

6001291



BC

SPECIFICATION

RECEIVED

13 AUG 2001

MARLBOROUGH
DISTRICT COUNCIL

SECTION ONE: PRELIMINARY AND GENERAL

1.1 MATERIALS AND WORKMANSHIP

All materials and workmanship shall be the best of their respective kind, qualities, classes and grades as specified. They shall comply with the relevant N.Z. Standard of their kind and with the New Zealand Building Code.

All tradesmen are to familiarise themselves with the Endeavour Homes Specification and complete their work in accordance with it.

1.2 FINISHING

A high standard of workmanship is required by all contractors and tradesmen. Should any trade consider that any surface, fitting or joinery not be left in such condition as to allow that trade to produce a workmanlike finish, it shall be his responsibility to notify that contractor before any further work is done. No further finishing work shall then be done until acceptable improvements have been made. Failure to notify the contractor in this respect shall render that trade responsible for any subsequent substandard finish.

1.3 SITE CLEARANCE AND MAINTENANCE

The contractor shall be responsible for the building site being left in a tidy state free from all rubbish and residue and ready for occupation. Any site cleaning up work required to be done in this respect may be charged to the contractor responsible.

SECTION TWO: SITE CLEARANCE

2.1 SCOPE

The contractor shall be responsible for the removal of all vegetation, trees, roots, and other unsuitable material from the area to be covered by the new building, decks, verandas and other associated works. This material is to be removed from the site and suitably disposed of.

2.2 SURVEY MARKS

The contractor shall ensure that all survey markings or builders pegs are not damaged to disturbed during site clearance. Any marks close to the works should be suitably protected by the contractor before he begins work. Any marks disturbed or damaged shall be advised to the Building Overseer who shall arrange for their reinstatement.

SECTION THREE: BUILDING CONTRACTORS

3.1 PRELIMINARY

All workmanship and materials shall comply with the New Zealand Building Code, relevant New Zealand Standards, and accepted trade practice. All work is to be carried out in accordance with the plans, specifications, and job sheets supplied with this contract and as varied from time to time.

3.2 SITE SET OUT

The contractor is responsible for ensuring that the works are correctly set out on the building site. He will confirm that all survey and/or ground marks required to achieve an accurate set out are in place. Any marks not in place or disturbed are to be notified to the Building Overseer. The contractor is responsible for ensuring that all such marks are not damaged or disturbed by his works and he shall take such measures as are necessary to protect these marks. He may be held liable for the cost of reinstatement of any marks disturbed by him.

3.3 CONCRETE FLOOR

3.3.1 EXCAVATION

The contractor is to excavate for all foundations, decks, porches, steps and other works included in this contract and as detailed on the plans. The foundations are to be excavated to a minimum depth of 300mm or to solid bearing.

A minimum depth of 100mm is to be excavated under all concrete floors. All excavations are to be cleaned out and the bottoms left dry and firm.

3.3.2 FILL UNDER CONCRETE FLOORS

Hardfill under all concrete floors shall be levelled. The minimum depth of hardfill is to be 150mm. Any concrete floors requiring hardfill to a depth exceeding 600mm shall require an Engineer's specific design in terms of NZS 3604:1990 CE 5.1 when requested by the local authority.

3.3.3 MATERIALS

All concrete shall be Ordinary Grade 17.5 MPA at 28 days and shall comply with NZS 3109:1987.

Reinforcing shall be mild steel rods (plain or deformed) and mesh if required as specified on the plans and will comply with NZS 3402:1989.

All ties to be black annealed tie wires.

3.3.4 FORMWORK

All formwork shall be ex 25mm rough sawn timber and braced so as to prevent any distortion. All joints shall be sufficiently tight so as to prevent any leakage and to ensure that a high standard of "fairfaced" finish is achieved.

Pour all foundation walls and footings as detailed on the plans. Allow to build in all pipes, conduits, and fittings as required by other trades. Any verandas, decks, or porches shall be tied to the foundation wall as detailed on the plans.

3.3.6 CONCRETE FLOOR

The concrete floor shall be 100mm minimum thickness poured over 0.25mm thick polythene vapour barrier. Vapour barriers are to be lapped a minimum of 150mm and shall be sealed with pressure sensitive tape. The concrete slab surface shall be smooth and level, free from any ridges or depressions and shall conform to an acceptable tradesmanlike finish.

3.3.7 CONCRETE DECKS AND STEPS

All concrete decks, steps and porch areas are to fully comply with NZBC D1/AS1 Table 1A for slip resistance: i.e. a broomed (Class 5 or 6)(6) or wood float finish (Class U2)(6) giving a coefficient of friction (wet) value of 0.65 - 0.85.

Steps are to have a minimum tread width of 280mm and a maximum tread height of 190mm (refer Table 5 NZBC D1/AS1).

All deck or step heights over 900mm in height above formed ground level are to comply with NZBC F4/AS1 in respect to balustrades or handrails.

Balustrades to decks, when required, are to comply with NZBC B1/AS2.

3.4 TIMBER FLOOR

3.4.1 EXCAVATION

Excavate for all timber piles to the minimum depth and width as detailed on the plans or to solid bearing. The bottoms of the holes should be square not rounded and the sides are to be perpendicular. The excavations should be left clean with the bottoms dry and firm.

3.4.2 MATERIALS

All timber is to comply with NZS 3604:1990 and NZS 3640:1992 (Minimum requirements of the N.Z. Timber Preservation Council Inc.)

All nails, screws, bolts and other fastenings are to be galvanised and shall be fixed in accordance with Appendix A NZS 3604:1990.

3.4.3 FLOOR FRAMING

All ordinary timber piles to be as detailed on the plans with 12 kn fixings and to comply with NZS's 3604:1990 and 3605:19 and the NZBC.

Level the tops of the piles and secure bearers to piles as detailed on the plans and to manufacturers specifications. Fixings to anchor piles to be 12 kn. Coat the ends of all cut piles with "Enseed" to seal.

Floor joists to be fixed as per NZ Standard 3604:1990 Appendix A except where separately specified in respect to anchor piles on the plans.

Drape double sided perforated aluminium foil over floor joists with 100mm dish at mid-span between joists. Sisalation must be tightly butted against blocking.

A 450mm x 450mm clear opening is to be framed for the manhole; this is to be located conveniently and a ledge formed to support the manhole cover.

3.4.4 FLOORING

Lay 18mm thick high density particle board flooring over joists, all joints to be staggered, to manufacturers specifications. Form the manhole cover.

3.4.5 TIMBER DECKS AND STEPS

All timber decks, steps and porches are to comply with NZBC D1/AS1 Table 1A for slip resistance: i.e. an uncoated profiled (4) across profile giving coefficient or friction value of 0.45 - 0.60.

Steps are to have a minimum tread width of 280mm and a maximum riser height of 190mm as per Table 5 NZBC D1/AS1.

10.3.2 LIGHT SWITCHES

Shall be 10 amp, all insulated approved switches mounted 1200mm above the floor and will be supplied and wired up as shown on the plans and as stated on clients specifications.

10.3.3 POWER POINTS

All power points shall be 230v 10 amp 3 pin approved type mounted 300mm above the floor or 225mm above bench tops. Mount power points for washing machine and refrigerator 1200 above floor level and will be supplied and installed as denoted on attached plans and client specification.

10.3.4 LIGHTS

Interior lights shall be approved white batten-holder complete with conical shade and approved downlights unless specified otherwise by the client.

Supply and wire up according to plans.

Supply and wire up two exterior lights, type as specified by client.

10.3.6 METER BOX

Supply and install a steel meter box as denoted on the plans.

10.3.7 SWITCHBOARD

Supply and install the switchboard, complete with all necessary control and ancillary equipment in the recess provided and as denoted on the plans.

10.3.8 WATER HEATER

Supply and install water heating element and thermostat in HWC.

10.3.9 TRENCHES

To be a minimum 600mm in depth for mains cable and to be backfilled and consolidated upon completion of contract.

SECTION ELEVEN: FINISHING

11.1 INTERIOR PAINTING

Interior paint is to be applied to all walls, doors, wardrobes, cupboard doors, and ceilings. The colours are to be as specified by the client.

"All paints used are to comply with the requirements of their respective manufacturer in terms of what building products it is suitable for use on."

11.2 EXTERIOR PAINTING

Exterior paint is to be applied to all weatherboard areas including gable ends, soffits, over windows and doors and other areas as specified by the Building Overseer.

Any decks or steps over 900mm in height above formed ground level are to comply with NZBC F4/AS1.

Balustrades to decks, when required, are to comply with NZBC B1/AS2.

3.5 HOUSE

3.5.1 WALL FRAMING

All framing to be "ex" 94mm x 47mm studs at 600 centres with two rows of dwangs equally spaced. Top and bottom plates are to be "ex" 94mm x 47mm with top plates being joined over studs and at intersecting walls with nail plates. Exterior bottom plates are to be fixed with Lumberlock bottom plate connectors at 900mm centres. A Ramset nail and washer is to be fixed adjacent to each connector.

Interior bottom plates may be fixed with "Ramset" or similar approved fittings.

Ceiling plate is to be 150mm x 40mm.

All exterior wall framing is to be covered with building paper complying with NZBC E2/AS1 clause 2.4 and is to be securely fixed to studs, dwangs, and plates with a minimum 75mm overlap.

All noggings, trimmings, straightening and packing of studs, dwangs, and joists necessary to enable tradesmenlike fixing of gibraltar board is to be completed by the builder.

All lintels are to comply with NZ Standard 3604:1990 Table 16.

The builder should note any special engineers lintel designs where high load points may occur in terms of NZ Standard 3604:1990 cl 6.6.1.2 i.e. Girder trusses on hip roofs.

3.5.2 WALL BRACING

All wall bracing is to be fixed in accordance with NZ Standard 3604:1990 and the manufacturers instructions. Location and type of brace to be in strict accordance with the plans and bracing schedule that form part of this contract.

3.5.3 ROOF FRAMING

Roof framing is to be in accordance with NZ Standard 3604:1990 and the manufacturers instructions. Location and type of brace to be in strict accordance with the plans and bracing schedule that form part of this contract.

A truss certificate from the roof truss manufacturer showing the layout of the roof truss design is to be included in the set of plans included in this contract.

3.5.4 COLORTILES

Installation is to be by an approved contractor and comply fully with the manufacturers specifications and instructions, the NZBC E2/AS1 Table 1, and NZ Standards 3604:1990 and 4217:1980. All building contractors are responsible for familiarising themselves with information in regard to roof framing requirements.

Self Supporting building paper complying to NZBC E2/AS1 Clause 1.3 is to be fixed to roof timbers under colourtiles.

3.5.5 GUTTER AND FASCIA SYSTEMS

Gutter and fascia systems are to be as stated in the clients specification and shall comply fully with the NZBC E1/AS1 clauses 5.0 - 5.2 and clauses B1 and B2.

All installation is to be in strict accordance with the manufacturers instructions and specification.

Downpipes are to comply with NZBC E1/AS1 Table 5.

3.5.6 INSULATION

Insulation is to comply with NZBC H1/AS1.

Ceiling insulation to be R 2.4 Fibreglass Batts and wall insulation to be R 1.8 Fibreglass Batts friction fitted to form a complete envelope.

