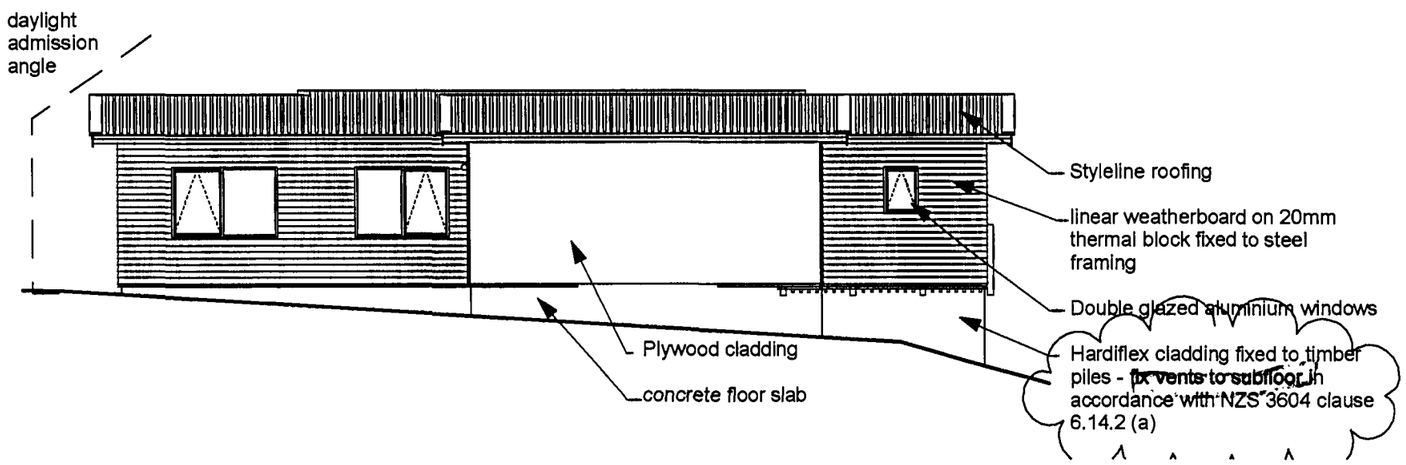
NPDC Approved
26 JAN 2009

3 SECTION C:C 1:50

Job Title: NEW RESIDENCE	For: M HERLIHY	At: 8 JOSHUA PLACE BELL BLOCK	Drawn: Shirley Thomson; Revised: ; Creation Date: 29/09/2008; Plot Date: 20/01/2009
ALL DIMENSIONS TO BE VERIFIED ON SITE			Drawing Title: SECTIONS A:A, B:B, C:C; Drawing Number: 201; Scale at A3 size: 1:50
DRAWING COPYRIGHT SHIRLEY THOMSON DESIGN LTD			SHIRLEY THOMSON DESIGN LTD, 45a Wallace Place, NEW PLYMOUTH 4310, shirleythomson@xtra.co.nz, Phone: 06 756 9667, Fax: 06 756 9667, Mobile: 027 4780 475



1 NORTH ELEVATION 1:100



2 EAST ELEVATION 1:100

NPDC Approved
26 JAN 2009

Job Title: NEW RESIDENCE	For: M HERLIHY	At: 8 JOSHUA PLACE BELL BLOCK	Drawn: Shirley Thomson; Revised: ; Creation Date: 29/09/2008; Plot Date: 20/01/2009
			Drawing Title: NORTH & EAST ELEVATIONS; Drawing Number: 301; Scale at A3 size: 1:100

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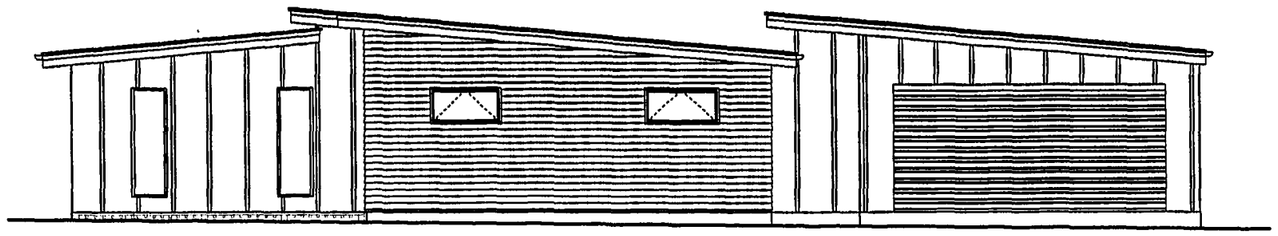
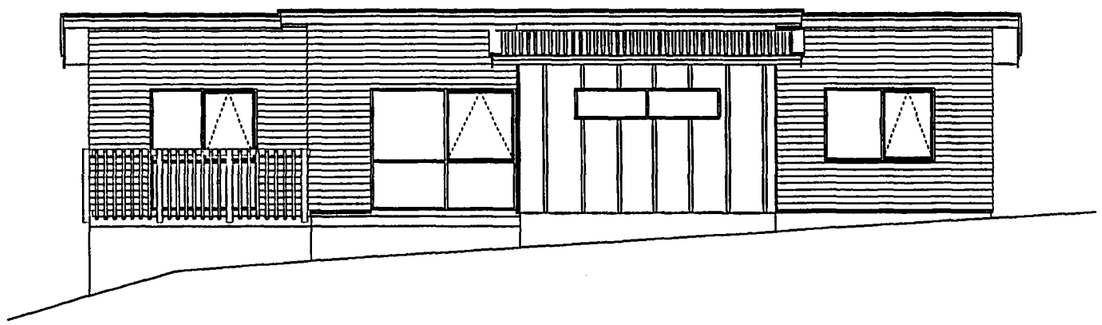


1 SOUTH ELEVATION 1:100



2 WEST ELEVATION 1:100

NPDC Approved
26 JAN 2009

Job Title: NEW RESIDENCE	For: M HERLIHY	At: 8 JOSHUA PLACE BELL BLOCK	Drawn: Shirley Thomson Revised: Creation Date: 29/09/2008 Plot Date: 24/11/2008	Drawing Title: SOUTH & WEST ELEVATIONS Drawing Number: 302 Scale at A3 size: 1:100

ALL DIMENSIONS TO BE VERIFIED ON SITE

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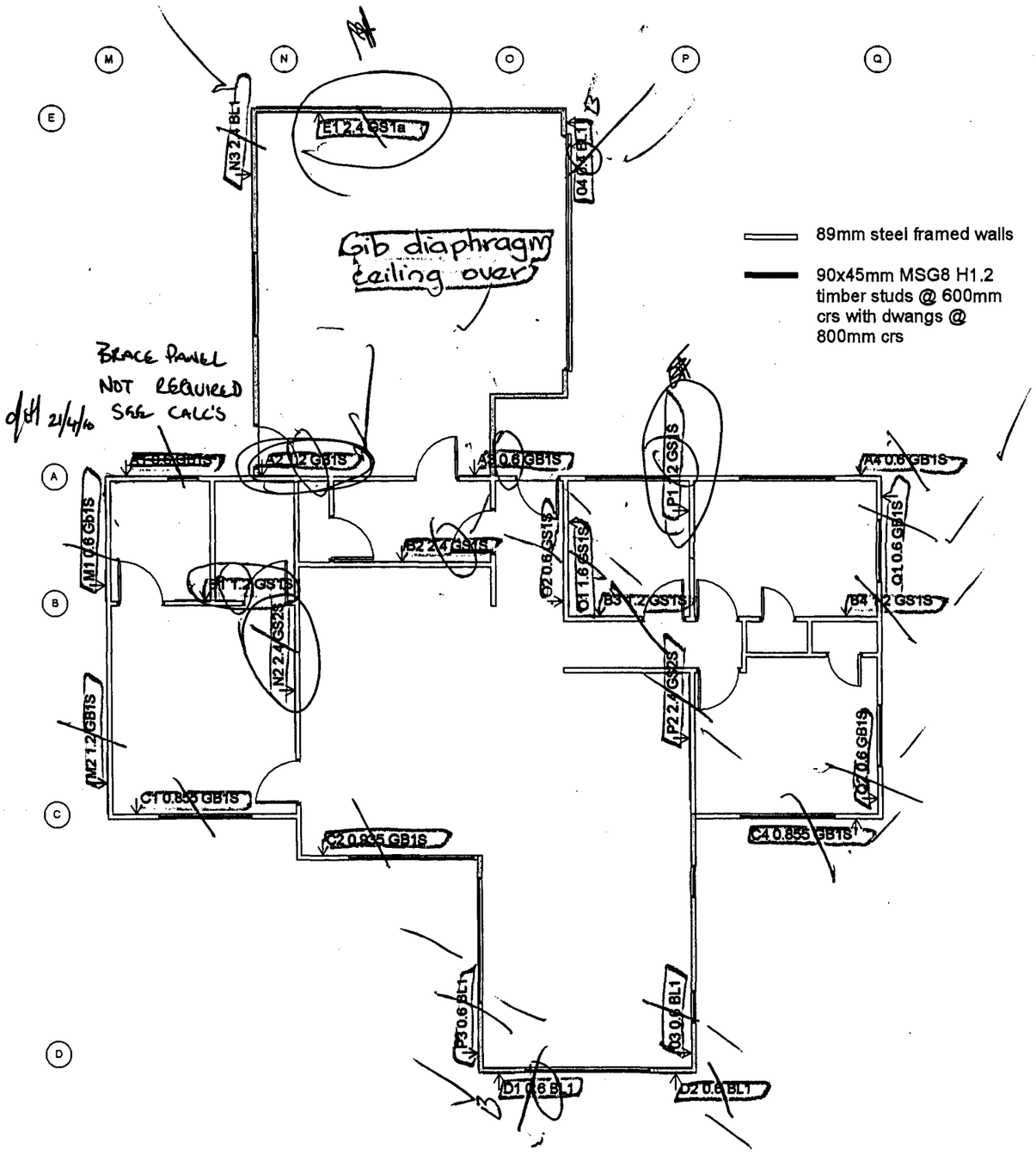
Mobile: 027 4750 475

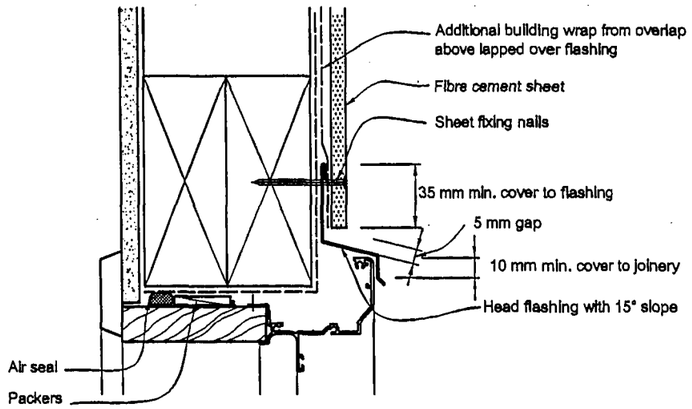


NPDC Approved
26 JAN 2009

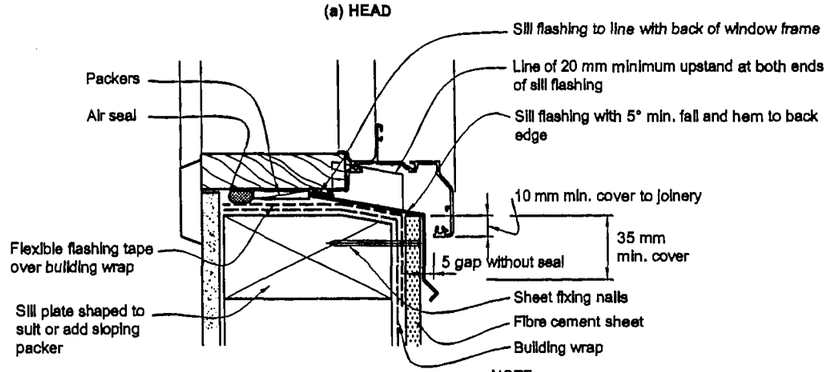
Job Title: NEW RESIDENCE	For: M HERLIHY	At: 8 JOSHUA PLACE BELL BLOCK	Drawn: Shirley Thomson	Drawing Title: BRACING PLAN	
			Revised:	Drawing Number: 105	Scale at A3 size: 1:100
			Creation Date: 29/09/2008	SHIRLEY THOMSON DESIGN LTD	
			Plot Date: 21/11/2008	45a Wallace Place, NEW PLYMOUTH 4310, shirleythomson@xtra.co.nz	Phone: 06 758 9657, Fax: 06 758 9657, Mobile: 027 4750 475
			ALL DIMENSIONS TO BE VERIFIED ON SITE		
			DRAWING COPYRIGHT SHIRLEY THOMSON DESIGN LTD		

Figure 115: Windows for direct fixed fibre cement sheet
Paragraphs 9.7.7.1 and 9.8.8.1, Figure 71

GENERAL: (a) Refer Figure 72 for wrapping of framed opening prior to window installation.
(b) Sliding and bi-fold windows will require specific design.
(c) A minimum of 8 mm effective cover at sills shall be permitted where necessary to allow for tolerances.

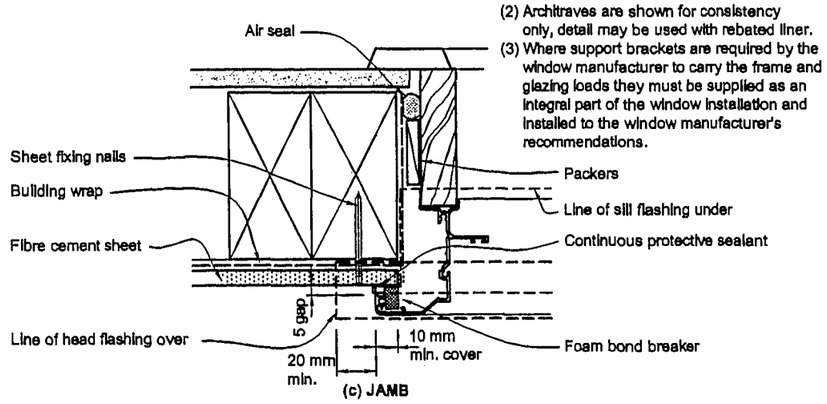


(a) HEAD



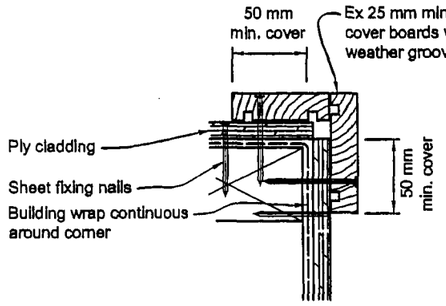
(b) SILL

NOTE:
(1) Window profile to be selected to achieve cover shown in details.
(2) Architraves are shown for consistency only, detail may be used with rebated liner.
(3) Where support brackets are required by the window manufacturer to carry the frame and glazing loads they must be supplied as an integral part of the window installation and installed to the window manufacturer's recommendations.

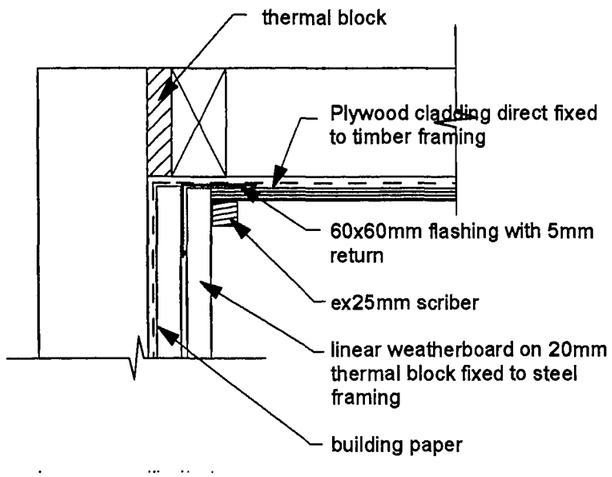


(c) JAMB

Figure 122: External corners for plywood sheet
Paragraph 9.8.4.1



(a) DIRECT FIX
NOTE: Corner battens shall be sized to provide 50 mm minimum cover over *cladding*.



3 LINEAR PLYWOOD JUNCTION 1:5

NPDC Approved
26 JAN 2009

Job Title: NEW RESIDENCE	For: M HERLIHY	At: 8 JOSHUA PLACE BELL BLOCK	Drawn: Shirley Thomson; Revised; Creation Date: 29/09/2008; Plot Date: 21/11/2008
ALL DIMENSIONS TO BE VERIFIED ON SITE	DRAWING COPYRIGHT SHIRLEY THOMSON DESIGN LTD		

Drawing Title: WINDOW & JUNCTION DETAILS
Drawing Number: 401
Scale at A3 size: 1:1, 1:5

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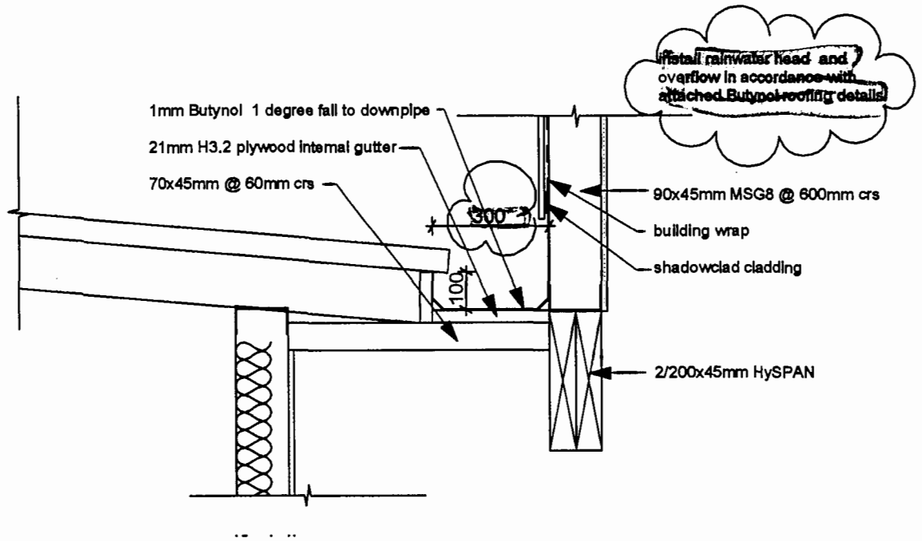
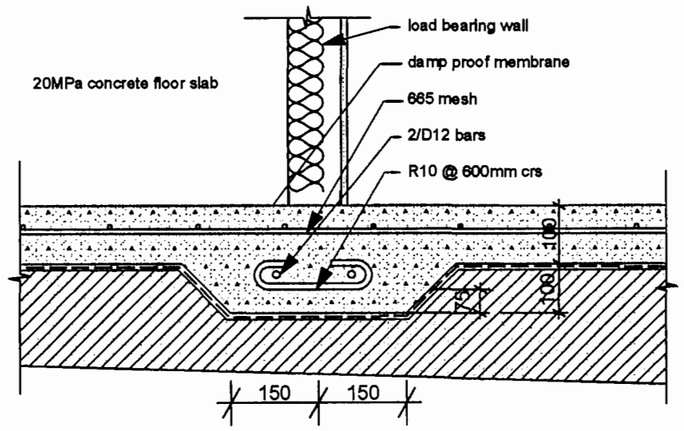
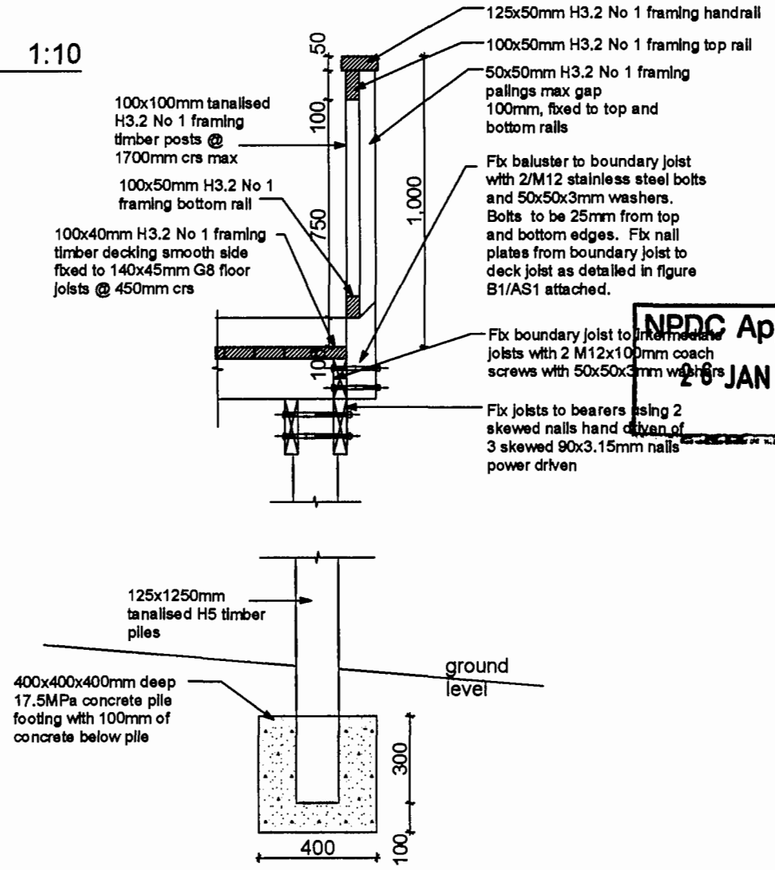


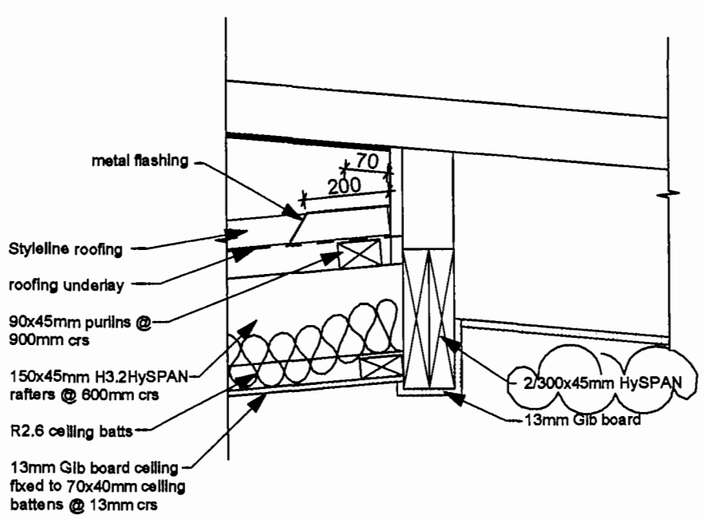
1 GUTTER DETAIL 1:10



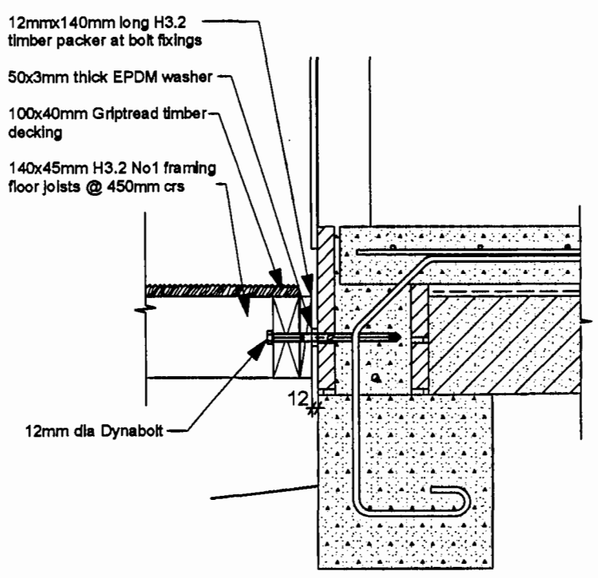
3 SLAB THICKENING DETAIL 1:10



4 BALUSTRADE & PILE DETAIL 1:20



2 LIVING ROOF DETAIL 1:10



5 DECK STRINGER DETAIL 1:10

Job Title: NEW RESIDENCE	For: M HERLIHY	At: 8 JOSHUA PLACE BELL BLOCK	Drawn: Shirley Thomson; Revised: ; Creation Date: 29/09/2008; Plot Date: 20/01/2009; Drawing Title: DETAILS 1-5; Drawing Number: 402; Scale at A3 size: 1:10, 1:20

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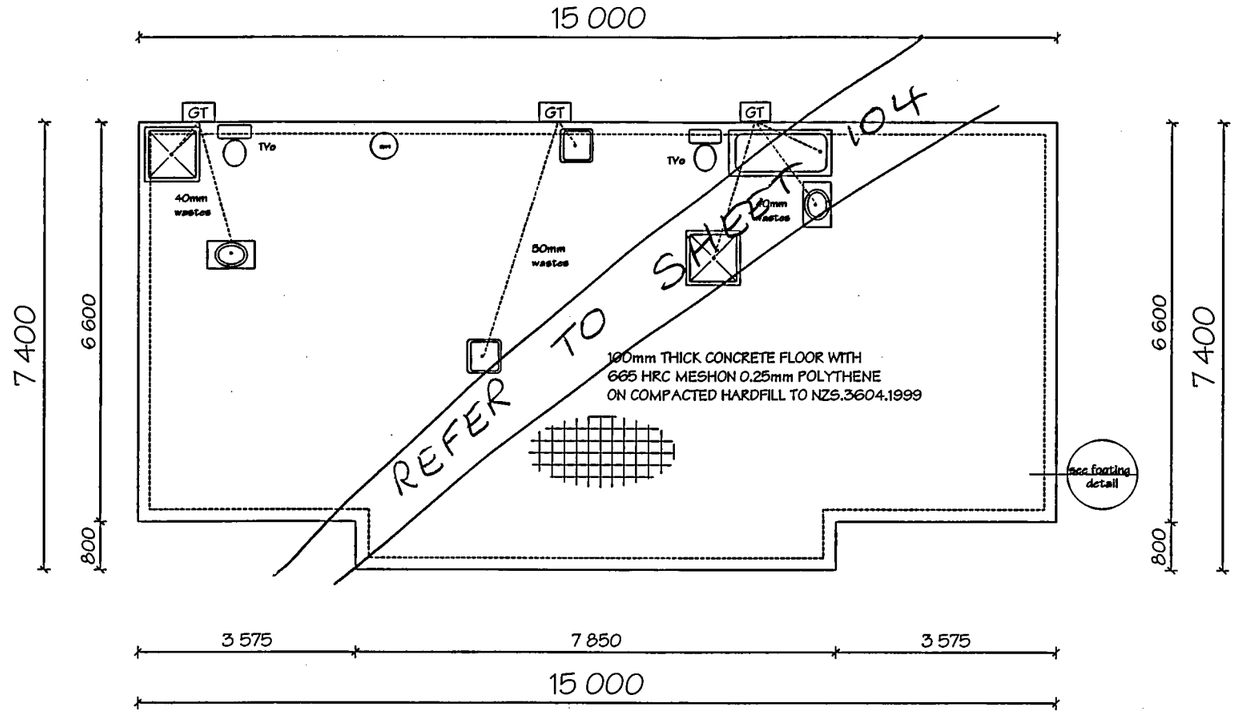
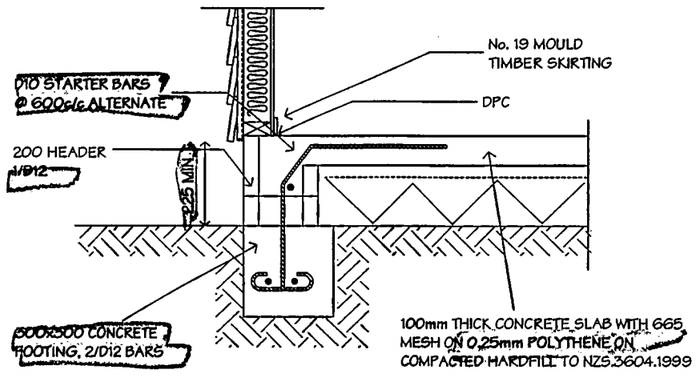


NOTE : BOTTOM PLATE ANCHORS ARE OWNERS CARE
FOUNDATION DESIGNED FOR 'GOOD GROUND' AS PER NZS.3604.199



refer to attached TSE footing details for footings higher than 600mm

FOOTING DETAIL
SCALE 1:20

Frames by: 209 steel frames of the future today

NZ BUILDING SUPPLIES LIMITED

Ashburton

NOTES:

THE DIMENSIONS ON THIS FOUNDATION PLAN ARE TO BE CHECKED BY ALL TRADES PRIOR TO COMMENCEMENT OF ANY WORKS AS THEY ARE AN INDICATION ONLY AND HAVE BEEN SHOWN TO HELP VERIFY EACH TRADES OWN CALCULATION FROM THE FLOOR PLAN. THE DESIGNER TAKES NO RESPONSIBILITY FOR ANY ERRORS IN THE DIMENSIONS SHOWN.

