

ASHBURTON DISTRICT COUNCIL

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

Application for Project Information Memorandum and/or Building Consent

Form 2

Section 33 or Section 45, Building Act 2004

Application

Request that you issue a

Copy of Certificate of title

Building Consent for the building work described in this application

Application

B00207/07

The Building [Project Location]

Street address of building:

Barton Street
Rakaia

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 5 of Proposed
Subdivision

Building Name:

[If Applicable]

N/A

Location of building within Site:

[Include nearest street access]

As per site plan

Number of levels:

[Include ground level and any levels below ground]

1

Level/Unit Number:

If Applicable

N/A

Area:

Total floor area [indicate area affected by the building work if less than the total area]

169.2 m²

Current, lawfully established, use:

[Include number of occupants per level and per use if more than 1]

N/A

Year first Constructed

[Insert year, approximate date is acceptable e.g. C1920s or 1960-1970]

Value of Building:

\$220,000

The Owner

Name

[Include preferred form of title, e.g. Mr, Miss, Dr, if an individual]

Antrim Developments
c/- Benchmark Homes

Contact Person:

[Only required if different from owner]

Ngel Smith

Contact Details:

Landline

03 307 7000

Mobile

027 220 1377

Daytime

After Hours

Facsimile Number:

03 308 4610

Email

Mailing Address:

P.O. Box 176
Ashburton

Street Address/Registered Office:

6 Park Street
Ashburton

For Council Use:

P.I.M./Consent No:

Received:

Receipt No:

Invoice No:

1.3.07

92449

359

Received:

Consent Fee:

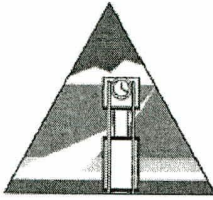
Receipt No:

Invoice No:

\$

150

Whatever it takes
ASHBURTON DISTRICT



ASHBURTON DISTRICT COUNCIL

5 Baring Square West, Ashburton, New Zealand
e-mail info@adc.govt.nz Website www.ashburtondc.govt.nz

BUILDING ACT 2004 Please read this carefully



INFORMATION FOR APPLICANTS FOR BUILDING CONSENTS:

1. Applications must be made on the form attached.
2. All parts of the form must be addressed although all parts may not be relevant to all building projects.
The form of application MUST however be as complete as possible and incomplete applications will be returned.
3. Together with the completed applications form there shall be, deposited in triplicate, the following:
 - a) Indelibly executed plans showing plan, elevations and cross section of the proposed building sufficient to indicate means of construction and preferably to a scale of 1:100 or 1:50. In any event the plans must be to a clearly stated scale.
 - b) Copies of Certificate of Title. Usually available from your solicitor.
 - c) A clear plan showing distances from property boundaries.

In the case of a new dwelling or other major development in rural areas, the site plan should give a clear measurement from a property boundary to the proposed entranceway to the new building.

This dimension will be used to allocate an R.A.P.I.D number to your property which then becomes the address.
 - d) Plan showing recession planes and % site coverage.
 - e) Full specification which are applicable to the project in question, i.e. **Standard general specifications are not acceptable**.
 - f) Design Certificate, Producer Statement, calculations or other Building Industry Authority approval document relevant to the planned project.
 - g) Please note that 20 working days may be required to process your consent.

4. PLANS TO BE KEPT ON SITE,

One copy of all documentation will be returned to the builder. These documents will be endorsed by Council as being approved and MUST be retained on the building site so that the Inspector can record inspections and later issue a Code Compliance Certificate.

5. INSPECTIONS

At least two working days notice of intention to commence building work must be given.

Inspections must be requested at the following stages of construction: (Ph 308 5139)

- (1) Foundations excavated and reinforcing steel in place.
- (2) Pre-floor slab pour.
- (3) Framed up but prior to lining and with insulation in place.
- (4) Plumbed.
- (5) Drains installed.
- (6) Completion

It is possible to save inspection fees by arranging to have more than one of the above stages ready for inspection at one visit. Inspections requested and visits made when the work is not ready for inspection will be charged for and an additional charge may be incurred where 48 hours notice of a required inspection has not been given.

6. PRIVACY STATEMENT

Applicants for Buildings Consents are advised that the details provided on the building consent application form are required to be held in a public register and on file where they may be perused by any interested individual. A summary of information compiled from these forms is also provided to the Councils Valuation Service Provider, the Building Industry Authority, Building Research Association, the media and on request, to the public. The consequence of not providing information is that a Building Consent will not be issued.



Agent [Only required if application is being made on behalf of the owner]	
Name of Agent: Benchmark Homes	
Contact Person: Nigel Smith	
Mailing Address: 	Street address/Registered Office:
Contact Details:	
Landline	Mobile
Daytime	After Hours
Facsimile Number	Email
Relationship to Owner [State details of the authorisation from the owner to make the application on the owner's behalf] Nominated Building Contractor	
First point of contact [If different from Owner or Agent]	
Name of Contact: Nigel Smith - Benchmark Homes	
Mailing Address: over page	Street address/Registered Office:
Contact Details:	
Landline over page	Mobile
Daytime	After Hours
Facsimile Number	Email
Signed by the Owner OR:	Signed by the Agent: [On behalf of, or with authority from, the owner]
Signature:	Signature: Chris Watson
Name:	Name: Chris Watson
Date:	Date: 28-2-07
Council Use Only: ☐ Mail ☐ Desk	

The Project

Description of the Building Work

[Provide sufficient description of building work to enable scope of work to be fully understood.]

Construct new dwelling

Will the building work result in a change of use of the building?

☐ Yes

☒ No i.e. [Residential, Commercial, Industrial]

If yes, provide details of new use:

[Provide sufficient description of building work to enable scope of work to be fully understood.]

Intended life of the building if less than 50 years:

List building consents previously issued for this project (if any):

[List who issued the consent, the date of issue and consent number]

Does the building or site have any cultural heritage significance, or is it a marae?

[Refer to District Plan]

☐ Yes

☒ No

Project Information Memorandum

[For project information memorandum only – not required for building consent application]

The following matters are involved in the project:

[Tick boxes applicable]

- ☒ 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 storm water 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

[Delete this section if this is an application for a project information memorandum only]

The following plans and specifications are attached to this application: project: [Tick boxes applicable]

☒ Specifications☒ Calculations☒ Plans☒ Producer Statement☐ Other _____ [Please Specify]

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

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

Clause [which of the following clauses will be involved in the proposed work?]	Means of compliance [refer to the relevant compliance document(s) or detail of alternative solution in the plans and specifications]	Proposed Inspections [state means of inspection. Note PSAs or certificate may be required]
☐ B1 Structure	☐ B1/AS2 ☐ NZS 3604 ☐ NZS 4203 ☐ NZS 4229 ☐ Other _____ [Specify]	☐ Council ☐ Engineer ☐ Other _____ [Specify]
☐ B2 Durability	☐ B2/AS1 ☐ NZS 3101 ☐ NZS 3602 ☐ NZS 3604 ☐ Other _____ [Specify]	☐ Council ☐ Engineer ☐ Other _____ [Specify]
☐ C1-4 Fire	☐ C/AS1 ☐ Other _____ [Specify]	☐ Council ☐ Engineer ☐ Other _____ [Specify]
☐ D1 Access routes	☐ D1/AS1 ☐ ZS4212 ☐ NZS 4121 ☐ Other _____ [Specify]	☐ Council ☐ Engineer ☐ Other _____ [Specify]
☐ D2 Mechanical Installations for access	☐ D2/AS1 ☐ NZS 4332 ☐ EN 81 ☐ EN 115 ☐ Other _____ [Specify]	☐ Engineer ☐ Other _____ [Specify]
☐ E1 Surface waters	☐ E2/AS1 ☐ AS/NZS 3500.3 ☐ Other _____ [Specify]	☐ Council ☐ Other _____ [Specify]
☐ E2 External moisture	☐ E2/AS1 ☐ Specific design and testing	☐ Council ☐ Other _____ [Specify]
☐ E3 Internal moisture	☐ E3/AS1 ☐ Other _____ [Specify]	☐ Council ☐ Other _____ [Specify]
☐ F1 Hazardous agents on site	☐ F1/AS1 ☐ Other _____ [Specify]	☐ Council ☐ Other _____ [Specify]
☐ F2 Hazardous Building materials	☐ E2/AS1 ☐ NZS 4223 ☐ Other _____ [Specify]	☐ Council ☐ Other _____ [Specify]
☐ F3 Hazardous substances etc	☐ F3/AS1 ☐ Other _____ [Specify]	☐ Council ☐ Other _____ [Specify]
☐ F4 Safety from falling	☐ F4/AS1 ☐ FSP Act ☐ Other _____ [Specify]	☐ Council ☐ Other _____ [Specify]
☐ F5 Construction and demolition hazards	☐ F5/AS1 ☐ Other _____ [Specify]	☐ Council ☐ Other _____ [Specify]
☐ F6 Lights for emergency	☐ F6/AS1 ☐ Other _____ [Specify]	☐ Council ☐ Other _____ [Specify]
☐ F7 Warning Systems	☐ F7/AS1 ☐ AS/NZS 1668 ☐ NZS 4512 ☐ NZS 4515 ☐ Other _____ [Specify]	☐ Council ☐ Engineer ☐ Other _____ [Specify]

As per plans & specifications

As per plans & specification

Clause [which of the following clauses will be involved in the proposed work?]	Means of compliance [refer to the relevant compliance document(s) or detail of alternative solution in the plans and specifications]	Proposed Inspections [state means of inspection. Note PS4s or certificate may be required]
☐ F8 Signs	☐ F8/AS1 ☐ Other _____ [Specify]	☐ Council ☐ Other _____ [Specify]
☐ G1 Personal hygiene	☐ G1/AS1 ☐ Other _____ [Specify]	☐ Council ☐ Other _____ [Specify]
☐ G2 Laundering	☐ G2/AS1 ☐ Other _____ [Specify]	☐ Council ☐ Other _____ [Specify]
☐ G3 Food preparation and prevention of contamination	☐ G3/AS1 ☐ Other _____ [Specify]	☐ Council ☐ Other _____ [Specify]
☐ G4 Ventilation	☐ G4/AS1 ☐ AS 1668.2 ☐ Other _____ [Specify]	☐ Council ☐ Other _____ [Specify]
☐ G5 Interior environment	☐ G5/AS1 ☐ Other _____ [Specify]	☐ Council ☐ Other _____ [Specify]
☐ G6 Airborne and impact sound	☐ G6/AS1 ☐ Other _____ [Specify]	☐ Council ☐ Other _____ [Specify]
☐ G7 Natural Light	☐ G7/AS1 ☐ Other _____ [Specify]	☐ Council ☐ Other _____ [Specify]
☐ G8 Artificial Light	☐ G8/AS1 ☐ NZS 6703 ☐ Other _____ [Specify]	☐ Council ☐ Other _____ [Specify]
☐ G9 Electricity	☐ G9/AS1 ☐ Other _____ [Specify]	By Certification only
☐ G10 Piped services	☐ G10/AS1 ☐ NZS 5261 ☐ Other _____ [Specify]	By Certification only
☐ G11 Gas as an energy source	☐ G11/AS1 ☐ Other _____ [Specify]	By Certification only
☐ G12 Water supplies	☐ G12/AS1 ☐ AS/NZS 3500.1 ☐ AS/NZS 3500.1 ☐ Other _____ [Specify]	☐ Council ☐ Other _____ [Specify]
☐ G13 Foul Water	☐ G13/AS1 ☐ AS/NZS 3500.2 ☐ BS 5772 ☐ Other _____ [Specify]	☐ Council ☐ Other _____ [Specify]
☐ G14 Industrial liquid waste	☐ G14/AS1 ☐ Other _____ [Specify]	☐ Council ☐ Other _____ [Specify]
☐ G15 Solid waste	☐ G15/AS1 ☐ Other _____ [Specify]	☐ Council ☐ Other _____ [Specify]
☐ H1 Energy Efficiency	☐ H1/AS1 ☐ AS/NZS 4218 ☐ NZS 4243 ☐ ALF Design Manual ☐ NZS 4214 ☐ Other _____ [Specify]	☐ Council ☐ Other _____ [Specify]

Waiver/modification to NZ Building Code required for following parts of code:

Compliance Schedule*[Delete this section if this is an application for a project information memorandum]**The following specified systems are existing, being altered, added to, or removed in the course of the building work:*

	<i>Existing</i>	<i>New</i>	<i>Altered</i>	<i>Added</i>	<i>Removed</i>
<i>Cable Car (including to individual dwelling)</i>	☐	☐	☐	☐	☐
<i>Automatic systems for fire suppression (for example, sprinkler systems)</i>	☐	☐	☐	☐	☐
<i>Electromagnetic or automatic doors or windows (for example, ones that close on fire alarm activation)</i>	☐	☐	☐	☐	☐
<i>Automatic or manual emergency warning systems for fire or other dangers</i>	☐	☐	☐	☐	☐
<i>Emergency lighting systems</i>	☐	☐	☐	☐	☐
<i>Escape route pressurisation systems</i>	☐	☐	☐	☐	☐
<i>Riser mains for Fire Service use</i>	☐	☐	☐	☐	☐
<i>Any automatic back-flow preventer connected to a potable water supply</i>	☐	☐	☐	☐	☐
<i>Lift, escalators, travelators or other systems for moving people or goods within buildings</i>	☐	☐	☐	☐	☐
<i>Mechanical ventilation or air-conditioning systems</i>	☐	☐	☐	☐	☐
<i>Means of escape from fire</i>	☐	☐	☐	☐	☐
<i>Building maintenance units for providing access to the exterior and interior walls of buildings</i>	☐	☐	☐	☐	☐
<i>Emergency power systems for, or signs relating to, a system or feature specified</i>	☐	☐	☐	☐	☐
<i>Safety barriers</i>	☐	☐	☐	☐	☐
<i>Means of access and facilities for use by persons with disabilities which meet the requirements of section 118</i>	☐	☐	☐	☐	☐
<i>Hand-held hose reels for fire fighting</i>	☐	☐	☐	☐	☐
<i>Such signs as are required by the Building Code or by section 120</i>	☐	☐	☐	☐	☐
<i>Laboratory fume cupboards</i>	☐	☐	☐	☐	☐
<i>Audio loops or other assistive listening systems</i>	☐	☐	☐	☐	☐
<i>Smoke control systems</i>	☐	☐	☐	☐	☐
<i>Such signs as are required by the Building Code or by section 120</i>	☐	☐	☐	☐	☐

Address where compliance schedule will be held:

The maximum number of occupants that the building is designed for is:

Contacts

Designer/Architect:

Business/name: Benchmark Homes
 Address _____
 Daytime: _____ Mobile: _____
 After Hours: _____ Facsimile: _____
 Registration/qualification _____

Engineer (identify practice college):

Business/name: _____
 Address _____
 Daytime: _____ Mobile: _____
 After Hours: _____ Facsimile: _____
 Qualification/College _____

Builder:

Business/name: Benchmark Homes
 Address _____
 Daytime: _____ Mobile: _____
 After Hours: _____ Facsimile: _____
 Registration/qualification _____

Head Contractor/Site Manager:

Business/name: Benchmark Homes
 Address _____
 Daytime: _____ Mobile: _____
 After Hours: _____ Facsimile: _____
 Registration/qualification _____

Structural Engineer:

Contact/name: _____
 Address _____
 Daytime: _____ Mobile: _____
 After Hours: _____ Facsimile: _____
 Registration/qualification _____

Plumber:

Contact/name: Ken Body
 Address _____
 Daytime: _____ Mobile: _____
 After Hours: _____ Facsimile: _____
 Registration/qualification _____

Drain layer:

Contact/name: Paul Summerfield
 Address _____
 Daytime: _____ Mobile: _____
 After Hours: _____ Facsimile: _____
 Registration/qualification _____

Other:

Contact/name: _____
 Address _____
 Daytime: _____ Mobile: _____
 After Hours: _____ Facsimile: _____
 Registration/qualification _____

Attachments

The following documents are attached to this application if required/necessary:

[Tick boxes applicable]

- ☒ Plans and specifications [list]
☐ Project information memorandum
☐ Development contribution notice
☐ Certificate attached to project information memorandum

Privacy Information

The information you have provided on this form is required so that your building consent application can be processed under the Building Act 2004. The Council collates statistics relating to issued building consents and has a statutory obligation to regularly forward these to Statistics NZ. The Council stores the information on a public register which must be supplied (as previously determined by the Ombudsman) to whomsoever requests the information.

Under the Privacy Act 1993 you have the right to see and correct personal information the Council holds about you.

PIM/CONSENT CHECKLIST BC0207/07

OWNER: Antrim Developments Limited
CONTACT NAME & ADDRESS: Value Plus Builders Limited
Trading As Benchmark Homes
P O Box 176
ASHBURTON
CONTACT PHONE: 307 7000
PROJECT LOCATION: Bowen Street ASHBURTON DISTRICT 8300
LEGAL DESCRIPTION: Lot 5 of proposed subdivision of Sec 445 TOWN OF
RAKAIA
Sec 443 TOWN OF RAKAIA
Sec 449 TOWN OF RAKAIA
Sec 447 TOWN OF RAKAIA
VALUATION: 2442037350
2442037370
PROJECT DESCRIPTION: New Construction Dwelling
BUILDER: Value Plus Builders Limited
Trading As Benchmark Homes
DATE OF APPLICATION: 28/02/2007
CURRENT BUILDING USE: N/A

Town Planning:

Zoning *Res*
Density / Coverage *ok*
Height of Building *ok*
Recession Planes *ok*
Siting *ok*
Outdoor living / service space *ok*
Low / high risk flooding *ok*
Car parking *ok*
Loading areas, etc *N/A*
Landscaping *N/A*
Resource Consent required (Yes / No)? *Yes*
Other? *Development Contribution*

Signed: *[Signature]*
Date: *01/03/07*

Public Health

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

Liquor Comments

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

Building Inspectors:

NZFS (Yes / No) *1/P1*
Sewer (Yes / No) *2/P2*
Water (Yes / No) *3/P3*
Storm water (Yes / No) *4/P12*
Septic Tank (Yes / No) *5/P14*
Vehicle Crossing (Yes / No) *6/*

PIM Notes

*Development contribution for water to be applied
Community Infrastructure fee applies.
8/ P10 Medium wind zone applies
9/ P19 15 tpa snow loading applies.*

Non Cont.

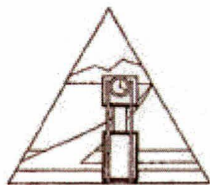
- 10/ water tapping fee has been charged.
 - 11/ Combined sewer & water connection fee has been charged
 - 12/ Vehicle crossing Permit fee has been charged
-

Consent Notes

SC 1-2-3-4 & 1P

NC 2 Inspection on regd

Foundation, prefloor prepwork,
Paving, Polishing, drainage & completion



ASHBURTON DISTRICT COUNCIL

PIM / BUILDING CONSENT

APPLICATION NO BC 0207/07

OWNER: Antrim Developments Ltd
 ADDRESS: Limited
 112 Company Rd
 R.D. 2 Ashburton

BUILDER: Value Plus Builders Ltd
 ADDRESS: T/A Benchmark Homes
 P O Box 176
 Ashburton

NUMBER:
 STREET: Bowen St 23
 DISTRICT: Rakaia

VALUATION REFERENCE NUMBER
 2442037370

ESTIMATED VALUE OF WORK: \$ 220,000

PIM

REDUCED / INTERMEDIATE (FULL) \$ 150

RECEIPT NO. 92449 DATE PAID: 13/07

CONSENT

ADMINISTRATION	\$ 75.00
INSPECTIONS	\$ 525.00
BUILDING RESEARCH LEVY	\$ 220.00
DBH LEVY	\$ 433.40
DISTRICT PLAN COMPLIANCE	\$ 100.00
COMMUNITY INFRASTRUCTURE	\$ 825.75
DEVELOPMENT CONTRIBUTION	\$ 2695.00
VEHICLE CROSSING <i>Reference</i>	\$ 100.00
SERVICE CHARGES	\$ 395.00
FIRE SERVICE CHARGE	\$
COMPLIANCE SCHEDULE	\$
CCC REDUCED / INTER / FULL	\$ 150.00
TOTAL	\$ 5510.15

RECEIPT NO: 101037 DATE PAID: 3/5/07

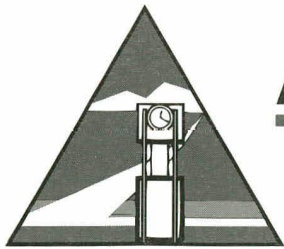
FURTHER PAYMENT REQUIRED: Y N

38(2) INFORMATION REQUIRED Y N

OTHER INFORMATION REQUIRED Y N

S/REGULATORY/FORMS/PIM BUILDING CONSENT COVER SHEET

*Issue via
with D/C
Print BC
+ Hold for fees*



ASHBURTON DISTRICT COUNCIL

5 Baring Square West, Ashburton, New Zealand

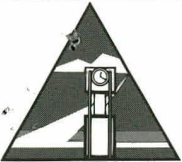
NOTICE OF INSPECTION BUILDING ACT

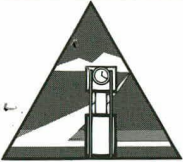
ENTERED

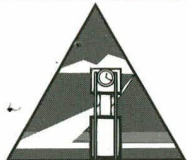
Owners Name: <i>Antrim Developments Ltd</i>		BC No.: <i>0207/07</i>
Site Address: <i>23 Bowen Street</i>		Valuation No.: <i>2442037376</i>
Date of Inspection: <i>31/07/07</i> at <i>2:45</i> am/pm		Building Type: <i>new dwelling</i>
FOUNDATION	Framing/Lintels/Ceiling Battens ☒	DRAINAGE
Siting	Bracing/Schedule ☒	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 <i>yes</i>	PRE EXTERIOR PLASTER	Gully Traps/Stormwater/T.Vent
Plate Fixings/Top & Bottom Purlins ☒	Subfloor Ventilation/Flashing	Vents - Kitchen/Bathroom
COMMENTS		Handrail to Stairs/Balustrades
<i>Bot plate fixed with anchor plates + shots</i>		Water Temperature - Laundry
<i>Top plate to stud with stud straps.</i>		Cooking/Personal Hygiene
<i>purlins fixed with 3/90mm nails</i>		Ground Clearance to Cladding
<i>90x45 H1.2 MSS8 studs @ 600 & 2 rows diagonals</i>		Access/Toilets/Ramps etc
<i>trusses fixed as per truss layout.</i>		Fire Safety Clearance
<i>All bracing as per schedule and ply</i>		Footpath Condition
<i>fixed to manufactures instruction</i>		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:
		<i>[Signature]</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 recertification is required by _____ ☐ A formal notice to fix will be issued
SIGNED Contractor/Owner/Agent/Occupier		DATE

SCANNED

12 DEC 2007

 ASHBURTON DISTRICT COUNCIL 5 Baring Square West, Ashburton, New Zealand. e-mail info@adc.govt.nz Website www.ashburtondc.govt.nz		(INSP003)	
		Project No: BC 0207/07	
		Valuation No: 2442037370	
PROJECT DETAILS			
Owners Name: Antium Developments Ltd.		Site copy viewed: Yes ☒ No ☒	
Site Address: 23 Bowen St.		Building Type: Dwelling	
Time arrived: 9.50	Time departed: 10.05	Date: 18-9-07	Inspector: Lib
BLOCK FILL / PRE/POST WRAP / PRELINE / POSTLINE			
Inspected		Inspected	
BLOCK FILL		BLOCK FILL	
Horizontal reinforcing		Purlin sizes	
Vertical reinforcing		Location / type	
Starters		Fixings (ply)/connections	
Steel identifiers		Roof bracing	
Slide Covers		Dragon Ties	
Lapping		Bottom plate	
Tying		Top plate	
Services blockouts		Truss to plate	
Steel around openings		Fire walls	
Finished floor height		POST-WRAP	
Subfloor ventilation		Wrap fixing	
Cleanout ports		Wrap condition/type	
Clean block cells		Window flashings	
Control joints		Penetration seals	
Height pour		Girder truss supports	
Horizontal reinforcing		DPC under plates	
PRE-WRAP		PRE-LINE	
Timber species		Timber treatment/grade	
Timber grade		Moisture content	
Timber treatment		Stud size	
Stud sizing		Stud spacing	
Stud spacing		Lintel size	
Lintel sizes		Post sizes	
Post sizes		Truss layout	
Truss layout		Ceiling batten spacing	
Girder truss supports		Purlins	
		POST LINE	
		Edge Nailing	
		Bracing Material type	
		Ceiling Diaphragms	
		Compliance with bracing plan	
		Edge Nailing	
COMMENTS -			
<i>Done as per plan.</i>			
SCANNED 12 DEC 2007			
☒ INSPECTION OK ☐ REINSPECTION REQUIRED 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	
Signed - Building Official		Date 18-9-07	

 ASHBURTON DISTRICT COUNCIL 5 Baring Square West, Ashburton, New Zealand. e-mail info@adc.govt.nz Website www.ashburtondc.govt.nz		(INSP003)	
		Project No: BC 0207/07. Valuation No: 2442037370.	
PROJECT DETAILS			
Owners Name	<i>Antim Developments Ltd.</i>	Site copy viewed	Yes ☐ No ☒
Site Address	<i>23 Bowen St.</i>	Building Type	<i>Dwelling</i>
Time arrived	<i>9.55</i>	Time departed	
		Date	
		Inspector	
BLOCK FILL / PRE/POST WRAP / PRELINE / POSTLINE			
	Inspected	Inspected	Inspected
BLOCK FILL		Purlin sizes	Building wrap
Horizontal reinforcing		Location / type	Window air seals
Vertical reinforcing		Fixings (ply)/connections	Roof underlay
Starters		Roof bracing	DPC under plates
Steel identifiers		Dragon Ties	Insulation material
Slide Covers		Bottom plate	Insulation placement
Lapping		Top plate	Internal ventilation
Tying		Truss to plate	Plumbing type
Services blockouts		Fire walls	Pressure tested & lagging
Steel around openings		POST-WRAP	Fire walls
Finished floor height		Wrap fixing	Shower tanking
Subfloor ventilation		Wrap condition/type	Roof bracing
Cleanout ports		Window flashings	Dragon Ties
Clean block cells		Penetration seals	Diaphragms
Control joints		Girder truss supports	Bottom Place
Height pour		DPC under plates	Top plate
Horizontal reinforcing		PRE-LINE	Brace bottom plate
PRE-WRAP		Timber treatment/grade	Steel angle fixings of windows
Timber species		Moisture content	Post to foundations
Timber grade		Stud size	Post to beam
Timber treatment		Stud spacing	Floor plan amendments
Stud sizing		Lintel size	POST LINE
Stud spacing		Post sizes	Edge Nailing
Lintel sizes		Truss layout	Bracing Material type
Post sizes		Girder truss supports	Ceiling Diaphragms
Truss layout		Ceiling batten spacing	Compliance with bracing plan
Girder truss supports		Purlins	Edge Nailing
COMMENTS -			
<i>- Work to complete at all bracing areas.</i> <i>- Reinspection required.</i>			
☐ INSPECTION OK ☒ REINSPECTION REQUIRED 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 <i>17.9.07</i>	
Signed - Building Official		Date <i>17.9.07</i>	

 ASHBURTON DISTRICT COUNCIL 5 Baring Square West, Ashburton, New Zealand. e-mail info@adc.govt.nz Website www.ashburtondc.govt.nz		(INSP003)	
		Project No: BC 02 07/07	
		Valuation No: 2442 037370	
PROJECT DETAILS			
Owners Name: Antrim Developments Ltd		Site copy viewed: Yes ☒ No ☐	
Site Address: 23 Baren Street		Building Type: new dwelling	
Time arrived: 1100	Time departed: 1120	Date: 6-09-07	Inspector: Robert
BLOCK FILL / PRE/POST WRAP / PRELINE / POSTLINE			
Inspected		Inspected	
BLOCK FILL		Inspected	
Horizontal reinforcing	Purlin sizes	Building wrap Frangard II	☒
Vertical reinforcing	Location / type	Window air seals	yes ☒
Starters	Fixings (ply)/connections	Roof underlay self supporting	☒
Steel identifiers	Roof bracing	DPC under plates	☒
Slide Covers	Dragon Ties	Insulation material	☒
Lapping	Bottom plate	Insulation placement	☒
Tying	Top plate	Internal ventilation	☒
Services blockouts	Truss to plate	Plumbing type comped polybutylene	☒
Steel around openings	Fire walls	Pressure tested & lagging	☒
Finished floor height	POST-WRAP	Fire walls	☒
Subfloor ventilation	Wrap fixing	Shower tanking	☒
Cleanout ports	Wrap condition/type	Roof bracing	☒
Clean block cells	Window flashings	Dragon Ties	☒
Control joints	Penetration seals	Diaphragms	☒
Height pour	Girder truss supports	Bottom Place	☒
Horizontal reinforcing	DPC under plates	Top plate	☒
PRE-WRAP	PRE-LINE	Brace bottom plate	☒
Timber species	Timber treatment/grade mss8 H1.2	Steel angle fixings of windows	☒
Timber grade	Moisture content 12%	Post to foundations	☒
Timber treatment	Stud size 90 x 45 + 35	Post to beam	☒
Stud sizing	Stud spacing 600	Floor plan amendments	☒
Stud spacing	Lintel size ok	POST LINE	☒
Lintel sizes	Post sizes ok	Edge Nailing	☒
Post sizes	Truss layout ok	Bracing Material type	☒
Truss layout	Girder truss supports ok	Ceiling Diaphragms	☒
Girder truss supports	Ceiling batten spacing 600	Compliance with bracing plan	☒
	Purlins H1.2 75x50 RAD	Edge Nailing	☒
COMMENTS -			
safety glazing in correct areas			
* no insulation installed.			
Producer Statement from Pink fit required			
☒ INSPECTION OK ☐ REINSPECTION REQUIRED 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	
Signed - Building Official		Date	

5 Baring Square West, Ashburton, New Zealand.
e-mail info@adc.govt.nz Website www.ashburtondc.govt.nz

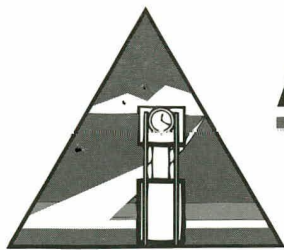
Valuation No:

2442037370

Inspector Robert

Inspected

Date



ASHBURTON DISTRICT COUNCIL

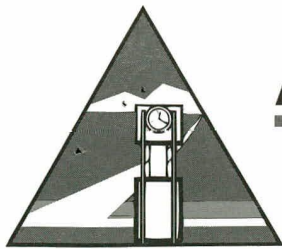
5 Baring Square West, Ashburton, New Zealand

NOTICE OF INSPECTION BUILDING ACT

ENTERED

Owners Name: <u>Antrim Developments Ltd</u>		BC No.: <u>0207/07</u>
Site Address: <u>23 Bowen St</u>		Valuation No.: <u>2442037370</u>
Date of Inspection: <u>13 07 07</u> at <u>10 25</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 <u>NO</u>	Floor Plan/Amendments	Drainlayer Reg No.
Organic Matter <u>✓</u>	Glazing/Ventilation	SFH/MAKE
Vapour Barrier <u>✓</u>	Building Paper/Roof/Underlay	Clearance
Hardfill <u>✓</u>	Plumbing/Pipe Type & Fixing	Flue Installation
Mesh - Shrinkage Control <u>✓</u>	Pressure Tested	Screen/Type/Smoke Alarm
Pipe Lagging/Waste Size/Fall <u>✓</u>	Lagging	Seismic Restraint/Hearth
Fixing to Foundation <u>✓</u>	Moisture content	Tempering Valve
Other (Polystyrene) <u>N/A</u>	Fire/smoke alarms installation	Inbuilt Cavity/Mantle Clearance
Piles/Treatment/Bearer <u>N/A</u>	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
<u>100mm slab on 25mm screenings</u>		Water Temperature - Laundry
<u>250 micron polythene, 665 mesh</u>		Cooking/Personal Hygiene
<u>well lapped. D10 foundation stakes</u>		Ground Clearance to Cladding
<u>into slab 600mm, 100mm wa</u>		Access/Toilets/Ramps etc
<u>pipe. 40mm waste pipes to vanities</u>		Fire Safety Clearance
<u>and sink.</u>		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>QJF</u>
☒ INSPECTION OKAY	☒ All work inspected is in accordance with the Building Consent/Certificate	
☐ REINSPECTION REQ'D	☐ Some work is not satisfactory as detailed above and recertification is required by _____	
☐ ISSUE CCC ☐ Yes ☐ No	☐ A formal notice to fix will be issued	
SIGNED	DATE	
Contractor/Owner/Agent/Occupier		

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ASHBURTON DISTRICT COUNCIL

5 Baring Square West, Ashburton, New Zealand

NOTICE OF INSPECTION BUILDING ACT

ENTERED

Owners Name: <u>Antrim Developments Ltd</u>		BC No.: <u>0207/07</u>
Site Address: <u>Bowen st</u>		Valuation No.: <u>2442037370</u>
Date of Inspection: <u>150607</u> at <u>12-10</u> <u>am</u> /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>Foundation 250 wide x 600 deep</u> <u>solid clay. 2 D16 horizontals</u> <u>with D10 plate starters at 600cs</u> <u>200 astok ground at highest AL.</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:				

☒ 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

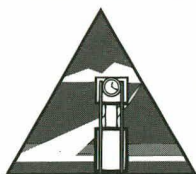
BRUCE PRINT 08/05 456.2

(INSP004)

Project No:

B0207/07

Valuation No:



ASHBURTON DISTRICT COUNCIL

5 Baring Square West, Ashburton, New Zealand.
e-mail info@adc.govt.nz Website www.ashburtondc.govt.nz

PROJECT DETAILS

Owners Name	Antura Developments	Site copy viewed	Yes	No
Site Address	23 Bowen St Lot 5	Building Type	Dwelling	
Time arrived	10 00	Time departed	10 08	Date
			10 03 08	Inspector
				Mike Tu

FINAL INSPECTION RESIDENTIAL HABITABLE GARAGES & SHEDS & SFH

Inspected		Inspected		Inspected	
EXTERIOR		INTERIOR		Sealing of exterior claddings	
Building height above ground		Downlights clear		Parapet and roof flashings	
Height of landscaping		Insulation placements		Energy work certificate	
Gully traps, sealing of wastes through back overflow relief		Mechanical Extraction Ducts		Cladding control joints	
Downpipes clipped		Lagging of Exhaust Pipes		Down pipes clipped	
TV Clipped, positioning		Seismic restraints supply tank		Storm water disposal	
Air vents for extraction systems, range hood etc		Tank stand structure		Bracing completed	
HWC vent pipe support		HWC seismic restraint		Truss, post and beam fixings	
Air admittance valve protection		Sealing of bathroom fixtures		Bottom plate fixings	
Flashing and sealing of windows		Safety glass		Connections (pole building)	
Sealing of exterior claddings & fixings		Window restrictors		Firewall stopping	
Verandah post/beam fixings		Waste venting		As-laid plan (Drainage)	
Subfloor Foil		Gas hob clearance		PS4 and producer statement	
Pole Platform, Bracing, connections		Gas bottle location		SFH/ MAKE	
Control joints/Plaster		Mechanical ventilation		Clearance	
Enclosed Decks overflow		Handrails, stairs, balustrades		Flue installation	
Footpath		Balconies, decks		Screen / Type / Smoke Alarm	
		Firewall stopping		Seismic restraint / hearth	
		Smoke alarms		Tempering Valve	
		Energy work certificates		Inbuilt cavity/Mantle clearance	
		GARAGES & SHEDS		Compliance Schedule	
		Building height above ground			