3.5.7 INTERNAL WALLS/GIBSTOPPING

All linings are to be carried to floor level, into wardrobes and cupboards and behind all fittings.

The moisture content of all framing (including lintels and beams) shall be within the acceptable range and complying with Local authority requirements before fitting of linings.

All walls, ceilings, wardrobes and cupboards are to be lined with 9.5mm thick Gibraltar Board and stopped to a paint grade finish.

Fixing shall be in strict accordance with manufacturers instructions and good trade practice.

Skirtings shall be 60mm x 10mm bull nose skirting to all wall and floor junctions.

3.5.8 FIBRE CEMENT WEATHERBOARDS

All workmanship and materials are to comply with the NZBC E2/AS1, NZ Standard 3604:1990, and the manufacturers specification and instructions for installation. Fix weatherboards with 50mm x 2.8mm galvanised nails and fit soakers, mouldings and flashings as required.

All joints to be completed with an approved RTV sealant to manufacturers instructions.

The building contractor is to note the correct cutting and installation of these materials is essential to produce a quality finish, particularly around doors and windows.

3.5.9 JOINERY

3.5.9.1 DOORS, WARDROBES AND CUPBOARDS

All joinery for interior, exterior, wardrobes and cupboards is to be installed as shown on the plans and of the type shown in the client specification. The building contractor is to ensure that all doors are hung in a tradesmanlike manner being true and plumb. All sliding doors units are to be installed to permit the doors to slide truly along the tracks. Wardrobes and cupboards are to have shelves and rails etc installed as implied on the plans or in the client specification.

3.5.9.2 ALUMINIUM WINDOWS

All aluminium window joinery is to be installed in the positions shown on the plans and to the type specified in the client specification. The building contractor is to ensure that window reveals are fitted securely and square and that any flashings, particularly around box garden or bay windows are watertight. Any manufacturers instructions provided or indicated are to be strictly adhered to.

All glazing is to comply with the NZ Standard 4223:pt3:1993 and the NZBC F2/AS1 in respect to safety glass. Ventilation to all areas of the house to comply with NZBC G4.AS1 except where mechanical or other means of ventilation are used.

3.5.9.3 KITCHEN JOINERY

Install kitchen joinery as shown on the plans and as indicated in the client specification.

Kitchen layout and joinery is to comply with NZBC G3/AS1 with particular emphasis on the preparation area as set out in Figure 1.

It is important that the building contractor ensures that all necessary plumbing fittings are installed before fitting of the joinery.

3.5.9.4 LAUNDRY CABINET AND TUB

Install laundry cabinet and tub as shown on the plans and in the client specification. Laundry layout and joinery is to comply with the NZBC G2/AS1 particularly Fig. 1.

The building contractor to ensure that tub pre-plumbing is completed before final fitting of the cabinet.

3.5.9.5 BATHROOM

Install bathroom joinery including vanity unit and shower cubicle which are to comply with the requirements of the NZBC G1/AS1 and E3/AS1 Clause 3.2.

The building contractor is to ensure that the plumber has installed the shower tray (plumbed) and any other required fittings are in place before he commences work refer clause 9.7 of this specification.

3.5.9.6 WATER CYLINDER SUPPLY TANK (CHRISTCHURCH ONLY)

The building contractor is responsible for installing the 135 litre plastic roof tank, tray, and lid to be supplied with each house (dimension being 650mm dia x 500mm height) which is to be positioned as high in the roof cavity as is possible. Load bearing walls will be required to support the tank and a 350mm access gap will need to be provided for plumbers use. Seismic restraints complying with NZBC 912/AS1/Fig 6 are to be positioned as required.

SECTION FOUR: BLOCKLAYER

4.1 PRELIMINARY

All workmanship and materials to comply with NZ Standards 3604:1990 and 4230:Part 1:1990 and with the NZBC Parts B1 and B2.

The concrete blockwork includes the laying of all blockwork shown on the plans and as specified by any engineers design certificate.

4.2 CONCRETE BLOCKS

Shall comply fully with the requirements of NZ Standard 3102:1983 with all exposed edges laid true and square: damaged blocks will not be acceptable.

4.3 MORTAR

The cement used will comply with NZ Standard 3122, the water to be portable, and the sand used to comply with NZ Standard 3103 No.1 Grade.

4.4 BLOCKWORK

The concrete blockwork shall be laid in stretcher or stack bond with all joints to be full and struck to provide a good quality "FAIRFACED" finish to both faces. A complete bond between blocks and mortar is to be secured and no blocks are to be adjusted once the mortar has set thereby breaking the bond. All steel reinforcing is to comply with NZ Standard 3402:1989 and is to be placed as shown on the plans.

All pipes, conduits and other fittings required by other trades are to be built in for their convenience and in the positions indicated on the plans. Form weepholes in the blockwork at least 50mm below all bottom plates and below finished floor level at approximately 800mm centres.

All blockwork is to be thoroughly cleaned down upon completion.

SECTION FIVE: BRICKWORK

5.1 PRELIMINARY

All workmanship and materials are to comply with NZ Standards 3604:1990, 4229:1986 and 4230:1990 and the NZBC B1/AS1.

Bricks are to be as stated in the client specification and must be true to shape without blemish or defect.

5.2 MORTAR

Cement to be used to comply with NZ Standard 3122m water shall be potable, and sand shall be No.1 Grade NZ Standard 3103.

Mortar is to be mixed in an approved fashion to form a homogenous mass in a colour to match the brickwork (or as specified).

Any mortar not used within 90 minutes of mixing is to be discarded.

The bricklayer to note that Plasticisers are to be used in strict accordance with the manufacturers instructions and that no additives are to be used in conjunction with them.

5.3 BRICKWORK

Bricks are to be laid in stretcher bond to a true line level and plumb face. Joints are to be consistent and not more than 9.5mm in width.

A cavity of not less than 40mm nor more than 75mm in width is to be maintained between the timber frame and the brick veneer. The cavity is to be clean and free from mortar droppings, protrusions, pipework and electrical fittings.

Approved zinc or galvanised ties are to be fixed at 600mm vertically and 400mm horizontally (maximums).

100mm x 400mm subfloor vents are to be built into the veneer at 900mm maximum separation distances to provide required ventilation. (Based on 3500m² venting for each 1m² of floor area). Vents are to be a maximum of 750mm from house corners.

Bricklayer is to allow for any pipes, conduits, or other fittings required by other tradesmen.

Clean down face of brickwork when completed and leave free from mortar stains and efflorescence.

SECTION SIX: EXTERIOR TEXTURE COAT

6.1 SCOPE

The application of an approved acrylic texture coat to all exterior walls and areas as denoted on the plans.

6.2 MATERIALS

Nuplex texture coat system with a flex coat finish over 7.5mm Harditex to Manufacturers Specifications.

6.3 WORKMANSHIP

All work is to be best trade practice with the work to be of a consistent grade and finish over the whole job. Comply with NZBC B2/AS1 and E2/AS1.

SECTION SEVEN: FOUNDATION PLASTERER

7.1 SCOPE

The solid plastering of all decks, porches, front and back steps and foundations as required by the Building Overseer.

7.2 MATERIALS

Cement shall comply with NZ Standard 3122, sand shall be No. 1 Grade NZ Standard 3103, Hydrated Lime to be "mill hydrated" of approved manufacture and any bonding agents are to be used in strict accordance with manufacturers instructions.

7.3 WORKMANSHIP

All work is to be best trade practice with the overall finish to be of a consistent finish over all of the work.

Keep all work damp as required during application.

Comply with NZ Standard 4251:1974.

7.4 FOUNDATIONS

Remove any projections and make good any defects prior to commencing the application of the plaster coat (12mm thickness).

7.5 DECKS AND STEPS

Plaster coat to be done in one operation: one coat 12mm thick to be wood float finish complying with NZBC D1/AS1 Table 1A to remove all blemishes.

7.6 COMPLETION

Leave all work complete and clear away all plaster droppings, excess materials and residue.

SECTION EIGHT: PLUMBER

8.1 SCOPE

The Plumber shall be responsible for the supply of all plant and labour necessary for the installation of water reticulation (from toby box), sanitary services and fittings (from gully traps/vents inclusive), all vent pipe flashings and cappings and downpipes and associated brackets. Also snow strapping if required.

8.2 STANDARDS

All work and materials are to comply with the relevant NZ Standard (as stated) and the NZBC Clauses G1 - G4 and G10 - G15.

Work is to be completed by Registered Craftsman Plumbers.

8.3 MATERIALS

8.3.1 COPPER TUBING

Shall be seamless cold drawn to comply with NZ Standard 3501:1976.

8.3.2 PLASTIC PIPE

- Polybutylene to comply with NZ Standard??
- UPVC: Wastes, vents and soil pipes shall be rigid pvc having solvent welded joints to comply with NZ Standard 7641:1978 and 7642:1971.
- Polypropylene: Traps shall be white polypropylene with screwed joints to NZ Standard 7652:1976.
- Polythene: Water supply pipes to be "h.d" polythene completed with approved pipe fittings to NZ Standard 7602:1977.

8.4 COLD WATER SUPPLY

From point of supply in street (toby box) run a 20mm polythene pipe underground to the house foundation entry point thence to the gravity feed fed roof tank. All pipework to be PVC Polypropylene: 20mm dia mains with 15mm dia branches.

All pipe work to be clipped in accordance with NZBC G12/AS1 Table 7 and G13/AS1 6.3.1 Table 8.

8.5 HOT WATER SUPPLY

Install 180 Litre Hot Water Cylinder complete with 1500 watt element and thermostat with 20mm dia supply pipe and 15mm dia branches or risers to sink, wash hand basin, bath, shower and laundry tub. Hot water supply pipework to be copper.

HWC tempering valve to comply with NZ Standard 4617:1989 to all hot water supply pipe work prior to all fittings: Set valve to 55 degrees centigrade in accordance with NZBC G12/AS1 Clause 4.13.2. Fit seismic restraint.

All pipe work to be clipped in accordance with NZBC G12/AS1 Table 7 and G13/AS1 6.3.1 Table 8.

Insulate all hot water pipes with preformed fibreglass insulation or double thickness plumbers felt secured with wire tie wrap.

8.6 WASTE PIPES AND TRAPS

Waste pipes, vents, and traps are to be installed with all work carried out in accordance with the manufacturers instructions and specifications. Care is to be taken where pipes and wastes are running horizontally.

8.7 TAPS, FAUCETS, SHOWER MIXING VALVES, ETC

Refer to the clients specifications for brand and tupe of fitting required. All fittings to installed to manufacturers instructions.

The shower tray is to be installed before the builder finishes off shower joinery (refer Clause 3.5.9.4 of this specification) and must comply with NZBC E3/AS1 Clause 3.2.

8.8 DOWNPIPES

Supply and fit PVC downpipes to droppers in gutter system including two brackets per downpipe.

Comply with NZBC E1/AS1 clause 4.0 and Table 5.

8.9 TESTING

At completion of work test all water supply pipework at maximum pressure available and comply with any Local Authority requirements or procedures.

SECTION NINE: DRAINLAYER

9.1 SCOPE

The drainlayer is responsible for all surface and foulwater drainage up to ground level to connect to plumbers work. This includes all pipes and fittings, manholes and inspection chambers, gully traps and connections for terminal vents. The drainlayer is to confer with the building contractor before foundation work begins to fix the exact position of all pipes and fittings.

