


WAIKATO BUILDING CONSENT GROUP BUILDING CONSENT APPLICATION

PRINT CLEARLY WITH BLUE OR BLACK PEN

1. APPLICATION TYPE (tick one)

- Building Consent and PIM 
- PIM only

OFFICE ONLY
Date received

RECEIVED

18 AUG 2009

BUILDING

Consent No. 2009/22919

Document or Parcel No. 6645848

Valuation No. 04206-410-09

PIM No. no dwell - s ch
attach garage

2. THE BUILDING/PROJECT LOCATION

Street No. 379 Street name BERMAN ROAD

Town _____ Level or Unit _____ Building name _____

Lot(s) 10 DP/§ 397340 Site area _____ (ha) 787 (m²)

Other information _____

3. OWNER

Name/Company LOGAN HOMES LTD

Mail address P.O BOX 12467
HAMILTON.

Phone (daytime) 07 855 5800

Fax 07 855 2030

Mobile _____

Email melissa@loganhomes.co.nz

Attention MELISSA Ph _____

AGENT (if application is made on behalf of the owner)

Name/Company _____

Mail address _____

Phone (daytime) _____

Fax _____

Mobile _____

Email _____

Attention _____ Ph _____

Relationship to owner _____

Invoice to: Owner Agent

First point of contact for communication: Owner Agent

4. EVIDENCE OF OWNERSHIP ATTACHED:

- Certificate of Title Lease agreement Agreement for Sale and Purchase Other

5. THE PROJECT: Tick one - if more than one project please list on a separate page

- New Building Demolition Addition Alteration
- Relocation Change of Use Other (please specify below)

Description of Work:
CONSTRUCTION OF A NEW SINGLE STOREY TIMBER FRAMED DWELLING WITH ATTACHED DOUBLE GARAGE.

Current, lawfully established, use: (Include no. of occupants per level and per use if more than 1)

RESIDENTIAL

Year First constructed: (approximate date acceptable) 2009

Intended life of building (if less than 50yrs) N/A.

Estimated value of work: inc GST \$ 210,000

Existing floor area: _____ m² New Floor Area 257.5 m²

PHONED

Level

HAMILTON CITY COUNCIL

APPROVED

SUBJECT TO CONDITIONS TO BE KEPT ON SITE

Duplicate Request



6. PIM Information: Please supply any relevant information/documents/diagrams and tick checkboxes if your project involves one or more of these:

- Is there a proposed subdivision for this land?
- Are you digging out the site for a building platform?
- Are there new or altered connections to Council sewer, storm water or water mains?
- Are you altering domestic sewer or storm water drains?
- Are you building near or over any road or public space?
- Are you building near or over existing domestic sewer, storm water, water mains or wells?
- Are you building or altering a vehicle crossing (entrance)?
- Is the site contaminated?
- Will the building be sited on sloping ground, or near to a bank, a stream or a coastal zone?
- Is there any other relevant information? Please state in the box or attach information

7. BUILDING PRACTITIONERS INVOLVED IN THIS PROJECT

List all your trade's people, their contact details and their trade registration numbers (eg Master Plumber registration number) where appropriate.

BUILDER: LOGAN HOMES			
Name:		Registration Number:	
Address: REFER TO PREVIOUS PAGE			
Telephone:	Fax:	Mobile:	Email:

PLUMBER:			
Name:		Registration Number:	
Address:			
Telephone:	Fax:	Mobile:	Email:

DRAINLAYER:			
Name:		Registration Number:	
Address:			
Telephone:	Fax:	Mobile:	Email:

DESIGNER: LOGAN HOMES			
Name:		Registration Number:	
Address: REFER TO PREVIOUS PAGE			
Telephone:	Fax:	Mobile:	Email:

GAS FITTER:			
Name:		Registration Number:	
Address:			
Telephone:	Fax:	Mobile:	Email:

Project Role:			
Name:		Registration Number:	
Address:			
Telephone:	Fax:	Mobile:	Email:

Continue on a separate sheet if required

8. THE BUILDING WORK WILL COMPLY WITH THE BUILDING CODE AS FOLLOWS:

What alternatives to the Building Code are you using in your construction? Tell us what you are doing that does not comply with the Building Code that require modification or waiver. Get your designer to fill in this section.

