

ASHBURTON DISTRICT COUNCIL

6 Baring Square West, Ashburton, New Zealand
e-mail: info@adc.govt.nz Website: www.ashburton.govt.nz

Form 2



APPLICATION FOR PROJECT INFORMATION MEMORANDUM AND/OR BUILDING CONSENT

Section 33 or section 45, Building Act 2004

The building

Street address of building: *[for structures that do not have a street address, state the nearest street intersection and the distance and direction from that intersection]*

24 Wallow Drive, Lake Hood, Ashburton

Legal description of land where building is located: *[state legal description as at the date of application and, if the land is proposed to be subdivided, include details of relevant lot numbers and subdivision consent]*

Lot 11 PP. 311174 Vol. 2446005113

Building name: *[insert building name if applicable]*

N/A

Location of building within site/block number: *[include nearest street access]*

Number of levels: *[include ground level and any levels below ground]*

One

Level/unit number: *[insert level/unit number if applicable]*

Area: *[total floor area; indicate area affected by the building work if less than the total area]*

285.4m²

Current, lawfully established, use: *[include number of occupants per level and per use if more than 1]*



Year first constructed:

The owner

Name of owner: [include preferred form of address, eg, Mr, Miss, Dr, if an individual]

Dave & Shirlene Cochrane

*Contact person:

Mailing address:

Cl-Value Plus Builders Ltd T/A Benchmark Homes
P.O. Box 176
Ashburton

Street address/registered office:

42 Moore St
Ashburton

Phone number:

Landline:

Mobile:

Daytime: 033084612 After hours: .

Facsimile number: 033084610

Email address:

Website:

The following evidence of ownership is attached to this application: [copy of certificate of title, lease, agreement for sale and purchase, or other document showing full name of legal owner(s) of the building]

Certificate of Title

† Agent

†Name of agent: [only required if application is being made on behalf of the owner]

Value Plus Builders Ltd T/A Benchmark Homes

*Contact person: Nigel Smith

Mailing address: PO. Box 176 Ashburton

Street address/registered office: 42 Moore St, Ashburton

Phone number: Landline: Mobile:
Daytime: 03 3084612 After hours:

Facsimile number: 03 3084610

Email address: nigel@benchmarkhomes.co.nz

Website: _____

Relationship to owner: *[state details of the authorisation from the owner to make the application on the owner's behalf]*

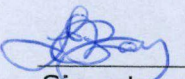
Building Contractor

First point of contact for communications with the council/building consent authority: *[state full name, mailing address, phone number(s), facsimile number(s) and email address(es)]*[†]

Nigel Smith - Benchmark Homes 3084612
PO. Box 176 Ashburton

Application

I request that you issue a [†]*[project information memorandum/project information memorandum and building consent/building consent]* for the building work described in this application.

 pp.
Signature of [†]*[owner/agent on behalf of and with the authority of the owner]*

Date 11-5-05

space for council use

Pim / consent no: BC050433

Received: 12.5.05

Pim / consent fee: \$150

Receipt # 883291

Invoice 35351

Inv 35564

Paid 2/06/05

~~#~~ Receipt 884529

The project

Description of the building work:

Build New Dwelling

Will the building work result in a change of use of the building? [†][Yes/No]

[†]If Yes, provide details of the new use: [provide description of new use]

Intended life of the building if less than 50 years:years

List building consents previously issued for this project (if any): [list who issued the consent, the date of issue and the consent number]

Estimated value of the building work on which the building levy will be calculated (including goods and services tax): \$ [state estimated value as defined in section 7 of the Building Act 2004]

\$330,000

§ Project information memorandum

The following matters are involved in the project:

~~† Subdivision~~

~~† Alterations to land contours~~

† New or altered connections to public utilities

† New or altered locations and/or external dimensions of buildings

† New or altered access for vehicles

† Building work over or adjacent to any road or public place

† Disposal of stormwater and wastewater

~~† Building work over any existing drains or sewers or in close proximity to wells or water mains~~

~~† Other matters known to the applicant that may require authorisations from the territorial authority: [specify]~~

|| Building consent

¶ The following plans and specifications are attached to this application: *[detail; plans and specifications]*

The building work will comply with the building code as follows:

Clause	Means compliance	of Waiver/modification required
<i>[list relevant clause numbers of building code]</i>	<i>[refer to the relevant compliance document(s) or detail of alternative solution in the plans and specifications]</i>	<i>[state nature of waiver or modification of building code required]</i>

Compliance schedule

† The specified systems for the building are as follows: *[specified systems are defined in regulations]*

[†]The following specified systems are being altered, added to, or removed in the course of the building work: *[specify]*

[†]There are no specified systems in the building.

[†]**Attachments**

The following documents are attached to this application:

[†]Plans and specifications *[list]*

[†]Project information memorandum

[†]Development contribution notice

[†]Certificate attached to project information memorandum

**Delete if the applicant is an individual.*

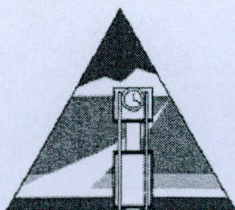
[†]Delete items that are inapplicable.

[†]Contact details must be in New Zealand.

[§]Delete this section if this is an application for a building consent only.

^{||}Delete this section if this is an application for a project information memorandum only.

[¶]All plans and specifications must meet the minimum requirements set out in the regulations or required by the building consent authority.



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Appendix 2

(Complete this form as far as possible in all cases. Give names, addresses, and telephone numbers. Give relevant registration numbers if known.)

Designers(s): Value Plus Builders Ltd TA Benchmark Homes

Building certifier (s) Ashburton District Council

Builders (s): Value Plus Builders Ltd TIA Benchmark Homes

Registered Drainlayer: Paul Summerfield

Registered Plumber: Ken Brady

Registered Gasfitter: Ray Lambert

Registered Electrician: to be advised

Other: _____



P.O. Box 94, Ashburton, New Zealand. Telephone (03) 308 5139. Fax (03) 308 1836

<http://aurora/Administration/Forms Vault/Word Form Originals/Appendix 2.doc>
sharynn 1/04/2005

Page 1 of 1

APPLICANT: D & S COCHRANE
 C/- VALUE PLUS BUILDERS LTD
 P O BOX 176
 ASHBURTON 8300
PHONE: 308 4612
PROJECT LOCATION: 24 LUDLOW DRIVE
LEGAL DESCRIPTION: LOT 11 DP 311174
PROJECT DESCRN: Erect new dwelling.
BUILDER: Value Plus Builders Ltd : P O Box 176 Ashburton : 308
DRAINLAYER: A P Summerfield :
PLUMBER: Ken Body :
VALN NO: 2446005113
DATE OF APPLICN: 12/05/05

Town Planning

- (a) Zoning *AA*
 (b) Density/Coverage *ok*
 (c) Height of Building *ok*
 (d) Recession planes *ok*
 (e) Siting *ok*
 (f) Outdoor living/service space *ok*
 (g) Low/high risk flooding *ok*
 (h) Carparking *ok*
 (i) Loading areas, etc *N/A*
 (j) Landscaping *N/A*
 (k) Resource Consent required (Yes/No)?
 (l) Other?

Signed: *[Signature]*
 Date: *16/05/05*

Public Health Comments

Signed:
 Date:/..../..

Building Dept

- (a) NZFS (Yes/No)
 (b) Sewer (Yes/No)
 (c) Water (Yes/No)
 (d) Stormwater (Yes/No)
 (e) Septic Tank (Yes/No)
 (f) Vehicle Crossing (Yes/No)

Consent notes.

SC - 2-4 . 13, 16 . 20 . 24.

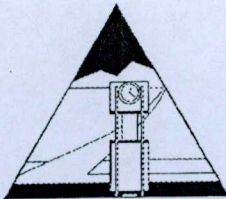
AC & inspections required.

Foundation, Pn floor, Pn wall.
Pn line, Postline, Pn exterior
Plaster, drainage, completion.

POSTED

Pim notes.

- 1 - P1
- 2 - P2
- 3 - P3
- 4 - P12
- 5 - Gas insulation
cent req before issue CCC.
- 6 - Energy cent req
before issue CCC.
- 7 - Wind zone 42-44
m/sec
- 8 - Snow loading 0.5



ASHBURTON DISTRICT COUNCIL

PIM / BUILDING CONSENT

APPLICATION NO BC 050433

OWNER: D. S. Cochrane BUILDER: Value Plus Builders Ltd
 ADDRESS: Cl- Value Plus BUILDERS LTD ADDRESS: P.O. Box 176
 P.O. Box 176 Ashburton 8300
 NUMBER: 24 VALUATION REFERENCE
 STREET: Ludlow Drive NUMBER
 DISTRICT: Lake Hood 2446005/13
 ESTIMATED VALUE OF WORK: \$ 330,000

PIM	REDUCED / INTERMEDIATE / <u>FULL</u>	\$ 150
	RECEIPT NO: 883291	DATE PAID: 12 / 5 / 05
CONSENT	ADMINISTRATION	\$ 60
	INSPECTIONS (8)	\$ 560
	BUILDING RESEARCH LEVY	\$ 330
	DBH LEVY	\$ 650.10
	DISTRICT PLAN COMPLIANCE	\$ 30
	VEHICLE CROSSING	\$
	SERVICE CHARGES	\$
	FIRE SERVICE CHARGE	\$
	COMPLIANCE SCHEDULE	\$
	CCC REDUCED / INTER / FULL	\$ 150
	TOTAL	\$ 178.10

issue Pim. I/V
 Print B.C.
 hold for Gees.

Len.

POSTED

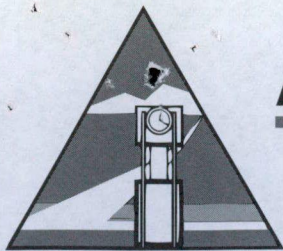
RECEIPT NO: DATE PAID: / /

FURTHER PAYMENT REQUIRED: Y / N \$
 34(2) INFORMATION REQUIRED Y / N
 OTHER INFORMATION REQUIRED Y / N

PLAN INSPECTION CHECKLIST

OWNER: <i>Drs. Lochrane.</i>	BC NUMBER: <i>050433.</i>
PROJECT ADDRESS: <i>24 Lindlaw Drive.</i>	VALUATION REF: <i>2446005113.</i>
PROCESSED BY: <i>CLH</i>	DATE: <i>26.5.05.</i>

		COMMENTS		COMMENTS
Road Access	✓		Insulation	✓ <i>R2-2 R2-6.</i>
Hazardous Substances	—		Truss Design & Fixing	✓ <i>Approved Fabricator.</i>
Power Lines	—		Roof Cladding	✓ <i>Colomsteel.</i>
Sewer/Septic Tank	—		Exterior Cladding	✓ <i>Rockcote EPS 40⁺.</i>
Water Supply	✓		Building Paper	✓ <i>Building wrap.</i>
Stormwater	✓		Roof Underlay	✓ <i>CS Building Paper.</i>
Telecom/Electricity	✓	<i>D12.</i>	Ceiling Battens	✓ <i>70x35</i>
Site Visit Required	—		Plumbing/Pipe Type	✓
Landfill/Flooding	—		High/Low Pressure/Valves HWC	✓
Engineers Certificate	—		Restraints/HWC & Roof Tank	✓
Siting	✓		Tempering	✓
Foundation Depth/Width	✓	<i>250x450.</i>	Backflow Prevention	—
Reinforcing	✓	<i>2 D16 rods.</i>	Pipe Lagging	✓
Concrete Strength	✓	<i>17.5 MPa.</i>	Drainage - Network Operator	✓
Ventilation/Subfloor	✓		CRC Requirements - Effluent Disposal	—
Foundation Height	✓		Specific Designed System	—
Piles	—		Other	—
Bearers	—		Fire Safety Requirements	✓ <i>Smoke detection.</i>
Floor Joists	—		Access for Disabled	—
Insulation/Vapour Barrier	✓	<i>Polythene DPM.</i>	Engineers Producer Statements Req'd	—
Fill Type	✓	<i>150 Expanded H.F.</i>	Firewalls	—
Mesh	✓	<i>665.</i>	Fire Design	—
Fixing to Foundation	✓	<i>D 10 ties 600 c/c</i>	Stairs/Handrails & Balustrades	—
Plate Fixing	✓	<i>125 mm bolts.</i>	Heating	✓
Wall Bracing/Subfloor Bracing	✓		Laundry Facilities	✓
Roof Bracing/Diaphragm Bracing	✓	<i>diaphragm</i>	Cooking Facilities	✓
Framing	✓	<i>90x35 - dry chamber</i>	Personal Hygiene	✓
Lintels/Beams	✓			
Glazing/Ventilation	✓		Other Conditions for Consent	



ASHBURTON DISTRICT COUNCIL

5 Baring Square West, Ashburton, New Zealand

NOTICE OF INSPECTION BUILDING ACT

ENTERED

Owners Name: <u>B & S. Cochran</u>		BC No.: <u>050433</u>
Site Address: <u>24 Carden Drive</u>		Valuation No.: <u>2446005113</u>
Date of Inspection: <u>15-2-06</u> at <u>1.55</u> am/pm		Building Type: <u>Dwelling</u>

FOUNDATION	Framing/Lintels/Ceiling Battens	DRAINAGE
Siting	Bracing/Schedule	Trench Fill
Foundation Depth, Width	Floor Joists	Inspections
Reinforcing	Truss/Rafters & Posts - Fixings	Vents/Stack
Bearing	Roof Bracing	Connection to Outlet
Height - Ventilation	PRELINE	Septic Tank/Effluent Disposal
Footpath Condition	Insulation	Drain in General
PRE-POUR SLAB/THICKNESS	Floor Plan/Amendments	Drainlayer Reg No.
Organic Matter	Glazing/Ventilation	SFH/MAKE
Vapour Barrier	Building Paper/Roof/Underlay	Clearance
Hardfill	Plumbing/Pipe Type & Fixing	Flue Installation
Mesh - Shrinkage Control	Pressure Tested	Screen/Type/Smoke Alarm
Pipe Lagging/Waste Size/Fall	Lagging	Seismic Restraint/Hearth
Fixing to Foundation	Moisture content	Tempering Valve
Other (Polystyrene)	Fire/smoke alarms installation	Inbuilt Cavity/Mantle Clearance
Piles/Treatment/Bearer	Fire separations	FINAL
Floor Joists/Insulation	Other	Exterior Cladding/Fixing
Fixings - Type/Bracing	POST LINING	Flashings
PRE-WRAP	Diaphragm/Jib Bracing	External Moisture
Floor Cutting	PRE EXTERIOR PLASTER	Gully Traps/Stormwater/T.Vent
Plate Fixings/Top & Bottom Purlins	Subfloor Ventilation/Flashing	Vents - Kitchen/Bathroom
COMMENTS <u>✓ Power to connect at Range-hood.</u> <u>✓ Gas installation sent to sight.</u> <u>✓ Penetration to blockwork to fill.</u> <u>Electrical compliance cert req.</u> <u>Pre line reinspection req.</u> <u>BR9 Garage Door std GIB.</u> <u>✓ 13mm ultra line req to ceiling</u> <u>Producer Statement Monolithic clad system.</u>		Handrail to Stairs/Balustrades
		Water Temperature - Laundry
		Cooking/Personal Hygiene
		Ground Clearance to Cladding
		Access/Toilets/Ramps etc
		Fire Safety Clearance
		Footpath Condition
		Producer Statement/s Req'd
		Ceiling Insulation
		Signage
		Water Test Results
		Venting/Drain/Bathroom etc.
		HWC Fittings & Restraint
		Roof Tank Restraint & Overflow
		Smoke Alarms
		Planning/Other
		Building Inspector: <u>[Signature]</u>

☒ INSPECTION OKAY ☐ REINSPECTION REQ'D ☒ ISSUE CCC ☒ Yes ☐ No	☐ All work inspected is in accordance with the Building Consent/Certificate ☐ Some work is not satisfactory as detailed above and recertification is required by _____ ☐ A formal notice to fix will be issued
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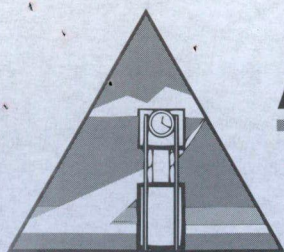
SIGNED Contractor/Owner/Agent/Occupier	DATE
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5 Baring Square West, Ashburton, New Zealand

ENTERED

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ASHBURTON DISTRICT COUNCIL

5 Baring Square West, Ashburton, New Zealand

NOTICE OF INSPECTION BUILDING ACT 1991

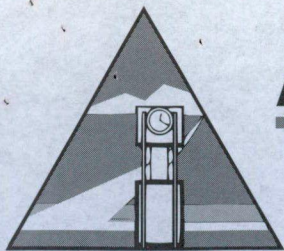
ENTERED

Owners Name: <u>D. Cochrane</u>		BC No.: <u>050433</u>	
Site Address: <u>24 Ludlow Drive</u>		Valuation No.: <u>24460 051 13</u>	
Date of Inspection: <u>9/11/05</u> at <u>11.05</u> <u>am/pm</u>		Building Type: <u>Dwg</u>	

FOUNDATION	PRE-LINE	DRAINAGE
Siting	Floor Cutting	Trench Fill
Foundation Depth, Width	Moisture Content	Inspections
Reinforcing	Plate Fixings/Top & Bottom Purlins	Vents/Position
Bearing	Framing/Lintels/Ceiling Battens	Connection to Outlet
Height - Ventilation	Bracing/Schedule	Septic Tank/Effluent Disposal
Footpath Condition	Ceiling Diaphragm	Drain in General
PRE-POUR SLAB/THICKNESS	Truss/Rafters & Posts - Fixings	Soil Stacks & Vents
Organic Matter	Roof Bracing	SFH/MAKE
Vapour Barrier	Insulation	Clearance
Hardfill	Second Floor, Joists	Flue Installation
Mesh - Shrinkage Control	Floor Plan/Amendments	Screen/Type
Pipe Lagging/Waste Size	Glazing/Ventilation	Seismic Restraint/Hearth
Fixing to Foundation	Building Paper/Roof/Underlay	Tempering Valve
Other (Polystyrene)	Plumbing/Pipe Type & Fixing	Inbuilt Cavity/Mantle Clearance
Piles/Treatment	Pressure Tested	FINAL
Bearer Size/Spacing	Lagging	Exterior Cladding/Fixing
Floor Joists	Access/toilets/ramps etc	Flashings
Subfloor Insulation	Fire/smoke alarms	External Moisture
Subfloor Bracing	Fire separations	Gully Traps/Stormwater/T.Vent
Fixings - Type	Other	Vents - Kitchen/Bathroom
Subfloor Ventilation	Post Lining	Handrail to Stairs/Balustrades
COMMENTS <u>o All bracing elements appear to be rectified although stopping completed so only have fixing spacing along bottom plate to sight. -OK.</u> <u>o Winstones Wallboards checked records and confirmed in phone call that ceiling diaphragm is actually ultraline 13mm and computer has mis-printed. -OK</u> <u>o Discussed use of standard gib in wet areas and Winstones rep. confirmed that although aqualine is recommended it is not mandatory as yet and std gib will suffice.</u>		Water Temperature - Laundry
		Cooking/Personal Hygiene
		Ground Clearance to Cladding
		Access/Toilets/Ramps etc
		Fire Safety Clearance
		Footpath Condition
		Producer Statement/s Req'd
		Ceiling Insulation
		Signage
		Water Test Results
		Venting
		HWC Fittings & Restraint
		Roof Tank Restraint & Overflow
		Other
		Planning
		Building Inspector:

☒ INSPECTION OKAY ☐ REINSPECTION REQ'D ☐ ISSUE CCC ☐ Yes ☐ No	☒ All work inspected is in accordance with the Building Consent/Certificate ☐ Some work is not satisfactory as detailed above and rectification is required ☐ A formal notice to rectify will be issued
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SIGNED Contractor/Owner/Agent/Occupier	DATE
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ASHBURTON DISTRICT COUNCIL

5 Baring Square West, Ashburton, New Zealand

NOTICE OF INSPECTION BUILDING ACT 1991

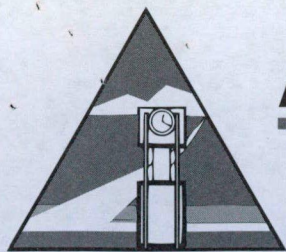
ENTERED

Owners Name: <u>D. Cochrane</u>		BC No.: <u>050433</u>	
Site Address: <u>24 Ludlow Dve.</u>		Valuation No.: <u>24460 051 13</u>	
Date of Inspection: <u>4/11/05</u> at <u>3.45</u> <u>am/pm</u>		Building Type: <u>Dwg.</u>	

FOUNDATION	PRE-LINE	DRAINAGE	
Siting	Floor Cutting	Trench Fill	
Foundation Depth, Width	Moisture Content	Inspections	
Reinforcing	Plate Fixings/Top & Bottom Purlins	Vents/Position	
Bearing	Framing/Lintels/Ceiling Battens	Connection to Outlet	
Height - Ventilation	Bracing/Schedule	Septic Tank/Effluent Disposal	
Footpath Condition	Ceiling Diaphragm	Drain in General	
PRE-POUR SLAB/THICKNESS	Truss/Rafters & Posts - Fixings	Soil Stacks & Vents	
Organic Matter	Roof Bracing	SFH/MAKE	
Vapour Barrier	Insulation	Clearance	
Hardfill	Second Floor, Joists	Flue Installation	
Mesh - Shrinkage Control	Floor Plan/Amendments	Screen/Type	
Pipe Lagging/Waste Size	Glazing/Ventilation	Seismic Restraint/Hearth	
Fixing to Foundation	Building Paper/Roof/Underlay	Tempering Valve	
Other (Polystyrene)	Plumbing/Pipe Type & Fixing	Inbuilt Cavity/Mantle Clearance	
Piles/Treatment	Pressure Tested	FINAL	
Bearer Size/Spacing	Lagging	Exterior Cladding/Fixing	
Floor Joists	Access/toilets/ramps etc	Flashings	
Subfloor Insulation	Fire/smoke alarms	External Moisture	
Subfloor Bracing	Fire separations	Gully Traps/Stormwater/T.Vent	
Fixings - Type	Other	Vents - Kitchen/Bathroom	
Subfloor Ventilation	Post Lining	Handrail to Stairs/Balustrades	
COMMENTS <u>* Bottom plate of brace C3 to be fixed @ 150¢</u> <u>* Standard 10mm Gib used on Ceiling diaphragm where ultimate specified.</u> <u>* Brace panel D1 not provided.</u> <u>* " " C1 not provided</u> <u>* " " Q3 not provided</u> <u>* " " B2 " "</u> <u>* Standard gib used in wet areas.</u> <u>Reinspection required.</u>		Water Temperature - Laundry	
		Cooking/Personal Hygiene	
		Ground Clearance to Cladding	
		Access/Toilets/Ramps etc	
		Fire Safety Clearance	
		Footpath Condition	
		Producer Statement/s Req'd	
		Ceiling Insulation	
		Signage	
		Water Test Results	
		Venting	
		HWC Fittings & Restraint	
		Roof Tank Restraint & Overflow	
		Other	
		Planning	
		Building Inspector:	

☐ INSPECTION OKAY ☒ REINSPECTION REQ'D ☐ ISSUE CCC ☐ Yes ☐ No	☐ All work inspected is in accordance with the Building Consent/Certificate ☒ Some work is not satisfactory as detailed above and rectification is required ☐ A formal notice to rectify will be issued
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SIGNED Contractor/Owner/Agent/Occupier	DATE
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ASHBURTON DISTRICT COUNCIL

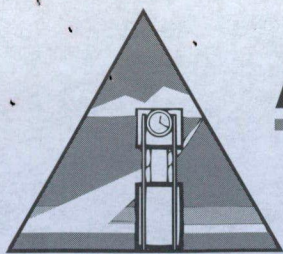
5 Baring Square West, Ashburton, New Zealand

NOTICE OF INSPECTION BUILDING ACT

ENTERED

Owners Name: <u>D & S. Lockman</u>		BC No.: <u>050433</u>
Site Address: <u>24 Ludlow Drive</u>		Valuation No.: <u>2446005113</u>
Date of Inspection: <u>28-10-05</u> at <u>10.35</u> am/pm		Building Type: <u>Dwelling</u>
FOUNDATION	Framing/Lintels/Ceiling Battens	DRAINAGE
Siting	Bracing/Schedule	Trench Fill
Foundation Depth, Width	Floor Joists	Inspections
Reinforcing	Truss/Rafters & Posts - Fixings	Vents/Stack
Bearing	Roof Bracing	Connection to Outlet
Height - Ventilation	PRELINE	Septic Tank/Effluent Disposal
Footpath Condition	Insulation	Drain in General
PRE-POUR SLAB/THICKNESS	Floor Plan/Amendments	Drainlayer Reg No.
Organic Matter	Glazing/Ventilation	SFH/MAKE
Vapour Barrier	Building Paper/Roof/Underlay	Clearance
Hardfill	Plumbing/Pipe Type & Fixing	Flue Installation
Mesh - Shrinkage Control	Pressure Tested	Screen/Type/Smoke Alarm
Pipe Lagging/Waste Size/Fall	Lagging	Seismic Restraint/Hearth
Fixing to Foundation	Moisture content <u>9-11%</u>	Tempering Valve
Other (Polystyrene)	Fire/smoke alarms installation	Inbuilt Cavity/Mantle Clearance
Piles/Treatment/Bearer	Fire separations	FINAL
Floor Joists/Insulation	Other	Exterior Cladding/Fixing
Fixings - Type/Bracing	POST LINING	Flashings
PRE-WRAP	Diaphragm/Jib Bracing	External Moisture
Floor Cutting	PRE EXTERIOR PLASTER	Gully Traps/Stormwater/T.Vent
Plate Fixings/Top & Bottom Purlins	Subfloor Ventilation/Flashing	Vents - Kitchen/Bathroom
COMMENTS		Handrail to Stairs/Balustrades
* Bracing to complete marked on plan * Summer-Strud btm plate - stud to be straddled where spanning 7-10m or over. * Did GIB to BR9 areas? Garage door - I play type plumbing system EN 15894 - ceiling battens 600x40 - insulation in place		Water Temperature - Laundry
		Cooking/Personal Hygiene
		Ground Clearance to Cladding
		Access/Toilets/Ramps etc
		Fire Safety Clearance
		Footpath Condition
		Producer Statement/s Req'd
		Ceiling Insulation
		Signage
		Water Test Results
		Venting/Drain/Bathroom etc.
		HWC Fittings & Restraint
		Roof Tank Restraint & Overflow
		Smoke Alarms
		Planning/Other
	Building Inspector:	
☐ INSPECTION OKAY ☒ REINSPECTION REQ'D ☐ ISSUE CCC ☐ Yes ☐ No		☐ All work inspected is in accordance with the Building Consent/Certificate ☒ Some work is not satisfactory as detailed above and recertification is required by _____ ☐ A formal notice to fix will be issued
SIGNED Contractor/Owner/Agent/Occupier		DATE

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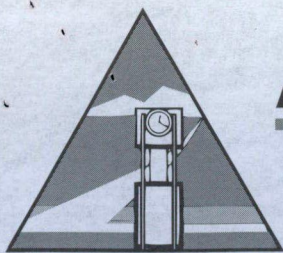
ASHBURTON DISTRICT COUNCIL