REINFORCED CONCRETE SLAB TO BE IN ACCORDANCE WITH SECTION 7.5.8.6.4 OF NZS.3604.1999

SHRINKAGE CONTROL JOINTS IN SLAB SHALL COMPLY WITH THE FOLLOWING CRITERIA:
(a) SHRINKAGE CONTROL JOINTS SHALL BE POSITIONED TO COINCIDE WITH MAJOR CHANGES OF PLAN
(b) SUPPLEMENTARY STEEL (2 D/10 BARS 1.2 LONG) AT EACH INTERNAL CORNER EXCEPT ACROSS SHRINKAGE CONTROL JOINTS
(c) THE BAY DIMENSIONS SHALL BE FOR NEED OF CONSTRUCTION OR SHRINKAGE CONTROL JOINTS SHALL HAVE A MAXIMUM RATIO OF LENGTH:WIDTH OF 2:1

NDC Approved
26 JAN 2009

DESIGNED FOR SOIL BEARING CAPACITY OF 100kPa MINIMUM

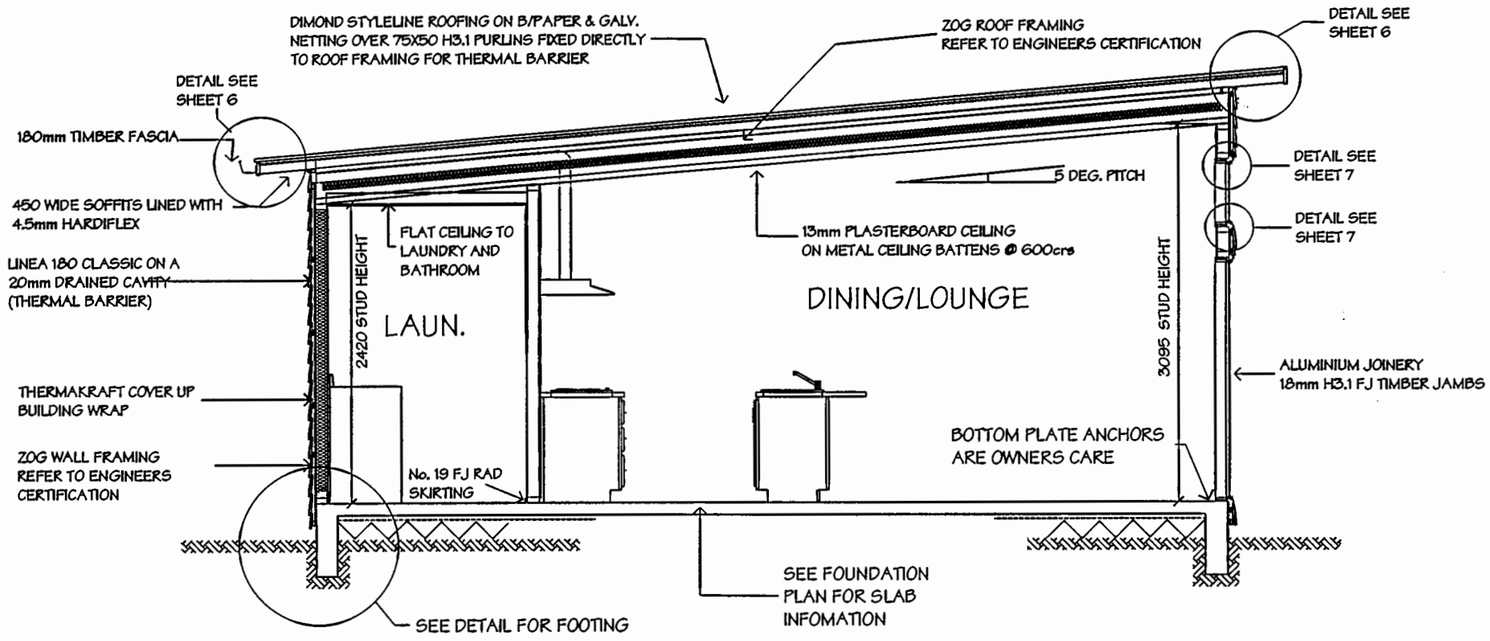
DESIGNED FOR UP TO & INCLUDING :

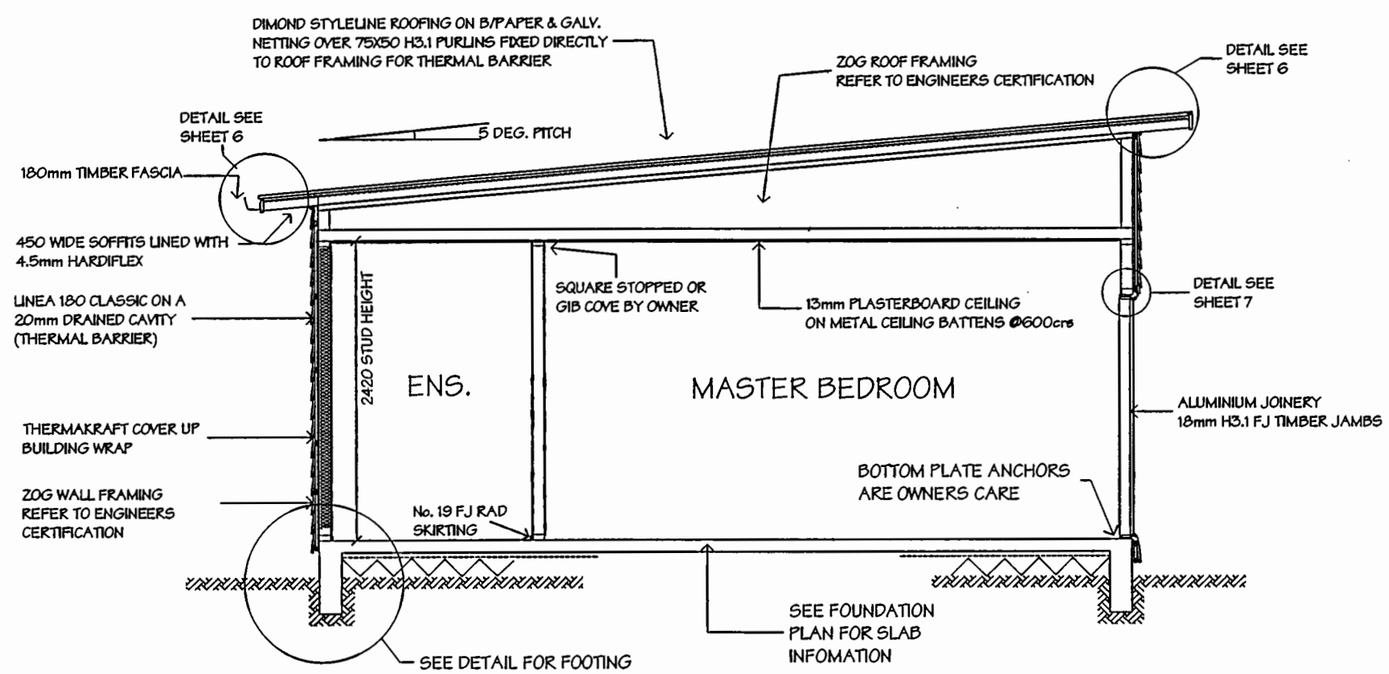
WIND ZONE:	VERY HIGH
EARTHQUAKE ZONE:	A
SNOW LOAD:	1.0 Kpa
CORROSION ZONE:	1

JOB TITLE
HERLIHY RESIDENCE
LOT 34,
8 JOSHUA PLACE
BELL BLOCK
NEW PLYMOUTH

DRAWING TITLE
FOUNDATION LAYOUT

CODE	DRAWN KYLE
	CHECKED
	APPROVED
SCALE 1 : 100	DATE OUT 12/08/08
JOB NO. 1630	SHEET NO. SHEET 3





Frames by: zog® steel frames of the future today

NZ BUILDING SUPPLIES LIMITED

Ashburton

NOTES:

ALL WALL AND ROOF FRAMING FIXED IN ACCORDANCE WITH ENGINEERS DETAILS

- ALL LINTEL & BEAM SIZES AS PER ENGINEERS DRAWINGS & CALUCLATIONS

INSULATION :
R2.6 ~~R2~~ FIBREGLASS WALL BATTS
R3.3 ~~R2~~6 FIBREGLASS CEILING BATTS

ALL DETAILS IN ACCORDANCE WITH NEW ZEALAND BUILDING CODE, CLAUSE E2 - EXTERNAL MOISTURE

ALL FIXINGS TO BE IN ACCORDANCE WITH SECTION 4, DURABILITY, NZS.3604.1999 FOR APPROPRIATE CORROSION ZONE

LINEA WEATHERBOARD TO BE FIXED AS PER THE JAMES HARDIE LINEA TECHNICAL SPECIFICATION

NPDC Approved
26 JAN 2009

DESIGNED FOR UP TO & INCLUDING :

WIND ZONE:	VERY HIGH
EARTHQUAKE ZONE:	A
SNOW LOAD:	1.0 Kpa
CORROSION ZONE:	1

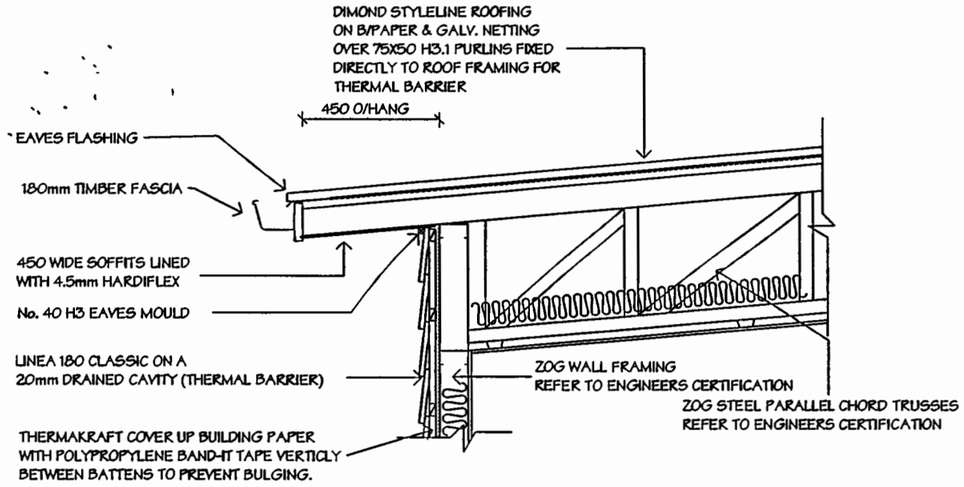
JOB TITLE

HERLIHY RESIDENCE
LOT 34,
8 JOSHUA PLACE
BELL BLOCK
NEW PLYMOUTH

DRAWING TITLE

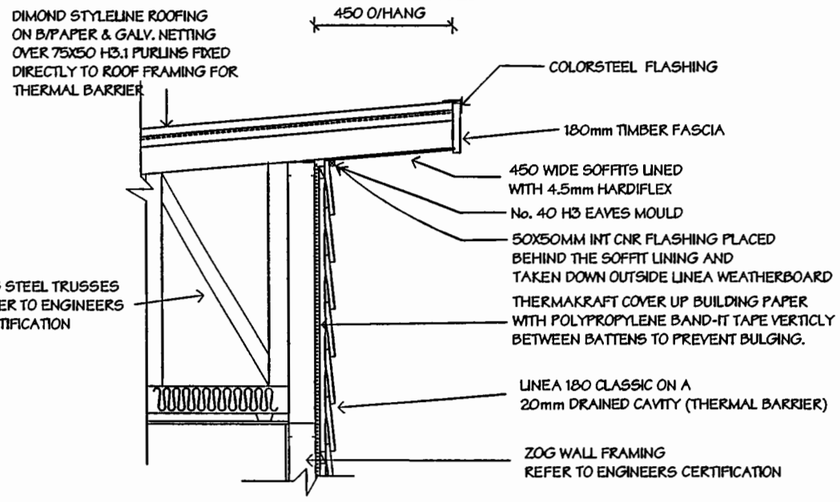
CROSS SECTION

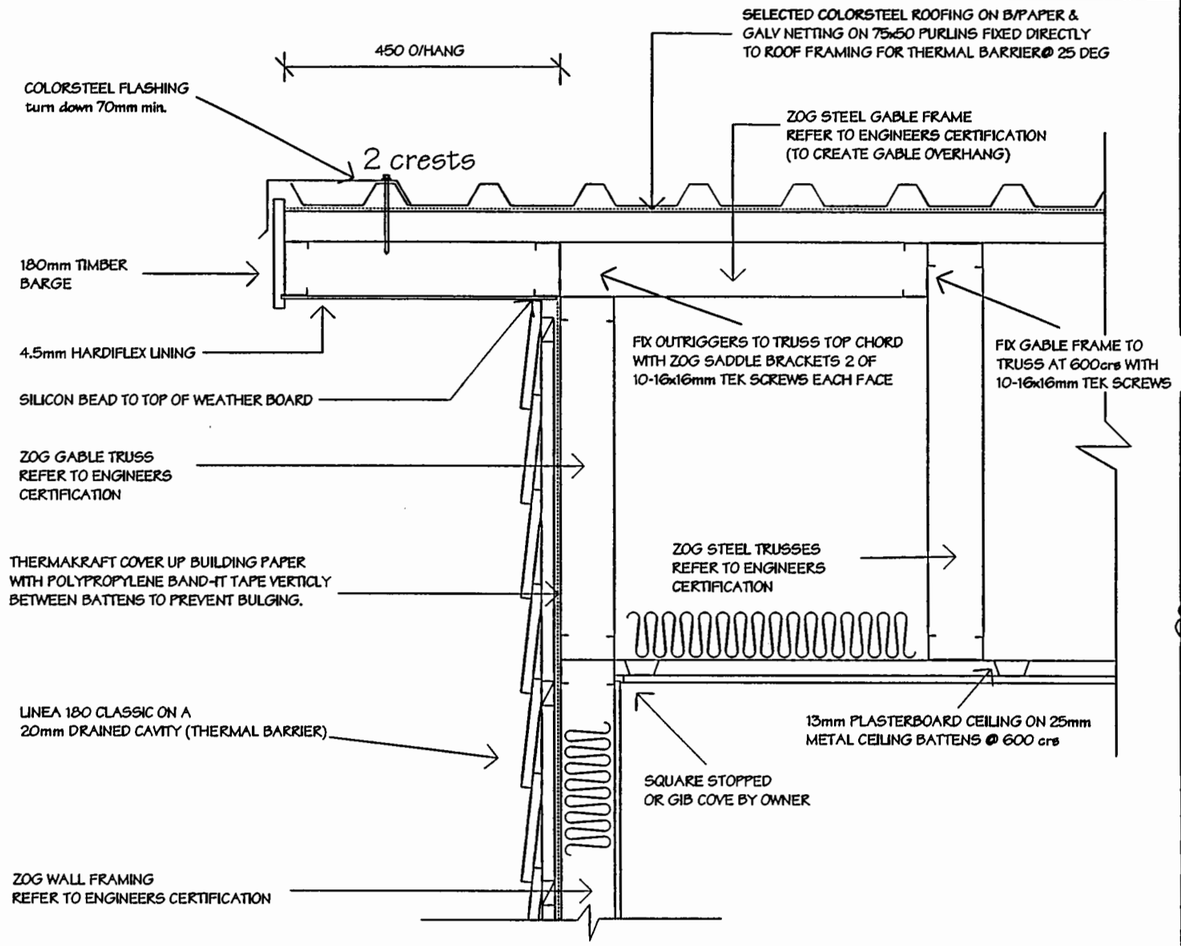
CODE	DRAWN KYLE
	CHECKED
	APPROVED
SCALE 1:50	DATE OUT 12/08/08
JOB NO. 1630	SHEET NO. SHEET 6



RAFTER LOWER EAVES DETAIL

SCALE 1 : 20



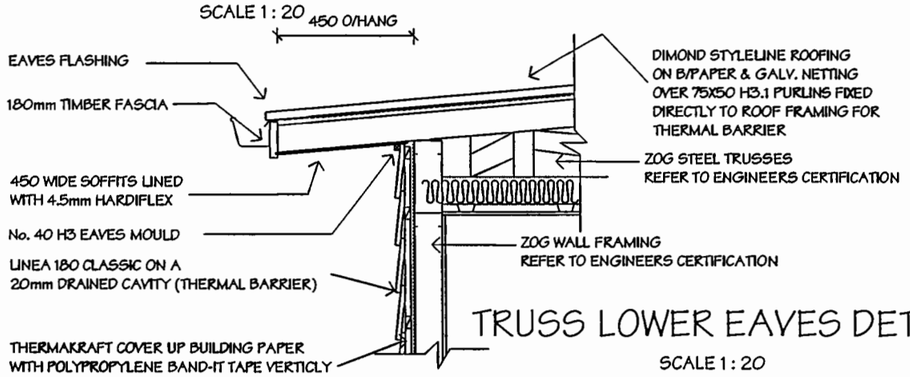


GABLE VERGE DETAIL

SCALE 1 : 10

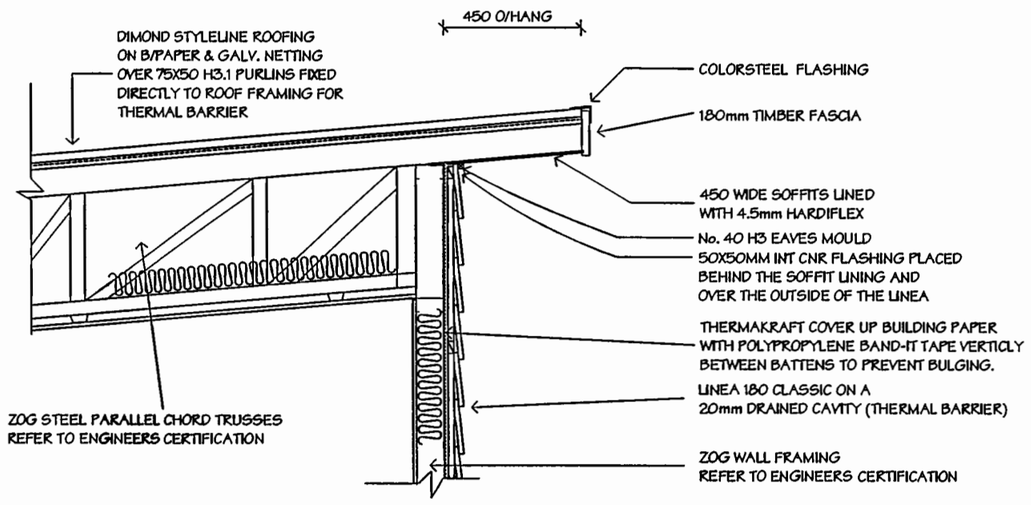
TRUSS UPPER EAVES DETAIL

SCALE 1 : 20



TRUSS LOWER EAVES DETAIL

SCALE 1 : 20



RAFTER UPPER EAVES DETAIL

SCALE 1 : 20

Frames by: ZOG steel frames of the future today

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NOTES:

ALL WALL AND ROOF FRAMING FIXED IN ACCORDANCE WITH ENGINEERS DETAILS

- ALL LINTEL & BEAM SIZES AS PER ENGINEERS DRAWINGS & CALUCLATIONS

INSULATION :
R2.6 ~~R2.2~~ FIBREGLASS WALL BATTS
R3.3 ~~R2.6~~ FIBREGLASS CEILING BATTS

ALL DETAILS IN ACCORDANCE WITH NEW ZEALAND BUILDING CODE, CLAUSE E2 - EXTERNAL MOISTURE

ALL FIXINGS TO BE IN ACCORDANCE WITH SECTION 4, DURABILITY, NZS.3604.1999 FOR APPROPRIATE CORROSION ZONE

LINEA WEATHERBOARD TO BE FIXED AS PER THE JAMES HARDIE LINEA TECHNICAL GUIDE

NBBC Approved
26 JAN 2009

DESIGNED FOR UP TO & INCLUDING :

WIND ZONE:	VERY HIGH
EARTHQUAKE ZONE:	A
SNOW LOAD:	1.0 Kpa
CORROSION ZONE:	1

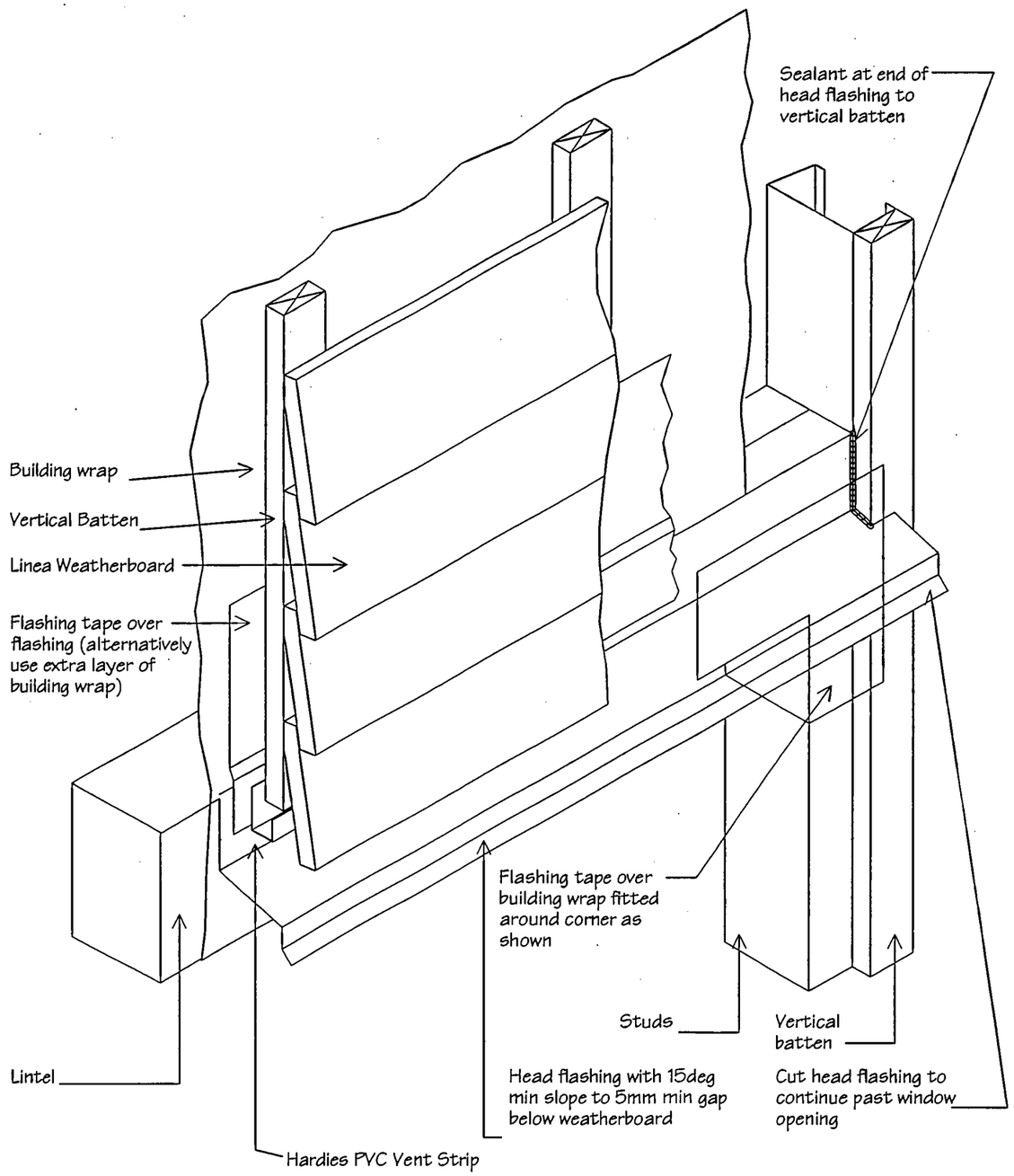
JOB TITLE

HERLIHY RESIDENCE
LOT 34,
8 JOSHUA PLACE
BELL BLOCK
NEW PLYMOUTH

DRAWING TITLE

GABLE VERGE DETAILS

CODE	DRAWN KYLE
	CHECKED
	APPROVED
SCALE 1 : 10	DATE OUT 12/08/08
JOB NO. 1630	SHEET NO. SHEET 7



HEAD FLASHING TERMINATION
Scale 1:5

Frames by: 2og steel frames of the future today

NZ BUILDING SUPPLIES LIMITED

Ashburton

NOTES:

ALL DETAILS IN ACCORDANCE WITH NEW ZEALAND BUILDING CODE, CLAUSE E2 - EXTERNAL MOISTURE

ANY METAL FLASHINGS TO BE AS PER SECTION 4, DURABILITY, NZS 3604 1999

LINEA WEATHERBOARD TO BE FIXED AS PER THE JAMES HARDIE LINEA TECHNICAL SPECIFICATION

- ALL LINTEL & BEAM SIZES AS PER ENGINEERS DRAWINGS & CALUCLATIONS

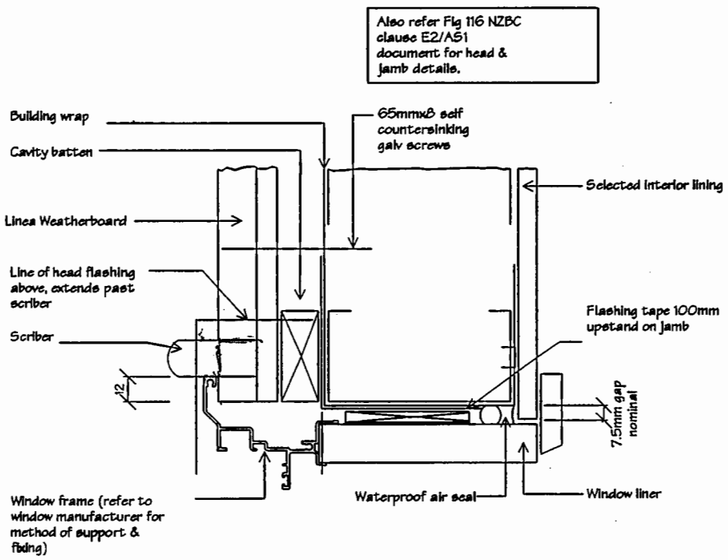
NPDC Approved
26 JAN 2009

DESIGNED FOR UP TO & INCLUDING :	
WIND ZONE:	VERY HIGH
EARTHQUAKE ZONE:	A
SNOW LOAD:	1.0 Kpa
CORROSION ZONE:	1

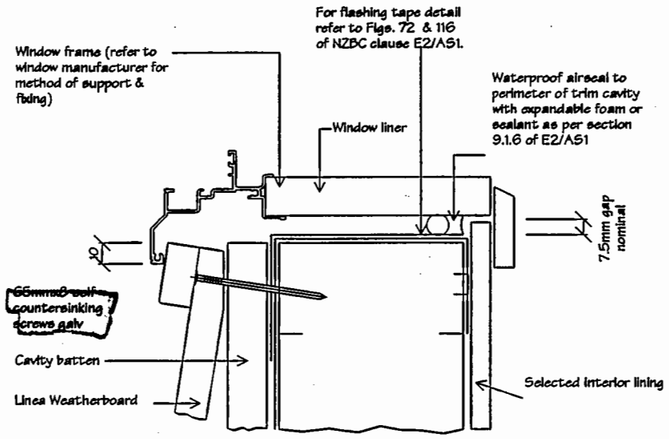
JOB TITLE
HERLIHY RESIDENCE
LOT 34,
8 JOSHUA PLACE
BELL BLOCK .
NEW PLYMOUTH

DRAWING TITLE
LINEA WINDOW DETAILS

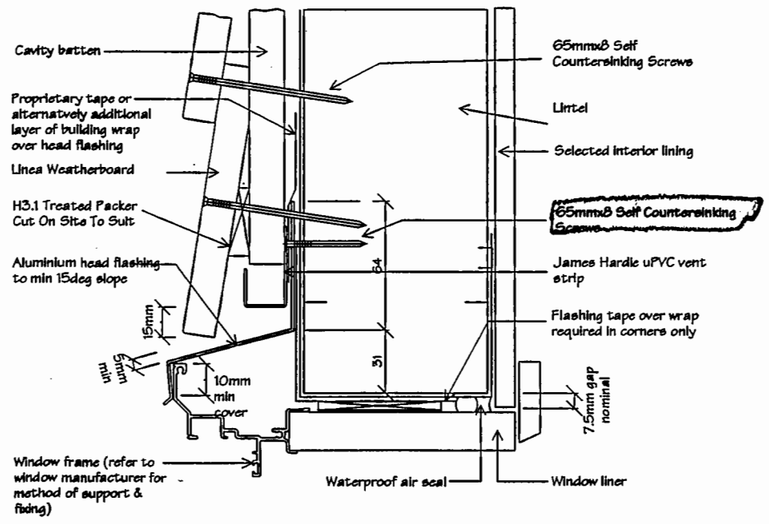
CODE	DRAWN KYLE
	CHECKED
	APPROVED
SCALE 1:5	DATE OUT 12/08/08
JOB NO. 1630	SHEET NO. SHEET 8



CAVITY WINDOW JAMB WITHOUT FACINGS
Scale 1:3



CAVITY WINDOW SILL WITHOUT FACINGS
Scale 1:3



CAVITY WINDOW HEAD WITHOUT FACINGS
Scale 1:3

Frames by: 270g steel frames of the future today

NZ BUILDING SUPPLIES LIMITED

Ashburton

NOTES:

NPDC Approved
26 JAN 2009

DESIGNED FOR UP TO & INCLUDING :

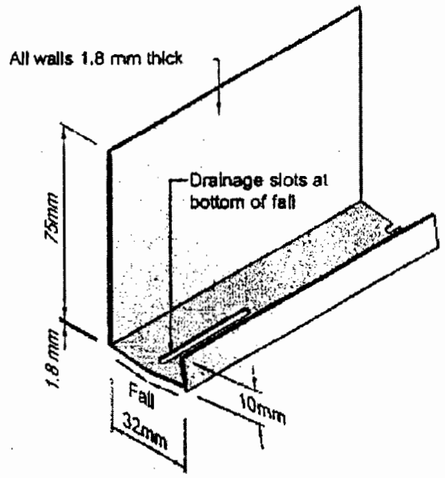
WIND ZONE:	VERY HIGH
EARTHQUAKE ZONE:	A
SNOW LOAD:	1.0 Kpa
CORROSION ZONE:	1

JOB TITLE
HERLIHY RESIDENCE
LOT 34,
8 JOSHUA PLACE
BELL BLOCK
NEW PLYMOUTH

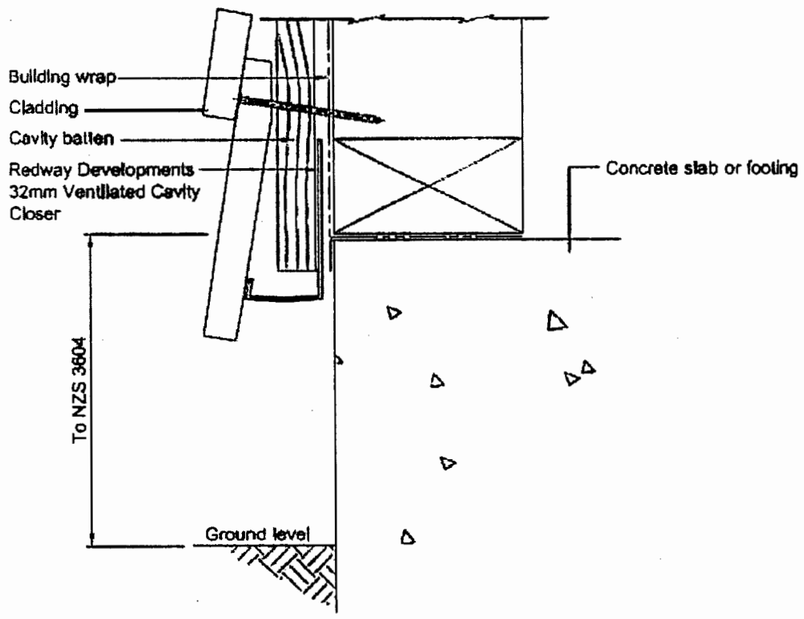
DRAWING TITLE
LINEA WINDOW DETAILS

CODE	DRAWN KYLE
	CHECKED
	APPROVED
SCALE 1:3	DATE OUT 12/08/08
JOB NO. 1630	SHEET NO. SHEET 9

32mm Vent Cavity Closer



Cavity Closer Detail



Wall to Concrete Slab

General notes:
All materials & building procedures must comply with NZBC Acceptable Solutions & the requirements of NZS 3604.

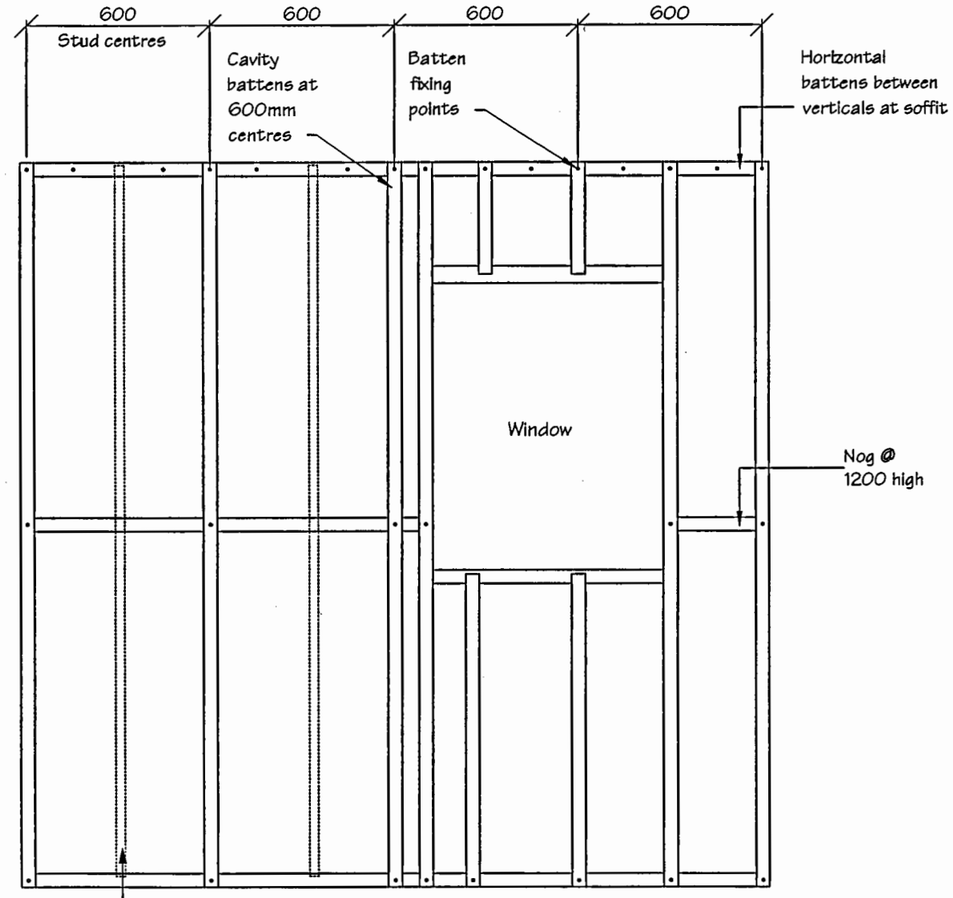
Rev	Description	Date
0	Original	Apr 06

REDWAY DEVELOPMENTS LTD
Manufacturer's of 'The Sill Tray'
BRANZ Appraised

SALES: P.O.Box 31 - 202, Christchurch 8030, NEW ZEALAND
TELEPHONE: 64 3 358 5775, FACSIMILE: 64 3 358 9829
FACTORY: 13 Michelle Place, Christchurch 8061, NEW ZEALAND
TELEPHONE: 64 3 332 4224
FACSIMILE: 64 3 337 2066
E-MAIL: allmyst@slingshot.co.nz

Title	Scale	Original size	Date
32mm VENT CAVITY CLOSER	NTS	A4	Apr 06

Drawing No. ST-022



POLYPROPYLENE BAND-IT TAPE VERTICLY BETWEEN BATTENS TO PREVENT BULGING. WHERE CAVITY BATTENS ARE SPACED MORE THEN 400mm APART.