Building Code Clause (tick relevant clause)	Means of Compliance (refer to the relevant compliance document(s) or detail of alternative solution in the plans and specifications; if not applicable, put n/a)	Waiver/modification required (state nature of waiver or modification of building code required; if not applicable, put n/a)
<input checked="" type="checkbox"/> B1 Structure	NZS3604	
<input checked="" type="checkbox"/> B2 Durability	NZS3604	
<input type="checkbox"/> C1 Outbreak of fire		
<input type="checkbox"/> C2 Means of escape		
<input type="checkbox"/> C3 Spread of fire		
<input type="checkbox"/> C4 Structural stability during fire		
<input type="checkbox"/> D1 Access routes		
<input type="checkbox"/> D2 Mechanical installations for access		
<input checked="" type="checkbox"/> E1 Surface water	NZBC E1	
<input checked="" type="checkbox"/> E2 External moisture	NZBC E2	
<input type="checkbox"/> E3 Internal moisture		
<input type="checkbox"/> F1 Hazardous agents on site		
<input type="checkbox"/> F2 Hazardous building materials		
<input type="checkbox"/> F3 Hazardous substances and processes		
<input type="checkbox"/> F4 Safety from falling		
<input type="checkbox"/> F5 Construction and demolition hazards		
<input type="checkbox"/> F6 Lighting for emergency		
<input checked="" type="checkbox"/> F7 Warning systems	NZBC F7	
<input type="checkbox"/> F8 Signs		
<input type="checkbox"/> G1 Personal hygiene		
<input type="checkbox"/> G2 Laundering		
<input type="checkbox"/> G3 Food preparation & contamination prevention		
<input checked="" type="checkbox"/> G4 Ventilation	NZBC G4.	
<input type="checkbox"/> G5 Interior environment		
<input type="checkbox"/> G6 Airborne and impact sound		
<input type="checkbox"/> G7 Natural light		
<input type="checkbox"/> G8 Artificial light		
<input type="checkbox"/> G9 Electricity		
<input type="checkbox"/> G10 Piped services		
<input type="checkbox"/> G11 Gas as an energy source		
<input checked="" type="checkbox"/> G12 Water supplies	NZBC G12	
<input checked="" type="checkbox"/> G13 Foul water	NZBC G13 NZS 3500	
<input type="checkbox"/> G14 Industrial liquid waste		
<input type="checkbox"/> G15 Solid waste		
<input checked="" type="checkbox"/> H1 Energy efficiency	NZS4218	

9. **COMPLIANCE SCHEDULE - THE FOLLOWING SYSTEMS APPLY TO/ARE MODIFIED BY THIS PROJECT**
 This is only required if you need a compliance schedule and a Building Warrant of Fitness, for a commercial building. A Compliance Schedule lists the inspection, maintenance and reporting procedures for systems within a building such as lifts, automatic sprinklers, automatic doors, air conditioning and fire alarms.

Please tick appropriate boxes

Automatic systems for fire suppression	<input type="checkbox"/> New	<input type="checkbox"/> Modified
Automatic or manual emergency warning systems for fire and other dangers	<input type="checkbox"/> New	<input type="checkbox"/> Modified
Electromagnetic or automatic doors or windows	<input type="checkbox"/> New	<input type="checkbox"/> Modified
Emergency lighting systems	<input type="checkbox"/> New	<input type="checkbox"/> Modified
Escape route pressurisation systems	<input type="checkbox"/> New	<input type="checkbox"/> Modified
Riser mains for use by fire services	<input type="checkbox"/> New	<input type="checkbox"/> Modified
Automatic back-flow preventers connected to potable water supplies	<input type="checkbox"/> New	<input type="checkbox"/> Modified
Mechanical ventilation or air conditioning systems	<input type="checkbox"/> New	<input type="checkbox"/> Modified
Laboratory fume cupboards	<input type="checkbox"/> New	<input type="checkbox"/> Modified
Audio loops or other assisted listening systems	<input type="checkbox"/> New	<input type="checkbox"/> Modified
Smoke control systems	<input type="checkbox"/> New	<input type="checkbox"/> Modified
Lifts, escalators, travelators or other systems to move people or goods within buildings	<input type="checkbox"/> New	<input type="checkbox"/> Modified
Building maintenance units providing access to exterior and interior walls of buildings	<input type="checkbox"/> New	<input type="checkbox"/> Modified
Emergency power systems for, or signs to, a system or feature specified in the above clauses	<input type="checkbox"/> New	<input type="checkbox"/> Modified

10. **CONFIDENTIALITY**

This is generally for reasons of building security in commercial or public buildings. If you think this project may require confidentiality, please discuss this with a Building Review Officer and if they agree, then tick the box and state why it is needed.