5 Baring Square West, Ashburton, New Zealand

NOTICE OF INSPECTION BUILDING ACT 1991

ENTERED

Owners Name: <u>Cochranes</u>		BC No.: <u>050433</u>	
Site Address: <u>24 Ludlow Drive</u>		Valuation No.: <u>2246005113</u>	
Date of Inspection: <u>1.9.08</u> at <u>2:00</u> am/pm		Building Type: <u>Dwelling</u>	
FOUNDATION	PRE-LINE	DRAINAGE	
Siting	Floor Cutting	Trench Fill	
Foundation Depth, Width	Moisture Content	Inspections	
Reinforcing	Plate Fixings/Top & Bottom Purlins	Vents/Position	
Bearing	Framing/Lintels/Ceiling Battens	Connection to Outlet	
Height - Ventilation	Bracing/Schedule	Septic Tank/Effluent Disposal	
Footpath Condition	Ceiling Diaphragm	Drain in General	
PRE-POUR SLAB/THICKNESS	Truss/Rafters & Posts - Fixings	Soil Stacks & Vents	
Organic Matter	Roof Bracing	SFH/MAKE	
Vapour Barrier	Insulation	Clearance	
Hardfill	Second Floor, Joists	Flue Installation	
Mesh - Shrinkage Control	Floor Plan/Amendments	Screen/Type	
Pipe Lagging/Waste Size	Glazing/Ventilation	Seismic Restraint/Hearth	
Fixing to Foundation	Building Paper/Roof/Underlay	Tempering Valve	
Other (Polystyrene)	Plumbing/Pipe Type & Fixing	Inbuilt Cavity/Mantle Clearance	
Piles/Treatment	Pressure Tested	FINAL	
Bearer Size/Spacing	Lagging	Exterior Cladding/Fixing	
Floor Joists	Access/toilets/ramps etc	Flashings	
Subfloor Insulation	Fire/smoke alarms	External Moisture	
Subfloor Bracing	Fire separations	Gully Traps/Stormwater/T.Vent	
Fixings - Type	Other	Vents - Kitchen/Bathroom	
Subfloor Ventilation	Post Lining	Handrail to Stairs/Balustrades	
COMMENTS	<u>Prewrap Reinspection</u>	Water Temperature - Laundry	
<u>- Trimmer to living Rm strapped</u>		Cooking/Personal Hygiene	
<u>- Bracing elements OK change to brace D2</u>		Ground Clearance to Cladding	
<u>- Extra ply bracing installed to Living Rm wall East end</u>		Access/Toilets/Ramps etc	
<u>- Cantilevered Rafter strapped</u>		Fire Safety Clearance	
<u>- Top plates to Gable end strapped</u>		Footpath Condition	
		Producer Statement/s Req'd	
		Ceiling Insulation	
		Signage	
		Water Test Results	
		Venting	
		HWC Fittings & Restraint	
		Roof Tank Restraint & Overflow	
		Other	
		Planning	
		Building Inspector:	
		<u>C. Katson</u>	
☒ INSPECTION OKAY ☐ REINSPECTION REQ'D ☐ ISSUE CCC ☐ Yes ☐ No		☐ All work inspected is in accordance with the Building Consent/Certificate ☐ Some work is not satisfactory as detailed above and rectification is required ☐ A formal notice to rectify will be issued	
SIGNED Contractor/Owner/Agent/Occupier <u>[Signature]</u>		DATE 	



ASHBURTON DISTRICT COUNCIL

5 Baring Square West, Ashburton, New Zealand

NOTICE OF INSPECTION BUILDING ACT 1991

ENTERED

Owners Name: <u>Cochranes</u>		BC No.: <u>050433</u>	
Site Address: <u>24 Ludlow Drive</u>		Valuation No.: <u>2446005113</u>	
Date of Inspection: <u>19.8.05</u> at <u>10.00</u> <u>am/pm</u>		Building Type: <u>Dwelling</u>	

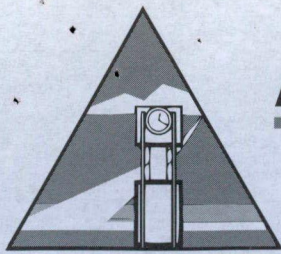
FOUNDATION	PRE-LINE	DRAINAGE
Siting	Floor Cutting	Trench Fill
Foundation Depth, Width	Moisture Content	Inspections
Reinforcing	Plate Fixings/Top & Bottom Purlins	Vents/Position
Bearing	Framing/Lintels/Ceiling Battens	Connection to Outlet
Height - Ventilation	Bracing/Schedule	Septic Tank/Effluent Disposal
Footpath Condition	Ceiling Diaphragm	Drain in General
PRE-POUR SLAB/THICKNESS	Truss/Rafters & Posts - Fixings	Soil Stacks & Vents
Organic Matter	Roof Bracing	SFH/MAKE
Vapour Barrier	Insulation	Clearance
Hardfill	Second Floor, Joists	Flue Installation
Mesh - Shrinkage Control	Floor Plan/Amendments	Screen/Type
Pipe Lagging/Waste Size	Glazing/Ventilation	Seismic Restraint/Hearth
Fixing to Foundation	Building Paper/Roof/Underlay	Tempering Valve
Other (Polystyrene)	Plumbing/Pipe Type & Fixing	Inbuilt Cavity/Mantle Clearance
Piles/Treatment	Pressure Tested	FINAL
Bearer Size/Spacing	Lagging	Exterior Cladding/Fixing
Floor Joists	Access/toilets/ramps etc	Flashings
Subfloor Insulation	Fire/smoke alarms	External Moisture
Subfloor Bracing	Fire separations	Gully Traps/Stormwater/T.Vent
Fixings - Type	Other	Vents - Kitchen/Bathroom
Subfloor Ventilation	Post Lining	Handrail to Stairs/Balustrades
COMMENTS <u>Prewrap / Framing Inspection</u> <u>① - Trimmer to Living Rm to be strapped</u> <u>② - Bracing</u> <u>P2, Q3, Q4, A2, B2, R1, D3, D4, and G1b</u> <u>Diaphragm blocking to complete.</u> <u>Rechecked above at Preline</u> <u>- MS68 H1.2 90x45 framing</u> <u>- bottom plate fixing ok</u> <u>③ Cantilevered rafters to Entry Roof require</u> <u>multiple clips</u> <u>④ Top plates gable ends to be nail plated</u> <u>or strapped together</u>		Water Temperature - Laundry
		Cooking/Personal Hygiene
		Ground Clearance to Cladding
		Access/Toilets/Ramps etc
		Fire Safety Clearance
		Footpath Condition
		Producer Statement/s Req'd
		Ceiling Insulation
		Signage
		Water Test Results
		Venting
		HWC Fittings & Restraint
		Roof Tank Restraint & Overflow
		Other
		Planning
		Building Inspector: <u>E. Ralston</u>

☐ INSPECTION OKAY ☒ REINSPECTION REQ'D ☐ ISSUE CCC ☐ Yes ☐ No	☐ All work inspected is in accordance with the Building Consent/Certificate ☒ Some work is not satisfactory as detailed above and rectification is required ☐ A formal notice to rectify will be issued
---	---

SIGNED Contractor/Owner/Agent/Occupier	DATE
--	-------------

5 Baring Square West, Ashburton, New Zealand

Print Date: 27 November 2025, 9:49 AM



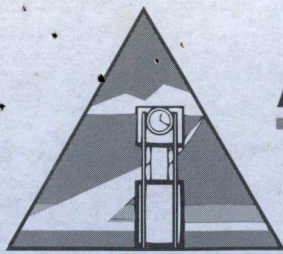
ASHBURTON DISTRICT COUNCIL

5 Baring Square West, Ashburton, New Zealand

POSTED

NOTICE OF INSPECTION BUILDING ACT 1991

Owners Name: <i>Drs Lochrane</i>		BC No.: <i>050433</i>	
Site Address: <i>24 Cudlow Drive</i>		Valuation No.: <i>2446005113</i>	
Date of Inspection: <i>12-7-05</i> at <i>9.25</i> am/pm		Building Type: <i>Dwelling</i>	
FOUNDATION	PRE-LINE	DRAINAGE	
Siting	Floor Cutting	Trench Fill	
Foundation Depth, Width	Moisture Content	Inspections	
Reinforcing	Plate Fixings/Top & Bottom Purlins	Vents/Position	
Bearing	Framing/Lintels/Ceiling Battens	Connection to Outlet	
Height - Ventilation	Bracing/Schedule	Septic Tank/Effluent Disposal	
Footpath Condition	Ceiling Diaphragm	Drain in General	
PRE-POUR SLAB/THICKNESS	Truss/Rafters & Posts - Fixings	Soil Stacks & Vents	
Organic Matter	Roof Bracing	SFH/MAKE	
Vapour Barrier	Insulation	Clearance	
Hardfill	Second Floor, Joists	Flue Installation	
Mesh - Shrinkage Control	Floor Plan/Amendments	Screen/Type	
Pipe Lagging/Waste Size	Glazing/Ventilation	Seismic Restraint/Hearth	
Fixing to Foundation	Building Paper/Roof/Underlay	Tempering Valve	
Other (Polystyrene)	Plumbing/Pipe Type & Fixing	Inbuilt Cavity/Mantle Clearance	
Piles/Treatment	Pressure Tested	FINAL	
Bearer Size/Spacing	Lagging	Exterior Cladding/Fixing	
Floor Joists	Access/toilets/ramps etc	Flashings	
Subfloor Insulation	Fire/smoke alarms	External Moisture	
Subfloor Bracing	Fire separations	Gully Traps/Stormwater/T.Vent	
Fixings - Type	Other	Vents - Kitchen/Bathroom	
Subfloor Ventilation	Post Lining	Handrail to Stairs/Balustrades	
COMMENTS	<i>Pre Block (Foundation)</i>	Water Temperature - Laundry	
		Cooking/Personal Hygiene	
		Ground Clearance to Cladding	
		Access/Toilets/Ramps etc	
		Fire Safety Clearance	
		Footpath Condition	
		Producer Statement/s Req'd	
		Ceiling Insulation	
		Signage	
		Water Test Results	
		Venting	
		HWC Fittings & Restraint	
		Roof Tank Restraint & Overflow	
		Other	
		Planning	
		Building Inspector:	
		<i>C.H.</i>	
☒ INSPECTION OKAY ☐ REINSPECTION REQ'D ☐ ISSUE CCC ☐ Yes ☐ No		☒ All work inspected is in accordance with the Building Consent/Certificate ☐ Some work is not satisfactory as detailed above and rectification is required ☐ A formal notice to rectify will be issued	
SIGNED Contractor/Owner/Agent/Occupier		DATE	



ASHBURTON DISTRICT COUNCIL

5 Baring Square West, Ashburton, New Zealand

NOTICE OF INSPECTION BUILDING ACT 1991

POSTED

Owners Name: <u>D & S Cochrane</u>		BC No.: <u>050433</u>
Site Address: <u>24 Ludlow Drive</u>		Valuation No.: <u>24460 051 13</u>
Date of Inspection: <u>5/7/05</u> at <u>9.05</u> <u>am</u> /pm		Building Type: <u>Dwelling</u>

FOUNDATION	PRE-LINE	DRAINAGE
Siting ☒	Floor Cutting	Trench Fill
Foundation Depth, Width ☒	Moisture Content	Inspections
Reinforcing ☒	Plate Fixings/Top & Bottom Purlins	Vents/Position
Bearing ☒	Framing/Lintels/Ceiling Battens	Connection to Outlet
Height - Ventilation ☒	Bracing/Schedule	Septic Tank/Effluent Disposal
Footpath Condition <u>good</u> ☒	Ceiling Diaphragm	Drain in General
PRE-POUR SLAB/THICKNESS	Truss/Rafters & Posts - Fixings	Soil Stacks & Vents
Organic Matter	Roof Bracing	SFH/MAKE
Vapour Barrier	Insulation	Clearance
Hardfill	Second Floor, Joists	Flue Installation
Mesh - Shrinkage Control	Floor Plan/Amendments	Screen/Type
Pipe Lagging/Waste Size	Glazing/Ventilation	Seismic Restraint/Hearth
Fixing to Foundation	Building Paper/Roof/Underlay	Tempering Valve
Other (Polystyrene)	Plumbing/Pipe Type & Fixing	Inbuilt Cavity/Mantle Clearance
Piles/Treatment	Pressure Tested	FINAL
Bearer Size/Spacing	Lagging	Exterior Cladding/Fixing
Floor Joists	Access/toilets/ramps etc	Flashings
Subfloor Insulation	Fire/smoke alarms	External Moisture
Subfloor Bracing	Fire separations	Gully Traps/Stormwater/T.Vent
Fixings - Type	Other	Vents - Kitchen/Bathroom
Subfloor Ventilation	Post Lining	Handrail to Stairs/Balustrades
COMMENTS <u>2/D16 bars, D10 @ 600 +</u> <u>250 wide x 300 deep found.</u> <u>250 - 350 FFL + step up 500 FFL</u> <u>average.</u> <u>Solid bearing.</u> <u>Siting as per plan.</u> <u>OK to pour.</u>		Water Temperature - Laundry
		Cooking/Personal Hygiene
		Ground Clearance to Cladding
		Access/Toilets/Ramps etc
		Fire Safety Clearance
		Footpath Condition
		Producer Statement/s Req'd
		Ceiling Insulation
		Signage
		Water Test Results
		Venting
		HWC Fittings & Restraint
		Roof Tank Restraint & Overflow
		Other
		Planning
		Building Inspector: <u>✓</u>

☒ INSPECTION OKAY ☐ REINSPECTION REQ'D ☐ ISSUE CCC ☐ Yes ☐ No	☒ All work inspected is in accordance with the Building Consent/Certificate ☐ Some work is not satisfactory as detailed above and rectification is required ☐ A formal notice to rectify will be issued
---	---

SIGNED Contractor/Owner/Agent/Occupier <u>[Signature]</u>	DATE <u>5/7/05</u>
---	--------------------

ELECTRICAL WORKERS
REGISTRATION BOARD

Safety • Competency

Electrical Certificate of Compliance

for prescribed electrical work that is carried out on electrical installations and involves the placing or positioning or the replacing or repositioning of conductors (including fittings attached to those conductors).
To be completed whether or not an Inspection is required.

No. 1870405

No. of attachments

CUSTOMER INFORMATION - PLEASE PRINT CLEARLY

Name of customer DL e SM Cochrane

Phone: 03 6963898

Address of installation 24 Ludlow Drive Lake Hood Ashburton

Postal address of customer (if not as above)

WORK DETAILS

33 No. of lighting outlets

0 No. of ranges

32 No. of socket outlets

2 No. of water heaters

Was any installation work carried out by the homeowner?

Yes ☐ No ☒

Please tick (✓) as appropriate where work includes:

☒ Mains☒ Main earthing system☒ Switchboard☐ Electric lines

Description Wire New House
 complete / not including
 air conditioning wiring or
 Alarm wiring.

It is recommended that test results be recorded here:

Visual Examination ☒Earth Continuity ☒Bonding ☒Polarity ☒

Insulation Resistance 200 Mohm

Other Main E wire requires protection at Earth Stakes

If necessary attach any pages with sketches of work done

CERTIFICATION OF WORK

I certify that the above electrical work has been carried out in accordance with the requirements of the Electricity Act 1992 and Electricity Regulations 1997.

ELECTRICAL WORKER DETAILS

Name

Richard Atkinson

Registration no.

E243 266

Company

Atkinson Electrical

Signature

Date

23-01-06

Contact Ph No.

0211518378 (03)3037287

CERTIFICATION OF ELECTRIC LINES

(to be completed where a separate electrical worker has installed the electric line portion of the mains)

Name

Registration no.

Company

Signature

Date

Contact Ph No.

INSPECTION DETAILS Electrical work requiring inspection by a registered electrical inspector☒ New mains☒ Switchboard☒ Earthing system☐ Installation work in hazardous areas

I certify that the inspection has been carried out in accordance with the requirements of regulation 41 of the Electricity Regulations 1997.

Name

DPeacock

Registration no.

I2862

Signature

DPeacock

Date

7.2.06

Contact Ph No.



23 February 2006

Ashburton District Council
P.O. Box 94
ASHBURTON

Attn: Len Schmanski

42 Moore Street
P.O. Box 176
ASHBURTON

Phone: (03) 308 4612
Fax: (03) 308 4610

Dear Len,

RE: Building Consent: 050433

Job Name: D & S Cochrane

Site Address: 24 Ludlow Drive, Lake Hood, Ashburton

This letter confirms that bracing elements S1 & S2 were installed either side of garage doors as per sheet 11 of the approved drawings.

Yours faithfully
Benchmark Homes

Grant Love
Project Manager

A handwritten signature in blue ink, appearing to read 'Grant Love', is written over a large, faint, stylized orange and white graphic that resembles a house roofline or a stylized 'B'.



14 February 2006

Ashburton District Council
P.O. Box 94
ASHBURTON

Attn: John Bruce

42 Moore Street
P.O. Box 176
ASHBURTON

Phone: (03) 308 4612
Fax: (03) 308 4610

Dear John,

Please find enclosed the details required for Completion Code of Compliance.

Building Consent: 050433
Job Name: D & S Cochrane
Site Address: 24 Ludlow Drive, Lake Hood, Ashburton
Electrical Certificate of Compliance Number: 1870405
Electrician: Richard Atkinson
Electrician's Registration Number: E243266

If you require further information please do not hesitate to contact Benchmark Homes.

Yours faithfully
Benchmark Homes

A handwritten signature in purple ink, appearing to read 'Grant Love', is written over a faint circular stamp.

Grant Love
Project Manager



COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952

Search Copy



R. W. Muir
Registrar-General
of Land

Identifier 43987
Land Registration District Canterbury
Date Issued 26 February 2003

Prior References

19137	19138	CB32K/389
-------	-------	-----------

Estate	Fee Simple
Area	809 square metres more or less
Legal Description	Lot 11 Deposited Plan 311174

Proprietors

David Lindsay Cochrane and Shirlene Marie Cochrane

Interests

Land Covenant in Transfer 5501124.19 - 26.2.2003 at 9:00 am
Fencing Covenant in Transfer 5501124.19 - 26.2.2003 at 9:00 am
5501124.20 Encumbrance to Ashburton Aquatic Park Charitable Trust - 26.2.2003 at 9:00 am

4.7.02. DP 311174

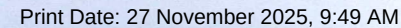
RESERVATION

APPROVED (UNDO):

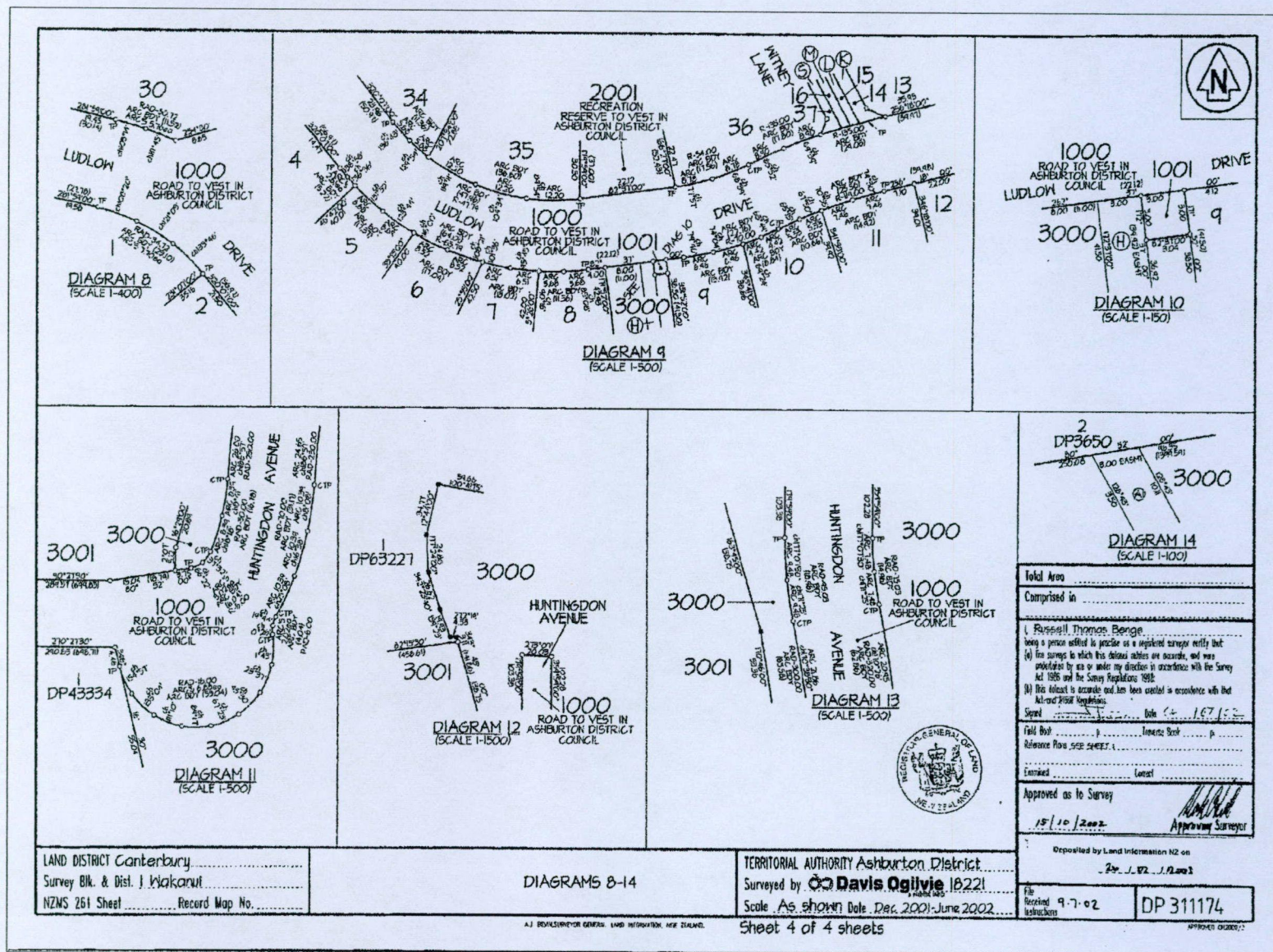
Sheet 1 of 4 sheets

A.J. BEVILS, SENIOR CONSULTANT, LAND RECOGNITION, NEW ZEALAND

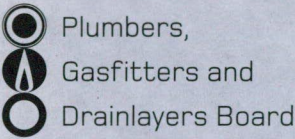
Register Only



Identifier 43987



CONSUMERS COPY



PLUMBERS, GASFITTERS AND DRAINLAYERS BOARD
GASFITTING CERTIFICATION CERTIFICATE
(Pursuant to the Gas Act 1992 and the Gas Regulations 1993 and amendments)
ENERGY WORK CERTIFICATE
(Pursuant to the Building Act 1991)

Certificate No **383131**
9th Floor, 70 The Terrace
PO Box 10655
WELLINGTON
Tel 04 494 2970
Fax 04 494 2975
website www.pgdb.co.nz

THIS CERTIFICATE IS NOT TRANSFERABLE

Installation address:

Please complete in block letters

(Box No's not acceptable)

(Number)

(Street name)

(Suburb)

(Town/City)

Consumer:

(Title)

(Initials)

(Family/Business name)

DESCRIPTION OF GASFITTING TO WHICH THIS CERTIFICATE APPLIES

Appliance				Flue		Ventilation		
Qty	Type	Location	Make/model	Input rate	Type	Location	Type	Location
1	1 D HEATER	Lounge	1cent TRANQUILITY	42m ³ /h	Twin Skin	Through roof	Complies to NZ S261	

Registered Gasfitter/s Supervised by certifier

Name

Registration No

Name

Certificate owner

Registration No

On behalf of

Address

(If other than certifying gasfitter)

Category

Type (Regulation 24(1))

☒ Domestic

☐ Commercial

☐ Industrial

☐ Temporary

☐ Other

☒ New

☐ Addition, ☐ Extension,

☐ Replacement

☐ Alteration

☐ Repair following accident

Gas Type

☐ NG

☒ LPG

☐ TLP

☐ Bio

Name of Gas Supplier

Pipework Installed

☒ YES

☐ NO

(attach pipework diagram)

Test Results

Other Testing

10 min Duration

7.5 kPa Test pressure

0 kPa Loss / gain

2-75 kPa Working pressure

Combustion

☐ Yes ☒ No

Ventilation

☒ Yes ☐ No

Test Date

I certify that :-

- ① All appliances and fittings worked on by me or by persons working under my supervision are safe and that all work carried out was in accordance with all applicable requirements of the Gas Act 1992 and Gas Regulations 1993 as amended.
- ② The gasfitting to which this certificate applies does not make other parts of the installation unsafe or otherwise non-compliant with the Gas Act 1992 and Gas Regulations 1993 as amended.
- ③ Gasfitting work to which this certificate applies
☒ does ☒ does not include work on an appliance or fitting imported or manufactured by a person for their own use.

Certifiers Name

Address

Registration No

Signature

Date

Craig Bishop



The Finishing Company Ltd

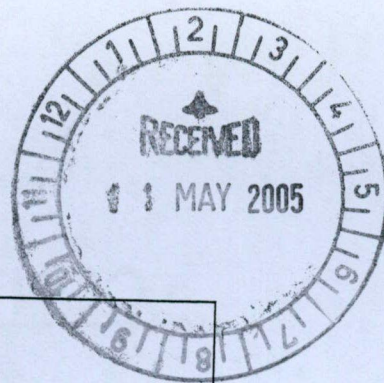
Ashburton
F:033078871
M:0274444856

CONSTRUCTION/PRODUCER STATEMENT

Job Number	16844
Site Address	Lake Hood, Ashburton
Building Owner	Cochrane Residence
Builder	
Licensed Plasterer	The Finishing Company Ltd
Main System	EPS 40 Plus - 20mm Battens
Main Substrate	40mm EPS
Finish	Classico Swirl
Colour	Trojan
Start Date	14-Oct-2005
End Date	18-Dec-2005
Clauses and Further Information	

We the above firm have completed the above work in accordance with the New Zealand Building Code and the Rockcote Resene Limited Specifications.

Signed By The Finishing
Company Ltd



Benchmark Homes
"We set the standard, you set the style"

STANDARD SPECIFICATIONS

ISSUED 2004



VALUE PLUS

PO BOX 523,
ASHBURTON

CONTENTS

Preliminary and General (All Trades)

Excavator

Concreter

Carpenter

Joiner

Roofing Contractor

Plumber

Drainlayer

Electrician

Painter

Window and Glazing

Plaster / Gypsum Board Stopper

Standard Details

Appendix – Fusiotherm

PRELIMINARY AND GENERAL (All Trades)

Note:

This specification is subject to the requirements of the New Zealand Building Code 1992 (NZBC) using NZS3604 Timber Framed Buildings, NZS 4229 Concrete Masonry Buildings as a means of compliance. Both NZS 3604 and NZS 4229 are acceptable solutions under NZBC 1992. Specifications may also be subject to other design certificates and producer statements as provided by approved manufacturers or registered engineer.

PLANS AND SPECIFICATION:

The plans and specifications shall be read as one document.