CAVITY BATTEN LAYOUT AT WINDOW OPENING
Scale 1:20

Frames by: 200 steel frames of the future today

NZ BUILDING SUPPLIES LIMITED

Ashburton

NOTES:

ALL DETAILS IN ACCORDANCE WITH NEW ZEALAND BUILDING CODE, CLAUSE E2 - EXTERNAL MOISTURE

ANY METAL FLASHINGS TO BE AS PER SECTION 4, DURABILITY, NZS 3604 1999

LINEA WEATHERBOARD TO BE FIXED AS PER THE JAMES HARDIE LINEA TECHNICAL SPECIFICATION

- ALL LINTEL & BEAM SIZES AS PER ENGINEERS DRAWINGS & CALUCLATIONS

NPDC Approved
26 JAN 2009

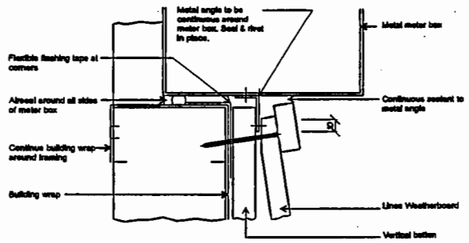
DESIGNED FOR UP TO & INCLUDING :

WIND ZONE:	VERY HIGH
EARTHQUAKE ZONE:	A
SNOW LOAD:	1.0 Kpa
CORROSION ZONE:	1

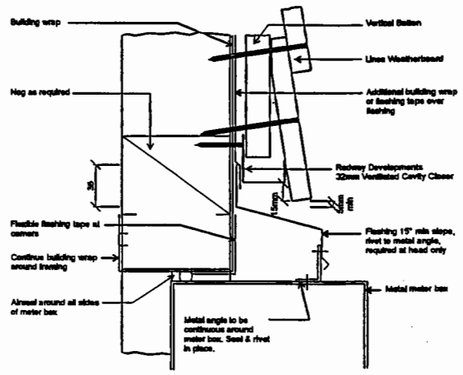
JOB TITLE
HERLIHY RESIDENCE
LOT 34,
8 JOSHUA PLACE
BELL BLOCK
NEW PLYMOUTH

DRAWING TITLE
LINEA DETAILS

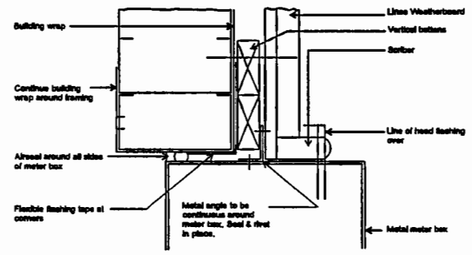
CODE	DRAWN KYLE
	CHECKED
	APPROVED
SCALE	DATE OUT 12/08/08
JOB NO. 1630	SHEET NO. SHEET 10



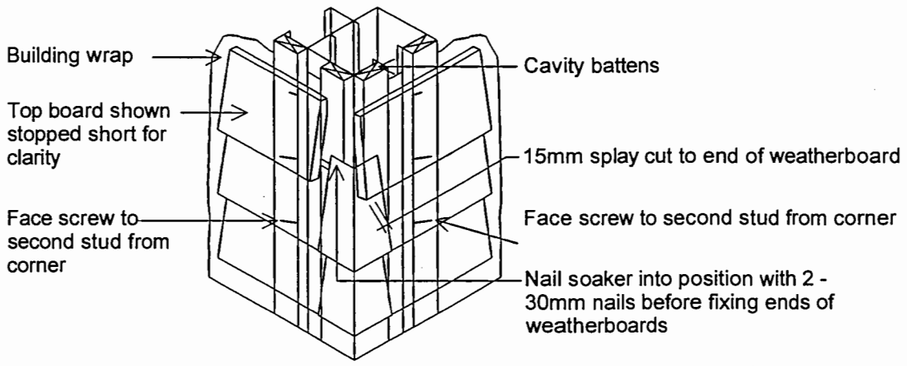
CAVITY METER BOX AT SILL
Scale 1:5



CAVITY METER BOX AT HEAD
Scale 1:5

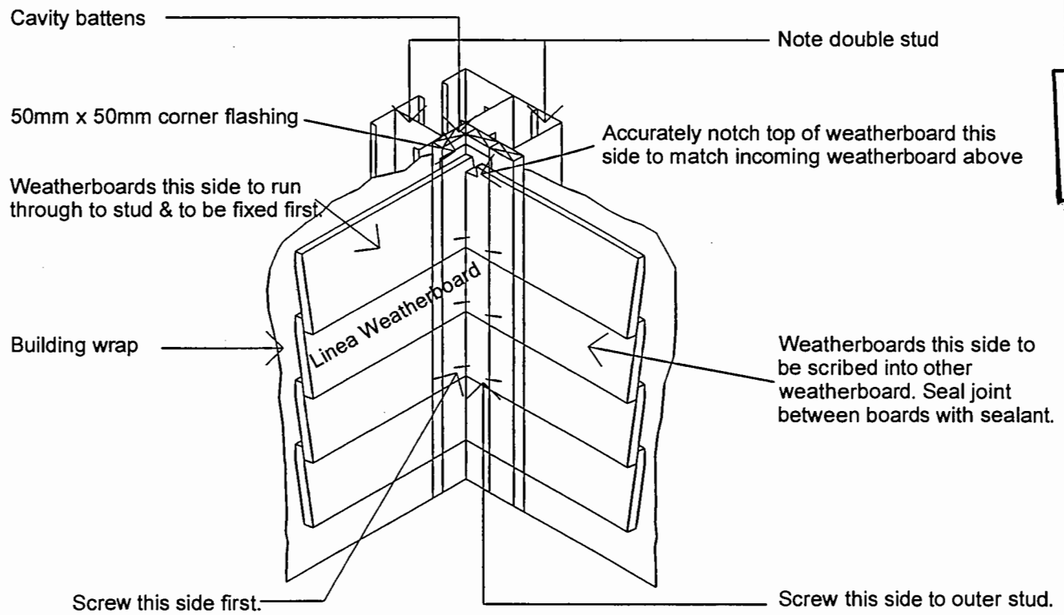


CAVITY METER BOX HEAD FLASHING AT JAMB
Scale 1:5



Soaker material	Nail material
Aluminium	Hot dip galvanised

CAVITY EXTERNAL CORNER SOAKER
Scale 1:10



CAVITY INTERNAL CORNER
Scale 1:10

Frames by: zog® steel frames of the future today

NZ BUILDING SUPPLIES LIMITED

Ashburton

NOTES:

ALL DETAILS IN ACCORDANCE WITH NEW ZEALAND BUILDING CODE, CLAUSE E2 - EXTERNAL MOISTURE

ANY METAL FLASHINGS TO BE AS PER SECTION 4, DURABILITY, NZS 3604 1999

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- ALL LINTEL & BEAM SIZES AS PER ENGINEERS DRAWINGS & CALUCLATIONS

NPDC Approved
2 6 JAN 2009

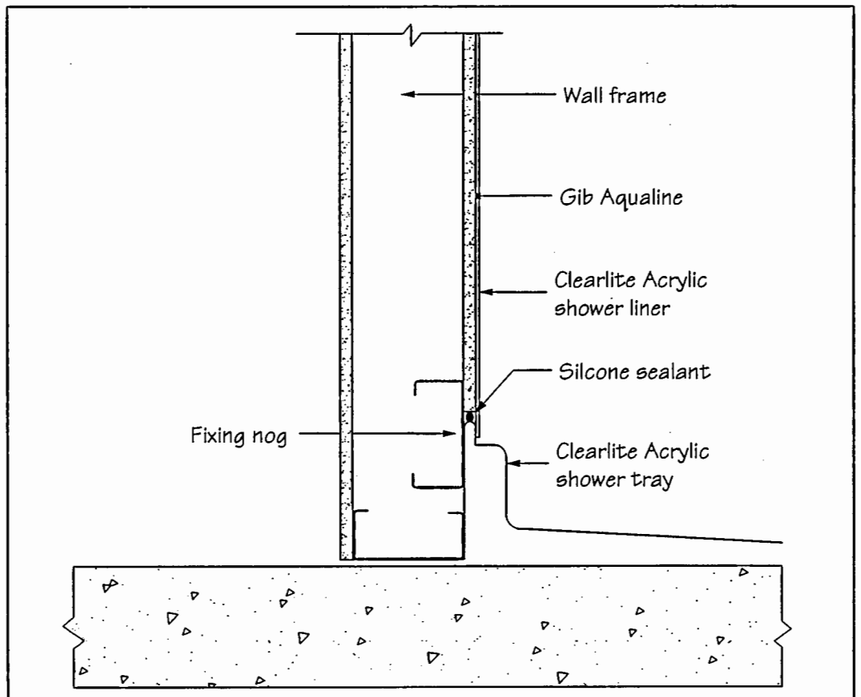
DESIGNED FOR UP TO & INCLUDING:

WIND ZONE:	VERY HIGH
EARTHQUAKE ZONE:	A
SNOW LOAD:	1.0 Kpa
CORROSION ZONE:	1

JOB TITLE
HERLIHY RESIDENCE
LOT 34,
8 JOSHUA PLACE
BELL BLOCK
NEW PLYMOUTH

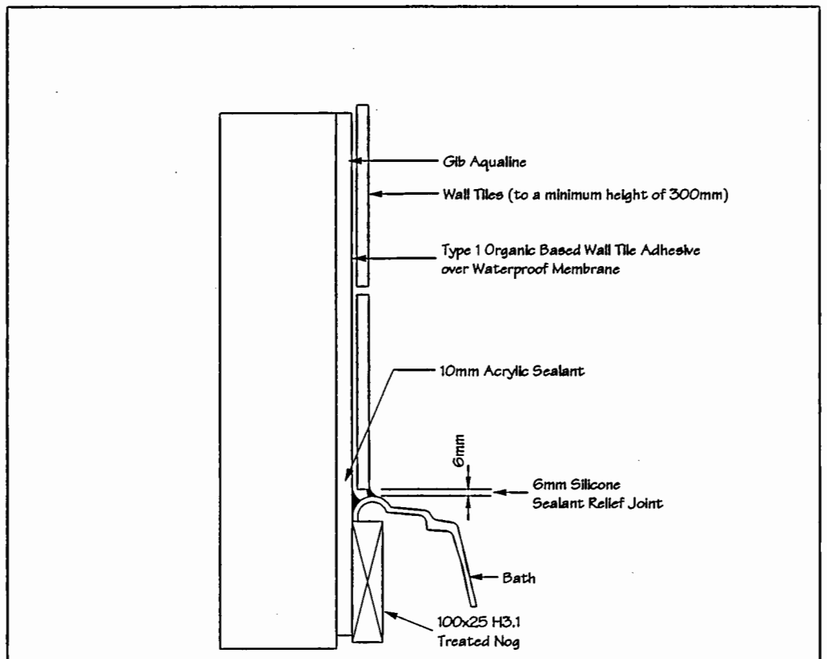
DRAWING TITLE
LINEA JOINT DETAILS

CODE	DRAWN KYLE
	CHECKED
	APPROVED
SCALE 1:10	DATE OUT 12/08/08
JOB NO. 1630	SHEET NO. SHEET 11



SHOWER TRAY / LINER SCALE 1:5

(no sealant should be visible inside shower)



BATH / WALL JUNCTION
SCALE 1:5

Frames by: 2og steel frames of the future today

NZ BUILDING SUPPLIES LIMITED

Ashburton

NOTES:

ALL DETAILS IN ACCORDANCE WITH NEW ZEALAND BUILDING CODE, CLAUSE E2 - EXTERNAL MOISTURE

ANY METAL FLASHINGS TO BE AS PER SECTION 4, DURABILITY, NZS 3604 1999

DETAILS IN ACCORDANCE WITH BOTH

GIB AQUALINE WET AREA SYSTEMS MANUAL & CLEARLITE ACRYLIC SHOWER TRAY AND LINER SPECIFICATIONS

NPDC Approved
26 JAN 2009

DESIGNED FOR UP TO & INCLUDING:	
WIND ZONE:	VERY HIGH
EARTHQUAKE ZONE:	A
SNOW LOAD:	1.0 Kpa
CORROSION ZONE:	1

JOB TITLE

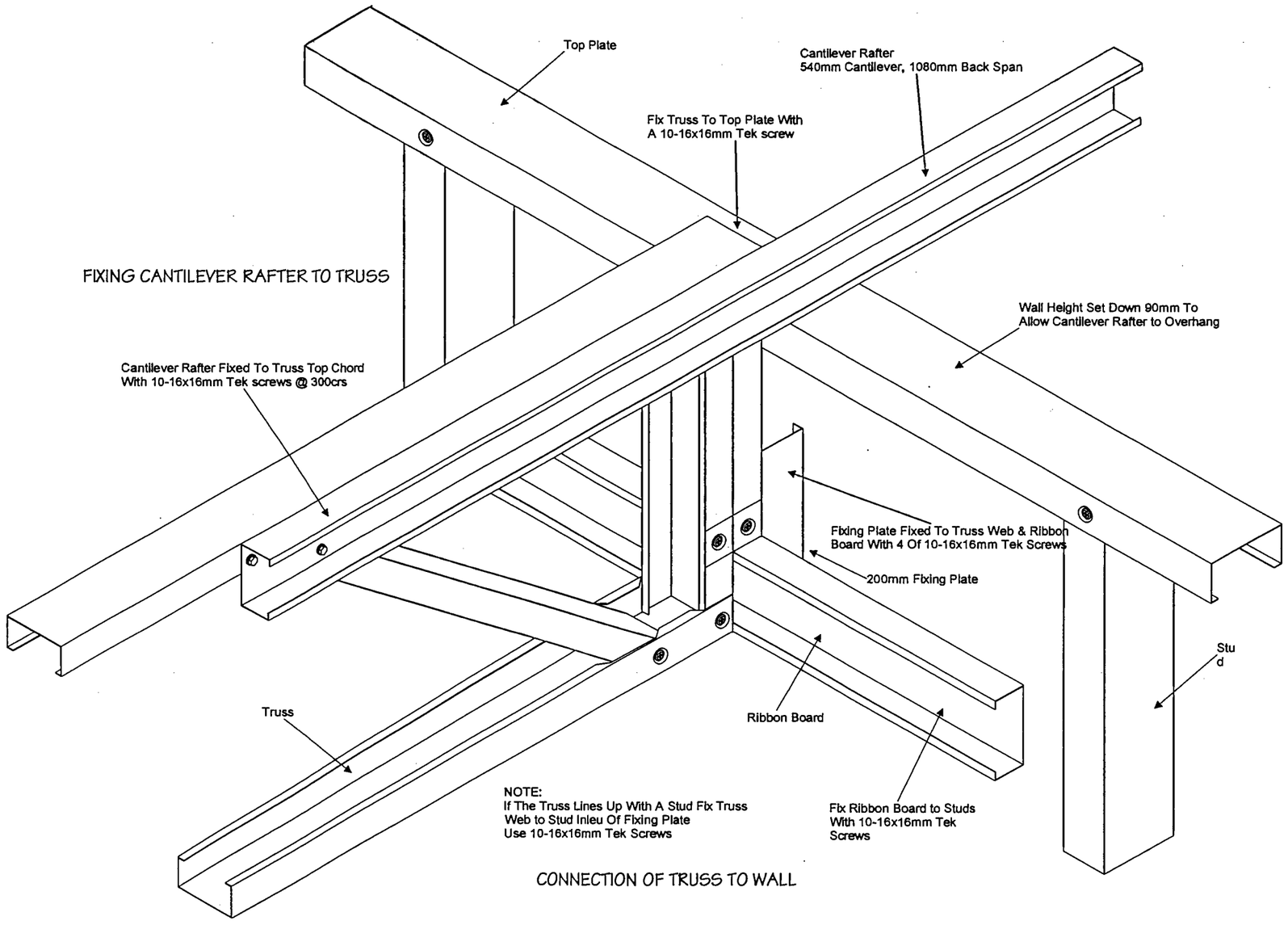
HERLIHY RESIDENCE
LOT 34,
8 JOSHUA PLACE
BELL BLOCK
NEW PLYMOUTH

DRAWING TITLE

WET AREA DETAILS

CODE	DRAWN KYLE
	CHECKED
	APPROVED
SCALE 1:5	DATE OUT 12/08/08
JOB NO. 1630	SHEET NO. SHEET 12

FIXING CANTILEVER RAFTER TO TRUSS



CONNECTION OF TRUSS TO WALL

Frames by: zog steel frames of the future today

NZ BUILDING SUPPLIES LIMITED

Ashburton

NOTES:

NPDC Approved
26 JAN 2009

DESIGNED FOR UP TO & INCLUDING:	
WIND ZONE:	VERY HIGH
EARTHQUAKE ZONE:	A
SNOW LOAD:	1.0 Kpa
CORROSION ZONE:	1

JOB TITLE

HERLIHY RESIDENCE
LOT 34,
8 JOSHUA PLACE
BELL BLOCK
NEW PLYMOUTH

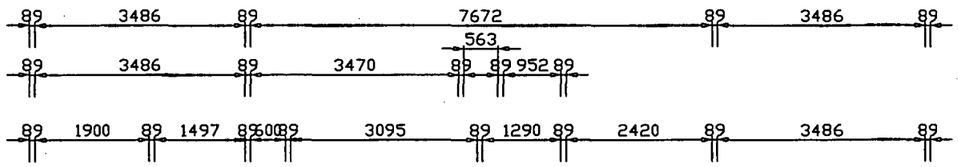
DRAWING TITLE

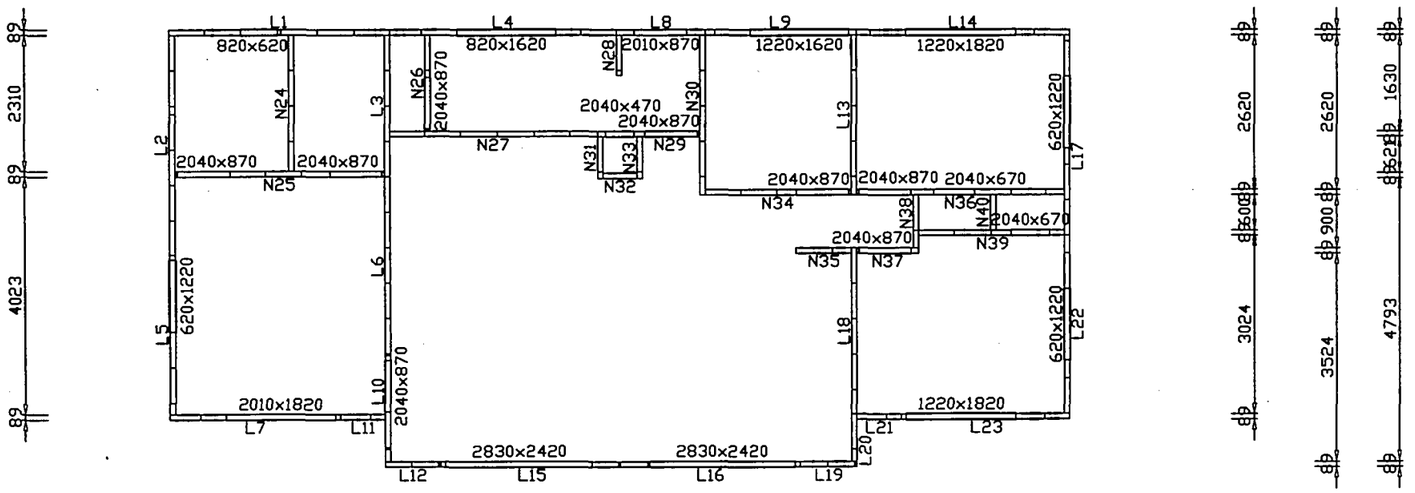
STEEL
DETAIL

CODE	DRAWN KYLE
	CHECKED
	APPROVED
SCALE N.T.S	DATE OUT 12/08/08
JOB NO. 1630	SHEET NO. SHEET 13

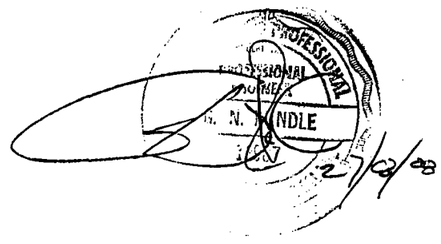
Wall Design Summary	
System Types Found	MFT-Demo
System Types Found	MFT-NZBS
Wind Types Found	W44
Wind Types Found	W50
Snow Loads Found	1.00
Snow Loads Found	1
Load Types Found	Sheet
Floor Types Found	Concrete
Floor Types Found	Timber

Wall Summary		
Load Bearing Walls	17	56388
Non Load Bearing Walls	17	29771





NPDC Approved
26 JAN 2009

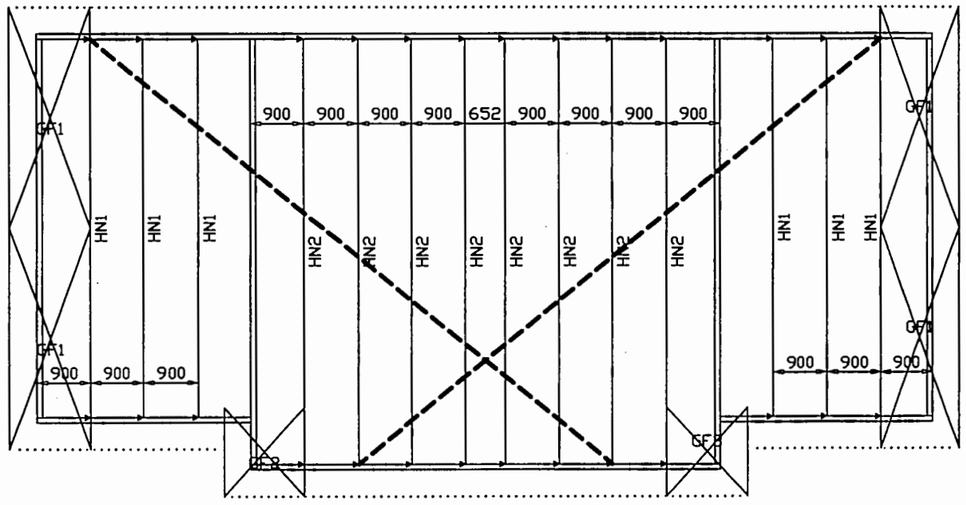


Floor Framing Layout

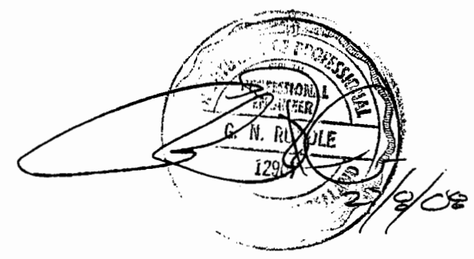
zog steel frames of the future today

DATE DRAWN	DRAWN	VIEW NAME	JOB DETAILS		JOB REFERENCE	REVISION
25-08-2008	Kyle	2 of 5	HERLIHY RESIDENCE 8 JOSHUA PLACE, BELL BLOCK NEW PLYMOUTH	The information contained within is intended to be an aid for fabricators and detailers and is not a substitute for professional judgement.	1630	
DWG FILE	CHECKED	SCALE				
Layouts		1:100				

Truss Design Summary		
System		MFT-NZBS
Wind Load (m/s)		W50
Roof Load		SHEET
Snow Load (kpa)		1.00
Truss Pitch		5.000
End Batten Spacing		900
Int Batten Spacing		1200
Bottom Chord Restraints		600
Truss Summary		
Half Truss	14	96308
Gable Frame	6	8100



NPDC Approved
2 6 JAN 2009



LUMBERLOK STRIP BRACE
WITH TENSIONERS
as per
NASH 3405:2006 10.4. fig.

Roof Truss Layout

zog
steel frames of the future today

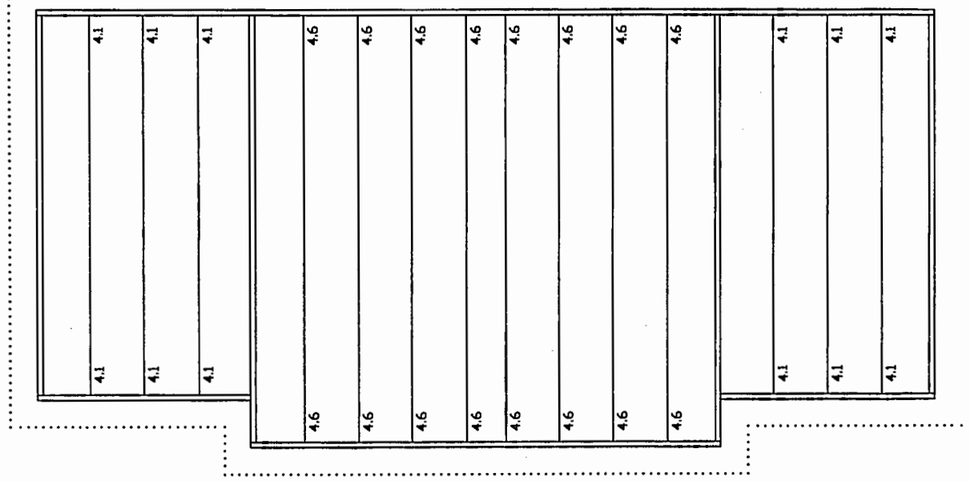
DATE DRAWN	DRAWN	VIEW NAME
25-08-2008	Kyle	3 of 5
DWG FILE	CHECKED	SCALE
Layouts		1:100

JOB DETAILS
HERLIHY RESIDENCE
8 JOSHUA PLACE, BELL BLOCK
NEW PLYMOUTH

The information contained within is intended to be an aid for fabricators and detailers and is not a substitute for professional judgement.

JOB REFERENCE
1630

REVISION

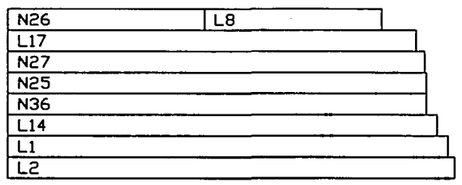


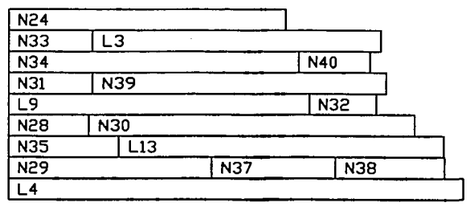
NPDC Approved
26 JAN 2009

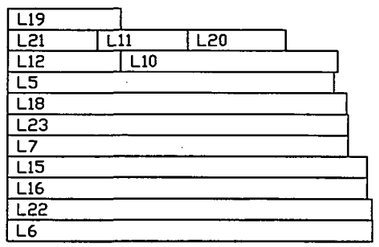
Truss Uplift Plan (kN)

zog® steel frames of the future today

DATE DRAWN 25-08-2008	DRAWN Kyle	VIEW NAME 4 of 5	JOB DETAILS HERLIHY RESIDENCE 8 JOSHUA PLACE, BELL BLOCK NEW PLYMOUTH	The information contained within is intended to be an aid for fabricators and detailers and is not a substitute for professional judgement.	JOB REFERENCE 1630	REVISION
DWG FILE Layouts	CHECKED	SCALE 1:100				







NPDC Approved
26 JAN 2009

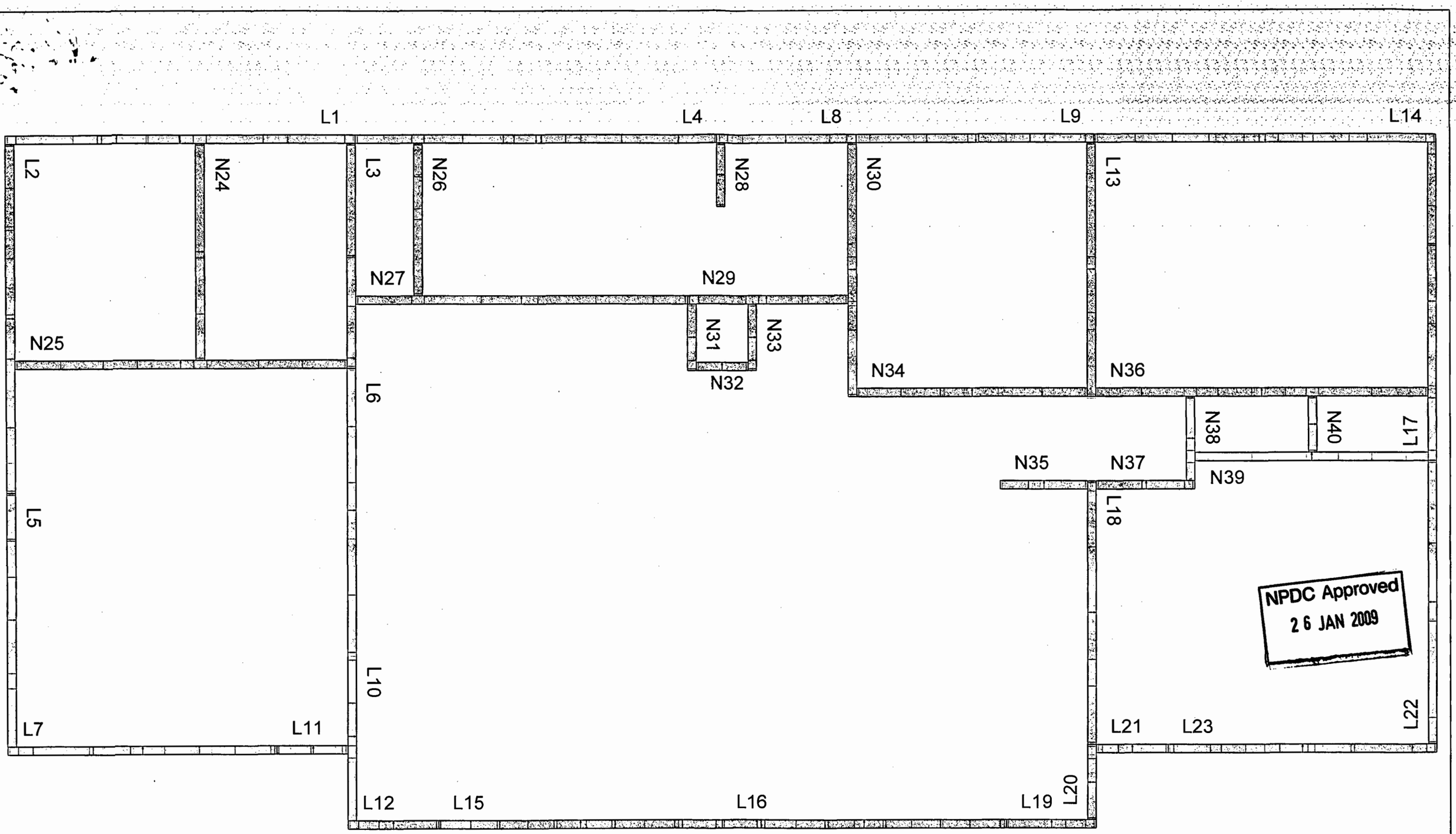
Pannel Stacking

zog® steel frames of the future today

DATE DRAWN 25-08-2008	DRAWN Kyle	VIEW NAME 5 of 5	JOB DETAILS HERLIHY RESIDENCE 8 JOSHUA PLACE, BELL BLOCK NEW PLYMOUTH
DWG FILE Layouts	CHECKED	SCALE 1:100	

JOB REFERENCE 1630

REVISION



Title:	WALLS		
Project:	Keri-Keri		
Client:		*Job:*	*Date:* 25/08/2008

HERLIHY RESIDENCE (1630)

for

LOT 34, 8 JOSHUA PLACE, BELL BLOCK, NEW PLYMOUTH

STRUCTURAL CALCULATIONS **PROJECT No. 8231**

Prepared by: **Hamish Pearse-Danker**
MEng (Hons)

August 2008

CONTENTS: Page

Redco NZ Ltd
Redco House
470 Chapmoetal Road
TAURANGA 3110
Telephone: 07 571 7070
Facsimile: 07 571 7080
Email: red@redco.co.nz
www.redco.co.nz

redco *adding 'enginuity' to building projects*

Chartered Professional Engineers

redco

adding 'enginuity' to building projects

Chartered Professional Engineers

Redco NZ Ltd
Redco House
470 Otumoetai Road
TAURANGA 3110
Telephone: 07 571 7070
Facsimile: 07 571 7080
Email: red@redco.co.nz
www.redco.co.nz

27 August 2008

PRODUCER STATEMENT - PS1 - DESIGN No. 8231

Issued by: **Redco NZ Ltd**

to:

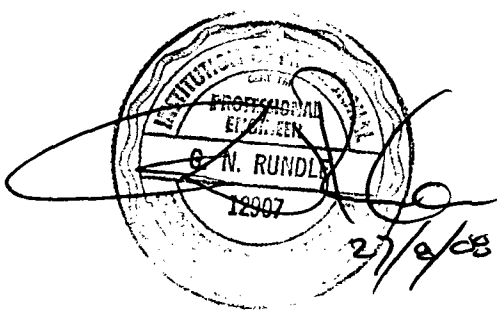
To be supplied to: **NEW PLYMOUTH DISTRICT COUNCIL**

in respect of: **Herlihy Residence (1630)**

at: **Lot 34, 8 Joshua Place, Bell Block, New Plymouth**

Redco NZ Ltd has been engaged by
Golden Homes 1998 Ltd
to provide engineering design services in respect of the requirements of
Clause B1
of the Building Code for those parts of the building work specified in the accompanying calculations.
The design carried out by us has been prepared in accordance with
B1/VM1 & AS1
of the Compliance Documents issued by the Department of Building & Housing and the work
is described on Golden Homes 1998 Ltd
drawings titled Herlihy Residence (1630)
and the specification and other documents according to which the building is proposed to be constructed.