Confidentiality required

11. **PLEASE ENSURE THAT YOUR APPLICATION FOR BUILDING CONSENT CONTAINS:**


- Complete application form with relevant documents Accurate set of specifications
 Accurate set of plans and design statements Other information relevant to this application, please specify

12. **COLLECTION OF CONSENTS**

If your building consent application is at Waikato or Matamata Piako District Councils, please tick which of your council offices you wish to collect your consent from when it is ready:

WAIKATO	MATAMATA PIAKO
<input type="checkbox"/> Ngaruawahia <input type="checkbox"/> Raglan <input type="checkbox"/> By post	<input type="checkbox"/> Te Aroha <input type="checkbox"/> Matamata
<input type="checkbox"/> Huntly <input type="checkbox"/> Hamilton CC	<input type="checkbox"/> Morrinsville

13. **DECLARATION: Signed by the OWNER or by the AGENT on behalf of and with the authority of the owner**

Print name: MELISSA HAWKEN.	Signature: 	Date: 13/8/09.
--------------------------------	---	-------------------



OFFICE USE ONLY

FEES PAYABLE	
Project Information Memorandum	\$ 140
Building Consent - Application Fee	\$ 3215
- Approval fee	\$
- Inspection fee	\$
- Mileage	\$
Code Compliance Certificate	\$
BRANZ levy	\$ 210
DBH levy	\$ 413.70
Photocopying	\$
Microfilm - A4	\$ 261
- A3	\$ 135
Street crossing administration	\$ 165
Structural check	\$
Amendments to consent	\$
External consultants check 1	\$
External consultants check 2	\$
NZ Fire Service check	\$
Planning bond/Resource Consent	\$
Reserves contribution	\$
Rural connection	\$
Fire main	\$
Water connection	\$
Water disconnection	\$
Wastewater/Sewerage connection	\$
Wastewater disconnection	\$
Backflow inspection	\$
Stormwater connection - Mains	\$
- Kerb and channel	\$
Stormwater disconnection	\$
CCTV Survey wastewater	\$
CCTV Survey stormwater	\$
Cellar indemnity	\$
Council bonds	\$
Compliance Schedule	\$
Development contributions	
- Water	\$
- Stormwater	\$
- Wastewater	\$
- Transport/roading	\$
- Community infrastructure	\$
BCA Accreditation Levy	\$
	\$
Total fees (Inc GST)	\$ 4592.70
Deposit paid - Receipt No.:	
- Date:	
Remainder fees due	\$
	\$

REFERRALS	
Structural consultant:	
Name:	
Sent:	Returned:
Structural consultant:	
Name:	
Sent:	Returned:
Other consultant:	
Name:	
Sent:	Returned:
New Zealand Fire Service	
Sent:	Returned:
Historic Places Trust (Notification)	
Date advised:	

ADDITIONAL NOTES AND/OR FEES

AUTHORISED BY:	
Planning Officer	
Date:	
AUTHORISED BY:	
Building Officer	
Date:	28/8
AUTHORISED BY:	
Engineer	
Date:	
CHECKED BY:	
Date:	
ISSUED BY:	
DATE ISSUED:	1/9/09
RECEIPT No.	B 2981538 1/9/09
RECEIPT No.	

Code Compliance Certificate
No 2009/22919
Section 95, Building Act 2004



Te kaunihera o Kirikiriroa

Private Bag 3010
Hamilton 3240
New Zealand

Phone 07 838 6699
Fax 07 838 6599

info@hcc.govt.nz
www.hamilton.co.nz

Issued by Hamilton City Council
Building Consent ref: 2009/22919
Historic ref:

Date: 15 March 2010

Applicant: Logan Homes Ltd
Mailing Address: P O Box 12467
HAMILTON 3248

Application Lodged: 18/08/2009

Project:
Application Description: New Dwelling attached Garage
Intended Use: Detached Dwelling - Live As A Family
Work Type: New Construction
Intended Life: >50 years
Value of Work: \$210,000.00

Property:
Address: 379 Borman Road Hamilton 3210
Property Reference: LOT: 10 DP: 397340

This is:

- A final code compliance certificate issued in respect of the building work under the above building consent.
- This Certificate is issued subject to the conditions specified in the attached page(s) headed "Conditions of Code Compliance Certificate No. 2009/22919" (being this certificate)

Signed for and on behalf of the Hamilton City Council:

Name:

A handwritten signature in black ink, appearing to read 'Phil Saunders'.