COMMENTS -

Air admittance valve has been extended in height and has frost protection
 Hole in wall has been repaired (new brick)
 All work now completed

SCANNED

11 MAR 2008

ENTERED

☒ INSPECTION OK☐ REINSPECTION REQUIREDISSUE 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

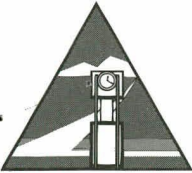
Signed - Building Official

Date

PLAN INSPECTION CHECKLIST

OWNER: <u>Antrim Dev Ltd</u>	BC NUMBER: <u>0207/07</u>
PROJECT ADDRESS: <u>Bower Street Raharua</u>	VALUATION REF: <u>2442037370</u>
PROCESSED BY: <u>AB</u>	DATE: <u>20/4/07</u>

		COMMENTS			COMMENTS
Road Access	✓		Flashings	✓	
Hazardous Substances	✓		Insulation	✓	216 + 2.2 & walk
Power Lines	✓	N/A	Truss Design & Fixing	✓	
Sewer Septic Tank	✓	Volunteer	Roof Cladding	✓	Cl Iron
Water Supply	✓	" "	Exterior Cladding	✓	Bricks
Stormwater	✓	N/A do site	Building Paper	✓	
Telecom/Electricity	✓	N/A	Roof Underlay	✓	
Site Visit Required	✓	No	Ceiling Battens	✓	600 q 13 m 3.6
Landfill/Flooding	✓	N/A	Plumbing/Pipe Type	✓	
Engineers Certificate	✓	N/A	High/Low Pressure/Valves HWC	✓	
Siting	✓	OK	Restraints/HWC & Roof Tank	✓	
Foundation Depth/Width	✓	250 x 350	Tempering	✓	
Reinforcing	✓	2 x D16	Backflow Prevention	✓	
Concrete Strength	✓	17 N/A	Pipe Lagging	✓	
Ventilation/Subfloor	✓		Drainage - Network Operator	✓	
Foundation Height	✓		CRC Requirements - Effluent Disposal	✓	
Piles	✓		Specific Designed System	✓	
Bearers	✓		Other	✓	
Floor Joists	✓		Fire Safety Requirements	✓	
Insulation/Vapour Barrier	✓	200 p/b	Access for Disabled	✓	
Fill Type	✓	80mm	Engineers Producer Statements Req'd	✓	N/A
Mesh	✓	G65 specified	Firewalls	✓	
Fixing to Foundation	✓		Fire Design	✓	
Plate Fixing	✓		Stairs/Handrails & Balustrades	✓	
Wall Bracing/Subfloor Bracing	✓		Heating	✓	N/A
Roof Bracing/Diaphragm Bracing	✓		Laundry Facilities	✓	
Framing / Treatment	✓		Cooking Facilities	✓	
Lintels/Beams	✓		Personal Hygiene	✓	
Glazing/Ventilation	✓		Other Conditions for Consent	✓	

 ASHBURTON DISTRICT COUNCIL 5 Baring Square West, Ashburton, New Zealand. e-mail info@adc.govt.nz Website www.ashburtondc.govt.nz		(INSP004)	
		Project No: BC 0207/07	
		Valuation No: 2442037320	
PROJECT DETAILS			
Owners Name Antura Developments		Site copy viewed Yes ☒ No ☐	
Site Address 23 Bower St		Building Type Dwelling	
Time arrived 10-45	Time departed 11 15	Date 23/11/07	Inspector Mike L
FINAL INSPECTION RESIDENTIAL HABITABLE GARAGES & SHEDS & SFH			
Inspected		Inspected	
EXTERIOR		INTERIOR	
Building height above ground ☒	Downlights clear ☒	Sealing of exterior claddings	
Height of landscaping ☒	Insulation placements ☒	Parapet and roof flashings	
Gully traps, sealing of wastes through back overflow relief ☒	Mechanical Extraction Ducts ☒	Energy work certificate	
Downpipes clipped ☒	Lagging of Exhaust Pipes ☒	Cladding control joints	
TV Clipped, positioning ☒	Seismic restraints supply tank ☒	Down pipes clipped	
Air vents for extraction systems, range hood etc ☒	Tank stand structure ☒	Storm water disposal	
HWC vent pipe support ☒	HWC seismic restraint x3 ☒	Bracing completed	
Air admittance valve protection ☒	Sealing of bathroom fixtures ☒	Truss, post and beam fixings	
Flashing and sealing of windows ☒	Safety glass ☒	Bottom plate fixings	
Sealing of exterior claddings & fixings ☒	Window restrictors ☒	Connections (pole building)	
Verandah post/beam fixings ☒	Waste venting ☒	Firewall stopping	
Subfloor Foil ☒	Gas hob clearance ☒	As-laid plan (Drainage)	
Pole Platform, Bracing, connections ☒	Gas bottle location ☒	PS4 and producer statement	
Control joints/Plaster ☒	Mechanical ventilation ☒	SFH/ MAKE	
Enclosed Decks overflow ☒	Handrails, stairs, balustrades ☒	Clearance	
Footpath ☒	Balconies, decks ☒	Flue installation	
	Firewall stopping ☒	Screen / Type / Smoke Alarm	
	Smoke alarms x2 ☒	Seismic restraint / hearth	
	Energy work certificates ☒	Tempering Valve	
	GARAGES & SHEDS	Inbuilt cavity/Mantle clearance	
	Building height above ground	Compliance Schedule	
COMMENTS - Exterior Roof well fixed and plastered, all stormwater to soakholes, down pipes are double clipped. Brick cladding all windows and doors well sealed. Terminal vent well above gutters. All gully traps sealed. Ground height to cladding. Landscaping has not been started. Kitchen all benches well sealed, tank and plumbing works well. Rangehood over hobbs, tile splash back behind hobs. Wall over HWC 3 straps temporary valve, water temp 52.2°C and falling. Bathroom spa bath, shower, and vanity all well sealed. Plumbing works well. Toilet well plumbed. Laundry super tubing garage plumbed for washing machine. 2 smoke detectors good coverage of all bedrooms.			
SCANNED 26 NOV 2007			
Plaster hole in brickwork beside front entrance Air admittance valve requires frost protection			
☐ INSPECTION OK ☒ REINSPECTION REQUIRED 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	
Signed - Building Official		Date	23/11/07

23 Nov.

Application for Code Compliance Certificate

Section 92, Building Act 2004

The Building Consent

23 Bowen St

Building Consent Number: BC0207/07

2442037390

Issued by:

Ashburton District Council

Name of Owner:

[Include preferred form of title, e.g. Mr, Miss, Dr, if an individual]

Antrim Developments Limited

Contact Person:

[Only required if different from Owner]

Nigel Smith - Benchmark Homes

Mailing Address:

P.O. Box 176
Ashburton

Street Address/Registered Office:

16 Park Street, Ashburton

Contact Details:

Landline

0330770000

Mobile

027 220 1377

Daytime

After Hours

Facsimile Number:

033084610

Email



Copy of Certificate of title



Lease



Agreement for sale and purchase



Or other document no older than 3 months showing full name of legal owner(s) of the building

Agent

Name of Agent:

[Only required if application is being made on behalf of the owner]

Benchmark Homes

Contact Person:

Chris Roulston

Mailing Address:

P.O. Box 176
Ashburton

Street address/Registered Office:

6 Park Street
Ashburton

Contact Details:	
Landline:	033017000
Daytime:	
Facsimile Number:	033084610
Mobile:	0274545636
After Hours:	
Email:	chris@benchmarkhomes.co.nz

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	[If different from Owner or Agent]
Name of Contact:	Chris Ralston - Benchmark Homes

Mailing Address:	Street address/Registered Office:
As above	As above

Contact Details:	
Landline:	As above
Daytime:	
Facsimile Number:	
Mobile:	
After Hours:	
Email:	

Application
All building work to be carried out under the above building consent was completed on 23-11-07

The personnel who carried out the building work are as follows:

Concreter:	
Business/name:	Precision Concrete Paving
Address:	P.O. Box 592 Ashburton
Daytime:	033081707
After Hours:	
Registration/Qualification:	
Product Name:	
Manufacturer:	

Joiner:	
Business/name:	Aluminium Shear Mac Aluminium
Address:	P.O. Box 92 Methven
Daytime:	033078329
After Hours:	
Registration/Qualification:	
Product Name:	
Manufacturer:	

Tanking Applicator:	
Business/name:	
Address:	
Daytime:	
After Hours:	
Registration/Qualification:	
Product Name:	
Manufacturer:	

Plasterer/Textured Coater:	
Business/name:	N/A
Address:	
Daytime:	
After Hours:	
Registration/Qualification:	
Product Name:	
Manufacturer:	

Gasfitter:	
Business/name:	N/A
Address	
Daytime:	Mobile:
After Hours:	Facsimile:
Registration/Qualification	
Product Name:	
Manufacturer:	

Electrician:	
Business/name:	Greg Anderson
Address	109 Fort Drive Methven
Daytime:	033028420
Mobile:	0274324888
After Hours:	
Facsimile:	033028420
Registration/Qualification	
Product Name:	
Manufacturer:	

Plumber:	
Business/name:	Rodger Bell
Address	14 Tie Place Hornby, Chch
Daytime:	0274338142
Mobile:	
After Hours:	
Facsimile:	6
Registration/Qualification	
Product Name:	
Manufacturer:	

Drainlayer:	
Business/name:	Paul Summerfield
Address	99 Tarbottons Road Ashburton
Daytime:	033082109
Mobile:	0274346815
After Hours:	
Facsimile:	033082109
Registration/Qualification	
Product Name:	
Manufacturer:	

Carpenter:	
Business/name:	Benchmark Homes
Address	P.O. Box 176 Ashburton
Daytime:	033077000
Mobile:	0272201377
After Hours:	
Facsimile:	033084610
Registration/Qualification	
Product Name:	
Manufacturer:	

Brick/Block Layer:	
Business/name:	Tom Beams
Address	151 Archibald Street Ashburton
Daytime:	033081981
Mobile:	0272214450
After Hours:	
Facsimile:	033081981
Registration/Qualification	
Product Name:	
Manufacturer:	

Deck/Roof Membrane Applicator:	
Business/name:	Mainland Roofing
Address	P.O. Box 33206 Christchurch
Daytime:	033656714
Mobile:	027
After Hours:	
Facsimile:	033658932
Registration/Qualification	
Product Name:	
Manufacturer:	

Roofer:	
Business/name:	Mainland Roofing
Address	
Daytime:	
Mobile:	
After Hours:	
Facsimile:	
Registration/Qualification	
Product Name:	
Manufacturer:	

Concealer Fascia Installer:	
Business/name:	Mainland Roofing
Address	
Daytime:	
Mobile:	
After Hours:	
Facsimile:	
Registration/Qualification	
Product Name:	
Manufacturer:	

Others:	
Business/name:	
Address	
Daytime:	
Mobile:	
After Hours:	
Facsimile:	
Registration/Qualification	
Product Name:	
Manufacturer:	

Compliance Schedule

The following specified systems are contained on the compliance schedule for the building and, in the opinion of the personnel who installed them, are capable of performing standards set on in the building consent:

☒ <i>There are no specified systems in the building</i>	
<i>Cable Car (including to individual dwelling)</i>	☐
<i>Automatic systems for fire suppression (for example, sprinkler systems)</i>	☐
<i>Electromagnetic or automatic doors or windows (for example, ones that close on fire alarm)</i>	☐
<i>Automatic or manual emergency warning systems for fire or other dangers</i>	☐
<i>Emergency lighting systems</i>	☐
<i>Escape route pressurisation systems</i>	☐
<i>Riser mains for Fire Service use</i>	☐
<i>Any automatic back-flow preventer connected to a potable water supply</i>	☐
<i>Life, escalators, travelators or other systems for moving people or goods within buildings</i>	☐
<i>Mechanical ventilation or air-conditioning systems</i>	☐
<i>Means of escape from fire</i>	☐
<i>Building maintenance units for providing access to the exterior and interior walls of buildings</i>	☐
<i>Emergency power systems for, or signs relating to, a system or feature specified</i>	☐
<i>Safety barriers</i>	☐
<i>Means of access and facilities for use by persons with disabilities which meet the requirements of section 118</i>	☐
<i>Hand-held hose reels for fire fighting</i>	☐
<i>Such signs as are required by the Building Code or by section 120</i>	☐
<i>Laboratory fume cupboards</i>	☐
<i>Audio loops or other assistive listening systems</i>	☐
<i>Smoke control systems</i>	☐

I request that you issue a code compliance certificate for this work under section 95 of the Building Act 2004.

The code compliance certificate should be sent to:

[State which address, and whether owner or

Benchmark Homes

P.O. Box 176

Ashburton

Signed by the Owner OR:

Signature: _____

Name: _____

Date: _____

Signed by the Agent:

[On behalf of, or with authority from, the owner]

Signature: _____

Name: _____

Date: _____

[Signature]
Lucy Ray
21-11-07

The following documents are attached to this application:



Certificates from the personnel who carried out the work



Certificate that relates to the energy work



Evidence that specified systems are capable of performing to the performance standards set out in the building consent



Water Test Results



Engineers Construction Produce Statements, site instruction/reports

Job: 0702179

Client: VALUE PLUS BUILDERS
Phone:

Site: NEW HOUSE
LOT 5 BOWEN AVE
RAKAIA

Description:
Building Consent No.:
MITek 2020 - Engineering 4.4 Gamma1.3 (build 1597-5)

MITek New Zealand Ltd.

Phone:
Printed: 08:28:51 28 Feb 2007

PRODUCER STATEMENT
MITek 2000™ TRUSS DESIGN PROGRAM

Certification of MITek 2000™ Truss Design Program

The MITek 2000™ truss design program has been developed by Gang-Nail Group 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 2000™ Truss Design Data and Output

The MITek 2000™ 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: CDNP45
Roof
Material: Galv Iron .5mm
Dead Load: 0.210 kPa
Restraints: 900 mm centres
Live Load: Q_{ur} = 0.250 kPa
Q_c = 1.000 kN

Pitch: 25.000 deg
Ceiling
Material: Standard
Dead Load: 0.200 kPa
Restraints: 400 mm centres

Std Overhang: 600 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, ~~xxx~~ = failed design, Unmarked trusses = designed successfully, LB = lateral bracing required

Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)	Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)	Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)
T01	1	7660	25.000	900	J05	1	1267	25.000	900	T04	3	4708	25.000	900
T02	1	6180	25.000	900	J05A	1	1267	25.000	900	V01	1	850	25.000	900
T03	2	6180	25.000	900	J05B	1	1267	25.000	900	V02	1	3421	25.000	900
T03A	1	6180	25.000	900	J05C	1	1267	25.000	900	V03	1	2521	25.000	900
T05	3	6940	25.000	900	J06	1	2997	25.000	900	V04	1	1576	25.000	900
T06	1	6940	25.000	900	J06A	1	2997	25.000	900	V05	1	855	25.000	900
T07	1D	7660	25.000	900	J06B	1	2997	25.000	900	V06	2	1755	25.000	900
T08	1	6940	25.000	900	J06C	2	2997	25.000	900	V07	1	1756	25.000	900
T08A	3	6940	25.000	900	J06D	1	2997	25.000	900	*HB01	1	6188	18.249	900
TG01	1	7660	25.000	900	J07	1	2097	25.000	900	*HB02	3	1229	18.249	900
TG02	1	6940	25.000	900	J07A	1	2097	25.000	900	*HB03	2	5142	18.249	900
TG03	1	6940	25.000	900	J08	1	990	25.000	900	*HB04	2	6315	18.249	900
J01	1	2907	25.000	900	J09	1	2547	25.000	900	*HB05	2	5679	18.249	900
J01A	1	2907	25.000	900	J09A	1	2547	25.000	900	*R02	1	1720	25.000	900
J02	1	2007	25.000	900	J09B	1	2547	25.000	900	*R03	7	913	25.000	900
J02A	1	2007	25.000	900	J09C	1	2547	25.000	900	*R03A	7	913	25.000	900
J03	1	3067	25.000	900	J09D	1	2547	25.000	900	*R04	1	980	25.000	900
J03A	1	3067	25.000	900	J10	1	1647	25.000	900	*R04A	1	980	25.000	900
J03B	1	3067	25.000	900	J10A	1	1647	25.000	900	*R05	1	1810	25.000	900
J04	1	2167	25.000	900	J10B	1	1647	25.000	900	*R07	1	1360	25.000	900
J04A	1	2167	25.000	900	J10C	1	1647	25.000	900	*R07A	1	1360	25.000	900
J04B	1	2167	25.000	900	R01	1	1431	25.000	900					
J04C	1	2167	25.000	900	R06	1	901	25.000	900					

Total quantity : 93

Ashburton District Council
Wednesday, 28 February 2007
APPROVED
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Signed Date

The computer design input has been carried out by:

Signed:

Dated: Wednesday, 28 February 2007

Name of Computer Operator: Mason Griffiths
Qualifications and Title: Truss Detailer

Company: Carters - Canterbury



BUILDING CONSENT LAYOUT

CARTERS

MANUFACTURING

P O Box 4643
Christchurch
Ph (03) 353 6082

JOB No **0702179**

Client: **VALUE PLUS BUILDERS**
Job Name: **NEW HOUSE**
Address: **LOT 5 BOWEN AVE
RAKAIA**

Pitch: 25
Roof Material: **LONGRUN**
Soffit Overhang: 600mm
Wind Area: **HIGH**
Snow Load: 0.5 kPa

Trusses And Rafters At 900 Centres
Unless Stated Otherwise.

This layout is to be read in conjunction
with the Architectural plans.

DRAWN BY **Mason Griffiths**

DATE **28/02/07** PAGE **1 of 2**

BUILDING CONSENT INFORMATION

These layouts and associated design
statements are provided as a means
of showing compliance with NZBC
and may be used for Building Consent
Application purposes only.

As to be Built roof truss layouts, truss
fixing details, point load notification,
and a Producer Statement for the
design of the roof trusses will be
provided to the Local Authority at
the time of manufacture.

All walls shown on this layout are
considered to be load bearing.

These layouts and associated design
statements are valid only if the job is
manufactured by **CARTERS**.

TRUSS FIXINGS

Truss to Top Plate - 2 wire dogs
Truss to Truss - Joist Hanger
or alternatively as specified by
CARTERS on the Final Layout



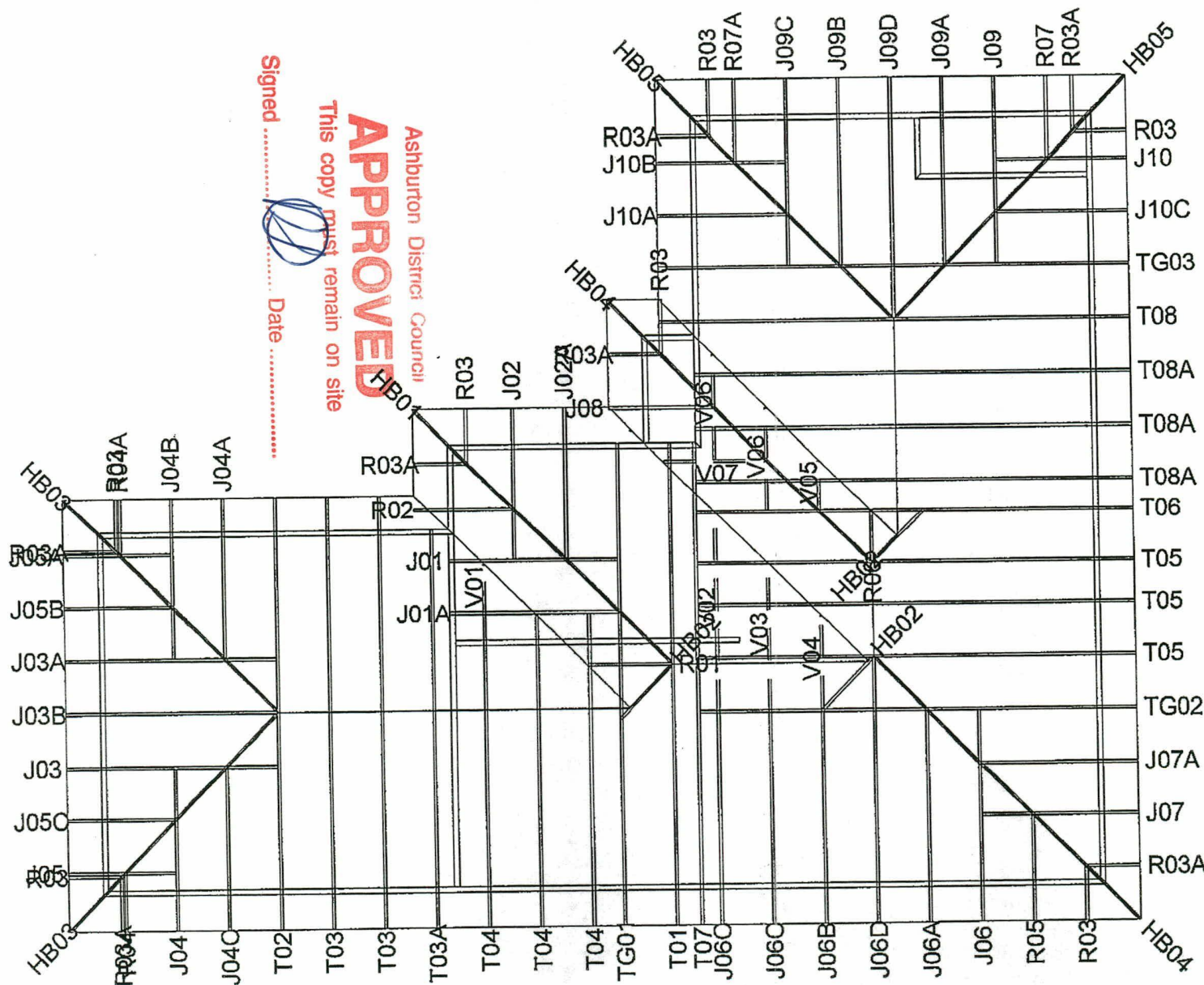
See Page 2 for Dimensions
and Point Load notification

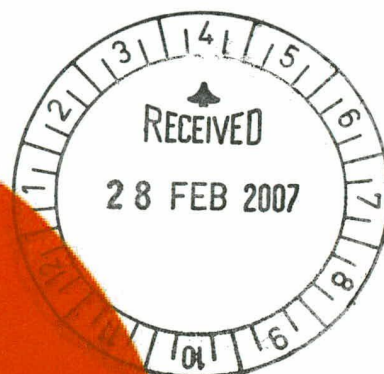
Signed Date

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Ashburton District Council





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

CONSTRUCTION SPECIFICATIONS

FOR THE

Lot 5 Bowens St

RESIDENCE

Ashburton District Council

APPROVED

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Signed Date

Value Plus Builders Ltd t/a Benchmark Homes
P.O. Box 176, ASHBURTON



CONTENTS

- **Building Consent Requirements / Compliances**
- **Preliminary and General (All Trades)**
- **Excavation**
- **Concrete**
- **Carpenter**
- **Joiner**
- **Roofing**
- **Plumber**
- **Drainlayer**
- **Electrician**
- **Painter**
- **Window Joinery and Glazing**
- **Interior Linings / Plasterer**
- **Bracing & Fixing Schedules**
- **Fixing Details**
- **Fusiotherm Installation Principles**
- **Fire Specifications (where applicable)**

BUILDING CONSENT REQUIREMENTS / COMPLIANCES

The building work shall comply with the Building Code as detailed

<i>Building Code Clause</i>		<i>Means of compliance</i>
• B1	Structure	B1/AS2, NZS3604, NZS4201, NZS4229
• B2	Durability	B2/AS1, NZS3101, NZS3602, NZS3604
• C1-4	Fire	C/AS1
• D1	Access Routes	D1/AS1, NZS4212, NZS4121
• D2	Mechanical Inst.	D2/AS1, NZS4332, EN81, EN115
• E1	Surface Waters	E2/AS1, AS/NZS3500.3
• E2	External Moisture	E2/AS1
• E3	Internal Moisture	E3/AS1
• F4	Safety from falling	F4/AS1, FSP Act
• F8	Signs	F8/AS1
• G1	Personal Hygiene	G1/AS1
• G4	Ventilation	G4/AS1, AS1668.2
• G6	Airborne and Impact Sound	G6/AS1
• G7	Natural Light	G7/AS1
• G8	Artificial Light	G8/AS1, NZS 6703
• G9	Electricity	G9/AS1
• G10	Piped Services	G10/AS1, NZS 5261
• G11	Gas as Energy Source	G11/AS1
• G12	Water Supplies	G12/AS1, AS/NZS 3500.1, AS/NZS 3500.1
• G13	Foul Water	G13/AS1, AS/NZS 3500.2, BS 5772
• G15	Solid Waste	G15/AS1
• H1	Energy Efficiency	H1/AS1, AS/NZS 4218, NZS 4243

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.

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Signed Date

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 claim 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 placed 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 confirm to grades defined by NZS 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 –

<u>Use –</u>	<u>Timber –</u>
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 stropped 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 wanes, 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 BHP 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 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). 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 hot water supply pipes and branches to all fittings including washing machine. System must include 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.

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		Vertical Pipe	Graded Pipe
Pipe material	Pipe diameter (mm)		
Copper	10 – 15	1.5	
1.2			
	20 – 25	2.0	1.5
	32 – 40	2.5	2.0
Steel	10 – 15	2.0	1.5
	20 – 25	3.0	2.5
	32 – 40	3.5	3.0
UPVC	15 – 20	2.0*	1.0
	25 – 40	2.4*	1.2
	50 -	2.7*	1.35
Polythene & Polybutylene (cold water)	15 – 20	1.5	0.75
	25 – 40	1.8	0.9
	50 -	2.4	1.2
Polybutylene (Hot supply – assumes 80degreesC)	15 – 18	0.5	0.3
	20 – 22	0.8	0.5

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

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 roof and slashed with lead. No lead is supplied with the kit. The top of the dormer valleys must be flashed with lead 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 1.3.

GIB® BRACING SYSTEMS – DESIGN

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

MARCH 2006

TABLE 1: Bracing Unit Ratings for 10mm GIB® Standard Plasterboard and any other 10mm and 13mm GIB® plasterboard.

TYPE	LENGTH (m)	LINING REQUIREMENT	OTHER REQUIREMENTS		BU PER METRE	
	MINIMUM		DIAGONAL BRACE		WIND	EARTHQUAKE
GS1a	1.8	10mm GIB® Standard Plasterboard one face fixed horizontal or vertical	yes		65	55
	2.4				75	65
GS2	1.2	10mm GIB® Standard Plasterboard both sides fixed horizontal or vertical ¹	no		70	60
	1.8				80	70
	2.4				90	80

TABLE 2: Bracing Unit Ratings for 10mm GIB Braceline®, 10mm GIB Noiseline® and 10mm GIB Toughline® (fixed with GIB Braceline® screws or GIB Braceline® nails)

TYPE	LENGTH (m)	LINING REQUIREMENT	OTHER REQUIREMENTS		BU PER METRE	
	MINIMUM		DIAGONAL BRACE	HOLD-DOWNS	WIND	EARTHQUAKE
BL1	0.4	GIB Braceline® one face fixed horizontal or vertical ²	no	yes	120	115
	0.6		no	yes	125	115
BL1a	1.8	GIB Braceline® one face fixed horizontal or vertical ²	yes	yes	130	115
BLP	0.6	GIB Braceline® one face fixed horizontal or vertical, 7mm D-D plywood on the other ^{1,2}	no	yes	145	135
	0.9				145	145
BLG	0.6	GIB Braceline® one face, 10mm GIB® Standard on the other face, linings fixed horizontal or vertical ^{1,2}	no	yes	145	130
	1.2				150 ³	130

- Notes:**
- 1) Where linings are specified on both faces, each face must be fastened as a bracing element.
 - 2) GIB Aqualine® can be used in place of GIB Braceline® in bracing elements 900mm or longer, provided the perimeter of the element is fixed with GIB Braceline® nails or screws spaced at 100mm centres generally, using the GIB Braceline® corner fixing pattern.
 - 3) A maximum of 150 BU/m is recommended for any bracing system used with NZS 3604:1999 construction. Higher ratings generate loads beyond the capacity of NZS 3604:1999 timber foundation and slab details. If ratings exceed 150 BU/m, hold downs and foundations must be the subject of specific structural engineering design.

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

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FOR FURTHER INFORMATION VISIT WWW.GIB.CO.NZ

GIB® BRACING SYSTEMS – CEILING DIAPHRAGMS

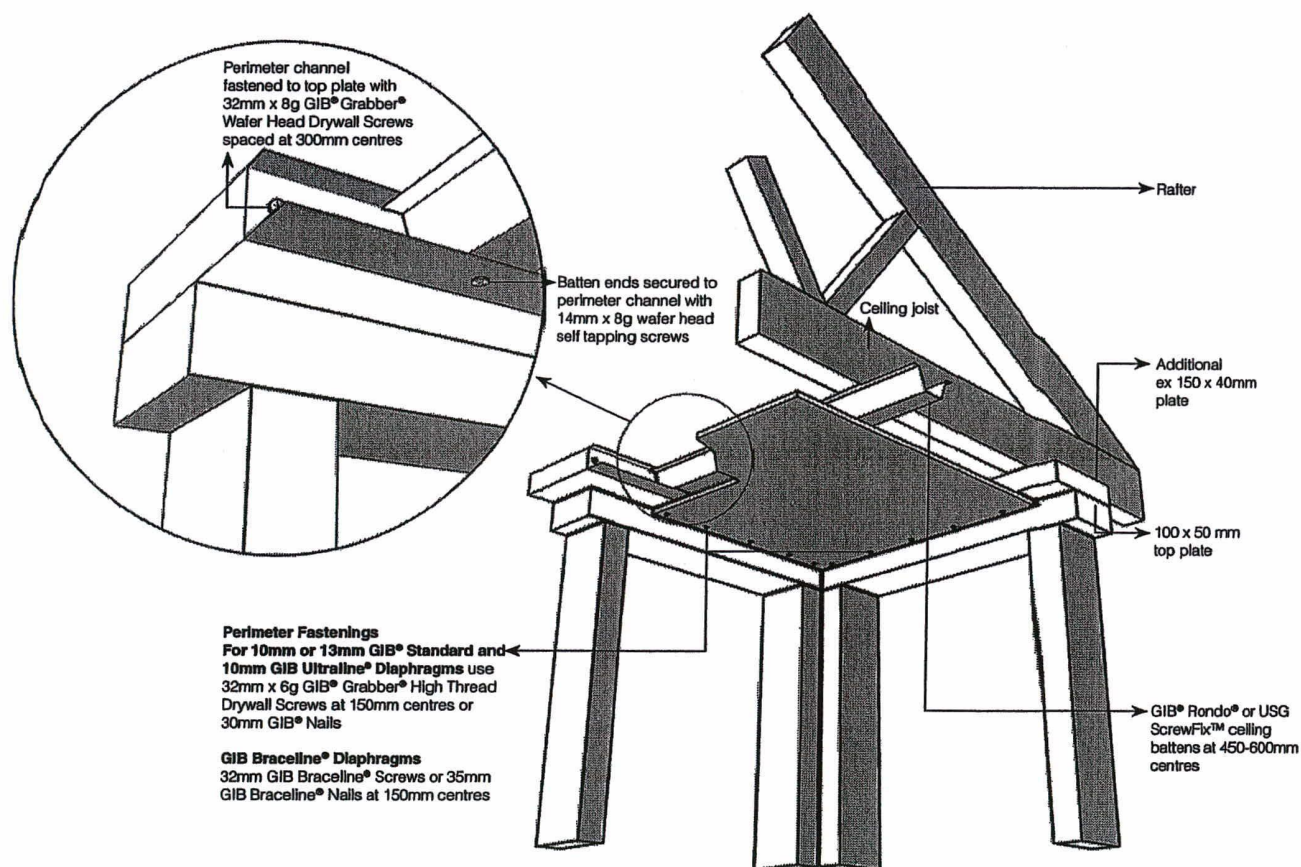


Steel Battens

The GIB® Rondo® and USG DONN Screwfix™ (FC37 and FC50) battens may be used to construct GIB® plasterboard ceiling diaphragms.

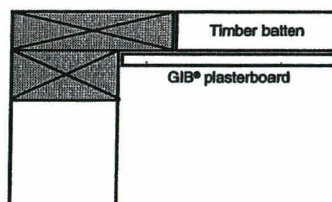
- The battens shall be spaced at 450mm centres maximum for 10mm GIB® plasterboard and at no more than 600mm centres for 13mm GIB® plasterboard. The battens are fastened through both flanges directly to the ceiling framing with 32mm x 8g GIB® Grabber® Wafer Head Self Tapping Drywall Screws.
- A steel perimeter channel is required at the perimeter of the diaphragm. The channel shall be fastened to the top plate with 32mm x 8g GIB® Grabber® Wafer Head Self Tapping Drywall Screws spaced at 300mm centres maximum.
- The linings are fastened to the perimeter channel at 150mm centres maximum with 25mm x 6g Self Tapping Screws.
- Within the diaphragm area sheets may be fastened as described in "General Fixing Requirements for GIB® Ceiling Diaphragms".

Ceiling Diaphragm on Steel Battens – Typical Fixing Detail

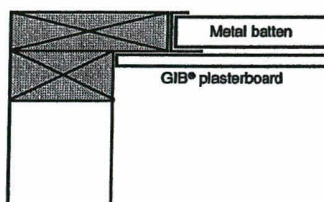


The perimeter of a ceiling diaphragm must be connected to a single continuous member along all edges. Connection to dwangs between trusses is not acceptable.