On behalf of Redco NZ Ltd, and subject to all proprietary products meeting the performance requirements,
I believe on reasonable grounds the building, if constructed in accordance with the drawings, specifications and other documents provided, will comply with the relevant provisions of the Building Code.



Graham Rundle BE M.IPENZ CPEng IntPE
Chartered Professional Engineer No. 54001
Redco NZ Ltd

Note: This Producer Statement is to accompany Form 2 of the Building (Forms) Regulations 2004 for the application of a Building Consent, and shall only be relied upon by the Building Consent Authority named above.
Liability under this Statement accrues to Redco NZ Ltd only. The maximum amount of damages payable arising from this statement and all other Statements provided to the Building Consent Authority in relation to this building work, whether in contract, tort or otherwise (including negligence), is limited to the sum of $200,000. Redco NZ Ltd holds a current policy of Professional Indemnity Insurance for no less than $200,000.*
Further guidance notes on the use of this form are printed on the reverse side.*

GUIDANCE NOTES ON THE USE OF PRODUCER STATEMENTS

Producer statements were first introduced with the Building Act 1992. The producer statements were developed 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 in consultation with the Building Officials Institute of New Zealand. The original suite of producer statements has been revised at the date of this form as a result of enactment of the Building Act (2004) by these organisations to ensure standard use within the industry.

The producer statement system is intended to provide Building Consent Authorities (BCAs) with reasonable grounds for the issue of a Building Consent or a Code Compliance Certificate, without having to duplicate design or construction checking undertaken by others.

PS1 Design	**PS1 Design Intended for use by a suitably qualified independent design professional in circumstances where the BCA accepts a producer statement for establishing reasonable grounds to issue a Building Consent;**
PS2 Design Review	Intended for use by a suitably qualified independent design professional where the BCA accepts an independent design professional's review as the basis for establishing reasonable grounds to issue a Building Consent;
PS3 Construction	Forms commonly used as a certificate of completion of building work are Schedule 6 of NZS 3910:2003 [1]
PS4 Construction Review	Intended for use by a suitably qualified independent design professional who undertakes construction monitoring of the building works where the BCA requests a producer statement prior to issuing a Code Compliance Certificate. This must be accompanied by a statement of completion of building work (Schedule 6).

The following guidelines have been provided by the committee to help interpret the Producer Statement:

Competence of Design Professional

This statement is made by a Design Firm that has undertaken a contract of services for the services named, and is signed by a person authorised by that firm to verify the processes within the firm and the competence of its designers. A competent design professional will have a professional qualification and proven current competence through registration on the national competence based register as a Chartered Professional Engineer (CPEng). Membership of a professional body, such as the Institution of Professional Engineers New Zealand (IPENZ) provides additional assurance of the designer's standing within the profession.
Persons or firms meeting these criteria satisfy the term "suitably qualified independent design professional".

*** Professional Indemnity Insurance**

The PI insurance minimum stated on the front of this form reflects standard, small projects. If the parties deem this inappropriate for large projects the minimum may be up to $500,000.

Professional Services during Construction Phase

There are several levels of service which a Design Firm may provide during the construction phase of a project (CM1- CM5)[2] . The Building Consent Authority is encouraged to require that the service to be provided by the Design Firm is appropriate for the project concerned.

Requirement to provide Producer Statement PS4

Building Consent Authorities should ensure that the applicant is aware of any 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 Firm's engagement.

Attached Particulars

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

Refer Also:

[1] Conditions of Contract for Building & Civil Engineering Construction NZS 3910: 2003

[2] Guideline on the Briefing & Engagement for Consulting Engineering Services (ACENZ/IPENZ 2004)

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Redco NZ Ltd
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Chartered Professional Engineers

Client: **Golden Homes 1998 Ltd** **27 Aug '08**

Project: **Herlihy Residence (1630)** Project No. **8231**

Steel Framed House

Summary

The building is to be a single storey dwelling and to have a Colorsteel roof on roof trusses with timber fascia cladding.

The proposed structure is to be constructed using light steel framed structural members fabricated from 89x40x0.75 lipped channel sections.

Roof trusses at nominal 900mm centres are to be fabricated using chords and webs as 'traditional' trusses and will span between load bearing walls.

Walls are fabricated using studs at nominal 600mm centres spanning between top plates and slab. The channel top plate of load bearing walls is strengthened using a 20x160x0.75mm angle plate to resist gravity and uplift loads.

Lintels are generally formed as trussed sections spanning between trimming studs. The channel top plate is strengthened to load bearing walls using a 20x160x0.75mm angle plate to resist gravity and uplift loads.

Window and door trimming studs are to be arranged as follows to limit deflection:-
- Openings up to 900mm wide use 1no. trimming stud
- Openings up to 2400mm wide use 2no. trimming stud
- Openings up to 3900mm wide use 3no. trimming stud
- Openings up to 54000mm wide use 4no. trimming stud

Window and door sill and head members are to be arranged as follows to limit deflection:-
- Openings up to 1800mm wide use 1no. trimming member
- Openings up to 2400mm wide use 2no. trimming member
- Openings up to 2700mm wide use 3no. trimming member
- Openings up to 3000mm wide use 4no. trimming member
- Openings up to 3300mm wide use 5no. trimming member

Roof trusses and wall frames have been designed by Golden Homes using software which has been specifically developed by FrameCad Solutions Ltd for the light steel frame housing market. Checks have been made by Redco NZ Ltd on structural members and amendments made where required.

Wall bracing requirements have been calculated by Golden Homes using the H-Brace software programme and checks have been made by Redco NZ Ltd.
The bracing values of plasterboard on steel frame have been gained from test undertaken at BRANZ and FRI and by values provided by FrameCad Solutions.

Roof bracing done and checked by others.

A Producer Statement PS1- Design has been provided to cover the design of this structure in accordance with B1/VM1 & AS1

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26 JAN 2009

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Chartered Professional Engineers

Lintel check

Loads

G_{sw} =	0.12 kN/m
G =	**0.22 kPa**
Q =	**0.25 kPa**
Qu =	0.00 kPa
Wu up max =	-1.35 kPa
Wu down max =	0.90 kPa
Snow =	**1.00 kPa**

Wind Zone **Very high**

Load case 1. (LC1.)	1.2G + 1.6Q	W =	0.66 kPa (excluding self weight, $1.2*G_{sw}$)
Load case 2. (LC 2.)	0.9G + Wu	W =	-1.15 kPa (excluding self weight, $0.9*G_{sw}$)
Load case 3. (LC 3.)	1.2G + Wu	W =	1.16 kPa (excluding self weight, $1.2*G_{sw}$)
Load case 4. (LC 4.)	1.2G + Qu +1.2S	W =	1.46 kPa (excluding self weight, $1.2*G_{sw}$)

Eaves = **0.5 m**

Lintel within frame ref:-	Contrib roof width	W on lintel (including self weight, G_{sw})	Comments
L15, L16 2.4m span	3.70 m + eaves	LC1. = 2.9 kN/m LC2. = -4.7 kN/m LC3. = 5.0 kN/m LC4. = 6.2 kN/m	Provide 4no. 10g Teks total to ends of 1st and last web members

To all other Type3 lintels provide 2no. 10g Tek screws to ends of first and last web members

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HBrace 4.0: Bracing Design to NZS 3604:1999

PROJECT DETAILS

Project Name:	***Herlihy Residence***		
Street Address:	***8 Joshua Place***		
City/Town:	***Bell Block, New Plymouth***	Job Number:	***1630***
Legal Description:	***Lot 34,***		
Read with:	***SHEET 4***		

WIND ZONE - Very High Wind Zone

(Wind Zone was supplied by the Local Authority.)

EARTHQUAKE ZONE

Earthquake Zone (from NZS 3604 map): ***A***

BUILDING DETAILS

Number of Levels:	***Single Storey structure (Concrete Ground Floor).***		
Dimensions:	Ground Floor: ***15 x 7.4m***		
Floor Areas:	Ground Floor: ***105.2m²***		
Typical Stud Height:	***2.7m***	Height to Roof Apex:	***5m***
Roof Pitch:	***0-25°***	Roof Height Above Eaves:	***1m***
Roof Cladding:	***Light***	Wall Cladding:	***Light***

WALL BRACING - Ground Floor - Along

Wall or Bracing Line		Bracing Elements Provided				WIND		EARTHQUAKE	
Line Label	Minimum BU/Wall	Element No.	Bracing Type	Element Length	Element Height	Wall Rating BU/m	Achieved (BU/m x L)	Wall Rating BU/m	Achieved (BU/m x L)
A	150	~~1~~	~~GB1S~~	~~0.6m~~	~~2.7m~~	**100**	~~53~~	80	~~43~~
		2	GS1S	1.2m	2.7m	**75**	**80**	60	64
		3	GB1S	0.6m	2.7m	**100**	**53**	80	43
		4	GB1S	0.6m	2.7m	**100**	**53**	80	43
B	70	1	GS1S	1.2m	2.4m	**75**	**90**	60	72
		2	GS1S	2.4m	2.7m	**75**	**160**	60	128
		3	GS1S	1.2m	2.7m	**75**	**80**	60	64
		4	GS1S	1.2m	2.4m	**75**	**90**	60	72
C	140	1	GB1S	0.9m	3m	**100**	**68**	80	55
		2	GB1S	0.9m	3m	**100**	**75**	80	60
		3	GB1S	0.9m	3m	**100**	**75**	80	60
		4	GB1S	0.9m	3m	**100**	**68**	80	55
					Total Achieved BU's		893 ~~946~~ **BU's**		714 ~~787~~ BU's
					Total Required BU's		**507 BU's**		379 BU's

OK OK

WALL BRACING - Ground Floor - Across

Wall or Bracing Line		Bracing Elements Provided				WIND		EARTHQUAKE	
Line Label	Minimum BU/Wall	Element No.	Bracing Type	Element Length	Element Height	Wall Rating BU/m	Achieved (BU/m x L)	Wall Rating BU/m	Achieved (BU/m x L)
M	66	1	GB1S	0.6m	2.7m	**100**	**53**	80	43
		2	GS1S	1.2m	3.3m	**75**	**65**	60	~~52~~
N	70	1	GS1S	1.2m	2.4m	**75**	**90**	60	~~72~~
		2	GS2S	2.4m	2.4m	**100**	**240**	90	216
O	70	1	GS1S	1.2m	2.7m	**75**	**80**	60	64
		2	GB1S	0.6m	2.7m	**100**	**53**	80	43
P	70	1	GS1S	1.2m	2.4m	**75**	**90**	60	~~72~~
		2	GS2S	2.4m	2.4m	**100**	**240**	90	216
Q	70	1	GB1S	0.6m	2.7m	**100**	**53**	80	43
		2	GB1S	0.6m	3.3m	**100**	**66**	80	35
					Total Achieved BU's		**1009 BU's**		856 BU's
					Total Required BU's		**750 BU's**		379 BU's

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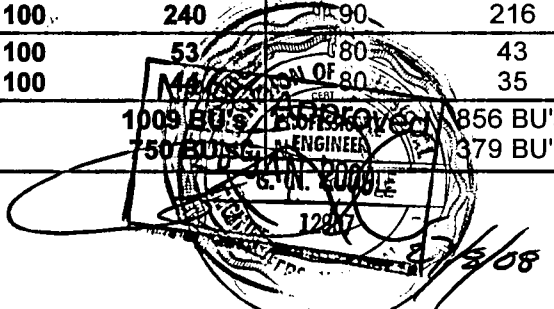

GIB® Wall Bracing Calculation Sheet A — single storey — V85A

GIB® EzyBrace™
GIB® Bracing Systems, 2006

Job Details

Name	Herlihy	
Street and Number	8 Joshua Place	
Lot and DP Number	Lot 34	
City/Town/District	Bell Block	
Designer and date	Shirley Thomson	1-Nov-08
Company Name		

Building Specification

Location of Storey	single	
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)	light	
Cladding Weight (lower)	light	*not applicable (single storey building)*
Cladding Weight (subfloor)	light	*not applicable (slab)*
Roof Weight	light	
Roof Pitch (degrees)	0-25	
Room in Roof Space	no	
Building Length (m)	18.59	
Building Width (m)	14.82	
Gross Building Plan Area (m2)	162	

Building Location

Wind Zone	***High***	**Earthquake Zone**	
Region	R1		A
Terrain	Coastal		
Exposure	Sheltered		
Topography	Moderate		

Bracing Units required for Wind

per m	subfloor	walls
W along	n/a	64 BUs/m
W across	n/a	54 BUs/m

Totals	subfloor	walls
W along	n/a	948 BUs
W across	n/a	1004 BUs

Bracing Units required for Earthquake

per m2	subfloor	walls
E	n/a	3.6 BUs/m2

Totals	subfloor	walls
E along	n/a	583 BUs
E across	n/a	583 BUs

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GIB® Wall Bracing Calculation Sheet B — single storey — V85A

GIB® EzyBrace™ — *GIB® Bracing Systems, 2006*

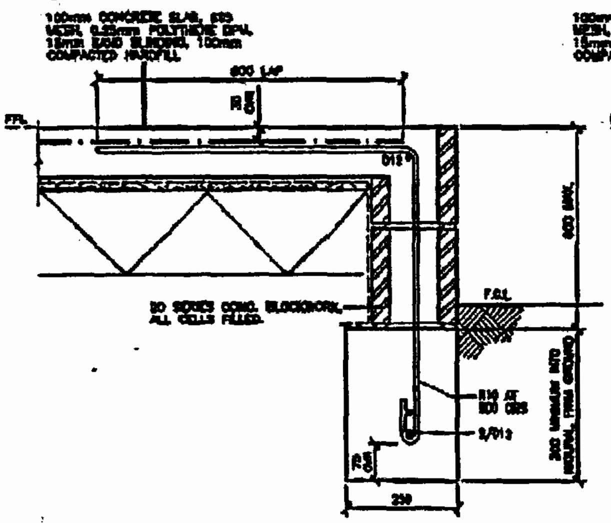
Along									
Wall or Bracing Line		*Bracing Elements provided*						*Wind*	*Earthq.*
1	2	3	4	5	7	8	6	9W	10EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Supplier	Bracing Type	Element Length L (m)	Element Height H (m)	Angle to Bracing line (degrees)	BUs Achieved	BUs Achieved
A	enter	1	Gib	GS1s	0.6	2.4		45	36
		2	Gib	GS1s	1.2	2.4		90	72
line totals		3	Gib	GS1s	0.6	2.4		45	36
W	225	4	Gib	GS1s	0.6	2.4		45	36
EQ	180	5							
B	enter	1	Gib	GS1s	1.2	2.4		90	72
		2	Gib	GS1s	2.4	2.4		180	144
line totals		3	Gib	GS1s	1.2	2.4		90	72
W	450	4	Gib	GS1s	1.2	2.4		90	72
EQ	360	5							
C	enter	1	Gib	GB1s	0.855	2.4		86	68
		2	Gib	GB1s	0.935	2.4		94	75
line totals		3							
W	265	4	Gib	GB1s	0.855	2.4		86	68
EQ	212	5							
D	enter	1	GIB®	GS1a	2.4	2.4		180	156
		2							
line totals		3							
W	180	4							
EQ	156	5							
E	enter	1	GIB®	BL1	0.6	2.4		75	69
		2	GIB®	BL1	0.6	2.4		75	69
line totals		3							
W	150	4							
EQ	138	5							
F	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
G	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
H	enter	1							
		2							
line totals		3							
W		4							
EQ		5							

								Wind	Earthq.
Totals Achieved								1270	1046
								OK	OK
Totals Required (from Sheet A)								948	583

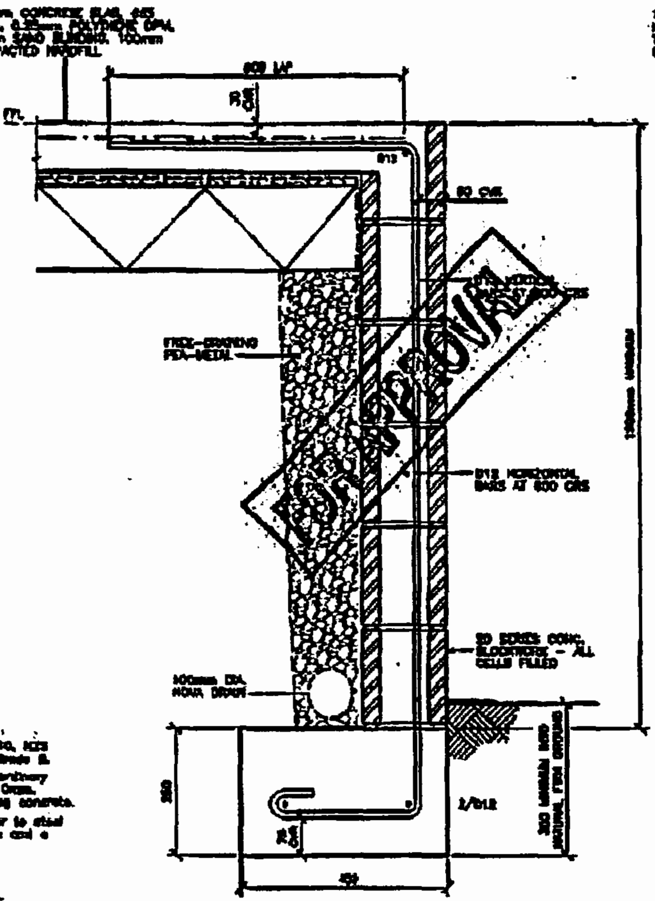
GIB® Wall Bracing Calculation Sheet B — single storey — V85A

GIB® EzyBrace ™ — *GIB® Bracing Systems, 2006*

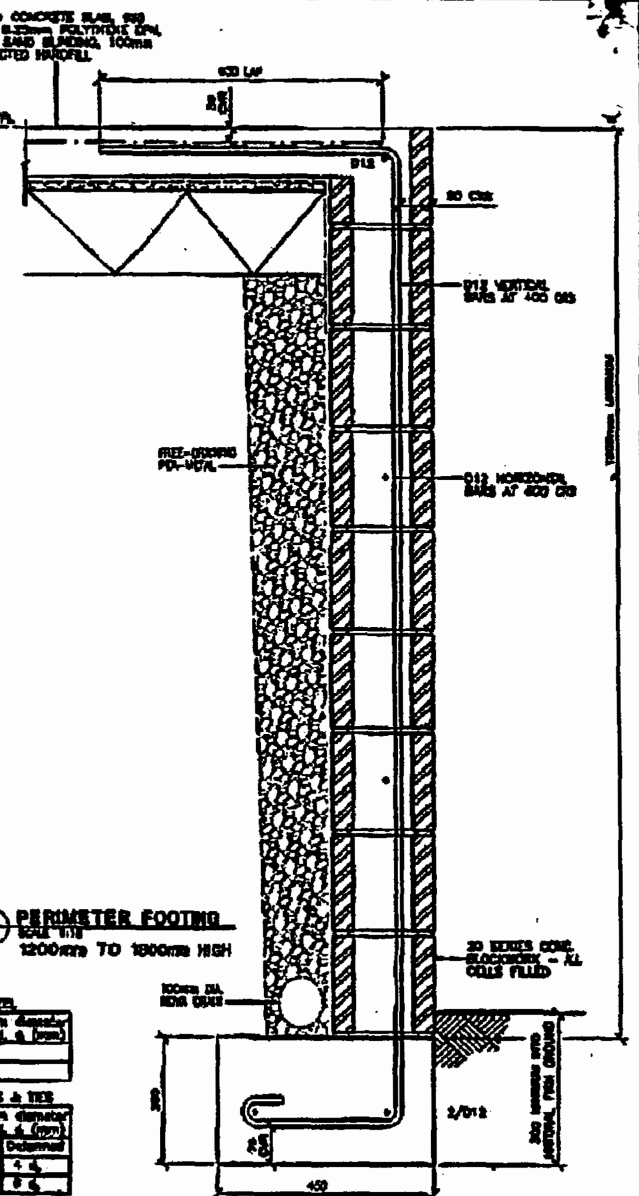
Across									
Wall or Bracing Line		*Bracing Elements provided*						*Wind*	*Earthq.*
1	2	3	4	5	7	8	6	9W	10EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Supplier	Bracing Type	Element Length L (m)	Element Height H (m)	Angle to Bracing line (degrees)	BUs Achieved	BUs Achieved
M	enter	1	Gib	GS1s	0.6	2.4		45	36
		2	Gib	GS1s	1.2	2.4		90	72
line totals		3							
W	135	4							
EQ	108	5							
N	enter	1	Gib	GS1s	1.2	2.4		90	72
		2	Gib	GS2s	2.4	2.4		240	216
line totals		3	GIB®	GS1a	2.4	2.4		180	156
W	510	4							
EQ	444	5							
O	enter	1	Gib	GS1s	1.6	2.4		120	96
		2	Gib	GS1s	0.6	2.4		45	36
line totals		3	GIB®	BL1	0.6	2.4		75	69
W	288	4	GIB®	BL1	0.4	2.4		48	46
EQ	247	5							
P	enter	1	Gib	GS1s	1.2	2.4		90	72
		2	Gib	GS2s	2.4	2.4		240	216
line totals		3	GIB®	BL1	0.6	2.4		75	69
W	405	4							
EQ	357	5							
Q	enter	1	Gib	GB1s	0.6	2.4		60	48
		2	Gib	GB1s	0.6	2.4		60	48
line totals		3							
W	120	4							
EQ	96	5							
R	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
S	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
T	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
Totals Achieved								Wind 1252	Earthq.
								OK	*OK*
Totals Required (from Sheet A)								1004	583



Ⓐ TYPICAL PERIMETER FOOTING
SCALE 1:10
UP TO 600mm HIGH



Ⓑ PERIMETER FOOTING
SCALE 1:10
600mm TO 1200mm HIGH



Ⓒ PERIMETER FOOTING
SCALE 1:10
1200mm TO 1800mm HIGH

CONCRETE

1. All concrete work to conform to NZS 3109.
2. Extend foundations to a minimum of 300mm into good ground.
3. All concrete shall be ordinary, high or special grade to conform to NZS 3109.
4. Concrete shall have a minimum compressive strength at 28 days of
   17.5 MPa for reinforced concrete in Zones 1 and 2.
   20 MPa for reinforced concrete in Zone 3.
   25 MPa for reinforced concrete in [illegible] Spray Zone.
   or specific engineering design in [illegible] areas.
5. Minimum concrete cover to steel reinforcement shall be:
   75mm when concrete is [illegible] or against the ground.
   50mm in all other [illegible] concrete is placed [illegible]
   30mm from the top [illegible] slab which is in a closed [illegible]
   50mm from the top of any [illegible] wall or floor slab.
6. Lay floor slab on DPM, 15mm sand blinding and 100mm minimum compacted hardfill.
7. Compaction of hardfill to be carried out in maximum layers of 150mm to 95% Maximum Dry Density under buildings and 90% Maximum Dry Density elsewhere.

CONCRETE BLOCKWORK

1. All concrete [illegible] shall conform to NZS 4210, NZS 4229 & NZS 4230. All blockwork shall be Grade B.
2. Concrete [illegible] masonry cavities to be ordinary [illegible] aggregate size of 10mm. [illegible] to be used when pouring concrete.
3. [illegible] shall have minimum cover to steel reinforcement from a masonry external face and a [illegible] strength of:
   [illegible] MPa for Sea Spray Zone;
   [illegible] 17.5 MPa for Zone 1;
   [illegible] 17.5 MPa for Zones 2 and 3;
   [illegible] 17.5 MPa for interior conditions.
4. Mortar strength to be 12.5 MPa at 28 days.
5. All block cavities to be filled.

RETAINING WALLS

1. Retaining walls have not been designed to be stable under full load until the wall concrete and the slab on top of the wall have reached their designed strength. Provide adequate shoring and/or strutting to prevent any damage to the walls occurring during backfilling and compacting behind walls. Compacting machinery used adjacent to the walls shall be such that the wall is not damaged.
2. Compaction of hardfill to be carried out in maximum layers of 150mm.
3. Provide 100mm dia. Novaflo pipe behind wall, backfill with free draining material.

REINFORCING

1. Mild steel plain and deformed reinforcing bars shall conform to AS/NZS 4671 Steel Reinforcing Materials.
2. All plain (round) bars shall be Grade 300. All deformed bars nominated as 'D' shall be Grade 300 and all deformed bars nominated as 'H' shall be Grade 500E, unless noted otherwise.
3. Take special care to achieve the minimum inside diameter of bends as shown in the charts at right. Do NOT allow re-bending of Grade 500E steel and do NOT carry out site welding, including tack welding.
4. HRC mesh to conform to AS 4671. Mesh shall be lapped 225mm minimum unless specified otherwise by manufacturer.

MINIMUM BENDS FOR MAIN STEEL

GRADE	Bar diameter, d_b (mm)	Minimum diameter of bend, d_i (mm)
300 or 500E	6 – 20	5 d_b
	25 – 40	6 d_b

MINIMUM BENDS FOR STIRRUPS & TIES

GRADE	Bar diameter, d_b (mm)	Minimum diameter of bend, d_i (mm)	
		Plain	Deformed
300 or 500E	6 – 20	2 d_b	4 d_b
	25	3 d_b	6 d_b

NOTES

A	FOR APPROVAL		
ISSUE	AMENDMENT	DATE	BY

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[illegible]

TITLE

SHEET CONTENTS
PERIMETER FOOTING DETAILS & NOTES

Drawn	[illegible]
Design	[illegible]
Checked	
Approved	

A1 SCALE
A2 SCALE
A3 SCALE 1:10

ISSUE A
SHEET No.
JOB No.

ORIGINAL SIZE - A3 — CHECK ALL DIMENSIONS ON SITE — IF IN DOUBT ASK — DO NOT SCALE

James Hardie®

Facsimile

To: Rex Collins
Company: Golden Homes
Location: Tauranga
Date: 24/04/08
From: Singh Kamboj
Subject: Linea Weatherboard Installation to Steel frame
Ref. No: TS 1866
Pages: 1

James Hardie New Zealand Limited

50 O'Rorke Road, Penrose
Auckland 6, New Zealand

Telephone 0-9-579 9919
0800-808 868
DDI 0-9-525 8608
Mobile 021 279 9538
Fax: Despatch and Orders 0800-808 988
Technical 09-525 4562

PO Box 12 070, Penrose
Auckland 6, New Zealand

Hi Rex

Please refer to the drawings you have sent us regarding the installation of Linea Weatherboard over steel frame. In this matter I make the following comments;

- Linea Weatherboard can be fixed to steel frame using steel screws. Generally 8g to 10g screw is used for fixing Linea to steel frame.
- Thermal bridging material must be used between Linea and steel frame. HD polystyrene 10mm thick is sufficient to achieve the required thermal break. A 20 mm Spec bat or Thermax batten can also be used that provides both a cavity and the required thermal break.
- Where a 50mm cavity is provided behind Linea Weatherboard, a thicker batten can be used which should be structurally fixed to steel frame and Linea Weatherboard can be fixed to the batten only.
- The other installation details and the flashing requirements are the same as provided in Linea Weatherboard technical specification. Weatherboards installed considering these comments and our technical specification literature are covered under the standard product warranty.

Please refer to our product literature for information regarding installation or contact the writer in case you need any further assistance.

Regards

NPDC Approved
26 JAN 2009

Yours sincerely
James Hardie New Zealand Ltd.
Singh Kamboj, (B.E) civil, GIPENZ
Technical Support Manager
Tel: 09 525 8608, 021 279 9538
E- mail: singh.kamboj@jameshardie.co.nz

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Chartered Professional Engineers

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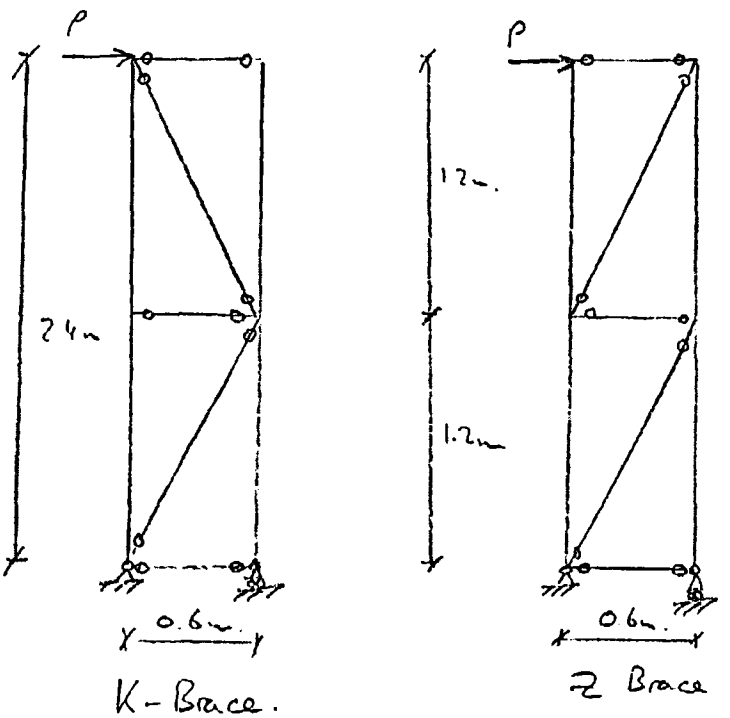
Email: red@redco.co.nz
www.redco.co.nz

CALCULATIONS Page

Client: **Golden Homes 1998 Ltd** 25 Jul '08

Truss Comparison

Consider both K and Z bracing in a 600 wide panel
Apply a unit load to each in both directions. Model used:



$P = \pm 1kN$.

Results

Deflections for both braces with load in each direction are almost identical.