15 March 2010

Phil Saunders

Position: Authorised Officer

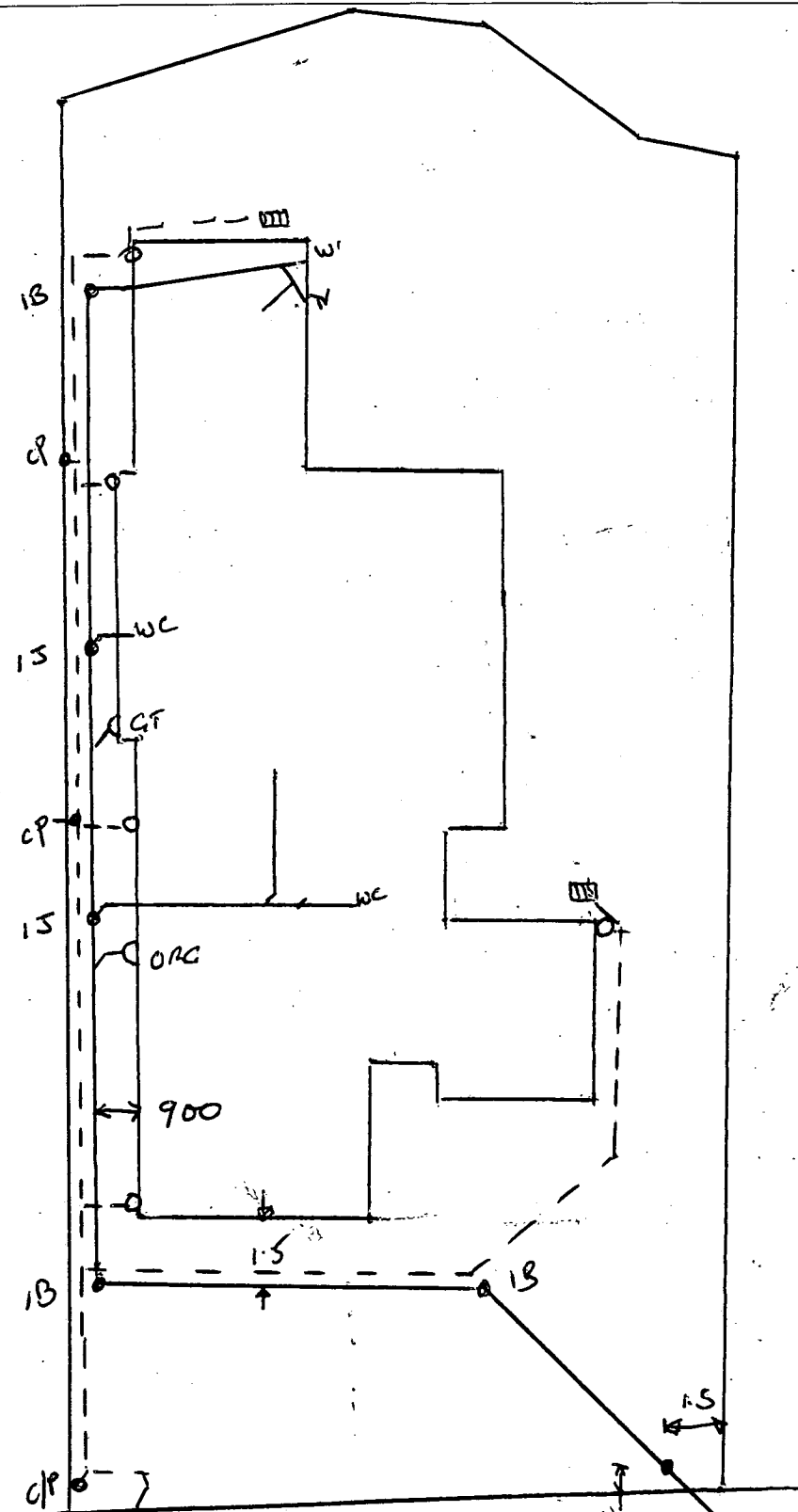
Building Control Unit

Buildings

STREET: Bolman Rd No: 374
OWNER: Lagan Homes
INSPECTOR: hes
DATE OF INSPECTION: 16. 9. 09

LOT: 10 DPS 397340
DRAINLAYER: B Cleason
REG No: 11305
CONSENT No: 2009/22919

DRAINLAYER PLEASE FILL IN ALL DETAILS

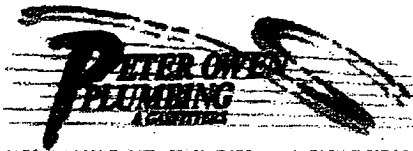


DRAINLAYER'S SIGNATURE:

B Cleason

DATE:

16. 9. 09



PO Box 5340
Frankton
Hamilton 3242
Ph 07 847 9699
Mob 021 937 606
Fax 07 847 9698
peterowen@xtra.co.nz

PRODUCER STATEMENT PLUMBING SYSTEM PRESSURE TEST

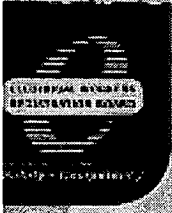
Owner: Legon Homes
Property Address: 379. Downer Rd.
Lot: _____ Consent Number: 22919
To: HCC

Please be advised that **Peter Owen Plumbing Limited** Has completed a pressure test on the plumbing system in the building at the above address. We certify that the system was tested to 1500kpa for a period of 30 minutes. This test was conducted in accordance with manufacturer recommendations and complies with the pressure testing provisions of the New Zealand Building Code and Approved Solution G12 AS1 and AS/NZS3500.1.2 as appropriate.

We advise that we have current public liability insurance to the value of \$500,000 and have approved quality control measures for recording purposes in place.

We understand that the _____ will conduct random audits of our work where a producer statement has been used. If a workmanship or technical fault is detected from these audits then we undertake to carry out all appropriate remedial work as agreed is necessary by both parties in the particular circumstances.