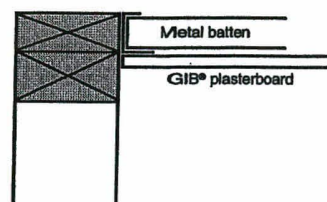
Timber battens example



Steel battens with perimeter channel example



OR



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

FOR FURTHER INFORMATION VISIT WWW.GIB.CO.NZ

GIB® BRACING SYSTEMS – CONSTRUCTION

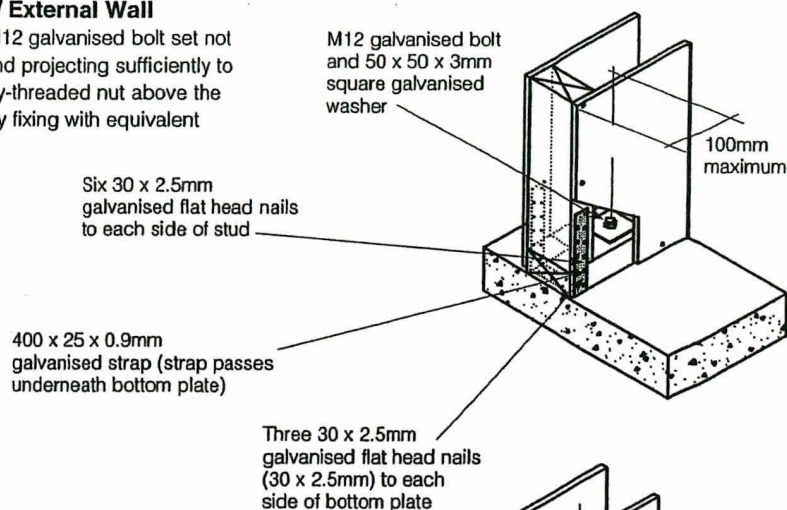


Panel Hold-down Details

MARCH 2006

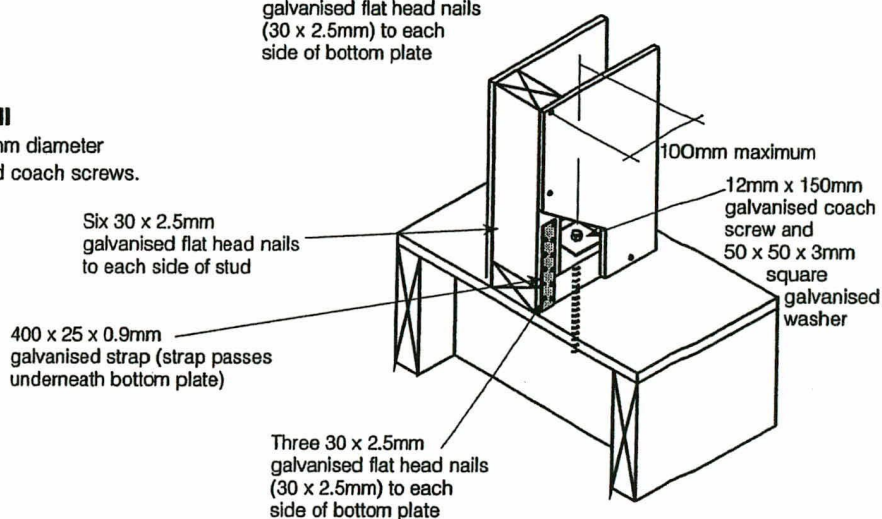
Concrete Floor – Internal / External Wall

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



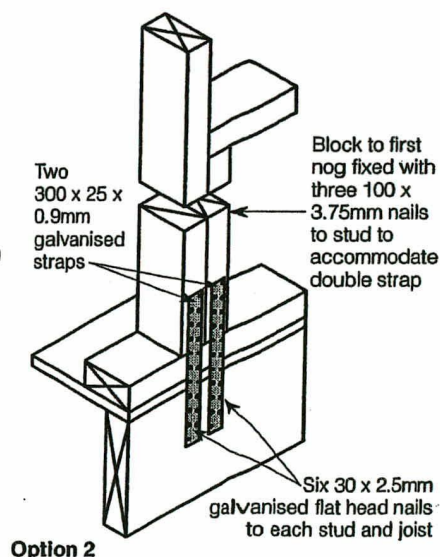
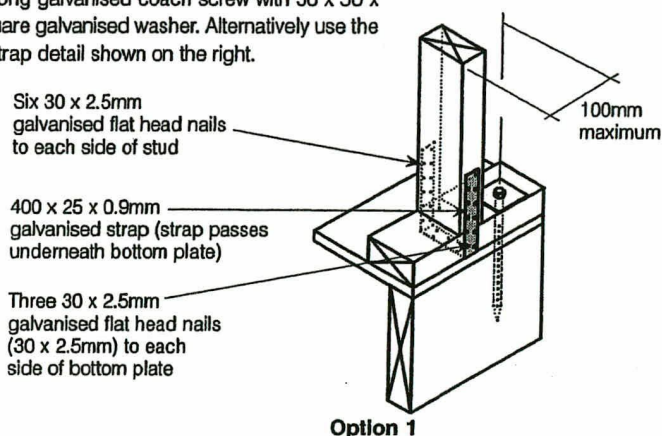
Timber Floor – Internal Wall

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



Timber Floor – External Wall Alternatives

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



Notes:

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

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

FOR FURTHER INFORMATION VISIT WWW.GIB.CO.NZ

GIB® BRACING SYSTEMS – CONSTRUCTION



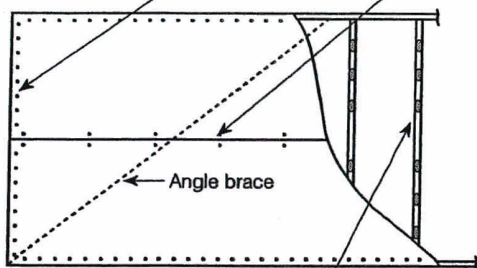
Fastener Layouts – GIB® Standard Bracing Elements

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

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

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

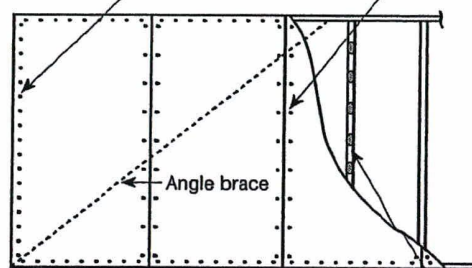


**GS1a (lined one side)
(Horizontal Fixing)**

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

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

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

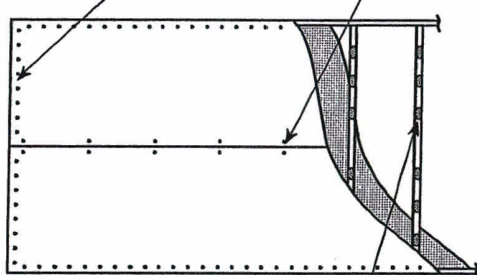


**GS1a (lined one side)
(Vertical Fixing)**

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

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

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

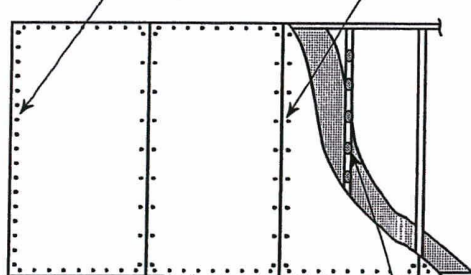


**GS2 (lined both sides)
(Horizontal Fixing)**

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

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

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



**GS2 (lined both sides)
(Vertical Fixing)**

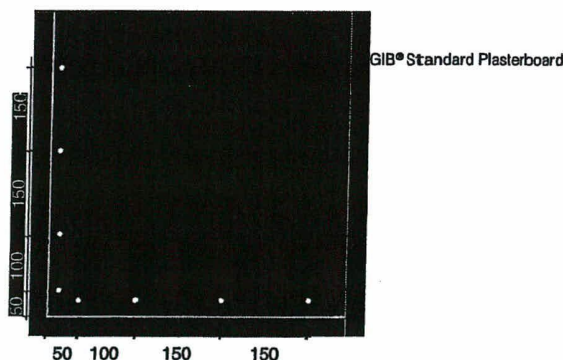
Daub of GIBFix® adhesive at 300mm centres to intermediate studs and noggs

Fixing the perimeter of a GIB® Standard Plasterboard bracing element

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

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

Fastening pattern for GIB® Standard bracing elements



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

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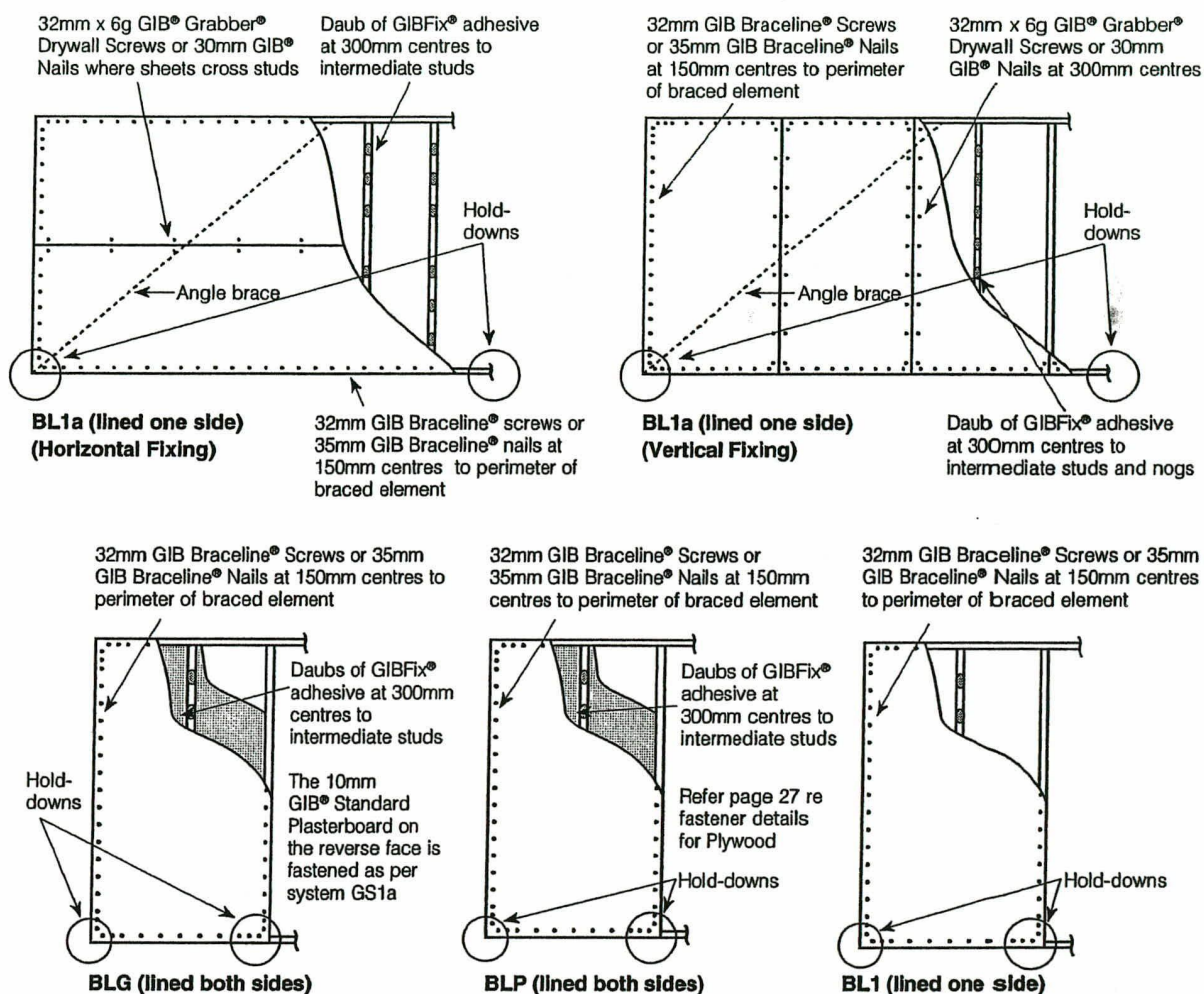
GIB® BRACING SYSTEMS – CONSTRUCTION



Fastener Layouts – GIB Braceline® Braoing Elements

MARCH 2006

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

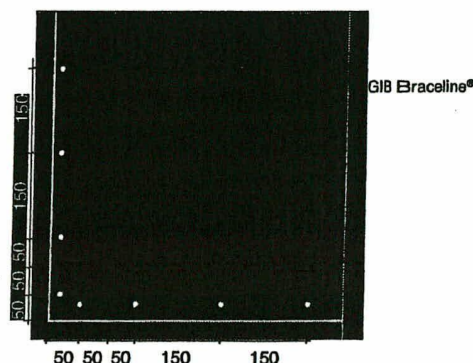


Fixing the perimeter of a GIB Braceline® bracing element

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

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

Fastening pattern for GIB Braceline® bracing elements



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

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FOR FURTHER INFORMATION VISIT WWW.GIB.CO.NZ

GIB® BRACING SYSTEMS

	GIB® Bracing System Installation Checklist		MARCH 2006

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

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

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

Wavin

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ENGINEERING AND INSTALLATION METHODS

TABLE OF REGRESSION CURVES OF THE TIGRIS *green* SYSTEM

With the regression curves the maximum pressure in respect of the duration and the working temperature of the system can be determined.

To obtain the maximum working range the following formula has to be applied: $P = \left(\frac{20 \cdot S \cdot \sigma}{d-s} \right) : f$

where:

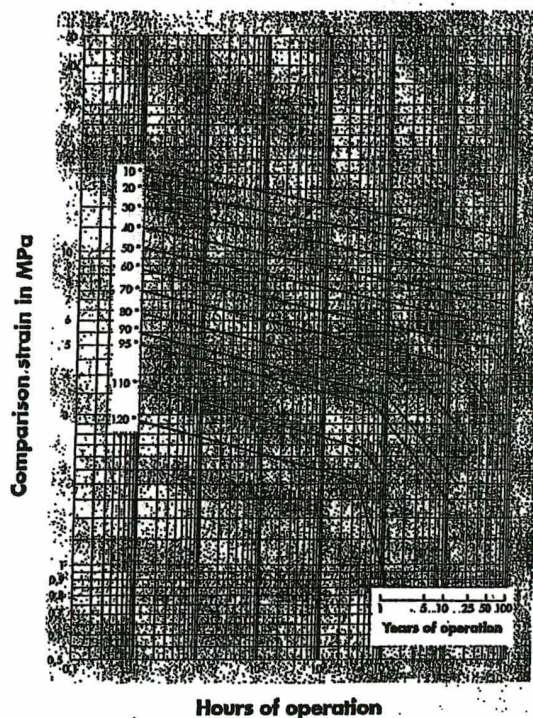
P = maximum constant pressure

d = outside diameter of the pipe

f = safety factor

σ = pressure depending on temperature

S = pipe thickness



Temperature °C	Duration Years	Pressure Bar	Safety Factor
20	50	25,9	1,5
40	50	18,4	1,5
60	50	12,6	1,5
80	20	7,8	1,5
95	10	5,9	1,5

The minimum safety coefficient according to ISO DIS 12162 is 1,25.

Ashburton District Council

APPROVED

This copy must remain on site

Signed Date

ENGINEERING AND INSTALLATION METHODS

ENGINEERING AND INSTALLATION OF THE TIGRIS *green* SYSTEM

Engineering and laying of hot and cold pipe systems must be carried out according to the specific regulation in force in the countries concerned.
In Italy the reference norm is UNI 9182.

THERMAL EXPANSION OF THE TIGRIS *green* SYSTEM

Even though thermal expansion is higher in the copolymer polypropylene "Random" Type 3 than in metals and buildings materials, it does not cause problems in walled installations, because changes in direction (which allow absorption of expansions) are frequent in this kind of laying; even in absence of direction changes the characteristic of deformability of TIGRIS *green* can absorb expansions in walled installation.

In external pipe systems thermal expansion can cause cracks on the outside surface of pipelines, therefore it is necessary to fix the pipelines with suitable clamps.

The following formula is useful to determine immediately the total variation in length or expansion in pipelines according to the sections' length and to the variation in temperature ΔT as follows:

$$\Delta L = \Delta T \times L \times \alpha$$

$$\Delta L = L - L_0$$

$$\Delta T = T - T_0$$

Expansion coefficient = 0,15 mm/mk

ΔL = Total variation in length
 ΔT = Variation in temperature

where L is the length of the pipeline at the temperature T, L_0 is the length at a reference temperature T_0 (usually room temperature) and α is the coefficient of thermal expansion.

FIXED POINTS

In the installation of external pipelines the system has to be split into expansion sections, so as to prevent uncontrolled movements of the pipelines.

Valves and connections resisting to bending stresses have to be anchored with fixed points. In particular cases, the fixed points are to be positioned close to branches or wall passages.

The axial expansion will be compensated between two fixed points.

To assess the resistance of the fixed points, you have to take into account the stresses to which they will be subjected caused by the linear expansion, weight of the piping and weight of the transported fluid.

The fixed points should be introduced and delimited on both sides of the clamp, fixing them on the rim of fittings or on the valves.

SLIDING POINTS

The sliding points must keep the system aligned and support it, and allow the axial sliding of the pipe as well. The sliding points are to be firmly mounted, in order to prevent vibrations and transmission of noise.

DISTANCE BETWEEN THE SUPPORT POINTS IN cm

PIPE Ø	TEMPERATURE IN °C		
	20 °C	50 °C	80 °C
16	70	60	50
20	80	70	60
25	85	80	70
32	100	85	85
40	110	100	90
50	125	110	90
63	140	125	105
75	155	135	115
90	165	150	125
110	185	165	140

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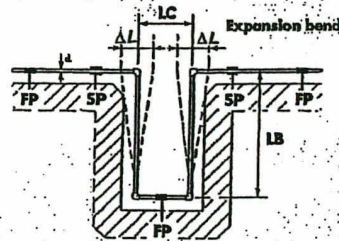
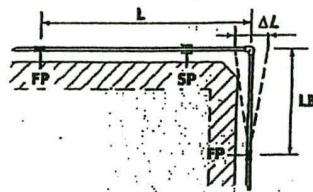
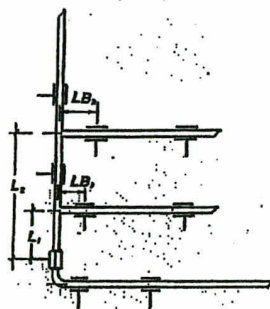
ENGINEERING AND INSTALLATION METHODS**VARIAION IN LENGTH OF TIGRIS *green* SYSTEM****Compensation using expansion arm**

Basic diagram. With the help of fixed points **FP**, part of the installation subject to thermal expansion is blocked, leaving the remaining part free to move axially guided by the sliding points **SP**. Depending on the length **L**, the length of the arm **LB** can be calculated using the following formula:

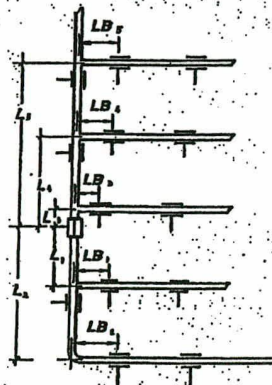
$$LB = c \cdot \sqrt{d \cdot \Delta L} \quad (\text{mm})$$

where:

- LB** = length of the expansion arm (mm)
- d** = external diameter of the pipe (mm)
- ΔL** = Variation in length (mm)
- L** = length of the pipe on which the ΔL is calculated
- c** = constant depending on the material
(for PPR=30)

**POSITION OF FIXED AND SLIDING POINTS**

Example for a riser with fixed point at the bottom
(installation of 2 floors, max).



Riser with fixed point in the middle
(more than 2 floors).

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ENGINEERING AND INSTALLATION METHODS**GRAPHS AND FORMULAS**

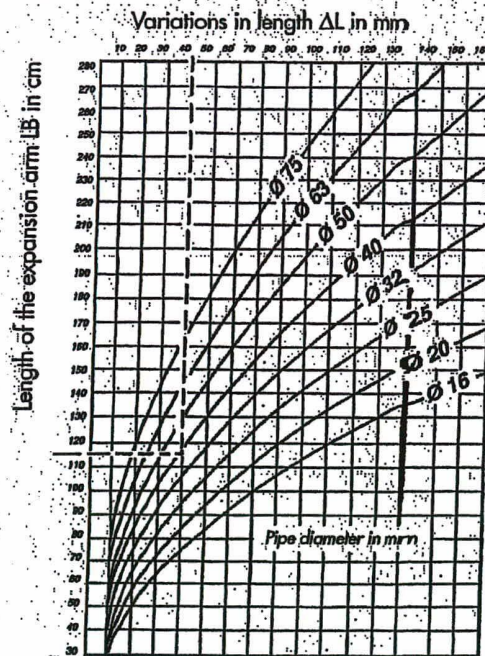
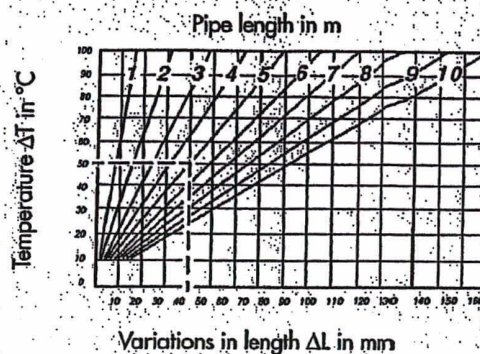
To calculate the variations in length ΔL and the length of the expansion arm LB , the formulas given on the previous page can be used. For a quicker reference you can use the following graphs:

Example:

TIGRIS green pipe
Ø 40 - 5 m long

Variation in length:

$$\Delta L = 0,15 \times 5 \times 50 = 37,5 \text{ mm}$$



Length of the expansion arm:

$$LB = c \cdot \sqrt{d \cdot \Delta L}$$

$$LB = 30 \cdot \sqrt{40 \times 37,5} = 116,18 \text{ mm}$$

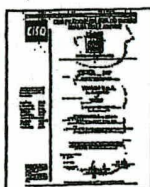


CERTIFICATES

CERTIFICATES AND QUALITY MARKS OF THE TIGRIS *green* SYSTEM

Quality system certificate

Wavin S.p.A. offer their customers the guarantee of the CISQ-SQP quality mark, given to the whole of the company's quality system by the IIP (Italian Institute for Plastics), according to UNI EN ISO 9002 regulations. This certificate is acknowledged all over Europe by EQ-Net (European network for the estimation and certification of the quality systems) and guarantees the customer the maximum security and reliability not only on Wavin's products, but also on Wavin's organisation and service.

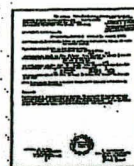


Raw material

The raw material used in the production of the **TIGRIS *green*** system complies with the requirements stated in the standards concerning the physiological innocuousness and the suitability for the contact with foodstuff (Ministerial Decree dated 21.03.73 and 26.04.93 and further datings; Circular no. 102 of 02.12.78 issued by the Italian Ministry of Health).

TIGRIS *green* SYSTEM

Certificate of potability dated 28.06.96
Regional Agency for prevention and environment
Head office: Ferrara - Italy



The new range complies with the latest European norms.

**P/IIP Certificate of conformity with
the new preliminary
European norm prEN 12202 - (Quality mark for pipe and fittings)**



Tin (Poland) - (Quality mark for the system)

ASSURANCE DECLARATION

Wavin S.p.A. have an insurance cover given by a major insurance company relating to the Policy of Civil Responsibility towards third parties and to the Policy of Civil Responsibility for Products, whose no is No. 600354. The amount of the compensation is the equivalent sum of 1.000.000 Dutch guilders in Italian Liras per case.



TIGRIS green

The traditional safe system for hot and cold water supply

Wavin S.p.A. introduce the TIGRIS green system composed of pipes and fittings made of Polypropylene Random Type 3 according to the norms DIN 8077 - 8078 for pipes and DIN 16962 for fittings.

TIGRIS green pipes are PN20 and TIGRIS green fittings are PN25.

The choice of raw materials, the structural accuracy and the strict quality control give the TIGRIS green system a high reliability.

MATERIAL PROPERTIES

The PP Random Type 3 used in the production of the TIGRIS green system has a high molecular weight and excellent creep resistance, fundamental characteristics for the transportation of hot fluids under pressure. It also has a good impact strength which ensures ease of installation even at temperatures below 0 °C.

PHYSICAL PROPERTIES

Characteristics	Test method acc.to	Unit	Value
Density at 23°C	ISO 1183	g/cm ³	0,909
Melt flow index (MFI) at 190 °C/5 kg	ISO 1133	g/10 min	0,55
at 230 °C/2,16 kg	ISO 1133	g/10 min	0,30
at 230 °C/5 kg	ISO 1133	g/10 min	1,30
Melt flow volume (MVR) at 230° C/2,16 Kg	ISO 1133	cm ³ /10 min	0,38

MECHANICAL PROPERTIES

Characteristics	Test method acc.to	Unit	Value
Yield stress	ISO R 527 / DIN 53455	N/mm ²	> 20
Elongation at yield (50 mm/min)	DIN 53455	%	> 8
E-Modulus	ISO R 527 / DIN 53457	N/mm ²	> 800
Hardness test	ISO 2039 / DIN 53456	N/mm ²	45
Shore hardness (3 sec)			45
Impact test (on not notched specimen) at 23 °C	ISO 180/1C	KJ/m ²	no break
at 0 °C		KJ/m ²	160
at -30 °C		KJ/m ²	28
Impact test (on notched specimen) at 23 °C	ISO 180/1A	KJ/m ²	30
at 0 °C		KJ/m ²	3
at -30 °C		KJ/m ²	1,8

THERMAL PROPERTIES

Characteristics	Test method acc.to	Unit	Value
Softening temperature (VST/A/50)	ISO 306/DIN53460	°C	132
(VST/B/50)	ISO 306/DIN53460	°C	69
Thermal stability			
HDT A	ISO 75/DIN534561	°C	49
HDT B	ISO 75/DIN534561	°C	70

MAIN CHARACTERISTICS OF THE TIGRIS *green* SYSTEM

Potability

The TIGRIS *green* system is in full compliance with the international standards on the use of plastic materials for the transportation of potable water.

Welding capacity

This is a fundamental characteristic of the system. It enables all the elements in the system to be joined by polyfusion welding or the use of electro-fusion couplers.

Inserts in fittings

All threaded inserts in the fittings and joints are made of nickel-plated brass OT 58.

Versatility

The low specific weight means ease of transport and handling. The system can be used in traditional site installation, for the preparation of prefabricated constructions and in the creation of modules or fitted walls.

Head loss

The internal surface of the pipes and fittings are smooth so limestone or other deposits cannot form and head loss is reduced to the minimum.

Noise

The material's elasticity and high insulation capacity mean a considerable reduction of the noise in the installation, even when there is water hammering.

Resistance to frost

The typical elasticity of PP-Random allows the enlargement of the pipe section under the thrust of the volume increase due to freezing of the conveyed liquid.

Resistance to abrasion and corrosion

This characteristics allow high flow velocities of the transported fluid, up to 7 m/s without any problem of erosion, even in the presence of acid and alkaline substances with PH values between 1 and 14.

Resistance to chemical agents

The TIGRIS *green* system offers a considerable resistance to a great number of chemical agents even at high temperatures (110° - 115° C).

See reference table stating values according to ISO 7471 on page 4 and 5.

Fitness for use in seismic areas

The flexibility and resilience of the PP-Random pipelines allow their use also in seismic areas.

Resistance to stray currents

The TIGRIS *green* system is a poor conductor of electricity, therefore perforation phenomena caused by stray currents are unknown.

Low conductivity of heat

Since PP-Random is a poor conductor of heat, condensation and heat dispersion of the transported fluid are considerably reduced.



ENGINEERING AND INSTALLATION METHODS

STANDARD CONDITIONS FOR THE USE OF THE TIGRIS *green* SYSTEM

Pressure and temperature of TIGRIS *green* pipe, which the hot and cold system can be submitted to, are the following:

60°C - 10 Bar

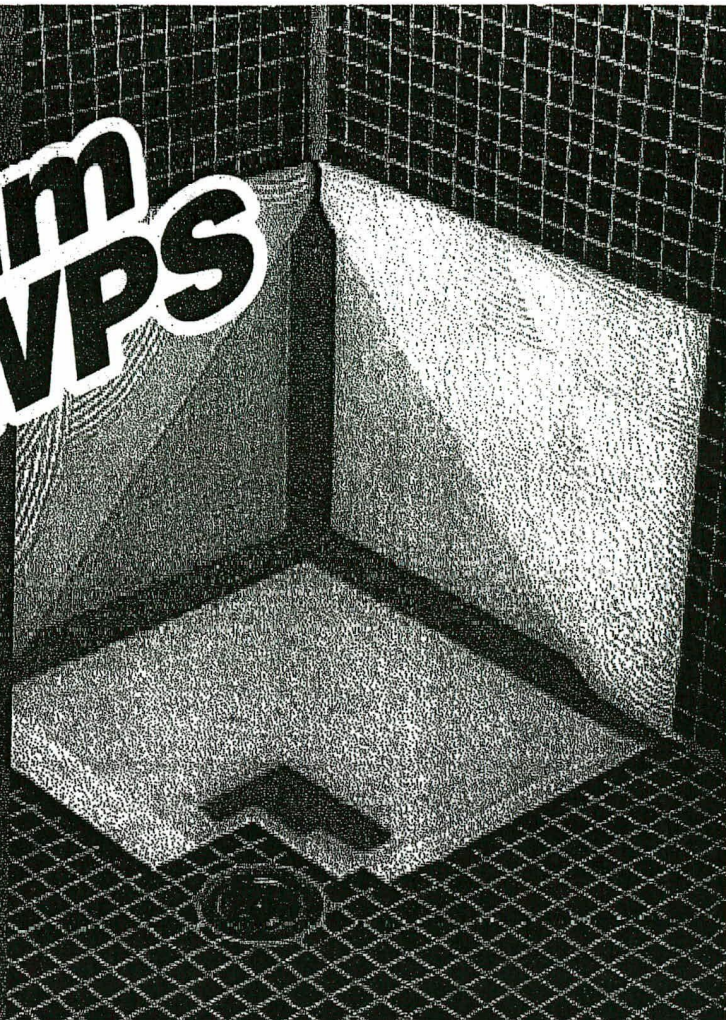
These standard conditions have to be considered for the realisation of a system which is not exposed to the influence of UV rays.

Temperature °C	Service life, years	PN 20 Pressure class
10	1	41,4
	5	39,1
	10	38,1
	25	36,8
	50	35,9
20	100	36,9
	1	35,3
	5	33,2
	10	32,3
	25	31,2
30	50	30,4
	100	29,6
40	1	30,1
	5	28,2
	10	27,4
	25	26,4
	50	25,7
50	1	25,5
	5	23,9
	10	23,2
	25	22,3
	50	21,7
60	1	21,6
	5	20,1
	10	19,5
	25	18,8
	50	18,2
70	1	18,2
	5	16,9
	10	16,4
	25	15,8
	50	15,3
80	1	15,3
	5	14,2
	10	13,8
	25	12,0
	50	10,1
90	1	12,8
	5	11,9
	10	9,6
	25	7,7
95	1	9,1
	5	6,2
	10	5,2



Mapegum WPS

**Fast drying flexible
liquid membrane for
interior waterproofing**



WHERE TO USE

Waterproofing indoor floor and wall surfaces that are not subject to continuous immersion in water, or rising damp. Flexible, anti-fracture membrane. Apply before the installation of ceramic tiles or stone material.

Mapegum WPS may be used on the following:

- plasterboard, gypsum or cementitious render, lightweight cement block and marine-plywood;
- cementitious, anhydrite, wooden and magnesite substrates and existing ceramic and natural stone after the application of Mapeprim SP primer.

Some application examples

- Waterproofing walls and floors in bathrooms and shower cubicles before laying ceramic tiles, natural stone and mosaic.
- Waterproofing kitchen walls and floors and work tops before laying ceramic tiles and natural stone.

TECHNICAL CHARACTERISTICS

Mapegum WPS is a ready-to-use, solvent-free, single component, grey-coloured paste with a base of synthetic resins in water dispersion. Mapegum WPS has a thixotropic consistency which makes it easy to apply on horizontal, sloping and vertical surfaces. After rapid evaporation of the water content, Mapegum WPS forms a flexible membrane which is not sticky and which is strong enough to withstand light pedestrian traffic. It also forms an excellent surface

which bonds perfectly to adhesives used for laying ceramics, marble and natural stone.

The flexibility of Mapegum WPS enables it to withstand normal expansion and contraction movements of the substrate due to temperature variations and vibrations. Thanks to the flexibility of Mapegum WPS, it acts as an anti-fracture membrane for substrates which are subject to light cracking (< 1 mm).

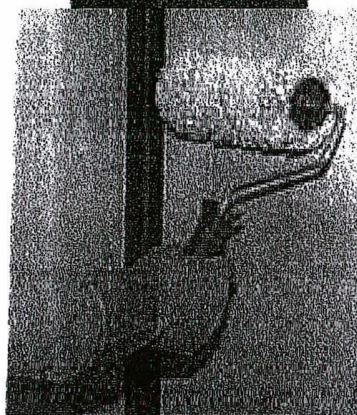
Mapegum WPS is resistant to water, limewater (pH > 12), water which contains chlorides and normal household detergents and cleaning products. Systems based on the use of Mapegum WPS flexible membrane, on which various types of tiles have been laid using MAPEI cementitious-based adhesives (such as Granirapid, Keraflex and Adesilex P9) and water dispersion adhesives (Ultramastic III), have been certified for use in damp environments by the following institutes:

- Säurefilesner (Germany);
- Sp Swedish National Testing & Research Institute (Sweden);
- Norwegian Research and Building Institute (Norway).

RECOMMENDATIONS

- Do not apply Mapegum WPS if the temperature is lower than +5°C.
- Create sloping surfaces where necessary to avoid the formation of puddles of water.
- Do not apply Mapegum WPS on damp cementitious substrates or on substrates which are subject to rising damp.

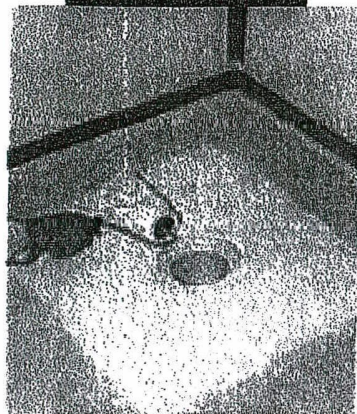
**Mapegum
WPS**



Applying
Mapegum WPS on a
wall with a roller



Bathroom wall
waterproofed with
Mapegum WPS and
Mapeband



Spreading
Mapegum WPS
around the drain
in a shower cubicle

TECHNICAL DATA (typical values):

PRODUCT IDENTITY

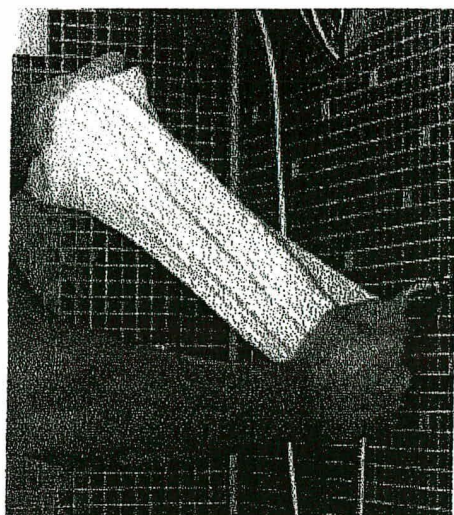
Consistency:	paste
Colour:	light grey
Density (g/cm ³):	1.45
pH:	9.0
Dry solids content (%):	75
Brookfield viscosity (mPa.S):	180,000 (rotor E - 5 revs)
Shelf life:	24 months in its original, unopened packaging. Protect from frost
Hazard classification according to Directive 99/45/CE:	None. Before using refer to the "Safety" instructions for the preparation and application" paragraph and the information on the packing and "Safety Data Sheet"
Customs class:	4002 11 00

APPLICATION DATA

Minimum film-forming temperature:	+5°C
Application temperature range:	from +5°C to +35°C
Completely dry (2 mm of thickness) at +20°C:	5 hours
Completely dry (2 mm of thickness) at +5°C:	12 hours
Waiting time before laying dressing material:	12-24 hours

FINAL PERFORMANCES

Resistance to temperature variations:	excellent
Resistance to ageing:	excellent
Resistance to solvents and oil:	good
Resistance to acids and alkalis:	good
Elongation at breakage (DIN 53504) (%):	180
In service temperature range:	from -30°C to +100°C
Water absorption (%) (by weight) 7 days at +23°C + 21 days immersed in water:	10 (Standard UNI 8202/22a)
Vapour permeability (μ):	650 (Standard UNI 8202/23a)



Fibreglass Mesh reinforcement in the Mapegum WPS.