Critical Leg is the bottom half of the studs

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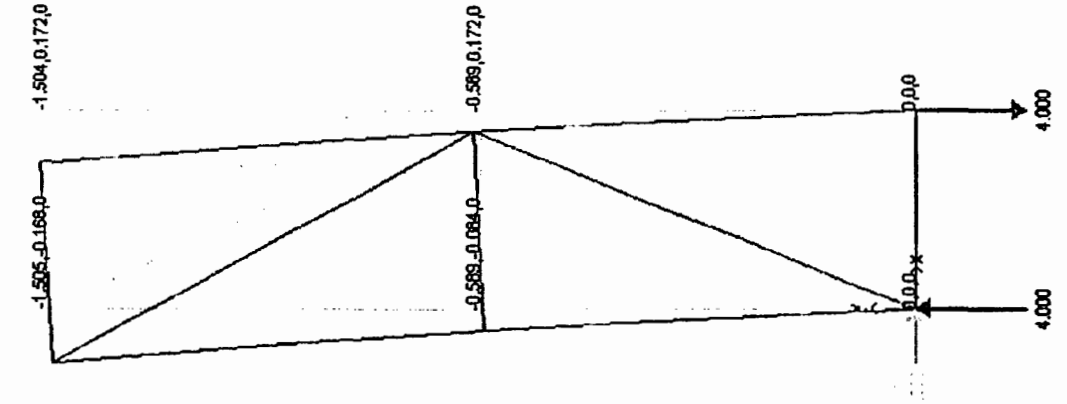
CALCULATIONS

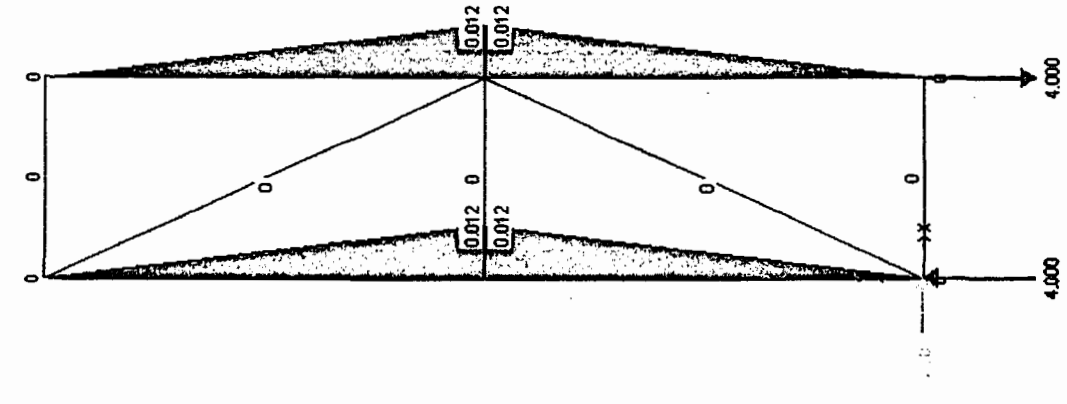
Page

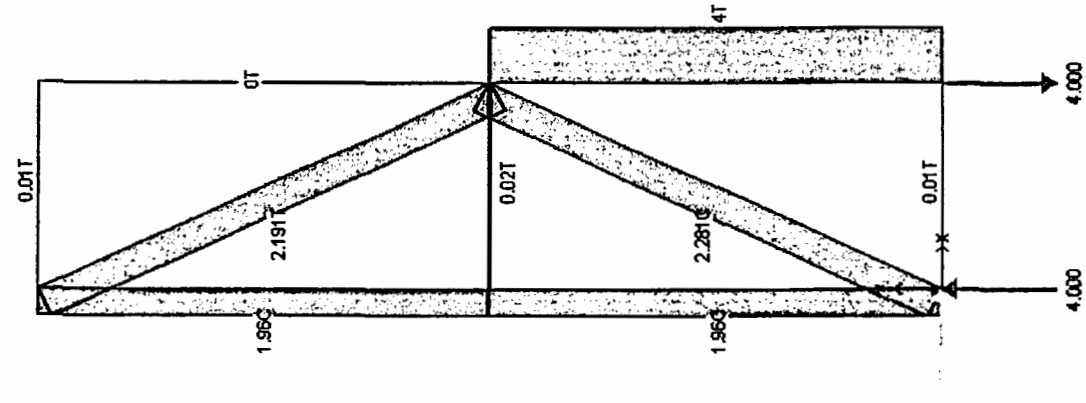
Client: **Golden Homes 1998 Ltd**

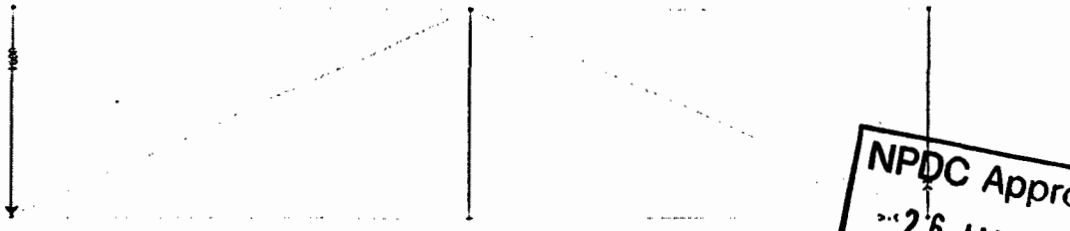
28 Jul '08

K-Brace - Load to the left









NPDC Approved
26 JAN 2009

redco

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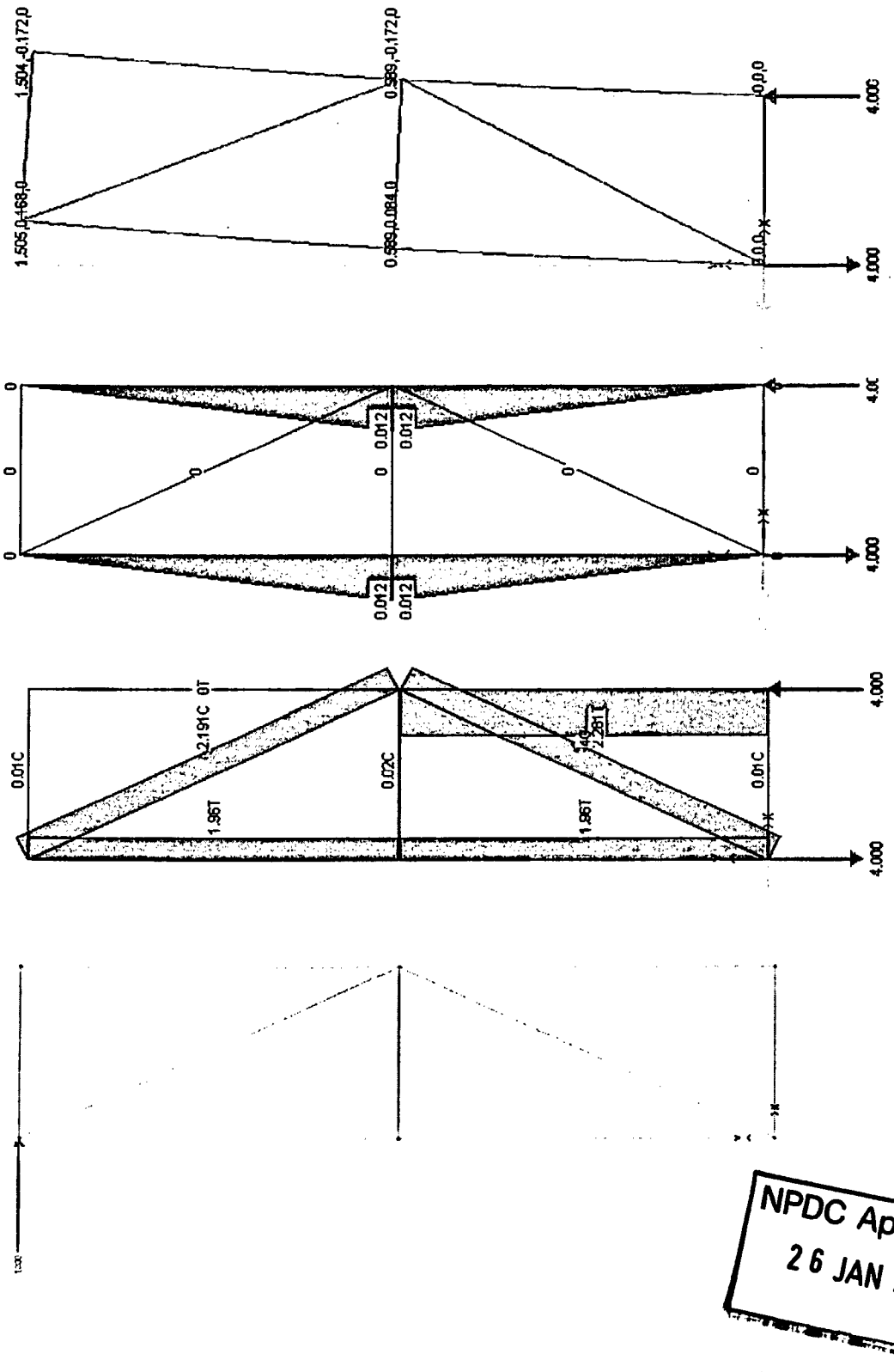
Chartered Professional Engineers

K-Brace - Load to the right



Redco NZ Ltd
Redco House
470 Otumoetai Road
TAURANGA 3110
Telephone: 07 571 7070
Facsimile: 07 571 7080
Email: red@redco.co.nz
www.redco.co.nz

adding 'enginuity' to building projects

Chartered Professional Engineers

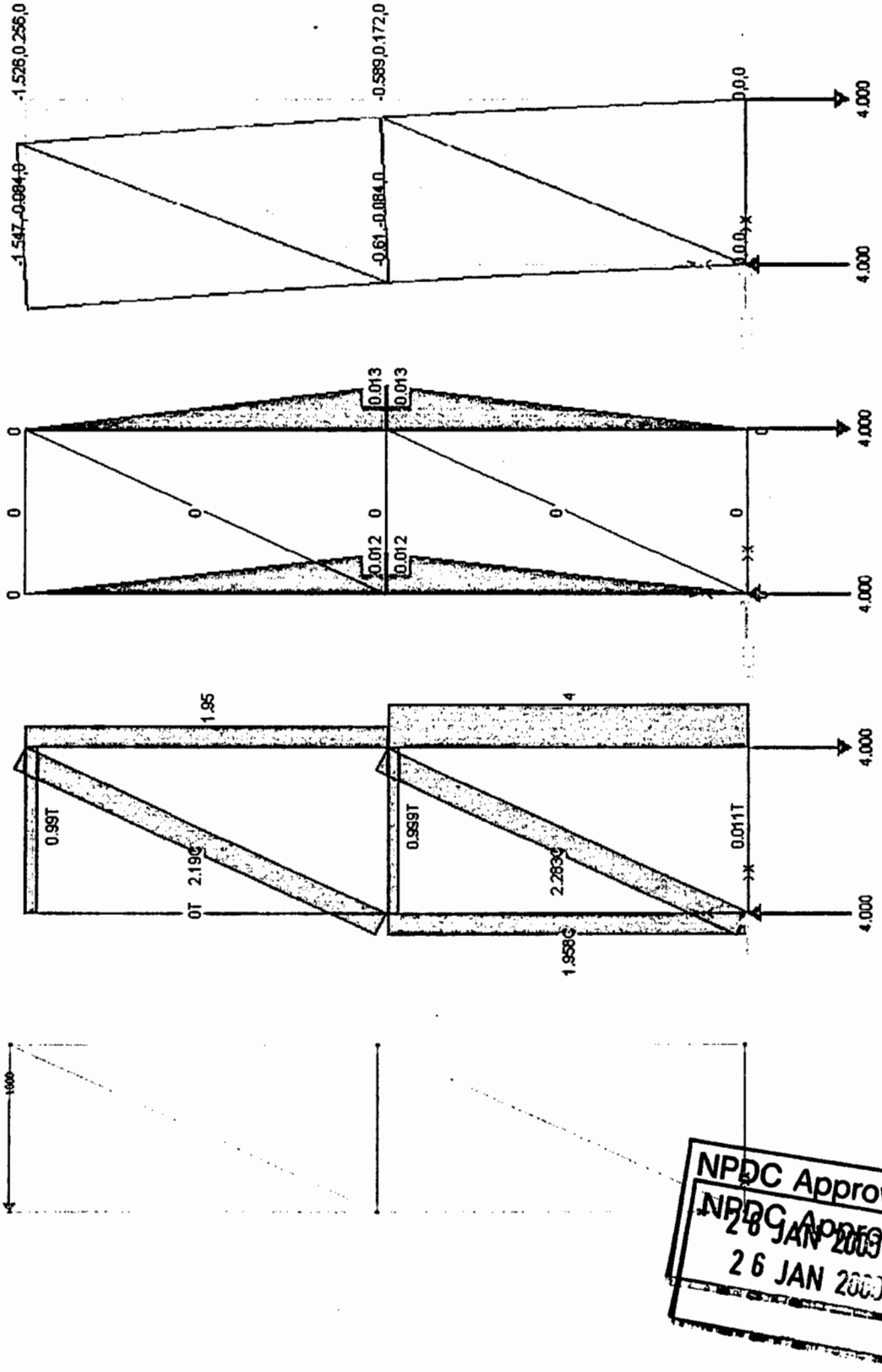
CALCULATIONS

Page

Client: **Golden Homes 1998 Ltd**

28 Jul '08

Z-Brace - Load to the Left



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Chartered Professional Engineers

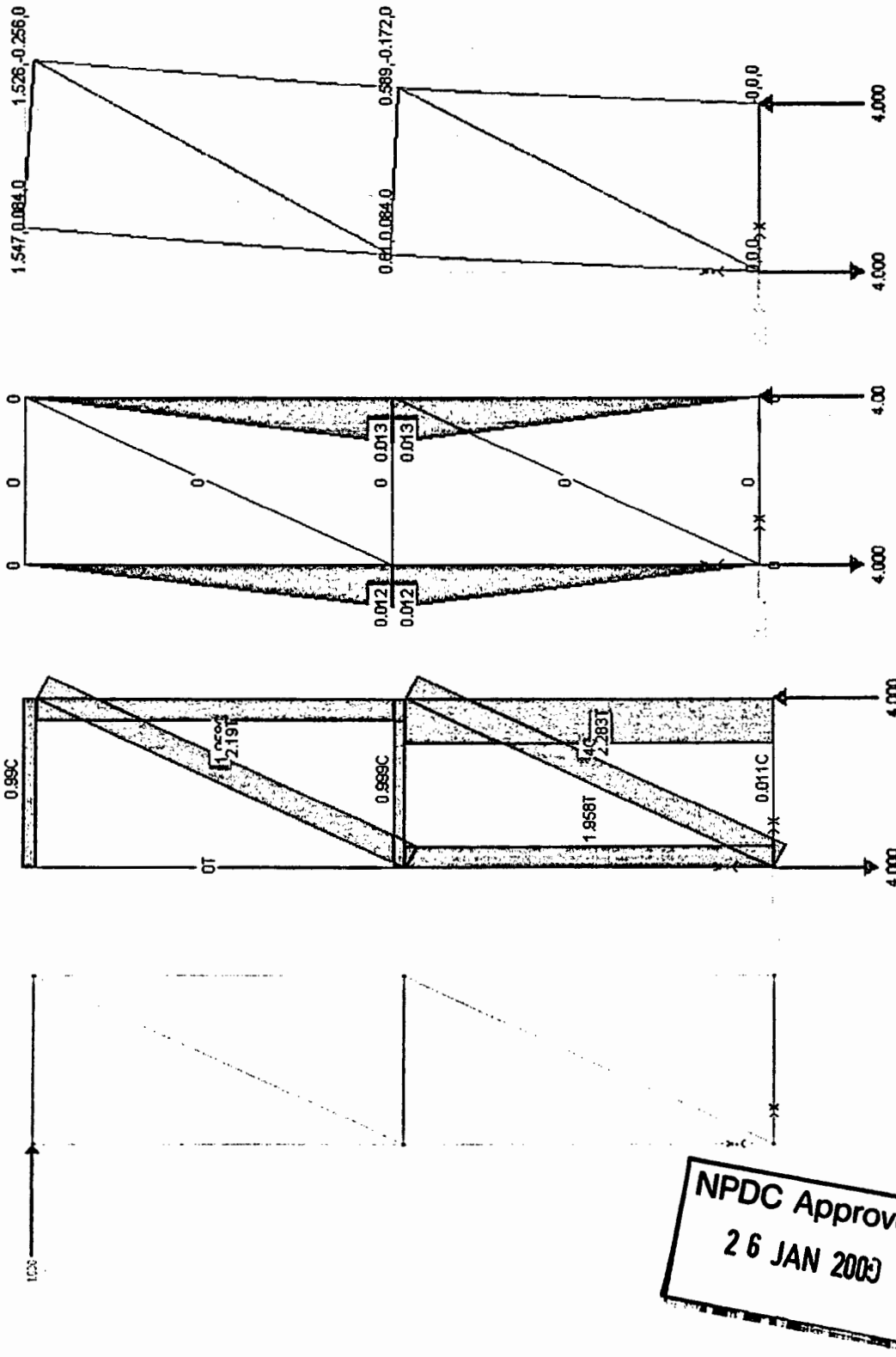
CALCULATIONS

Page

Client: **Golden Homes 1998 Ltd**

28 Jul '08

Z-Brace - Load to the right



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www.redco.co.nz

redco *adding 'enginuity' to building projects*

Consulting Professional Engineers

CALCULATIONS Page 1 of 2

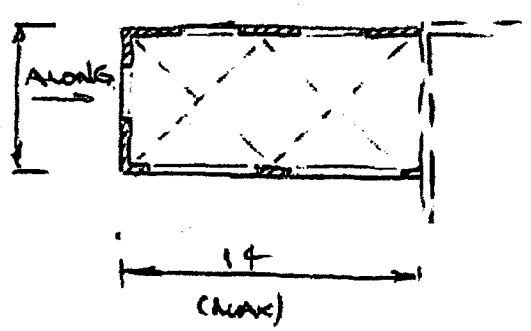
Client: **NZ BUILDING SUPPLIES LTD** 9 Oct '06

Project: **CEILING BRACING FOR NEW HOUSES** Project No. 6939

CEILING BRACING TO GARAGE AREA'S

QUADRUPLE GARAGE

TO BE DESIGNED FOR
MEDIUM WIND ZONE - 0.82 kPa
HIGH WIND ZONE - 1.16 kPa
V. HIGH WIND ZONE. - 1.50 kPa.



ALL GARAGES ARE 2.4M HIGH.

EARTH QUAKE

WORST CASE $Z = 1.2$ $N = 3.0$ $\therefore C = 0.28$.

ROOF = $0.2 \times 7 \times 14$ = 19.6
WALL = $0.7 \times 2.4/2 \times (7+14+14) \times 0.7$ = 20.6
(REDUCTION FOR OPENINGS)
40.2

$\therefore$ SEISMIC FORCE = 40.2×0.28
= 11.3 kN - 225 BU's ALONG & ACROSS
(113 BU's EACH WALL)

LOAD TO X-BRACING : ROOF $0.2 \times 7 \times 14/2$ = 9.8
WALL $0.7 \times 2.4/2 \times (7+14/2) \times 0.7$ = 8.3
18.1

$\therefore$ SEISMIC FORCE = 18.1×0.28
= 5.1 kN < MEDIUM WIND ZONE

$\therefore$ WIND GOVERNS FOR X-BRACES.

NPDC Approved
26 JAN 2007

red co

adding 'enginuity' to building projects

Redco NZ Ltd
Redco House
470 Otumoetai Road
TAURANGA 3110
Telephone: 07 571 7070
Facsimile: 07 571 7080
Email: red@redco.co.nz
www.redco.co.nz

Consulting Professional Engineers

CALCULATIONS

Client: **NZ BUILDING SUPPLIES LTD** 19 Oct '06

Project: **CEILING BRACING FOR NEW HOUSES** Project No. 6939

WIND.

MEDIUM WIND ZONE

ALONG. $0.82 \times 2.4/2 \times 7/2$

$= 3.4\,kN$ _ 6980'S. EACH WALL

ACROSS $0.82 \times 2.4/2 \times 14/2$

$= 6.9\,kN$ _ 13880'S EACH WALL.

X-BRACING TO TRANSFER BRACING LOADS _

BRACE FORCE $= 0.82 \times 2.4/2 \times 7$

$= 6.9\,kN$

$= 3.4\,kN$ EACH BRACE.

$\therefore$ TENSION FORCE $= 3.4/\cos 45°$

$= 4.8\,kN$

USE BOLMAC STRAP BRACE X-BRACING

10/ TEK SCREWS EACH END.

SEE TABLE FOR HIGH & V. HIGH WIND ZONES

red co

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TAURANGA 3110
Telephone: 07 571 7070
Facsimile: 07 571 7080
Email: red@redco.co.nz
www.redco.co.nz

Consulting Professional Engineers

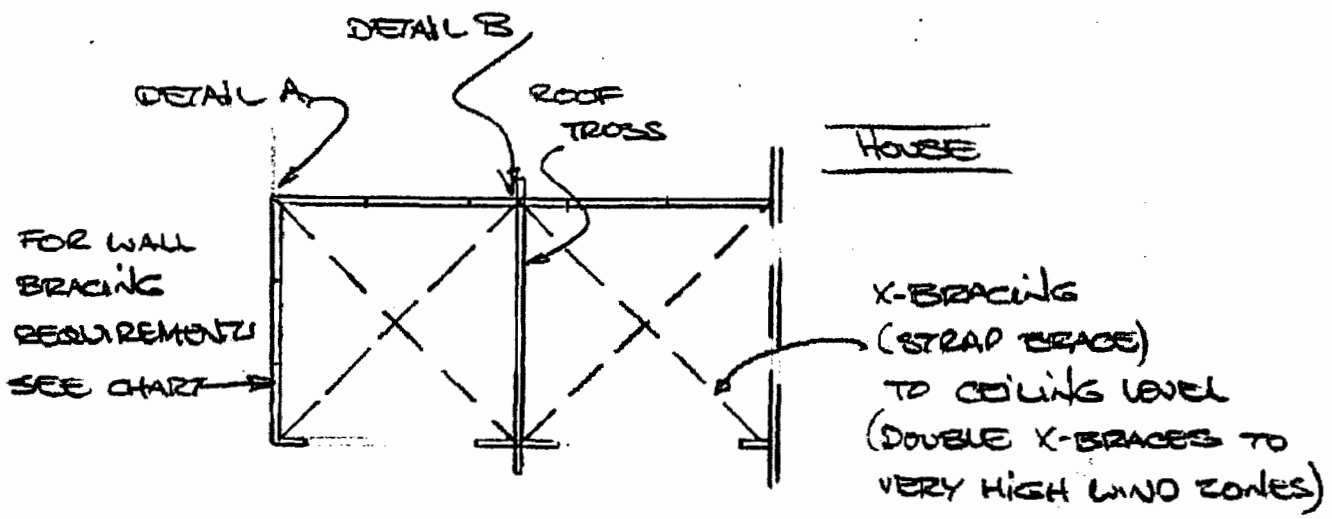
CALCULATIONS

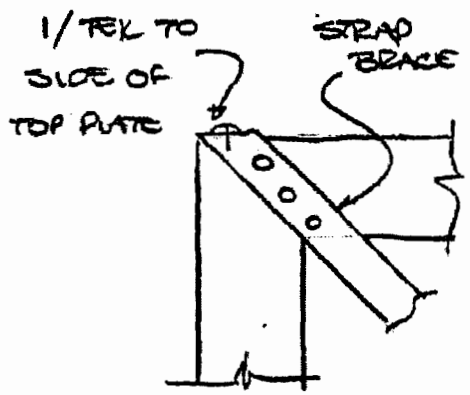
Client: NZ BUILDING SUPPLIES LTD

19 Oct '06

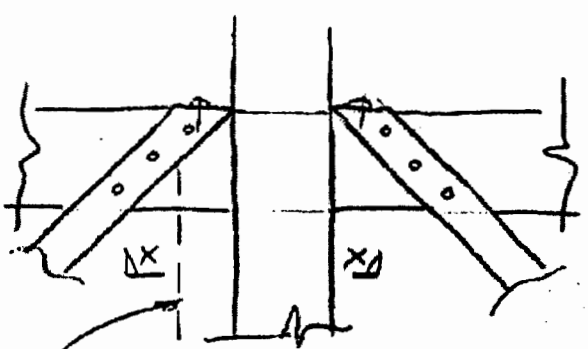
Project: CEILING BRACING FOR NEW HOUSES

Project No. 6939

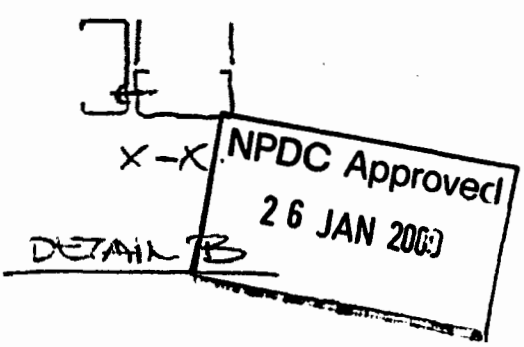




DETAIL A



FOR VERY HIGH WIND ZONE FIX ADDITIONAL CHANNEL TO SIDE OF TRUSS BTM PLATE @ 600 CRS USING 10g TEKS



DETAIL B

60MT

BUILDING CONSENT

106288A

PROPERTY ID **107870**

106288A

ID 107870

NEW PLYMOUTH DISTRICT COUNCIL

newplymouthnz.com

Application No: BC08/106288

Related Pim Application No: PIM08/106278

TIMESHEET TRANSFERRED

Date Received: 25/11/2008
Name: Morgan Joseph HERLIHY, Crichton Hanley PARKER
Address: 8 Joshua Place
BELL BLOCK 4601

Legal No: LOT 34 DP 374057
Property ID: 103970
Category: 1

Residential/Farm - three bedroom dwelling with attached garage

		More info required	Applicant notified	Application correct
BC: **Approvals:** JOHN		23.12.08	POST.	20-01-09
* Engineer : 0-25 Time:	Yes			2/12/08
BWOF: if required	Yes			
Pool Fencing:	Yes			
PIM issue				10-12-08
Other				

DC Applies

Amendments

AMENDMENT

01 130509 AMENDMENT

BUILDING ADMINISTRATION: PLEASE READ THE CONSENT COMMENT (INSIDE BACK COVER) RE: BLOCKFILL INSPECTIONS.

RES 5

FILE COMPLETE
CCC TO BE ISSUED

Approved 27/1/09

Not Approved 23-12-08

Building Consent Comments

THE APPLICANT HAS VERIFIED THAT TSE ENGINEER'S AND ASSOCIATES LTD WILL BE INSPECTING THE 'GRADE B' BLOCKWORK AND FORWARDING A COPY OF THE INSPECTION REPORT TO COUNCIL PRIOR TO BOOKING IN THE COUNCIL BLOCKFILL INSPECTION. PLEASE ENSURE THIS REPORT IS AVAILABLE PRIOR TO BOOKING/VERIFYING THE INSPECTION. 19-05-09.

Signed		Date:	

Engineers Comments

Signed		Date:	

NEW PLYMOUTH DISTRICT COUNCIL

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C.C.C AUDIT

This is a checklist for the final sign off of building consents by an authorised NPDC officer and is to assist the process only. The job file is now passed to administration for fees check and C.C.C. issue

			N/A	MIR	Pass
Application form correctly filled in.					
Energy certificate	Gas				
	Electrical				
As built drainage plan. ✓					
Producer statements as listed below:					
•					
•					
•					
•					
Consultant reports as listed below:					
•					
•					
•					
FPIS certificate					
All inspections recorded					
All inspection requests addressed					
All amendments approved and completed					
Compliance Schedule prepared					

Signed		**Date:**

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COVER SHEET

Application No: **BC08/106288** Date Received: 26/11/2008
Related: Application No: **PIM08/106278**

Morgan Joseph HERLIHY, Crichton Hanley PARKER
8 Joshua Place
BELL BLOCK 4601

LOT 34 DP 374057
Assessment: 11662/974.66 Property ID: 103970

Residential/Farm - three bedroom dwelling with attached garage

ENVIRONMENTAL HEALTH		Not Approved	Approved
	Info pack	Date:	Date:

DEVELOPMENT ENGINEER		Not Finished	Finished
	Memorandum of Encumbrance		
	SOM (~~no~~ inspection)		
	SOM Release		
	Development Contribution	Date:	Date: 2/12/08

PLANNING		Not Approved	Approved
	RMA Certificate		
	RC Granted	Date:	Date: 10.12.08

PIM CO-ORDINATOR	Inputted	Issued
	Date: 27.11.08	Date: 10.12.08

Project Information Memorandum

Only include information relevant to this project – complete prior to processing

PIM Details	Data checked & inputted
PIM Co-ordinator:	✓
High	Nate
See Property File 096172 for consent notices	Nate
and engineering reports etc.	
Land subdivided - File 42048	
No Land Use	OK
No Heritage	✓ OK.
Development Engineer:	
Environmental Health:	
Planning:	

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FORM
Application Cover Page
(Required with all other forms)

1. Property details

1a. Site Address
(Specify unit / level number, location of building within site / block number, building name and street name)
: 8 Joshua Pl
Bell Block

1b. Current lawfully established use
:

1c. Legal Description
: Lot 36 DP374057.

1d. Rapid Number
:

2. Property owner details

2a. Name
: Morgan Herlihy & Crichton Parker

2b. Contact person
(If owner is a corporation, partnership or trust)
:

2c. Postal address
: 15 Gotonia Pl Bell Block

2d. Contact details
: (06) 7552524 Phone | 027 470 3654 Mobile | ( ) Fax

2e. Email
:

3. Description of project

3a. Detailed description of the development/ project
: Residential Dwelling

3b. Will business activities take place when building is completed?
: ○ Yes ⊘ No

Liardet Street, Private Bag 2025, New Plymouth 4620, NZ. Telephone (06) 759 6060, Facsimile (06) 759 6072, Email enquiries@npdc.govt.nz, Website www.newplymouthnz.com

4. Council applications for this project

OFFICE USE

	Application attached	Have applied already (Write application no. if known)	Information provided
a. Common applications			
Project Information Memorandum (PIM)	✓		○
Building consent	✓		○
Vehicle crossing	○		○
Encroachment licence	○		○
Land use resource consent	○		○
Subdivision resource consent	○		○
Sewer connection/disconnection	○		○
Stormwater connection/disconnection	○		○
Water connection/disconnection	○		○
b. Non-residential applications			
Discharge of trade waste consent	○		○
Liquor licence	○		○
Food premise licence	○		○
Health act licence *(Hairdressing, Camping ground, Funeral parlour, Offensive trade)*	○		○
c. Other project authorisations			
Fencing of swimming pools registration	○		○
Building over council reticulation	○		○
Craneage permit	○		○
d. Other project requirements			
Rapid number	○		○
Parking hood rental	○		○
Refuse Collection	○		○
Existing street damage declaration	○		○

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11

1039978

NEW BUILDING WORK

BUILDING INSPECTION CHECKLIST

Type = Residential Final

Building Code Compliance

Read today	/	Property Details	8c Joshua Pl Bell Block		Consent Number	106288
Customer	Morgan Herlihy	Phone Number	274170368	Name of person on site	Morgan	

Inspection Details			
Call Details	Final (257008)	***PREVIOUS OUTSTANDING ITEMS***	**Pass**

Item		Comments	Status
38.	Woodfire as per specifications		N/A
39.			????
40.	**CEILING SPACE**		
41.	Access to roof space		Pass
42.	Ceiling insulation		Pass
43.	Insulation clear of downlights	All fixtures batten-mounted.	N/A
44.	Fan ducting to exterior		Pass
45.	Solid nogging behind apron flashings		Pass
46.	Roof underlay		Pass
47.			????
48.			????
49.			????
50.	**DOCUMENTATION**		
51.	Application for CCC form provided & correctly filled in	Blank copy left with Morgan to complete & forward to NPDC at earliest opportunity.	Required
52.	Electrical Certificate		Required
53.	Gas Certificate		N/A
54.	Producer Statements/Warranties required		N/A
55.	Consultant Reports		N/A
56.	As-Built Drainage Plan in File		Pass
57.	All inspections recorded		Pass
58.	All Inspection requests addressed		Pass
59.	All amendments approved & completed		Pass
60.			????
61.			????
62.			????
63.	Any Variations to the approved plans and documents?	???? .	No

Comments / Photos			
FINAL OUTCOME:	**CCC will be issued when above info is received**	Next likely Inspection:	????
Inspection Date & Time: Thursday, 30 September 2010 10:05 AM		Inspection took	50 Mins

Inspection Performed by:
Chris Barrett

Signature:

Sign

Clear

Save As

CAB

NEW PLYMOUTH DISTRICT COUNCIL
newplymouthnz.com

NEW BUILDING WORK

BUILDING INSPECTION CHECKLIST

Type = Residential Final

Building Code Compliance

Read today		/	Property Details	8c Joshua Pl Bell Block		Consent Number	106288
Customer	Morgan Herlihy		Phone Number	274170368	Name of person on site	Morgan	
Inspection Details							
Call Details	Final (257008)		**PREVIOUS OUTSTANDING ITEMS**				**Pass**

Item		Comments	Status
1.	Is the latest approved consent plan, including any approved amended plans, on site and used as the basis for construction?		YES
2.	**EXTERNAL**		
3.	Roof/Wall cladding and flashings	Silicone bead required to short flashing junction above entry.Pointed out to Morgan & verbally assured it will be completed.	Pass
4.	External moisture requirements		Pass
5.	FFL to surrounding ground clearances		Pass
6.	Surface water runoff		Pass
7.	Gully dish heights (no <150mm below lowest fixture outlet)	ORG hose-tap charged as required.	Pass
8.	Waste pipes sealed through gully dishes/foundation		Pass
9.	Downpipes connected to spouting/house/soak hole		Pass
10.	Downpipe spreaders		N/A
11.	Overflow relief to enclosed deck/gutters		N/A
12.	Wall cavity ventilation		Pass
13.	Exposed fixings		Pass
14.	Decks/barriers		Pass
15.	Sub-floor fixings, bracing, ventilation & insulation	All fixings & H4 painted base-boards as required.	Pass
16.	Terminal vent size and location		Pass
17.	Shallow drains protected		N/A
18.	Beam/post fixings		Pass
19.	Penetrations/fixtures weathertight, insulated		Pass
20.	Venting of top of brick cavity		N/A
21.	**INTERNAL**		
22.	Floor & wall coverings		Pass
23.	Waste water fixture traps		Pass
24.	Air admittance valves		Pass
25.	Shower liners sealed against walls	Water-seal tested with no visable leakage.	Pass
26.	Venting of internal moisture to outside		Pass
27.	Vanities sealed against walls		Pass
28.	Impervious wall lining, sealant around bath	Tiled	Pass
29.	Toilet pan fixed to floor	Silicone-sealed to tile flooring.	Pass
30.	Water temp	<55 degrees C	Pass
31.	HWC, restraint, valves, hot pipe insulation within 2.0m	HWC overflow discharge copper pipe connected to soakhole.	Pass
32.	Safety glass, showers/bathrooms and windows		Pass
33.	Stair tread, rise & graspable handrail		N/A
34.	Stair/landing barrier		N/A
35.	Supatub secured to wall		Pass
36.	100mm restrictors (upper level windows <760mm above FFL)		N/A
37.	Smoke detectors	Installed as required within 3m of bedrooms.	Pass

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NEW BUILDING WORK

BUILDING INSPECTION CHECKLIST

Type = Drainage

(Including on-site disposal)

Building Code Compliance

Date	28/7/10	Property details	8 Joshua Place, BBK
Customer	Ross Johnston	Consent number	106288
Phone No.	02175 8641	Name of person on site	Ross

Inspection Details	Main drain inspection		
Call Details	DRAINAGE	Deferred items completed from prior inspections	N/A

	Item	Comments	Status
1	Is the latest approved consent plan, including any approved amended plans, on site and used as the basis for construction?	Yes	Pass
2	Pipe material	DN100 uPVC	Pass
3	Drain depth	Meets min. depth required	Pass
4	Bedding of drain	Well bedded, firm under foot	Pass
5	Gradient	Meets min. grade required	Pass
6	Water test	Checked & holding	Pass
7	Septic tank/effluent disposal as per design	—	—
8	Connection to main	Connected with inspection point	Pass
9	Gully traps	ORG's fitted. Hose tap to be installed over lower gully 30-9-10.	Pass/CAB
10	As-built provided, with road frontage or north point indicated	Provided	Pass
11	Existing septic tank removed/or filled with approved fill	—	—
12	Overall as per plans and documents		PASS

Comments / Photos	Vent & hose tap over gully to be completed once base boards fitted to dwelling.		
FINAL OUTCOME:	APPROVED TO BACKFILL	Next likely Inspection:	FINAL
Inspection date and time:	26/7/10 3.00pm	Inspection took:	20 mins
Inspection performed by:	J. Farquhar	Signature	

JAGO PRINT & GRAPHICS 72728

9/1-

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newplymouthnz.com

NEW BUILDING WORK

BUILDING INSPECTION CHECKLIST

Type = Post-Line
(Brace Elements)
Building Code Compliance

Read today	/	Property Details	8 Joshua Place Bb			Consent Number	106288
Customer	Morgan Herlihy		Phone Number	27417036 8	Name of person on site		

Inspection Details	**Postline**		
Call Details	Postline inspection (248999)	***PREVIOUS OUTSTANDING ITEMS***	**????**

Item		Comments	Status
1.	Is the latest approved consent plan, including any approved amended plans, on site and used as the basis for construction?		**YES**
2.	Correct linings for system used	????	**Pass**
3.	Correct fastener type & spacing for system used		**Pass**
4.	Any opening larger than 90x 90mm is positioned in the middle third of the element both vertically and horizontally, Small openings (e.g. power outlets) of 90 x 90mm or less may be placed no closer than 90mm to the edge of the braced element.		**Pass**
5.	Brace Sheet lay-out		**Pass**
6.	Firewall fixings		**Pass**
7.	Perimeter of the diaphragm is fixed to a single continuous member along each edge		**Pass**
8.	Control joints		**Pass**
9.			**N/A**
10.			**????**
11.	Any Variations to the approved plans and documents?	???? .	**No**

Comments / Photos

Bracing element in the firewallE1 to complete.
elements N2,P1,yet to be screwed off builder aware and will complete. ok to downscale to GS1 0/S. on kitchen.
Elements in the bathroom have been changed to oposing walls. accepted.