BUILDING CONSENT:

The Owner or Benchmark Homes shall be responsible for the application for a building consent and all charges and fees associated with the application. No work shall begin until a building consent is issued.

DIMENSIONS:

Figured dimension drawings shall take preference to scaled dimensions and large scale drawings given preference to smaller. Unless expressly stated otherwise, dimensions shall be taken to define bare surface of concrete, timber frames and the like. All dimensions shall be verified on site before commencing any work.

SAFETY PRECAUTIONS:

Allow for complying with all requirements of the Health and Safety in Employment Act 1992. All casual contractors and sub contractors to Benchmark Homes Ltd. to sign the separate Health and Safety Agreement with Benchmark Homes Ltd.

TEMPORARY POWER SUPPLY:

Benchmark Homes will arrange for the contractors power supply connection on site and arrange all necessary fees to be paid.

MATERIALS AND WORKMANSHIP:

All materials are to be the best of their respective kind, qualities, classes and grades as hereinafter specified and shall comply with the requirements of the NZBC and all relevant standards applying to each trade.

EXCAVATOR:

PRELIMINARY AND GENERAL:

Note: where preliminary and general clauses apply to this trade.

SCOPE OF WORK:

The work specified in this section consists of clearing the site, earthworks for site development, excavations, trenching and trimming where necessary to prepare the site as specified and indicated on the drawings.

The contractor shall arrange to check existing site levels before commencing work, as no allowance will be allowed in respect of any discrepancy on levels or variations from what may have been anticipated once work has started.

NOTE:

NZS 4431: 1978 – Code of practice for Earthfill for Residential Development Building Code Reference B1 /VM1 /VM4

GENERALLY:-

The area of the top of the site to be covered by the building shall be stripped of all top growth and vegetable matter and topsoil to a depth of 100mm. Excavate for all foundation pads etc as shown on the drawings. Should soft clay peat or filled ground be found on the site, an engineer shall be consulted for additional foundation details (see attached Engineers Plans). Before placing steel or pouring concrete, the excavations shall be cleansed and the bottoms dry and firm. Deposit all surplus material away from the area of the building. Stockpile on the site where directed by the owner.

HARDFILL:

Except where permitted in yard areas, all bulking fill shall be hardfill, which shall be broken rock or 30-50mm river rounds. All fill and backfill materials shall be place and compacted in layers in accordance with NZS 4431:1989.

INSPECTION:

The contractor shall notify the Territorial Authority Inspector or Building Certifier for approval of the excavations and reinforcing before placing of any concrete.

CONCRETER:

PRELIMINARY AND GENERAL:

Note all clauses under preliminary and general, which shall apply to this section of work.

EXTENT OF WORK:

Comprises the setting out, boxing and placing of concrete in the foundations, floor slabs, and any other concrete work shown on the plans.

NOTE:

NZS 3109: 1997 – Specification for Concrete Construction

Building Code Refs: B1/AS1 & E1/AS1

CONCRETE:

Concrete slab to have a strength of 17.5 M.P.A after 28 days. Corner Foundations are to have a strength of 20 M.P.A after 28 days. All slabs to be 100mm thick. Reinforcement to be round mild steel rods or reinforcing mesh, as detailed, free from scale, loose rust, paint, grease, dirt, etc

FORMWORK:

The formwork and falsework shall be constructed as specified in NZS 3109. The formwork is to be constructed to provide a high standard of 'Fairfaced' finish. Concrete shall be conveyed and placed so that no separation of the various materials takes place and shall be immediately tamped or rammed into position.

REINFORCING:

Two Storey: Three D16 mm m.s reinforcing rods with R 10 stirrups at 600 centres, 600 into slab shall be laid in the foundation and wired in position before any concrete is poured. Single Storey: D16 mm m.s reinforcing rods with R 10 stirrups at 600 centres, 600 into slab shall be laid in the foundation and wired in position before any concrete is poured. All laps shall comply with NZS 3402 (1989) and NZS 3422.

FLOOR SLAB:

- (A) Damp proofing
Seal with a damp proof course of Moistop 250mic. Polythene lapped at least 150mm, all laps sealed with tape over 19-38mm washed no fines gravel.
Leave openings for wastes etc as required.
- (B) Floorslab
Trowel all floors to a smooth surface, while the concrete is green. Allow to fill and finish with a steel float all pockets, chases, recesses, etc left for pipework and other trades.
- (C) Shrinkage control joints
Form control joints by making 6mm wide x 25mm deep saw cuts not more than 2 days after the floor has been cast. Divide the slab into 6m bays for 100mm thick floor slabs. With 665 reinforcing mesh

EMBEDDED ITEMS:

Provide and build in all bolts, fixings etc, necessary for the proper execution of the works. Co-operate with all other tradesmen and trades and build in all items required by them.

CARPENTER:

NOTE:

Read and note all clauses of the Preliminary And General, which apply to all works of this section.

MATERIALS AND WORKMANSHIP –

All materials used shall be the best of their respective class and type specified. Any materials, which in the opinion of the owner, Loan Body or Local Authority which are not up to standard, shall be removed from the site immediately. All work shall be carried out in a workmanlike manner in accordance with best trade practice and as or when especially specified. Any work that is intended or implied but not specifically shown, mentioned or specified as necessary for the proper completion of the building shall be included. All work shall comply with the relevant NZS requirements, particularly NZS 3604.

All timber shall conform to grades defined by NZA 3631:1988 and amendments, and which shall form part of this Specification. Unless otherwise shown on the drawings, all external timber joinery, etc shall be DA Timber. NZS 3602:2003 requires minimum of 450 "Eaves all around. See section 110.2 (b) Otherwise Treated H1.2 framing. All framings shall be CHEMICAL FREE LASER FRAME Kiln Dried. All internal finishing timber shall be of DA Rimu. Timbers shall be to sizes shown. Refer: NZS 3631:1988 NZ Timber Grading Rules, Building Codes Refs – B1/AS2/AS5.

SEASONING OF ALL TIMBER: -

Before being machined, all joinery and dressing timbers shall be thoroughly air seasoned or kiln dried, and before being built in, all joinery, dressed and finished timber and all pre-cut components shall be stacked under cover from weather at all times prior to erection on the site.

BOTTOM PLATE FIXING:-

Lumberlock fixings with 90mm dry pin washes beside at 900crs. Refer to fig.8.12 NZS 3604 1999.

CO-OPERATION:-

Attend upon all other trades providing all blockings, fixings, trims, nogging as necessary for the full completion of their respective works and make good after all trades.

DAMP PROOFING: -

All timber to be protected from dampness with 3-ply bituminous felt or other approved damp proofing material when in contact with concrete or brickwork, except as provided for under Clause 7.5.4 of NZS 3604 1999.

PRIMING:-

All exterior finishing, all timbers in contact with concrete blockwork and all external faces, rebate, etc, of all doors, windows, frames and all woodwork of sashes, shall be primed before fixing unless otherwise specified in "Painter".

CLEANING:

The contractor at the conclusion of the contract shall have all ceilings, walls and woodwork carefully dusted and wiped down. Windows washed and glass free from scratches and paint. Floors brushed and the entire building site left in a clean condition for occupation.

FASTENING AND FABRICATION –

- (A) The contractor should especially note that all aspects of fastening fabrication of timber framing members and wood-based products on this contract shall accord with the following clauses of NZS 3604: Section 4 "Durability".
- (B) Reference shall also be made to section 12 "interior linings" of NZS 3604 for the proper fixing of sheet lining and cladding materials for walls and ceilings that are not wood based eg, Gibraltar board, fibrous plaster or wood cellulose sheeting: especially where such materials are used as diaphragms and for wall bracing.
- (C) Mild steel structure components used in subfloor spaces, exposed to the weather or in position where condensation of dampness may occur shall be hot dipped galvanized after forming and shall provide the necessary "capacities" required by NZS 3604 dependent on function and location.
- (D) In all other cases, select and use connectors according to manufacturers' literature conforming to NZBC 3604 requirements and the NABC.

MOISTURE CONTROL –

Where a vapour barrier is required in the form of foil or polythene film, this barrier shall be fixed according to BRANZ Bulletin NO. 217. Foil or polythene shall not be used as a substitute for building paper. Building paper shall be properly fixed to bottom plates, especially in veneer construction, to prevent entry of subfloor air into stud cavities.

There should be no unsealed openings for service piped and wiring, etc. There should be no discharge from cooking extractors or clothes dryers into any wall, roof or floor cavity. Linings shall not be fixed until moisture content of framing has been tested and approved. A proper solvent based paint or varnish finish must be used for plasterboard (Gibraltar board or fibrous plaster) linings to "wet" rooms, such as kitchens, bathrooms and laundry. Floors for "wet rooms" to be finished with an impervious floor covering as per NZBC 1990 E3/AS1.

Water based emulsion paints must not be used.

SCHEDULE OF TIMBER GRADES –

Use –

Timber –

Timbers in contact with concrete or –	without DPC H4 Treated
Within 50mm off the ground	H3.1 Treated Radiata
Wall Framing	H1 Treated Radiata Pine OR chemical free Kiln Dried
All interior finishing wood work	Rimu Dressing A or approved timber OR MDF as required in the contract Addendum

SCHEDULE OF TIMBER –

Top Plate	90x45mm or 90x35mm
Bottom Plate	90x45mm or 90x35mm
Studs @ 600mm centres	90x45mm or 90x35mm
Dwangs @ 800mm centres	90x45mm or 90x35mm
Beams	As per section 8 NZS 3604 1999
Ceiling Battens @ 400 centres	70x35mm
Barges – Fascia	Or as per manufacturers instructions Stratco Fascia System or as shown on Plans.
Soffit	4.5mm Hardiflex
Wall Braces	Metal angle brace
Skirtings	60x12 MDF B/A, or as shown on plans.
Roof Trusses	Connector System to Manufacturers specifications

BEAM & POST FIXINGS –

All fixings shall be as per NZS 3604 1999 section 9, figure 9.2 & 9.3 (refer to details attached) PVC columns shall be reinforced with 2/D12 rods with a lumberlock fixing bracket at the top.

WHAT LEVEL OF TREATMENT IS NEEDED WHERE?	
Building Element	Treatment Levels
-Roof framing, trusses and ceiling joists -Interior wall framing, including bottom plates -Exterior wall framing in low risk, single storey masonry veneer buildings.	-Untreated Kiln dried radiata pine -Untreated Douglas fir -H1 treated, planer gauged radiata pine.
-Exterior wall framing and parapets in all but low risk, single storey masonry veneer buildings -Enclosed framing within skillion roofs.	-H 1.2
-Subfloor framing	-H 1.2
-Enclosed framing within flat roofs. -Framing for enclosed decks and balconies. -Framing within enclosed balustrades -Some framing supporting decks and balconies.	-H 3.1
-Unroofed decking and external stairs, handrails and balustrades	-H 3.2
-Piles and other structural in ground material	-H 5.0
IMPORTANT NOTE: Treatment levels specified are the minimum treatment level. Higher levels may be used in any situation. This table is a summary of the requirements only. The requirements are set out in the BIA's Acceptable Solution for the Durability clause of the Building Code (referred to as B2/AS1), which cites two New Zealand Standards for detail. The Acceptable Solution can be purchased from, Victoria Books (phone 0800 370 370). The New Zealand Standards (NZS3602:2003 and NZS3640:2003) can be purchased from Standards New Zealand on 0800 782 632.	

LINTEL SIZES –

Lintel sizes are to comply with Section 15.2 of NZS 3604:1999 for appropriate loadings. Also all fixings and sizes as per gangnail table (Nov 97) or gangnail flitch beam tables (Oct 00), unless otherwise noted.

Cantilevered lintels shall be 2/3 the length of the shortest opening unless otherwise noted.

WALL BRACING-

Provide all wall bracing as shown on drawings and wall bracing calculation sheets as is intended to satisfy the NZBC. Keep strictly to the "Type", Lengths and Locations shown on plans and elevations. NZBC Clause B1.

BOTTOM PLATES –

All plate fixings shall be a lumberlock type at 900crs and shall have a 90mm drive pin beside. Place as per manufactures requirements.-washes to Drive Pin.

INSULATION-

All ceilings shall have either

R2.6C, Thickness 110mm

R3.2C, Thickness 135mm

R3.6C, Thickness 155mm

Wall Insulation shall be either

R2.2W, Thickness 94mm

R2.6W, Thickness 110mm

WALL LININGS –

Generally shall be of 10mm Gypsum Board and shall be fixed to external walls only after placement of thermal insulation (bulk insulants). All wall linings to be nailed or fixed as per Appendix A of NZS 3604 of manufacturer's instructions and stopped to manufacturer's instructions, in particular where contributing to wall bracing.

CEILINGS –

Gypsum Board – Fix paint quality 13mm gypsum board to joists or ceiling battens, rafters with 30mm Gib Grabber Screws, with nails stopped and all joints flushed up to a true, even, smooth surface. In particular, fix all ceilings serving as structural ceiling diaphragms under terms of NZS 3604. (See Winstone (Auck) Ltd taped joint system). Check that each wall under or connected to, has adequate bracing diaphragm.

JOINER:

The timber for the joiners work to be sound and well conditioned clean, free from waness, open shakes and all to be thoroughly aired or kiln seasoned.

Timber to various items to be in accordance with the following –

Door frames

DA Rimu or Customwood

Exterior doors

Glazed Aluminum

Internal doors

Prehung Rimu or MDF type

KITCHEN JOINERY-

Supply and fit by contracted kitchen joiner.

EXTERIOR JOINERY – ALUMINUM –

All windows shall be to NZS 4211 to suit location.

All windows and external sliders and doors are of aluminium powder coated manufacture. Aluminum joinery is supplied complete with all hardware, timber reveals and head and side fittings.

Fix plumb both ways and in correct alignment and flash all in accord with manufacturer's instructions. Sliding patio doors shall be safety glazed and fixed to timber sub-frames as per Code. Glazing and safety glazing as per NZS 4223 part 3 1999.

FINISHING-

Skirting as scheduled to all rooms. Mitre external angles and scribe internal angles.

EXTERIOR WALL COVERINGS –

- A) Breather type building paper and masonry veneer shown on drawings shall be as given under "BRICKLAYER".

INSULATION –

Refer to NZBC Clause H1. Install insulations as required in NZBC Acceptable Solution H1/AS1. All insulation materials are to be installed in accordance to manufacturer's recommendation and NZBC.

Fix fibreglass Batts to ceilings and into wall framing; Batts "600" and Batts "400" are engineered to friction fit between stud spacings of 600 and 400 respectively.

ROOFING CONTRACTOR:

Read and note all clauses under Preliminary and General where applicable to this trade (see also PLUMBER)

ROOF FRAMING AND WALLS-

Roof framing shall provide adequate support and fixings for purlins (roofing battens). No member shall be overloaded by landing heavy, localized, stacks of cladding on them. If roof types (b) and (c) of the timber schedule, the size of the purlins, if not shown or stated, shall be such as to accommodate the required thickness of thermal to comply with the bylaws; advise and agree with owner.

ROOFING UNDERLAY –

Underlay shall be breather type building paper to NZS 2295: 1988. Run horizontally with upper sheets lapped 75mm over lower sheets and with bottom edges turned over fascia into gutters. Such underlay shall be provided under all metal roofs and be adequately supported unless self-supporting type.

Where other roof claddings are specified and where at less than 12-1/2 degree pitch undertake all work in accord with a method approved in writing from the cladding the particular job.

NOTE –

NZBC – E2/AS1

ROOF CONSTRUCTION –

(See Drawings and schedules of timbers for types) NZBC E2/AS1 clause 1.0

PURLINS, EAVES, GABLE ENDS –

Size of framing, spacing, overhangs and sheathing type as shown on plan.

ROOFING –

All valleys, hips, dormers and penetration cuts to be made on site.

ROOF CLADDING MATERIALS AND COMPONENTS –

Roof cladding shall be as per drawings and, manufactured by B H P STEEL. Materials selected shall be set put and fixed by approved FIXERS and all shall accord with the manufacturer's specification and in all cases with NZS Specifications or other where appropriate i.e.-

FACTORY PREFINISHED MATERIAL –

Treat all such material with great care and obtain matching colour for making good minor damage and covering fixings made throughout the face of the claddings.

ROOF –

The fixing of the roof cladding with flashings and ridging will be the responsibility of the Roofing Contractor. Fix selected roofing over building paper in wire mesh to manufacturer's specifications. Bitumas heavyweight building paper. Fixing of other roofing materials is subject to separate specification.

PLUMBER: -

Read and note all clauses in the Preliminary and General applicable to work in this section (see also ROOFING CONTRACTOR). All plumbing work shall comply with the requirements of the NZBC, refer to sections G1-G4 and G10-G15. x E1

EXTENT OF WORK –

Provision of all materials and execution of all works necessary for the proper completion of the plumbing work.

FLASHINGS –

Generally provide all flashings required by all other trades to make the building weathertight. Flash and counter flash all pipes, vents and exhausts with lead neatly capped to roofing.

SPOUTING AND DOWNPIPES – NZBC E1

Spouting shall be that which is manufactured by the roof cladding manufacturer of standard Coloursteel i.e. Stratco External gutter and fascia system. Provide and fix as recommended with evenfall to downpipes. Provide all necessary stopped ends, mitred returns and outlets and ensure all joints in metal spouting are adequately soldered or welded, or for PVC, made with solvent cement except where joints provide for thermal movement. Connect outlets to 80mm diameter downpipes fixed at not more than 1200mm centres. Downpipes to discharge stormwater into soakways or street channel, NOT into foulwater drainage system.

WATER SUPPLY

- A) Cold Water can be obtained from a Local Authority mains normally providing adequate water pressure and volume; so avoiding the need for a cold water supply tank in the rood or onsite well providing a portable water supply.

- B) Water heating is to be mainly by means of a low-pressure thermal storage electric water heater with cold water fed into Hot Water Cylinder through a pressure-reducing valve and separate non-return valve. Alternative include;
 - B1.) Use of a break-pressure tank installed above hot water cylinder OR
 - B2.) A mains pressure water heater; with check valve (gate valve) between two stop valves OR
 - B3.) Provision for gas water heater or heaters OR
 - B4.) Provision for wet-back, e.g. from free-standing fireplace of stove or solar water heating; supplementary to main method of water heating OR
 - B5.) Water heating for space (room) heating, as well as serving sanitary fittings.
- C) Proximity of sanitary fittings to Hot Water Cylinder will normally be in order of most frequent use; e.g. kitchen sink, bath or lavatory basin, bath/shower, tub and washing machine.
- D) Cold and hot water supply to ALL fitting is assumed to be by min. 12mm nominal bore pipes with temperature compensating mixer valve to shower to reduce severe temperature changes when taps are turned on or off elsewhere in the house.

COLD WATER SUPPLY – NZBC G12 AS1

Tap off from mains service pipe in COPPER/ POLYBUTYLENE/ UPVC/ or TYPE 3 or TYPE 5 POLYETHYLENE (polythene) or FUSIOTHERM® POLYPROPYLENE pipe system. Run pipes not less than 450mm below finished ground level to house with entry through or under the wall foundation. Supply and fix a water meter, bow and cover when required by Local Authority.

Provide pipe to hose taps at front and rear of building and to all fittings including hot water cylinder and washing machine. All branched to be short, straight and at as even gradient as possible with easy bends throughout (NOT ELBOW FITTINGS). Use only approved fittings throughout. All pipes are to be adequately supported, well secured and, where possible, concealed. When using any form of plastic piping, plumber to discuss, and provide, means of ELECTRICAL EARTHING with electrician. Lag where likelihood of freezing. Isolating valve will be at the entry to every house.

HOT WATER SUPPLY – NZBC G12/AS1

Supply one low pressure electrical hot water cylinder of 270 litre capacity of approved make and type. Provide COPPER or POLYBUTYLENE or FUSIOTHERM® POLYPROPYLENE pipe system hot water supply pipes and branches to all fittings including washing machine. System must include an antiscald device as per NZBC G12/AS1 clause 4.13.2.

(Maximum tempered water to be 55 degrees Celsius)

Seismic Restraint HWC as per NZBC G12/AS1. Fig 14

NOTE: -

NZS 3603:1985 – Installation of Low Pressure Thermal Storage Electric Water Heaters with Copper Cylinders. AS 2642 Polybutylene Pipe Systems.

Pressure Test internal water supply lines to 1500k paces per NZBC G12/AS1 7.5 before closing in.

PIPE SUPPORTS –

Pipes and their supports shall be electrochemically compatible.

Except when other anchor points are necessary the pipes shall be supported at centres of no greater than those in Table 7 of NZBC G12.5.0.

Note: FUSIOTHERM® POLYPROPYLENE pipe system linear expansion see FUSIOTHERM® APPENDIX.

Movement in Concrete or Masonry

Pipes penetrating or installed in concrete or masonry walls for floors shall be either lagged with a flexible material, or passed through a sleeve, to permit free movement for expansion and contraction.

Anchor Points:

Anchor points shall be provided where

- A) Seal ring joints are used, and
- B) The joint is not able to resist the thrust imposed by the water pressure.

Protection from frosts:

Water supply pipework shall be insulated where water is likely to become frozen.

Comment

Locations where the water supply pipe work, are likely to become frozen include pipes concealed in exterior walls; ceiling spaced of basements fixed to the outside of buildings.

Closed cell foam polymer insulation or fibreglass insulation, which is preformed to the shape of the pipe and not than 13mm thick, is acceptable material for insulating pipes less than or equal to 40mm in diameter. Any insulation material, which absorbs moisture, shall be wrapped in a waterproof membrane.

Table 7: Water Supply Pipework Support Spacing Paragraph 5.3.3

Maximum distance between supports mm					
Pipe material	Pipe diameter (mm)	Vertical Pipe		Graded Pipe	
Copper	10 – 15	2.0	1.5	1.5	1.2
	20 – 25				
	32 – 40				
Steel	10 – 15	2.0	3.0	1.5	2.5
	20 – 25	3.0		2.5	
	32 – 40	3.5		3.0	
UPVC	15 – 20	2.0*	2.4*	1.0	1.35
	25 – 40	2.4*		1.2	
	50 -	2.7*		1.35	
Polythene & Polybutylene	15 – 20	1.5	1.8	0.75	0.9
	25 – 40	1.8		0.9	

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(cold water)	50 -	2.4	1.2
Polybutylene	15 – 18	0.5	0.3
(Hot supply – assumes 80degreesC)	20 – 22	0.8	0.5

* These values shall be halved where the pipe is located in exposed exterior positions.

SEE FUSIOTHERM® POLYPROPYLENE pipe system APPENDIX Page 3

SANITARY FITTINGS, ETC –

Provide for the following. Carefully note dimensions and install where shown on plan and to owners' approval (Specification should preferably include the number of each required size, branch colour, materials and where necessary, height).

NOTE –

BS 5575; Code of Practice for Sanitary Pipe Work.

VENTS, SOIL STACKS AND DORMER VALLEYS –

The above shall be provided as required. Vent stacks will be PC extended up through the rood and slashed with lead. No lead is supplied with the kit. The top of the dormer valleys must be flashed with leaf and the bottom of the valleys extended out over the tiles or iron with leaf in a workmanlike manner – shoddy work shall not be accepted.

NOTE – Building code Reference G12/VM1/AS1 provides a more comprehensive list of references, which must be complied with.

DRAINLAYER:

Read and note all clauses under Preliminary and General of this contract where applicable to his trade. All drainage work to comply with the requirements of the NZBC refer to sections G1 – G4 and G10 – G15.

EXTENT OF WORK –

Work in this section of the contract comprises all surface and foul water drainage up to above ground level to connect to Plumbers work. Include all pipes and specials, fittings, construction of manholes, all gully traps and connections for terminal vents, soil and waste pipes. The Drainlayer shall confer with the Plumber and shall arrange with the contractor before the foundations are laid to fix the exact position of wastes and drains.

NOTE – NZS 4452: 1986 – Code of Practice for the Construction of Underground Pipe Sewers and Drains. Building Code Ref B1/AS1 E1/AS1 G13/AS2 G14/VM1; NZS 4610: 1982 – Specification for Household Septic Tank – Building Code Ref G13/AS2 AS/NZS 1547:2000

MATERIALS –

All materials shall be the best of their respective kinds.

DRAIN TRENCHES –

The excavation of trenches for drains shall be accurately made with base clean and true to grade so that no unnecessary filling is required. Adequate width shall be allowed in accordance with depth of the drain to enable laying and jointing to be properly carried out. Trenches shall be kept firm and dry and shall be opened up only in lengths that can be protected, utilized and refilled within a reasonable time.

FITTINGS – The site plan shows the layout of the system. Additional fittings are not normally required, such as inspection points and inspection bends, etc, that may be required but are not specifically shown must be allowed for by the Drainlayer to comply with normal practice under the regulations or special requirements of Local Council.

FALL IN DRAINS –

The whole of the soil and stormwater drains are to be laid to an even and regular fall. Run to street connection or to septic tank designed by an approved person.

GULLY TRAPS –

Supply all gully traps and securely bed and build up with 5.1 concrete surround, 150mm above finished ground levels. Form large and deep dishings and finish the surface with blue metal, dust and cement, one to one and steel trowel smooth. All gully traps are to be fitted with large cast iron or plastic gratings and also a grating or perforated plate above the wastes discharging into it.

COMPLETION –

Properly back fill all trenches, consolidate as filling proceeds and leave area in a tidy state. At time of full water Test Inspection, provide an accurate as laid drainage plan to council.

ELECTRICIAN:

NZBC G9 / VM1

Read and note all clauses under Preliminary and General where applicable to this trade.

FEES –

The Electrician is responsible for paying all fees and charges and obtain all necessary consents for this trade.

SCOPE OF WORK –

Carry out the whole of the electrical installation in strict accordance with the latest Electrical Wiring Regulations 1997.

MATERIALS AND WORKMANSHIP –

All materials used under this contract shall be approved British or New Zealand Standard Specification. Allow for all materials necessary to complete this contract, whether specified or not. All work shall be carried by a Registered Electrician in accordance with regulations and best trade practice and in a manner, which will cause minimum inconvenience to other workmen and the work as a whole. Do all cutting away, drilling, etc and with timber cut the minimum only away for the entry of cables.

CO-OPERATION

Co-operate with the Building Contractor and other sub-contractors in all phases of work. Give ample notice to enable the Contractor to arrange the necessary void, chase date, etc

WATER HEATER –

Allow for the permanent connection of the water heater to the electrical system. Provide and install element and thermostat to the hot water cylinder provided by the Plumber. Refer to clause 3 of his section.

SPECIAL FITTINGS –

Allow for fittings to be selected by the Owner. All as noted on detailed addendum.

PAINTER:

Note all clauses under Preliminary and General of this Specification applicable to this section of work.

MATERIALS –

All material shall be of the best quality and work shall be performed by skilled tradesmen. Colours to be selected by Owner, picked out as required.

WORKMANSHIP –

All work shall be carried out in accordance with good trade practice. Surfaces shall be clean and properly prepared before coating and work shall be in accordance with Code of Practice NZS 7703 "Painting of Building". To plasterboard in areas of water splash, firstly apply a Sealer coat before Semi-Gloss or Gloss Finishing Coats.

COMPLETION –

On completion, the residence is to be left clean and tidy – window and other glasswork are to be cleaned. All trade debris is to be removed from site and the building left ready for occupancy.