Application of the product

Mapegum WPS may be applied by trowel, with a roller, by brush or spray (if required, dilute with up to 5% of water). The product must be applied evenly in thin coats (approx. 1mm maximum per coat). Wait until the first coat is dry before applying further coats crossways (1-2 hours according to temperature conditions).

The final thickness of Mapegum WPS must never be less than 1mm, in order to form a consistent, flexible continuous coat. Make sure that there are no gaps caused by imperfections in the substrate.

After 12-24 hours from applying the final coat of Mapegum WPS (according to temperature conditions), the surface is ready for laying ceramic tiles or natural stone etc. Use an adhesive from the MAPEI range to lay ceramic tiles and natural stone; class C2 if it is cementitious based or class D2 if it is a water dispersion type, in accordance with Standard EN 12004. In order to guarantee continuity in the waterproofing coat, we recommend placing Mapeband, special waterproof rubber strip, between the wall and the floor and between contiguous walls before applying Mapegum WPS.

Special Mapeband pieces are available to be inserted in correspondence of corners, drains and pipe-work.

Mapeband must be bonded to the substrate using Mapegum WPS and must be completely embedded in the waterproofing layers.

Laying the tiles

After applying Mapegum WPS wait:

- 12-24 hours on absorbent substrates;
- 4-5 days on substrates which are not absorbent.

Lay the tiles using an adhesive from the MAPEI range (such as Keraquick, Granirapid, Adesilex P9, Keraflex or Ultramastic III); the width of the joints depends on the size of the tiles to be laid. Grout the tile joints using Ultracolor Plus, Keracolor FF or GG plus Fugolastic or Kerapoxy, available in a variety of colours. Expansion joints must be sealed using the special MAPEI sealants.

Cleaning

Mapegum WPS may be easily removed while still fresh from tools and surfaces with water.

CONSUMPTION

The consumption of Mapegum WPS is approximately 1.5 kg/m² per mm of thickness.

PACKAGING

Mapegum WPS is available in 5, 10 and 25 kg drums.

STORAGE

24 months in original packaging. Protect from frost.

- Do not apply Mapegum WPS on bitumen or asphalt membranes which could bleed oil or plasticisers.
- Do not use Mapegum WPS on surfaces which are immersed continuously in water, such as swimming pools, fountains, water tanks, etc. For these applications, use Mapelastico or Mapelastico Smart.
- Do not use Mapegum WPS to cover cracks which are subject to shearing movements.
- Mapegum WPS must be protected from abrasion caused by pedestrian traffic by installing ceramic tiles or stone material.

APPLICATION PROCEDURE

Preparation of the substrate

Substrates must be solid, clean, dry and free of oil, grease, old paintwork or any other material which could compromise bonding. Thoroughly clean all the mould, loose material etc. from existing surfaces to be waterproofed (existing flooring, old bitumen membranes, asphalt, metallic surfaces, etc.) by washing and brushing them down, or by spraying water and steam.

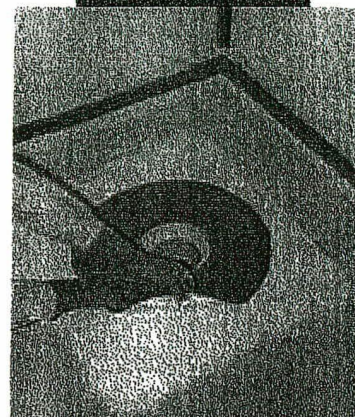
Cementitious substrates must be stable and dry, and not subject to rising damp.

Substrates which are highly absorbent or gypsum must be pre-treated with Primer G (usually diluted with water at a ratio of 1:1 or 1:2 to ensure thorough penetration). Wait several hours until the coating of Primer G is completely dry.

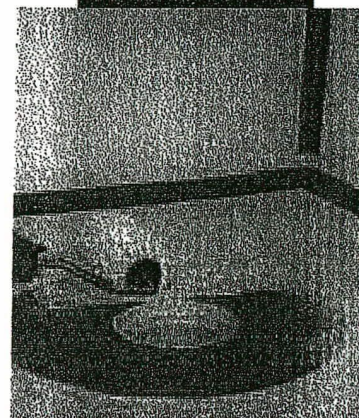
Anhydrite or gypsum substrates must be perfectly dry (maximum residual humidity 0.5%), sanded and treated with a coat of Primer G or Primer S. Existing substrates of ceramic tiles or natural stone must be treated with Mapeprim SP primer before applying Mapegum WPS.

If a slope has to be created and the base needs to be smoothed off before spreading on Mapegum WPS, use one of the recommended MAPEI products.

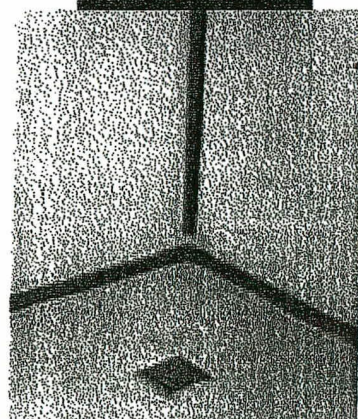
If Mapegum WPS is applied as an anti-fracture membrane on a damaged substrate, we recommend embedding



Positioning the special piece of Mapeband over Mapegum WPS



The special piece of Mapeband embedded in the Mapegum WPS

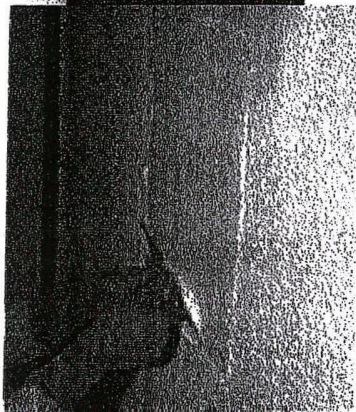


End result of a waterproofing treatment using Mapegum WPS and Mapeband

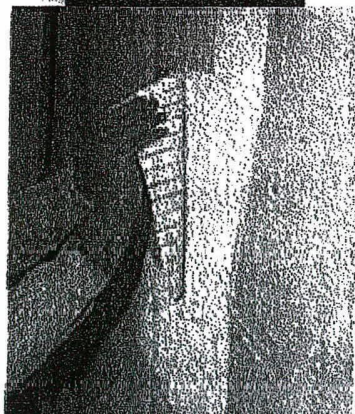
Mapegum WPS



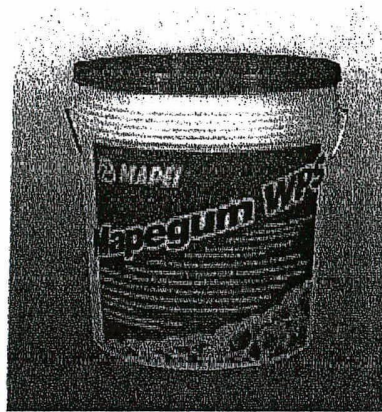
Applying Mapegum WPS with a brush



Spreading a coat of adhesive on Mapegum WPS



Laying glass mosaic



SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Mapegum WPS is not considered a dangerous substance according to current norms and regulations regarding the classification of preparations. The usual precautions taken when handling chemical

products are recommended. The Safety Data Sheet is available upon request for professional users.

FOR PROFESSIONALS.

WARNING

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All relevant references of the product are available upon request

(1) A.G. B.T.W.

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2014-1-2005



Mapelastastic

Two-component, flexible cementitious mortar for the protection and waterproofing of concrete surfaces, balconies, terraces, bathrooms and swimming pools



WHERE TO USE

Waterproofing and protection of concrete structures, renders and cementitious screeds.

Some application examples

- Waterproofing of concrete basins used for containing water and drinking water.
- Waterproofing bathrooms, showers, balconies, terraces, swimming pools etc. before laying ceramic tile dressings.
- Waterproofing retaining walls or pre-cast concrete elements embedded in the ground.
- Flexible smoothing layer for light-sectioned concrete structures, including those subjected to small deformations when under load (e.g. pre-cast panels).
- Protection of render or concrete with cracks caused by shrinkage, against the infiltration of water and aggressive atmospheric elements.
- Protection, against the penetration of carbon dioxide, of concrete pillars and joists and road and railway viaducts repaired with products from the Mapegrout range, and structures with an insufficient layer of concrete covering on the reinforcement rods.
- Protection of concrete surfaces which may come into contact with sea water, de-icing salts, such as sodium or calcium chloride, and sulphates.

TECHNICAL CHARACTERISTICS

Mapelastastic is a two-component mortar based on cementitious binders, fine-grained selected aggregates, special additives and synthetic polymers in water dispersion, blended according to a formula developed in MAPEI's own research laboratories. When the two components are mixed together, a free-flowing mix is obtained which may be easily applied, even on vertical surfaces, at a thickness of up to 2 mm in one single coat.

Thanks to the high content and quality of the synthetic resins, the hardened layer of Mapelastastic remains constantly flexible under all environmental conditions and, what is more, is completely waterproof up to a pressure of 1.5 bar and resistant to the chemical attack of de-icing salts, sulphates, chlorides and carbon dioxide.

Mapelastastic has excellent bonding properties on all concrete, masonry, ceramic and marble surfaces, as long as they are solid and sufficiently clean.

These properties mean that structures protected and waterproofed with Mapelastastic are hardwearing, even under particularly adverse climatic conditions, in coastal areas with a high salt content in the atmosphere or in industrial areas where the air is particularly polluted.

RECOMMENDATIONS

- Do not use Mapelastastic for thick dressings (more than 2 mm per coat).
- Do not apply Mapelastastic at temperatures below +8°C.

Ashburton District Council

APPROVED

This copy must remain on site

Signed Date

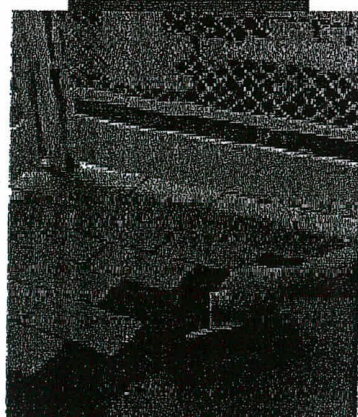
Mapelastic



Mixing of Mapelastic with a mechanical mixer

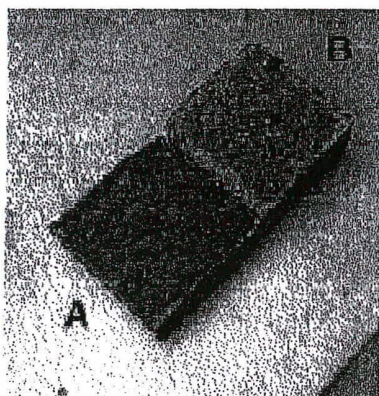


Waterproofing a balcony with Mapelastic incorporating a fibreglass net reinforcement



Setting tiles with Granirapid onto a balcony waterproofed with Mapelastic

- Do not add cement, aggregates or water to Mapelastic.
- Protect from rain and water spillage for the first 24 hours after application.
- When used for waterproofing basins and drinking water tanks, do not fill until Mapelastic has been cured for at least 28 days and until it has been repeatedly washed down with hot water.
- When Mapelastic is used on large terraces or flat roofs that will not be covered with tiles, vapour vents must be appropriately positioned



Penetration test of chloride ions (UNI 9944). Sample A covered with Mapelastic is not penetrated, sample B, left uncoated, shows an advanced penetration of many mm

according to the level of humidity in the substrate (generally every 20-25 m²).

This operation is indispensable when Mapelastic is laid on substrates which are particularly absorbent, such as screeds which have been lightened with polystyrene or foamed clay.

APPLICATION PROCEDURE

Preparation of the substrate

A) Protection and waterproofing of concrete structures and elements (e.g. pillars and beams for road and railway viaducts, cooling towers, chimneys, underpasses, retaining walls, applications in coastal areas, basins, swimming pools, canals, faces of dams, columns, balcony fronts). The surface to be treated must be solid and perfectly clean. Remove all cement laitance, flaky parts and traces of powder, grease, oil and form release agents by sand-blasting, or wash down with high-pressure water jets. If the structure to be waterproofed and protected with Mapelastic is in poor condition, remove the damaged parts by hand or mechanical demolition or

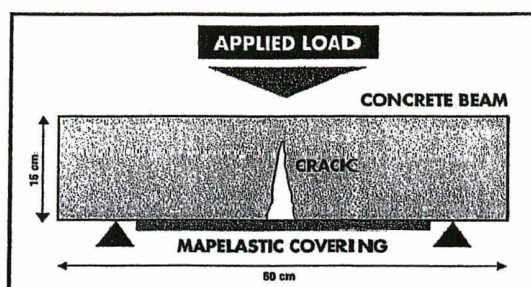


Fig. 1: Protection of a hairline crack with Mapelastic on the underside of a concrete beam subject to flexural stress

FIG. 2: PROTECTION OF MAPELASTIC AGAINST ACCELERATED CARBONATION (30% OF CO₂) ON POROUS CONCRETE

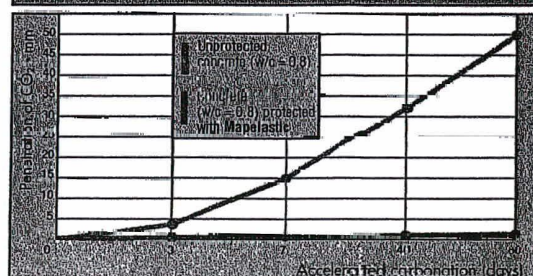


FIG. 3: PROTECTION OF MAPELASTIC AGAINST PENETRATION OF SODIUM CHLORIDE ON POROUS CONCRETE

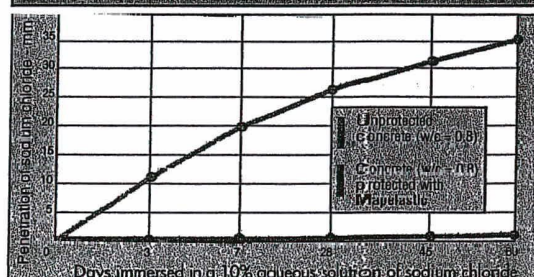
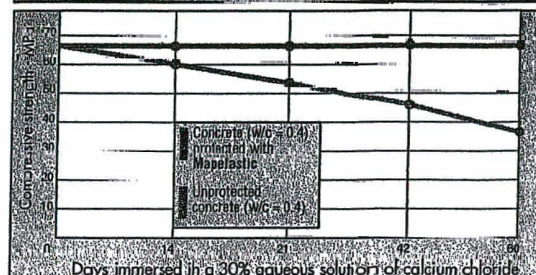


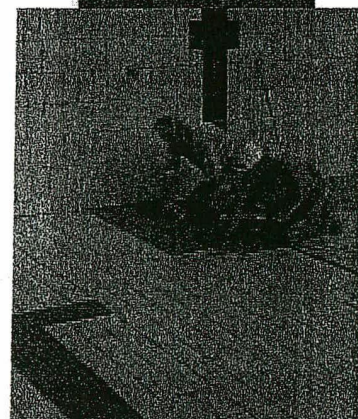
FIG. 4: PROTECTION OF MAPELASTIC AGAINST THE DECREASE IN MECHANICAL STRENGTH OF CONCRETE CAUSED BY CALCIUM CHLORIDE BASED DE-ICING SALTS



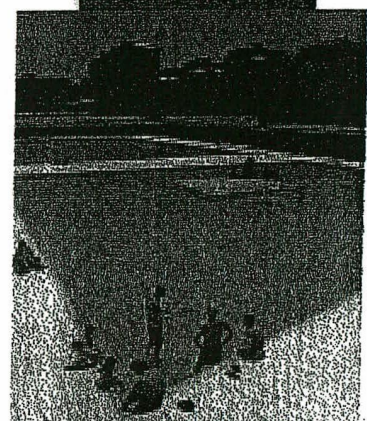
TECHNICAL DATA (typical values)		
PRODUCT DETAILS		
	Comp. A	Comp. B
Consistency:	powder	liquid
Colour:	grey	white
Density (g/cm³):	1.4	1.1
Dry solids content (%):	100	50
Storage:	12 months in their original packaging in a closed place	
Hazard classification according to 99/45/CE:	irritant	none
Customs class:	3824 50 90	
APPLICATION DATA at 23°C and 50% R.H.		
Colour of mix:	grey	
Mixing ratio:	Component A : Component B = 3 : 1	
Consistency:	plastic - applied by trowel	
Density of mix (g/cm³):	1.7	
Density after application by spraying (g/cm³):	2.2	
Application temperature range:	from +8°C to +35°C	
Pot life:	60 min.	
FINAL PERFORMANCES		
Adhesion to concrete (N/mm²): - after 28 days at 23°C and 50% R.H.: - after 7 days at 23°C and 50% R.H. + 21 days in water:	1.1 0.6	
Elongation DIN 53504 (modified): - after 28 days at 23°C and 50% R.H. (%):	30	
Waterproofing capacity EN 12390 / B Modified (1.5 bar for 7 days):	waterproof	
Crack Bridging of non-reinforced Mapelastic: - after 28 days at 23°C and 50% R.H.: - after 7 days at 23°C and 50% R.H. + 21 days in water: - after 7 days at 23°C and 50% R.H. + 24 months in water:	0.8 mm 0.6 mm 0.5 mm	
Crack Bridging at breakage of Mapelastic membrane reinforced with fibreglass mesh: - after 28 days at 23°C and 50% R.H.:	1.5 mm	



Waterproofing of a swimming pool with Mapelastic



Laying of ceramic tiles on Mapelastic in a swimming pool



Swimming pool waterproofed with Mapelastic: Scarioni Leisure Centre - Milan - Italy

by using a hydro-demolition system or a hydro-scarifier.

The last two techniques, which use high-pressure water, are particularly recommended because the reinforcement rods are not damaged and the structures are not subject to vibrations which could cause onset of small cracks in adjacent concrete.

Once the rust has been completely removed by sandblasting, carry out the repair with ready-mixed mortar from the **Mapegrout** range or with **Planitop 400** (see relative Technical Data Sheets). Absorbent surfaces to be treated with **Mapelastic** must be dampened beforehand with water.

B) Waterproofing of terraces, balconies and swimming pools

• CEMENTITIOUS SCREED:

- slump cracks or cracks caused by plastic or hygrometric shrinkage must be sealed beforehand with **Eporip**;
- if thicknesses of up to 2 cm have to be levelled out (to create slopes, fill in dips, etc.) use **Adesilex P4**.

• EXISTING FLOORS

- existing floors and coverings in ceramic, gres, clinker or terracotta etc. must be well bonded to the substrate and free of substances which could compromise the bonding, such as grease, oil, wax, paint, etc.

• RENDERS:

- cementitious renders must be sufficiently cured (7 days per cm of thickness in good weather conditions), well bonded to the substrate, resistant and free of all dust and paint;

- dampen absorbent surfaces to be treated beforehand with water.

Preparation of the mortar

Pour component B (liquid) into a suitable, clean container. Then slowly add component A (powder) while stirring with a mechanical mixer.

Carefully mix **Mapelastic** for a few minutes, making sure that no powder remains stuck to the sides or the bottom of the container.

Keep stirring until a perfectly homogenous mix is obtained.

Use a low-speed mechanical mixer for this operation to avoid too much air being dragged into the mix.

Do not prepare the mix by hand.

Preparation of **Mapelastic** may also be carried out with a mortar mixer, which is usually supplied with mortar sprayers. If this technique is used, make sure that the mix is homogenous and has no lumps before it is poured into the hopper of the pump.

Manual application of the mortar

Mapelastic must be applied within 60 minutes of it being mixed.

Smooth off the prepared surface by applying a thin layer of **Mapelastic** with a smooth trowel, then apply a second coat on the first layer while it is still fresh, to have a final thickness of approximately 2 mm.

When used for waterproofing terraces, balconies, basins and swimming pools, it is recommended to insert a layer of 4.5x4 mm **Fibreglass Mesh** in the first layer of fresh **Mapelastic**, to act as a reinforcement (see the **Fibreglass Mesh** Technical Data Sheet).

The mesh must also be used in areas with either small cracks or in areas which are particularly stressed.

After the mesh has been laid, finish off the surface with a flat trowel and apply a second layer of **Mapelastic** when the first one has set (after 4-5 hours).

During waterproofing operations, take special care when operating around expansion joints and joints between horizontal and vertical surfaces, where either **Mapeband**, rubber-backed synthetic fibre tape, or **Mapeband PVC**, vinyl chloride heat-welded resin tape, must be used.

After applying **Mapelastic**, wait at least 5 days for curing (in favourable climatic conditions) before laying ceramic tiles.

Laying ceramic tiles on Mapelastic

• BALCONIES AND SWIMMING POOLS

- lay the tiles with MAPEI cementitious adhesives and leave wide joints. In swimming pools, use **Granirapid** (class C2F) or **Keracrete + Keracrete Powder** (class C2T). If mosaics are laid, **Adesilex P10** (class C2TE) + **Isolastic** mixed with 50% water may also be used.

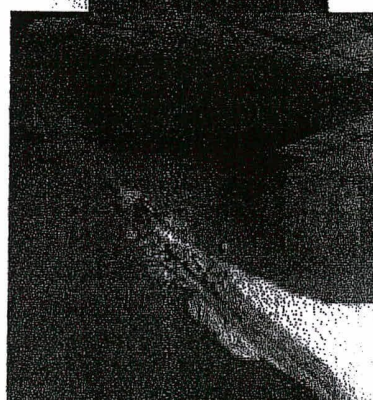
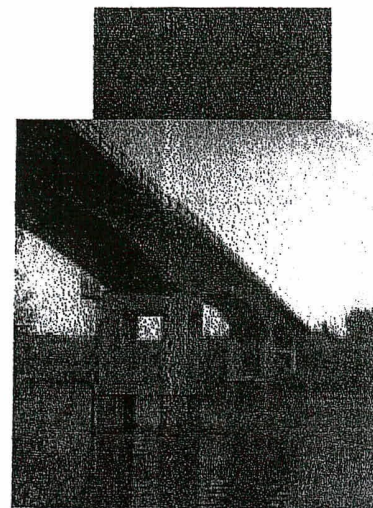
- grout the joints between the tiles with a suitable cementitious grout, such as **Keracolor FF**, **Keracolor GG** mixed with **Fugolastic**, **Ultracolor** (class CG2) or epoxy resin such as **Kerapoxy** (class RG);

- seal expansion joints with **Mapeflex PU21**, **Mapeflex PU20** or **Mapesil AC**, according to requirements.

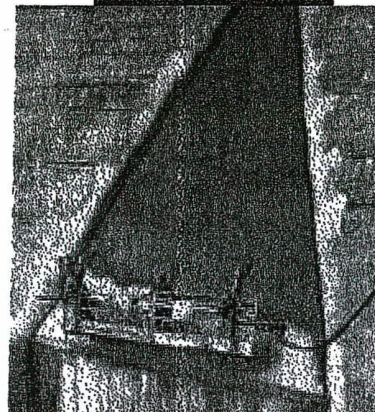
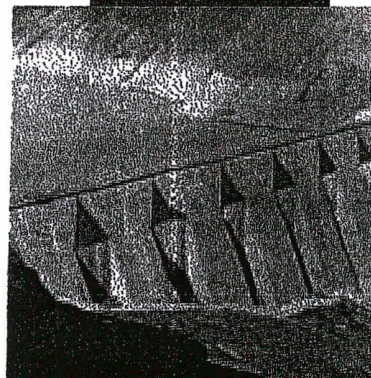
Application of the mortar by spraying

After preparing the surface (see paragraph on "Preparation of the substrate"), apply **Mapelastic** with a spray gun with a lance fitting for smoothing mortar, at a maximum thickness of 2 mm per layer. If a thicker layer is required, **Mapelastic** must be applied in several coats. Successive coats must only be applied when the previous one is dry (after 4-5 hours).

In areas with small cracks or which are



Example of Mapelastic applied on a viaduct by spraying



Example of Mapelastic applied on a dam by spraying

highly stressed, insertion of 4.5x4 mm **Fibreglass Mesh** in the first layer of fresh **Mapelastic** is recommended. Immediately after laying the mesh, **Mapelastic** must be smoothed off with a flat trowel.

If the mesh needs to be covered better, a further layer of **Mapelastic** may be applied with a spray gun.

In the areas around expansion joints and joints between horizontal and vertical surfaces, either **Mapeband**, rubber-backed synthetic fibre tape, or **Mapeband PVC**, vinyl chloride heat-welded resin tape, must be used.

Precautions to be taken during and after application

- No special precautions need to be taken when the temperature is around 20°C.
- During hot weather, it is advisable to keep the product out of direct sunlight (powder and liquid).
- After application, and in particularly dry, hot or windy weather, it is recommended to protect the surface from rapid evaporation by covering it with sheets.

TECHNICAL PERFORMANCE DATA

The Technical Data table contains the identification and application data for the product. Figures 1, 2, 3 and 4 illustrate some of **Mapelastic**'s characteristics.

Figure 1 shows the load diagram for evaluating the product's crack-bridging capacity. The sample to which **Mapelastic** was applied, on the underside of the beam, is subjected to increasing loads in the middle. The crack bridging capacity of **Mapelastic** is determined by measuring the maximum width of the crack in the concrete at the moment **Mapelastic** fractures.

The degree of protection offered by **Mapelastic** to the concrete support is not limited to a simple "covering" of subsequent cracks provoked by heavy loads, shrinkage, temperature variations etc. **Mapelastic** itself is also very resistant to chemical attack, as illustrated by the results of the following tests, and offers good protection for the concrete against carbonation and, therefore, subsequent corrosion of the reinforcing rods.

Figure 2 is a graph which compares accelerated carbonation (in an atmosphere of air enriched with 30% of CO₂), and shows how **Mapelastic** is completely impermeable to this aggressive substance (Fig. 5). The **Mapelastic** membrane also protects the concrete from the action of sodium chloride (for example sea water).

Figure 3 shows how **Mapelastic** completely blocks infiltration of salt into the concrete which is, in itself, very porous and may be easily penetrated. **Mapelastic** also provides an impenetrable barrier against calcium chloride (CaCl₂) based deicing salts, which have a destructive action on even the highest quality concrete.

Figure 4 shows the reduction in mechanical resistance (initially 65 MPa) of concrete permanently immersed in a solution of 30% CaCl₂. In this case, too, **Mapelastic** offers efficient protection of the concrete, and prevents the salt from carrying out its aggressive and destructive action on the concrete.

Cleaning

Due to the high bonding strength of **Mapelastic**, even on metals, it is recommended to wash work tools with water before the mortar sets. Once it has set, cleaning may only be carried out by mechanical means.

CONSUMPTION

Manual application:
approx. 1.7 kg/m² per mm of thickness.

Spray gun application:
approx. 2.2 kg/m² per mm of thickness.

PACKAGING

Units of 32 kg:
Component A: 24 kg bags;
Component B: 8 kg drums.

Upon request, component B may also be supplied in 100 kg tanks.

STORAGE

Mapelastic component A may be stored for up to 12 months in its original packaging.

Mapelastic component B may be stored for up to 24 months.

Keep **Mapelastic** in a dry place and at a temperature of at least 5°C.

SAFETY GUIDELINES FOR PREPARATION AND APPLICATION

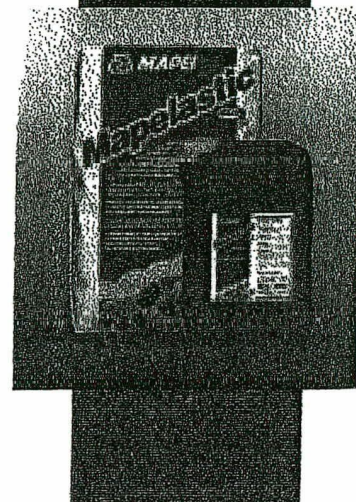
Component A contains cement which, in contact with perspiration or other body fluids, produces an irritating alkaline reaction and, in some cases, an allergic rash. Use protective gloves and goggles. For further information, please refer to the safety data sheet.

PRODUCT FOR PROFESSIONAL USE ONLY.

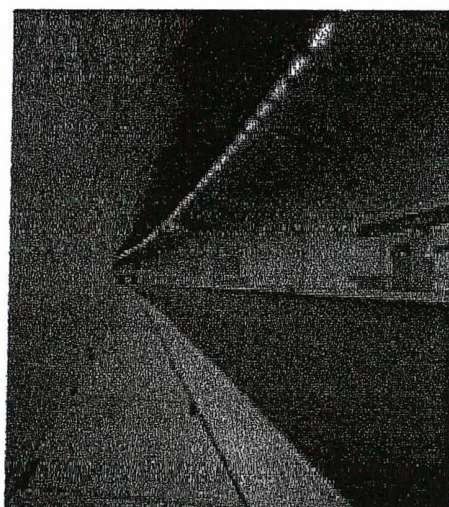
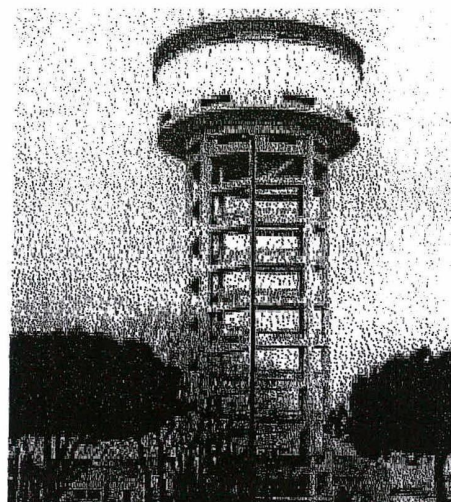
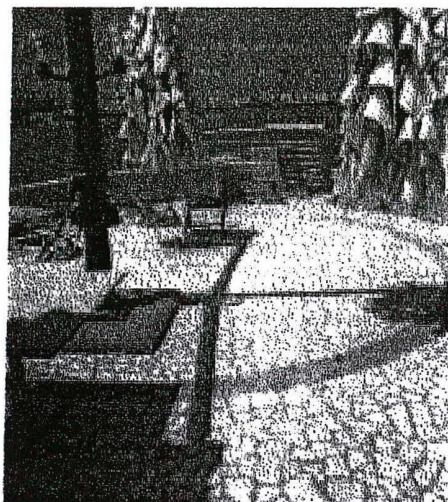
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**All relevant references
of the product are available
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Mapelastic

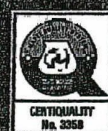
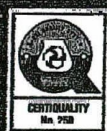


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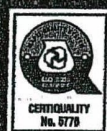
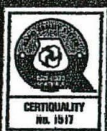
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EWVB 557

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 2310180

No. of attachments

28866

CUSTOMER INFORMATION - PLEASE PRINT CLEARLY

Name of customer Barrham House

Phone:

Address of installation Rehnd 17 Bowen St (Unit 5) Rakaia

Postal address of customer (if not as above)

WORK DETAILS

☒ No. of lighting outlets

☐ No. of ranges

☒ No. of socket outlets

☐ 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 New house, sub, mains

21 lights, 21 pp's, 1 water heater, 1 hob, 1 oven, 1 heat vent light, 1 220v bell

It is recommended that test results be recorded here:

Visual Examination

☐

Earth Continuity

☐

Bonding

☐

Polarity

☐

Insulation Resistance Mohm

Other

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

Cameron Othman

Registration no.

E16760

Company

Othman Electrical

Signature

[Signature]

Date

6/11/2007

Contact Ph No.

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

D. Pearce

Registration no.

28866

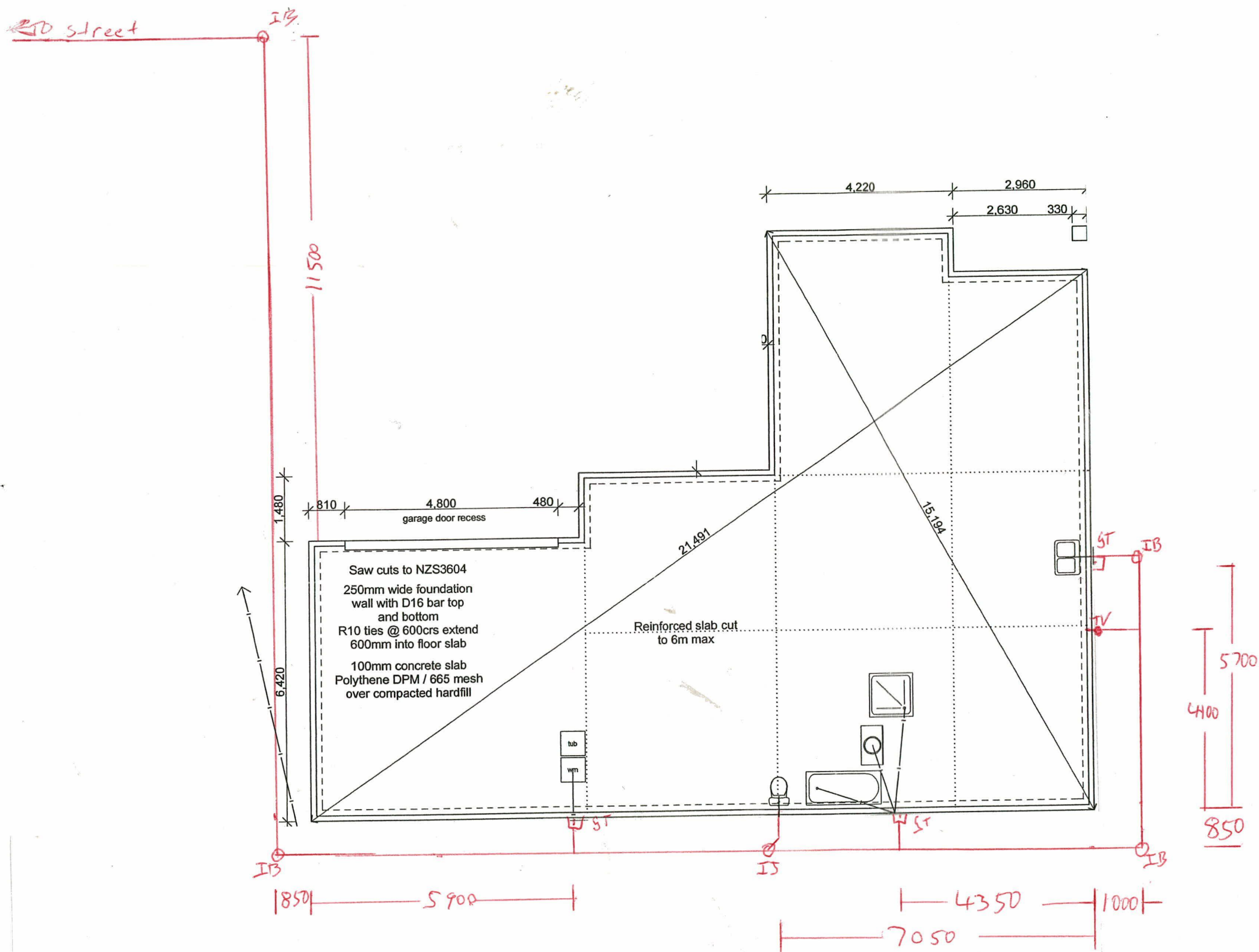
Signature

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Date

13/11/07

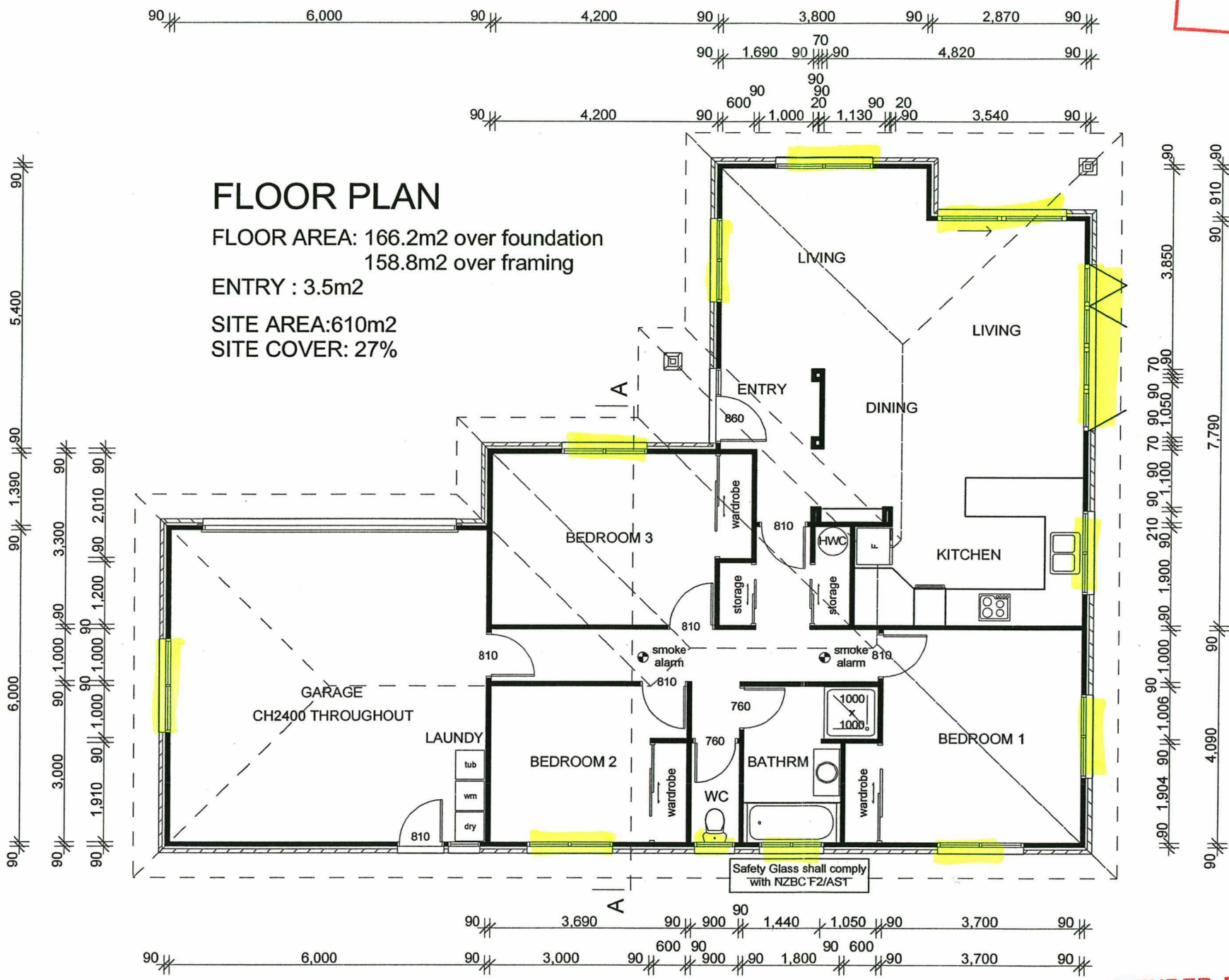
Contact Ph No.