FINAL OUTCOME:	**Approved to continue subject to above**	Next likely Inspection:	Drainage (including on-site disposal)
Inspection date & Time: Friday, 2 July 2010 1:41 PM		Inspection took:	25 Mins

Inspection Performed by:
Craig White

Signature:

Sign

Clear

Save As

N2, P1 completed 7-7-10.

Note. Checked Brace P1 (GS2) - ok to downscale to GS1 - (Excess of 250 BU in this direction from calcs. - Dan.

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NEW BUILDING WORK

BUILDING INSPECTION CHECKLIST

Building Code Compliance

8/946051

Read today		Property Details	8 Joshua Place, BBK	Consent Number	106288
Customer	Josh Herlihy	Phone Number	027 410 3340	Name of person on site	JOSH

Inspection Details	**PRELINE RECHECK**		
Call Details	Preline Inspection (240954)	***PREVIOUS OUTSTANDING ITEMS***	**Pass**
Comments / Photos			

R2.6 ULTRA INSULATION INSTALLED TO ALL WALLS AND GARAGE DIVID WALL PLUS R3.6 TI CEILINGS .
25mm AIR GAP PROVIDED BETWEEN BATTS AND UNDER SIDE OF ROOF.
FOAM AIR SEALS COMPLETED AROUND OPENINGS.
STEEL RHONDO BATTENS SET AT 600 CENTRES APART.

80mm TERMINAL VENT TO COMPLETE PLUS DRAINAGE IN GROUND TO BOUNDARY CONNECTION - DRAINAGE INSPECTION REQUIRED.
COMPLETE BOTTOM PLATE SECURING TO FLOOR THEN APPROVED TO LINE INTERNAL WALLS ALSO.
FIRE SHOT WITH DISC THROUGH STEEL FRAME BOTTOM PLATES AT 600 CENTRES TO INTERNAL WALLS WHERE UNCOMPLETED.

FINAL OUTCOME:	**Approved to continue subject to above**	Next likely Inspection:	Post-Line(brace elements)
Inspection Date & Time: Friday, 9 April 2010 2:46 PM		Inspection took:	35 Mins

Inspection Performed by: **Chris Martul**

Signature:

Sign

Clear

Save As

Liardet Street, Private Bag 2025, New Plymouth 4620, NZ, Telephone (06) 759 6060, Facsimile (06) 759 6072, Email enquiries@npdc.govt.nz, Website www.newplymouth.com

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NEW BUILDING WORK

BUILDING INSPECTION CHECKLIST
Type = Pre-Line
(Plumbing / Frame / Insulation)
Building Code Compliance

89 0523

Read today	/	Property Details	8 Joshua Place Bbk	Consent Number	106288
Customer	Ross	Phone Number	21758641	Name of person on site	ROSS
Inspection Details	**PLUMBING & PRELINE INSULATION**				
Call Details	Plumbing and preline (231697)				

Item		Comments	Status
		PREVIOUS OUTSTANDING ITEMS	**Not req**
1.	Is the latest approved consent plan, including any approved amended plans, on site and used as a basis for construction?	Consent Plans are on site	YES
2.	Water supply pipe on test	PRESSURE TEST HOLDING JUST OVER 200 PSI	Pass
3.	Secured as required by type used	K2 PIPE FIT OUT - SECURED THROUGH GROMMETS IN METAL FRAMES - SADDLE CLIPPED OVER HEAD	Pass
4.	Sanitary plumbing size, falls, layout and venting	T-VENTING IN PROGRESS	Deferred
5.	Roof and cladding on		Pass
6.	Ceiling batten type, size spacing	RHONDOS AT 600 CENTRES	Pass
7.	Timber moisture content	TMC TO PART TIMBER FRAMES READING BELOW 16%	Pass
8.	Brace element location & hold-down as per specified system		Pass
9.	Fire wall framing/fixings as design		N/A
10.	Air seal around exterior wall openings	YET TO BE INSTALLED	Deferred ✓
11.	Wall junctions secure		Pass
12.	Diaphragm ceiling correct lay-out		Pass
13.	Dragon ties		N/A
14.	Stairs correct tread and rise with minimum head height		N/A
15.	Insulation type and value as per plan	PINK BATT R3.6 CEILING & ULTRA WALL ON SITE	Pass
16.	Fitted to all voids in external walls and ceiling	YET TO FIT	Deferred ✓
17.	Fitted to dividing wall between dwelling and garage	YET TO FIT	Deferred ✓
18.	25mm air gap between insulation & roof underlay	GARAGE CEILING ALREADY LINED AND AIR GAP TO CHECK AT FINAL	Deferred ✓
19.	Strapping to blockwork		N/A
20.			????
21.			????
22.			????
23.			????
24.	Overall as per plans and documents		Deferred

Comments / Photos

COMPLETE CHECKLIST ITEMS #10 - 16 & 17 AND BOOK FOR RECHECK.

FINAL OUTCOME:	**Approved to continue subject to above**	Next likely Inspection:	Re-check
Inspection Date & Time: Tuesday, 22 December 2009 10:27 AM		Inspection took:	25 Mins

Inspection Performed by:
Chris Martul

Signature:

Sign

Clear

Save As

6/ 853727

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NEW BUILDING WORK

BUILDING INSPECTION CHECKLIST

Type = Cavity Battens (Flashings) Building Code Compliance

Read today	/	Property Details	8 Joshua Place Bb		Consent Number	106288
Customer	Kevin Pilcher	Phone Number	275711890	Name of person on site	Kevin	

Inspection Details			
Call Details	Cavity battens (225562)	***PREVIOUS OUTSTANDING ITEMS***	**Pass**
Item		**Comments**	**Status**
1.	Is the latest approved consent plan, including any approved amended plans, on site and used as a basis for construction?		YES
2.	Batten lay-out & treatment		Pass
3.	Batten fixings		Pass
4.	Cavity closure	PVC vent/vermin strip	Pass
5.	Wrap Secure with Penetrations dressed	Accoustic buffer in place	Pass
6.	Window & Meter Box flashings		Pass
7.	Flexible flashing tape		Pass
8.	Intermediate restraint to wrap if battens >450mm crs		Pass
9.	Control joints		N/A
10.			????
11.			????
12.			????
13.			????
14.			????
15.			????
16.			????
17.	Producer Statements required		????
18.	Overall as per plans and documents		Pass

Comments / Photos

FINAL OUTCOME:	**Approved to continue**	Next likely Inspection:	Pre-line (plumbing)
Inspection Date & Time: Last Print Date & Time: Thursday, 15 October 2009 11:50 AM		Inspection took:	25 Mins

Inspection Performed by: **Chris Barrett**

Signature:

Sign

Clear

Save As

C+B

(5)

NEW PLYMOUTH DISTRICT COUNCIL
newplymouthnz.com

8436-38

NEW BUILDING WORK

BUILDING INSPECTION CHECKLIST

Type = Pre-Wrap (Framing/Fixings)

Building Code Compliance

Read today	/	Property Details	8 Joshua Place, Bbk	Consent Number	106288
Customer	Robert Joyce	Phone Number	027 286 2877	Name of person on site	KEVEN
Inspection Details	**PREWRAP FRAMING & FIXINGS TO WALLS ONLY**				
Call Details	Prewrap Inspection (223507)				

Item		PREVIOUS OUTSTANDING ITEMS Comments	Deferred Status
1.	Is the latest approved consent plan, including any approved amended plans, on site and used as the basis for construction?	Consent Plans are on site	YES
2.	Uplift fixings		Pass
3.	Floor plan lay-out		Pass
4.	Timber grading and treatment	H3.1 MSG8 & STEEL FRAME CONSTRUCTION	Pass
5.	Bottom plate anchors		Pass
6.	Brace element location & hold-down as per specified system	SOME B-PLATE HOLD DOWNS TO FINISH 15-10-09	Deferred CKS
7.	Lintels and beams		Pass
8.	Truss fabricators lay-out and fixing detail on site		Pass
9.	Trusses and fixings as above		Pass
10.	Purlin type, size, spacing, fixing	CPC40 CLEATS AT 1.8 CENTRES TO FIT OVER STEEL ROOF FRAMING 15-10-09	Deferred CKS
11.	Frame over foundation (6mm)		Pass
12.	Floor slab cuts as per plan		Pass
13.	Roof bracing		Pass
14.	Dragon Ties		N/A
15.	Flooring laid and fixed as per spec	20mm H3 PLY SHEETING OVER MASTER BED & ENSUITE AREAS	Pass
16.	Sill trimmers		Pass
17.	Trimmer studs	DOUBLE STUDDED	Pass
18.	Blocking under top plates (single plate)	DOUBLE PLATED	N/A
19.	100mm step down to enclosed deck	YET TO CONSTRUCT	Deferred
20.	Enclosed deck/balustrade timber treatment		Deferred
21.	Nogs to suit cladding	FIT NOGGS UNDER WINDOW IN GARAGE	Pass
22.	Solid nogging behind apron flashings		N/A
23.	Fasica/spouting clear of frame and cladding	TO CUT BACK ABOVE ENTRANCE	Deferred
24.	Firewall framing/fixings as design		N/A
25.	Gutter & enclosed roof timber treatment	H3.1 TREATMENT	Pass
26.	Specific design fixings		Pass
27.			????
28.			????
29.			????
30.			????
31.			????
32.			????
33.	Overall as per plans and documents		Pass

Comments / Photos

COMPLETE THE ABOVE DEFERRED CHECK ITEMS AS NOTED.

FINAL OUTCOME:	**Approved to continue subject to above**	Next likely Inspection:	Pre-line (plumbing)

NEW PLYMOUTH DISTRICT COUNCIL
newplymouthnz.com

NEW BUILDING WORK

BUILDING INSPECTION CHECKLIST

Type = Pre-Wrap (Framing/Fixings)

Building Code Compliance

Read today	/	Property Details	8 Joshua Place, Bbk		Consent Number	106288
Customer	Robert Joyce	Phone Number	027 286 2877	Name of person on site	KEVEN	
Inspection Details	PREWRAP FRAMING & FIXINGS TO WALLS ONLY					
Call Details	Prewrap Inspection (223507)	PREVIOUS OUTSTANDING ITEMS				Deferred
Item		Comments				Status
Inspection Date & Time: Last Print Date & Time: Wednesday, 23 September 2009 11:17 AM		Inspection took:	55 Mins			

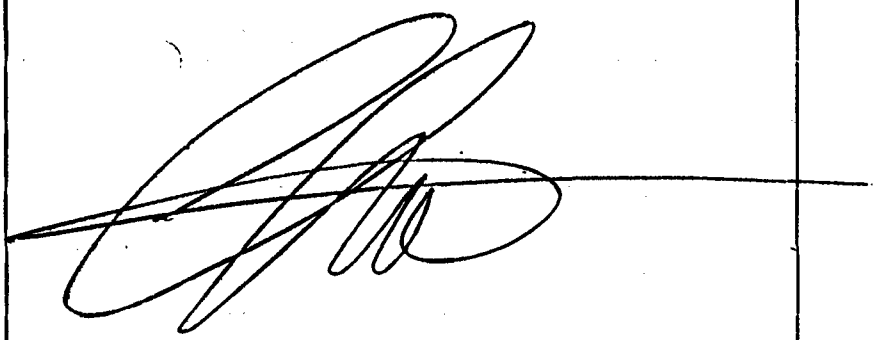
Inspection Performed by:
Chris Martul

Signature:

Sign

Clear

Save As



New Plymouth District Council

NPDC Inspection Notice - Pursuant to Building Act 2004

CUSTOMER FIRST
delivering sensational service

Call No: 223069

Customer: JOYCE, ROBERT (9)

Location: 8C Joshua Place

Time Logged: 9/14/2009 3:23:55PM

Building Consent: 106288 Joshua Place

Telephone: 0272862877

Authorised Officer: [signature] **Date:** 17/9/2009 **Time:** 9am – 10am

Description: Preroof insp ; Thurs AM (early as possible)

Robert Joyce On Site

Pre - Roof Framing Inspection.

(1) Connection Of Portions To Steel Rafters. (Builder Concerned @ Adequate Uplift With Single Screw),

* Builder To Double Done Screw Using Clamp To Better Holding While Screwing Off. ✓ Also Some "CPC 40 Type" To Fit @ 1.8m. c/c.

(2) LVL Roof Portions To Have CT Tigs some to finish To LVL Connections

Note - Diaphram Ceiling Batten To Garage Treated To H3.1 As Part Of Structure (B2/AS1).

Go Ahead & Call For Pre - Wrap Next.

Call Ticket Wednesday, 16 September, 2009 Foot, Anne

NPDC Phone No 06 7596060

Fax No. - 06 7596072

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newplymouthnz.com

NEW BUILDING WORK

BUILDING INSPECTION CHECKLIST

Type = Concrete Slab

Building Code Compliance

81/0684

Read today	/	Property Details	8c Joshua Pl Bell Block			Consent Number	106288
Customer	Rob Joyce		Phone Number	272862877	Name of person on site	ROB	
Inspection Details	**PREPOUR FLOOR SLAB**						
Call Details	Pre Pour (217853)				Outstanding items from prior inspections		Pass

Item		Comments	Status
1.	Is the latest approved consent plan, including any approved amended plans, on site and used as the basis for construction?	Consent Plans are on site	YES
2.	**CONCRETE SLAB**		
3.	Hardfill compaction	Firm under foot	Pass
4.	Vapour barrier	As required	Pass
5.	Floor thickness	100mm	Pass
6.	Starter bars		N/A
7.	Services sleeved/lagged	As required	Pass
8.	Mesh lapped, tied, supported	HRC665 CORRECT LAPS - TIED OFF ON 50mm BARCHAIRS	Pass
9.	Supplementary bars	As per approved plan	Pass
10.	Thickenings/pads as per plan	As per approved plan	Pass
11.	Correct brick veneer rebate (40mm-60mm)		N/A
12.	Concrete strength	20mpa	Pass
13.	Free joint over 24m		N/A
14.	As per specific design (Unispan, Hibond, Dycore, etc)		N/A
15.	Falls to Soil & Fixture Discharge Pipes	FOR AS/3500 SYSTEM	Pass
16.			????
17.			????
18.			????
19.			????
20.	Overall as per plans and documents		Pass

Comments / Photos

FINAL OUTCOME:	**Approved to place concrete**	Next likely Inspection:	Pre-wrap (framing/fixings)
Inspection Date & Time: Last Print Date & Time: Wednesday, 22 July 2009 9:26 AM		Inspection took:	15 Mins

Inspection Performed by: **Chris Martul**

Signature:

Sign

Clear

Save As

NEW PLYMOUTH DISTRICT COUNCIL
newplymouthnz.com

808634 (2)

NEW BUILDING WORK

BUILDING INSPECTION CHECKLIST

Type = Sanitary Drains (Under Slab)

Building Code Compliance

Read today	/	Property Details	8 Joshua Pl Bell Block	Consent Number	106288
Customer	Ross Johnstone	Phone Number	21758641	Name of person on site	
Inspection Details	**Underslab drainage inspection**				
Call Details	Drainage (215982)	Outstanding items from prior inspections	Not required		

Item		Comments	Status
1.	Is the latest approved consent plan, including any approved amended plans, on site and used as a basis for construction?	Consent Plans are on site	YES
2.	Pipe Sizes	DN100 uPVC	Pass
3.	Gradient	Exceeds min. grade required	Pass
4.	Water seal test	Checked and holding	Pass
5.	Flow test		Pass
6.	Bedding	Well bedded in clay soil, firm underfoot	Pass
7.			????
8.			????
9.			????
10.			????
11.			????
12.			????
13.	Overall as per plans and documents		Pass

Comments / Photos

FINAL OUTCOME:	**Approved to backfill**	Next likely Inspection:	Foundation (in ground/concrete)
Inspection Date & Time: Last Print Date & Time: Wednesday, 1 July 2009 1:58 PM		Inspection took:	20 Mins

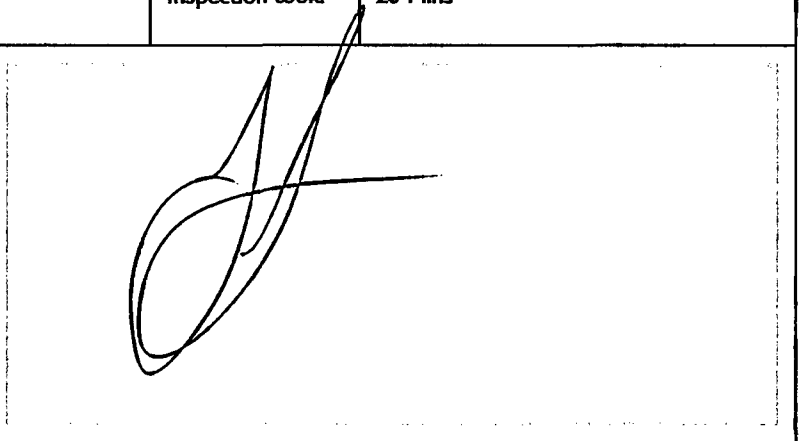
Inspection Performed by: **Jason Farquhar**

Signature:

Sign

Clear

Save As



NEW PLYMOUTH DISTRICT COUNCIL
newplymouthnz.com

792541

NEW BUILDING WORK

BUILDING INSPECTION CHECKLIST
Type = Foundation
(In ground = concrete)
Building Code Compliance

Read today	/	Property Details	8 Joshua Pl Bell Block			Consent Number	106288
Customer	Bob Joyce			Phone Number	272862877	Name of person on site	Nobody, Outcome Texted To Bob
Inspection Details	**Siting & Foundation part TSE design**						
Call Details	(214332)					Outstanding items from prior inspections	

Item		Comments	Status
1.	Is the latest approved consent plan, including any approved amended plans, on site and used as the basis for construction?		YES
2.	**SITING AND SITE EXCAVATION**		
3.	Site boundaries		Pass
4.	Building size/location as per plan		Pass
5.	Contour of site and Ground Lines as per plan		Pass
6.	Floor height		Pass
7.	Top soil removed		Deferred
8.	Surface water runoff		Pass
9.	**FOUNDATION**		
10.	Footing size and depth (300mm into good ground)		Pass
11.	Horizontal base		Pass
12.	Firm bearing achieved		Pass
13.	Reinforcing steel : Size, type and spacing		Pass
14.	Reinforcing steel : Cover and support		Pass
15.	Vertical starter bar length correct		Pass
16.	Concrete strength	20mpa	Pass
17.	Structural engineers report required	*Will be required for Grade B blockwork* Arranged Received - TSE	Deferred ✓
18.	As per specific design		Pass
19.			????
20.			????
21.	Overall as per plans and documents		Pass

Comments / Photos

FINAL OUTCOME:	**Approved to place concrete**	Next likely Inspection:	Foundation Wall (In-situ/concrete block/timber)
Inspection Date & Time: Last Print Date & Time: Wednesday, 10 June 2009 10:42 AM		Inspection took:	20 Mins

Inspection Performed by:
Karl Steer

Signature:

Sign

Clear

Save As

NEW PLYMOUTH DISTRICT COUNCIL
newplymouthnz.com

Code Compliance Certificate

Form 7, Section 95, Building Act 2004

The Building

Street Address of building: 8 Joshua Place BELL BLOCK 4312
Legal Description of land where building is located: Lot 2 DP 415439
Current, lawfully established use: Dwelling
Year first constructed: 2008

The Owner

Name of owner: Morgan Joseph HERLIHY, Crichton Hanley PARKER
Phone number:(Pvt.) 027 417 0368
Contact Person: Morgan Joseph HERLIHY
Mailing Address: 521 Carrington Road
NEW PLYMOUTH

Building Work

Building Consent number:	**BC08/106288**
Description of work:	**Three bedroom dwelling with attached garage**
Issued by:	New Plymouth District Council

Code Compliance

The building consent authority named below is satisfied, on reasonable grounds, that –
(a) the building work complies with the building consent.

This is a final code compliance certificate issued in respect of all of the building work under the above building consent.

CODE COMPLIANCE CERTIFICATE

Team Leader Inspectorate

Date Issued: 21 October 2010

NEW PLYMOUTH DISTRICT COUNCIL
newplymouthnz.com

FORM
Application for Code Compliance Certificate
Form 6, Section 92, Building Act 2004

1. The building consent

1a. Building consent no. 062566

Site address 5C Joshua Pl Bell Block New Plymouth

1b. Issued by
- ○ New Plymouth District Council
- ○ Other - please specify

2. Property owner details

2a. Owner details
- ✓ Have not changed since the building consent was lodged — Proceed to section 3
- ○ Have changed since the building consent was lodged — Complete 2b and 2c

2b. Name

Contact person (If owner is a corporation, partnership or trust)

Postal address

Contact numbers — Phone ( ) Mobile ( ) Fax ( )

Email

2c. Evidence of ownership attached (Only required if ownership has changed)
- ○ Certificate of title (copy)
- ○ Sale and purchase agreement
- ○ Lease agreement
- ○ Other document showing full name of legal owner(s), such as a rate instalment notice

3. Applicant details

3a. I am the
- ✓ Property owner — Proceed to 3b
- ○ Lessee — Provide details below
- ○ Agent — Authorised by owner/lessee, Provide details below

Name Morgan Harling

Postal address 521 Carrington RD New Plymouth

Contact numbers — Phone ( ) Mobile 0274170368 Fax ( )

Email

3b. Preferred means for formal correspondence
- ✓ Mail
- ○ Email
- ○ Fax

14 OCT 2010
New Plymouth District Council

Please turn over

OFFICE USE ONLY

Date received | File Ref RG-02-10-03 | Application # BC /

Received by | Document #

Property ID | Land ID

Liardet Street, Private Bag 2025, New Plymouth 4342, NZ. Telephone 06-759 6060, Fax 06-759 6072, Email enquiries@npdc.govt.nz, Website www.newplymouthnz.com

4. Attachments

The following documents are attached to this application:

- ◯ Certificates from the personnel who carried out the work.
- ✓ Certificates that relate to the energy work.
- ◯ Evidence that specified systems are capable of performing to the performance standards set out in the building consent.

5. Key personnel

Designer	Name/registration no.	Shirley Thompson
	Contact details Address	45c Waikee Pl
	Phone/email	06758 9987
Builder	Name/registration no.	Rob Joyce
	Contact details Address	Mountain RD RD3
	Phone/email	027 268 2577
Drainlayer	Name/registration no.	Ross Johnston Plumbing 1755
	Contact details Address	
	Phone/email	0211758641
Plumber	Name/registration no.	Ross Johnston Plumbing 1755
	Contact details Address	
	Phone/email	0211758641
Gasfitter	Name/registration no.	
	Contact details Address	
	Phone/email	( )
Electrician	Name/registration no.	Callum Story
	Contact details Address	5 Burgess Hill New Plymouth
	Phone/email	027 563 1213
Other	Name/registration no.	
	Contact details Address	
	Phone/email	( )

6. Application

6a. Date building work completed: 30-9-10

6b. The following specified systems are contained on the compliance schedule for the building and, in the opinion of the personnel who installed them, are capable of performing to the performance standards set out in the building consent:

6c. I request that you issue a code compliance certificate for the work under section 95 of the Building Act 2004. I understand that the code compliance certificate will be sent to the property owner.

M S Kelly — Signature

12/10/10 — Date

Morgan Kelly — Name (print clearly)

NEW PLYMOUTH DISTRICT COUNCIL
newplymouthnz.com

Project File Checklist

Building Consent No: BC 106238

1. Pre-CCC Audit Checklist

This is a checklist for ensuring that building consents are ready for issue of code compliance certificate subject to payment of fees and charges. This form is to be completed by an authorised NPDC Officer. After completion, the project file is now passed to Building Administration for fees check and CCC issue.

	Reviewed	Not Applicable
Application for CCC	☑	☐
Energy Certificates - Gas	☐	☑
- Electrical	☑	☐
As-built drainage plan	☑	☐
Producer statements – list below TSE - Blockwork	☑	☑
	☐	☑
	☐	☑
Fire services inspection certificate	☐	☑
Consultant report – list below	☐	☑
All inspections recorded	☑	☐
All inspection requests addressed	☑	☐
All amendments approved and completed	☐	☐
All building consent conditions met	☐	☐

Comments ☐ Please turn over.

Name: D Baker Signature: D Baker Date: 18.10.10

2. Building Consent Application Document Checklist

This checklist is for recording the documents handed over to Administration Services Team in compliance with s16.2, Building Regulations and s238, Building Act 2004.

	Attached	Not Applicable
Building Consent Application Form	☑	☐
PIM copy	☑	☐
Building Consent copy	☑	☐
RMA Certificate copy	☐	☑
CCC Audit Checklist and contents	☑	☐
Code Compliance Certificate copy	☐	☐
Inspection Checklist Hotchkists	☑	☐
Plans - Specification	☑	☐
- Calculation	☑	☐
- Superseded plans	☐	☑
Correspondence - Letters	☑	☐
- Invoice	☑	☐
- Others	☑	☐
Certificate for Public Use	☐	☑
Waiver Certificate	☐	☑

Name: Margiela Signature: Date: 20/10/10

Liardet St, Private Bag 2025, New Plymouth 4342, NZ. Telephone 06- 759 6060, Fax 06- 759 6072, Email enquiries@npdc.govt.nz, Website www.newplymouthnz.com

NEW PLYMOUTH DISTRICT COUNCIL

newplymouthnz.com

When replying please quote: BC08/106288 - Document Number: 783080
Property ID: 103970

18 May 2009

EMAILED 12:15 - 18 MAY 2009.

Morgan Herlihy
15 Antonia Place
Bell Block
NEW PLYMOUTH

Cc: Shirley Thomson – shirleythomson@xtra.co.nz

Dear Morgan,

New dwelling – 8 Joshua Place, Bell Block

Thank you for your Building Consent amendment. Unfortunately we are unable to approve the amendment at this time and the following information is to be provided to Council so we can complete the plan check.

BUILDING:

OK — 1. The amendment supplied quotes 'Grade B' masonry block work, therefore an inspection is required to be undertaken by a suitably qualified engineer prior to filling the block cells. Provide conformation of who will be inspecting the block work and ensure that their inspection report is forwarded to Council prior to booking the Council foundation inspection.

Please submit 2 copies of your amendments at the Customer Support counter, post to the council or if appropriate fax to (06) 7596072. If you have any queries regarding these matters please contact the Building Consents Officer below on (06) 759 6060.

To avoid any further delays we would appreciate the requested information being provided within 20 working days from the date of this letter.

Yours faithfully

John Hudson
Building Consents Officer

HUDSON, John

From: Shirley Thomson [b.s.thomson@xtra.co.nz]
Sent: Monday, 18 May 2009 3:28 p.m.
To: HUDSON, John
Cc: Bruce Walker; morgan68@xtra.co.nz
Subject: Re: New dwelling - 8 Joshua Place, Bell Block

John

Inspections of the blockwork will be made by TSE Engineers & Associates Ltd and a copy of the inspection report will be forwarded to the Council prior to booking the foundation inspection.

Regards

Shirley

Shirley Thomson Design Ltd
45a Wallace Place
New Plymouth

—— Original Message ——
From: HUDSON, John
To: shirleythomson@xtra.co.nz
Sent: Monday, May 18, 2009 12:15 PM
Subject: New dwelling - 8 Joshua Place, Bell Block

For your information,

NEW PLYMOUTH DISTRICT COUNCIL
newplymouthnz.com

When replying please quote: BC08/106288 - Document Number: 783080
Property ID: 103970

18 May 2009

Morgan Herlihy
15 Antonia Place
Bell Block
NEW PLYMOUTH

Cc: Shirley Thomson – shirleythomson@xtra.co.nz

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To avoid any further delays we would appreciate the requested information being provided within 20 working days from the date of this letter.

Yours faithfully

John Hudson
Building Consents Officer

NEW PLYMOUTH DISTRICT COUNCIL
newplymouthnz.com

Document Number: 723693
Property ID: 103970

23 December 2008

TRAC: PLUNKET POST.

Morgan Herlihy
15 Antonia Place
Bell Block
NEW PLYMOUTH

Dear Morgan,

New dwelling – 8 Joshua Place, Bell Block

Thank you for your Building Consent application. Unfortunately we are unable to approve your project at this time and the following information is to be provided to Council so we can complete the plan check.

BUILDING:

1. Demonstrate how the sub-floor below the master bed/ensuite is to be constructed to provide bracing along bracing lines A, B and C. OK
2. Sub-floor ventilation needs to be detailed on the drawings. OK
3. Nominate flooring material to the timber framed floor. OK

   Note: partical board requires a minimum 550mm clearance from ground as per the manufacturer's specification and this will need to be verified if this product is used. OK
4. Mid-span blocking is required to the 190x45 joists. OK
5. Supply the design IT verification and producer statement for the LVL members.
6. ~~Lintel fixing details to resist uplift are required for the NZS 3604 designed walls.~~ N/A DRAWING 103. OK
7. Amend the width of the internal gutter (drawing 402) to comply with NZBC E2 (300mm?). OK
8. Detail how the internal gutter discharges into the downpipe and supply overflow relief to the internal gutter. OK
9. Verify that the glazing will be to the appropriate standard (NZS 4223) to ensure that human impact requirements have been attended to. OK.
10. Verify what plumbing standard the plumbing has been designed to (NZBC G13 or AS/NZS 3500.2). OK
11. Supply the layout of the drains (gullies/WCs to connection). OK
12. Amend the location of the gully (with kitchen sink discharging into it) to a location where any surchage will be noticeable. OK
13. Amend the insulation on drawing 201 and sheets 6 & 7 (N Z building supplies limited) to comply with NZBC Clause H1 and Zog® steel framing specification. OK
14. Nominate insulation to the timber framed floor. OK

Please submit 2 copies of your amendments at the Customer Support counter, post to the council or if appropriate fax to (06) 7596072. If you have any queries regarding these matters please contact the Building Consents Officer below on (06) 759 6060.