WINDOWS AND CLEANING –

Read and note all clauses under Preliminary and General of this Specification applicable to this section of work.

EXTENT OF WORK –

The work done under this section comprises of the supply of all windows and doors normally supplied by the window manufacturer, glazing of interior door panels where applicable, decorative glass and mirrors.

NOTE – NZS 3504: 1979 Specification for Aluminum Windows; NZS 3619:1979 Specification for Timber Windows; NZS 4211:1985 Specification for performance of windows – NZBC ref: B1/VM1, E2/AS1; NZS 4223: 1999 Code of Practice for glazing Buildings – NZBC ref: B1/AS1, F2/AS1, B1/AS1.

MATERIALS-

Powder coated aluminium windows as per drawings as supplied by an aluminium joiner to manufacturers specifications.

PLASTER /GYPSUM BOARD STOPPER:

Note all clauses under Preliminary and General of this Specification, which shall apply to this section of work.

Installation shall be in accordance with the “Code of Practice for Fixing Fibrous Plaster” unless specified otherwise and in accordance with the manufacturer’s instruction for paper face gypsum brands.

WORKMANSHIP –

Work carried out under this section shall be by qualified tradesperson and in accordance with the best of trade practice.

At the completion of all fixing and nailing, fill all internal and external angles, joints and nail heads with stopping plaster. Trowel all areas to flat even finish and the whole of the work ready for the painter. All materials including exterior corners are supplied by the plastering contractor.

LEVEL OF FINISH –

Winstone Wallboard Ltd, provide the following recommended levels of finish and the methods achieving them for the final decoration.

Level 0 This level of finish may be useful in temporary construction or whenever the decoration has not been determined.

Level 1 For use in plenum areas above ceilings, in attics, in areas where the assemble would generally be concealed, or in building service corridors and other areas not normally open to public view.

Level 2 For use in garages, warehouses, storage or other similar areas where surface appearance is not of primary concern.

Level 3 For use in appearance areas, which are to receive heavy or medium texture (spray or hand applied) finishes before final painting, or where flat and low sheen paints are to be applied.

Level 4 For use where light textures or wall coverings are to be applied, or economy is of concern. Also for non-critical lighting areas where flat and low sheen paints are to be applied.

Level 5 This level of finish is for use where gloss, semi gloss, low sheen or non-textured flat paints are specified or where critical lighting conditions occur.

The Contractor shall be fully familiar with the manufacturer's specification on how to achieve the recommended level of finish and shall implement them as indicated by the type of wall decoration specified.

Refer to Gib Board Publication on Quality of Finish for more information and guidance levels to wall surfaces.

REGULATIONS AND STANDARDS –

All work and materials shall be in accordance with the requirement of the Building Regulations 1992 and with the New Zealand Building Code Handbook and Approved Documents.

The contractor and subcontractors undertaking this work shall obtain copies of the relevant sections of the New Zealand Building Code and documents relating to acceptable solutions and verification methods and shall be co servant with their contents. Refer to approved documents B2 of the New Zealand Building Code and Approved Documents.

Where applicable, the following Standards and their related documents and subsequent amendments and other Specifications shall form part of this Specification:

NZS 4221: 1971 Specification for Fibrous Plaster Sheet; AS 2592: 1993 Gypsum Plaster for Building Purposes; ISO 6308: 1980 Gypsum Plasterboard; Winstone Wallboard Ltd's Gibraltar Board Technical Information; New Zealand's Fibrous Plaster Manufacturers Association's Technical manual for Architects.

Where there is conflict between any two Standards, the requirements of the appropriate New Zealand Standard shall apply.

Where applicable, the following Standards and their related documents and subsequent amendments and other Specifications shall form part of this Specification.

NZS 4221: 1971 Specification for Fibrous Plaster Sheet; AS 2592 : 1983 Gypsum Plaster Building Purposes; ISO 6308 Gypsum Plasterboard; Winstone Wallboard Ltd Gibraltar Board Technical Information; New Zealand's Fibrous Plaster Manufacturer Association's technical Manual for Architects.

Where there is conflict between any two standards, the requirements of the appropriate New Zealand Standard shall apply.

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

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

Wall Heights Other Than 2.4m

The published Bracing Unit ratings are based on a 2.4 metre height. For other heights, the ratings must be multiplied by a factor $f = 2.4$ divided by actual wall height. The Bracing Unit ratings for walls higher than 2.4 metres will reduce, and the Bracing Unit rating for lower walls will increase. Factor f must not be greater than 1.

TABLE 1: Bracing Unit ratings for 10mm & 13mm GIB® Standard, 10mm and 13mm GIB Ultraline®, 10mm GIB Aqualine®, 10mm GIB Fyreline

Type	Minimum length (m)	Lining Requirement	Additional Requirement	Bracing Units per metre (wind)	Bracing Units per metre (Earthquake)
10mm GIB®Standard plasterboard bracing systems (these ratings also apply to 10mm GIB Aqualine®, and 10mm GIB Fyreline®)					
GIB1a	1.8 and less than 2.4	10mm GIB Standard plasterboard one face. fixed horizontal or	diaagonal brace '	55	50
GIB1 b	2.4 and greater			75	50
GIB2a	1.8 and less than 2.4	10mm GIB Standard plasterboard both faces. fixed horizontal or vertical	diaagonal brace	75	60
GIB2b	2.4 and greater			80	70
GIB3	1.2	10mm GIB Standard plasterboard both faces, fixed horizontal or vertical	N/A	65	60
13mm GIB® Standard plasterboard bracing systems (these ratings also apply to 13mm Gib® Ultra line)					
GIB10	1.8	13mm GIB Standard plasterboard or 13mm GIB Ultra line® one face, fixed horizontal or vertical	N/A	65	60
GIB11	1.2	13mm GIB Standard plasterboard or 13mm GIB Ultra line both faces, fixed horizontal or	N/A	65	65
10mm and 13mm GIB Ultra line bracing systems					
UL1	1.2 GIB Ultra line® one face, fixed horizontal or vertical		6kN connections	70	60
UL2	1.2 ~ GIB Ultra line both faces, fixed horizontal or vertical		6kN connections	100	85

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

TABLE 2: Bracing Unit ratings for 10mm GIB Braceline®, 10mm GIB Noiseline® and 10mm or 13mm GIB Toughline®.

Type	Minimum length (m)	Lining Requirement	Additional Requirement	Bracing Units per metre (wind)	Bracing Units per metre (Earthquake)
10mm GIB Braceline bracing systems (these ratings also apply to 10mm or 13mm GIB Toughline and 10mm GIB Noiseline®)					
BR1 a	1.8 and less than 2.4	GIB Braceline® one face, fixed horizontal or vertical	diagonal brace	70	60
BR1 b	2.4 and greater			90	75
BFi2a	1.8 and less than 2.4	GIB Braceline one face, Fixed vertical	N/A	75	60
BR2b	2.4 and greater			85	60
BR3a	1.8 and less than 2.4	GIB Braceline one face, fixed horizontal	N/A	60	45
BR3b	2.4 and greater			95	65
BR4	~ 0.9 and than 1.2	GIB Braceline one face, fixed vertical or horizontal.	6kN connections	100	85
BR5	1.2	GIB Braceline one face, fixed vertical or horizontal.	6kN connections	115	85
BR6	1.2	GIB Braceline one face, 10mm GIB® Standard on the other, fixed vertical or horizontal.	12kN connections	150	110
BR7	0.9	GIB Braceline one face, 7.5mm plywood on the fixed vertical or horizontal.	6kN connections	145	145
BR8	0.9	GIB Braceline one face, 4.75mm hardboard on other, fixed vertical or horizontal.	6kN connections	120	95
BR9	0.6	GIB Braceline one face, fixed vertical or horizontal.	6kN connections	110	95

Notes: 1) Where linings are specified on both faces (Systems GIB2, GIB3, GIB11, U12, BR6, BR7, BR8) each face must be fastened as a braced element. Refer page 12 for fastening systems relating to Plywood and Hardboard.

The standard 10mm GIB® Plasterboard on the reverse face of BR6 is fastened as per system GIB1.

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

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

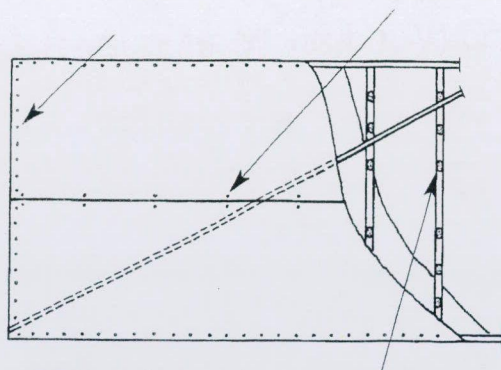
Fastener Layouts

32mm x 6g GIB® Grabber™ Single 32mm screws

or 30mm GIB® Nails or GIB® Nails where

at 150mm centres to

sheets across studs perimeter of Bracing Element



GIB®1 (lined one side)

GIB®2 (lined both sides)
intermediate studs

Daubof GIBFix® (**Horizontal Fixing**)

WoodBond adhesive at 300mm centres to

32mm x 6g GIB® Grabber™

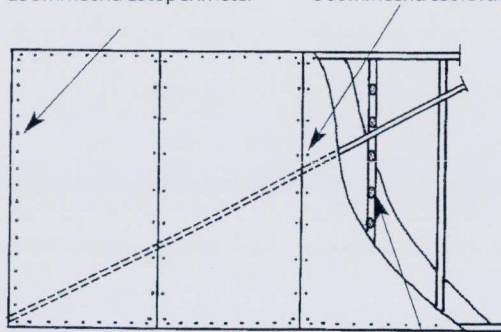
Single 32mm screws

or 30mm GIB® Nails

or GIB® Nails

150mm centres to perimeter

300mm centres of Bracing Element



GIB®1 (lined one side)
(**Vertical Fixing**)

GIB® 2 (lined both sides) Daubof GIBFix®

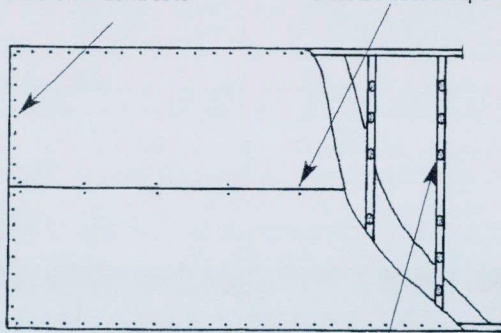
WoodBond adhesive at 300mm centres to intermediate studs

32mm x 6g GIB® Grabber™ Single 32mm screws

screws or 30mm GIB® Nails or GIB® Nails

at 150mm centres to

sheet cross studs perimeter of Bracing Element



GIB®3 (lined both sides)
(**Horizontal Fixing**)

GIB®10 (lined one side) Daubof GIBFix®

at 300mm centres to intermediate studs

32mm x 6g GIB® Grabber™

Single 32mm screws

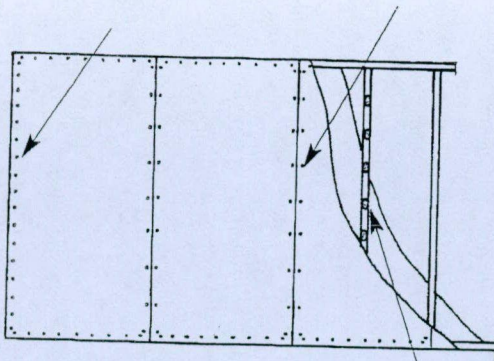
screws or 30mm GIB® Nails

or GIB® Nails

GIB® 11 (lined both sides) WoodBond adhesive

at 150mm centres to

300mm centres perimeter of Bracing Element

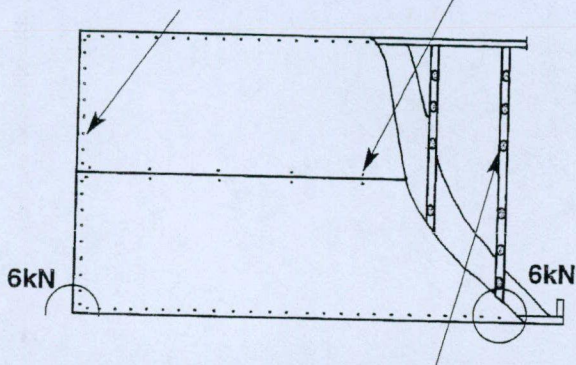


GIB® 3 (lined both sides) GIB® 10 (lined one side) GIB® 11 (lined both sides) (Vertical Fixing)

Daub of GIBFix® Wood Bond adhesive at 300mm centres to intermediate studs
32mm x 6g GIB® Grabber™ Single 32mm screws

screws or 30mm GIB® Nails at 150mm centres to perimeter

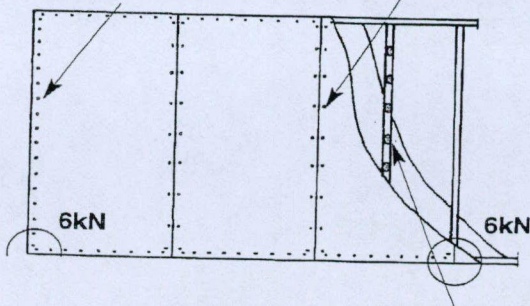
sheets cross studs of Bracing Element



UL1 (lined one side) UL 2 (lined both sides) (Horizontal Fixing)

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

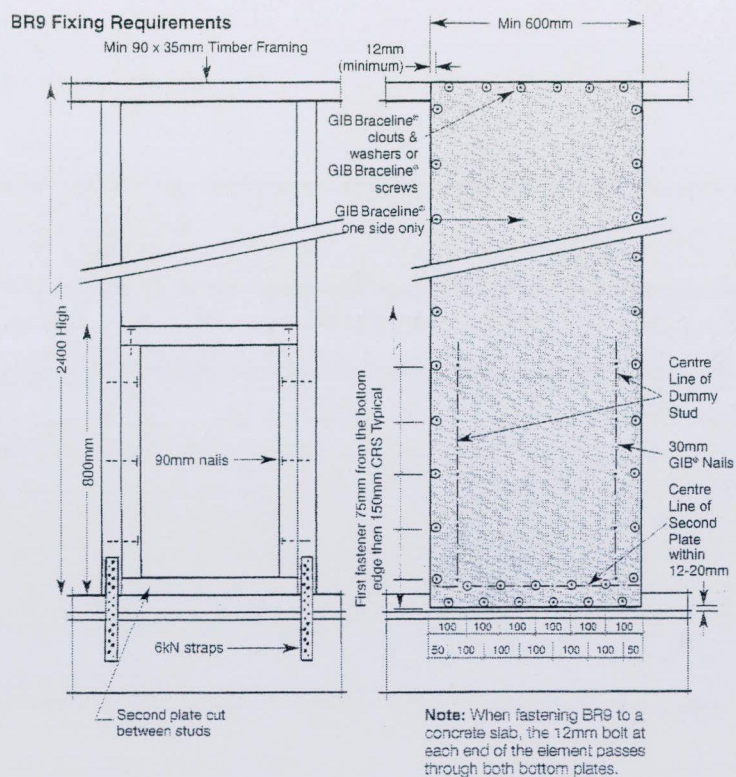
32mm x 6g GIB® Grabber™'s screws or 30mm GIB® Nails at 150mm centres to perimeter of Bracing Element



UL1 (lined one side) UL 2 (lined both sides) (Vertical Fixing)

Single 32mm screws or GIB® Nails at 300mm centres

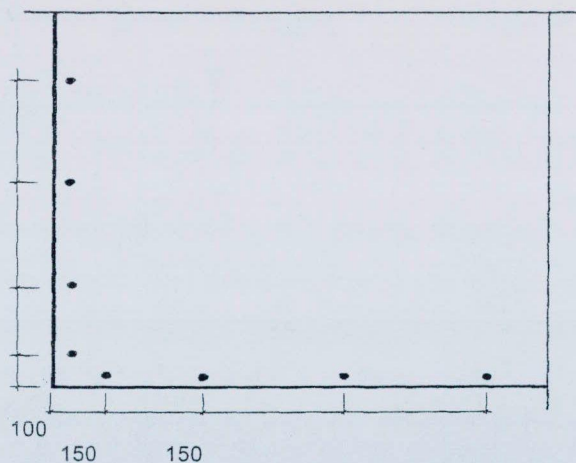
Daub of GIBFix® Wood Bond adhesive at 300mm centres to intermediate studs



IMPORTANT

Corner Fastening Details

This pattern applies to ceiling diaphragms and to all wall bracing elements except BR9.



Note: When fastening BR9 to a concrete slab, the 12mm bolt at each end of the element passes through both bottom plates.

Hold-Down Straps

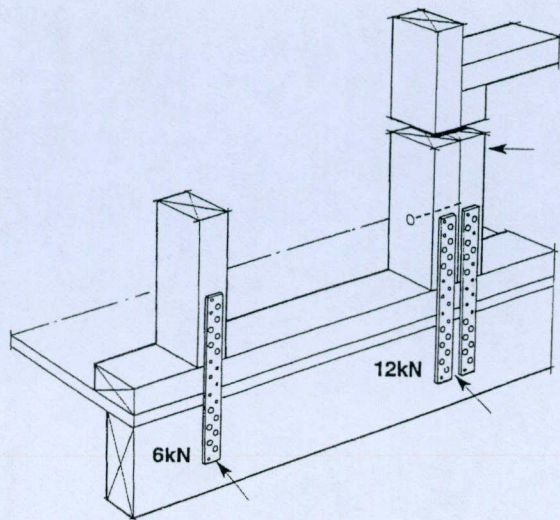
Timber Floor - External Wall

For a closed environment use, • 30 x 2.5mm galvanised nails
• 25mm x 0.9mm galvanised straps.

Additional thickness and/or corrosion protection is required in exposed and sheltered applications. (Consult NZS 3604:1999 Section 4)

Timber Floor - Internal Wall

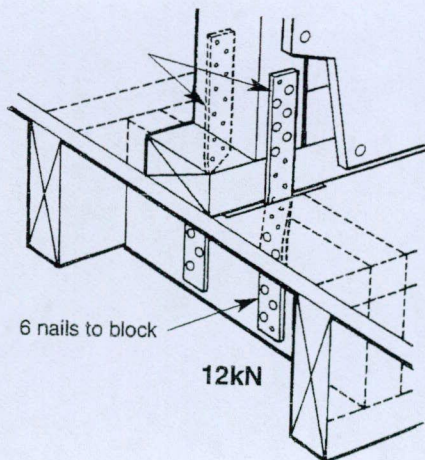
300mm long galvanised strap brace fixed with 6 nails to stud and joist

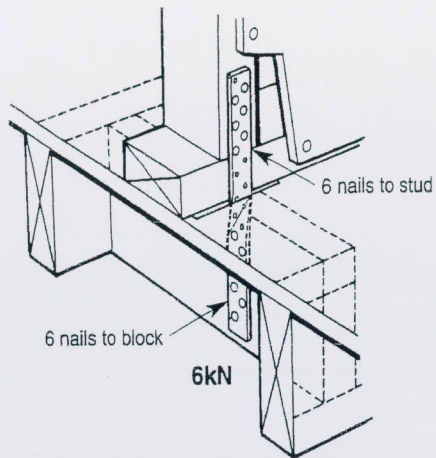


Min 300mm x 25mm x 0.9mm galvanised strap fixed with 6 nails to stud and joist
Block to first nog fixed with

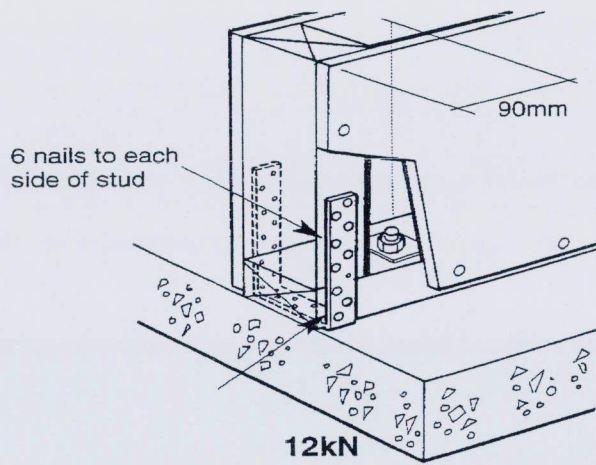
3 x 100 x 3.75mm nails to stud to accommodate double strap

RN Detail only suitable for 45mm bottom plate
6 nails to stud





Concrete Floor



3 nails to each side of bottom plate (strap passes underneath plate)
 61dN Connections - UL1, UL2, BR4, BR5, BR7, BR8 & BR9 121N Connections - BR6

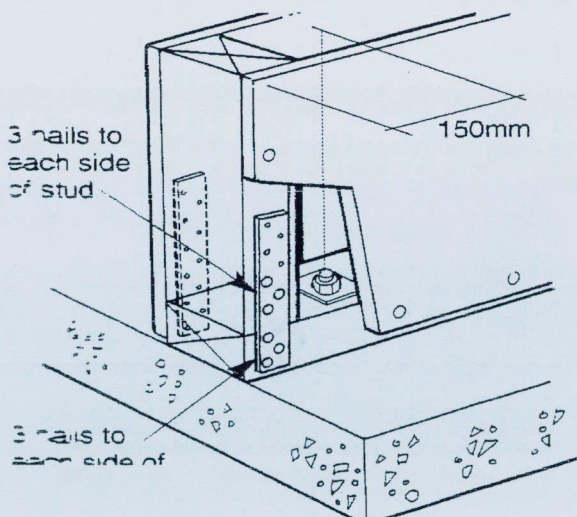


Figure 3: Fixing of plywood bracing sheets

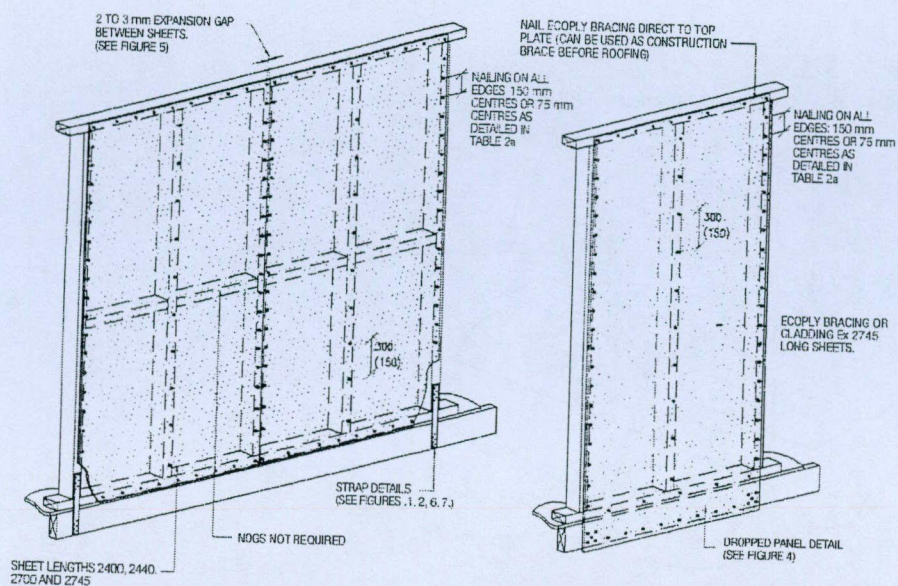
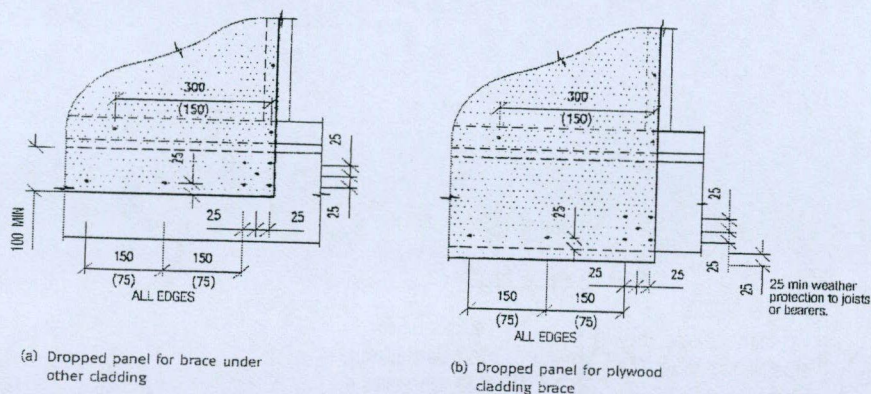


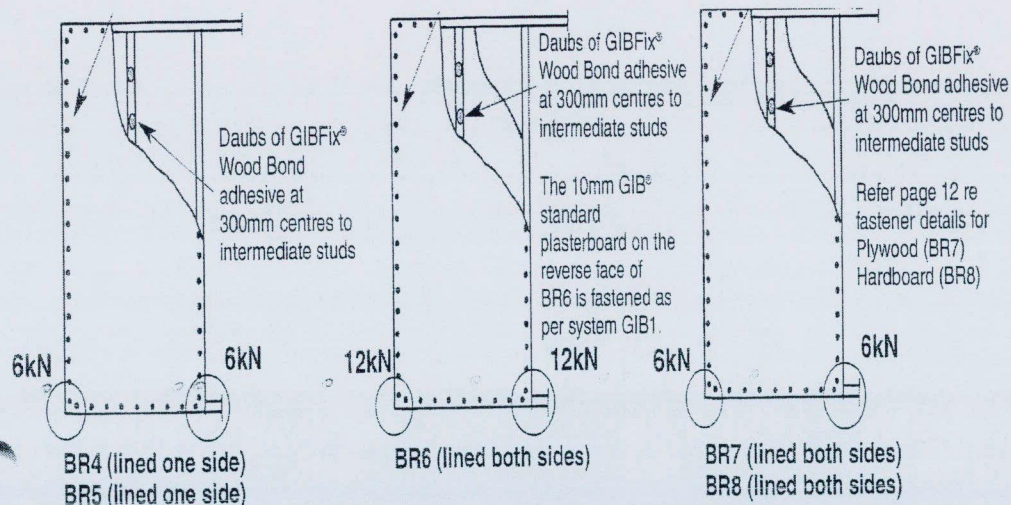
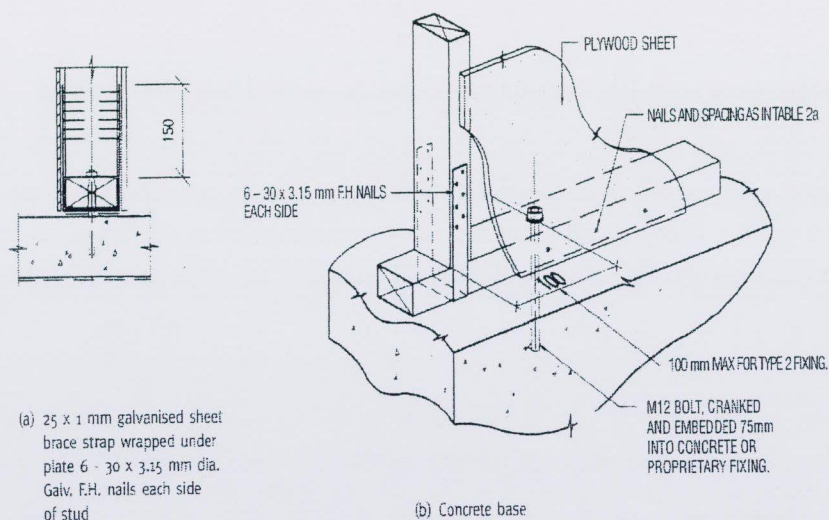
Figure 4: Type 1 dropped panel fixing for timber frames



Note

1. Nails as specified in Table 2a.
2. Nail centres given for standard nailing, refer Table 2a.
3. Extra hold-down nails are same size as for rest of sheet.