BC 0207/07

Antrim Developments

23 Bower Street
Drains Paul Summerfield
6.9.07 RB



FLOOR PLAN

FLOOR AREA: 166.2m2 over foundation
158.8m2 over framing
ENTRY : 3.5m2
SITE AREA: 610m2
SITE COVER: 27%

AMENDED
COPY



AMENDED PLAN
APPROVED

Signed *C.H.*

Date *28.5.07*

ANTI-SLIP: On all access routes (both external and internal), provide anti-slip surfaces complying with NZBC D1/AS1/Table2 (except surfaces inside entry doors of housing may be considered as dry areas).

DOMESTIC SMOKE ALARMS complying with Approved Document F7 are required as part of this consent



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PROJECT TITLE:

BOWEN ST

LOT 5

RAKAIA

ALL WORK SHALL COMPLY WITH
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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:
PRICING
ISSUE A: 13-2-07
CONSENT
ISSUE A: 26-2-07
ISSUE B: 9-4-07

Job No: BM-07-014	SCALE: 1:100
DATE: 9/04/2007	DRWG TYPE: CONSENT
DRAWN: Nathan	SHEET: 2 OF 12

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

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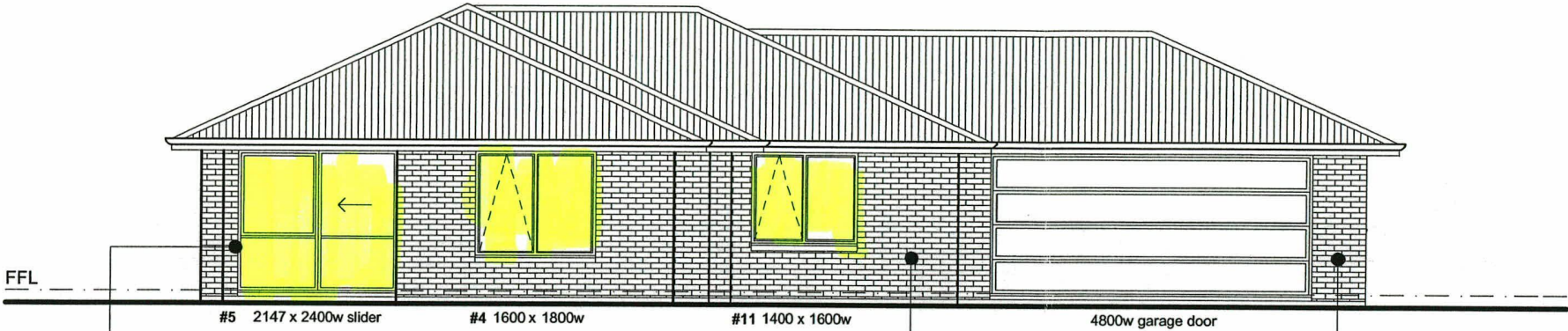
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Job No: BM-07-014	SCALE: 1:100
DATE: 9/04/2007	DRWG TYPE: CONSENT
DRAWN: Nathan	SHEET: 3 OF 12

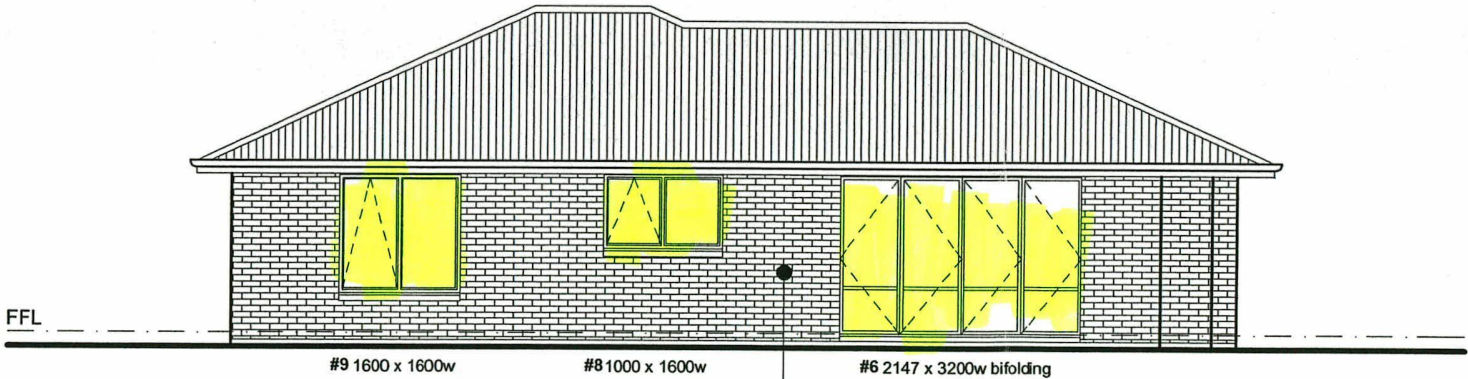


MATRIX	
A - HIGH -	1
B - LOW -	0
C - LOW -	0
D - LOW -	0
E - LOW -	0
F - LOW -	0
TOTAL	1

ELEVATION A

MATRIX KEY	
A - WIND ZONE	
B - NUMBER OF STORIES	
C - ROOF / WALL INTERSECTION DESIGN	
D - EAVES WIDTH	
E - ENVELOPE COMPLEXITY	
F - DECK DESIGN	

MATRIX	
A - HIGH -	1
B - LOW -	0
C - LOW -	0
D - LOW -	0
E - LOW -	0
F - LOW -	0
TOTAL	1



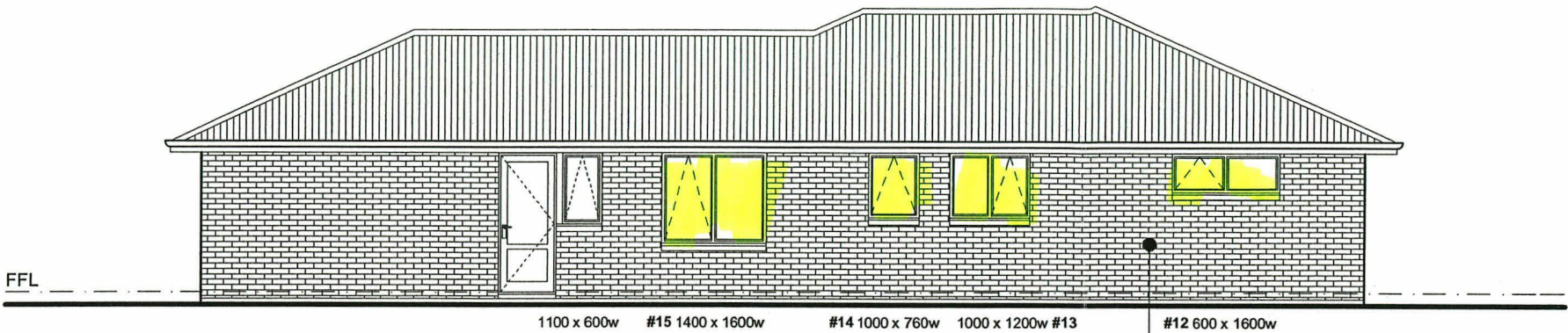
ELEVATION B

MATRIX	
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B - LOW -	0
C - LOW -	0
D - LOW -	0
E - LOW -	0
F - LOW -	0
TOTAL	1

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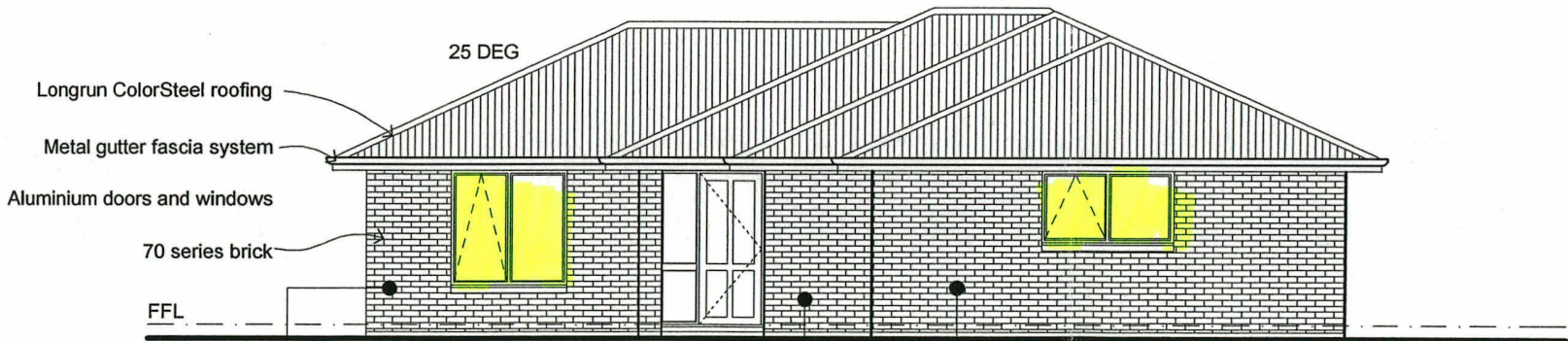
ELEVATION C

MATRIX KEY

A - WIND ZONE	
B - NUMBER OF STORIES	
C - ROOF / WALL INTERSECTION DESIGN	
D - EAVES WIDTH	
E - ENVELOPE COMPLEXITY	
F - DECK DESIGN	

MATRIX

A - HIGH -	1
B - LOW -	0
C - LOW -	0
D - LOW -	0
E - LOW -	0
F - LOW -	0
TOTAL	1



ELEVATION D

MATRIX

A - HIGH -	1
B - LOW -	0
C - LOW -	0
D - LOW -	0
E - LOW -	0
F - LOW -	0
TOTAL	1

MATRIX

A - HIGH -	1
B - LOW -	0
C - LOW -	0
D - LOW -	0
E - LOW -	0
F - LOW -	0
TOTAL	1



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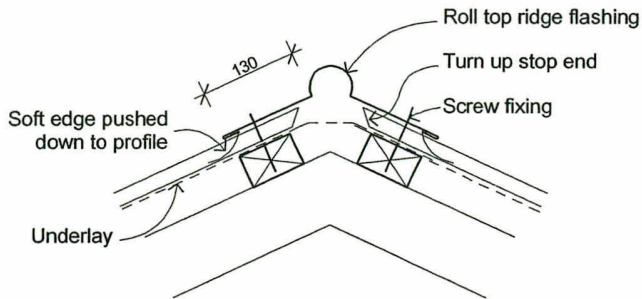
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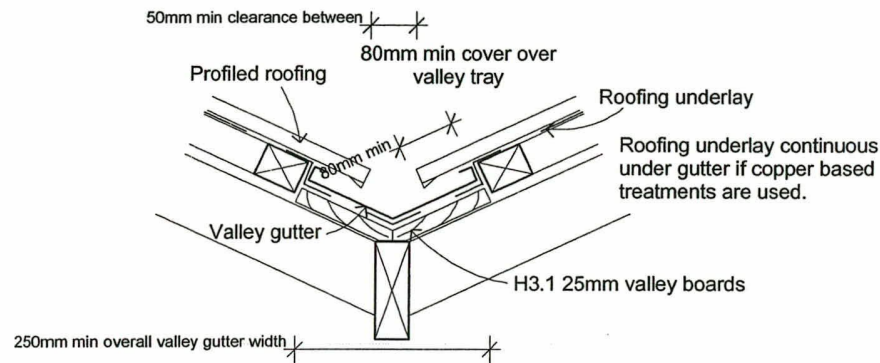
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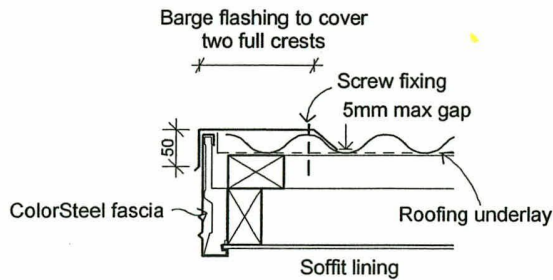
RIDGE FOR
PROFILED METAL

SCALE 1:10



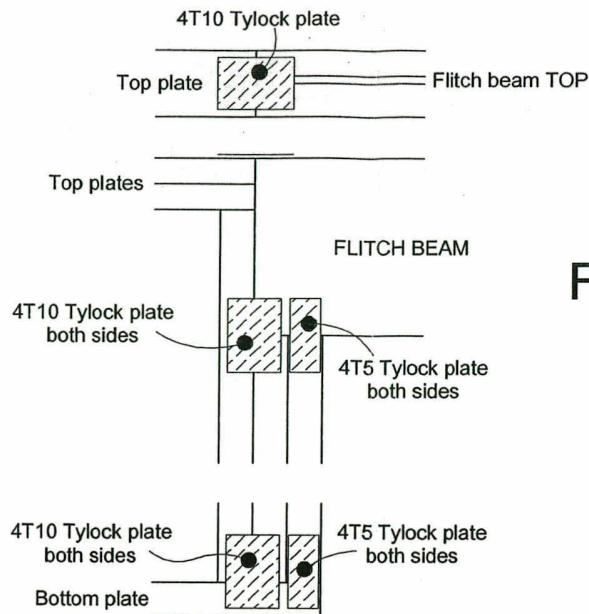
VALLEY FOR
PROFILED METAL

SCALE 1:10



BARGE FOR
PROFILED METAL

SCALE 1:10



FLITCH BEAM SUPPORT
DETAIL AND FIXING

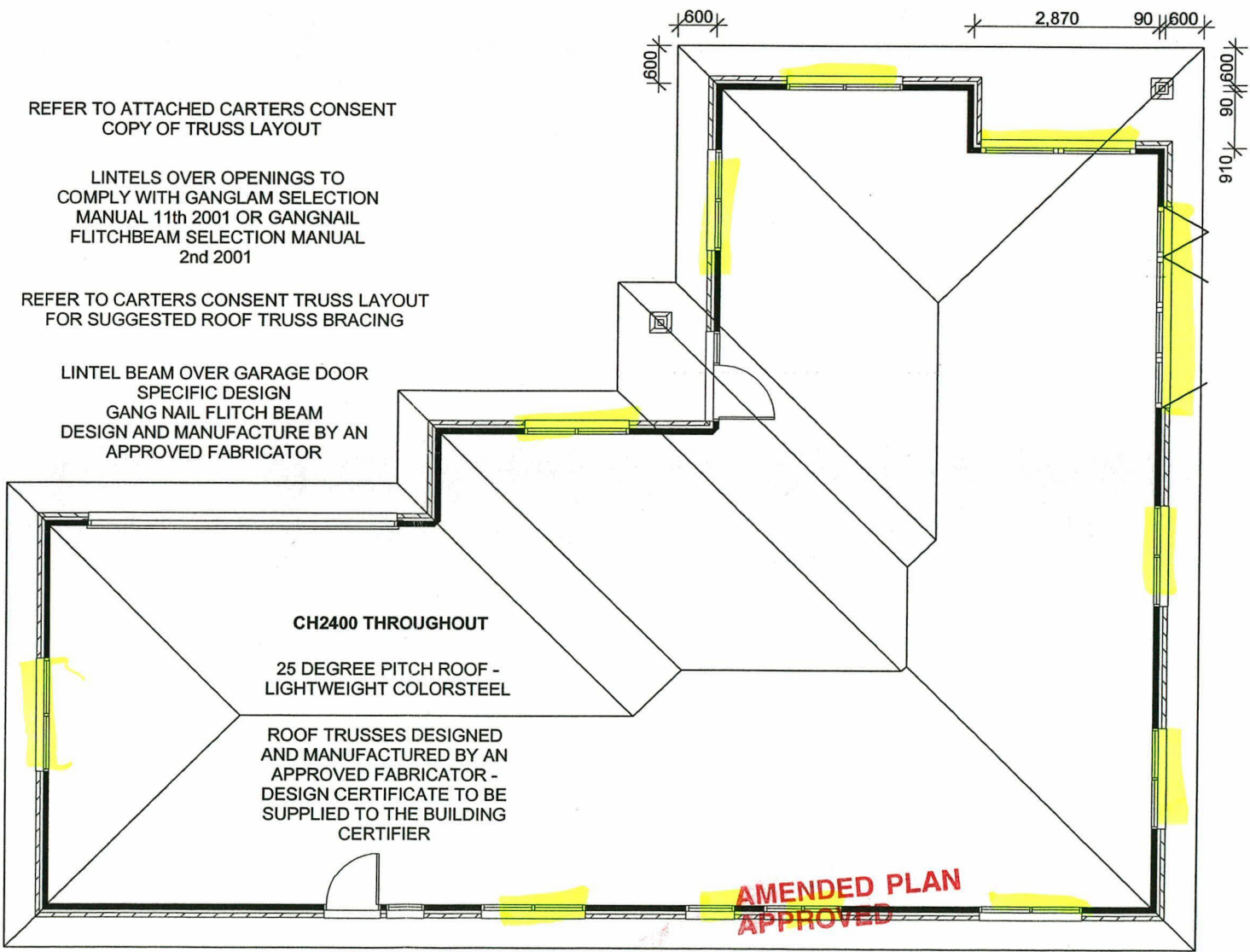
SCALE 1:10

REFER TO ATTACHED CARTERS CONSENT
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LINTELS OVER OPENINGS TO
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REFER TO CARTERS CONSENT TRUSS LAYOUT
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SPECIFIC DESIGN
GANG NAIL FLITCH BEAM
DESIGN AND MANUFACTURE BY AN
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ROOF PLAN

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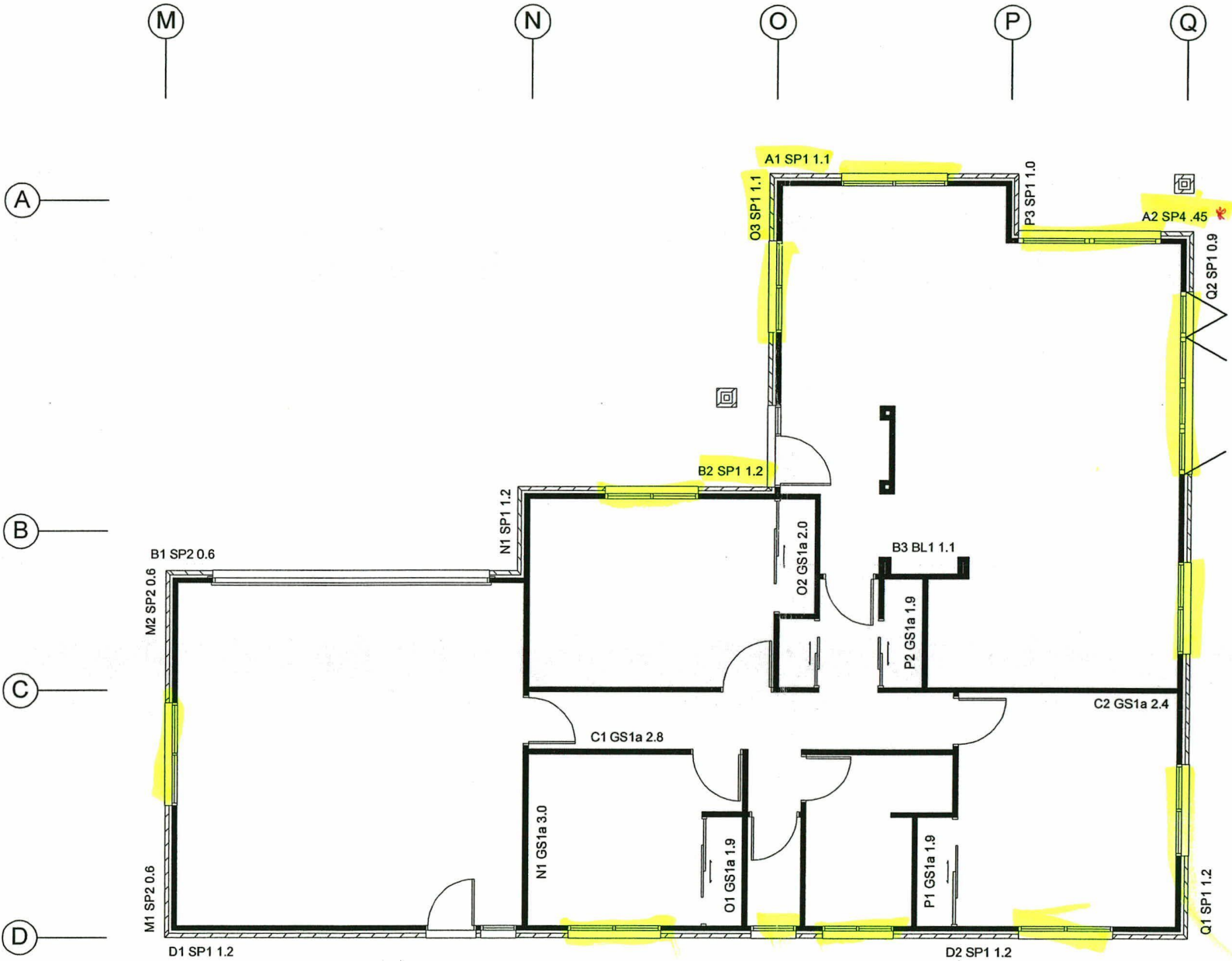
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DATE: 9/04/2007	DRWG TYPE: CONSENT
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Wall Bracing Calculation Sheet A Ground Floor

House Type:
Job: **BM-07-014**

Job Details

Name:
Street and Number:
Lot and DP Number:
City/Town/District:

LOT 5 Bowen Street

Rakaia

Location of Storey:
Building height:
Roof height to eaves:
Stud height:
Average roof pitch:
Building length BL =
Building width BW =

Roof weight
Cladding weight
Gross Plan Area =

light heavy
light heavy

166 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 =
W across :
Total wind load,
W ALONG:
W along x BW =
W ACROSS:
W across x BL =

78 BU/s/m
78 BU/s/m

1044 BU/s

1370 BU/s

BUs required Earthquake

E =

Total earthquake required
EQ ALONG & EQ ACROSS
E x GPA BU/s =

2.6 BU/s/m2

432 BU/s

Wall Bracing Calculation Sheet B Ground Floor

Along

Wall or
Bracing Line

1 2

Bracing Elements
Provided

3 4 5

Line
Label

Minimum
BU/s
Required

Bracing
Element
No.

Bracing
Type

Length
Element
(m)
L

A

A1 SP1 1.1
A2 SP4 0.4

B

B1 SP2 0.6
B2 SP1 1.2
B3 BL1 1.1

C

C1 GS1a 2.8
C2 GS1a 2.4

D

D1 SP1 1.2
D2 SP1 1.2

Totals Achieved
From Sheet A Totals Required

Wind

6W 7W

Rating
BU/s
W

BU/s
Achieved
(BU/mxL)
W

100 110
70 28

90 54
100 120
125 138

75 210
75 180

100 120
100 120

W 1080
W 1044

Earthquake

8E 9E

Rating
BU/s
E

BU/s
Achieved
(BU/mxL)
E

110 121
85 34

80 48
110 132
115 127

65 182
65 156

110 132
110 132

E 1064
E 432

Across

Wall or
Bracing Line

1 2

Bracing Elements
Provided

3 4 5.0

Line
Label

Minimum
BU/s
Required

Bracing
Element
No.

Bracing
Type

Length
Element
(m)
L

M

M1 SP2 0.6
M2 SP2 0.6

N

N1 GS1a 3.0
N2 SP1 1.2

O

O1 GS1a 1.9
O2 GS1a 2.0
O3 SP1 1.1

P

P1 GS1a 1.9
P2 GS1a 1.9
P3 SP1 1.0

Q

Q1 SP1 1.2
Q2 SP1 0.9

Totals Achieved
From Sheet A Totals Required

Wind

6W 7W

Rating
BU/s
W

BU/s
Achieved
(BU/mxL)
W

90 54
90 54

75 225
100 120

65 124
65 130
100 110

65 124
65 124
100 100

100 120
100 90

W 1374
W 1370

Earthquake

8E 9E

Rating
BU/s
E

BU/s
Achieved
(BU/mxL)
E

80 48
80 48

65 195
110 132

55 105
55 110
110 121

55 105
55 105
110 110

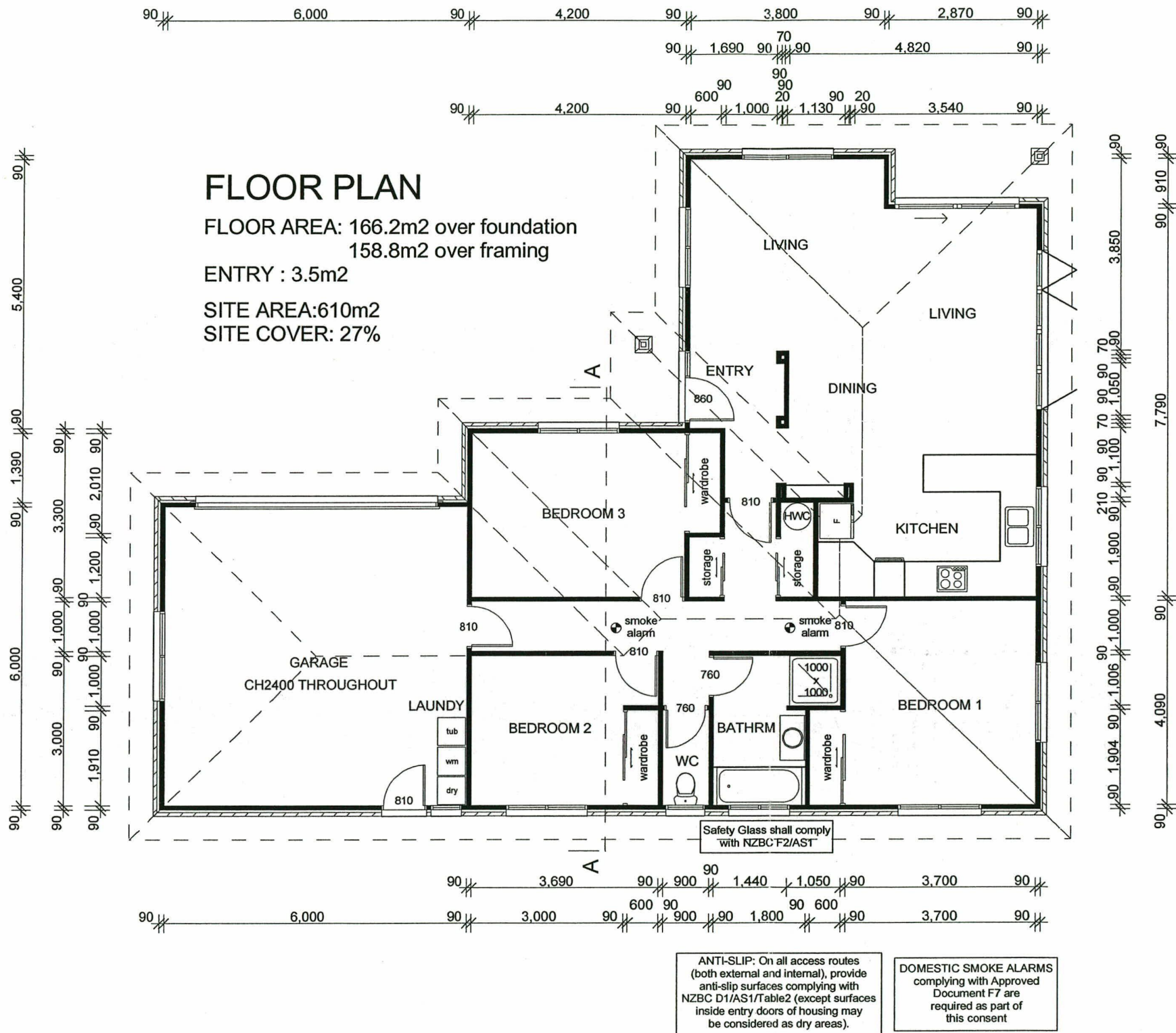
110 132
110 99

E 1309
E 432

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Date _____



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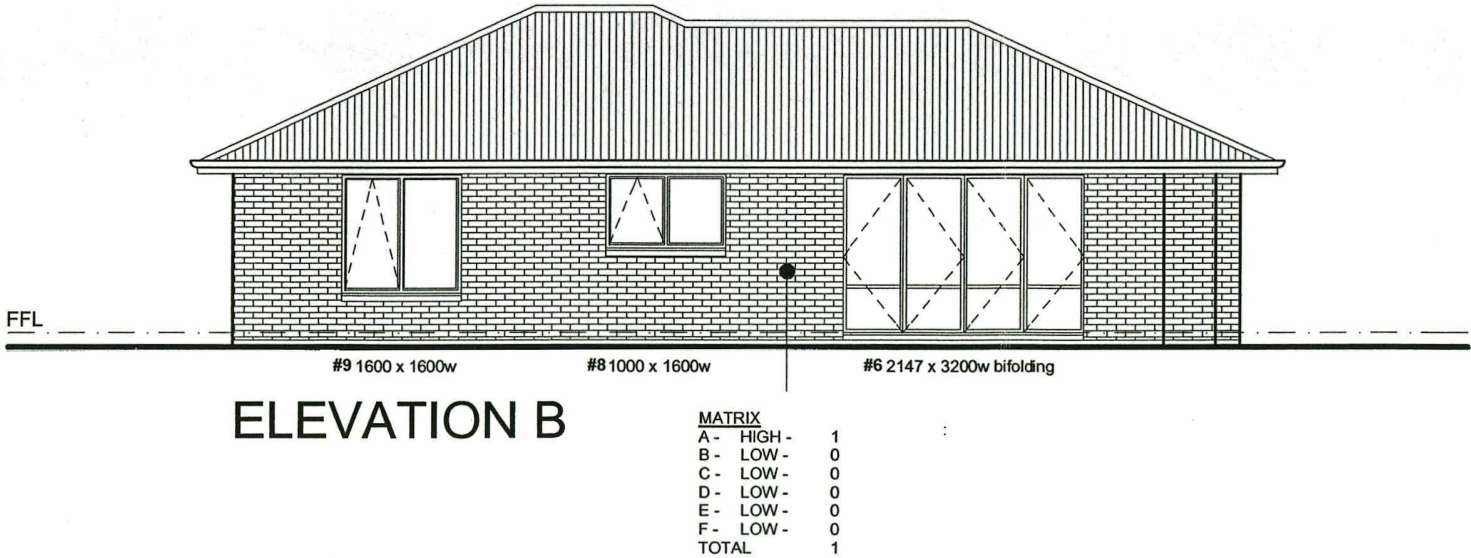
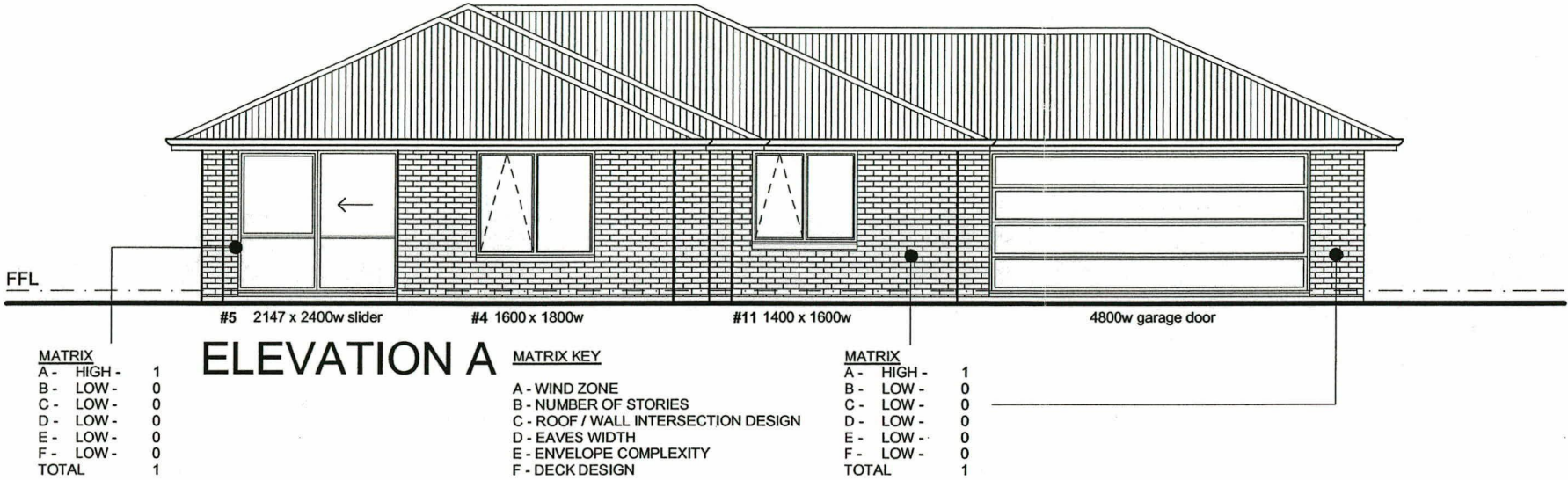
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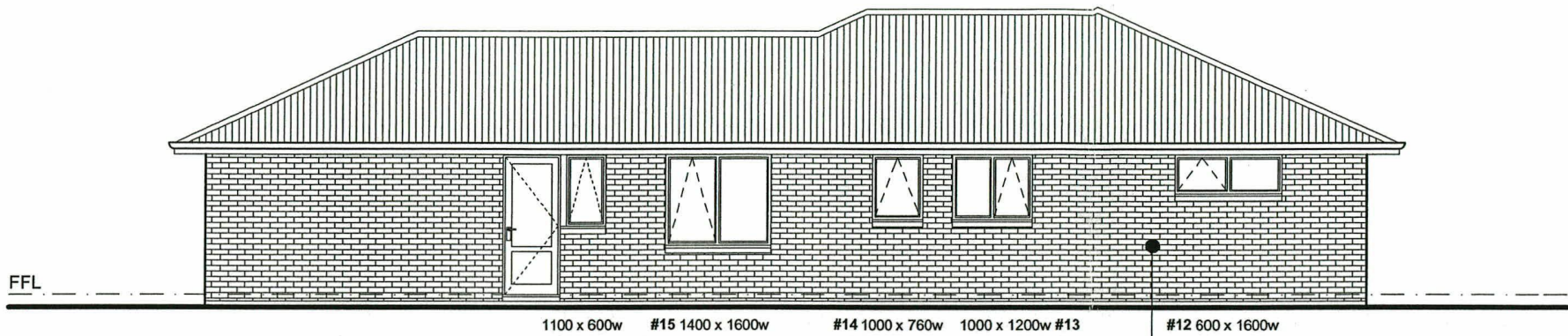
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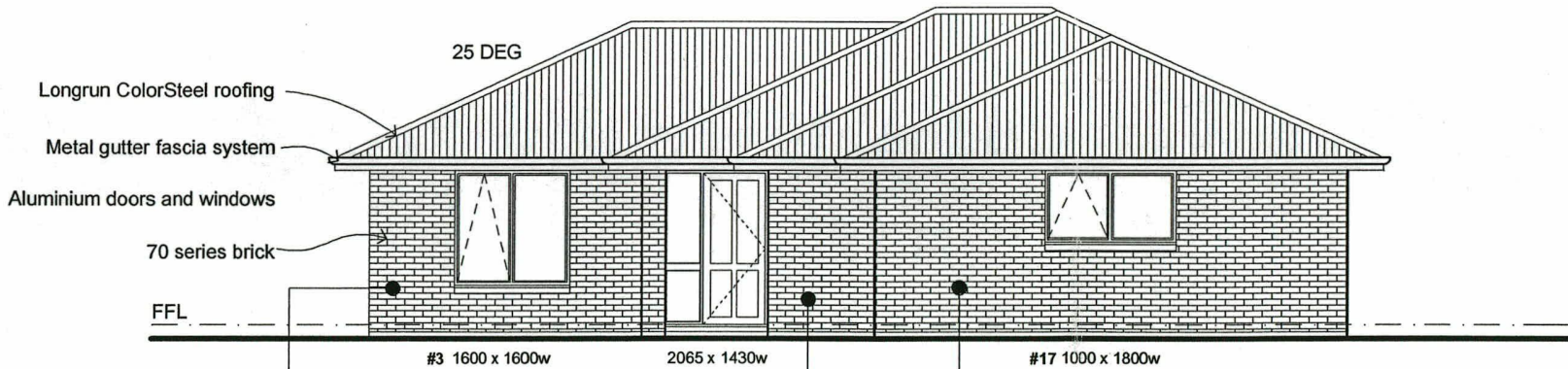
ELEVATION C