Signature: [Signature] Name: P. Owen
Date: 11.2.10
Registration: over 45



EANS 521

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. **3066878** ✓

No. of attachments

CUSTOMER INFORMATION - PLEASE PRINT CLEARLY

Name of customer: Phone:

Address of installation:

Postal address of customer (if not at home):

WORK DETAILS

No. of lighting outlets No. of ranges Please tick (✓) as appropriate where work includes:
 No. of socket outlets No. of water heaters Mains Main earthing system
 Was any installation work carried out by the homeowner? Yes No Switchboard Electric lines

Description:

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:

Registration no.:

Company:

Signature:

Date:

Contact Ph. No.:

CERTIFICATION OF ELECTRIC LINES

To be completed where a registered electrical worker has installed the electric line portion of the main.

Name:

Registration no.:

Company:

Signature:

Date:

Contact Ph. No.:

INSPECTION DETAILS

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 61 of the Electricity Regulations 1997.

Name:

Registration no.:

Signature:

Date:

Daytime Contact Ph. No.:

This form is approved by the Electrical Workers Registration Board, PO Box 19, 56, Wellington, New Zealand. Telephone: 04-488 1000

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. 3154164

No. of attachments

CUSTOMER INFORMATION - PLEASE PRINT CLEARLY

Name of customer LOGAN HOMES LTD.

Phone 855800

Address of installation LOT 10, 379 BURMAN ROAD SLAISDALE HAMILTON

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 INSTALL A/C TO NEW EXISTING SWITCHBOARD WITH A 20AMP CIRCUIT BREAKER.

It is recommended that test results be recorded here:

Visual Examination

Earth Continuity

Bonding

Polarity

Insulation Resistance 200 + 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 JOHN PAUL BUENO

Registration no. E 254456

Company HEATHCOTE APPLIANCES

Signature 

Date 08/02/10

Contact Ph No. 021753748

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

Registration no.

Signature

Date

Daytime Contact Ph No.

CUSTOMER COPY - THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED

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. 3072193

No. of attachments

CUSTOMER INFORMATION - PLEASE PRINT CLEARLY

Name of customer Logan Homes Phone: 021 2222548
Address of installation 37A Borman Road Hamilton
Postal address of customer (if not as above) 5# 802106

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 Connection of 1x Arcer unit to existing switch board as required

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 C A Newport
Registration no. E15965
Company S.T. Electrical
Signature [Signature]
Date 12/01/10
Contact Ph No. 021) 728 728

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 _____ Registration no. _____
Signature _____ Date _____
Daytime Contact Ph No. _____

CUSTOMER COPY - THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED

This form is approved by the Electrical Workers Registration Board (PO Box 10-156, Wellington. Freephone 0800 66-1000) for the purposes of the Electricity Regulations 1997.

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

Certificate No

516987

9th Floor, 76 The Terrace
 PO Box 10655
 WELLINGTON
 Tel 04 494 2970
 Fax 04 494 2975
 website www.pgdb.co.nz

THIS CERTIFICATE IS NOT TRANSFERABLE

Installation address:
 (Box No & occupant's)

Please complete in block letters

(Number)
379 BORMAN RD
ELAIDALE
 (Suburb)

HAMILTON.
 (Town/City)

Consumer:
 (Title) LOOM HOMES SHOWHOME.
 (Family/Business name)

DESCRIPTION OF GASFITTING TO WHICH THIS CERTIFICATE APPLIES

Qty	Type	Location	Appliance			Flue			Ventilation		
			Make/model	Input rate	Type	Location	Type	Location			
	FIRE	LOUNGE	HARRIS FERVA CALAIS	38	T WIND THROUGH ROOF	SKIN		COMPLIES			

Category

- Type (Regulation 24(1))
- Domestic
 - Commercial
 - Industrial
 - Temporary
 - Other
- New
 - Addition
 - Extension
 - Replacement
 - Alteration
 - Repair following accident

Gas Type

NG LPG TLP Bio

Name of Gas Supplier

9K6 CYLINDER

Pipework Installed

YES NO

Test Results

Duration 20 min
 Test pressure 2.75 kPa Yes No
 Loss / gain — kPa Ventilation
 Working pressure 2.75 kPa Yes No

Test Date

11.12.10

I certify that :-

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

Certifiers Name

G. GARDNER

Address

707 VICTORIA RD

R.D.I

CAMBRIDGE.