Figure 7: Type 2 strap fixings to end studs of plywood sheet braces for concrete floors



Note: If the length of the braced element using systems BR4, BR5, BR6, BR7 and BR8 exceeds 1.2m, then the sheet edges within the element are secured with single screws or nails at 300mm centres.

Fastening Technique

Installation Principles

Pipe clamps for fusiotherm®-pipes have to correspond to the external diameter of the plastic pipe.

Furthermore it is important, that the fastening material does not damage the surface of the pipe mechanically (fusiotherm®-pipe clamps art.-no.: 60516 - 60594, resp. fusiotherm®-plastic pipe clamps art.-no. 60616 - 60625).

The ideal fastening material for fusiotherm®-pipes are rubber lined pipe clamps. The rubber compound is specially made for applications with plastic pipes.

The selection of the fastening material and its application has to be determined as a

- fixed point or
- sliding point.

Fixed Points

On locating fixed points the pipelines are divided into individual sections. This avoids uncontrolled movements of the pipe.

In principal fixed points have to be measured and installed in a way, that the forces of expansion of fusiotherm®-pipes as well as probable additional loads are absorbed.

On using threaded rods or threaded screws the drop from the ceiling should be as short as possible. Rocker supports should not be used as fixed points.

It is always possible to install vertical distributions rigidly. Risers do not require expansion loops, provided that fixed points are located immediately before or after a branch.

To compensate the forces arising from the linear expansion of the pipe there must be sufficient and stable clamps and mountings.

Installation Principles

Fixed Points

fusiotherm®-pipe clamps meet all mentioned requirements and - when considering the following installation instructions - are perfect for fixed point installations.

This special type of rubber lined pipe clamps ensures that no mechanical damage of the pipe surface can occur.

Sliding Points

Sliding clamps have to allow axial movements of the pipe without damage.

On locating a sliding clamp it has to be observed that movements of the pipelines are not hindered by fittings or armatures installed next to them.

The special characteristics of fusiotherm®-pipe clamps makes them the most suited for noise insulation and, when installed in accordance with the below instructions, they are perfect for sliding point installations.

Installation Advice

fusiotherm®-pipe clamps are perfectly suited for fixed point and sliding point installations. The application of distance rings depends on the type of pipe.

Fastening	fusiotherm®-pipe fusiotherm®-faser composite pipe	fusiotherm®-stabi composite pipe
Sliding point	1 distance ring	2 distance rings
Fixed point	no distance ring	1 distance ring

Support Intervals

fusiotherm®-faser composite pipe

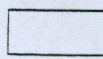
Table to determine support intervals for fusiotherm®-faser composite pipes in conjunction with temperature and outside diameter.

Difference in tem- perature Δt (K)	Pipe diameter d (mm)									
	20	25	32	40	50	63	75	90	110	
Support intervals in cm										
0	120	140	160	180	205	230	245	260	290	
20	90	105	120	135	155	175	185	195	215	
30	90	105	120	135	155	175	185	195	210	
40	85	95	110	125	145	165	175	185	200	
50	85	95	110	125	145	165	175	185	190	
60	80	90	105	120	135	155	165	175	180	
70	70	80	95	110	130	145	155	165	170	

fusiotherm®-pipe

Table to determine support intervals for fusiotherm®-pipes in conjunction with temperature and outside diameter.

Difference in tem- perature Δt (K)	Pipe diameter d (mm)									
	16	20	25	32	40	50	63	75	90	110
Support intervals in cm										
0	70	85	105	125	140	165	190	205	220	250
20	50	60	75	90	100	120	140	150	160	180
30	50	60	75	90	100	120	140	150	160	180
40	50	60	70	80	90	110	130	140	150	170
50	50	60	70	80	90	110	130	140	150	170
60	50	55	65	75	85	100	115	125	140	160
70	50	50	60	70	80	95	105	115	125	140

 Apply the support intervals of the blue-marked column to fusiotherm®-pipe SDR 11 / S 5 (PN 10).

Linear Expansion

The linear expansion of pipes depends on the heat subjected to the pipe material.

Therefore cold water pipes have practically no linear expansion and consequently expansion need not be considered.

Because of the heat dependent expansion of the material, the linear expansion must be specially considered in case of warm water and heating installations. This requires a distinction of the types of installation, i. e.

- concealed installation
- installation in ducts
- open installation.

Concealed Installation

Concealed installations generally do not require a consideration of the expansion of fusiotherm®-pipes.

The insulation acc. to DIN 1988 or the Decree for the Installation of Heating Systems (Heizungsanlagenverordnung) gives enough expansion space for the pipe. In case that the expansion is greater than the room to move in the insulation, the material absorbs every stress arising from a residual expansion.

The same applies to pipes, which do not have to be insulated acc. to current regulations. A temperature dependent linear expansion is prevented through the embedding in the floor, concrete or plaster. The compressive strain and tensile stress arising from this are not critical as they are absorbed through the material.

Installation in Ducts

As fusiotherm®-stabi composite pipes, fusiotherm®-faser composite pipes and fusiotherm®-pipes without stabilizing components are subject to a different linear expansion, branch-off points in ducts have to be installed in accordance with the chosen type of pipe.

Calculation of the Linear Expansion

The linear expansion Δl is calculated according to the following formula:

$$\Delta l = \alpha_n \times L \times \Delta t$$

Material: fusiotherm® composite pipe $\alpha_n = \alpha_1, \alpha_2, \alpha_3$

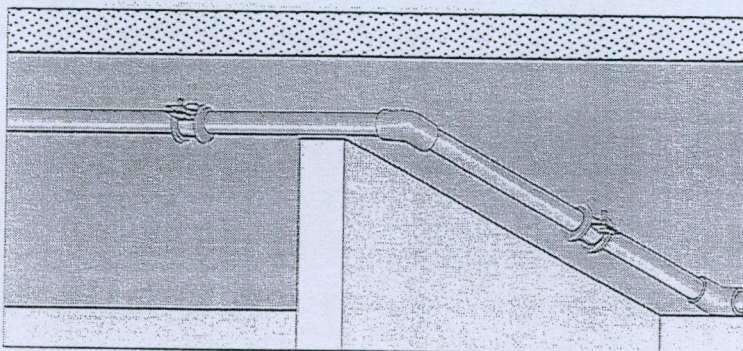
Expansion Bellows

Like metal pipes, fusiotherm®-pipes have to be installed in suitable pipe clamps.

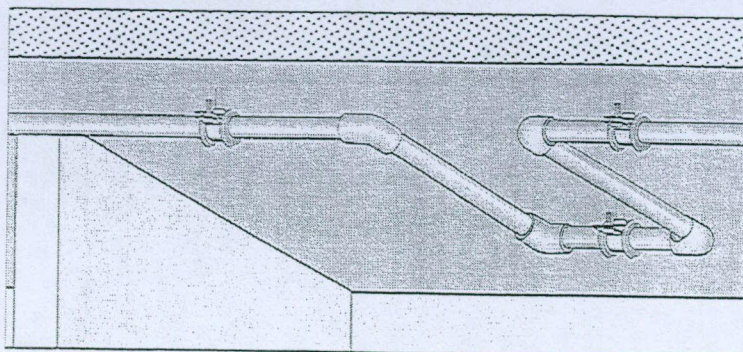
In case of open installed fusiotherm®-pipes the linear expansion Δl has to be taken into consideration on planning. The pipe route has to be planned and installed in a way that the pipe is free-moving within the determined expansion.

The following possibilities are considered to compensate the linear expansion:

- **Bending loop**



- **Expansion loop**

**Bellow Expansion Joint**

All bellow expansion joints for corrugated pipes for metal materials are unsuitable for fusiotherm®-pipes. When using toggle lever-bellow or axial expansion joints observe the manufacturer's instructions.

Installation Principles

Bending Side

In most cases direction changes can be used to compensate linear expansion in pipes.

The length of a bending side has to be calculated acc. to the following example.

Calculation example: Length of the bending side

Given and required values

Designation	Meaning	Value	Measuring unit
L_S	Length of the bending side	?	mm
K	Material specific constant fusiotherm®-pipe	15	-
d	Outside diameter fusiotherm®-pipe	40.0	mm
Δl	Linear expansion	30.0	mm

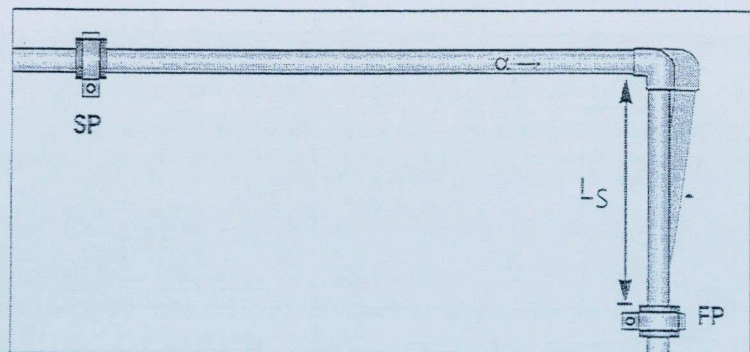
The bending side length is calculated according to the following formula:

$$L_S = K \times \sqrt{d \times \Delta l}$$

$$L_S = 15 \times \sqrt{40.0 \text{ mm} \times 30.0 \text{ mm}}$$

$$L_S = 520.0 \text{ mm}$$

Considering the values given above, the calculated bending side L_S comes up to 520 mm.



SP = Sliding point

FP = Fixed point

Expansion Loop

If the linear expansion cannot be compensated through change in direction, it becomes necessary to install an expansion loop. Its construction requires the necessary length of pipes and four further angles 90°.

Consider the length of the bending side L_5 as well as the breadth of the pipe bend A_{min} on constructing an expansion loop.

Calculation example: Breadth of the expansion loop

Given and required values

Designation	Meaning	Value	Measuring unit
A_{min}	Breadth of the expansion loop	?	mm
Δl	Linear expansion	30.0	mm
SD	Safe distance	150.0	mm

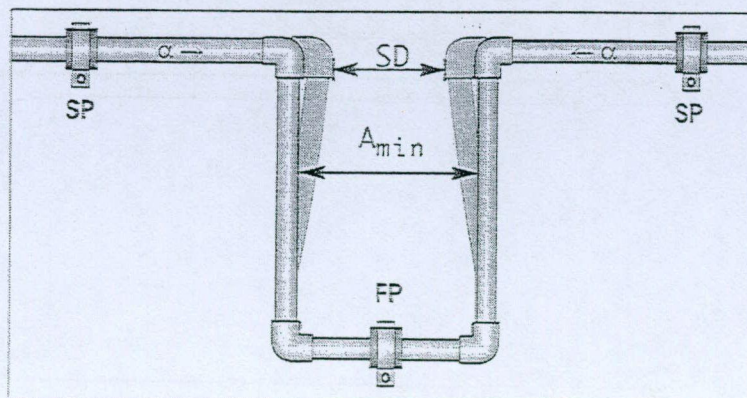
The pipe bend A_{min} is calculated acc. to the following formula:

$$A_{min} = 2 \times \Delta l + SD$$

$$A_{min} = 2 \times 30.0 \text{ mm} + 150.0 \text{ mm}$$

$$A_{min} = 210.0 \text{ mm}$$

The breadth of the expansion loop A_{min} should be at least 210 mm.



SP = Sliding point
FP = Fixed point

Installation Principles

Bending Side

In most cases direction changes can be used to compensate linear expansion in pipes.

The length of a bending side has to be calculated acc. to the following example.

Calculation example: Length of the bending side

Given and required values

Designation	Meaning	Value	Measuring unit
L_S	Length of the bending side	?	mm
K	Material specific constant fusiotherm®-pipe	15	-
d	Outside diameter fusiotherm®-pipe	40.0	mm
ΔL	Linear expansion	30.0	mm

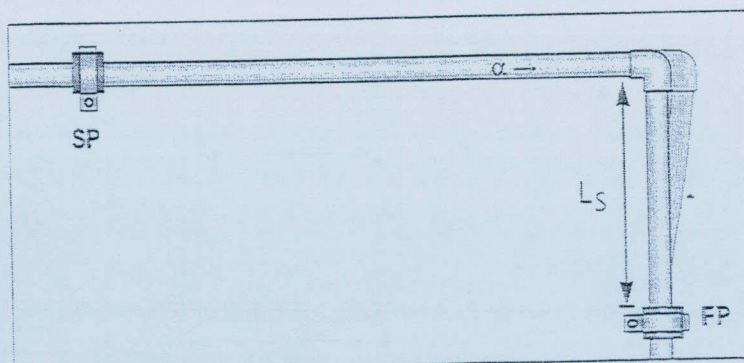
The bending side length is calculated according to the following formula:

$$L_S = K \times \sqrt{d \times \Delta L}$$

$$L_S = 15 \times \sqrt{40.0 \text{ mm} \times 30.0 \text{ mm}}$$

$$L_S = 520.0 \text{ mm}$$

Considering the values given above, the calculated bending side L_S comes up to 520 mm.



SP = Sliding point

FP = Fixed point

Job: 5020

Client: VALUE PLUS HOMES
Phone:Site: LUDLOW DRIVE
ASHBURTON

Description:

Phone:

MiTek 20/20 - Engineering 4.3 Gamma4 (Build 1228)

MiTek New Zealand Ltd.

Printed: 11:51:02 30 Jun 2005

PRODUCER STATEMENT
MiTek 20/20™ TRUSS DESIGN PROGRAM

PLEASE FILE.

Certification of MiTek 20/20™ Truss Design Program

The MiTek 20/20™ truss design program has been developed by MiTek New Zealand Ltd for the design of GANG-NAIL timber roof, floor and attic 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 20/20™ Truss Design Data and Output

The MiTek 20/20™ 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 Truss**

Timber Group: 45CDNP31
Roof
Material: Galv Iron .5mm
Dead Load: 0.210 kPa
Restraints: 900 mm centres
Live Load: Q_r = 0.250 kPa
Q_c = 1.000 kN

Pitch: 15.00 deg
Ceiling
Material: Standard
Dead Load: 0.200 kPa
Restraints: 400 mm centres

Std Overhang: 450 mm
Wind
Area: High (44.0 m/s)
Pressure Coeff: C_{pe} = varies; C_{pi} = -0.30, 0.20
Snow
Location: Zone 4 at 100 m
Open Ground Load: 0.550 kPa
Basic Roof Load: 0.440 kPa

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. Unless otherwise noted, this design assumes that the steel fixings and timber connectors are situated in a closed environment, as defined by NZS3604:1999 Section 4.

Truss List

Legend: * = detail only, ? = input only, ✕ = failed design, Unmarked trusses = designed successfully

Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)	Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)
*R01	1	1200	15.00	900	*R09	12	610	0.00	699
*R02	3	7080	15.00	900	*R10	8D	3630	15.00	377
*R03	1	5880	15.00	900	T01	24	6090	15.00	895
*R04	2D	3630	15.00	900	T01A	6	6090	15.00	895
*R05	2D	3630	15.00	347	T02	1	6090	15.00	912
*R06	30	1155	0.00	782	T02A	3	6090	15.00	912
*R07	8	1155	0.00	834	T03	16	4890	15.00	915
*R08	3	1155	0.00	578	T03A	2	4890	15.00	915

Total quantity : 122



The computer design input has been carried out by:

Signed: _____

Date: 30/6/5

Name of Computer Operator: _____

Qualifications and Title: _____

Company: _____

Carters - Canterbury

Verification / Acceptance of Input Data:

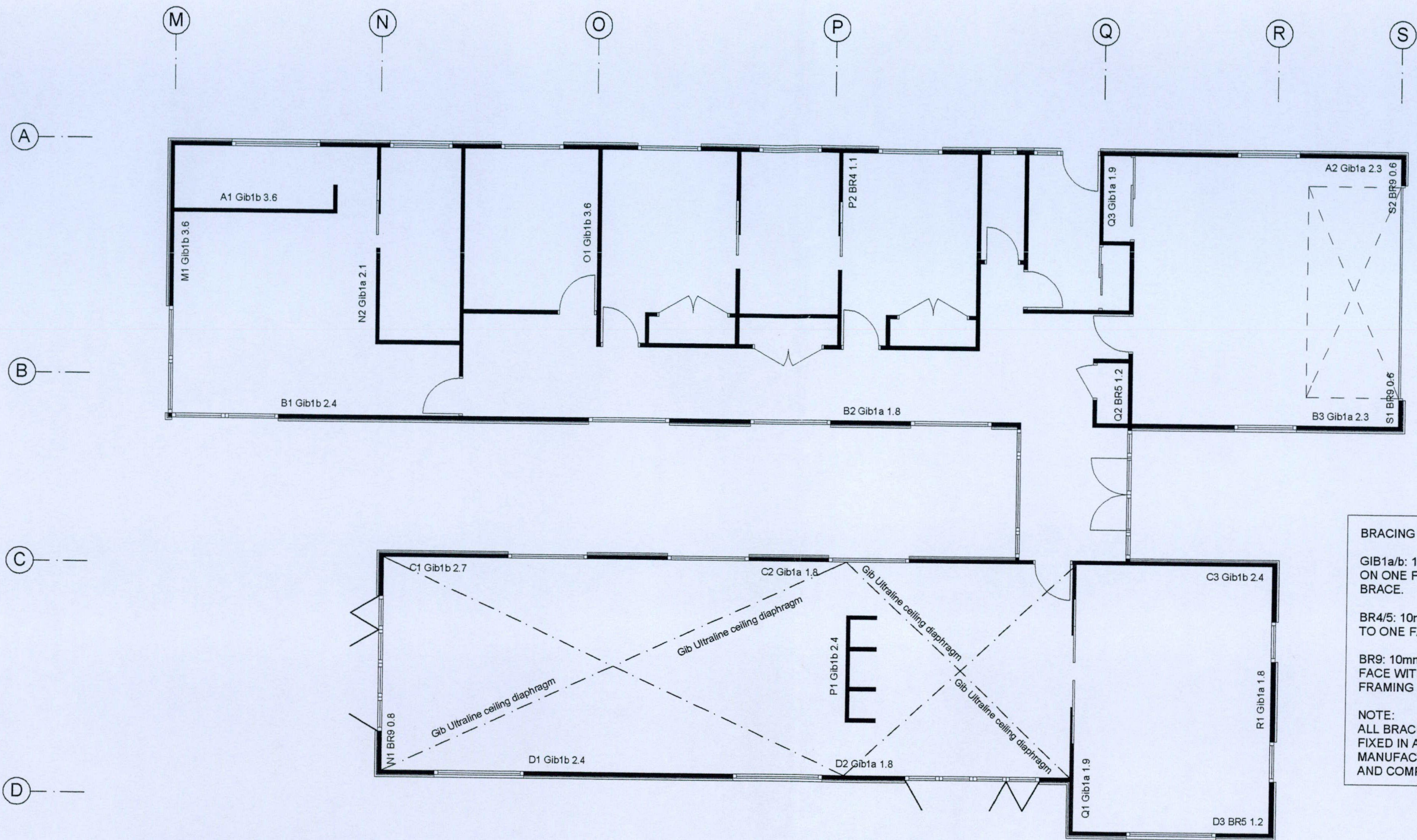
I have checked the input data against the construction drawings and specifications and verify that they are correct and suitable for this job.

Signed: _____

Date: _____

Name: _____

Company: _____



BRACING KEY:

GIB1a/b: 10mm GIB BOARD LINING ON ONE FACE WITH DIAGONAL BRACE.

BR4/5: 10mm GIB BRACELINE FIXED TO ONE FACE WITH 6kN TIES.

BR9: 10mm GIB BRACELINE ONE FACE WITH 6kN TIES. ADDITIONAL FRAMING AND NAILING.

NOTE:
ALL BRACING PANELS ARE TO BE FIXED IN ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS AND COMPLY WITH NZS 3604:1999

BRACING PLAN

	COPYRIGHT: ALL PLANS AND DESIGNS ARE SUBJECT TO COPYRIGHT AND SHALL NOT BE COPIED, REPRODUCED OR USED FOR CONSTRUCTION PURPOSES WITHOUT WRITTEN PERMISSION OF VALUE PLUS HOMES LTD.	COCHRANE HOUSE LAKE HOOD ASHBURTON	ALL WORK SHALL COMPLY WITH THE APPROPRIATE LOCAL AUTHORITY REGULATIONS, NEW ZEALAND STANDARDS AND NEW ZEALAND BUILDING CODE 1990. DO NOT SCALE FROM DRAWINGS BUILDER SHALL VERIFY WITH VALUE PLUS HOMES, ALL SITE DIMENSIONS, LEVELS AND BOUNDARIES BEFORE COMMENCING WORK	REVISIONS: CONSENT ISSUE A: 10/5/2005	Job No: BM-05-001	SCALE: 1:100
					DATE: 10/05/2005	DRWG TYPE: CONSENT
					DESIGN: Nathan	SHEET: 11 of 12

Wall Bracing Calculation Sheet A

Ground Floor

Job Details

House Type:
Job: **BM-05-001**

Name: **Cochrane residence**

Street and Number: **Ludlow Drive**

Lot and DP Number: **Lot 11 Lake Hood**

City/Town/District: **Ashburton**

Location of Storey:

Building height: 5.5 m

Roof height to eaves: 2.9 m

Stud height: 2.4 m

Average roof pitch: 15 deg.

Building length BL = 27.79 m

Building width BW = 15.36 m

Roof weight ☐light ☐heavy

Cladding weight ☐light ☐heavy

Gross Plan Area = 285 sq.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 Details

Wind zone:

☐Low

☒Medium

☐High

☐Very High

Earthquake zone

Select Earthquake zone

A

B

☒C

BUs required Wind

W along = 54 BUs/m

W across = 54 BUs/m

Total wind load,

W ALONG:

W along x BW = 829 BUs

W ACROSS:

W across x BL = 1501 BUs

BUs required Earthquake

E = 1.8 BUs/m2

Total earthquake required

EQ ALONG & EQ ACROSS

E x GPA BUs = 513 BUs

Wall Bracing Calculation Sheet B

Ground Floor

Along

Wall or Bracing Line		Bracing Elements Provided			Wind		Earthquake	
1	2	3	4	5	6W	7W	8E	9E
Line Label	Minimum BUs Required	Bracing Element No.	Bracing Type	Length Element (m) L	Rating BU/m W	BUs Achieved (BU/mxL) W	Rating BU/m E	BUs Achieved (BU/mxL) E
A		A1	GIB1b	3.6	75	270	50	180
		A2	GIB1a	2.3	55	127	50	115
B		B1	GIB1b	2.4	75	180	50	120
		B2	GIB1a	1.8	55	99	50	90
		B3	GIB1a	2.3	55	127	50	115
C		C1	GIB1b	2.7	75	178	50	119
		C2	GIB1a	1.8	55	87	50	79
		C3	GIB1b	2.4	75	158	50	105
D	D1	GIB1b	2.4	75	158	50	105	
	D2	GIB1a	1.8	55	87	50	79	
	D3	BR5	1.2	115	138	85	102	
Totals Achieved					W	1608	E	1209
Totals Required					W	829	E	513
From Sheet A								

Across

Wall or Bracing Line		Bracing Elements Provided			Wind		Earthquake			
1	2	3	4	5.0	6W	7W	8E	9E		
Line Label	Minimum BUs Required	Bracing Element No.	Bracing Type	Length Element (m) L	Rating BU/m W	BUs Achieved (BU/mxL) W	Rating BU/m E	BUs Achieved (BU/mxL) E		
M		M1	GIB1b	3.6	x.89	75	270	50	180	
N										
		N1	BR9	0.8		110	77	95	67	
		N2	GIB1a	2.1		55	116	50	105	
		O1	GIB1b	3.6		75	270	50	180	
P		P1	GIB1b	2.4		x.89	75	158	50	105
		P2	BR4	1.1			100	110	85	94
Q	Q1	GIB1a	1.9	55	105		50	95		
	Q2	BR5	1.2	115	138		85	102		
	Q3	GIB1a	1.9	55	105		50	95		
R	R1	GIB1a	1.8	55	99		50	90		
S	S1	BR9	0.6	110	66		95	57		
	S2	BR9	0.6	110	66	95	57			
Totals Achieved					W	1579	E	1227		
Totals Required					W	1501	E	513		

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COCHRANE HOUSE
LAKE HOOD
ASHBURTON

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BM-05-001

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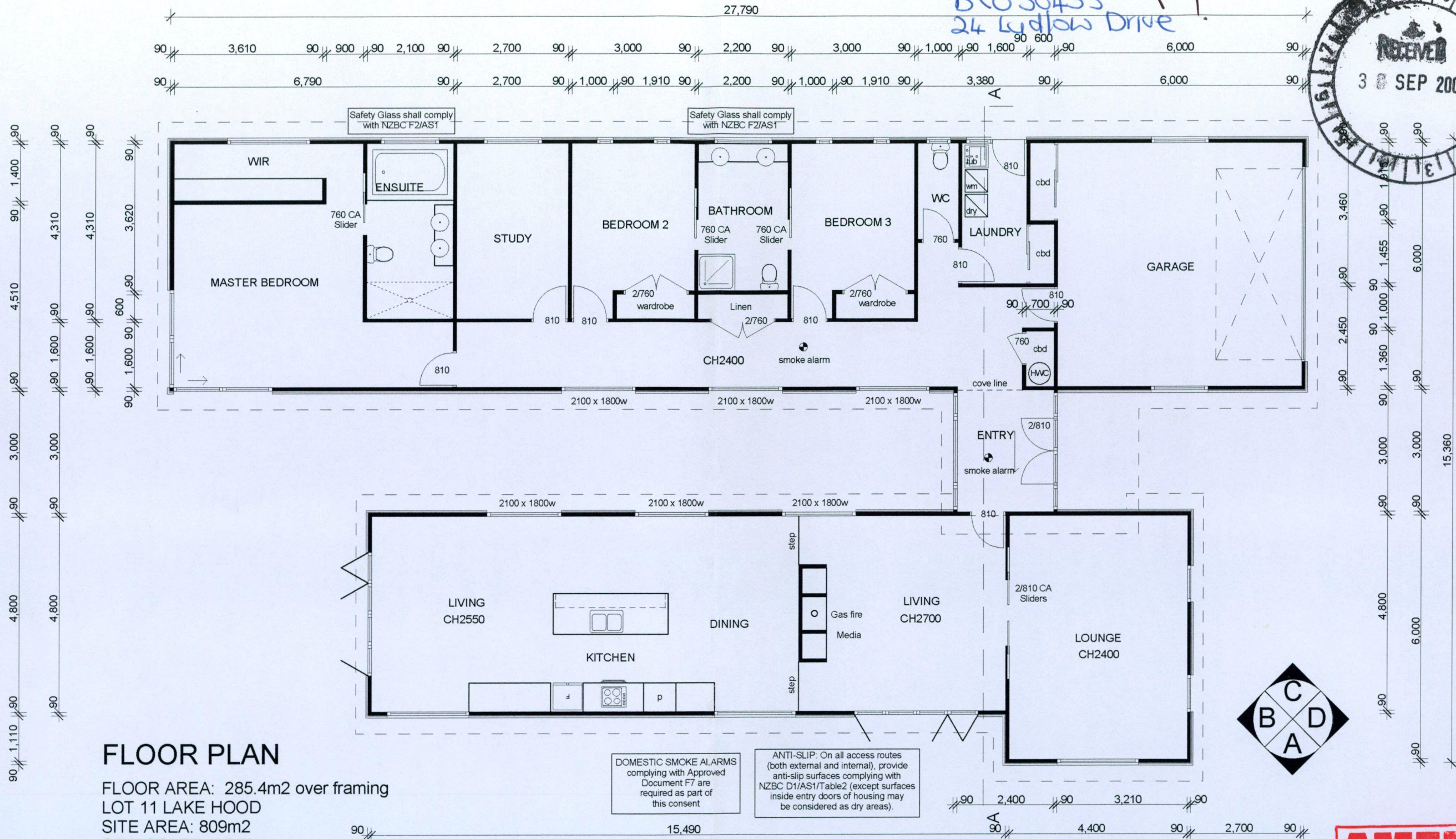
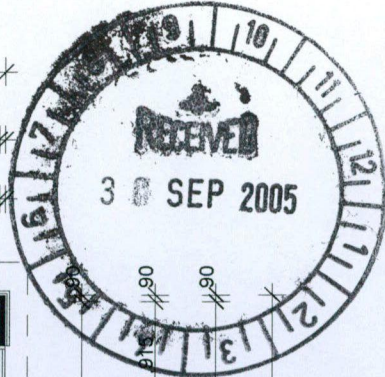
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DRWG TYPE:
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DRAWN:
Nathan