MATRIX KEY

- A - WIND ZONE
- B - NUMBER OF STORIES
- C - ROOF / WALL INTERSECTION DESIGN
- D - EAVES WIDTH
- E - ENVELOPE COMPLEXITY
- F - DECK DESIGN

MATRIX

A - HIGH -	1
B - LOW -	0
C - LOW -	0
D - LOW -	0
E - LOW -	0
F - LOW -	0
TOTAL	1



ELEVATION D

MATRIX	
A - HIGH -	1
B - LOW -	0
C - LOW -	0
D - LOW -	0
E - LOW -	0
F - LOW -	0
TOTAL	1

MATRIX	
A - HIGH -	1
B - LOW -	0
C - LOW -	0
D - LOW -	0
E - LOW -	0
F - LOW -	0
TOTAL	1

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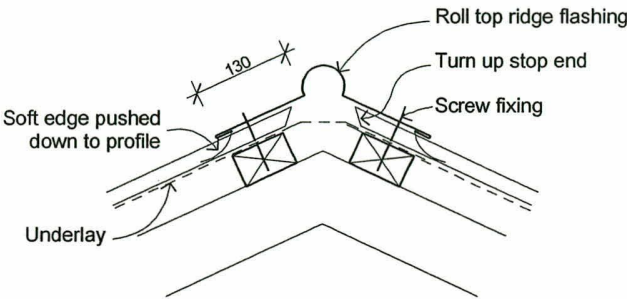
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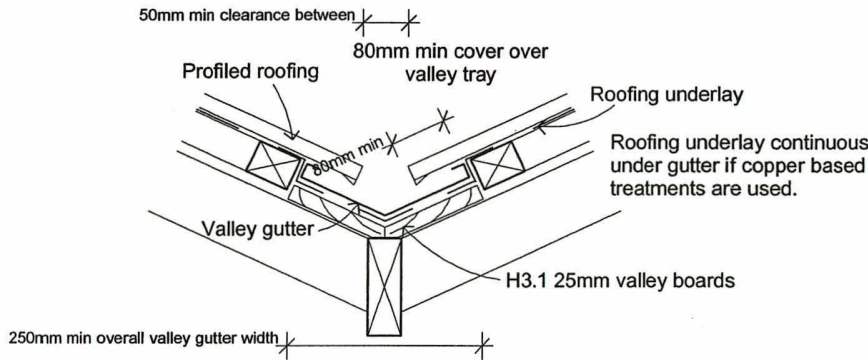
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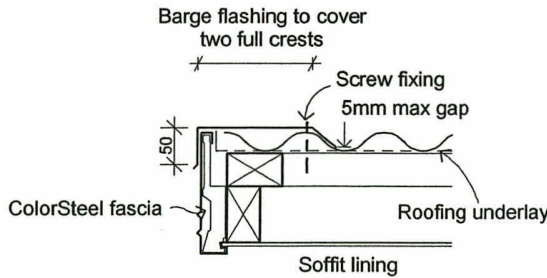
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PROFILED METAL

SCALE 1:10



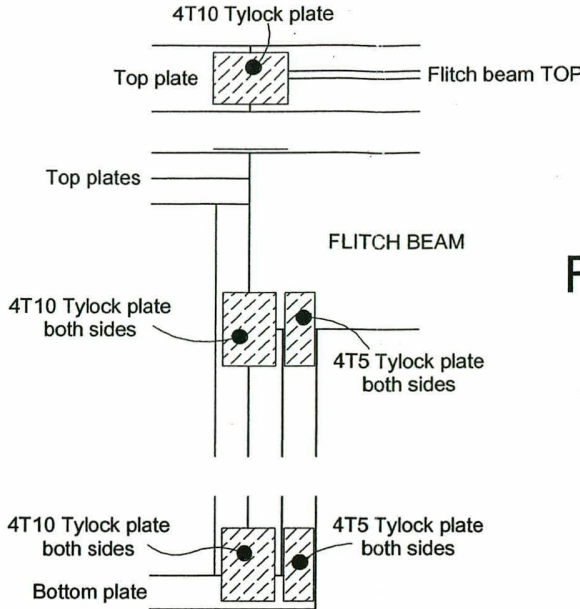
VALLEY FOR
PROFILED METAL

SCALE 1:10



BARGE FOR
PROFILED METAL

SCALE 1:10



FLITCH BEAM SUPPORT
DETAIL AND FIXING

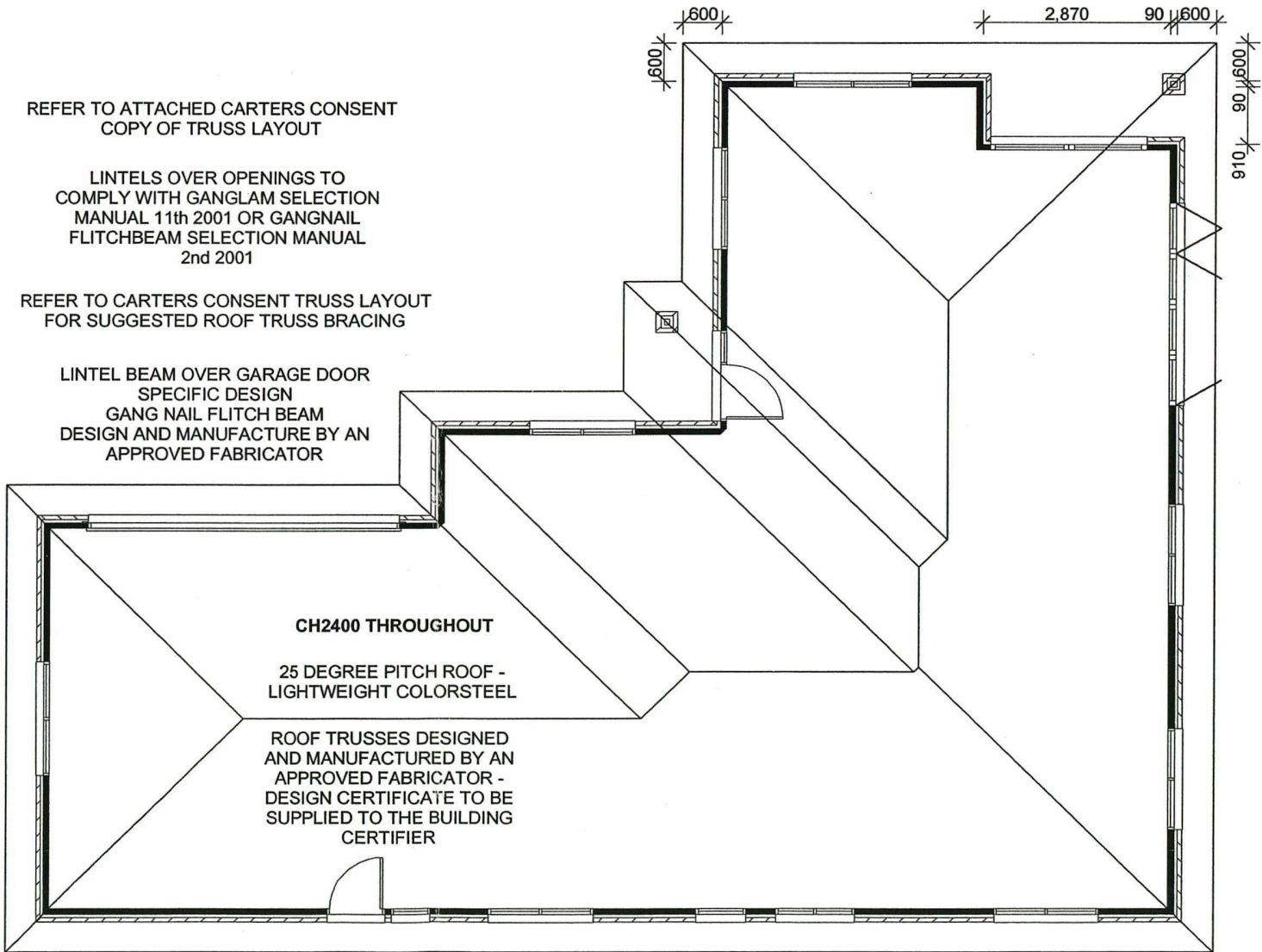
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REFER TO ATTACHED CARTERS CONSENT
COPY OF TRUSS LAYOUT

LINTELS OVER OPENINGS TO
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REFER TO CARTERS CONSENT TRUSS LAYOUT
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LINTEL BEAM OVER GARAGE DOOR
SPECIFIC DESIGN
GANG NAIL FLITCH BEAM
DESIGN AND MANUFACTURE BY AN
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ROOF PLAN



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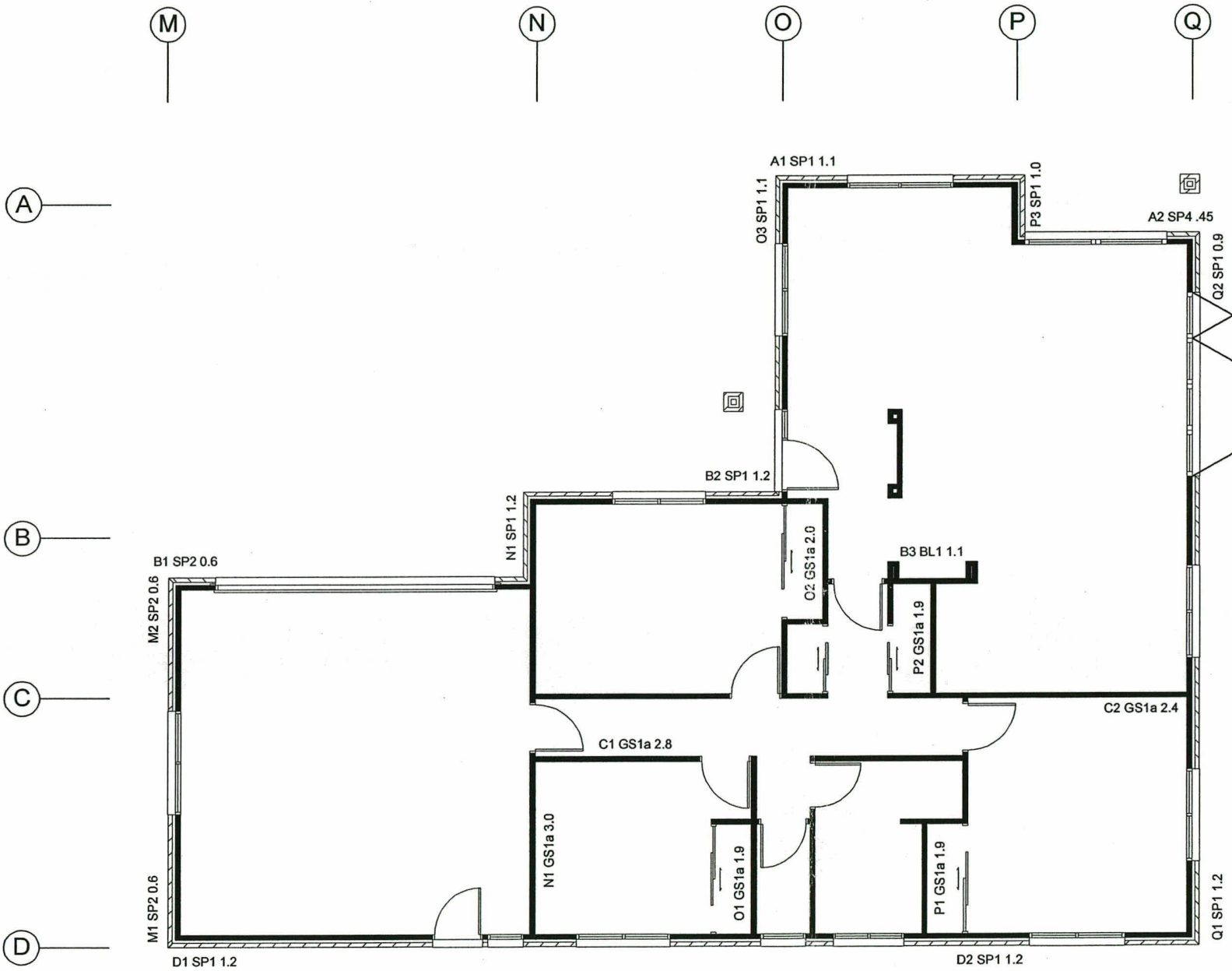
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Wall Bracing Calculation Sheet A

Ground Floor

Job Details

House Type:
Job: **BM-07-014**

Name: **LOT 5 Bowen Street**

Street and Number:

Lot and DP Number:

City/Town/District: **Rakaia**

Location of Storey:

Building height: 4.6 m

Roof height to eaves: 2.3 m

Stud height: 2.4 m

Average roof pitch: 25 deg.

Building length BL = 17.56 m

Building width BW = 13.39 m

Roof weight ☐ light ☐ heavy

Cladding weight light ☐ heavy

Gross Plan Area = 166 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 = 78 BUs/m

W across : 78 BUs/m

Total wind load,

W ALONG:

W along x BW = 1044 BUs

W ACROSS:

W across x BL = 1370 BUs

BUs required Earthquake

E = 2.6 BUs/m2

Total earthquake required

EQ ALONG & EQ ACROSS

E x GPA BUs = 432 BUs

Wall Bracing Calculation Sheet B

Ground Floor

Along

Wall or Bracing Line		Bracing Elements Provided		
1	2	3	4	5
Line Label	Minimum BUs Required	Bracing Element No.	Bracing Type	Length Element (m) L
A		A1	SP1	1.1
		A2	SP4	0.4
B		B1	SP2	0.6
		B2	SP1	1.2
		B3	BL1	1.1
C		C1	GS1a	2.8
		C2	GS1a	2.4
D	D1	SP1	1.2	
	D2	SP1	1.2	
Totals Achieved				
From Sheet A		Totals Required		

Wind	
6W	7W
Rating BU/m	BUs Achieved (BU/mxL) W
100	110
70	28
90	54
100	120
125	138
75	210
75	180
100	120
100	120
W	1080
W	1044

Earthquake	
8E	9E
Rating BU/m	BUs Achieved (BU/mxL) E
110	121
85	34
80	48
110	132
115	127
65	182
65	156
110	132
110	132
E	1064
E	432

Across

Wall or Bracing Line		Bracing Elements Provided		
1	2	3	4	5.0
Line Label	Minimum BUs Required	Bracing Element No.	Bracing Type	Length Element (m) L
M		M1	SP2	0.6
		M2	SP2	0.6
N		N1	GS1a	3.0
		N2	SP1	1.2
O		O1	GS1a	1.9
		O2	GS1a	2.0
		O3	SP1	1.1
P		P1	GS1a	1.9
		P2	GS1a	1.9
	P3	SP1	1.0	
Q	Q1	SP1	1.2	
	Q2	SP1	0.9	
Totals Achieved				
From Sheet A		Totals Required		

Wind	
6W	7W
Rating BU/m	BUs Achieved (BU/mxL) W
90	54
90	54
75	225
100	120
65	124
65	130
100	110
65	124
65	124
100	100
100	120
100	90
W	1374
W	1370

Earthquake	
8E	9E
Rating BU/m	BUs Achieved (BU/mxL) E
80	48
80	48
65	195
110	132
55	105
55	110
110	121
55	105
55	105
110	110
110	132
110	99
E	1309
E	432



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LOT 5

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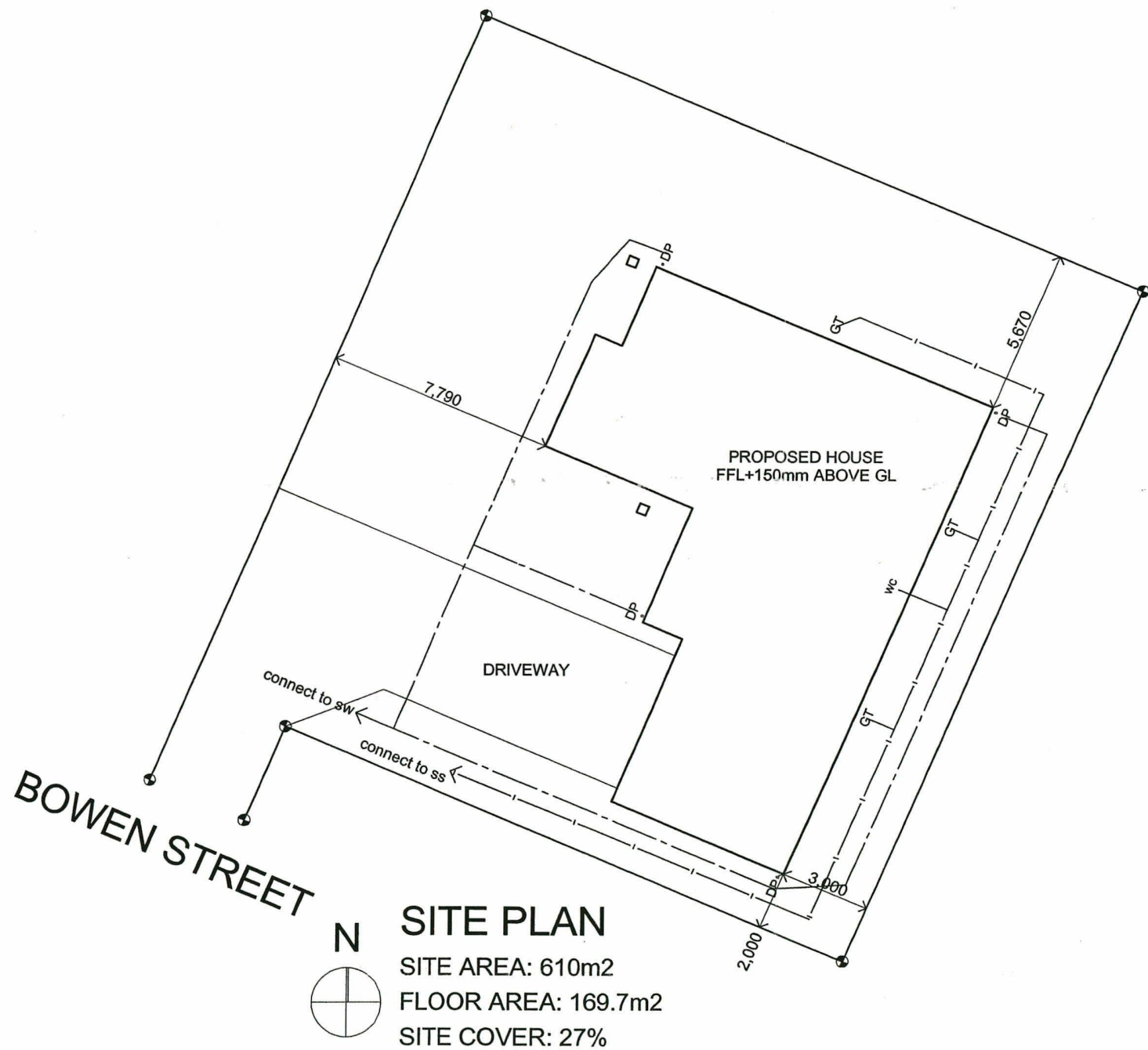
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23 Bowen St.

Rakaia .



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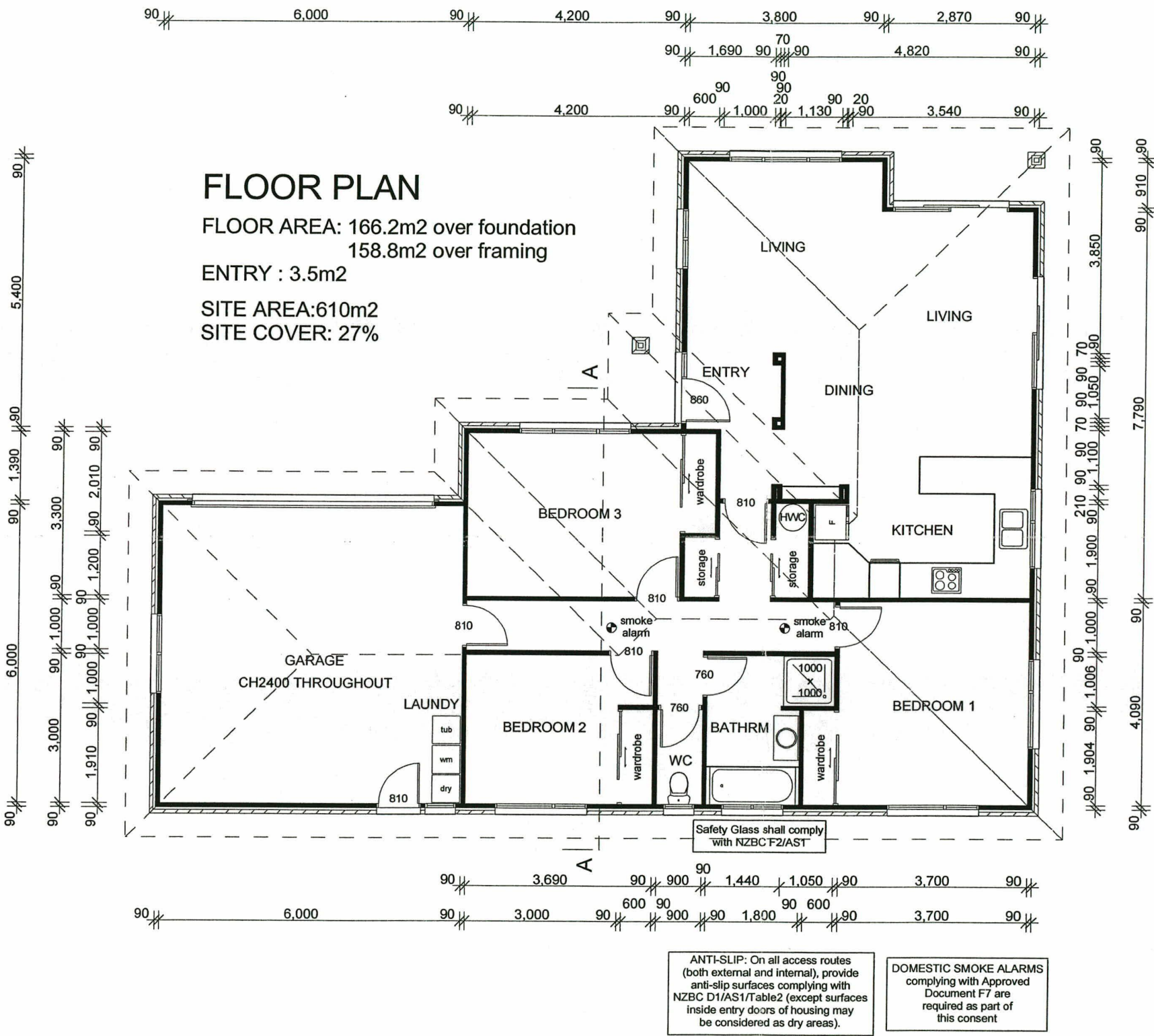
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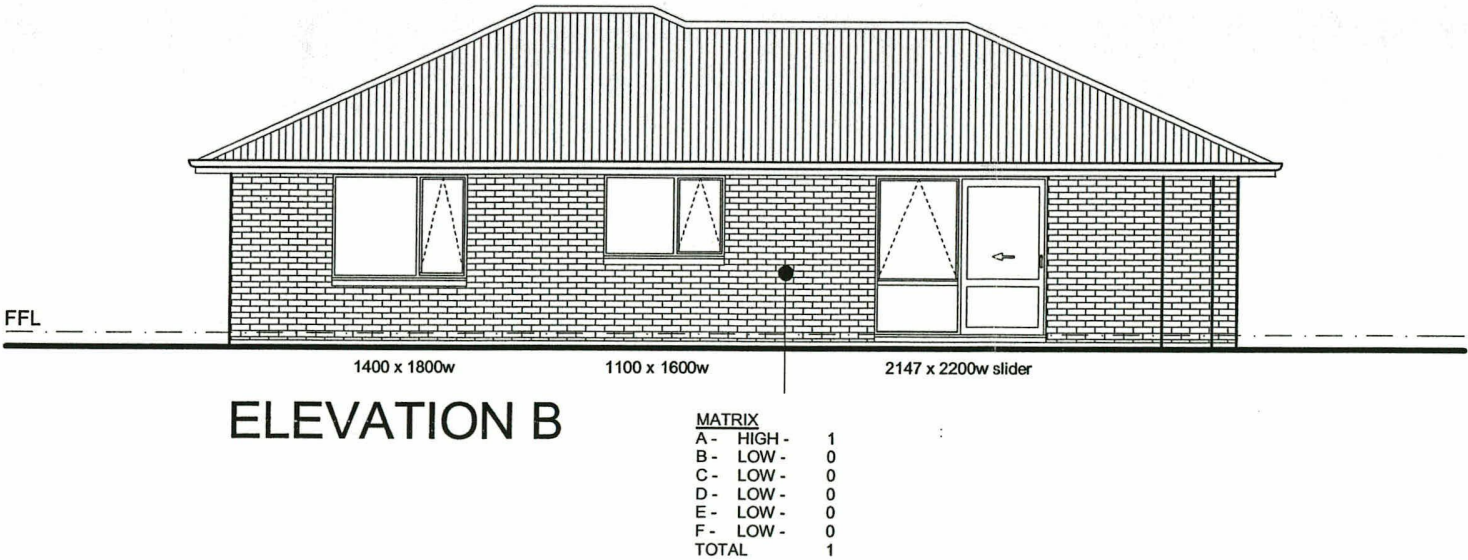
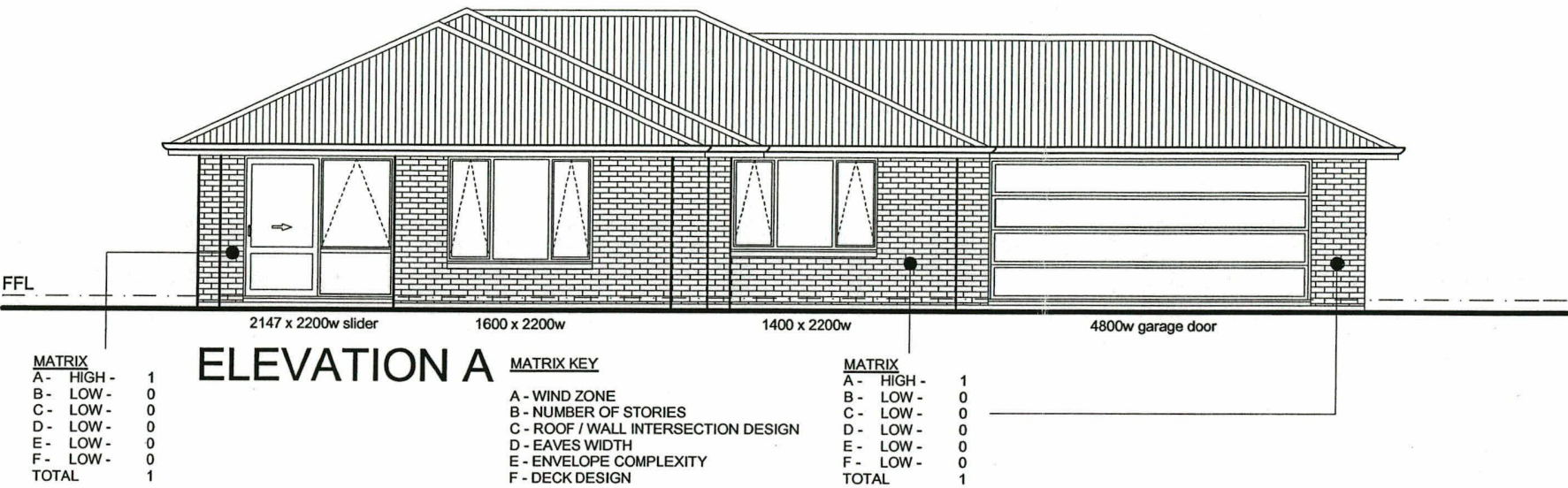
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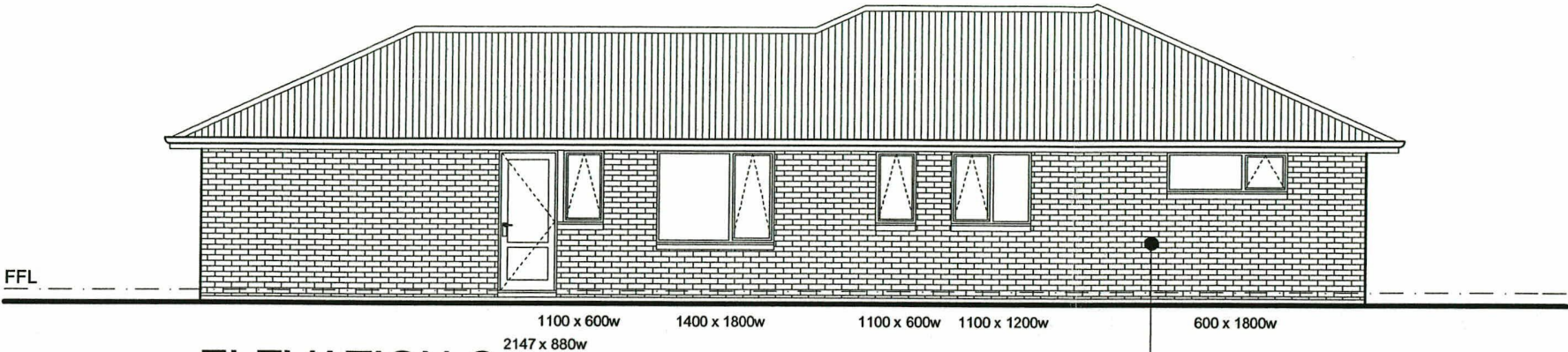
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ELEVATION C

MATRIX KEY

A - WIND ZONE
B - NUMBER OF STORIES
C - ROOF / WALL INTERSECTION DESIGN
D - EAVES WIDTH
E - ENVELOPE COMPLEXITY
F - DECK DESIGN

MATRIX

A - HIGH - 1
B - LOW - 0
C - LOW - 0
D - LOW - 0
E - LOW - 0
F - LOW - 0
TOTAL 1



ELEVATION D

MATRIX

A - HIGH - 1
B - LOW - 0
C - LOW - 0
D - LOW - 0
E - LOW - 0
F - LOW - 0
TOTAL 1

MATRIX

A - HIGH - 1
B - LOW - 0
C - LOW - 0
D - LOW - 0
E - LOW - 0
F - LOW - 0
TOTAL 1



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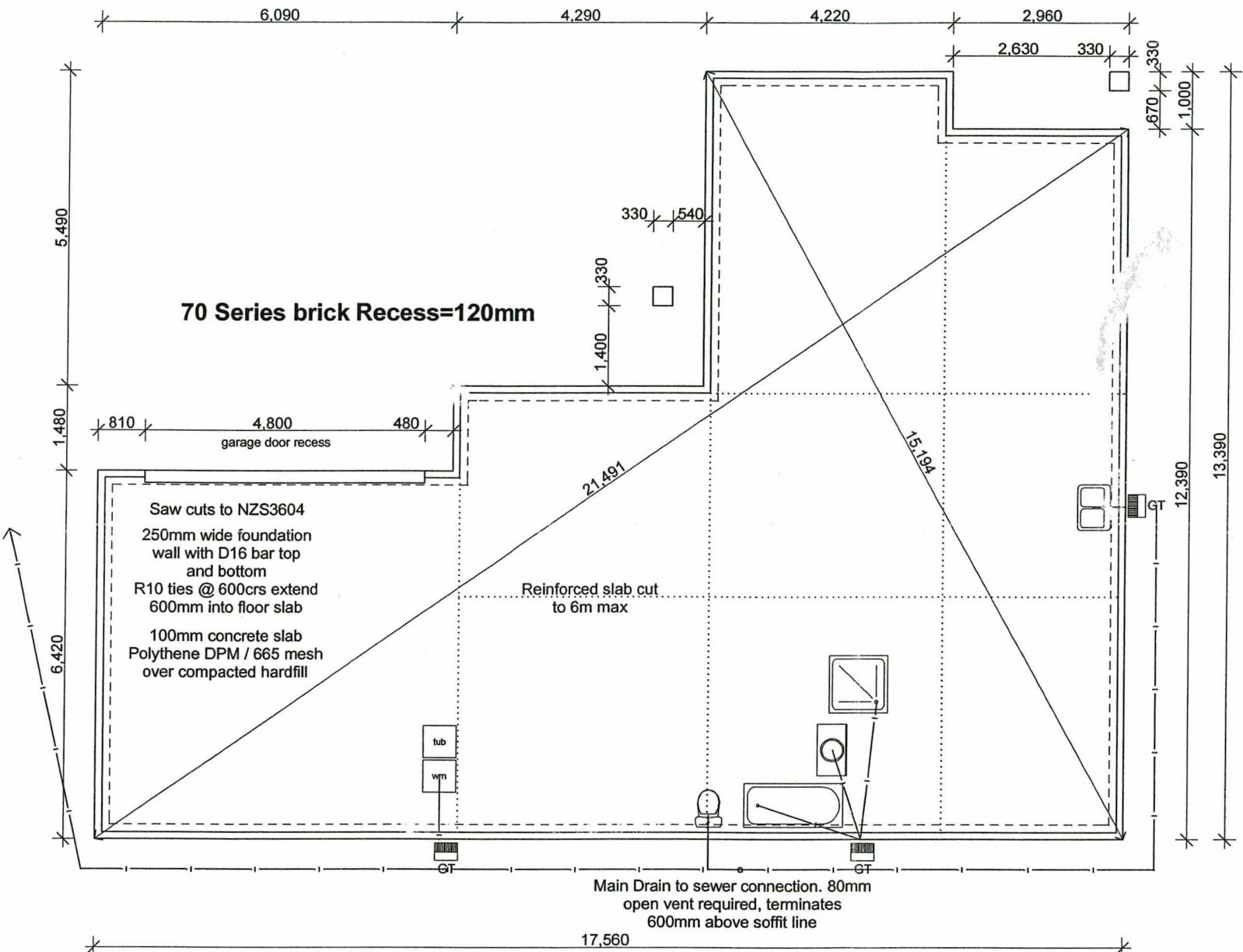
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FOUNDATION PLAN

Pipe sizes and gradients:
-Hand Basins: DN40 1:40 fall
-Sower: DN40 1:40 fall
-Kitchen sink/DW combination: DN40 1:40 fall
laundry tub: DN40 1:40 fall

SEWER AND STORMWATER PIPES TO BE LAID IAW G13:
-110mm SEWER DRAIN to be laid at a gradient no less than 1:120
-100mm STORMWATER main drain and 90mm branch drains to be laid at a gradient no less than 1:120.