9.2 STANDARDS

All work and materials are to comply with the relevant NZ Standards, with the NZBC Clauses G1 - G4 and G10 - G15, and with good trade practice. The drainlayer is to obtain all relevant permits, service all notices, pay all fees required and arrange for all tests.

9.3 MATERIALS

9.3.1 PIPES

UPVC pipes shall comply with NZ Standard 7649:1988 and 100mm dia unglazed socket earthenware pipes will comply with NZ Standard 3302:1983 with approved rubber rings.

9.3.2 CONCRETE

Shall be 17.5 MPa Ordinary Grade to NZ Standard 3109:1987.

9.4 TRENCHES

Neatly cut trenches, graded to falls after approval, backfill and thoroughly consolidate. Lay all drains on 100mm of 20mm crushed metal.

9.5 SEWER DRAINS

Comply with the NZBC and NZ Standard 4452:1986.

Refer to the SITE PLAN for layout of sewer drainage:

- Provide all necessary bends, junctions, inspection fittings, etc.
- Bed gullies in concrete and fit preformed plastic sumps complete with grate and cover.
- Sumps shall be 100mm above ^{finished} ~~existing~~ ground level.
- Connect to terminal vent and gully trap and run to approved connection.

9.6 STORMWATER DRAINS

Comply with the NZBC and NZ Standard 4452:1986.

Refer to the SITE PLAN for the layout of stormwater drains:

- Provide all necessary bends, junctions, inspection fittings, etc
- Bed "easy bends" in concrete below downpipe entries; fit grating and cover plate cut around downpipe.
- Connect to stormwater drain and run to road side channel (or other approved stormwater outfall).

9.7 COMPLETION

Properly backfill all trenches, consolidate as filling is done, and leave the building site in a tidy and safe state.

SECTION TEN: ELECTRICAL

10.1 SCOPE

The electrical contract consists of the supply of all plant, materials and labour for completion of the entire lighting and power system including the connection to the Local Power Supply Authority mains system.

10.2 STANDARDS

The whole of the electrical installation shall be in strict accordance with Electrical Wiring Regulations and all its amendments and shall comply with the NZ Electrical Code of Practice ECP50 and ECP51.

10.3 MATERIALS AND INSTALLATION

10.3.1 CABLES

Cables and flexibles shall be 250v grade T.P.S to comply with NZ Standard 6401:1973.

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Wall Bracing Calculation Sheet A

Job Details

box 1

Name Aldon Lodge
 Street and Number Wellington Street
 Lot and DP Number Lot 2 DP 4295 Lot 2 DP 4450 Lot 2 DP 577
 City/Town/District Pleasanton
 Location of Storey: Single upper of two tower of two Floor load 2kPa/3kPa
 Building height to apex 4.0 m Roof weight light/heavy
 Cladding weights: Subfloor light/medium/heavy
 Lower Storey light/medium/heavy
 Upper Storey light/medium/heavy
 Room in Roof Space Yes / No
 Roof height above eaves 1.2 m
 Stud height 2.4 m
 Average roof pitch 15°
 Building length BL = 7.30 m Gross Building
 Building width BW = 6.40 m Plan Area, GPA = 47 m'
 Note: When the average roof pitch is over 25 degrees, use the eaves length and width to determine BL and BW.
 Note: For heavy roofs use the roof plan at eaves level to determine GPA.

Wind Zone

box 2

Region: R1 0 Terrain: Inland 0 ✓ Exposure: Sheltered 0 ✓ Topography: Gentle 0 ✓
 R2 1 ✓ Coastal 1 Exposed 1 Moderate 1 Extreme 3
 Total points 1
 Wind Zone: Medium (1) Low (0) Very high (3) Specific Design (4)
High (2)

Earthquake Zone

box 3

From figure EQ1 select Earthquake Zone: A

BU's required Wind

box 4

From Table W1A/W1B
 W along = 44 BU's/m
 W across = 37 BU's/m
 Total wind load,
 W ALONG:
 W along x BW = 282 BU's
 W ACROSS
 W across x BL = 270 BU's

BU's required Earthquake

box 5

From Table EQ1/EQ2/EQ3/EQ4/EQ5/EQ6
 E = 5.2 BU's/m'
 Note: For a room in the roof space use E + 3
 Total earthquake load,
 EQ ALONG and EQ ACROSS
 E x GPA BU's = 245 BU's

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Wall Bracing Calculation Sheet B

Along

Wall or Bracing Line		Bracing Elements Provided			Wind		Earthquake	
1	2	3	4	5	6 W	7 W	6 E	7 E
Line Label	Minimum BU's Required	Bracing Element No.	Bracing Type	Length Element (m) L	Rating BU/m	BU's Achieved (BU/m x L)	Rating BU/m	BU's Achieved (BU/m x L)
					W	W	E	E
A		1	BR4	0.9	100	90	85	76
		2	Lib.	1.8	55	99	50	90
		3	BR4	1.1	100	110	85	93
B		4	BR4	9	100	90	85	76
		5	BR4	1.0	100	100	85	85
C								
D								
E								

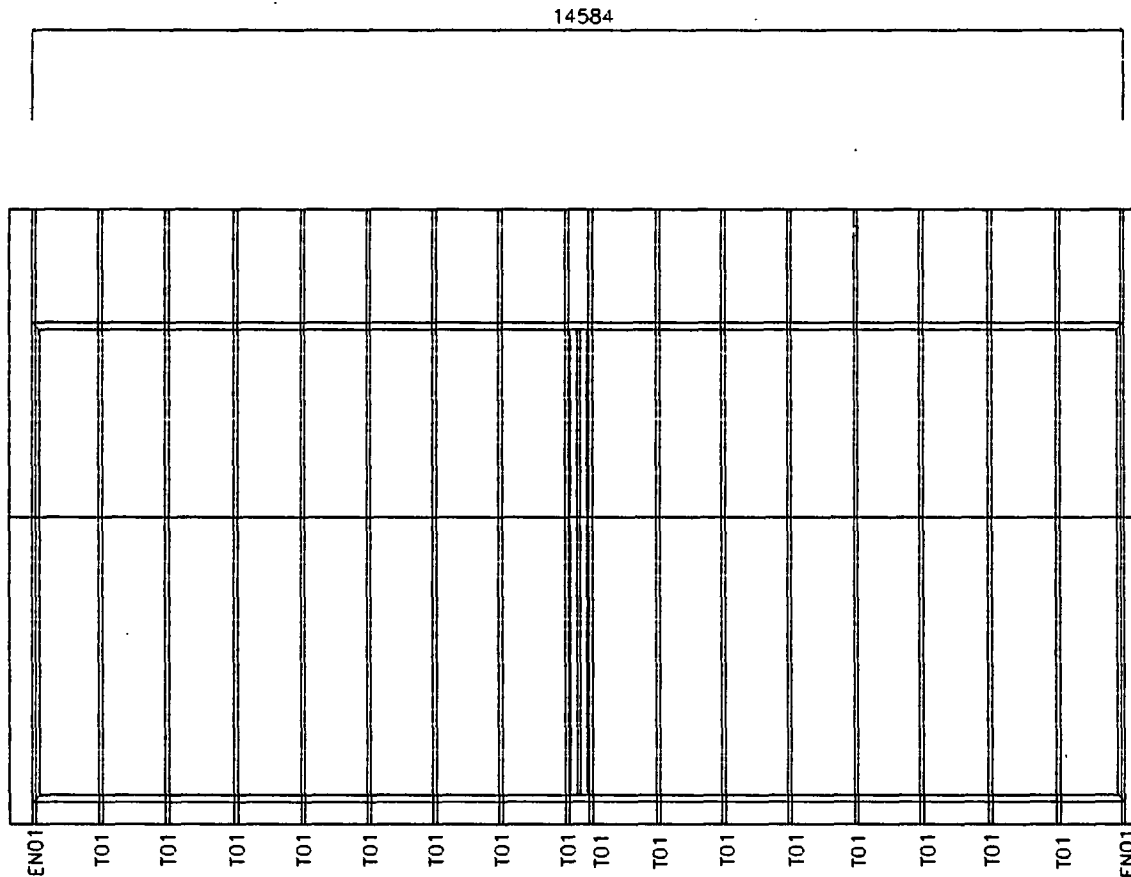
Totals Achieved		W	<u>489</u>	E	<u>420</u>
From Sheet A Totals Required		W	<u>282</u>	E	<u>245</u>
Wreq/Ereq =		<u>1.5</u>			

*If Wreq/Ereq is 1 or less complete E column only
 If Wreq/Ereq is 1.5 or more complete W column only
 Otherwise complete both W and E

Across

Wall or Bracing Line		Bracing Elements Provided			Wind		Earthquake	
1	2	3	4	5	6 W	7 W	6 E	7 E
Line Label	Minimum BU's Required	Bracing Element No.	Bracing Type	Length Element (m) L	Rating BU/m	BU's Achieved (BU/m x L)	Rating BU/m	BU's Achieved (BU/m x L)
					W	W	E	E
M		6	Lib.	4.0	75	300	50	200
		7	Lib.	2.1	55	115	50	105
N		8	Lib.	2.4	75	180	50	120
		9	Lib.	2.4	75	180	50	120
O								
P								
O								

Totals Achieved		W	<u>775</u>	E	<u>545</u>
From Sheet A Totals Required		W	<u>270</u>	E	<u>245</u>
Wreq/Ereq =		<u>1.0</u>			



Gibson Timber Ltd

76 Quarantine Road
Stoke
Nelson

Telephone: 03-547 7026
Fax: 03-547 2151

Builder: Endeavour Homes
Site Address: Wellington Street
Picton

Telephone:

Description: Aldan Lodge

File:

109-13

Scale: 1:100

Date: 7/09/01

Drawn By: Don Date

Job Details:

Snow Zone:	Zone 3	Snow Altitude:	20m
Ext. Pressure Coeff.:	-0.9	Int. Pressure Coeff.:	0.3
Wind Area:	High	Design Wind Speed:	44.0m/s
TC Restraints:	900mm	BC Restraints:	400mm
Roof Material:	Galv Iron .5mm	Ceiling Material:	Standard
Roof Live Load:	0.250kPa	Snow Load:	0.130kPa
Roof Pitch:	15.00deg	Truss Centre:	900mm

Job: 109-13 Qty: 16 Client: Endeavour Homes
Truss: T01 Ply: 1 Phone: 544 0886
Description:

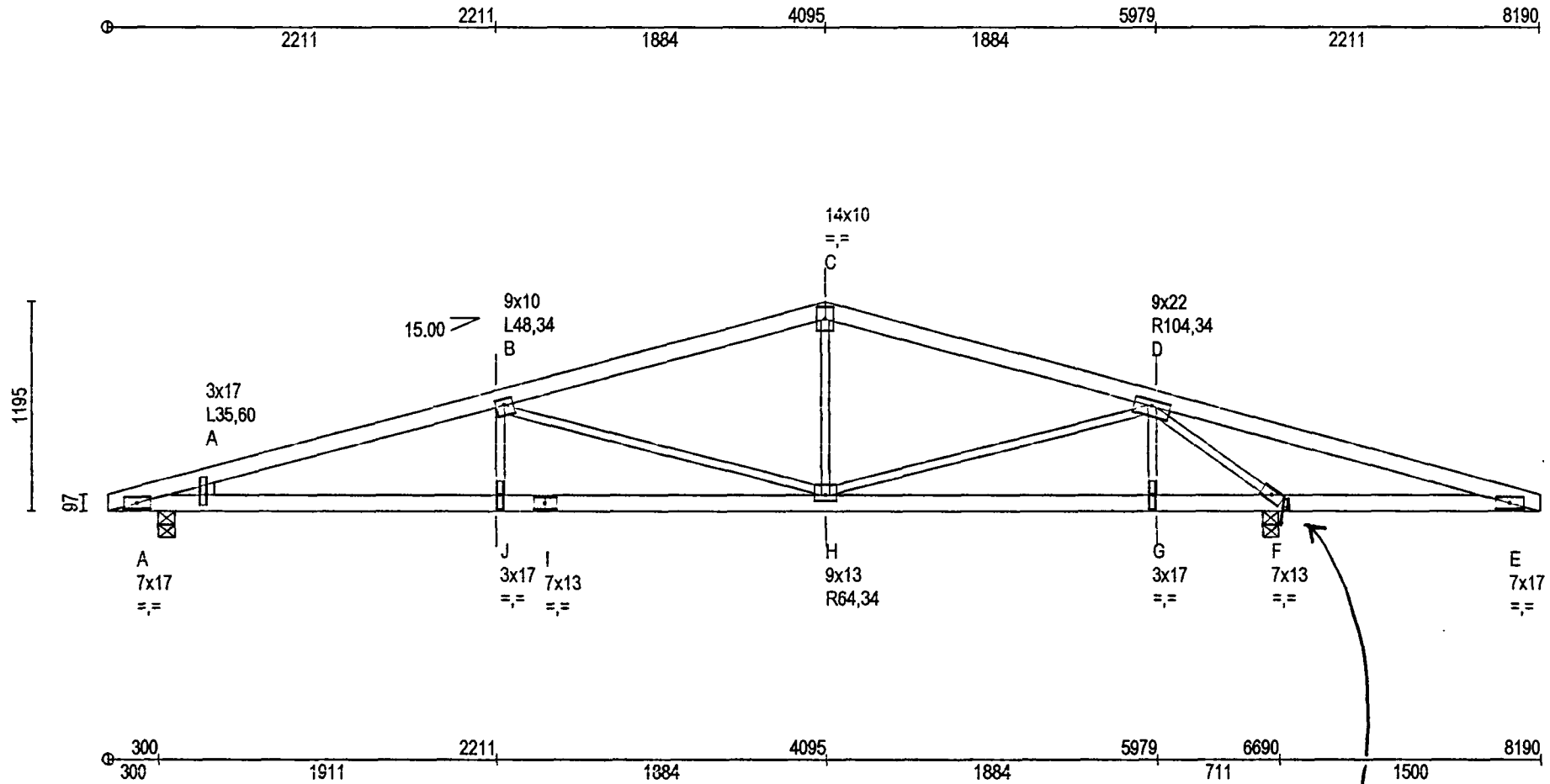
Site: Wellington Street
Picton

Phone:

MiTek 2000 2.100.g6f

Gang Nail Group Ltd

Fri Sep 07 10:24:34 2001



Designed with warnings

- CT200 cyclone truss required @ cantilever
1 pair per truss, fully nailed.

Fabricator adjusted camber at joint J = 2 mm.
Overall Truss Height: 1195

BCC011291

Gibson Timber Ltd

Job: 109-13

Client: Endeavour Homes

Site: Wellington Street

Phone: 544 0886

Picton

Description: Aldan Lodge

Phone:

MiTek 2000 2.100 g6f

Gang Nail Group Ltd.

Fri Sep 07 10:24:54 2001

PRODUCER STATEMENT
MiTek 2000(tm) ROOF TRUSS DESIGN

Certification of MiTek 2000(tm) Design Program

The MiTek 2000(tm) roof truss design program has been developed by Gang-Nail Group Ltd for the design of Gang-Nail timber roof trusses in New Zealand. The truss designs computed by this program are prepared using sound and widely accepted engineering principles, and in accordance with NZS 4203, NZS 3603 and NZS 3604 as verification methods and acceptable solutions of the approved documents issued by the Building Industry Authority to satisfy the requirements of Clause B1: Structure of the Building Regulations 1992. This computer design for the proposed building complies with the relevant provisions of the NZ Building Code. This is subject to all proprietary products meeting their performance specification requirements, the provision of adequate bracing, fixings and the correct input of design data carried out by suitably trained personnel.

Summary of MiTek 2000(tm) Design Data and Output

The MiTek 2000(tm) computer design output for this job titled and located at the site identified on the top of this page is based on the following parameters entered into the program. The owner must ensure that the following job details below are current and relevant to the project before fabrication and erection of the Gang-Nail trusses.

Job Details

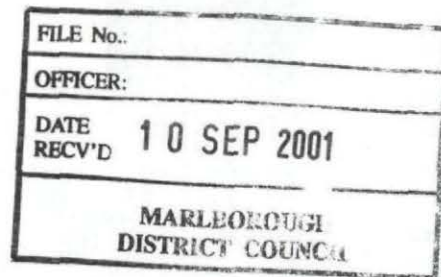
Roof Pitch:	15.00 deg	Timber Inventory:	DF_No.1.Fr.x50	Building Wind Zone:	High
Roof Material:	Galv Iron .5mm	Ceiling Material:	Standard	Design Wind Speed:	44.0 m/s
Dead Load:	0.210 kPa	BC Dead Load:	0.200 kPa	Pressure Coefficient:	Cpe = 0.9 Cpi = 0.3
IC Restraints:	900 mm centres	BC Restraints:	400 mm centres	Snow Load Zone:	Zone 3
Roof Live Load:	Lu = 0.250 kPa Lc = 1.0 kN	Truss Spacing:	900 mm	Altitude:	20 m
		Standard Overhang:	300 mm	Snow Load @ 15 deg:	0.1601 Pa

These trusses must be fabricated and erected in accordance with the Gang-Nail manual. Proper erection bracing must be installed to hold the components true and plumb and in a safe condition until permanent bracing is fixed. All permanent bracing and fixing must be installed before any loads are applied. The specifications for timber shall be as shown on the output. The timber shall be standard gauged and treated to the requirements of NZMP 3640.

Truss List

Legend: *: detail only, ?: input only, ~~xxx~~: failed design, Unmarked trusses: designed successfully

Truss	Span (mm)	Pitch (deg)	Spacing (mm)
EN01	8190	15.00	890
T01	8190	15.00	890



The computer design input has been carried out by:

Signed: *[Signature]*

Date: 7 September 2001

Name of Computer Operator: *Don Bale*

Qualifications and Title: *Pre-cut Manager*

Company: Gibson Timber Ltd



Verification / Acceptance of Input Data:

I have checked the input data against the construction drawings and specifications and verify that they are correct and suitable for this job.

Signed:

Date:

Name:

Company:

Gibson

TIMBER

LICENSED GANG-NAIL FABRICATOR

Don Bate

PRE-CUT MANAGER

76 Quarantine Road,
Stoke, Nelson

Phone 0-3-547 7026

Fax 0-3-547 2151

Mobile 021 140 7005

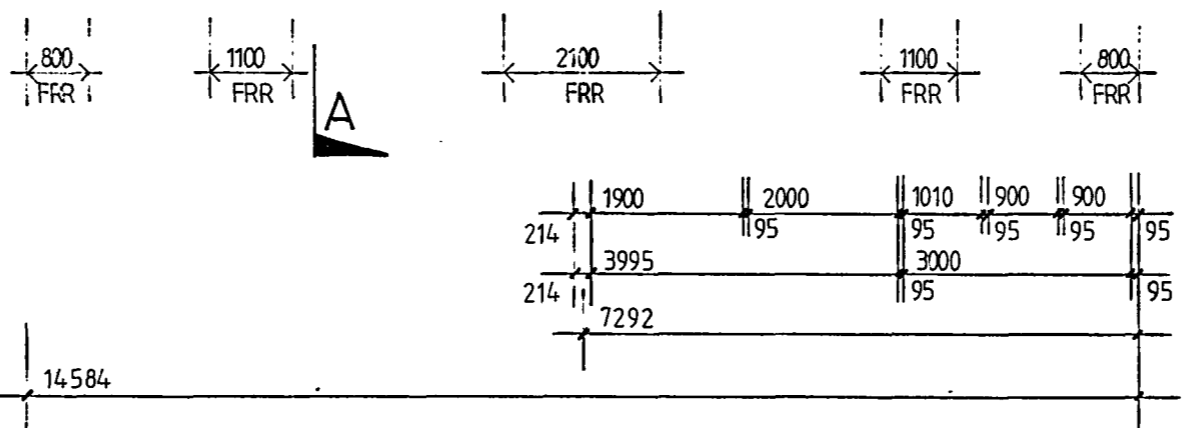
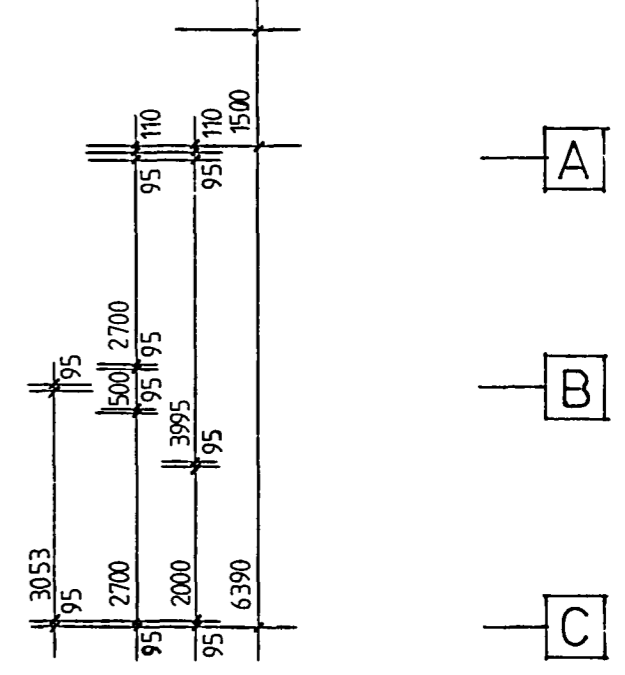
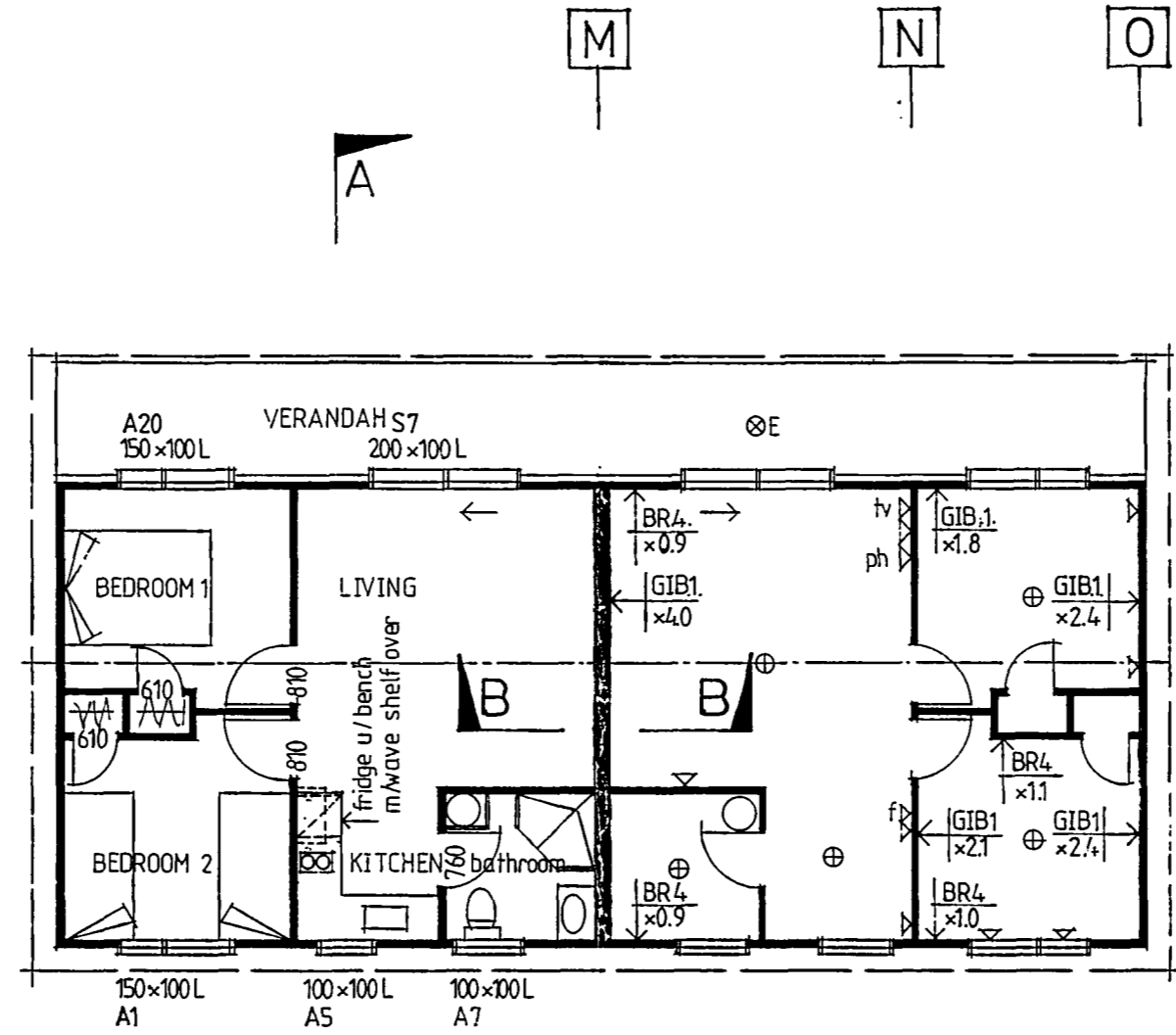
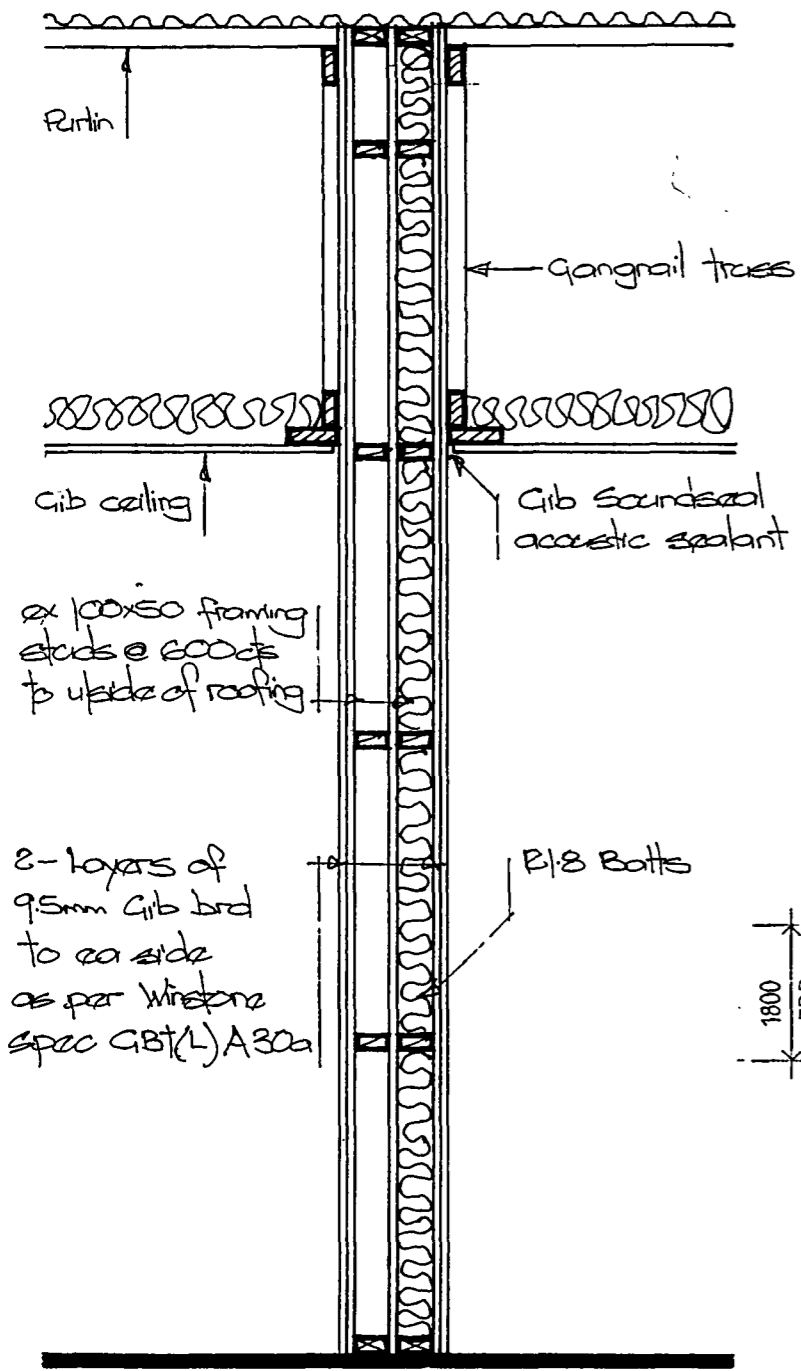
Email gibsontimber@xtra.co.nz



51246

RECEIVED
18 SEP 2001
MARLBOROUGH DISTRICT COUNCIL

- ◁ double plug
- ◁tv television outlet
- ◁ph telephone jack
- ◁f under bench fridge
- ⊕ batten holder
- ⊗E exterior batten holder
- HWC.



UNITS	93.42m2
VERANDAH	21.95m2
TOTAL	115.37m2

NOTE:- area of exterior walls dimensioned are to be lined with 13mm Fyrelime to both sides
- Refer to GIB residential garage wall system for hold down fixings

SECTION B-B

1:20

Endeavour Homes

DICK BAKER KEVIN SATHERLEY

93 Gladstone Road, Richmond
Ph (03) 544-0886
Fax (03) 544-0887



ALDAN LODGE

SHEET TITLE

FLOOR PLAN, BRACING, & ELECTRICAL PLAN

AMENDED
24-5-2001
6-6-2001
6-8-2001
13-9-2001

DRAWN Steve Arps
DATE 24-4-2001
SCALE 1:100

SHEET N° 2
SET OF 4

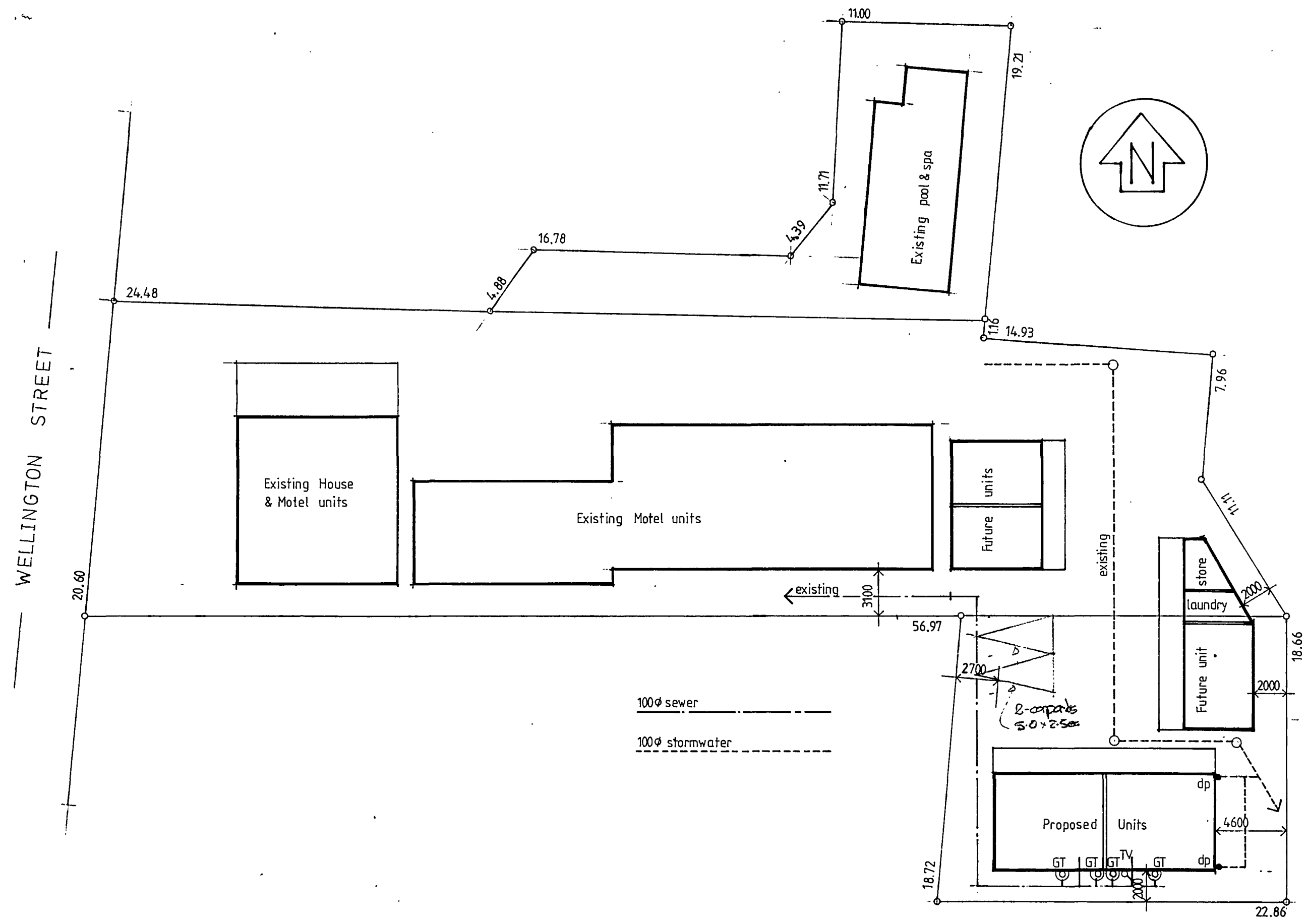
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18 SEP 2001
MARLBOROUGH
DISTRICT COUNCIL