SHEET:
12 of 12

Site Copy
BC050433
24 Lydlow Drive



FLOOR PLAN

FLOOR AREA: 285.4m2 over framing
LOT 11 LAKE HOOD
SITE AREA: 809m2
SITE COVER: 35.3%

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COCHRANE HOUSE LAKE HOOD

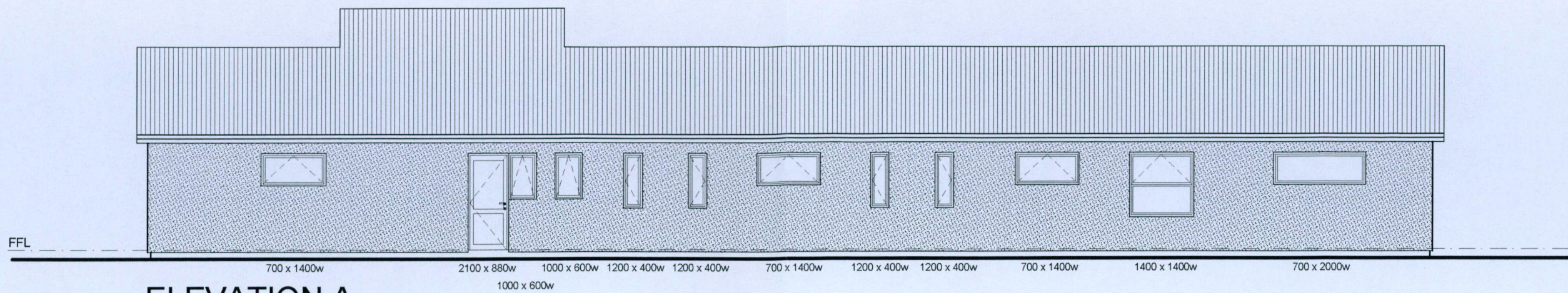
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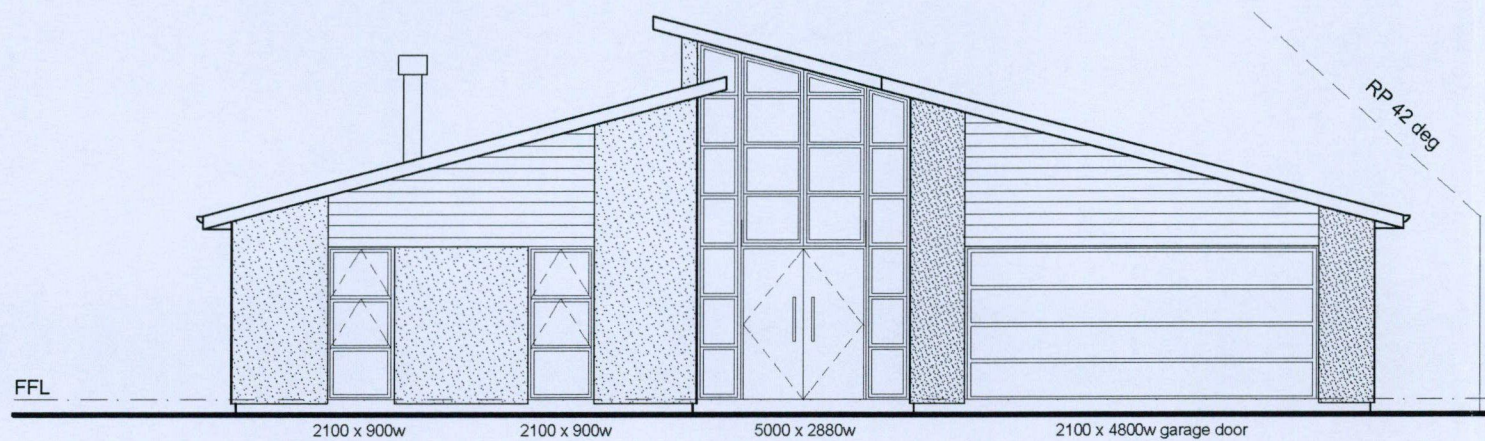
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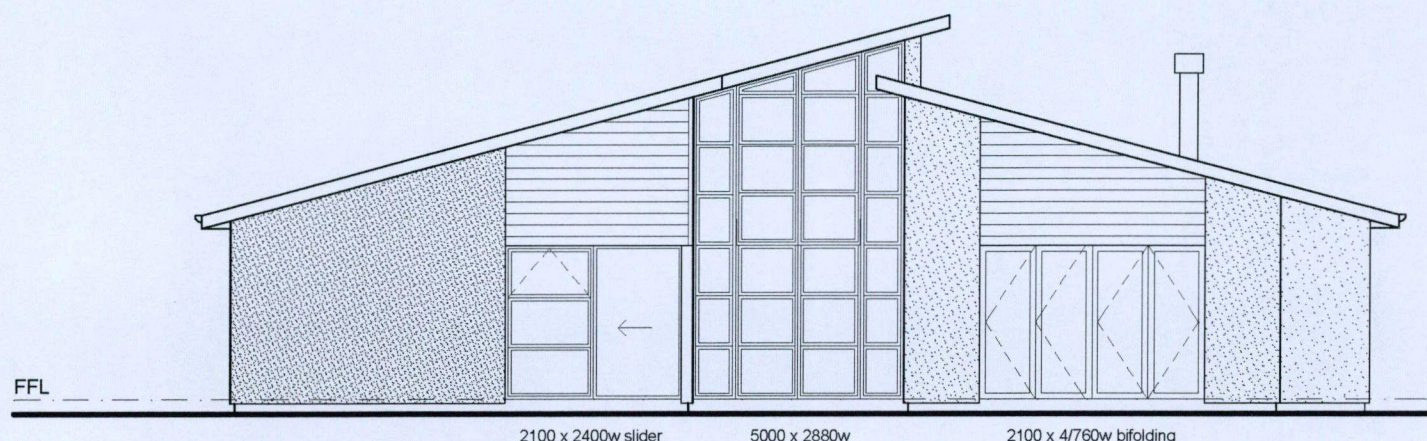
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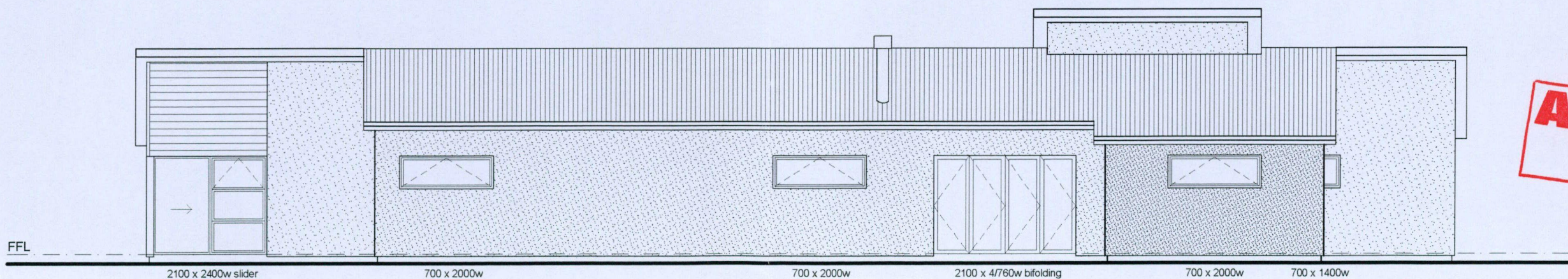
ELEVATION A



ELEVATION B



ELEVATION D



ELEVATION C

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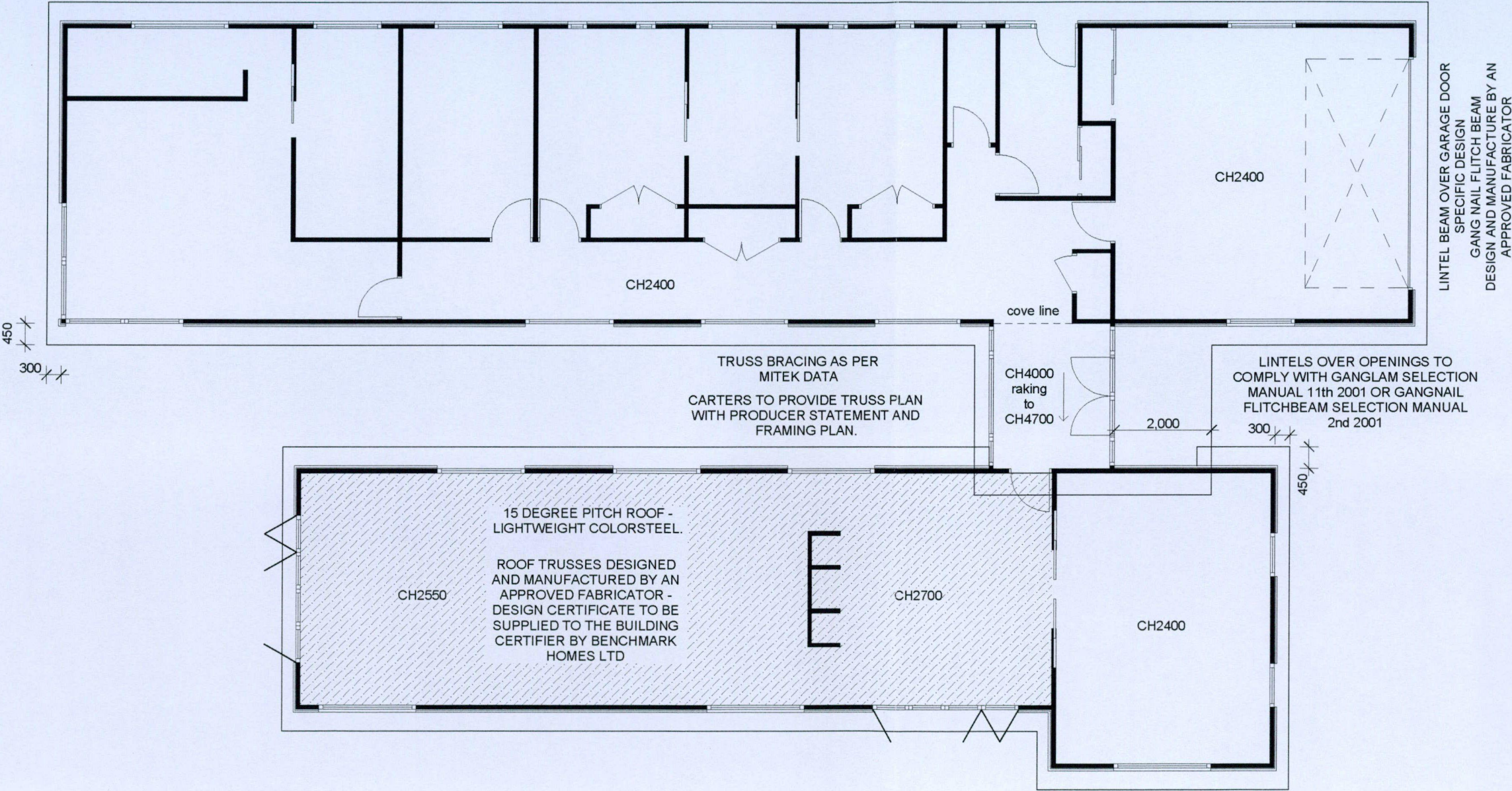
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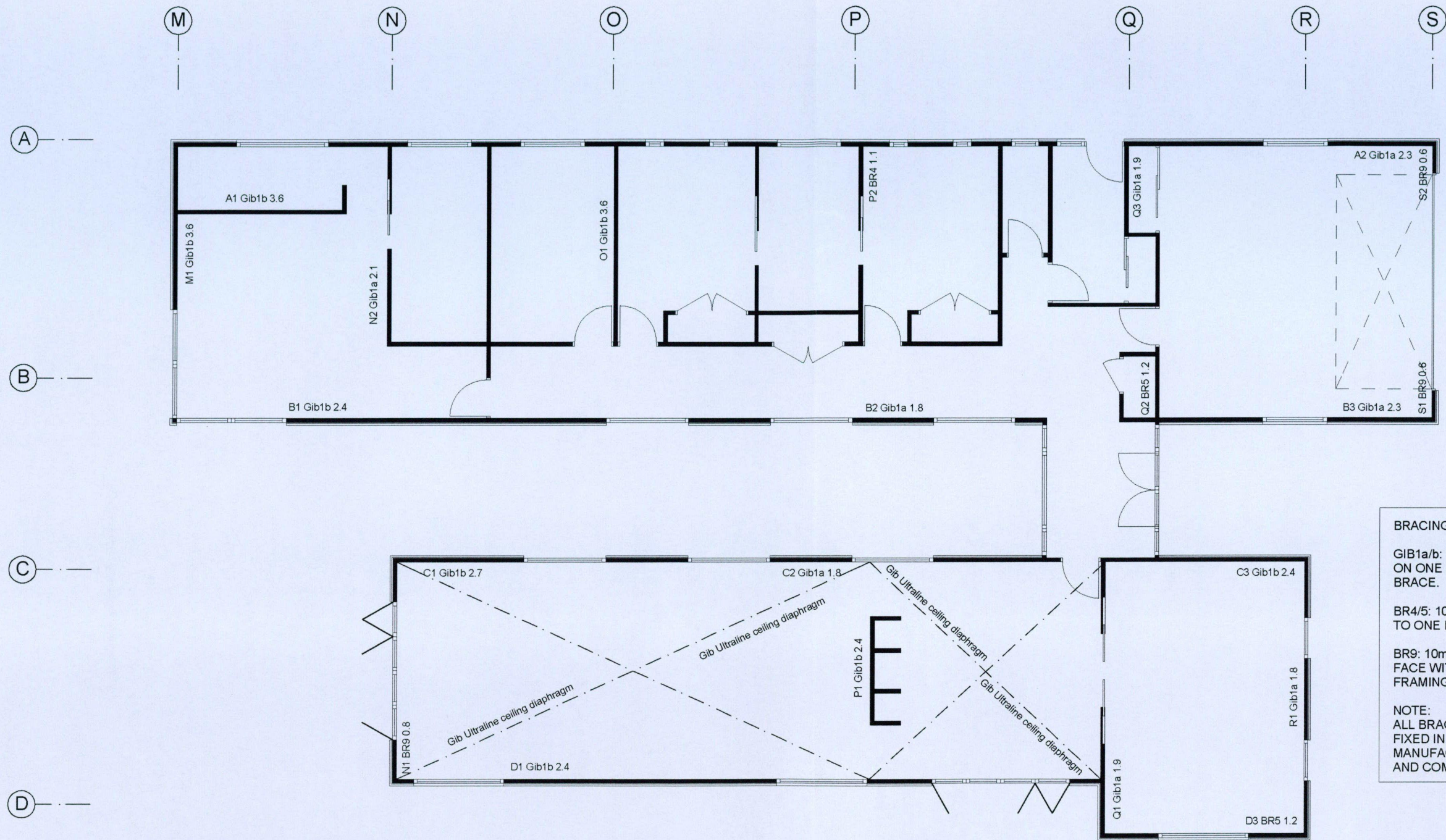
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ROOF PLAN



BRACING KEY:

GIB1a/b: 10mm GIB BOARD LINING ON ONE FACE WITH DIAGONAL BRACE.

BR4/5: 10mm GIB BRACELINE FIXED TO ONE FACE WITH 6kN TIES.

BR9: 10mm GIB BRACELINE ONE FACE WITH 6kN TIES. ADDITIONAL FRAMING AND NAILING.

NOTE:
ALL BRACING PANELS ARE TO BE FIXED IN ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS AND COMPLY WITH NZS 3604:1999

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BRACING PLAN

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					DESIGN: Nathan	SHEET: 11 of 12

Wall Bracing Calculation Sheet A

Ground Floor

Job Details

House Type:
Job: **BM-05-001**

Name:	Cochrane residence		
Street and Number:	Ludlow Drive		
Lot and DP Number:	Lot 11 Lake Hood		
City/Town/District:	Ashburton		
Location of Storey:	Roof weight	light	heavy
Building height: 5.5 m	Cladding weight	light	heavy
Roof height to eaves: 2.9 m			
Stud height: 2.4 m			
Average roof pitch: 15 deg.			
Building length BL = 27.79 m	Gross Plan Area =	285 sq.m	
Building width BW = 15.36 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 Details

Wind zone:	Low
	Medium
	High
	Very High

Earthquake zone

Select Earthquake zone	A	B	C
------------------------	---	---	--------------------------------

BUs required Wind

W along =	54 BUs/m
W across :	54 BUs/m
Total wind load,	
W ALONG:	
W along x BW =	829 BUs
W ACROSS:	
W across x BL =	1501 BUs

BUs required Earthquake

E =	1.8 BUs/m2
Total earthquake required	
EQ ALONG & EQ ACROSS	
E x GPA BUs =	513 BUs

Wall Bracing Calculation Sheet B

Ground Floor

Along

Wall or Bracing Line		Bracing Elements Provided				Wind			Earthquake			
1	2	3	4	5		6W	7W		8E	9E		
Line Label	Minimum BUs Required	Bracing Element No.	Bracing Type	Length Element (m) L		Rating BU/m W	BUs Achieved (BU/mxL) W		Rating BU/m E	BUs Achieved (BU/mxL) E		
A		A1	GIB1b	3.6		x.89	75		270	x.89	50	180
		A2	GIB1a	2.3			55		127		50	115
B		B1	GIB1b	2.4			75		180		50	120
		B2	GIB1a	1.8			55		99		50	90
		B3	GIB1a	2.3			55		127		50	115
C		C1	GIB1b	2.7	x.89		75	178	x.89		50	119
		C2	GIB1a	1.8	x.89		55	87	x.89		50	79
		C3	GIB1b	2.4			75	158			50	105
D		D1	GIB1b	2.4	x.89	75	158	x.89	50	105		
		D3	BR5	1.2		115	138		85	102		
Totals Achieved						W	1521		E	1130		
From Sheet A Totals Required						W	829		E	513		

Across

Wall or Bracing Line		Bracing Elements Provided						Wind		Earthquake		
1	2	3	4	5.0				6W	7W	8E	9E	
Line Label	Minimum BUs Required	Bracing Element No.	Bracing Type	Length Element (m) L				Rating BU/m W	BUs Achieved (BU/mxL) W	Rating BU/m E	BUs Achieved (BU/mxL) E	
M		M1	GIB1b	3.6	x.89							
N												
		N1	BR9	0.8		110	77		95	67		
		N2	GIB1a	2.1		55	116		50	105		
		O1	GIB1b	3.6								
P					x.89							
		P1	GIB1b	2.4		75	158		50	105		
		P2	BR4	1.1		100	110		85	94		
Q												
		Q1	GIB1a	1.9	55	105		50	95			
		Q2	BR5	1.2	115	138		85	102			
		Q3	GIB1a	1.9	55	105		50	95			
R			R1	GIB1a	1.8							
S												
	S1	BR9	0.6	110	66		95	57				
	S2	BR9	0.6	110	66		95	57				
Totals Achieved						W	1579		E	1227		
From Sheet A Totals Required						W	1501		E	513		

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LAKE HOOD

ASHBURTON

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CARTERS

MANUFACTURING

P O Box 4643
Christchurch

Ph (03) 359 2735

JOB No 5020

Client: VALUE PLUS HOMES
Job Name: COCHRANE RES
Address: LUDLOW DRIVE,
LAKE HOOD, ASHBURTON

Pitch: 15
Roof Material: LONG RUN
Soffit Overhang: VARIES
Wind Area: HIGH
Snow Load: .5 kPa

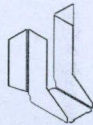
Trusses And Rafters At 900 Centres
Unless Stated Otherwise

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DATE 27-06-05 PAGE 1 of 4

FIXINGS

W=37x90 JH
X=37x120 JH
Y=37x190 JH
Z=70x180 JH



Joist Hanger

A=47x90 JH
B=47x120 JH
D=47x190 JH
E=95x165 JH

CT 200



Multi Grips

C=CT200
M=Multigrips
N=Nail On Plate
P=CPC 80



Nail on plate



CPC

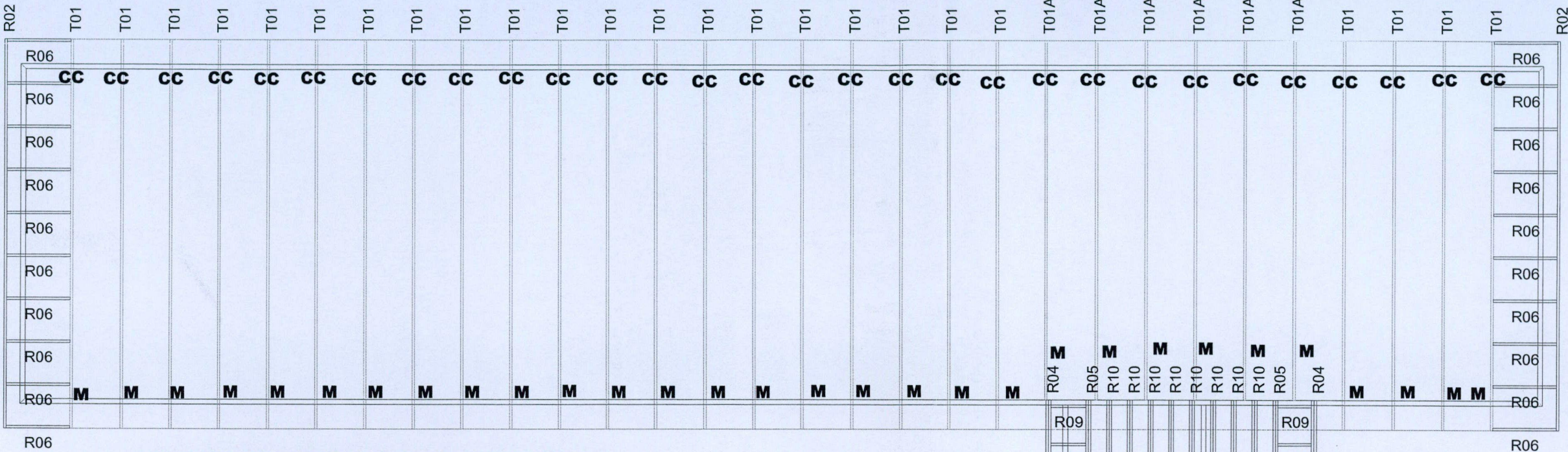
NOTE

Please contact your local CARTERS
Manufacturing Branch for any queries
regarding this layout or if any on site remedial
work is required.

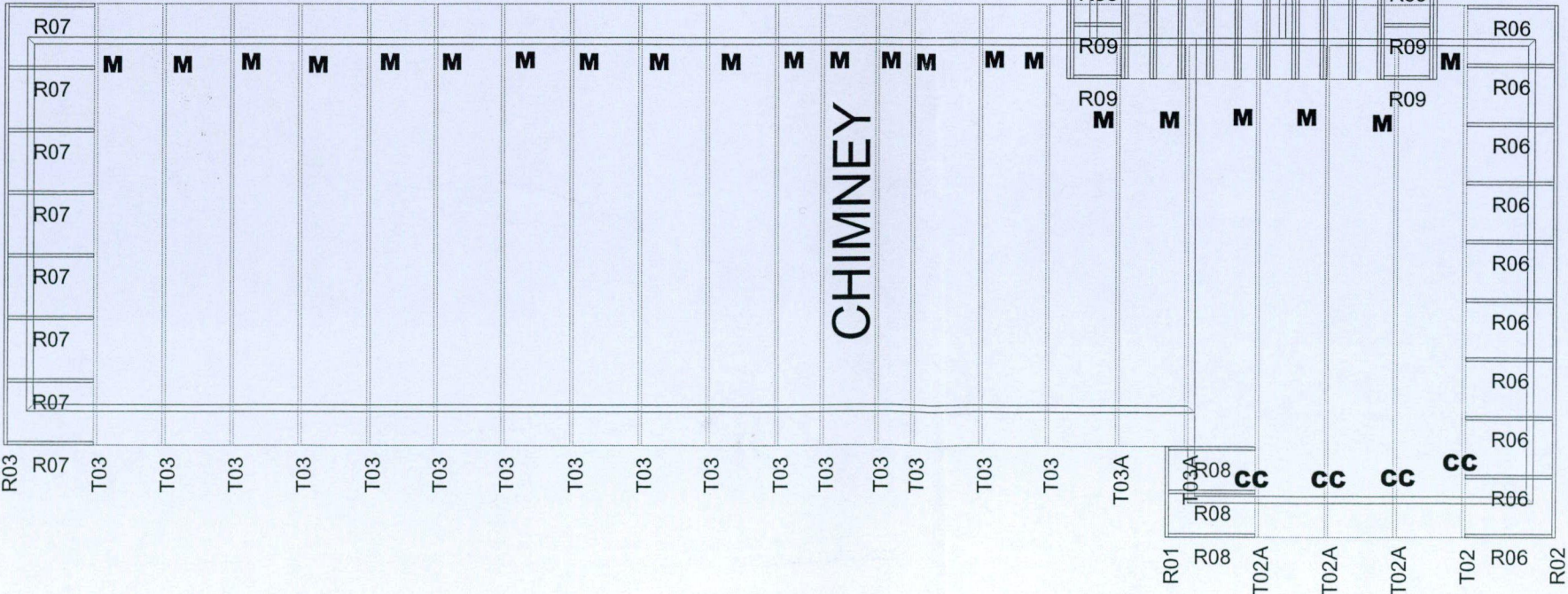
No modifications to Roof Trusses or Wall Frames
are to be undertaken without first obtaining
written authority from CARTERS Manufacturing.