NOTE: Foundation thickenings may be required as part of this truss layout. Point values to be determined by an engineer. MiTek pads assumed to be supported on soils that have ultimate bearing capacity of 300kPa



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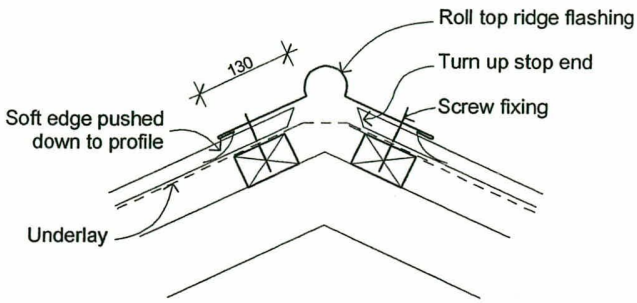
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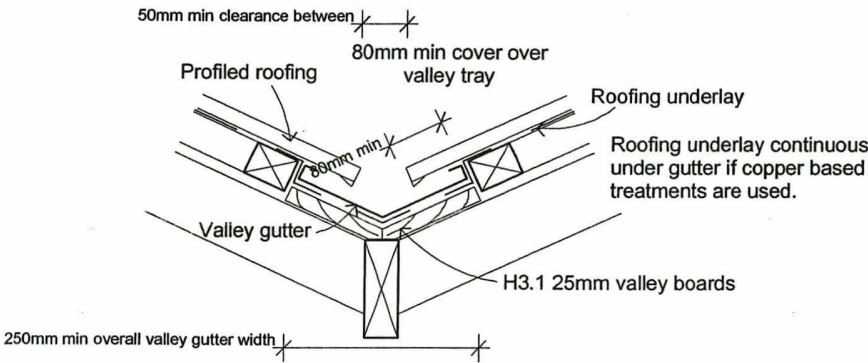
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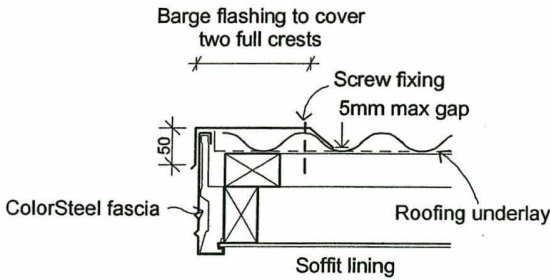
RIDGE FOR
PROFILED METAL

SCALE 1:10



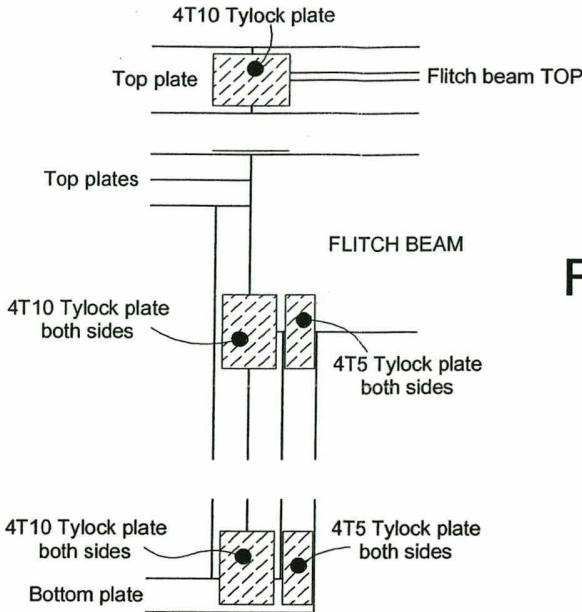
VALLEY FOR
PROFILED METAL

SCALE 1:10



BARGE FOR
PROFILED METAL

SCALE 1:10



FLITCH BEAM SUPPORT
DETAIL AND FIXING

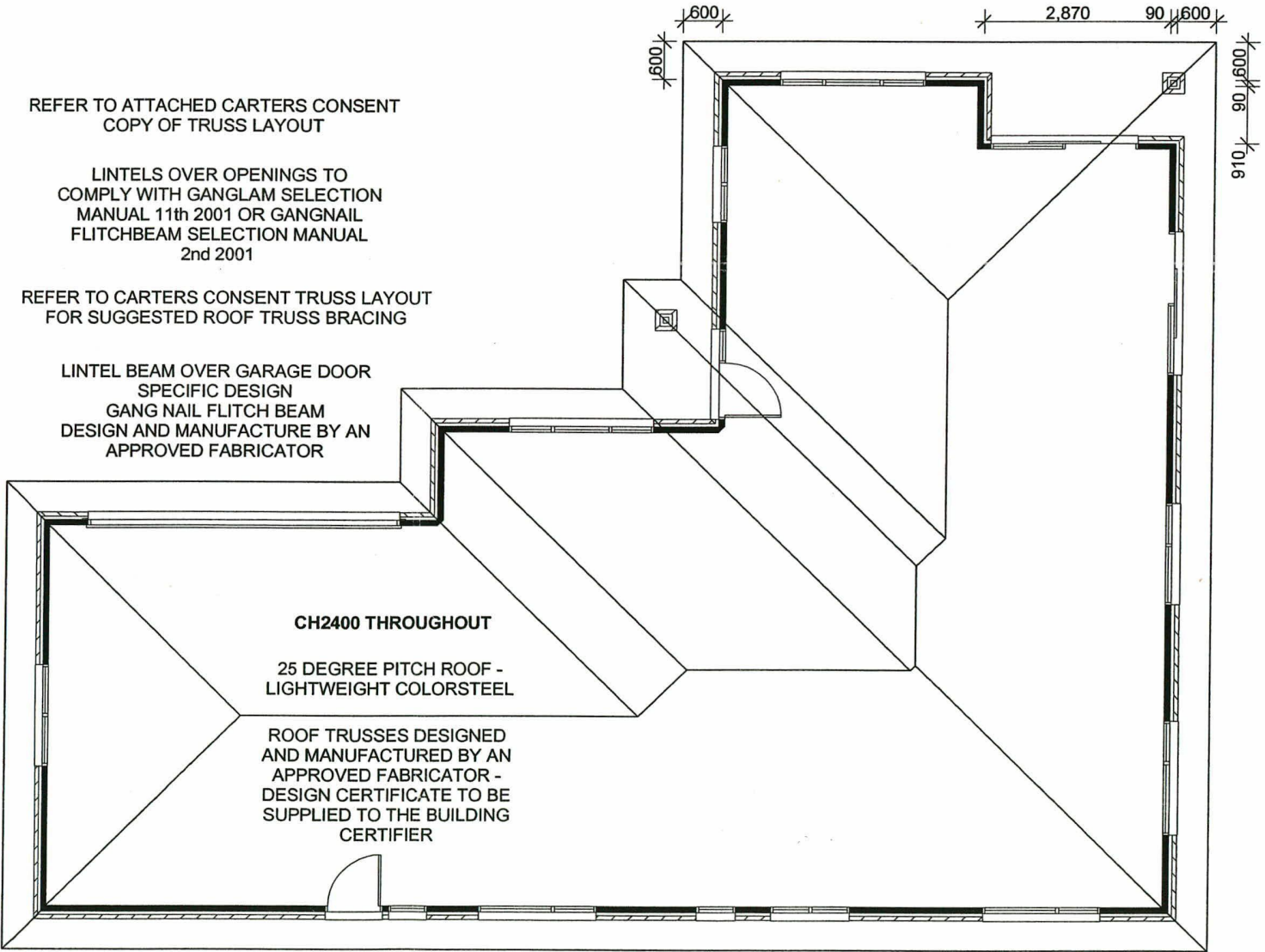
SCALE 1:10

REFER TO ATTACHED CARTERS CONSENT
COPY OF TRUSS LAYOUT

LINTELS OVER OPENINGS TO
COMPLY WITH GANGLAM SELECTION
MANUAL 11th 2001 OR GANGNAIL
FLITCHBEAM SELECTION MANUAL
2nd 2001

REFER TO CARTERS CONSENT TRUSS LAYOUT
FOR SUGGESTED ROOF TRUSS BRACING

LINTEL BEAM OVER GARAGE DOOR
SPECIFIC DESIGN
GANG NAIL FLITCH BEAM
DESIGN AND MANUFACTURE BY AN
APPROVED FABRICATOR



ROOF PLAN



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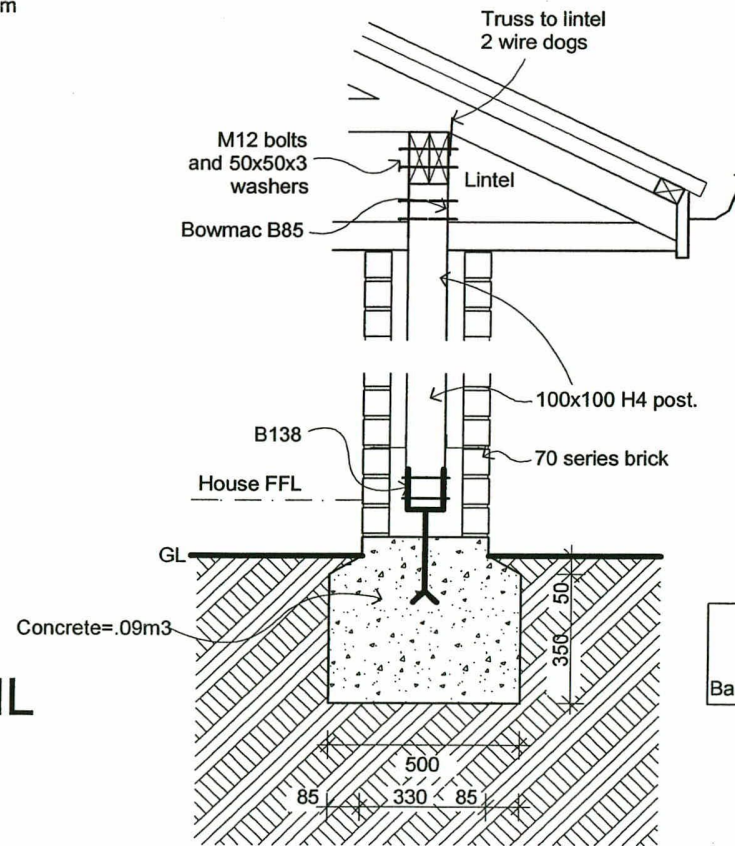
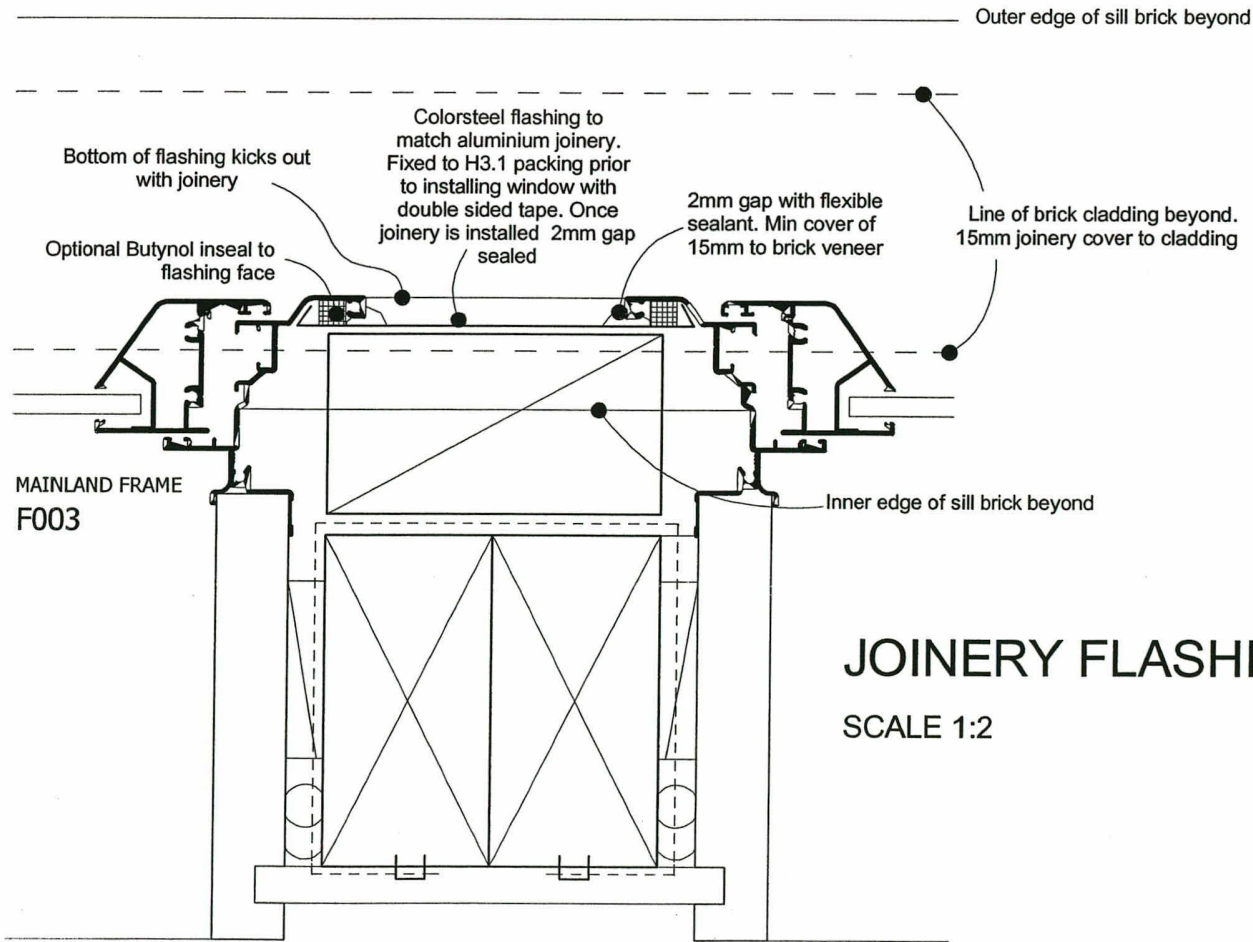
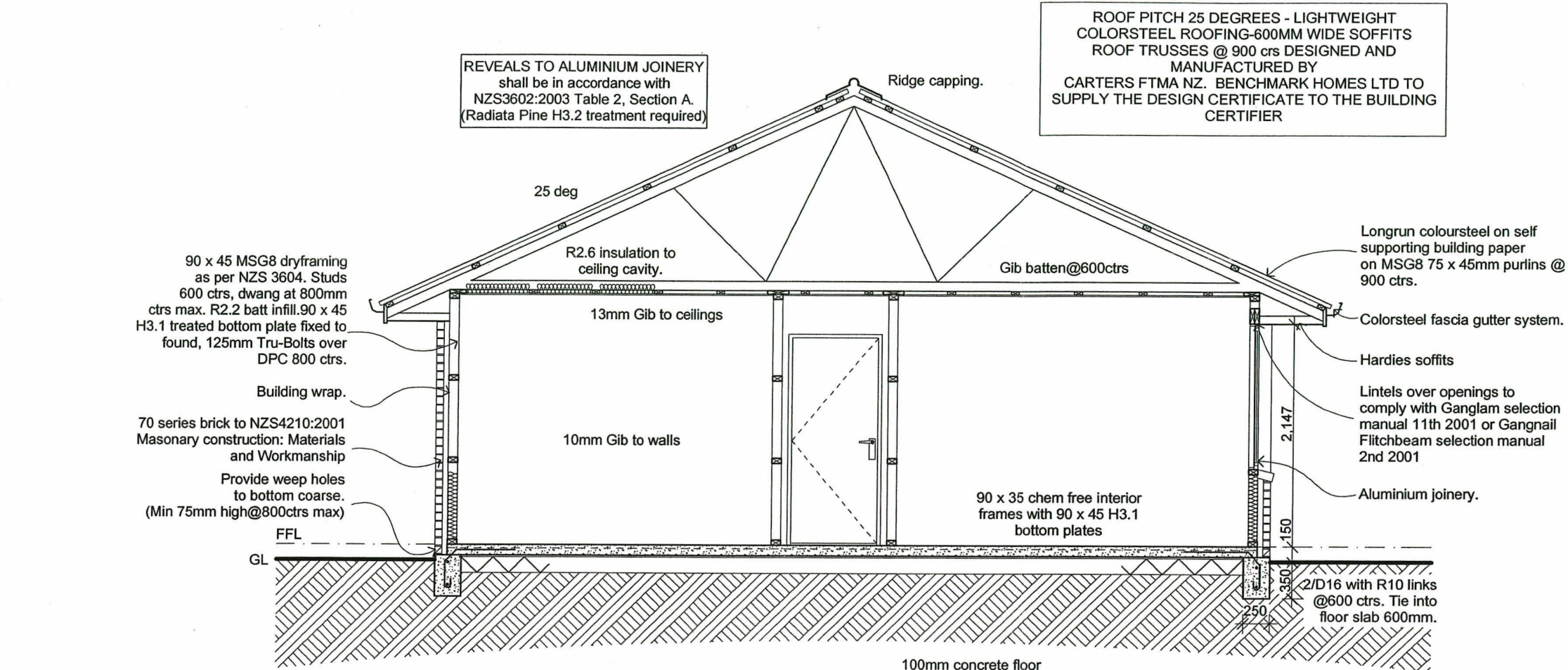
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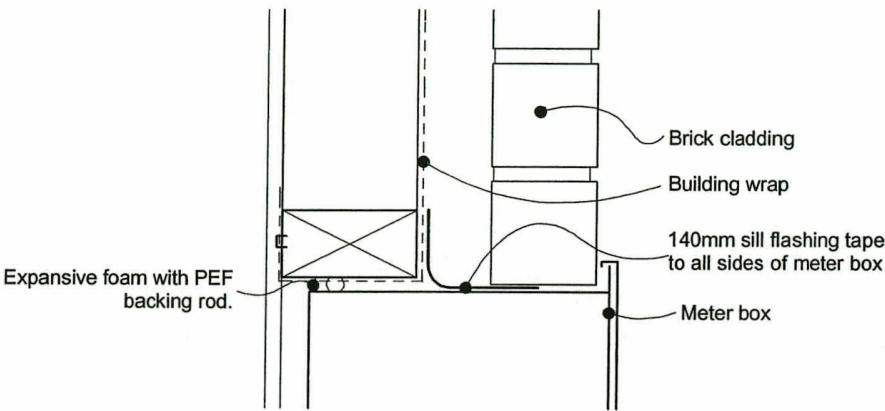
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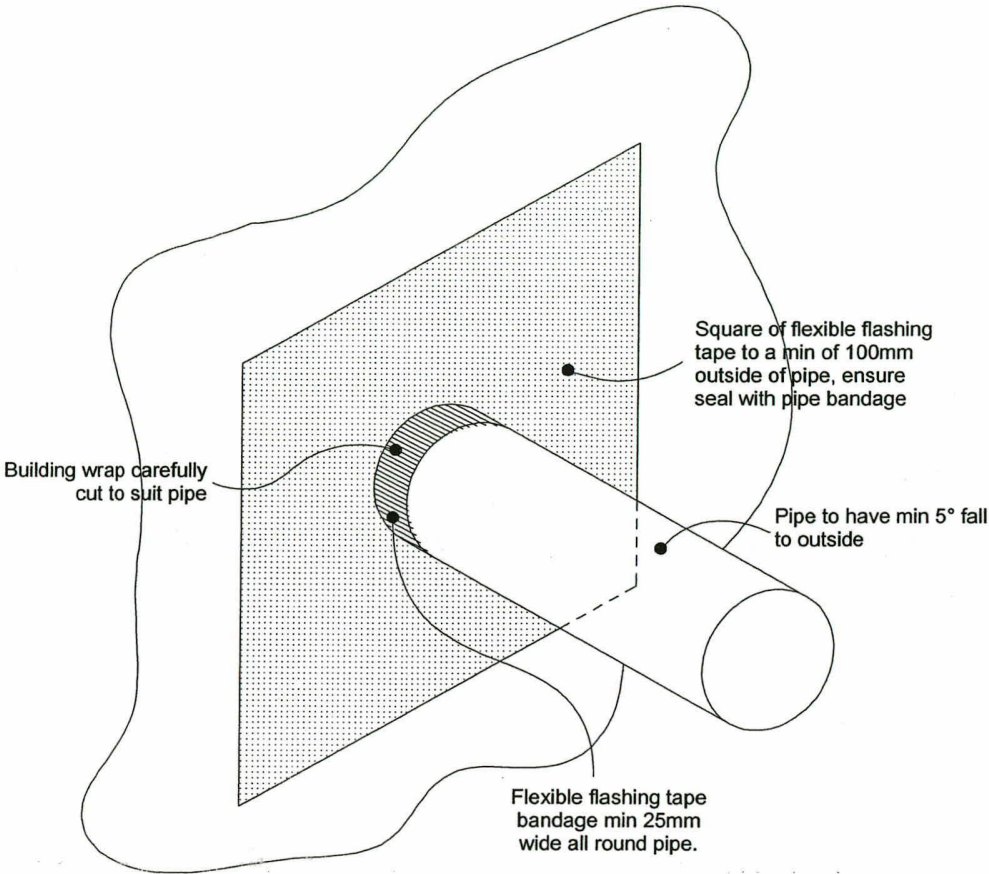
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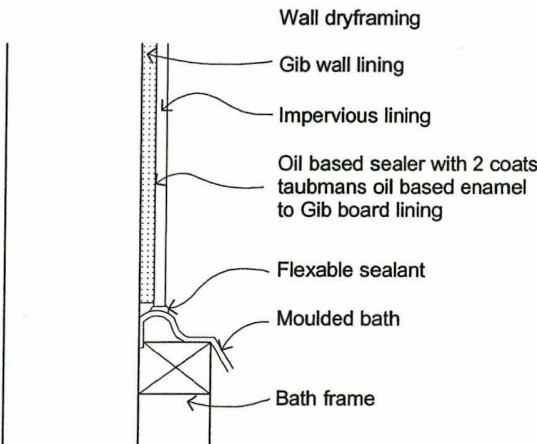


METER BOX

SCALE 1:5

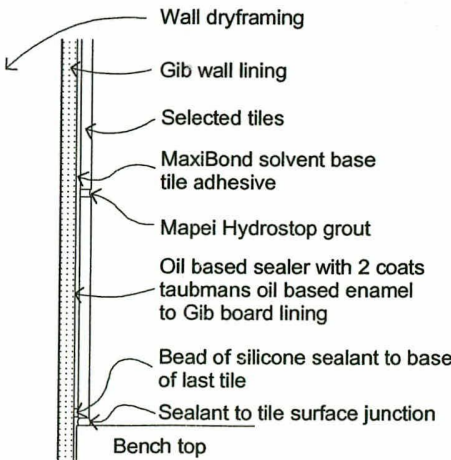


GENERAL PIPE PENETRATION



BATH WATER TIGHNESS

SCALE: 1:5



WET AREA WATERPROOFING



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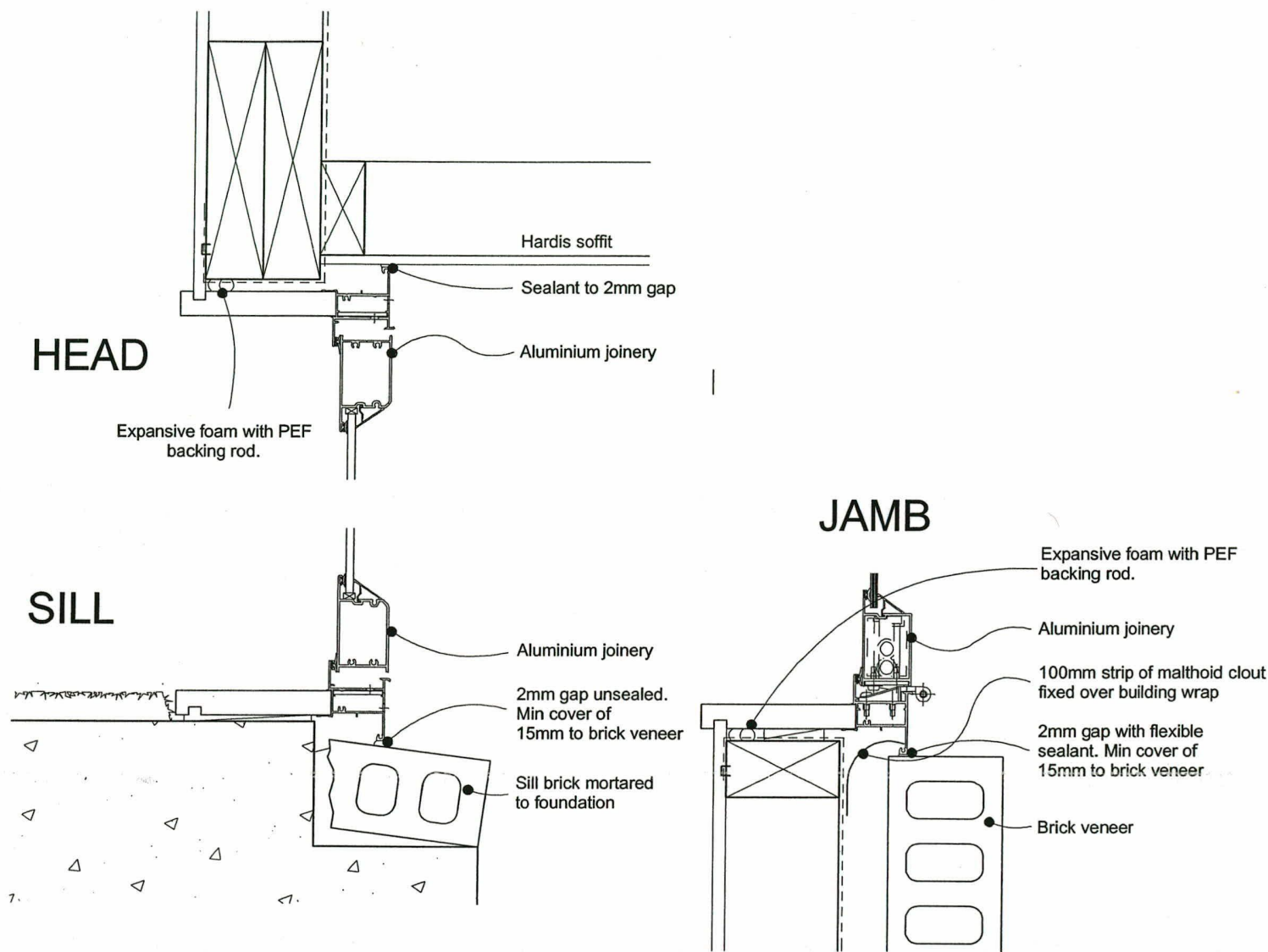
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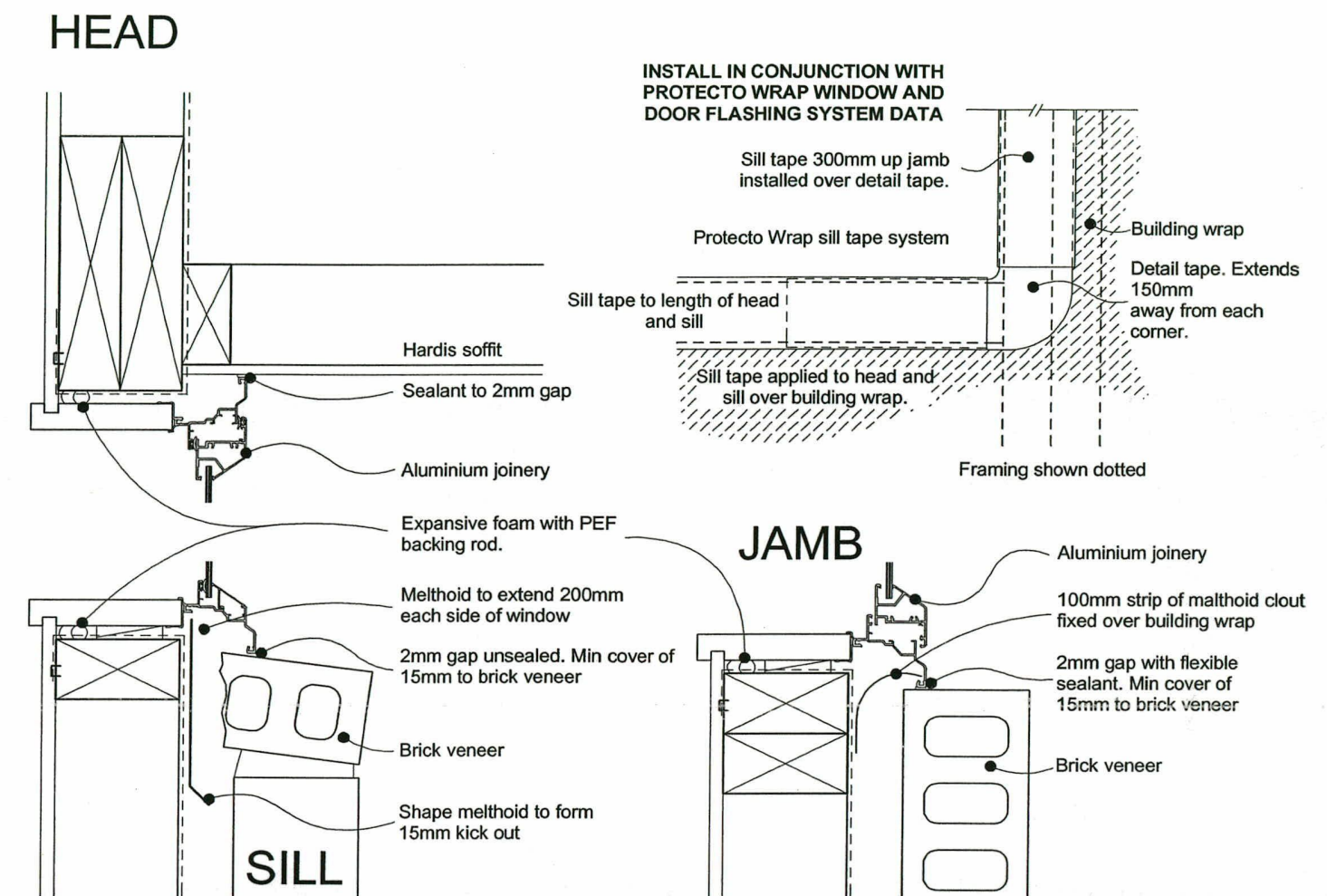
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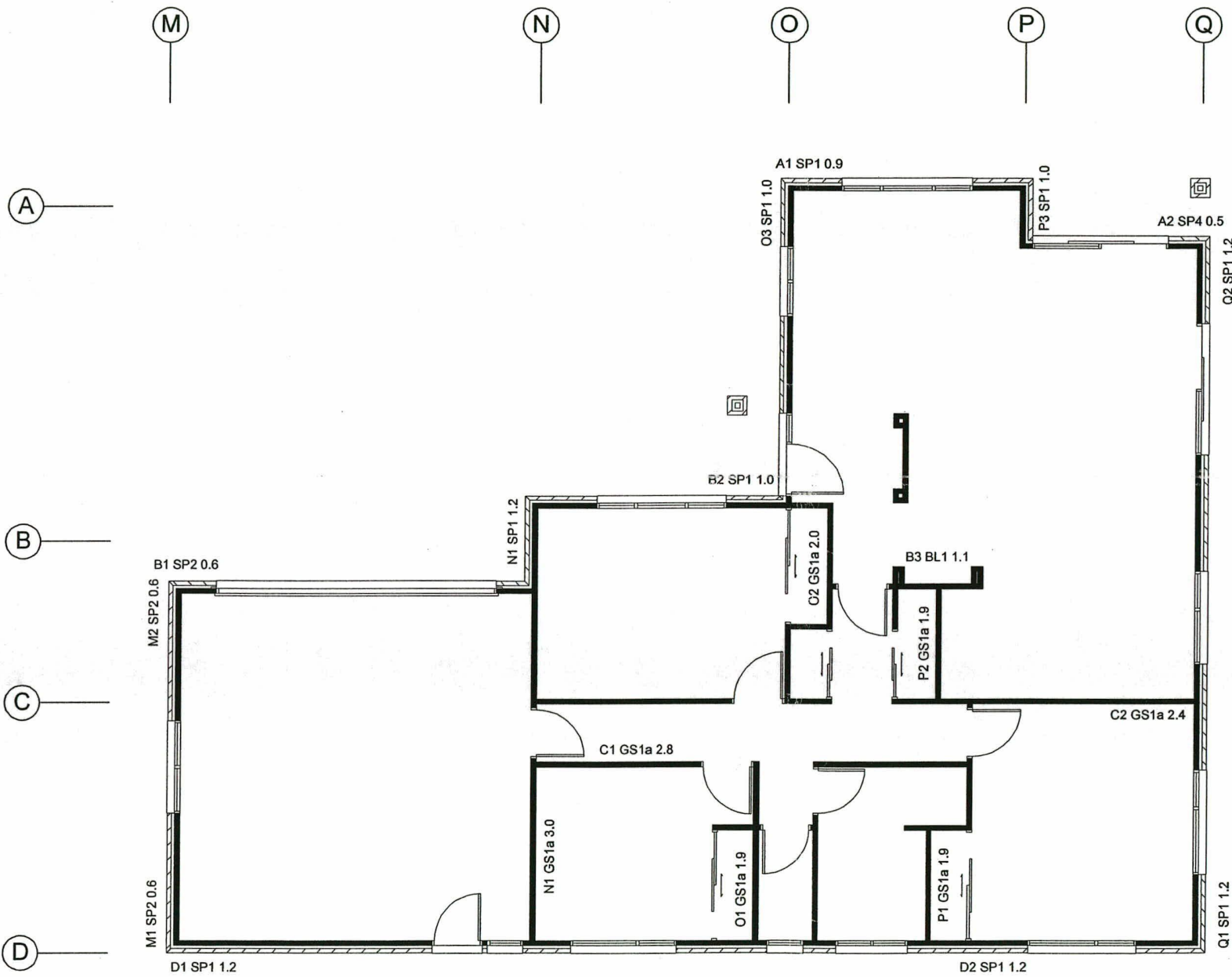
FLASHING DETAILS BLOCK VENEER (DOOR)



FLASHING DETAILS BLOCK VENEER (WINDOW)

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BRACING PLAN



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DATE: 26/02/2007	DRWG TYPE: CONSENT
DRAWN: Nathan	SHEET: 10 OF 12

Wall Bracing Calculation Sheet A

Ground Floor

Job Details

House Type:
Job: **BM-07-014**

Name:

LOT 5 Bowen Street

Street and Number:

Lot and DP Number:

City/Town/District:

Rakaia

Location of Storey:

Building height:

4.6 m

Roof height to eaves:

2.3 m

Stud height:

2.4 m

Average roof pitch:

25 deg.