Registration No

11558

Signature

[Signature]

Date

13.12.10

Registered Gasfitter/s Supervised by certifier

Name
 Registration No
 Name
 Registration No

Certificate owner
 Registration No
 On behalf of
 Address

(If other than certifying gasfitter)

CONSUMERS COPY



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

Certificate No 516930

9th Floor, 70 The Terrace
P.O. Box 10655
WELLINGTON
Tel 04 494 2970
Fax 04 494 2975
website www.pgdb.co.nz

THIS CERTIFICATE IS NOT TRANSFERABLE

Installation address:
(Box No's not acceptable)

(Number)

379

Please complete in block letters

(Street name)

Duncan Rd

(Suburb)

GRANDMALE

Consumer:

(Title)

Leann Heales

(Family/Business name)

HAMILTON

(Town/City)

DESCRIPTION OF GASFITTING TO WHICH THIS CERTIFICATE APPLIES

Qty	Type	Location	Appliance			Flue			Ventilation			
			Make/model	Input rate	Type	Location	Type	Location	Type	Location		
		Pipe	ewok corky									

Category Type (Regulation 24(1))

- Domestic
- Commercial
- Industrial
- Temporary
- Other

New

- Addition
- Extension
- Replacement
- Alteration
- Repair following accident

Gas Type NG LPG TLP Bio

Name of Gas Supplier BOTTES

Pipework Installed YES NO
(attach pipework diagram)

Test Results Other Testing

10 min Duration

5 kPa Test pressure

n/c kPa Loss / gain

1 kPa Working pressure

Test Date

11/12/10

I certify that :-

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

Certifiers Name

Address

P. O. O'Connell
P.O. 5340

Certificate owner

Registration No.

On behalf of

Address

HAMILTON
HAMILTON
060045

Registered Gasfitter/s Supervised by certifier

Name

Registration No

Name

Registration No

Registration No

Signature

Date

11/12/10

(If other than certifying gasfitter)

Consent Reference:

Project Address:

Issue Date:

2009 / 22919

379 Borman RD

28-Aug-09
Issue CCC

Owner:

Builder:

Logan Homes Ltd

Logan Homes Ltd

Description of Work:

New Dwelling attached Garage

Signed: *[Signature]*

Property Reference:

Lot 10 DP 397340

TR /

BUILDING INSPECTIONS

PLUMBING & DRAINAGE INSPECTIONS

	SIGN	APPROVED		DATE
		Yes	No	
Siting	<i>[Signature]</i>	✓		09/09/09
Foundation	<i>[Signature]</i>	✓		09/09/09
Bond Beam				
Concrete Floor	<i>[Signature]</i>	✓		10/09/09
Tilt Slab				
Framing	<i>[Signature]</i>	✓		28/09/09
Cavity/Batten	<i>[Signature]</i>	✓		2.10.09
Cladding	<i>[Signature]</i>	✓		17.11.09
Prelining	<i>[Signature]</i>	✓		14/10/09
Postlining	<i>[Signature]</i>	✓		23/10/09
Fire protection				
Crossing	<i>[Signature]</i>	✓		16/12/09
Crossing Final				

	SIGN	APPROVED		DATE
		Yes	No	
Concrete Floor	<i>[Signature]</i>	✓		8/9/09
Prelining	<i>[Signature]</i>	✓		09/10/09
Stack Test				
Waste & Soil				
Foulwater				
Stormwater	<i>[Signature]</i>	✓		16/4/09
Chimney	<i>[Signature]</i>	✓		16/4/09
Heater				
Other				
DRAINLAYER: <i>[Signature]</i>				
PLUMBER: <i>[Signature]</i>				

Consultant/Installer Statement	Requested	Received
Driven Piles		✓
Engineers		✓
Plaster Coating/Paint		✓
Electrical Certificate		✓
Automatic Sprinklers		
Fire Alarm		
Emergency Lighting		
Lifts, Escalators		
Mechanical Ventilation		
Automatic Doors		
Acoustic Engineer		
COMPLETION SIGN <i>[Signature]</i>		DATE 11-02-10
COMMENTS:		

Consultant/Installer Statement	Requested	Received
Pressure Test	✓	✓
As Laid Drainage Plan	✓	✓
Back Flow Prevention Device	✓	✓
Gas Certificate	✓	✓
COMPLETION SIGN <i>[Signature]</i>		DATE 18/2/10
COMMENTS:		



SPECIFIC LOCATION:

NOTE TO BUILDERS/SUB CONTRACTOR/OWNER: Please check that you have completed all items as listed and ticked the appropriate boxes before arranging for an inspection. This completed form needs to be given to the inspector at the time of inspection.

PROPERTY ADDRESS: 379 Boman Rd.