See Page Over for Dimensions
Lintel Statement and
Roof truss Bracing



STRINGER ATTACHED TO STUDS @ 600 CENTRES
WITH 3 X 90 X 3.15mm NAILS.



JOB No 5020

Client:	VALUE PLUS HOMES
Job Name:	COCHRANE RES
Address:	LUDLOW DRIVE, LAKE HOOD, ASHBURTON

Pitch: 15
Roof Material: LONG RUN
Soffit Overhang: VARIES
Wind Area: HIGH
Snow Load: .5 kPa

Trusses And Rafters At 900 Centres
Unless Stated Otherwise

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DATE 27-06-05	PAGE 1 of 4

These lintels have been sized as per the GANGLAM and FLITCH BEAM selection manuals as provided by MiTek NZ Ltd.

HYPAN lintels have been sized as per the HYPAN selection charts.

Unless otherwise stated all lintels are as per NZS3604 1999.

[illegible]

See Other Pages For
Truss Layout and
Fixings



Ph (03) 359 2735

Client: VALUE PLUS HOMES
Job Name: COCHRANE RES
Address: LUDLOW DRIVE,
LAKE HOOD, ASHBURTON

Pitch:	15
Roof Material:	LONG RUN
Soffit Overhang:	VARIES
Wind Area:	HIGH
Snow Load:	.5 kPa

Trusses And Rafters At 900 Centres Unless Stated Otherwise

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DATE 27-06-05	PAGE 1 of 4
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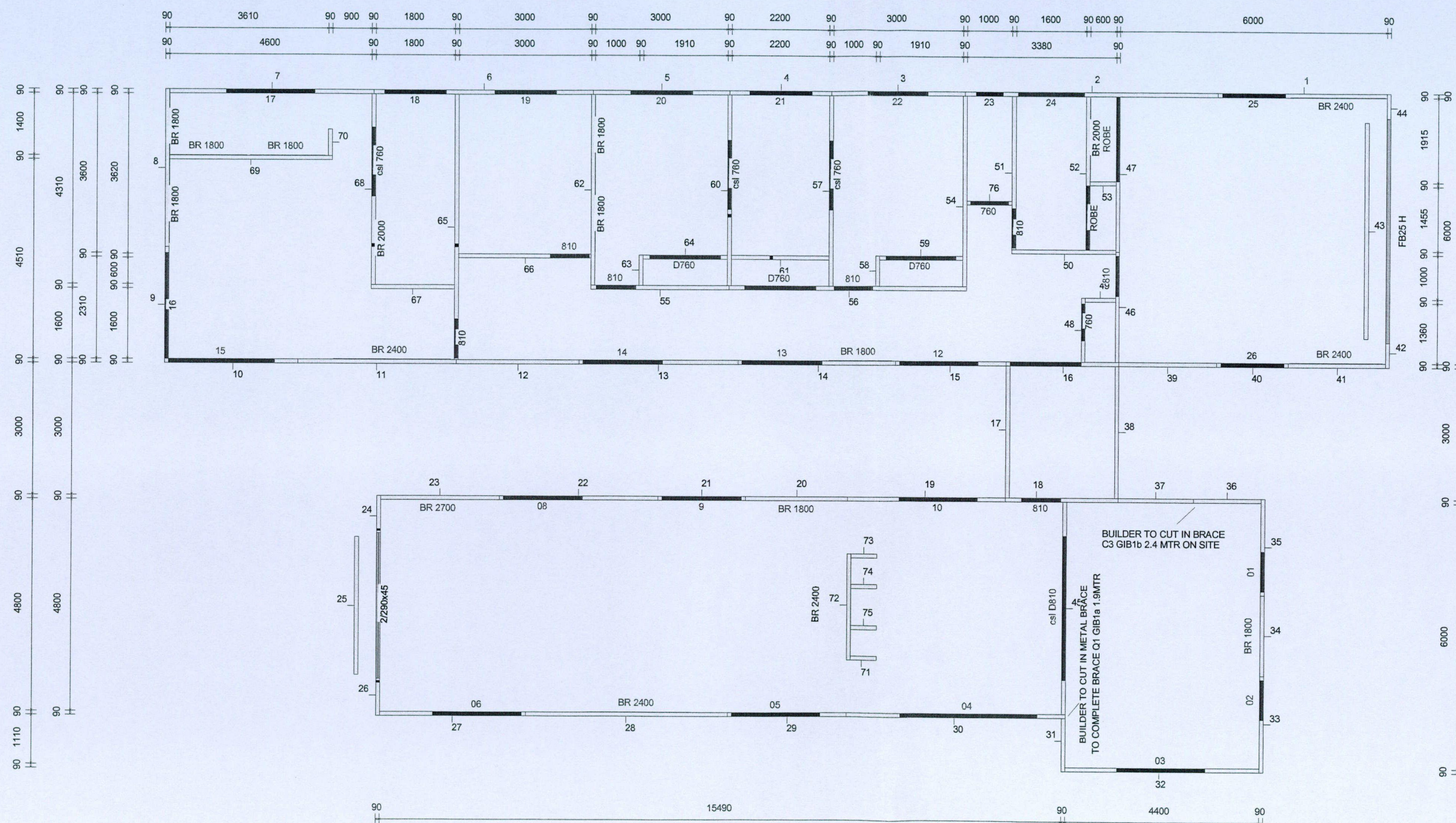
HYSPAN lintels have been sized as per the HYSPAN selection charts.

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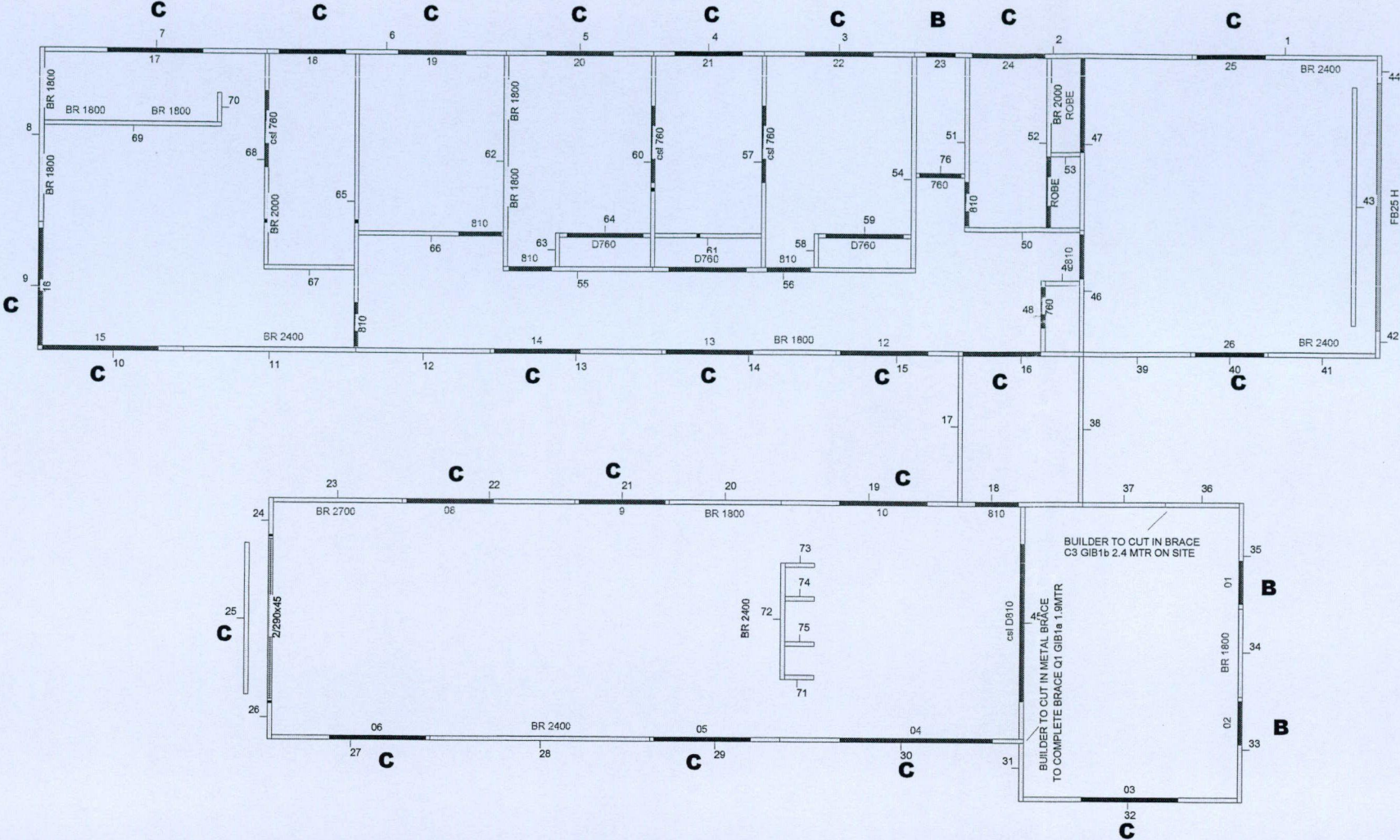
Level 1 Frames



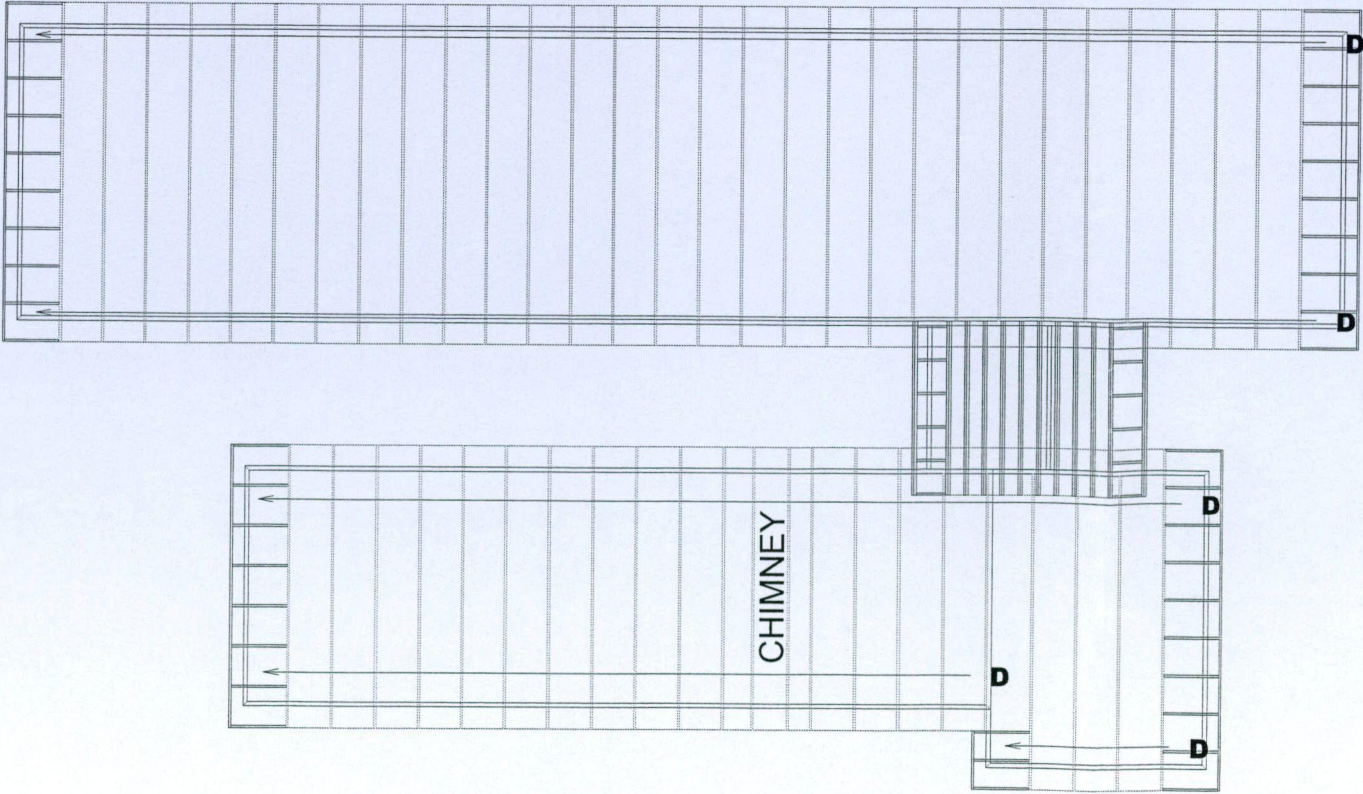
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Fixings



Builder is to ensure all Stud Straps are fixed to Bottom Plates, where required, before standing walls



**TIE DOWN AS PER
FLITCH BEAM MAUNAL**



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Christchurch

Ph (03) 359 2735

JOB No 5020

Client: VALUE PLUS HOMES
Job Name: COCHRANE RES
Address: LUDLOW DRIVE,
LAKE HOOD, ASHBURTON

Pitch: 15
Roof Material: LONG RUN
Soffit Overhang: VARIES
Wind Area: HIGH
Snow Load: .5 kPa

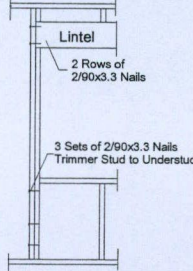
Trusses And Rafters At 900 Centres
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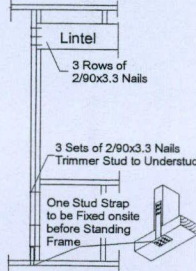
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Lintel Fixings

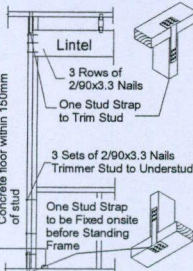
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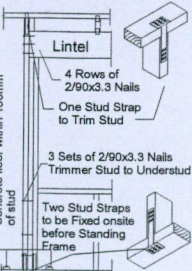
Type B (4.0kN)



Type C (7.5kN)



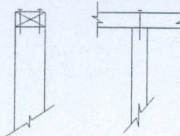
Type D (13.5kN)



Top Plate Fixings

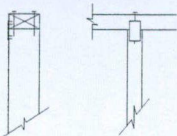
Fixing Type A (0.7kN)

2/90x3.33 Plain Steel Wirenails
Driven Vertically Into Stud

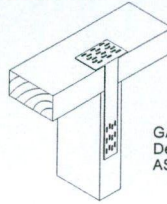


Fixing Type B (1.7kN)

2/90x3.33 Plain Steel Wirenails
Driven Vertically Into Stud plus
Single Tylok 2T4 Into Plate



Fixing Type D (6.0kN)



GANG NAIL Stud Strap
Design Capacity 6.1 kN
AS1720.1-1997

24 Ludlow Drive



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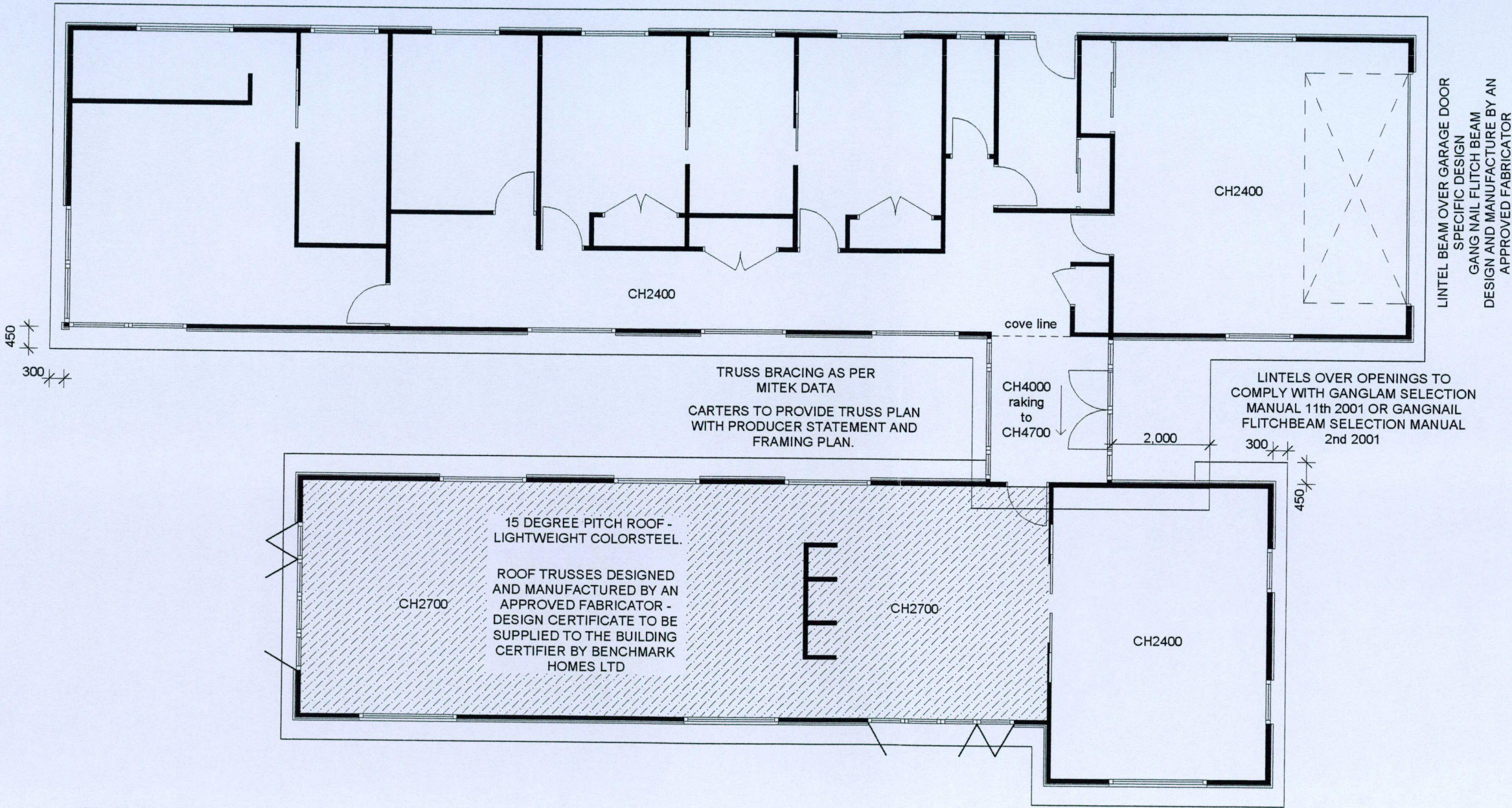
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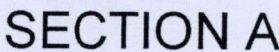
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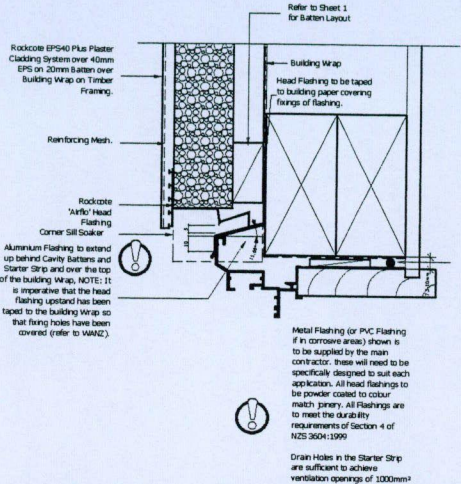
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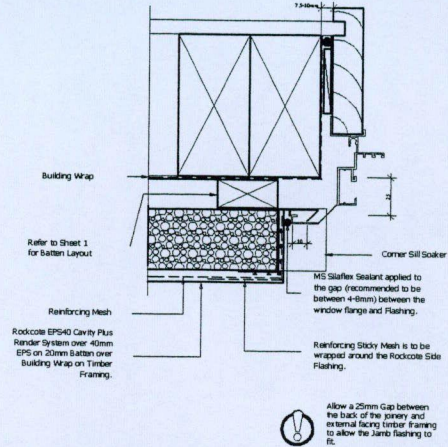
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ISSUE A: 10/5/2005

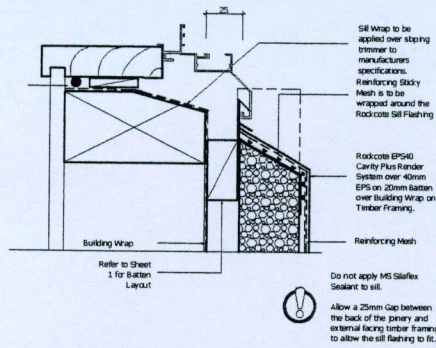
Job No: BM-05-001	SCALE: 1:5
DATE: 10/05/2005	DRWG TYPE: CONSENT
DRAWN: Nathan	SHEET: 7 OF 12



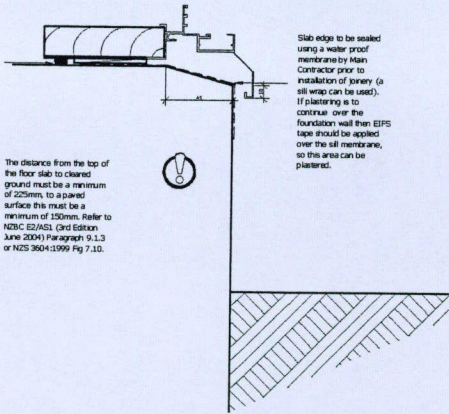
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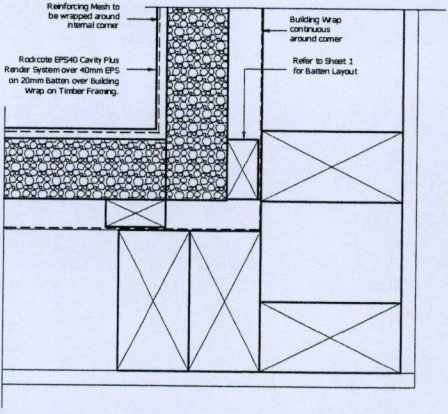
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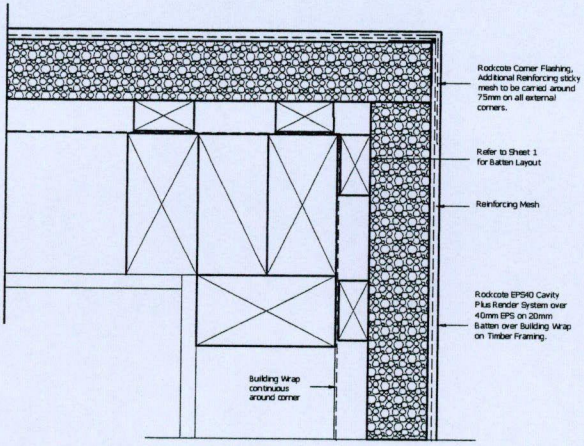
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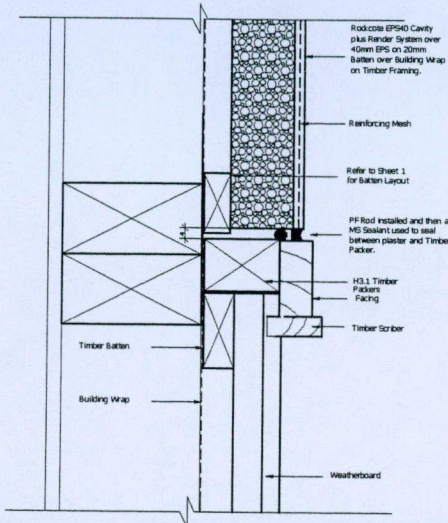
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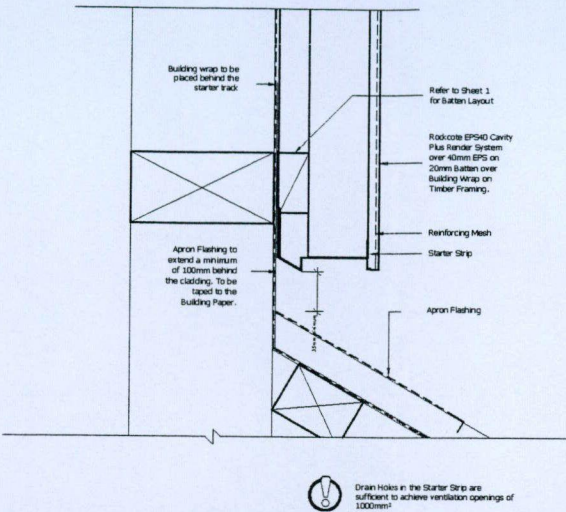
EPS40+ INTERNAL CORNER



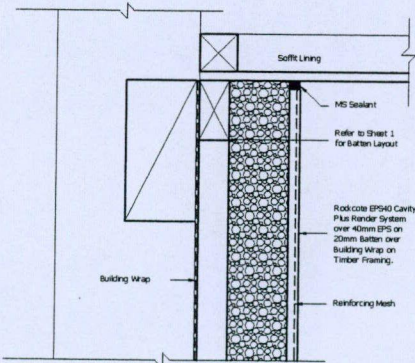
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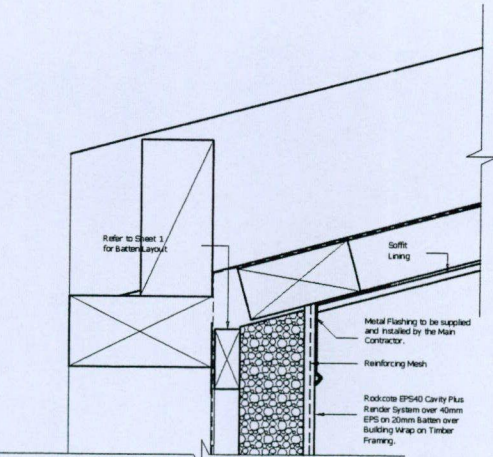
LINEA TO EPS40+ VERT JUNCTION