To avoid any further delays we would appreciate the requested information being provided within 20 working days from the date of this letter.

Yours faithfully

John Hudson
Building Consents Officer

Application No: BC08/106288

148 POWDERHAM STREET
P O BOX 237
NEW PLYMOUTH
NEW ZEALAND

TEL: 06 758 8390
FAX: 06 757 9404
email: tse@tsetaranaki.co.nz

FAXED

Tse

Tse Taranaki & Associates Limited

STRUCTURAL & CIVIL ENGINEERS
PROJECT MANAGERS

FACSIMILE COVER SHEET

TO: MR JOHN HUDSON/DON BAKER. DATE: 20/10/10.

FIRM: NPDC.

FROM: FRANK KORSIAKE FAX NO: NPDC

No. of pages 1 + 1. JOB NO: 3951/154.
(Including cover sheet)

SUBJECT: BC08/106288 HERLIHY B JOSHUA
BELLBLOCK.

FORTHER TO YOUR EMAIL DATED MAY 18, 2009 WE CONFIRM THAT MR PAUL STANLEY FROM OUR OFFICE INSPECTED THE GRADE 'B' BLOCK MASONARY WALLS DETAILED ON TSE TARANAKI AND ASSOCIATES LTD DRAWING S1-01 ISSUE A JOB NO 3951-154.

WE VISITED THE SITE 30 JUNE, 3 JULY 10 JULY 2009 AND INSPECTED BLOCKWORK.

REGARDS. FRANK KORSIAKE.

Tsé

PRODUCER STATEMENT - CONSTRUCTION REVIEW

3951/154

ISSUED BY: **FRANK DAVID KERSLAKE**

TO: **M HERLIHY**

TO BE SUPPLIED TO: **NEW PLYMOUTH DISTRICT COUNCIL**

IN RESPECT OF: **NEW RESIDENCE**

AT: **8 JOSHUA PLACE, NEW PLYMOUTH**

LOT 34 DP 374057

Tse Taranaki & Associates Limited has been engaged by **Shirley Thomson Design Limited** to provide **Structural Observation** services in respect of the requirements of Clause(s) **B1** of the Building Regulations 1992 for the building work described by the drawings and specifications prepared by **Tse Taranaki & Associates Limited** titled **M Herilhy Residence 8 Joshua Place, Bell Block, New Plymouth** and numbered **3951/154** Sheets **S1-01** As an independent design professional covered by a current policy of Professional Indemnity Insurance to a minimum value of $500,000, I or personnel under my control have carried out periodic reviews of the work appropriate to the engagement and based upon these reviews and information supplied by the contractor during the course of the works I **BELIEVE ON REASONABLE GROUNDS** that

☐ All ☒ Part only as specified (foundation Grade B Blockwork)

of the work as specified in the attached particulars of the building work under the above building consent with respect to Clause(s) **B1** of the Building Regulations 1992 has been completed to the extent required by that building consent.

Date: 20 October 2010

B.E., M.I.P.E.N.Z. Member ACENZ ☐

P O Box 237, New Plymouth IPENZ ☒ ☐ NZIA

NEW PLYMOUTH DISTRICT COUNCIL
newplymouthnz.com

When replying please quote: 1002082 - BC08/106288
Property ID: 103970

19 July 2010

Crichton Hanley PARKER & Morgan Joseph HERLIHY
15 Antonia Place
NEW PLYMOUTH 4312

Dear **Crichton and Morgan**

BUILDING WORK FOLLOWUP FOR BC08/106288 - 8 JOSHUA PLACE BELL BLOCK - NEW DWELLING

Further to your building consent application for the above project granted on 27/01/2009.

This letter is to inform you that under the Building Act 2004, two years after the building consent was issued, the council must decide whether to issue a code compliance certificate (CCC). After the two years, the council may not be able to issue a CCC.

Based on your building consent record, you have **5** months before we must make that decision.

If work is progressing and is not expected to be finished before January 2011, please contact Building Administration on 759 6060 to discuss options available to you.

If the work is completed, please contact the Council on 759 6060 to arrange a suitable time for a **final** inspection. Please complete the attached Application for Code Compliance Certificate and return to the Council.

Yours faithfully

Tracey Hoffmann
Building Administration Officer
Email: hoffmannt@npdc.govt.nz

RESIDENTIAL		PIM 106278		Name Hugs	Sign	OK.
		Zone Res A.		Page B30	Area @ 1063.	
No.	Rule	Suspend	RMA	OK	Notes	
5	Daylighting N E W S			✓ ✓		
6	Road Daylighting N E W S					
7	Max height 9m			✓		
8	Max length 30m			✓		
9	1 Building per ROW			✓		
10	Max Coverage Papakainga					
11	Max Coverage Res A 40%			✓		
12	Max Coverage Res B 50%					
13	Max Coverage Res C 35%					
14	Max Cov Front Yard A&C 35%					
15	Max Cov Front Yard B 50%					
16	Min Setback 1.5/12m 50%			✓		
17	Min Setback 22m H Voltage					
18	Financial Parking CBD					
19	Relocate					
28	Sign 120mm in less 70km					
29	Sign 160mm in greater 70km					
47	Excavation 20m3/100m2					
73	Access point			✓		
74	Parking			✓		
75	Loading & Standing					
76	Driveway			✓	Note.	
77	Manoeuvring					
78	Queuing					
79	1 Tree per 4 parks					
	Traffic Generation(ROW/Local)					
81	Total over 24 hours	30				
82	Total between 7am & 10pm	22				
83	Hourly - 7am & 10pm	8				
84	Total between 10pm & 7am	8				
85	Hourly - 10pm & 7am	6				
	Traffic Generation(St Hyw/col/l)					
86	Total over 24 hours	108				
87	Total between 7am & 10pm	100				
88	Hourly - 7am & 10pm	8				
89	Total between 10pm & 7am	16				
90	Hourly - 10pm & 7am	8				
Overlays						

Digital Title Plan - DP 374057

Survey Number	DP 374057
Surveyor Reference	03774-2b.nzt
Surveyor	John Arnold Hermann
Survey Firm	BTW Company (New Plymouth)
Surveyor Declaration	I John Arnold Hermann, being a person entitled to practise as a licensed cadastral surveyor, certify that - (a) The surveys to which this dataset relates are accurate, and were undertaken by me or under my direction in accordance with the Cadastral Survey Act 2002 and the Surveyor-General's Rules for Cadastral Survey 2002/2; (b) This dataset is accurate, and has been created in accordance with that Act and those Rules. Declared on 27/09/2006.

Survey Details

Dataset Description	Lots 1, 32-36, 38-40, 84-89 being a Subdivision of Lot 32 DP 368597		
Status	Deposited		
Land District	Taranaki	**Survey Class**	Class I Cadastral Survey
Submitted Date	27/09/2006	**Survey Approval Date**	03/10/2006
		Deposit Date	28/09/2006

Territorial Authorities

New Plymouth District

Comprised In

CT 278702

Created Parcels

Parcels	Parcel Intent	Area	CT Reference
Lot 1 Deposited Plan 374057	Fee Simple Title	4.8074 ha	298900
Lot 32 Deposited Plan 374057	Fee Simple Title	0.1192 ha	298901
Lot 33 Deposited Plan 374057	Vesting on Deposit for Recreation Reserve (Territorial Authority)	0.0412 ha	298914
Lot 34 Deposited Plan 374057	Fee Simple Title	0.1063 ha	298902
Lot 35 Deposited Plan 374057	Fee Simple Title	0.1265 ha	298903
Lot 36 Deposited Plan 374057	Fee Simple Title	0.1006 ha	298904
Lot 38 Deposited Plan 374057	Fee Simple Title	0.1052 ha	298905
Lot 39 Deposited Plan 374057	Fee Simple Title	0.1140 ha	298906
Lot 40 Deposited Plan 374057	Fee Simple Title	0.1160 ha	298907
Lot 84 Deposited Plan 374057	Fee Simple Title	0.0854 ha	298908
Lot 85 Deposited Plan 374057	Fee Simple Title	0.0979 ha	298909
Lot 86 Deposited Plan 374057	Fee Simple Title	0.0803 ha	298910
Lot 87 Deposited Plan 374057	Fee Simple Title	0.1557 ha	298911
Lot 88 Deposited Plan 374057	Fee Simple Title	0.1106 ha	298912
Lot 89 Deposited Plan 374057	Fee Simple Title	0.1060 ha	298913
Marked A Deposited Plan 374057	Easement		
Marked B Deposited Plan 374057	Easement		

Digital Title Plan - DP 374057

Created Parcels

Parcels	Parcel Intent	Area	CT Reference
Marked C Deposited Plan 374057	Easement		
Marked D Deposited Plan 374057	Easement		
Marked E Deposited Plan 374057	Easement		
Marked F Deposited Plan 374057	Easement		
Marked G Deposited Plan 374057	Easement		
Marked H Deposited Plan 374057	Easement		
Total Area		6.2723 ha	

Land Registration District	Plan Number
TARANAKI	DP 374057

Territorial Authority (the Council)

New Plymouth District

Schedule of Existing Easements in Gross

Purpose	Shown	Servient Tenement	Creating Document
Sewage	D, H, G	Lot 1	EI 6796936.7
Sewage	F	Lot 87	EI 6796936.7

Schedule of Proposed Easements in Gross

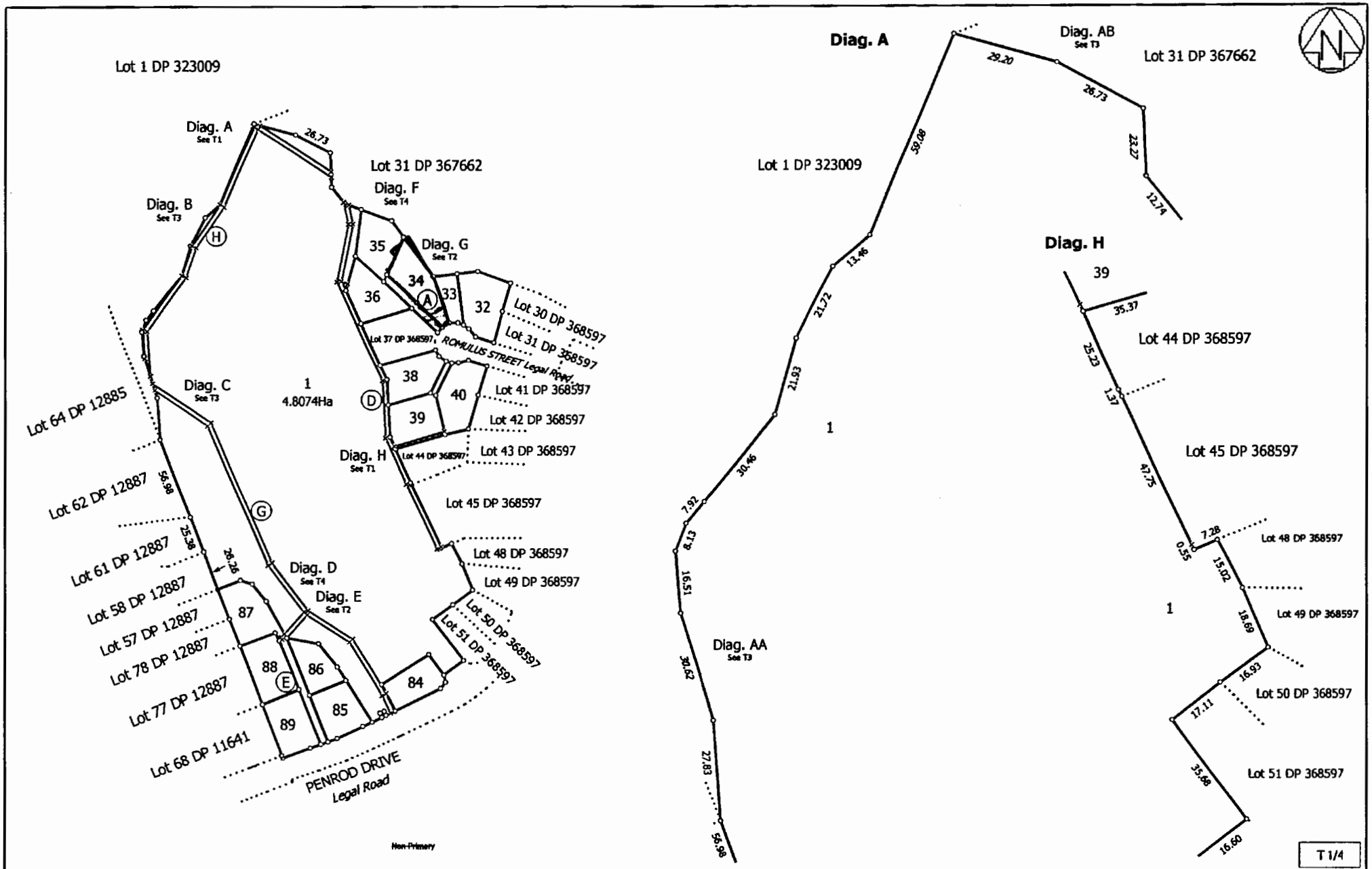
Purpose	Shown	Servient Tenement	Grantee
Telecommunications	A	Lot 35	Telecom NZ Ltd
Telecommunications	E	Lot 87	Telecom NZ Ltd
Electricity, Gas	A	Lot 35	PowerCo
Electricity, Gas	E	Lot 87	PowerCo
Water	A	Lot 35	N.P.D.C
Water	E	Lot 87	N.P.D.C

Memorandum of Easements

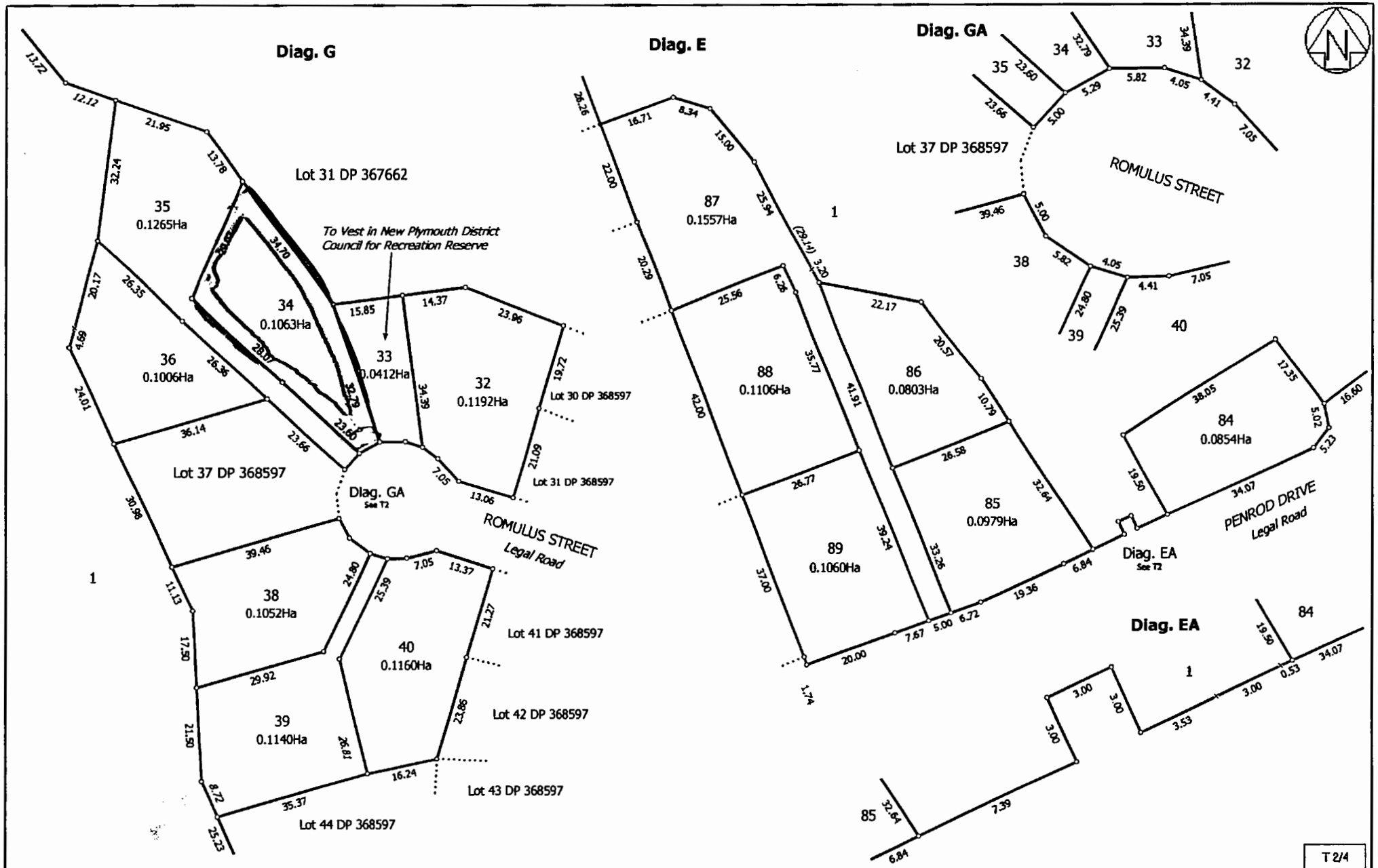
Purpose	Shown	Servient Tenement	Dominant Tenement
ROW, Sewage	A	Lot 35	Lot 34, Lot 36
ROW, Sewage	E	Lot 87	Lot 86, Lot 88
Sewage	E	Lot 87	Lot 85, Lot 89
Sewage	B	Lot 39	Lot 40
Sewage	C	Lot 1	Lot 36

Certifying parties must sign or initial here _____

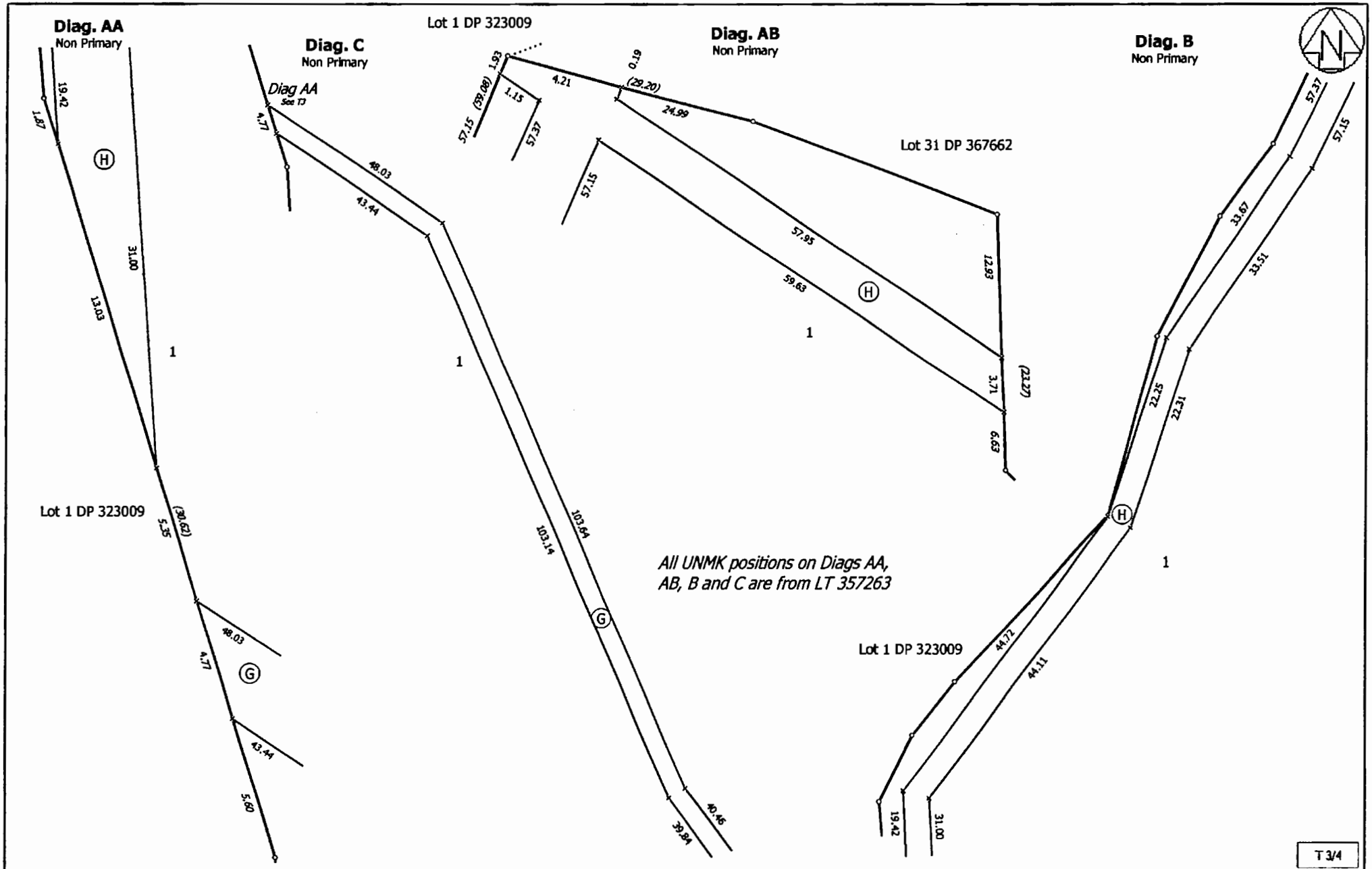
(Authorised officer)



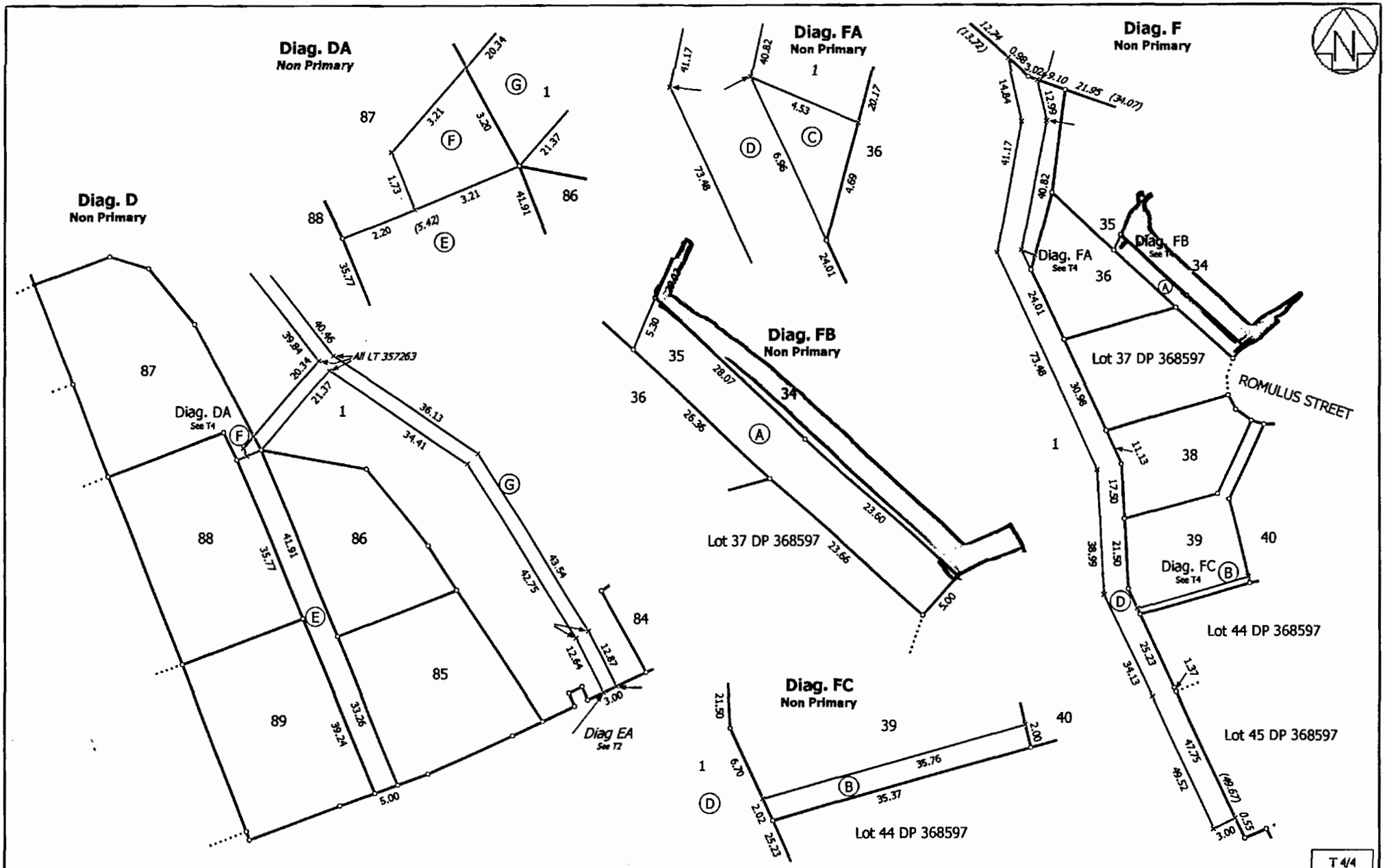
Land District: Taranaki Digitally Generated Plan Generated on: 05/10/2006 11:31am Page 4 of 7	Lots 1, 32-36, 38-40, 84-89 being a Subdivision of Lot 32 DP 368597	Surveyor: John Arnold Hermann Firm: BTW Company (New Plymouth)	Digital Title Plan DP 374057 Deposited on: 28/09/2006



Land District: Taranaki Digitally Generated Plan Generated on: 05/10/2006 11:31 am Page 5 of 7	Lots 1, 32-36, 38-40, 84-89 being a Subdivision of Lot 32 DP 368597	Surveyor: John Arnold Hermann Firm: BTW Company (New Plymouth)	Digital Title Plan DP 374057 Deposited on: 28/09/2006



Land District: Taranaki Digitally Generated Plan Generated on: 05/10/2006 11:31 am Page 6 of 7	Lots 1, 32-36, 38-40, 84-89 being a Subdivision of Lot 32 DP 368597	Surveyor: John Arnold Hermann Firm: BTW Company (New Plymouth)	Digital Title Plan DP 374057 Deposited on: 28/09/2006



Land District: Taranaki Digitally Generated Plan Generated on: 05/10/2006 11:31am Page 7 of 7	Lots 1, 32-36, 38-40, 84-89 being a Subdivision of Lot 32 DP 368597	Surveyor: John Arnold Hermann Firm: BTW Company (New Plymouth)	Digital Title Plan DP 374057 Deposited on: 28/09/2006

New Plymouth District Council

Quote Estimate

Quote No.: FDC08/00052

Date Issued: 2/12/2008

Expiry Date: 2/12/2013

Applicant: MJ HERLIHY
15 Antonia Place
BELL BLOCK 4312

Property Desc: LOT 34 DP 374057

Details: Status: Current

Group: Development Contribution

Category: Development Contributions

Estimated Cost:

Water HUE:	1
WasteWater HUE:	1
StormWater HUE:	1
Roads HUE:	1

Description	Qty	Amount	GST	Total
Water Housg Unit Equival	1	$497.00	$62.13	$559.13
WasteWater Housg Unit E	1	$277.00	$34.63	$311.63
StormWater Housg Unit E	1	$48.00	$6.00	$54.00
Roads Housg Unit Equival	1	$779.00	$97.38	$876.38
SubTotal		$1,601.00	$200.14	$1,801.14
Total		**$1,601.00**	**$200.14**	**$1,801.14**

All amounts displayed on this quotation are estimated as at the date of the quote. This estimate is based on information provided by the customer at the time of issue.

NEW PLYMOUTH DISTRICT COUNCIL

newplymouthnz.com

LIARDET ST, PRIVATE BAG 2025,
NEW PLYMOUTH 4342, NEW ZEALAND
TELEPHONE 06-759 6060 FAX 06-759 6072
EMAIL enquiries@npdc.govt.nz

TAX INVOICE / STATEMENT

GST Registration No. 51-700-449

Morgan Herlihy
15 Antonia Place
BELL BLOCK

Date: 27 January 2009

Invoice No. 2416

Application No: BC08/106288

Property Address:
8 Joshua Place BELL BLOCK 4601

Charge Description	Charge	GST	Amount
Accreditation levy	$188.80	$23.60	$212.40
Building Research Levy	$180.00	$0.00	$180.00
Department Building and Housing Levy	$354.60	$0.00	$354.60
Plan Processing & Administration	$674.67	$84.33	$759.00
Dwellings - New and Additions - Site Inspections	$1,288.89	$161.11	$1,450.00
Roads Housing Unit Equivalent Development Contribution	$779.00	$97.38	$876.38
Storm Water Housing Unit Equivalent Development Contribution	$48.00	$6.00	$54.00
Waste Water Housing Unit Equivalent Development Contribution	$277.00	$34.63	$311.63
Water Housing Unit Equivalent Development Contribution	$497.00	$62.13	$559.13
Total	$4,287.96	$469.18	$4,757.14

RECEIVED
16 FEB 2009
CUSTOMER SUPPORT CENTRE

8 Joshua Place, BBK

Receipt 24879

PLEASE PAY ON THIS INVOICE AS A STATEMENT WILL NOT BE ISSUED

NEW PLYMOUTH DISTRICT COUNCIL

Private Bag 2025
New Plymouth 4342

REMITTANCE ADVICE
Please detach and return this portion with your cheque.

Date: 27 January 2009
Invoice No: 2416
Application No: BC08/106288
Payer: MJ HERLIHY
Amount Due: $4,757.14

EWRB 551

ELECTRICAL WORKERS REGISTRATION BOARD
Safety • Competency

Electrical Certificate of Compliance

No. 3331586

for a low voltage installation if prescribed electrical work has been done on any part of it and the prescribed electrical work involved placing, replacing, or repositioning conductors or fittings attached to conductors.

No. of attachments X

To be completed whether or not an Inspection is required.

CUSTOMER INFORMATION - PLEASE PRINT CLEARLY

Name of customer M Herlihy Phone: 0274170368

Address of installation 8 Joshua Place Bell Block New Plymouth

Postal address of customer (if not as above) 521 Carrington Rd

DECLARATION OF CONFORMITY (Please tick (✓) appropriate boxes)

In accordance with Regulation 58 of the Electricity (Safety) Regulations 2010, the design of the installation or part of the installation to which this certificate applies

(a) complies with either Part 2 of AS/NZS 3000:2007 ☑ or Part 1 of AS/NZS3000:2007 and Regulation 59 ☐ and

(b) the supply system of the installation or part of the installation to which this certificate applies is

230V/400 V MEN ☑ or attached other system ☐

WORK DETAILS

25 No. of lighting outlets

31 No. of socket outlets

1 No. of ranges

1 No. of water heaters

Was any installation work carried out by the homeowner? Yes ✓ No

Please tick (✓) as appropriate where work includes:

✓ Mains

✓ MEN Switchboard closest to point of supply

✓ Main earthing system

✓ Electric lines

Description of work carried out (If necessary attach any pages with work done)

Proviro and fit off house to completion

CERTIFICATION OF WORK (Please tick (✓) appropriate boxes)

I certify that the completed installation or part of the installation to which this certificate applies

☑ has been installed in accordance with the design detailed in the Declaration of Conformity section above

☑ has had tests which are required by the Electricity (Safety) Regulations 2010 satisfactorily completed

☑ has an earthing system that is correctly rated

☑ contains fittings which are safe to connect to a power supply

☑ is safe to connect to a power supply

Earth = 0.2Ω
FLZ = 0.2Ω
IPSC = 1150A
RINS = >1000 MΩ

	RCD 1	RCD 2	RCD 3
	27mA	27mA 17mS	30mA 17mS
30mS	180 27mA	27 mA 27mS	180 27mA 27mS
	DC 13mS	9mS	DC 66mS

ELECTRICAL WORKER DETAILS

Name Calum Storey

Company E20133

Signature

Registration No. Generate Electrical

Contact Ph No. 0275831213

Date 19th Sept 2010

INSPECTION DETAILS

Electrical work requiring inspection by a registered electrical inspector

☐ Mains work (mains, MEN switchboards closest to the point of supply, or main earthing systems)

☐ Attached other

☐ Work carried out in accordance with Part 1 of AS/NZS 3000:2007

I certify that the items identified above are electrically safe and that the inspection has been carried out in accordance with the Electricity (Safety) Regulations 2010.

Name

Registration No.

Signature

Date

Contact Ph No.