LOT: 10 DP/S: 397340 CONSENT NO: 22919/09

Inspected Failed Not Applicable

- Builder/Sub-Contractor/Owner
- Inspector
- Check you are on correct site
- Approved Building Consent documents on site
- Check Building Consent Conditions
- Check street number on letterbox
- Ensure plumbers and drainlayers names are recorded on job card
- Relevant inspections have been called for
- Roof penetrations flashed in accordance with E2 page 81 Figures 53 & 54
- Gully dishes positioned to stop stormwater ingress
- Ensure overflow relief gully minimum 150mm below lowest fixture outlet
- Waste pipes sealed at point of entry into rear of gully dishes and bends installed tight to back of gully dish
- All wastes are vented if greater than 3.5m and have min 1:40 fall.
- Driveway catchpit installed for over 100m²
- All permanently paved areas over 10m² run to catchpit
- Permanent ground area does not exceed grass area to boundary
- Terminal vent position, flashings, cowls fitted
- Downpipes evenly clipped and connected to stormwater drainage
- No Discharge to lower masonry roofs. Downpipes from top storey roofs to lower roof spreader required as per E2 Page 56 figure 20
- No overflow drainage is terminated to catch pit
- Overflows fitted to Decks and run to exterior
- Hot water cylinder is correct type, all required safety valves and seismic restraints fitted
- HWC expansion/relief drains have been installed and conveyed to the exterior
- Cylinder drain/valve pipes via the tundish/air gap
- Cylinder safe tray if required
- Dishwasher pipe clamped and anti siphon bend fitted
- Water hammer
- Toilet cisterns screwed to wall securely

- Builder/Sub-Contractor/Owner
- Inspector
- Terminal vents continuous in ceiling space
- Traps fitted and holding seals
- Tub fixed in position
- Check job descriptions match card
- Water temperature = 35
- Gas certificate provided No: 516887
- As-laid drain plans provided
- Plumbing pressure test certificate from HCC registered person
- Pipes insulated outside building thermal envelope using UV protected where required
- Copper waste pipe to commercial machine
- Bainmarie drains provided to approved outlet
- Back flow prevention devices where required
- Test certificate for back flow devices
- Approval letter from Trade Waste Department received yes no
- Septic tank installation, has been installed as per engineers design PS4 (Certificate supplied)
- Engineers PS4 for storm water soak hole design
- If cross lease/subdivision ensure all drainage requirements have been met
- If timber floor check wastepipe/soilpipes clipping complies
- Further Inspection Fee Required yes no

Name of Builder/Sub-Contractor/Owner Completing Check List: _____

Signature: _____

Date: _____

OFFICE USE ONLY - Please Tick as appropriate

- Pass - in accordance with the plans & specifications approved for this consent
- Fail

- Further Documentation required
- Required Documents received / /
- Further Inspection needed

Comments Memo No: _____

Notice to Fix No: _____

Inspector [Signature]

Auditor _____

Inspection Date 18/2/09

Audit Date _____

SPECIFIC LOCATION:

NOTE TO BUILDERS/SUB CONTRACTOR/OWNER: Please check that you have completed all items as listed and ticked the appropriate boxes before arranging for an inspection. This completed form needs to be given to the inspector at the time of inspection.

PROPERTY ADDRESS: 379 Roman rd, Hamilton

LOT: _____ DP/S: _____ CONSENT NO: 2009/22919

Approved Failed Not Applicable

- Builder/Sub-Contractor/Owner
- Inspector
- Check you are on correct site
- Approved Building Consent documents on site
- Check Building Consent conditions
- Check job description on job card

EXTERIOR

- External envelope complete and weatherproof
- Flashings/sealants complete
- Wet area/kitchen vents
- Safety glass
- Ground/paving heights
- Crossing and footpath for damage
- Brick veneer weep and ventilation holes
- Exterior decorated
- Weathering of penetrations
- Construction of decks/steps/handrails
- Barrier heights and construction timber/treatment
- Sub floor access/ponding/ventilation/insulation
- Roof cladding/flushing fixings/roof penetrations
- Landscaping complete - retaining walls
- Wall cladding fixings/soakers/scribers etc
- Fire rating

INTERIOR

- Ceiling insulation in place
- Fire ratings stopped
- Wet areas completed, walls, ceilings, floors sealed
- Wet areas ducted to exterior
- Safety glass
- Heights of window sashes
- Heights of barriers and handrails/details
- All inspections have been completed
- All certificates have been received
- Smoke Alarms Fitted

- Builder/Sub-Contractor/Owner
- Inspector

COMMERCIAL

- Surface finishes, smoke development and spread of flame for ceilings, walls, floor coverings
- Stopping of fire walls and penetrations
- Penetrations/light fittings/fire collars etc
- Means of escape, door hardware, signage
- Fire and smoke doors: hardware, tags, self closers/magnetic hold open device and signage
- Signage/fire alarm

ACCESSIBILITY

- Ramps non slip, width, length, upstands, handrails 1:12 1200 wide
- Entrance signage, threshold, width, floor surfaces
- Public reception counters or desks
- Lifts sizes, controls. Handrails, lobby width
- Stair widths, handrails, landings, risers, treads, nosings
- Doorways/corridors clear width, glazing, colour contrasted, projections into corridors
- Alerting devices audible and visual signal
- Toilet size, controls, doors, wash hand basin, taps
- Showers size, controls, door/s
- Laundering size and turning cycle
- Signage entrance doors, information board and facilities signage
- Surface finishes stable firm and non slip
- Sound system, stage podium access, listening system
- Signage for listening system
- Accessible route car parks, identifiable route from street to and through building, surface finishes stable firm and non slip
- Further Inspection fee required