Lot 2
DP 4295

Lot 2
DP 4450

Lot 2
DP 5199

Total area 2136m
Urban Residential Zone



DICK BAKER KEVIN SATHERLEY

93 Gladstone Road, Richmond
Ph (03) 544-0886
Fax (03) 544-0887



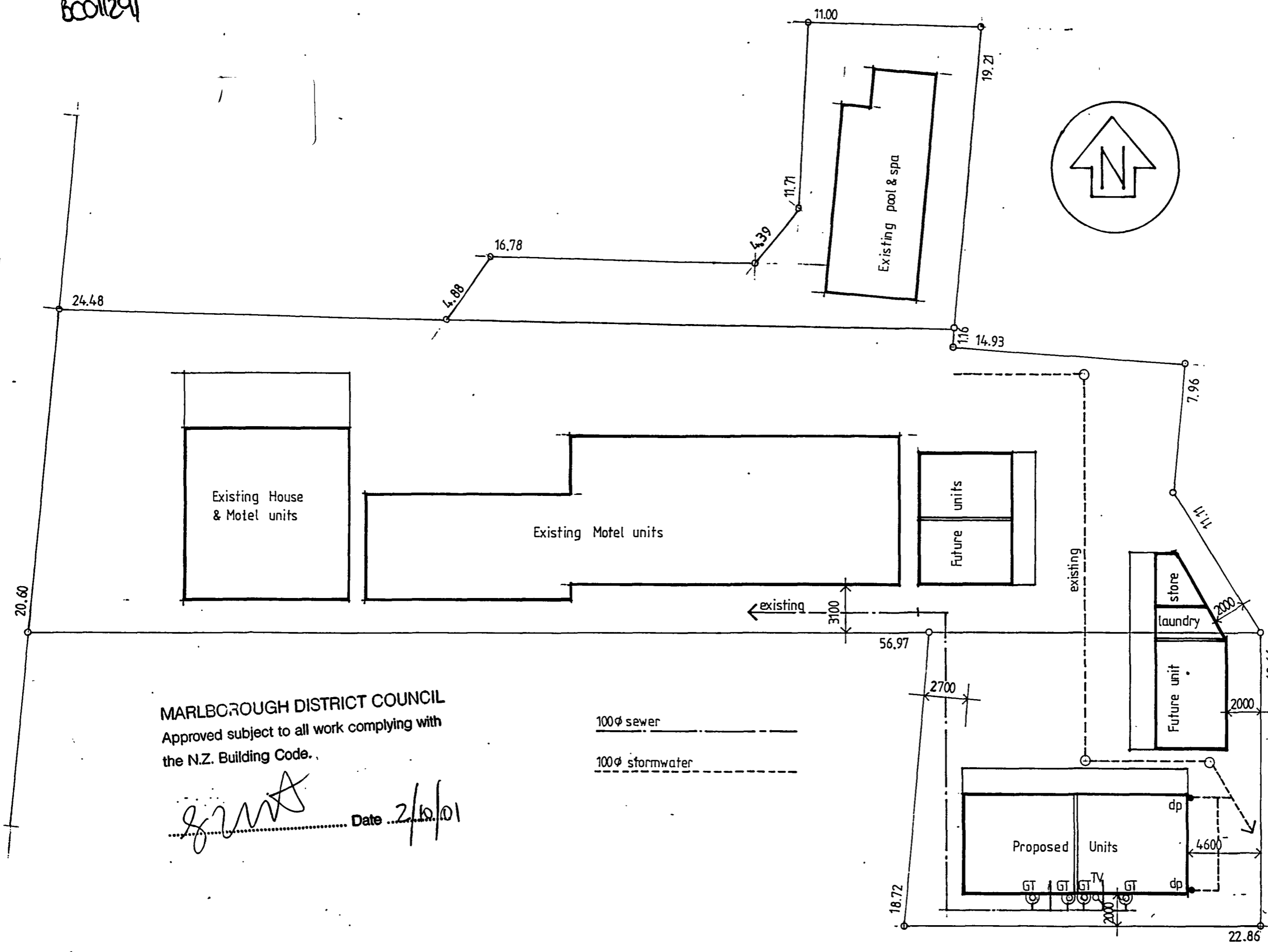
ALDAN LODGE

SHEET TITLE
SITE PLAN

AMENDED 6-8-2001	DRAWN Steve Arps
	DATE 24-5-2001
	SCALE 1:250
	SHEET NO 1
	SET OF 4

B0011291

WELLINGTON STREET



Lot 2
 DP 4295
 Lot 2
 DP 4450
 Lot 2
 DP 5199

Total area 2136m
 Urban Residential Zone

RECEIVED
 13 AUG 2001
 MARLBOROUGH DISTRICT COUNCIL

MARLBOROUGH DISTRICT COUNCIL
 Approved subject to all work complying with
 the N.Z. Building Code.

[Signature]
 Date 2/6/01

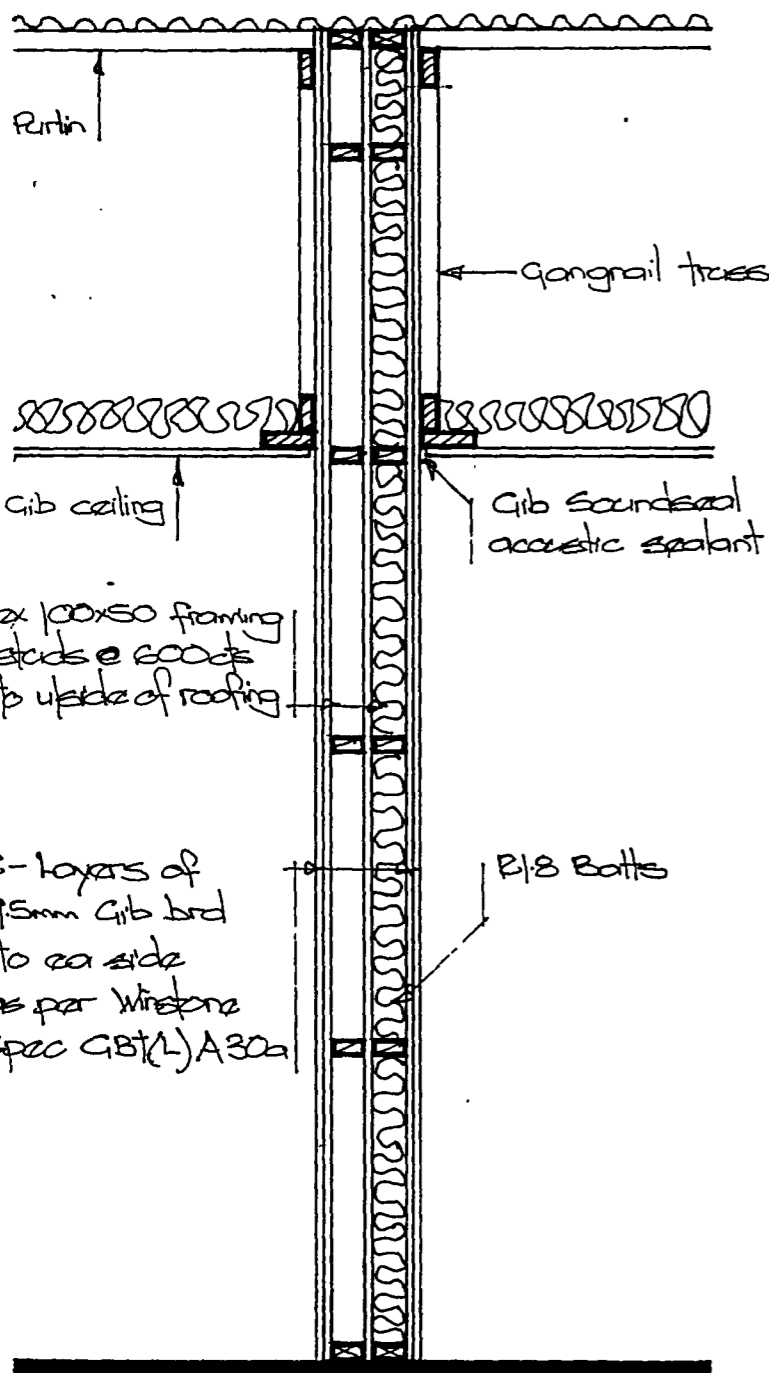


DICK BAKER KEVIN SATHERLEY
 93 Gladstone Road, Richmond
 Ph (03) 544-0886
 Fax (03) 544-0887



ALDAN LODGE
 SHEET TITLE
 SITE PLAN

AMENDED 6-8-2001	DRAWN Steve Arps
	DATE 24-5-2001
	SCALE 1:250
	SHEET NO 1
	SET OF 4



SECTION B-B

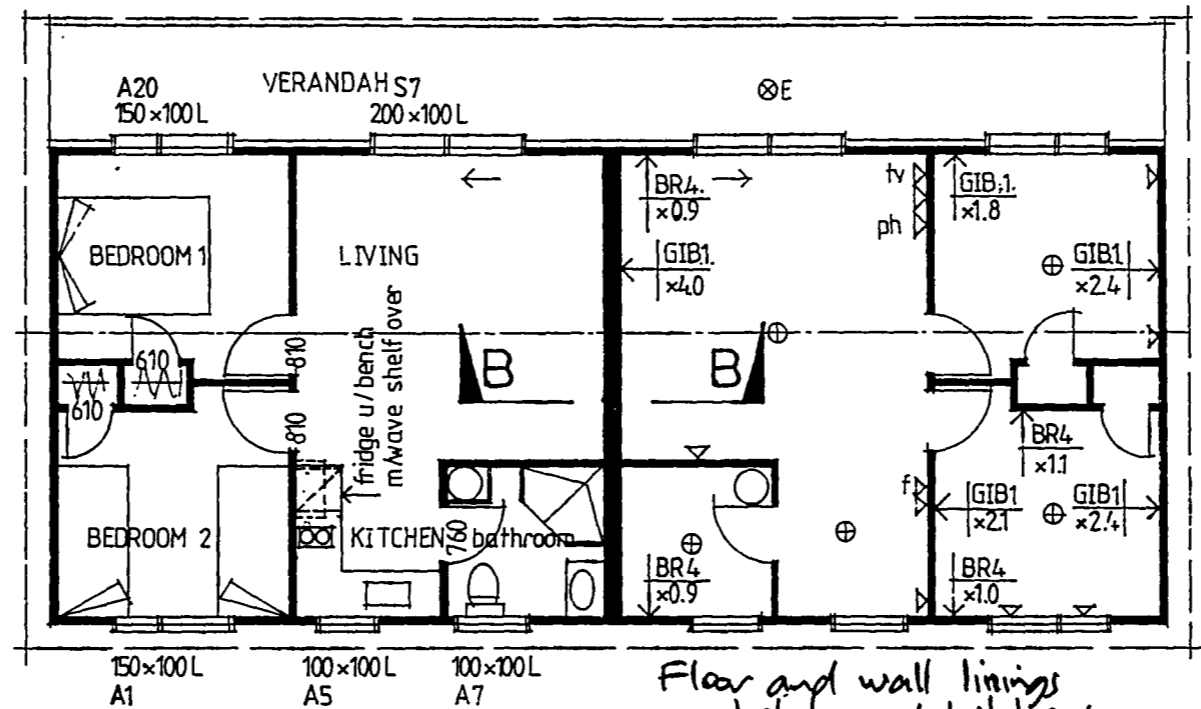
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Endeavour Homes

DICK BAKER KEVIN SATHERLEY
 93 Gladstone Road, Richmond
 Ph (03) 544-0886
 Fax (03) 544-0887

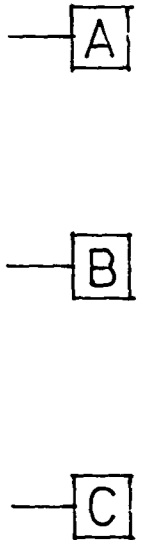
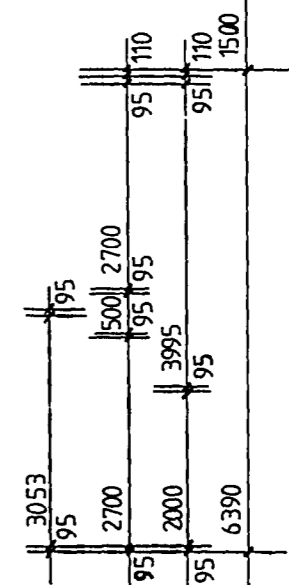


M N O



Floor and wall linings in toilets and kitchens to comply with E3 of the Building Code

- ◁ double plug
- ◁tv television outlet
- ◁ph telephone jack
- ◁f under bench fridge
- ⊕ batten holder
- ⊗E exterior batten holder
- H.W.C.