Building length BL =

17.56 m

Building width BW =

13.39 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

Roof weight

light

heavy

Cladding weight

light

heavy

Gross Plan Area =

166 sq.m

Wind Details

Wind zone:

Low

Medium

High

Very High

Earthquake zone

Select Earthquake zone

A

B

C

BUs required Wind

W along =

78 BUs/m

W across :

78 BUs/m

Total wind load,

W ALONG:

1044 BUs

W ACROSS:

1370 BUs

W across x BL =

BUs required Earthquake

E =

2.6 BUs/m2

Total earthquake required

EQ ALONG & EQ ACROSS

E x GPA BUs =

432 BUs

Wall Bracing Calculation Sheet B

Ground Floor

Along

Wall or Bracing Line		Bracing Elements Provided		
1	2	3	4	5
Line Label	Minimum BUs Required	Bracing Element No.	Bracing Type	Length Element (m) L
A		A1	SP1	0.9
		A2	SP4	0.5
B		B1	SP2	0.6
		B2	SP1	1.0
C		B3	BL1	1.1
C		C1	GS1a	2.8
		C2	GS1a	2.4
D				
		D1	SP1	1.2
	D2	SP1	1.2	
Totals Achieved				
From Sheet A		Totals Required		

Wind	
6W	7W
Rating BU/m	BUs Achieved (BU/mxL)
W	W
100	90
70	35
90	54
100	100
125	138
75	210
75	180
100	120
100	120
W	1047
W	1044

Earthquake	
8E	9E
Rating BU/m	BUs Achieved (BU/mxL)
E	E
110	99
85	43
80	48
110	110
115	127
65	182
65	156
110	132
110	132
E	1028
E	432

Across

Wall or Bracing Line		Bracing Elements Provided		
1	2	3	4	5.0
Line Label	Minimum BUs Required	Bracing Element No.	Bracing Type	Length Element (m) L
M		M1	SP2	0.6
		M2	SP2	0.6
N		N1	GS1a	3.0
		N2	SP1	1.2
O		O1	GS1a	1.9
		O2	GS1a	2.0
		O3	SP1	1.0
P		P1	GS1a	1.9
		P2	GS1a	1.9
		P3	SP1	1.0
Q	Q1	SP1	1.2	
	Q2	SP1	1.2	
Totals Achieved				
From Sheet A		Totals Required		

Wind	
6W	7W
Rating BU/m	BUs Achieved (BU/mxL)
W	W
90	54
90	54
75	225
100	120
65	124
65	130
100	100
65	124
65	124
100	100
100	120
100	120
W	1394
W	1370

Earthquake	
8E	9E
Rating BU/m	BUs Achieved (BU/mxL)
E	E
80	48
80	48
65	195
110	132
55	105
55	110
110	110
55	105
55	105
110	110
110	132
110	132
E	1331
E	432



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BM-07-014

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DATE:
26/02/2007

DRWG TYPE:
CONSENT

DRAWN:
Nathan

SHEET:
11 OF 12

Owner Name:		LOT 5 BOWEN STREET	
Address:			
New Zealand Building Code Handbook & Approved Documents			
	Clause	Means of Compliance	Wavier Modification Required
HB	New Zealand Building Code Handbook		
B1	Structure	Alternative Solution- Foundations,AS1- Slab, framing, Bracing, Lintels. VM1-Trusses ,Garage Lintel	N/A
B2	Durability	AS1- Durability evaluation VM1-durability applications, Maintenance, Generic materials.	N/A
C1	Outbreak of Fire	N/A	N/A
C2	Means of Escape	AS1- Escape Path Lengths. (24m max).	N/A
C3	Spread of Fire	AS1- Distance off boundary(greater than min), Building Height. (Less than max)	N/A
C4	Structural Stability During Fire	N/A	N/A
D1	Access Routes	AS1-Slip Resistance.	N/A
D2	Mechanical Installations for Access	N/A	N/A
E1	Surface Water	AS1- Protection from flooding, Surface water runoff, Drain leakage test, Minimum floor levels, Down pipes, Gutters	N/A
E2	External Moisture	AS1- Cladding Systems, roofing systems, Weathertightness risk factors, flashings, floors, Construction moisture.	N/A
E3	Internal Moisture	AS1- Provention of fungal growth, overflow, water splash.	N/A
F1	Hazardous Agent on Site	N/A	N/A
F2	Hazardous Building Materials	AS1- Glazing	N/A
F3	Hazardous Substances and Processes	N/A	N/A
F4	Safety from Falling	N/A	N/A

F5	Construction and Demolition Hazard	N/A	N/A
F6	Lighting for Emergency	N/A	N/A
F7	Warning Systems	AS1- Installation, Discription & Location	N/A
F8	Signs	N/A	N/A
G1	Personal Hygiene	AS1- Number of sanitary fixtures, location	N/A
G2	Laundering	AS1- Laundering Facilities	N/A
G3	Food Preparation and Prevention of Contamination	AS1- Appliances & Facilities	N/A
G4	Ventilation	VM1- Ventilation rate, AS1- Air purity & Ventilation	N/A
G5	Interior Environment	AS1- Temperature control & Space	N/A
G6	Airborne and Impact Sound	N/A	N/A
G7	Natural Light	VM1- Illuminance, AS1- Vertical window in external walls, Awazeness of outside environment.	N/A
G8	Artificial Light	VM1 & AS1- Illuminance	N/A
G9	Electricity	AS1- Electrical installation	N/A
G10	Piped Services	N/A	N/A
G11	Gas as an Energy Source	N/A	N/A
G12	Water Supply	VM1- Sanitary plumbing, AS1- Water supply system, requirements for hot water system, materials and installation, Equipotential bonding, Water tightness.	N/A
G13	Foul Water	VM1- Sanitary Plumbing,Gully traps, pipe gradient & size, drain ventilation materials of pipes & joints, bedding & backfill, Drains under buildings. AS1- Water traps, Sanitary plumbing, Discharge pipes, Vent pipes, pipe materials, Support & Thermal movement, Water tightness.	N/A
G14	Industrial Liquid Waste	N/A	N/A
G15	Solid Waste	N/A	N/A
H1	Energy Efficiency	VM1- Thermal envelope. AS1- Control of heat flow, Control of solar heat, Hot water system, Thermal envelope	N/A



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SUBJECT TO COPYRIGHT AND SHALL
NOT BE COPIED, REPRODUCED OR
USED FOR CONSTRUCTION PURPOSES
WITHOUT WRITTEN PERMISSION
OF VALUE PLUS HOMES LTD.

BOWEN ST

LOT 5

RAKAIA

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: 26-2-07

Job No:
BM-07-014

DATE:
26/02/2007

DRAWN:
Nathan

SCALE:

DRWG TYPE:
CONSENT

SHEET:
12 OF 12



COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952

Search Copy



R. W. Muir
Registrar-General
of Land

Identifier CB8B/197
Land Registration District Canterbury
Date Issued 25 September 1968

Prior References
CB721/88

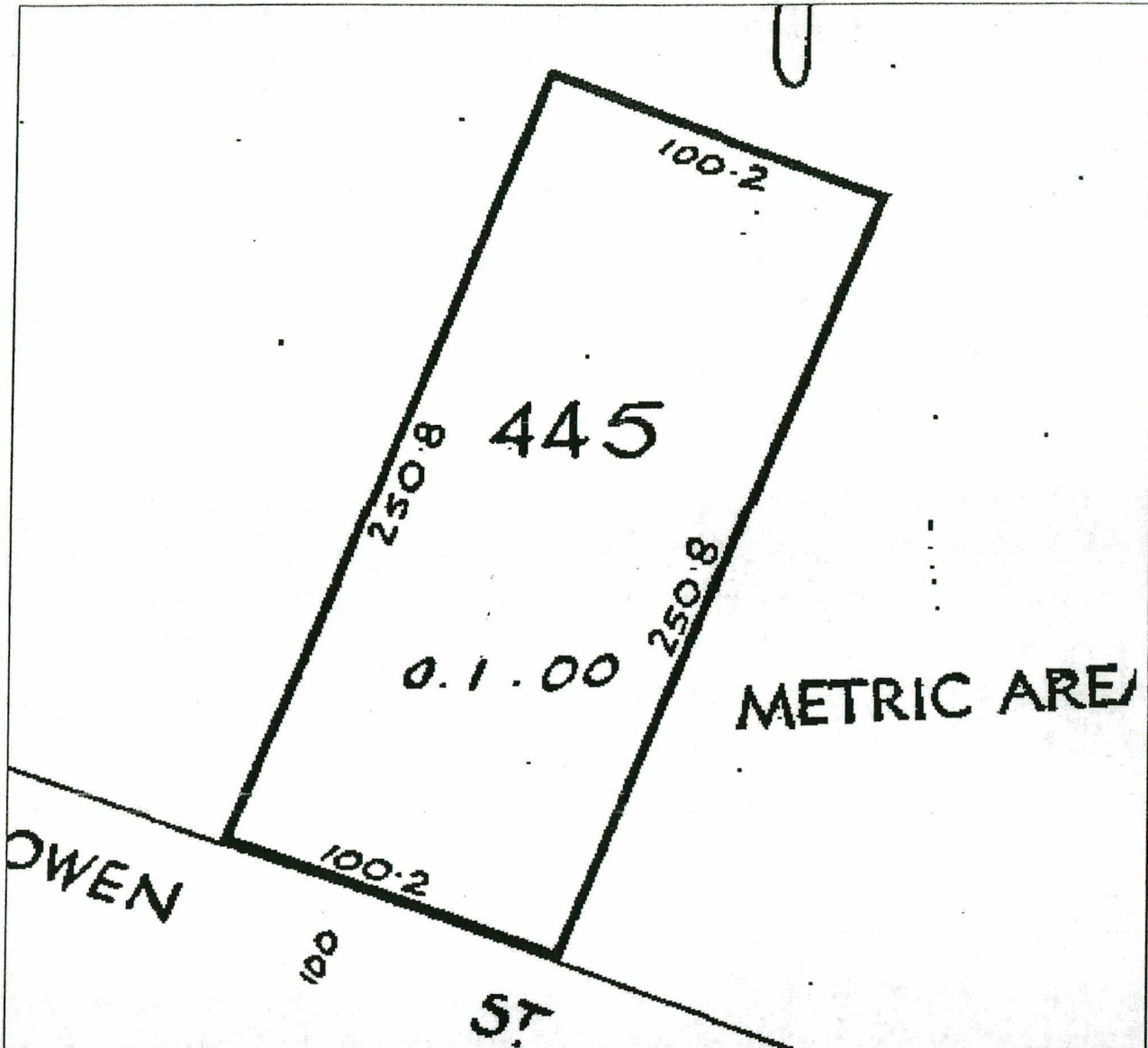
Estate Fee Simple
Area 1012 square metres more or less
Legal Description Section 445 Town of Rakaia
Proprietors
Antrim Developments Limited

Interests

Subject to Section 59 Land Act 1948
6960578.2 Mortgage to ANZ National Bank Limited - 25.7.2006 at 9:00 am

Identifier

CB8B/197





COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952

Search Copy




R. W. Muir
Registrar-General
of Land

Identifier CB20B/320
Land Registration District Canterbury
Date Issued 14 August 1979

Prior References
CB104/16

Estate	Fee Simple
Area	3033 square metres more or less
Legal Description	Section 443, Section 447 and Section 449 Town of Rakaia

Proprietors
Antrim Developments Limited

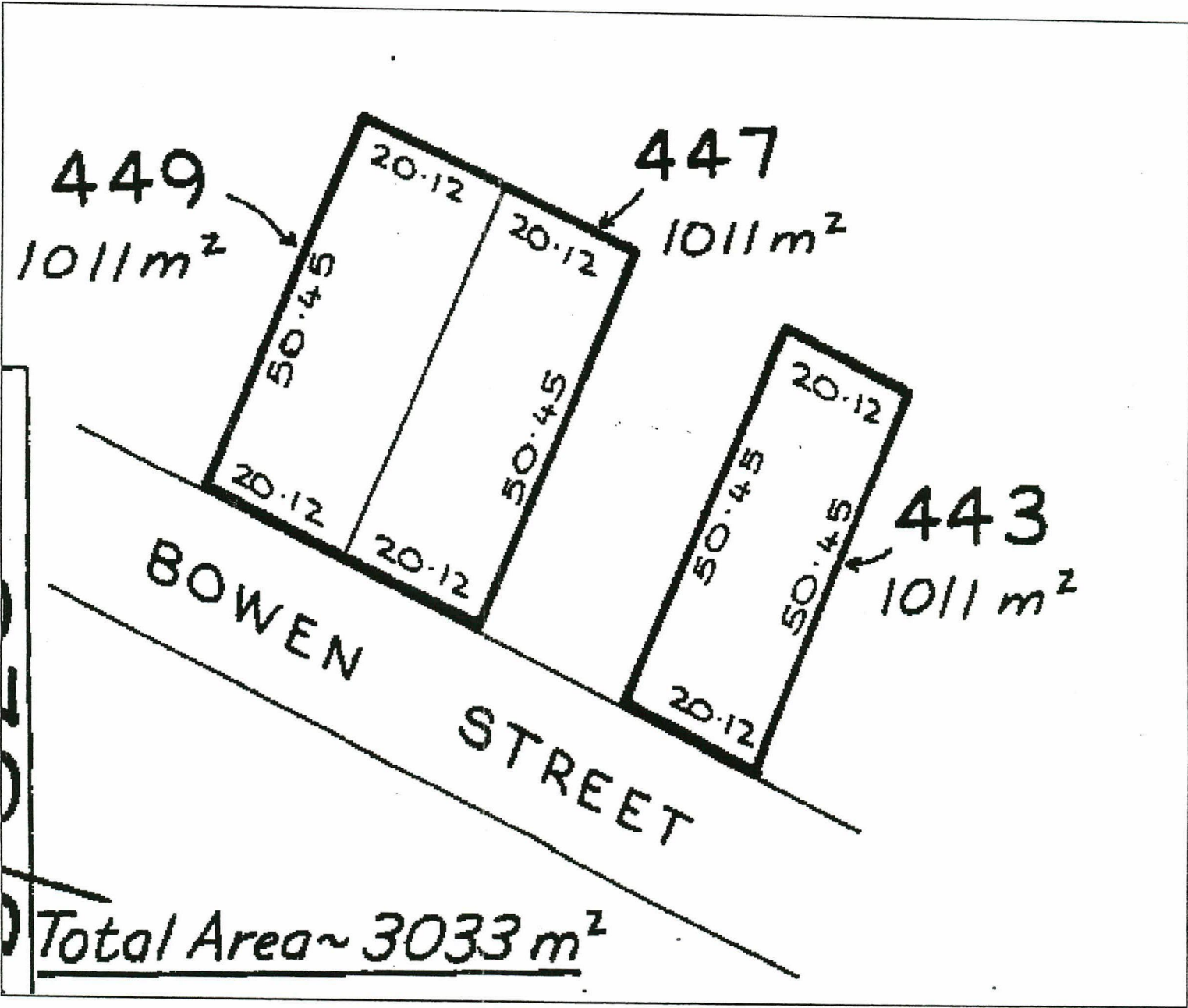
Interests
6960578.2 Mortgage to ANZ National Bank Limited - 25.7.2006 at 9:00 am

Transaction Id 14864003
Client Reference irehama001

Search Copy Dated 18/08/06 2:21 pm, Page 2 of 2
Register Only

Identifier

CB20B/320





COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952



Search Copy


R. W. Muir
Registrar-General
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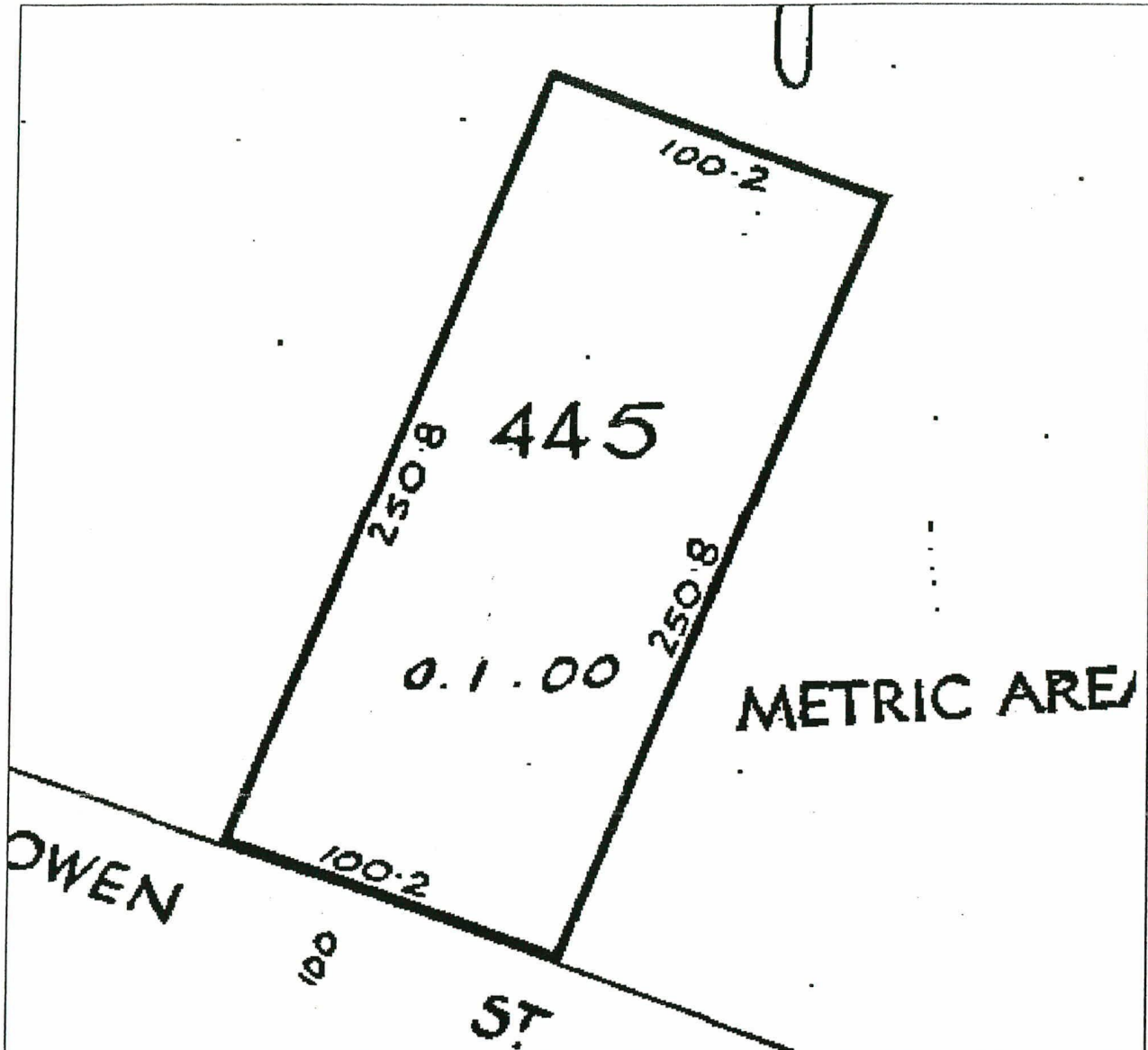
Estate Fee Simple
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6960578.2 Mortgage to ANZ National Bank Limited - 25.7.2006 at 9:00 am

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Search Copy




R.W. Muir
Registrar-General
of Land

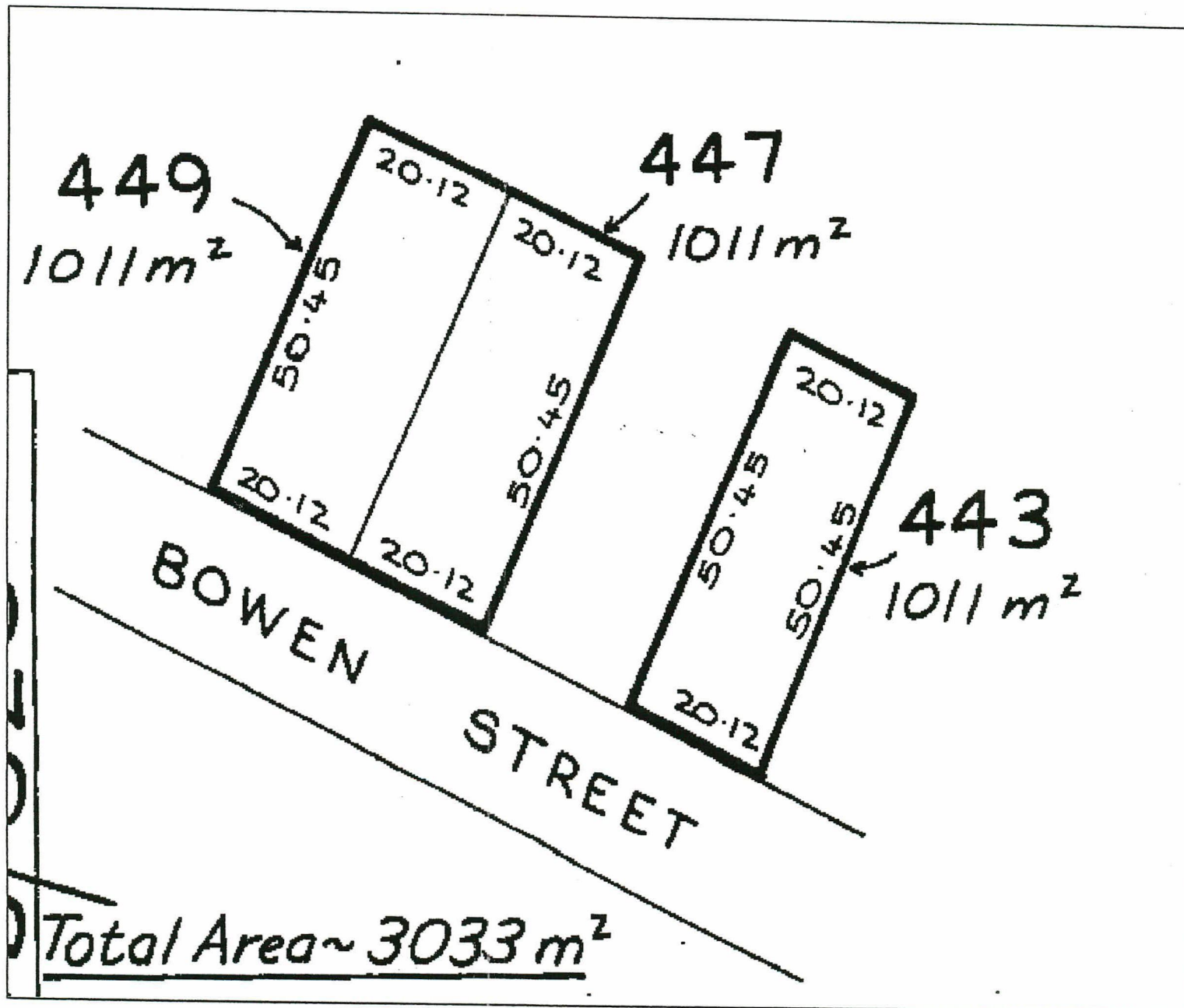
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Land Registration District Canterbury
Date Issued 14 August 1979

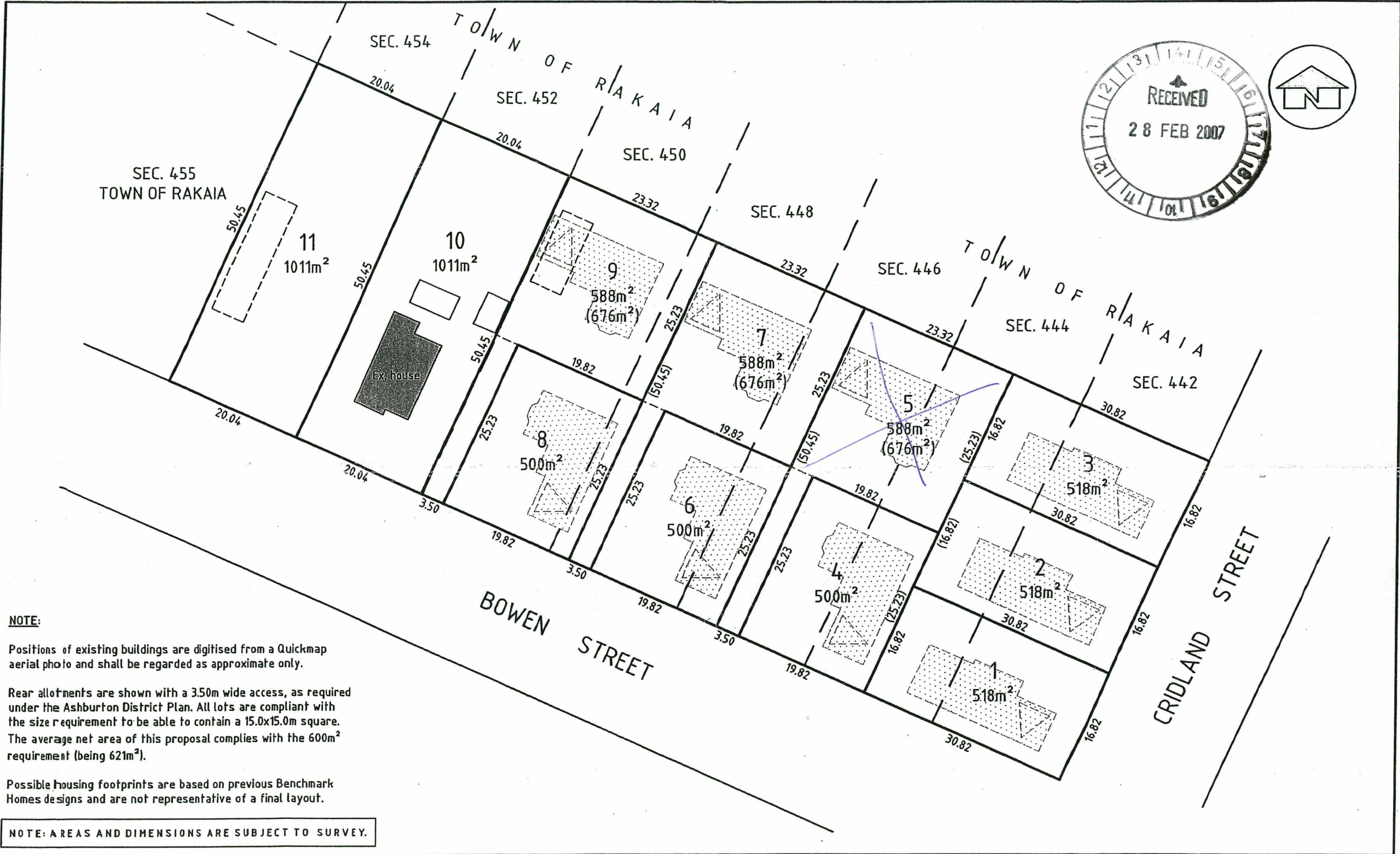
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NOTE:

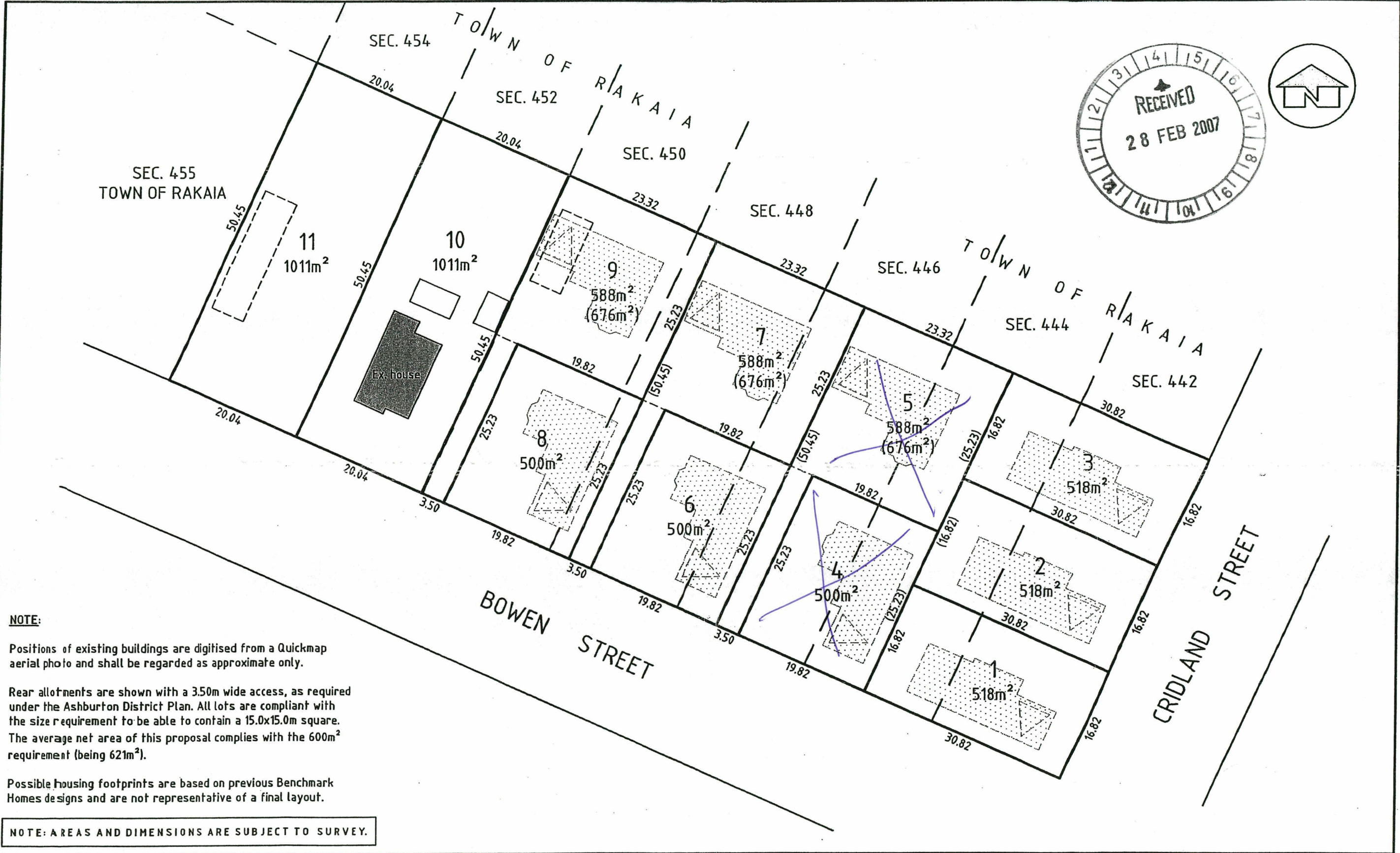
Positions of existing buildings are digitised from a Quickmap aerial photo and shall be regarded as approximate only.

Rear allotments are shown with a 3.50m wide access, as required under the Ashburton District Plan. All lots are compliant with the size requirement to be able to contain a 15.0x15.0m square. The average net area of this proposal complies with the 600m² requirement (being 621m²).

Possible housing footprints are based on previous Benchmark Homes designs and are not representative of a final layout.

NOTE: AREAS AND DIMENSIONS ARE SUBJECT TO SURVEY.

MIDDLETON WILLIAMS & CO. LTD. Registered Surveyors and Land Development Consultants Level 7, Amuri Courts, 293 Durham Street North, P.O. Box 13-212 Christchurch Telephone Christchurch: +64 3 366 5428; Rangiora: +64 3 312 5390 Facsimile: +64 3 379 5227, Email: office@miltonwilliams.co.nz Web Site: www.miltonwilliams.co.nz		POSSIBLE SUBDIVISION OF SEC's 441, 443, 445, 447, 449, 451 & 453 TOWN OF RAKAIA		Total Area:	7079m ² (C.T.) 7107m ² (calc.)	Date:	Jan 2007	Scale:	1:500	A3
				C.T. Ref.:	CB1B/725, CB8B/197, CB20B/(320-322)	Surveyed:	-	BM-A2-02		Sheet
				Client:	Benchmark Homes	Designed:	-	Cad File #:		1
				Territorial Authority:	ASHBURTON DISTRICT	Drawn:	G.M.	M:\CADD\data\Estimates\ TF-bm-bowen.02.dwg		1 Of



NOTE:

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