CUSTOMER COPY – THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED

PIM No 08/106278

Finished / Suspend

Time (mins) 30

PIM Section 2.3 - Water, stormwater, reticulation sewer system

Water, stormwater, reticulation sewer system

Water:

- [x] No information - Water
- [ ] No requirements - water
- [ ] Rural water supply
- [ ] Urban water supply
- [ ] Water supply for additional dwelling
- [ ] No water reticulation / Potable water supply required
- [ ] Water disconnection from metered / unmetered supply
- [ ] Connection to water supply

Sewer:

- [x] No information - sewer
- [ ] No requirements - sewer
- [ ] Connection to existing common private drain
- [ ] Sewer connection
- [ ] Sewer disconnection (for building demolition or removal)
- [ ] No sewer reticulation / onsite sewerage disposal required
- [ ] Connection to existing private drains serving the property

Stormwater:

- [ ] No information - stormwater
- [ ] No requirements - stormwater
- [ ] Urban residential disposal
- [ ] Other urban disposal
- [ ] Rural stormwater disposal
- [ ] Stormwater disconnection
- [x] Existing stormwater disposal

Other Information:

- [ ] Council reticulation plan
- [ ] Drainage plan

Close

D R
$160.19

PIM Section 2.4 - Information held by council

Information held by council

00 Section: B Heading: Water and Sewer

Statement - for office use only

Actual statement (Will not appear in the completed document)

Statement - To appear on letter if ticked

Revised statement (This will appear in the final document if ticked)

Impact of the above statement

Impact (This will appear in the final document if ticked)

Delete | Add new | Save | Close

SUBDIV 2048

PIM Section 7.7.2.3 CAG 5 Other authorisations needed for this project

Other authorisations needed for this project

☑ No information

☐ ☐ Building over Council Reticulation

☐ ☐ Building encroachment / use of council owned land

☐ Encroachment Licence - tables etc

☐ Existing encroachment license

☐ ☐ Access Affects Street Trees, Sumps, Light Columns, Junction Boxes and Power Poles

Impact

☐ ☐ Vehicle Crossing to the applicant's Property

☐ ☐ Vehicle Access to the Applicant's Property is not possible due to the Change in Gradient of the Access at the Road Boundry.

☐ ☐ Excavation on or near a road reserve. (Safety)

☐ ☐ Damage to Council Owned Assets

☐ ☐ Trade Waste

Close

PIM Section 7.9 - Schedule of Matters

Closing statement

As these matter(s) will or may materially affect the building work to which the attached project information memorandum relates, until they have been addressed [no building work may proceed / building work may only proceed to the extent stated below]

[Detail building restrictions if building work is restricted]

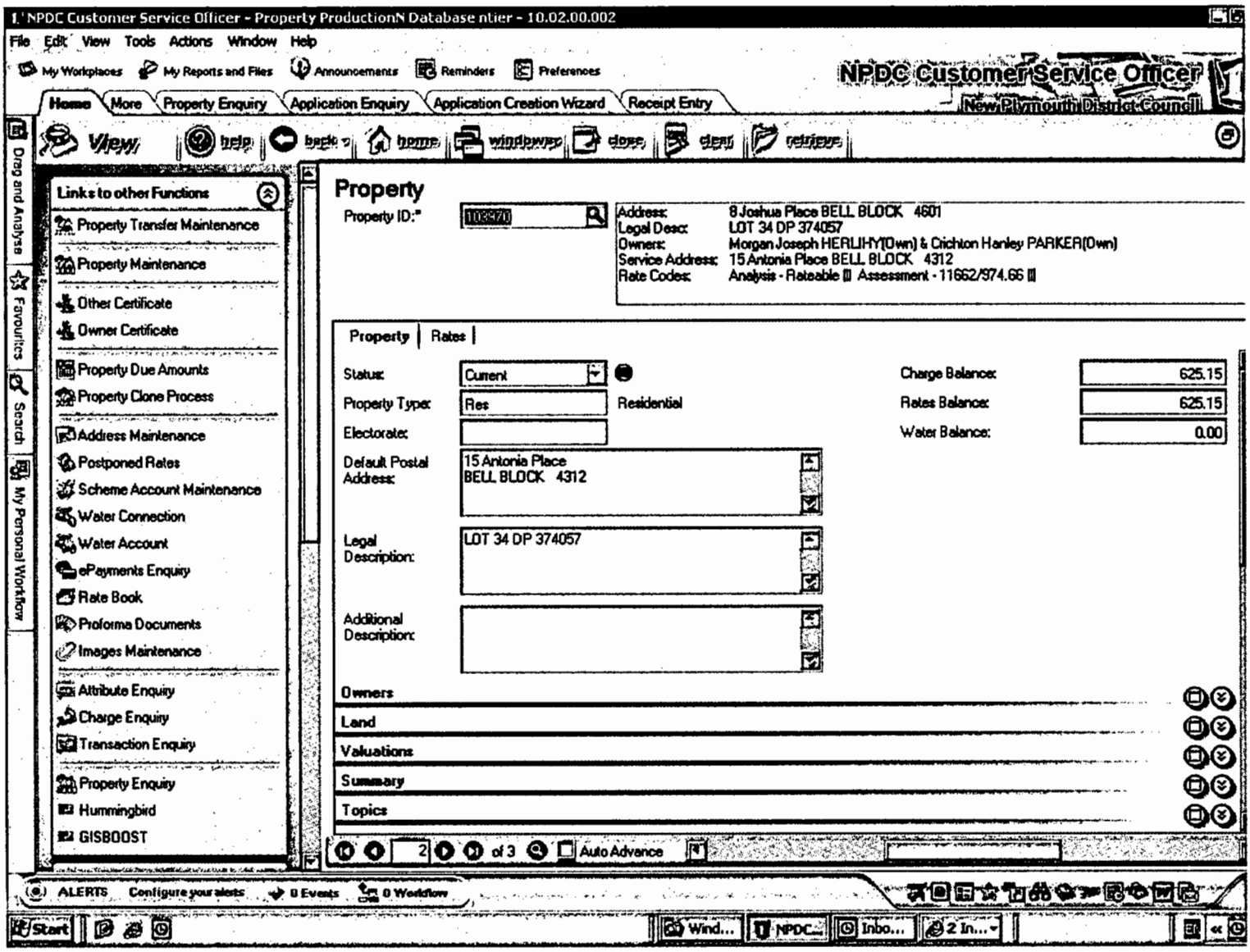
Failure to comply with the requirements of this notice may result in legal action being taken against you under the relevant statute or bylaw.

Dated this [day] day of [month] [year]

[Type your name here]
[Type Your Position Here]
New Plymouth District Council

Project location: [Type address]
Project description: [Type project description]

Close


1 NPDC Customer Service Officer - Property ProductionN Database ntier - 10.02.00.002
File Edit View Tools Actions Window Help
My Workplaces
My Reports and Files
Announcements
Reminders
Preferences
NPDC Customer Service Officer
New Plymouth District Council
Home
More
Property Enquiry
Application Enquiry
Application Creation Wizard
Receipt Entry
View
help
back
home
windowpro
close
clear
retrieve
Drag and Analyse
Favourites
Search
My Personal Workflow
Links to other Functions
Property Transfer Maintenance
Property Maintenance
Other Certificate
Owner Certificate
Property Due Amounts
Property Clone Process
Address Maintenance
Postponed Rates
Scheme Account Maintenance
Water Connection
Water Account
ePayments Enquiry
Rate Book
Proforma Documents
Images Maintenance
Attribute Enquiry
Charge Enquiry
Transaction Enquiry
Property Enquiry
Hummingbird
GISBOOST
Property
Property ID:*
103970
Address: 8 Joshua Place BELL BLOCK 4601
Legal Desc: LOT 34 DP 374057
Owners: Morgan Joseph HERLIHY(Own) & Crichton Hanley PARKER(Own)
Service Address: 15 Antonia Place BELL BLOCK 4312
Rate Codes: Analysis - Rateable Assessment - 11662/974.66
Property
Rates
Status: Current
Property Type: Res
Residential
Electorate:
Default Postal Address: 15 Antonia Place BELL BLOCK 4312
Legal Description: LOT 34 DP 374057
Additional Description:
Charge Balance: 625.15
Rates Balance: 625.15
Water Balance: 0.00
Owners
Land
Valuations
Summary
Topics
2 of 3
Auto Advance
ALERTS
Configure your alerts
0 Events
0 Workflow
Start
Wind...
NPDC...
Inbo...
2 In...

DOMESTIC / FARM

Owners Name (s) Morgan Herlihy & Crichton Parker

Total Value: $ 180,000.00.

Total Base Fee: $ 2,209.00

B. Research Levy: $ 180.00

DBH Levy: $ 356.60

Accreditation Fee: $ 212.40.

***Total :** $ 2,956.00.

Paid: $ —

Receipt No: $ _____

To be invoiced: (Yes) / No

Signature: _____

***Development contributions may apply to some projects**

RES 5

NEW PLYMOUTH DISTRICT COUNCIL
newplymouthnz.com

Building Consent No: BC08/106288
Section 51, Building Act 2004

Building
Street address of building: 8 Joshua Place BELL BLOCK 4601
Legal description of land where building is located: LOT 34 DP 374057
Building name: Dwelling

Owner
Name of owner: Morgan Joseph Herlihy, Crichton Hanley Parker
Applicant: Morgan Herlihy
Applicant contact address: 15 Antonia Place, Bell Block

Ph (work): 06 755 2524 Ph (private): 027 417 0368 Fax:

First point of contact for communications with council/building consent authority:

New Plymouth District Council
Private Bag 2025
NEW PLYMOUTH
Ph: 06-759 6060 Fax: 06-759 6072
Email: enquiries@npdc.govt.nz Website: www.newplymouth.com

Building work
The following building work is authorised by this consent:

Project: New Dwelling

Intended use: Residential Accommodation

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

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

Additional Comments
No additional Comments Relate to this Building Consent.

This building consent is subject to the following conditions:

Additional Conditions
There are no conditions relating to this Building Consent.

---

1. **Inspections**
   All inspections are to be carried out by BCA Building Inspectors unless prior arrangements have been made by the BCA to have an approved qualified person inspect specific items. Inspections shall be carried out in accordance with the attached schedule of inspection types. It is the owner's responsibility to ensure all necessary inspections are carried out as required. Please contact NPDC if you are unsure what requires inspection – do not cover or enclose any building work without inspection.

2. **Durability of building elements**
   Building elements may have an intended life of less than 50 years. Limited life building elements carry certain limitations and obligations. Based on current legislation these obligations require the building owner to follow the normal and/or scheduled maintenance of the building element to ensure its continued compliance with the New Zealand Building Code (NZBC). Where failure to properly maintain the building elements results in non-compliance with the NZBC, the Territorial Authority may issued a "Notice to Fix" which if not met could result in legal action appropriate in the circumstances.

3. **Construction and demolition noise**
   The proposed New Plymouth District Plan, appendix 12, clause 1.1 - 1.4 sets construction and demolition noise standards. Anyone carrying out building work must ensure they comply with these noise levels at all times. These standards may be obtained from the council's website or by contacting the council.

4. **Lapse and cancellation of consents**
   A Building Consent lapses and is of no effect if the building work to which it relates does not commence within 12 months after the date of issue of the building consent or any further period that the Building Consent Authority may allow. (Time extensions to commence building work after 12 months must be submitted to the Building Consent Authority in writing stating the reason for the request, prior to the lapse date of the consent.

5. **Additional costs and refunds**
   Building Consent fees are required to be paid prior to a Building Consent being issued. Once the project commences actual costs are charged against the fees paid. Where costs are greater or less than the base fee paid, additional costs will be charged or a refund made where the value exceeds $100 for consents with a base fee greater than $1000, or $50 where the base fee is $1000 or less.

6. **Completion of building project**
   A Code Compliance Certificate must be applied for as soon as practicable after the building work is completed. A building consent is valid for two years after the date on which the building consent was granted. An extension of time may be considered if required, application for this time extension must be made in writing explaining reasons for the request prior to the consent lapsing.

Compliance Schedule
A Compliance Schedule is not required for the building.

Signature

Building Administration Officer

Position

On behalf of: New Plymouth District Council

Date: 16 February 2009

NEW PLYMOUTH DISTRICT COUNCIL
newplymouthnz.com

Project Information Memorandum (PIM)

Section 34, Building Act 2004

Application details

Project No. | **PIM No:** PIM08/106278

Date application lodged : 26 November 2008 | **Date PIM issued :** 10 December 2008

Applicant's details

Name : Morgan Herlihy

Address : 15 Antonia Place
BELL BLOCK

Date new information received :

Reason for re-issue :

Date PIM re-issued :

Project description

Description : Three Bedroom Dwelling With Attached Garage

Intended use : Residential Dwelling

Intended life :

Floor area : 190m2

Property details

Legal description : Lot 34 DP 374057

Address: 8 Joshua Place
BELL BLOCK

Property owner details

Name: Morgan Joseph Herlihy & Crichton Hanley Parker

Address: 15 Antonia Place
BELL BLOCK

THE IMPACT ON YOUR PROPOSED PROJECT

This is confirmation that, subject to the Building Act 2004, this building work may be carried out subject to the requirements of a building consent and subject also to all other necessary authorisations being obtained.

Your building project requires further authorisations or revision for the following reasons:

If you wish to suspend your building consent application until the revised plans are received by council, please call the council (06 759 6060) and send written confirmation of this instruction. Otherwise, you may be charged for additional processing time as a result of re-evaluation of your proposed building work.

Signed for and on behalf of New Plymouth District Council

PIM Co-ordinator

This is not a building consent. Your next step is to obtain a building consent prior to commencement of work. Please contact us with any queries you may have on 759 6060

Liardet Street, Private Bag 2025, New Plymouth 4620, NZ, Telephone (06) 759 6060, Facsimile (06) 759 6072, Email enquiries@npdc.govt.nz, Website www.newplymouth.com

Section 1: What is a Project Information Memorandum (PIM)

The PIM provides an applicant with information about land and about the other statutes and requirements that might be relevant to the proposed building work, other than construction design and features required under the Building Act 2004. This information enables the applicant to assess the feasibility of the project before proceeding with the preparation of the building consent application.

Section 2: Property information related to this project

Section 2.1 - Heritage status of the building and / or land

No Information - Heritage

There is no information held by the council applicable to the project.

Section 2.2 Special features of the land (Natural Hazards)

Wind Zone Information

The proposed building is in an area shown to be a high wind zone on the council's wind maps. This designation is indicative only and may alter due to topography, shelter, etc. Designers are advised to check the wind zone using the method provided in New Zealand Standards 3604.

This information is indicative and may be used for design purposes. However this wind zone value should be checked against the NZS 3604 calculation method, which requires that topography, nearby tall buildings be taken into account.

Section 2.3 - Water, Stormwater and Reticulation Sewer Systems

No requirements - Sewer

There is no sewer work included in this project and therefore no information has been provided in respect to this service.

If you wish to obtain further information relating to this service please contact the council's customer support team.

No requirements - Water

There is no water work included in this project and therefore no information has been provided in respect to this service.

Urban residential disposal

This council's policy for residential stormwater management is that it is disposed of on-site unless, proven impractical to do so.

If you consider on-site disposal is impractical you should seek direction from a council development engineer.

Please refer to the attached Stormwater Connection / Disconnection Guide for further information.

Kerb connections may be granted where soak holes are impractical or for overflows from soak holes within residential properties only.

Well-up sumps will be required in lieu of kerb connections and for soak hole overflows if the ground level is greater than 3 metres above the kerb height. Long sections may be required.

All kerb connection applications are to be made using the council's application form for installation or repair of stormwater kerb connection.

A stormwater system connection requires an application to the council using the council's Stormwater Connection/Disconnection application form.

Water & Sewer connections are already on Lot. There is no need to apply to council for these connections.

Section 3: Other authorisations needed for this Project

No comments applicable to the project.

District Plan Rule - Vehicle Access

Vehicle access to the site shall comply with the provisions of Appendix 23 of the New Plymouth District Plan. Matters to

consider include:

a. Construction standards for vehicle access points
b. Standards for parking
c. Standards for loading and standing space
d. Standards for driveways
e. Standards for manoeuvring space
f. Standards for on-site queuing.

"The intended activity or site is subject to District Plan rules that are required to be met.

District Plan rules that must be met include the undisturbed retention of notable or amenity trees, installing landscaping, planting or screening and providing marked out, all weather surfaced parking or loading.

These are Resource Management Act matters and will not be checked as part of the Building Act, building inspection process.

Monitoring the sites compliance with these rules is the responsibility of the council's Land Use & Monitoring team. A monitoring officer will inspect the site upon completion of the approved building work.

Provided the site meets the required rules, no costs will apply. Where rules are not met, the person operating the activity will be charged for the site inspection and any future compliance monitoring. These charges will be calculated in accordance with the Land Use & Monitoring schedule of fees & charges.

We ask that you pass this information on to the site or activity owner or occupier so they will be aware of their obligations.

Please contact the Land Use & Monitoring team should you have any queries."

Section 4: Authorisations for this project that have been refused

No comments applicable to the project.

Section 5: Building Consent Matters

No comments applicable to the project.

Section 6: Advice Notes

Re-issue of PIM

A territorial authority may where it becomes aware of errors or omissions or where new information is received, reissue this project information memorandum subject to the applicable time limitations and conditions of Section 34 of the Building Act 2004.

NEW PLYMOUTH DISTRICT COUNCIL
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Acceptance

DWELLINGS
New Dwellings, Alterations, Additions, Sleepouts & Relocated Buildings
PIM & Building Consent

How to use this checklist

Use this checklist when finalising your building drawings and plans to assist you to lodge a complete application and to avoid delays in processing. Your application will be accepted based on this checklist to ensure that it has sufficient information to commence processing.

✓ All items on this checklist must be ticked to show that they are either provided (**P**) or are not applicable to your project (**N/A**).

Later, additional information may be requested during the processing of your building consent to confirm compliance with the Building Code. Processing time will be suspended until information is received.

Project No. _____

Office use	Applicant use P	Applicant use N/A		
			1.	**Minimum building consent application documentation**
○	✓	○	a	Complete application forms
○	✓	○	b	Three sets of plans (one in A3 maximum) and two sets of specifications and other documentation (If plans are larger than A3, both electronic and hard copy required)
○	✓	○	c	All plans drawn to a recognised metric scale; include a north arrow; and in black ink (not pencil or red pen)
○	○	○	d	Land undergoing subdivision - If the title has not yet been issued for land you wish to build on, council may or may not accept your building consent application depending on the status of the subdivision. Refer to the Land Undergoing Subdivision Checklist
			2.	**Site / location plan**
○	✓	○	a	Accurate site plan showing street name and boundary dimensions
○	✓	○	b	Location of existing and proposed buildings; building area, distances to boundaries, and distances between buildings
○	✓	○	c	Current and proposed use of site and buildings
○	✓	○	d	Existing and proposed access for vehicles, driveway gradient, and off-street parking
○	✓	○	e	Existing contours
○	○	✓	f	Alterations to land contours; retaining, cut, fill and their intended quantities; site datum for floor levels
○	○	✓	g	Easements, public drains, and service connections (where known)
○	○	✓	h	Identification of streams and drains, and normal flow levels relative to site datum
			3.	**Plumbing and drainage**
○	✓	○	a	Nominate plumbing / drainage design standard (eg. AS/NZS 3500 or G13)
○	✓	○	b	Plumbing and drainage layout plan, including falls
○	✓	○	c	Method of water heating system
○	✓	○	d	Fixtures (If the building has plumbing fixtures on an upper level, provide layout drawing showing wastes, pipes and falls, e.g., an isometric layout)
○	✓	○	e	On-site wastewater disposal design
			4.	**Elevations**
○	✓	○	a	North, South, East and West elevations showing original and proposed ground levels at buildings and boundaries
○	✓	○	b	Relationship of finished ground level (after landscaping) relative to floor levels
○	✓	○	c	Dimensions of openings (doors and windows)
○	✓	○	d	Specify cladding systems and roofing type and any other relevant details
○	✓	○	e	Roof pitch and height to apex of building
○	✓	○	f	Height and daylighting angles
			5.	**Foundation plan**
○	✓	○	a	Design details of all new foundations and reinforcing
○	✓	○	b	Concrete slab design, including reinforcing and contraction control cuts / joints
○	✓	○	c	Pile layout and footing design
○	✓	○	d	Sub floor framing including bracing
○	○	✓	e	Upper storey floor design if applicable

Please turn over

Liardet Street, Private Bag 2025, New Plymouth 4620, NZ. Telephone (06) 759 6060, Facsimile (06) 759 6072, Email enquiries@npdc.govt.nz, Website www.newplymouthnz.com

Office use	Applicant use	P = Information provided	N/A = not applicable to this project

Office use	P	N/A		
			6. Floor plan	
○	✓	○	a	Complete floor plan(s) with walls / partitions, doorways, and the use of each area
○	✓	○	b	Smoke detectors indicated (must be in or within 3m of each bedroom)
			7. Fire rating	
○	✓	○	a	Fire rating system for all walls closer than 1m to a boundary
			8. Cross sections and details	
○	✓	○	a	E2 Risk Matrix and weathering details
○	✓	○	b	Wall details showing cladding, framing, insulation, linings etc.
○	✓	○	c	Roof / wall intersection showing eaves, gutters, flashings and top plate fixings
○	✓	○	d	Wall / floor intersection
○	✓	○	e	Window, door and critical intersections
○	✓	○	f	Door and window lintel sizes
○	✓	○	g	Truss layout with girder trusses indicated
○	✓	○	h	Stairs, handrails and barriers
○	✓	○	i	Decks, pergolas, verandas, porches, carports and garages
			9. Bracing design and calculations	
○	✓	○	a	Bracing details and calculations for wall and sub floor
○	✓	○	b	Sub floor bracing for decks projecting more than 2m from the house
			10. Specifications	
○	✓	○	Specifications must be relevant to the particular buildings and to the plans submitted and shall include the building envelope. They must give a full description of the type, size and grade of materials to be used and the method of construction. Include Manufacturer's Specifications for all relevant parts of building elements, detailing where they apply to your project.	

Other information that may be required

	P	N/A		
			11. Specific engineering design	
			Design work from an engineer must have calculations and structural drawings provided. When engineering drawings are provided from persons other than the engineer they must be acknowledged by the Engineer (signed) as meeting engineering design requirements. Specific engineering design may include (this list is not exhaustive):	
○	○	○	a	Special ground conditions, including building over uncertified fill, peat, soft ground or closeness to steep banks
○	○	○	b	Retaining walls
○	○	○	c	Earthworks / stability of adjacent sites and support of adjacent structures
			12. Heating	
○	○	○	a	If a free standing or insert wood fire is to be installed, location is to be shown on the floor plan and the manufacturer's installation specifications provided
○	○	○	b	If woodfire is secondhand and over two years old, confirm a new flue will be installed, and provide a letter from a member of the Home Heating Association confirming that the wood fire has been inspected and is suitable for reinstallation
			13. Swimming pool	
○	○	○	If the plan shows an outdoor swimming pool / spa, fencing details and pool Manufacturer's Specifications must be provided	
			14. Other supporting documentation or plans	
○	○	○	This is a generic checklist for this project type. There may be other information that you know about, specific to your project or site, that has not been covered in the above items	
			15. Tick method of payment	
○			○ cash / cheque / eftpos ○ pre-approved account customer	

NEW PLYMOUTH DISTRICT COUNCIL
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FORM PIM and/or Building Consent
Building Act 2004

This form must be accompanied by an Application Cover Page Form.
Fill this form out with the assistance of the PIM and/or Building Consent Guide - numbers on this form relate to explanatory notes in the guide.

1. Applicant details

1a. I am the
- (✓) Property owner — As stated on the Application Cover Page Form. Proceed to 1b
- ( ) Lessee — Provide details below
- ( ) Agent — Authorised by owner/lessee. Provide details below

Name O.A.P. Morgan Heeley

Postal address 15 Artemis Pl Bell Block

Contact numbers: Phone 067552524 | Mobile 027417036[illegible] | Fax

Email

1b. Preferred means for formal correspondence
- (✓) Mail
- ( ) Email
- ( ) Fax

1c. Evidence of ownership attached
- ( ) Certificate of title (copy)
- ( ) Sale and purchase agreement
- ( ) Lease agreement
- (✓) Other document showing full name of legal owner(s), such as a rate instalment notice

1d. I request that you issue the following approval(s) for the building work described in this application
- (✓) Project information memorandum — Complete sections 2, 3 and 7
- (✓) Building consent — Complete section 2, and sections 4 to 7

2. The project

Description of the building work

2a. Type of work
- (✓) New building
- ( ) Alteration
- ( ) Log fire
- ( ) Addition
- ( ) Relocation
- ( ) Plumbing and drainage only
- ( ) Demolition/Removal
- ( ) Re-pile existing building

2b. Category of work
- (✓) Residential
- ( ) Outbuilding/ancillary
- ( ) Milking shed
- ( ) Commercial/ Industrial/ Community
- ( ) Replacement or upgrade of on-site waste disposal (septic tank)

2c. Will the building work result in a change of use of an existing building?
- ( ) Yes
- (✓) No

Current use: Residential

Intended use: Residence.

2d. Year building first constructed: 2008

2e. Floor area: Total floor area affected by building work: 190 m²

2f. The completed building will be:
- (✓) Single storey, single unit building
- ( ) Multi-storey or multi-unit building - please specify
  - Number of units
  - Number of storeys

9.45am Mon. 25 NOV 2008 New Plymouth District Council

Please turn over

OFFICE USE ONLY

Planning/EH requirements? Y / N
Relevant planning/EH forms provided? Y / N

Date 25/11/08 | Owner ID 109036/102492 | Code RES 5
Document # | Legal ID 103287 | Property ID 103970
Application # BC08/106288 | Received by

PIM08/106278

Liardet St, Private Bag 2025, New Plymouth 4342, NZ. Telephone 06-759 6060, Fax 06-759 6072, Email enquiries@npdc.govt.nz, Website www.newplymouthnz.com

2. The project continued

2g. Intended life of the building

- [x] Indefinite but not less than 50 years
- [ ] Less than 50 years - please specify _____ years

2h. Estimated value of the building work

$ 150,000 Including GST

2i. Have any PIM and/or building consents been issued previously for this project?

- [ ] Yes
- [ ] No

Provide details below

Consent issued by	Date of consent	Consent number

3. Project information memorandum - do not fill in this section if the application is for a building consent only

The project involves

- [ ] Land undergoing subdivision, where title has not yet been issued.
- [ ] Alterations to land contours.
- [x] New or altered connections to public utilities (water/stormwater/sewer).
- [x] New or altered locations and/or external dimensions of buildings.
- [ ] Building work over, or adjacent to, any road or public place.
- [ ] Building work over, or adjacent to, any existing drains or sewers, or in close proximity to wells or water mains.
- [x] New or altered access for vehicles.
- [x] Disposal of stormwater and wastewater.
- [ ] Other matters known to the applicant that may require authorisations from the council - please specify.

4. Building consent - do not fill in this section if the application is for a project information memorandum only

The following plans and specifications are attached to this application:

- [x] Two sets of plans and specifications plus:
  - Site plan that clearly indicates boundary distances.
  - Floor plan that clearly indicates full floor area (m²).
  - Elevations that clearly indicate cladding.
- [x] Site/location plan.
- [x] Plumbing and drainage design.
- [x] Elevations.
- [x] Foundation plan.
- [x] Floor plan.
- [x] Cross-sections and building design details.
- [x] Bracing design and calculations.
- [x] Specific engineering design.
- [x] Manufacturer's specifications.
- [ ] Other - please specify.

5. Compliance with New Zealand Building Code - do not fill in this section if the application is for a PIM only

Clause Tick relevant building code clauses		Means of compliance (Refer to the relevant compliance document(s) or detail of alternative solution in the plans and specifications. If not applicable, write N/A)	Waiver/modification required (State nature of waiver or modification of building code required. If not applicable, write N/A)
✓	B1 Structure	acceptable solution	
✓	B2 Durability	" "	
○	C1 Outbreak of fire	n/a	
○	C2 Means of escape	"	
○	C3 Spread of fire	"	
○	C4 Structural stability during fire	"	
○	D1 Access routes	"	
○	D2 Mechanical installations for access	"	
✓	E1 Surface water	acceptable solution	
✓	E2 External moisture	" "	
✓	E3 Internal moisture	" "	
○	F1 Hazardous agents on site	n/a	
○	F2 Hazardous building materials	"	
○	F3 Hazardous substances and processes	"	
○	F4 Safety from falling	"	
○	F5 Construction and demolition hazards	"	
○	F6 Lighting for emergency	"	
✓	F7 Warning systems	acceptable solution	
○	F8 Signs	n/a	
✓	G1 Personal hygiene	acceptable solution	
✓	G2 Laundering	" "	
○	G3 Food preparation and prevention of contamination	n/a	
✓	G4 Ventilation	acceptable solution	
○	G5 Interior environment	n/a	
○	G6 Airborne and impact sound	n/a	
✓	G7 Natural light	acceptable solution	
○	G8 Artificial light	n/a	
✓	G9 Electricity	acceptable solution	
○	G10 Piped services	n/a	
○	G11 Gas as an energy source	n/a	
✓	G12 Water supplies	acceptable solution	
✓	G13 Foul water	" "	
○	G14 Industrial liquid waste	n/a	
○	G15 Solid waste	n/a	
✓	H1 Energy efficiency	acceptable solution	

Use the box below if you need more space to detail how you propose to comply with the building code.

Please turn over

6. Compliance schedule - do not fill in this section if the application is for a project information memorandum only

(✓) There are no specified systems identified as part of this application - Proceed to section 7.

( ) The specified systems for the building are indicated below:

Removed	New	Existing	Altered		
○	○	○	○	SS1	Automatic systems for fire suppression (e.g. sprinkler systems).
○	○	○	○	SS2	Automatic or manual emergency warning systems for fire or other dangers.
○	○	○	○	SS3	Electromagnetic or automatic doors or windows (e.g., ones that close on fire alarm activation).
○	○	○	○		SS3/1 Automatic doors.
○	○	○	○		SS3/2 Access controlled doors.
○	○	○	○		SS3/3 Interfaced fire or smoke doors or windows.
○	○	○	○	SS4	Emergency lighting systems.
○	○	○	○	SS5	Escape route pressurisation systems.
○	○	○	○	SS6	Riser mains for use by fire services.
○	○	○	○	SS7	Automatic backflow preventers connected to a potable water supply.
○	○	○	○	SS8	Lifts, escalators, travelators or other systems for moving people or goods within buildings.
○	○	○	○		SS8/1 Passenger carrying lifts.
○	○	○	○		SS8/2 Service lifts.
○	○	○	○		SS8/3 Escalators and moving walks.
○	○	○	○	SS9	Mechanical ventilation or air-conditioning systems.
○	○	○	○		SS9/1 Air conditioning systems.
○	○	○	○		SS9/2 Ventilation systems.
○	○	○	○		SS9/3 Fire/smoke dampers.
○	○	○	○	SS10	Building maintenance units providing access to exterior and interior walls of buildings.
○	○	○	○	SS11	Laboratory fume cupboards.
○	○	○	○	SS12	Audio loops or other assistive listening systems.
○	○	○	○		SS12/1 Audio loops.
○	○	○	○		SS12/2 FM radio frequency systems and infrared beam transmission systems.
○	○	○	○	SS13	Smoke control systems.
○	○	○	○		SS13/1 Mechanical smoke control.
○	○	○	○		SS13/2 Natural smoke control.
○	○	○	○		SS13/3 Smoke curtains.
○	○	○	○	SS14	Emergency power systems for or signs relating to, a system or feature specified for any of the above systems or features.
○	○	○	○		SS14/1 Emergency power systems.
○	○	○	○		SS14/2 Signs.
○	○	○	○	SS/15	Other fire safety systems or features.
○	○	○	○		SS15/1 Systems for communicating spoken information intended to help evacuation.
○	○	○	○		SS15/2 Final exits (as defined in the Building Code).
○	○	○	○		SS15/3 Fire separations (as defined in the Building Code).
○	○	○	○		SS15/4 Signs for communicating information intended to help evacuation.
○	○	○	○		SS15/5 Smoke separations (as defined in the Building Code).

( ) Systems that relate to:

- ( ) Safety barriers.
- ( ) Means of access and facilities that meet the requirements of section 118.
- ( ) Hand-held hose reels for fire fighting.
- ( ) Any signs that are required by the building code or section 120.

7. Applicant's declaration

I understand that as the applicant, the council will send all invoices and refunds for fees to the fee payer, and that all correspondence related to the application will be sent to me.

I confirm that I have read and understood the privacy statement in the PIM and/or Building Consent Guide, and that the information provided on the application form is true and correct.

M Sibley — 25/11/06

Signature — Date

Morgan Joseph Hurley

Name (print clearly)