214	1900	2000	1010	900	900	95
		95	95	95	95	
214	3995	3000				95
		95				
	7292					

UNITS	93.42m2
VERANDAH	21.95m2
TOTAL	115.37m2

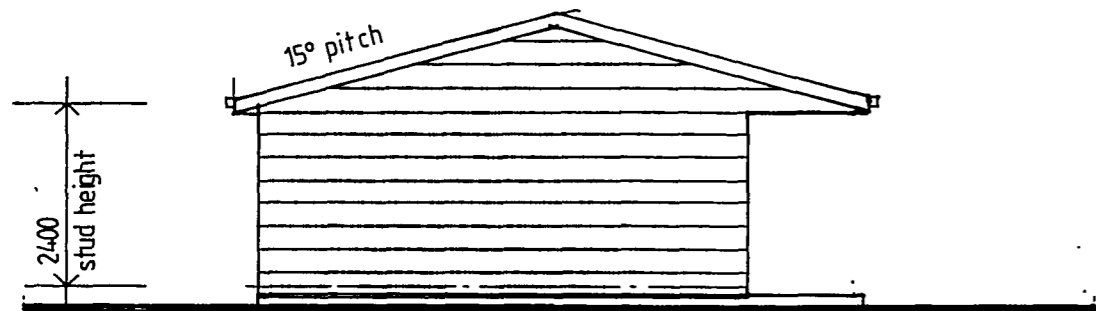
ALDAN LODGE

SHEET TITLE
FLOOR PLAN, BRACING, & ELECTRICAL PLAN

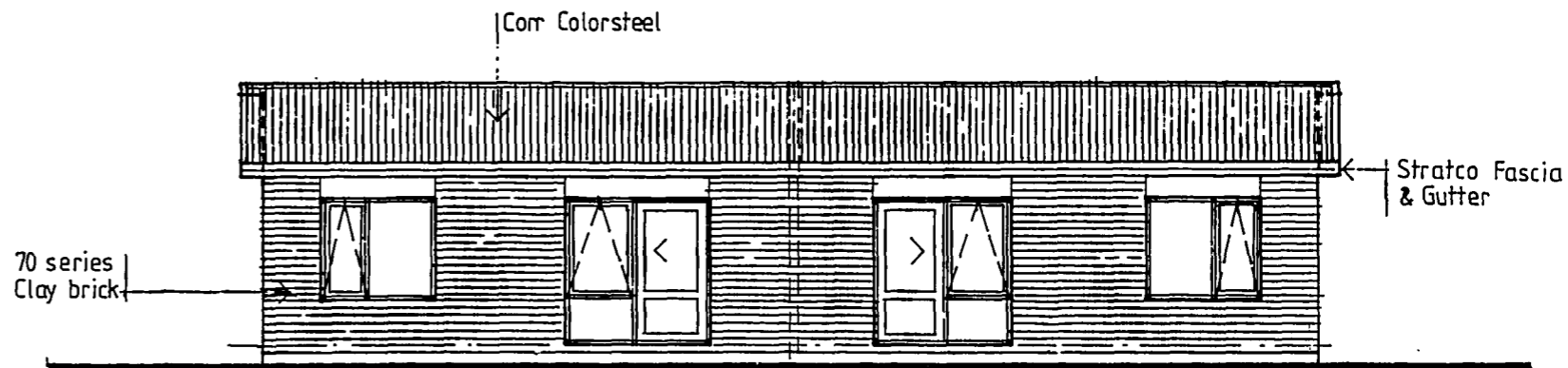
AMENDED
 24-5-2001
 6-6-2001
 6-8-2001

DRAWN Steve Arps
 DATE 24-4-2001
 SCALE 1:100

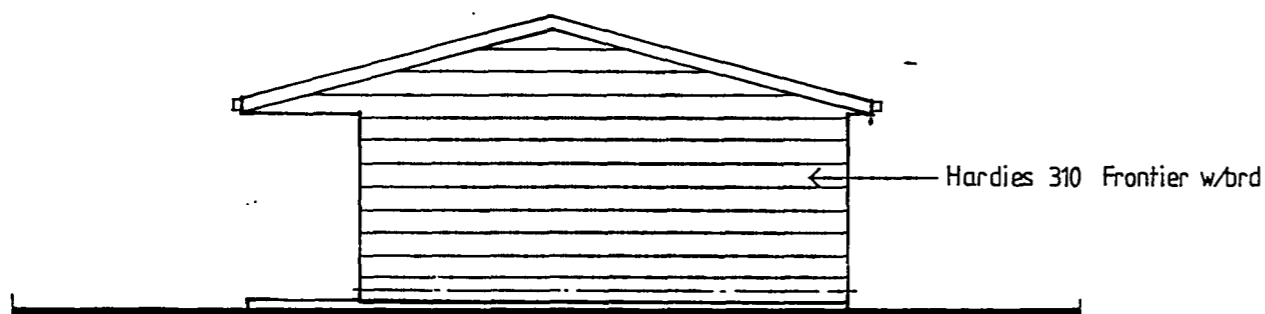
SHEET N° 2
 SET OF 2



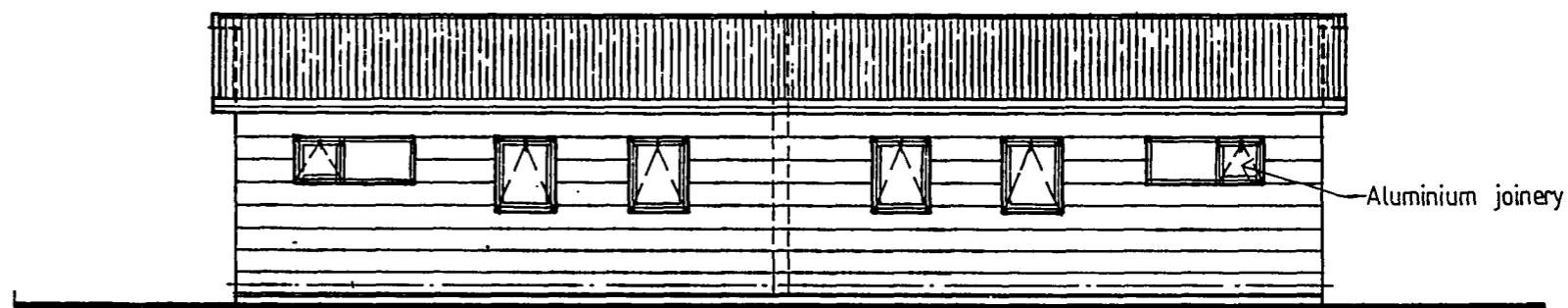
EAST ELEVATION



NORTH ELEVATION



WEST ELEVATION



SOUTH ELEVATION



DICK BAKER KEVIN SATHERLEY

93 Gladstone Road, Richmond
 Ph (03) 544-0886
 Fax (03) 544-0887



ALDAN LODGE

SHEET TITLE

ELEVATIONS

AMENDED
 24-5-2001
 6-8-2001

DRAWN Steve Arps

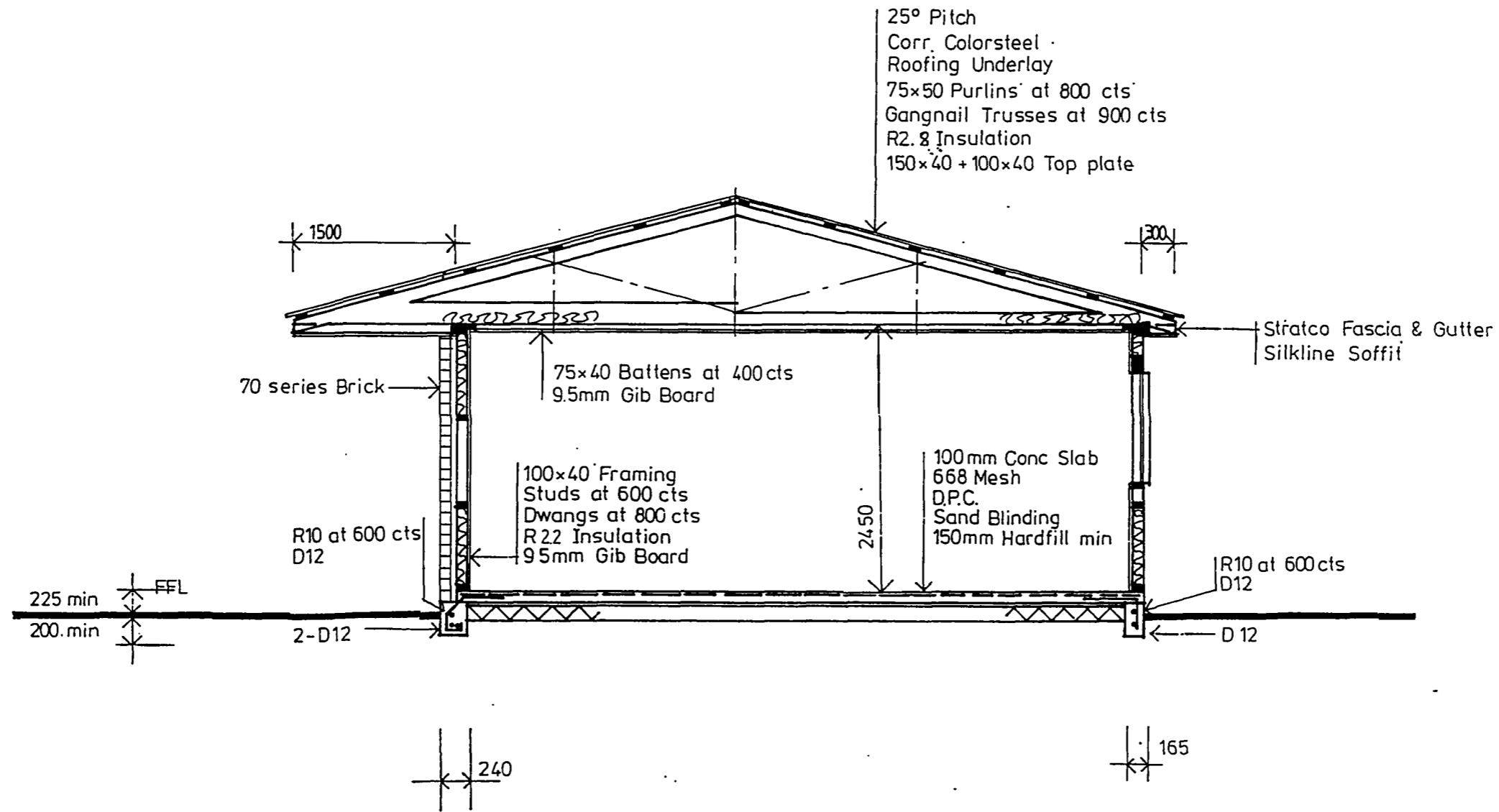
DATE 24-4-2001

SCALE 1:100

SHEET N^o

3

SET OF 4



DICK BAKER KEVIN SATHERLEY

93 Gladstone Road, Richmond
 Ph (03) 544-0886
 Fax (03) 544-0887



ALDON LODGE

SHEET TITLE

SECTION A-A

AMENDED

DRAWN Steve Arps

DATE 6-8-2001

SCALE 1:50

SHEET N° 4

SET OF 4

BC D11291 Graham Roberts.