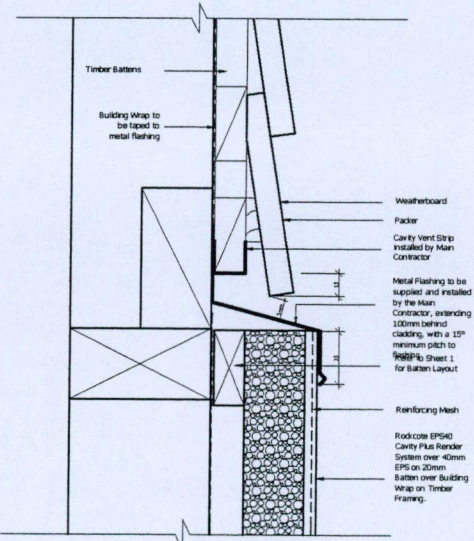
EPS40+ OVER ROOF LINE



STANDARD SOFFIT JUNCTION



SLOPING SOFFIT JUNCTION



LINEA TO EPS40+ HORIZ JUNCTION

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COCHRANE HOUSE

LAKE HOOD

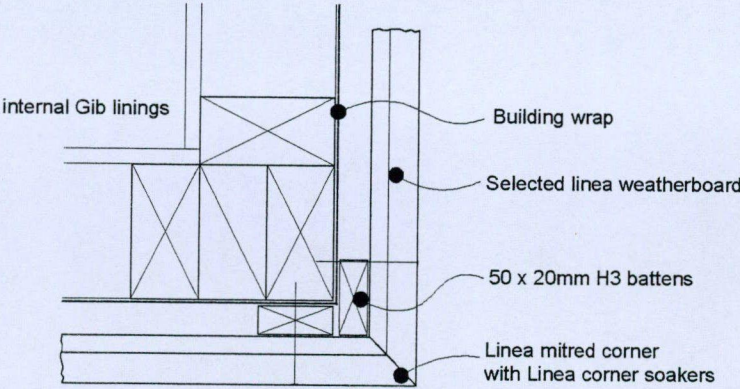
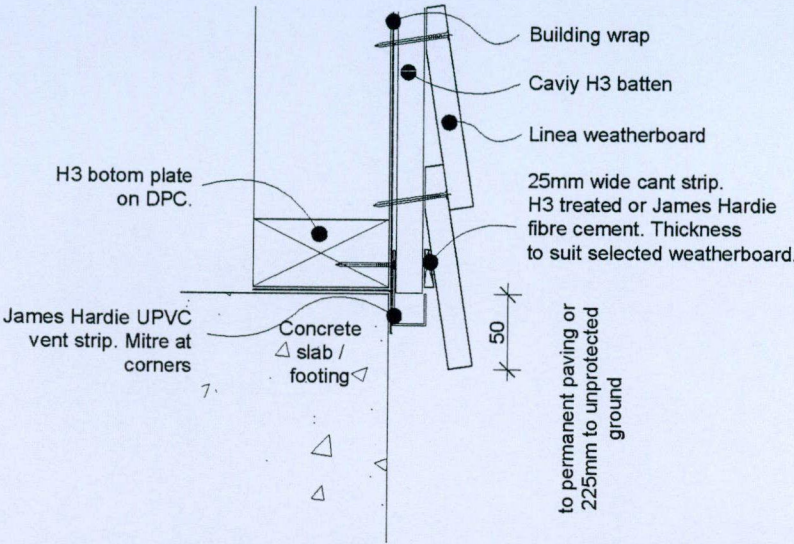
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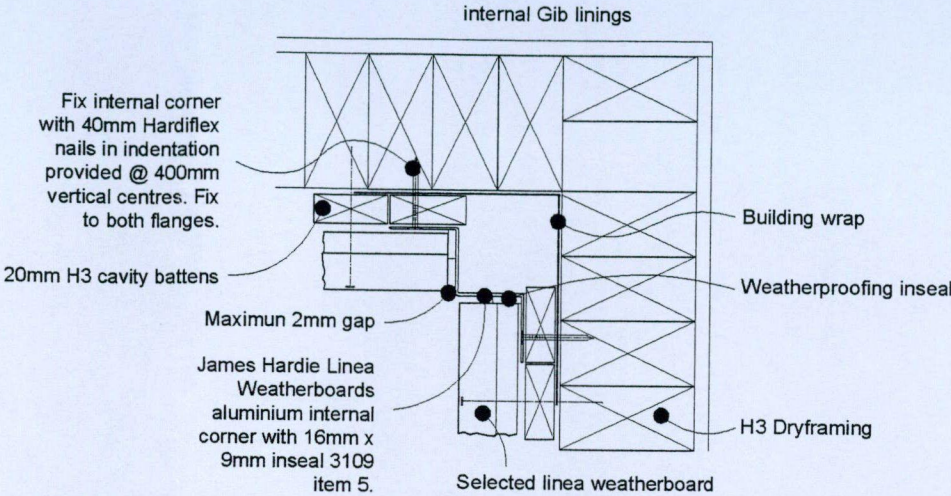
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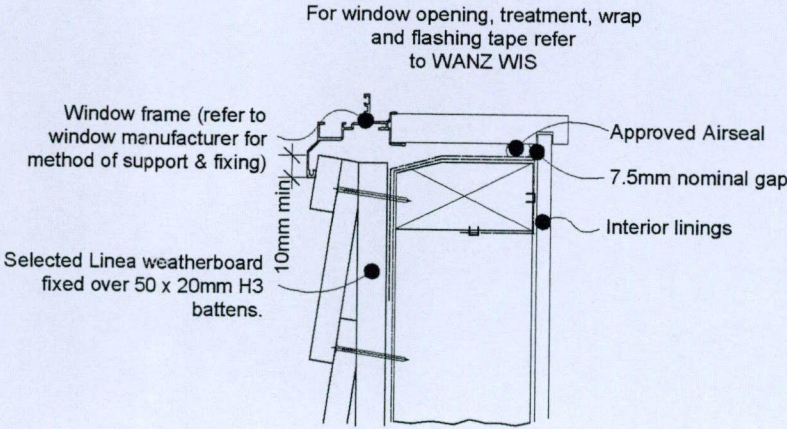
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LINEA EXTERNAL CORNER



LINEA-LINEA INTERNAL CORNER



SILL FLASHING DETAIL

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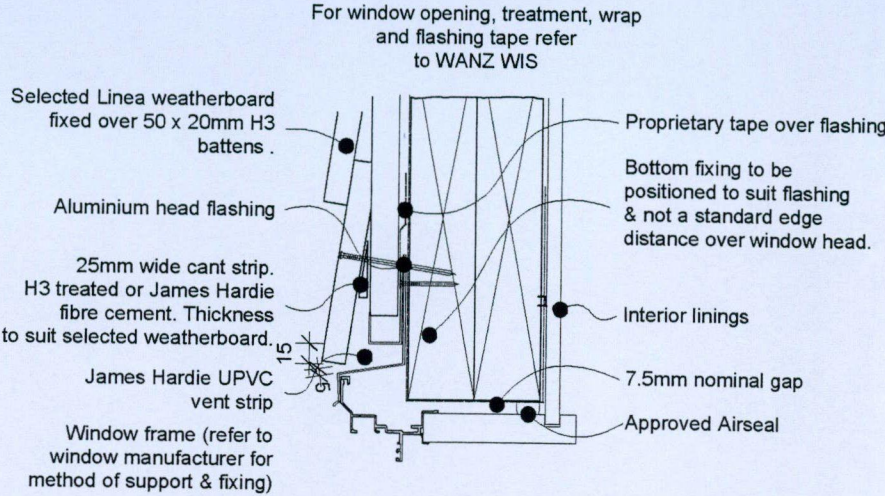
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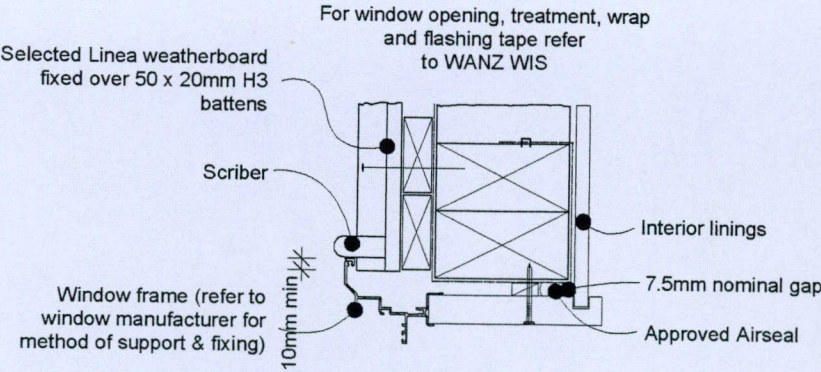
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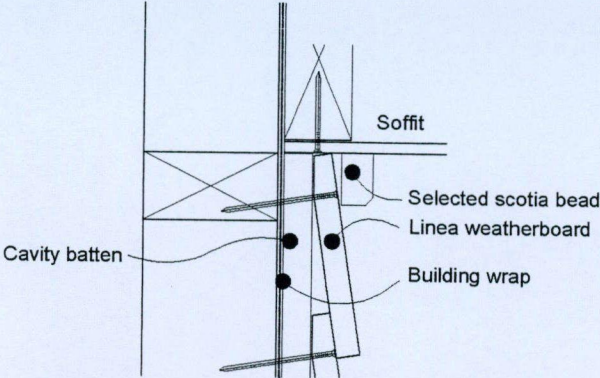
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HEAD FLASHING DETAIL



JAMB FLASHING DETAIL



EAVES FLASHING DETAIL

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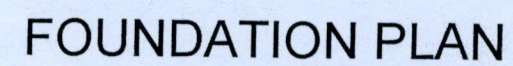
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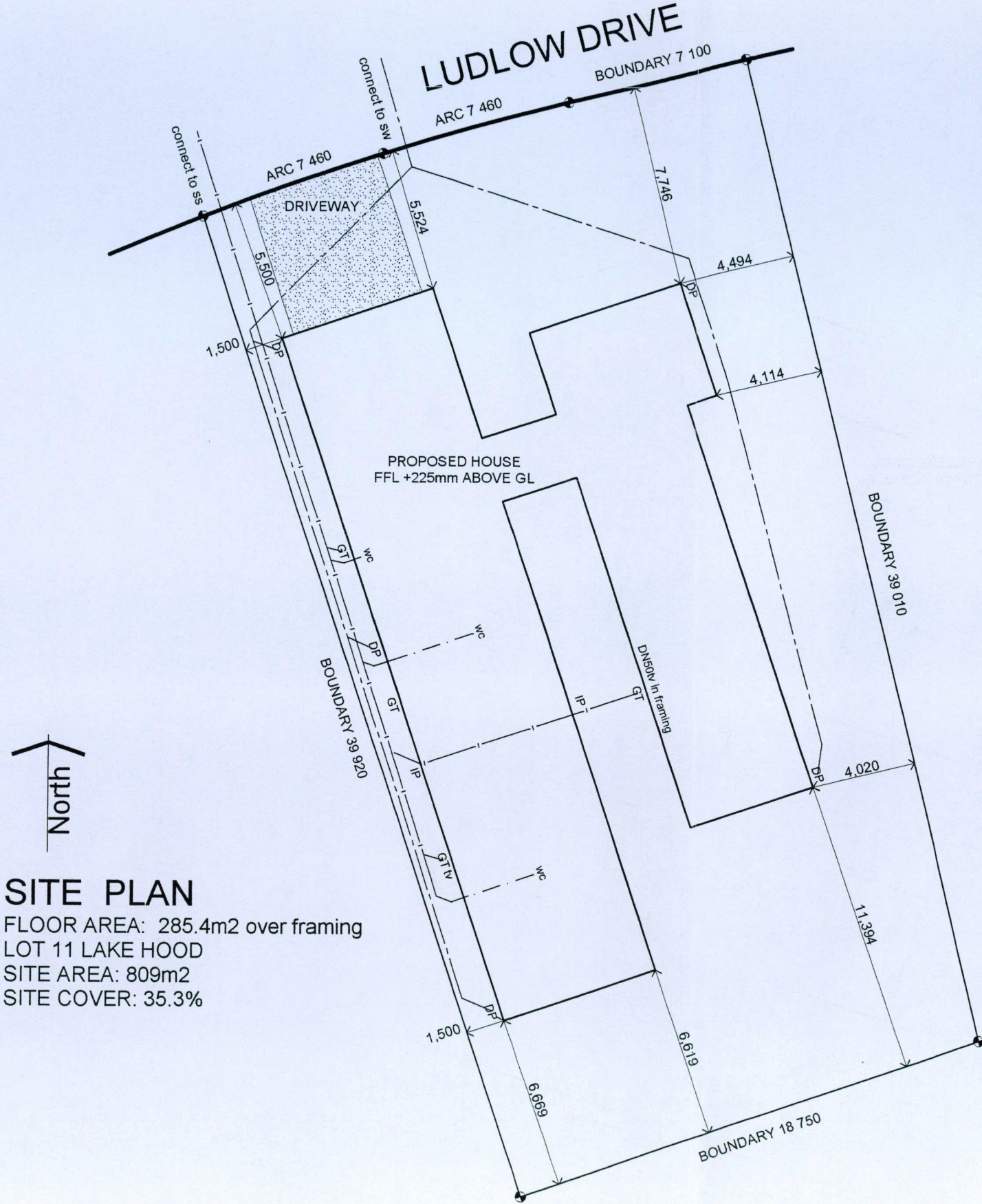
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SITE PLAN
FLOOR AREA: 285.4m² over framing
LOT 11 LAKE HOOD
SITE AREA: 809m²
SITE COVER: 35.3%



Benchmark Homes
"We set the standard, you set the style"

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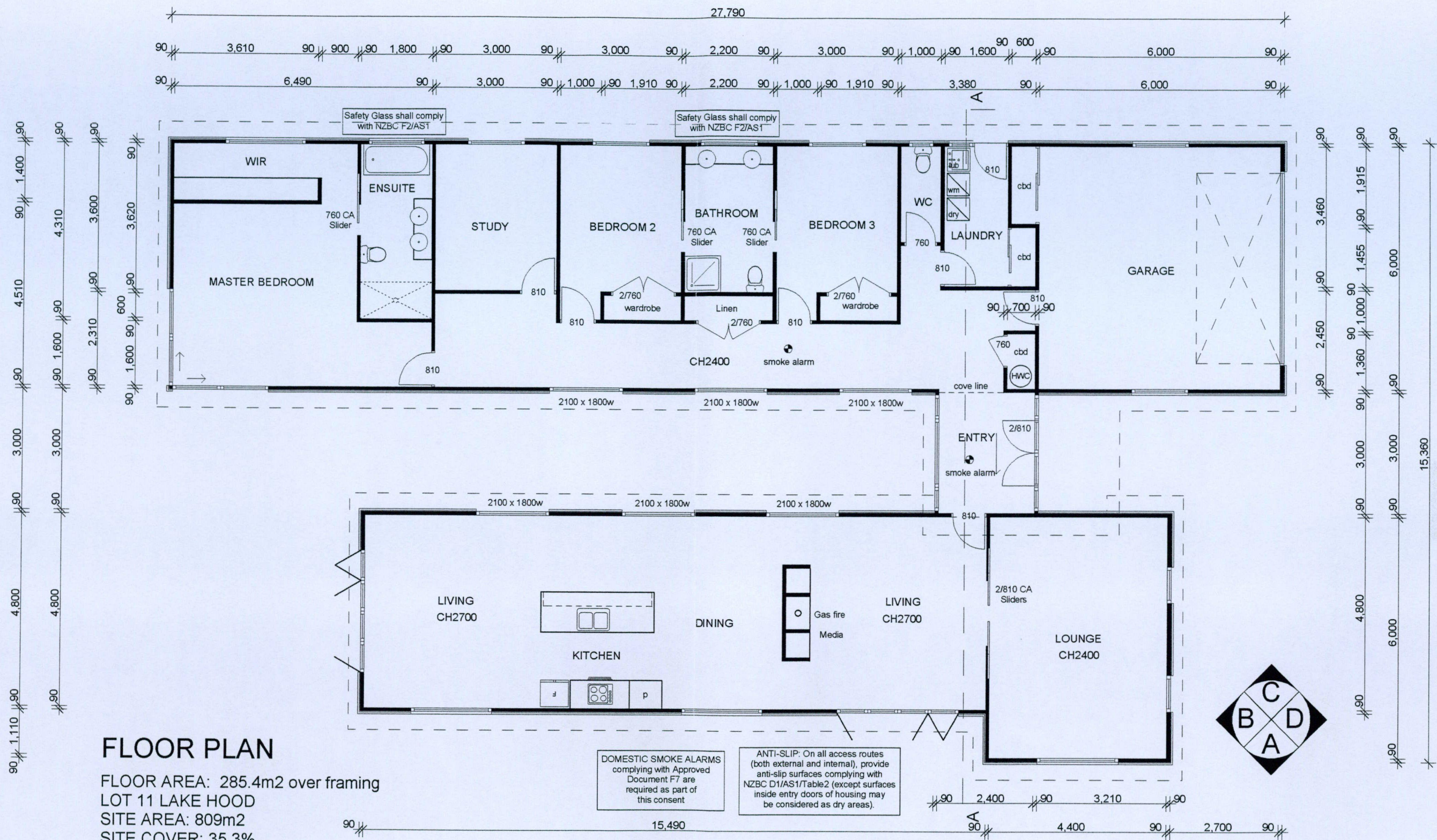
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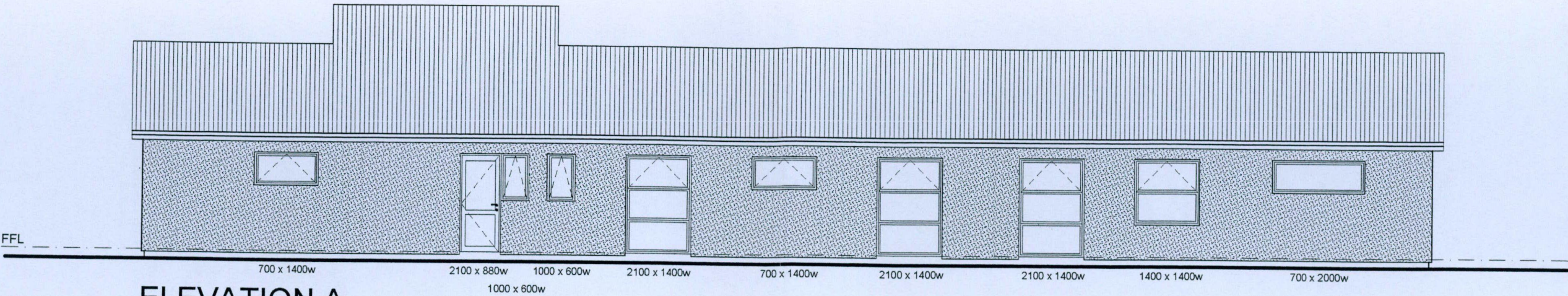
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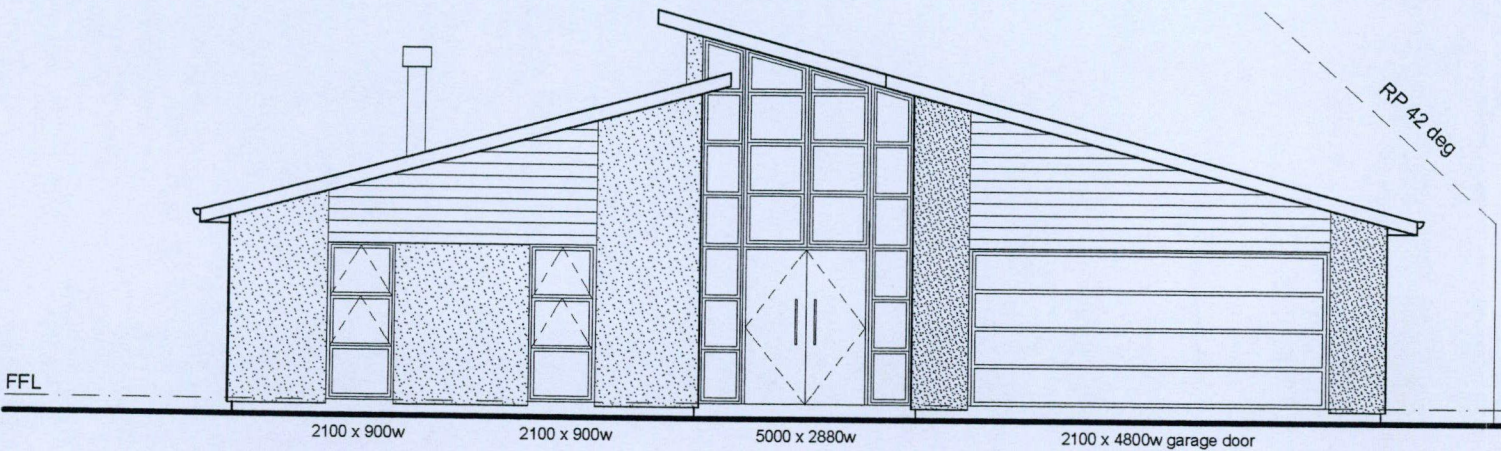
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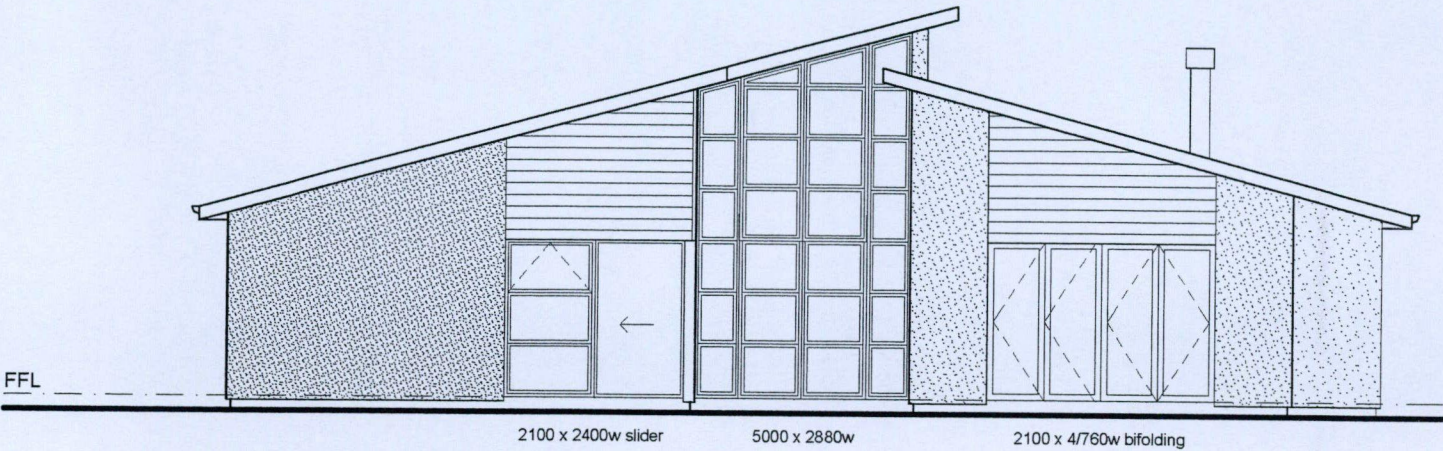




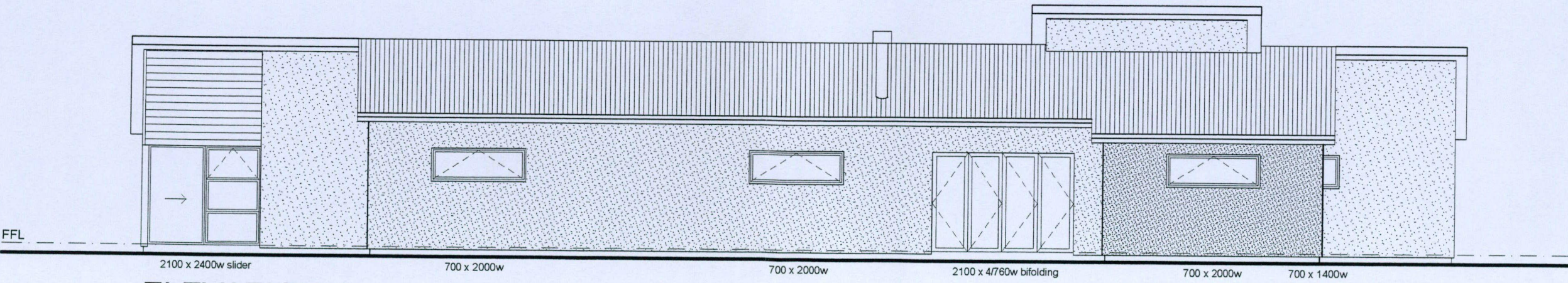
ELEVATION A



ELEVATION B



ELEVATION D



ELEVATION C

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					DESIGN: Nathan	SHEET: 3 OF 12

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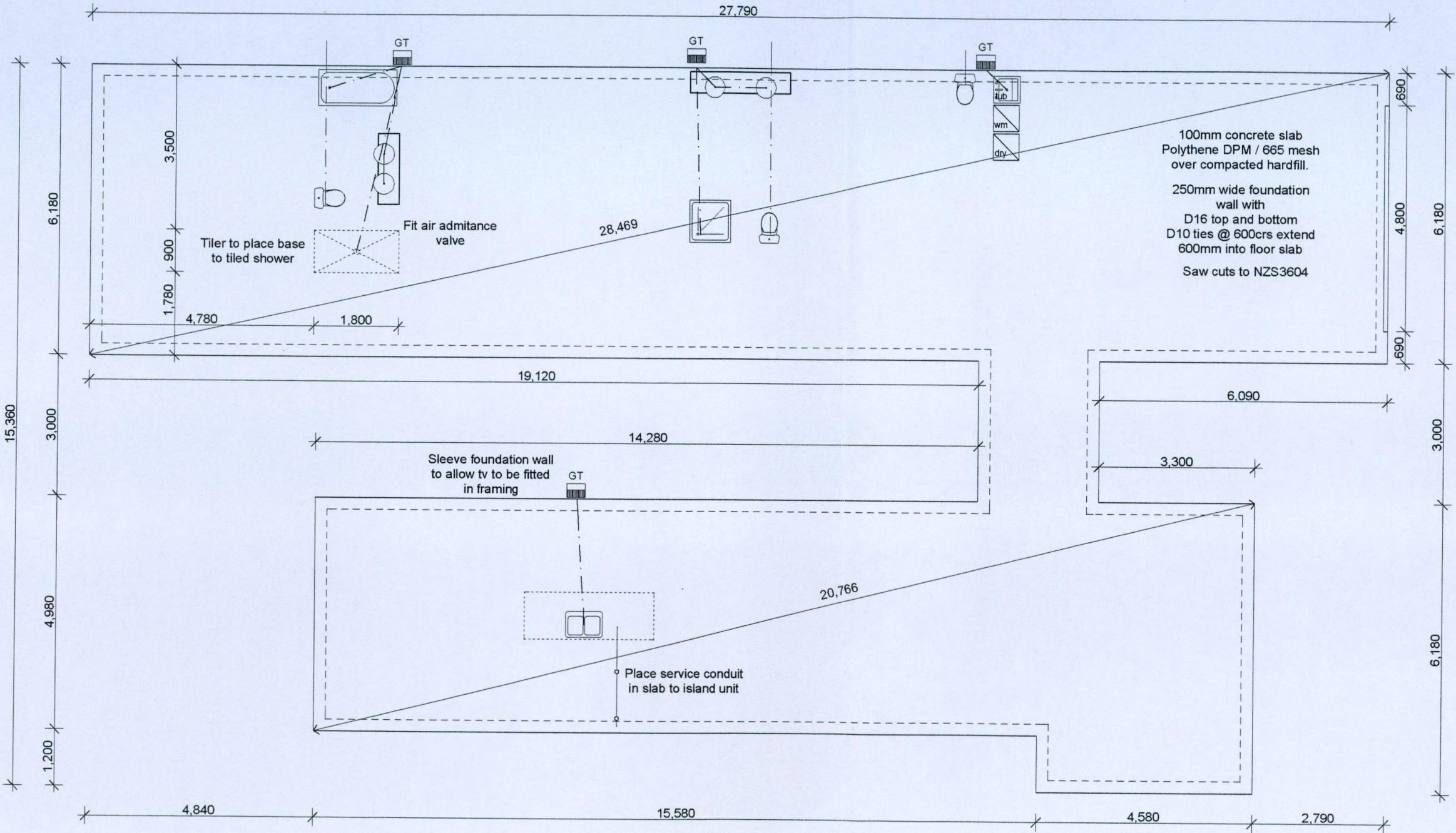
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FOUNDATION PLAN

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