Gib[®] Residential Garage Boundary Walls

ADDITION TO: 'GIB BOARD[®] FIRE RATED SYSTEMS, 1992'

Scope of Use

The solution offered in this bulletin is intended for use when a 30/30/30 or 60/60/60 Fire Resistance Rating (FRR) is required by the NZBC Acceptable Solution C3/AS1 for single storey residential garage boundary walls.

Compliance with the NZBC

Under normal conditions of dry internal use Gib Board[®] Fire Rated Systems have a serviceable life in excess of 50 years and satisfy the requirements of NZBC Clause B2 – Durability.

Gib Board[®] Fire Rated Systems provide passive fire protection in accordance with the requirements of NZBC Clause C3 – Spread of Fire.

Gib[®] Residential Garage Boundary Walls have been specifically designed to fall inwards, away from the adjacent property boundary, when collapse conditions are reached during a fire and therefore satisfy the requirements of NZBC Clause C4 – Structural Stability during Fire.

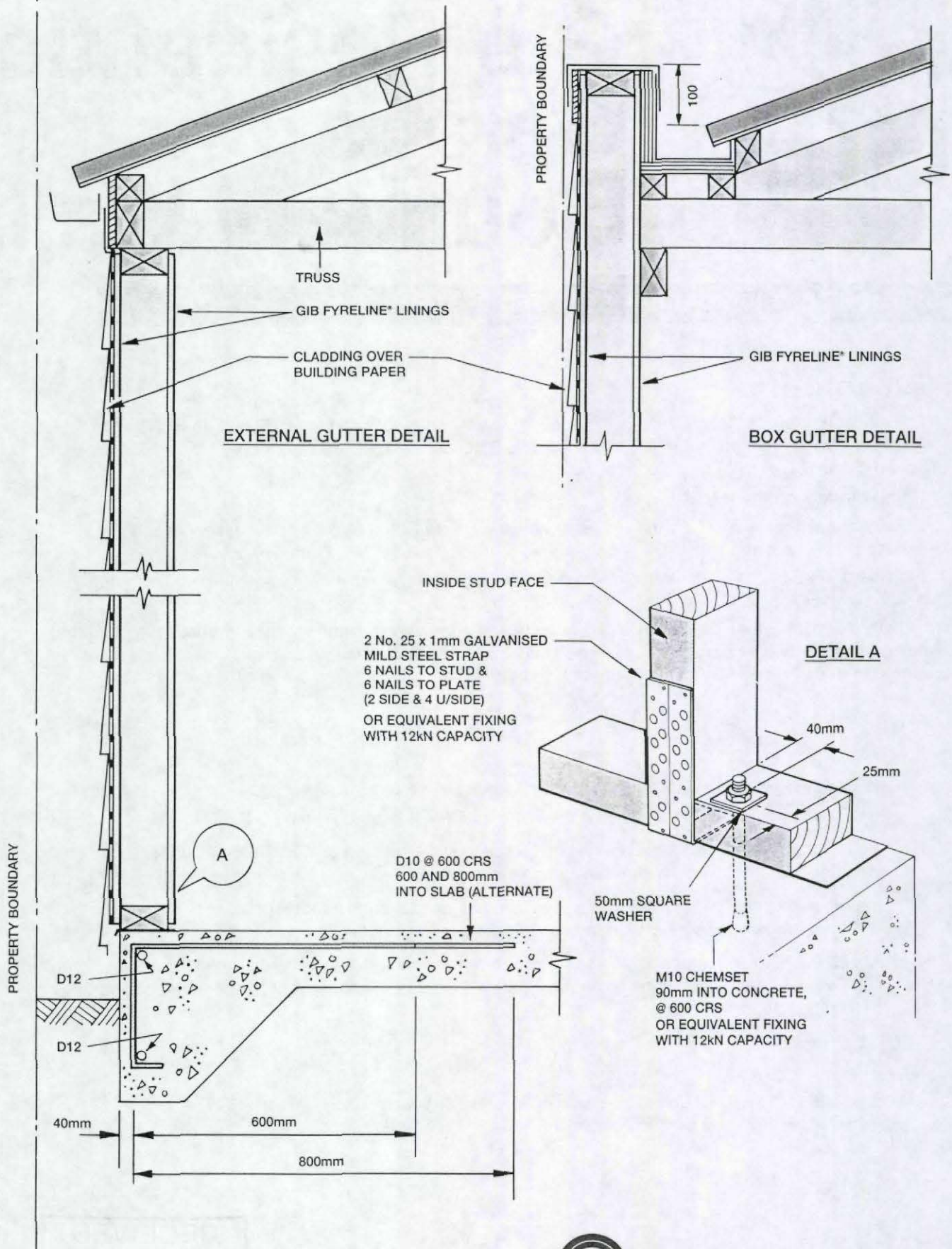
NOTES:

- i) Wall construction in accordance with 'Gib Board[®] Fire Rated Systems, 1992' GBTL 30 or GBTL 60 depending on the required Fire Resistance Rating (FRR).
- ii) Sheets joints in the external Gib Fyreline[®] linings on the outside of the frame, i.e., under the cladding system, do not require taping and stopping.
- iii) Impervious cladding materials with a ventilating air-space, such as steel or aluminium weatherboards, may be installed over building paper directly over the external Gib Fyreline[®] lining.
- iv) Absorbent cladding materials such as plywood or fibre cement must be separated from the external Gib Fyreline[®] lining by means of vertical battens, with a nominal depth of 50mm, and building paper behind the cladding material.

Reference

Macdonald Barnett Partners, Consulting Civil and Structural Engineers, Report No 5109 CRB, dated 13 October 1993, and Producer Statement dated 1 March 1994.





Fire Rated Wall Systems Two Way FRR - Timber Frame

Specification Number	Loadbearing Capability	Fire Resistance Rating	Lining Requirements	Sound Transmission Class	System Weight Approx
GBT 60a	NLB	-/60/60	1 x 12.5mm Gib® Fyreline each side	STC 36	26kg/m ²
GBTL 60	LB	60/60/60			

Framing

GBT60a Non Loadbearing - No. 1 framing grade H1 treated Radiata Pine nominal dimensions 75mm x 50mm minimum.

Alternatively, F5 stress grade or No. 1 visually graded kiln dried Radiata Pine, actual dimensions 70mm x 35mm minimum.

GBTL60 Loadbearing - No. 1 framing grade H1 treated Radiata Pine nominal dimensions 100mm x 50mm minimum.

Studs at 600mm centres maximum.

Nogs at 800mm centres maximum for Vertical fixing.

Nogs at 1200mm centres maximum for Horizontal fixing.

Wall Heights

GBT60a Non Loadbearing - Framing dimensions and height as determined by NZS3604 stud tables for non loadbearing partitions.

GBTL60 Loadbearing - Framing dimensions and height as determined by NZS3604 stud and top plate tables for loadbearing walls.

Lining

1 layer of 12.5mm 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

40mm x 2.5mm galvanised Gib® Clouts or 40mm x 6g bugle head gypsum drywall screws.

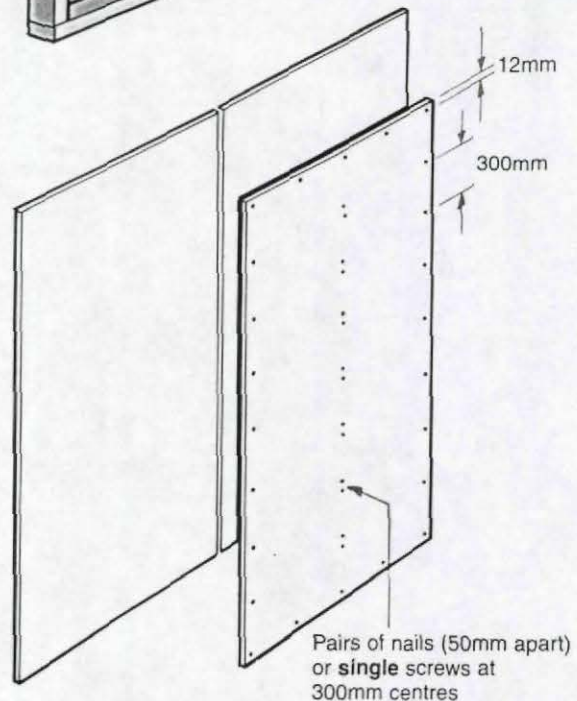
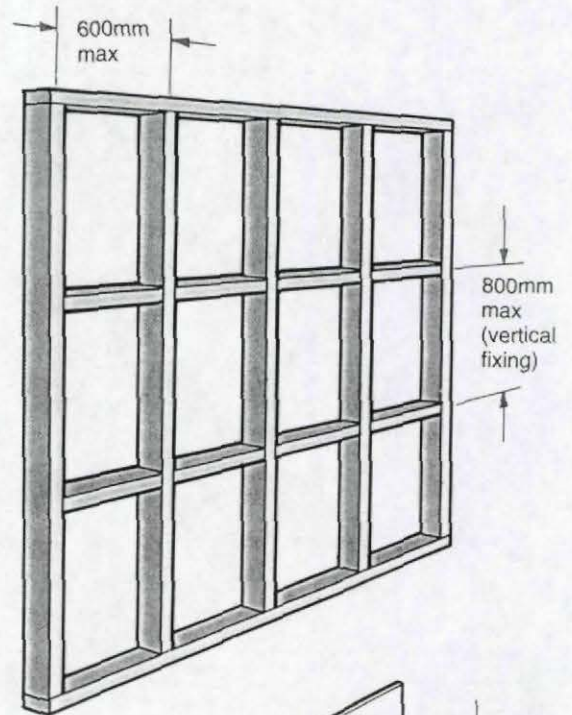
Fastener Centres

300mm centres around the sheet perimeter, 12mm from the sheet edge.

Pairs of nails, (50mm apart), or single screws 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® Stopping and Finishing Systems 1992" or a later approved revision.



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