Name of Builder/Sub-Contractor/Owner Completing Check List: Turn

Signature: [Signature] Date: 11-2-10

OFFICE USE ONLY - Please Tick as appropriate

- Pass - in accordance with the plans & specifications approved for this consent
- Fail

- Further Documentation required
- Required Documents received 1 1
- Further Inspection needed

Comments Memo No: _____
Inspector: [Signature]
Inspection Date: 11.02.10

Notice to Fix No: _____
Auditor: _____
Audit Date: _____

SPECIFIC LOCATION:

NOTE TO BUILDERS/SUB CONTRACTOR/OWNER: Please check that you have completed all items as listed and ticked the appropriate boxes before arranging for an inspection. This completed form needs to be given to the inspector at the time of inspection.

PROPERTY ADDRESS: 379 Borman rd, Hamilton

LOT: _____ DP/S: _____ CONSENT NO: 2009/22919

Inspected Failed Not Applicable

- Builder/Sub-Contractor/Owner
- Inspector
- Check you are on correct site
- Approved Building Consent documents on site
- Check Building Consent Conditions
- Check street number on letterbox
- Ensure plumbers and drainlayers names are recorded on job card
- Relevant inspections have been called for
- Gully dishes positioned to stop stormwater ingress
- General workmanship of flashings and roof penetrations
- Ensure overflow relief gully minimum 150mm below lowest fixture outlet
- All wastes are vented if greater than 3.5m and have min 1:40 fall.
- Driveway catchpit installed for over 100m²
- All permanently paved areas over 10m² run to catchpit
- Permanent ground area does not exceed grass area to boundary
- Waste pipes sealed at point of entry into rear of gully dishes and bends installed tight to gully dish
- Terminal vent position, flashings, cowls fitted
- Downpipes evenly clipped and connected to stormwater drainage
- Downpipes from top storey roofs to lower roof spreader required as per E2 Page 56 figure 20
- Novaflo drainage is terminated to catch pit
- Overflows fitted to Decks and run to exterior
- Hot water cylinder is correct type, all required safety valves and seismic restraints fitted
- HWC expansion/relief drains have been installed and conveyed to the exterior
- Cylinder drain/valve pipes via the tundish/air gap
- Cylinder safe tray if required
- Dishwasher pipe clamped and anti siphon bend fitted
- Water hammer
- Toilet cisterns screwed to wall securely

- Builder/Sub-Contractor/Owner
- Inspector
- Terminal vents continuous in ceiling space
- Traps fitted and holding seals
- Tub fixed in position
- Check job descriptions match card
- Water temperature = 7 °C
- Gas certificate provided No: _____
- As-laid drain plans provided
- Plumbing pressure test certificate from HCC registered person
- Pipes insulated outside building thermal envelope using UV protected where required
- Copper waste pipe to commercial machine
- Roof penetrations flashed in accordance with E2 page 81 Figures 53 & 54
- Bainmarie drains provided to approved outlet
- Back flow prevention devices where required
- Test certificate for back flow devices
- Approval letter from Trade Waste Department recieved yes no
- Septic tank installation, has been installed as per engineers design PS4 (Certificate supplied)
- Engineers PS4 for storm water soak hole design
- If cross lease/subdivision ensure all drainage requirements have been met
- If timber floor check wastepipe/soilpipes clipping complies
- Further Inspection Fee Required yes no

2 Gas Cert Required
1 Entry through HWC
HWC to be hot on vent inspect.

Name of Builder/Sub-Contractor/Owner Completing Check List: Peter Owen Plumbing

Signature: [Signature] Date: 11,02,10

OFFICE USE ONLY - Please Tick as appropriate

Pass - in accordance with the plans & specifications approved for this consent

Fail

Further Documentation required

Required Documents received 1/1

Further Inspection needed

Comments Memo No: _____

Inspector: [Signature]

Inspection Date: 11/2/10

Notice to Fix No: _____

Auditor: _____

Audit Date: _____

NOTE TO BUILDERS/SUB CONTRACTOR/OWNER: Please check that you have completed all items as listed and ticked the appropriate boxes before arranging for an inspection. This form needs to be shown to the inspector at the time of inspection.



Inspected



Failed



Not Applicable

PROPERTY ADDRESS: 379 Borman Road

LOT: 10

DP/S: 397340

CONSENT NO: 22919/2009

- Builder/Sub-Contractor/Owner Inspector
- Check you are on correct site Check street number
- Approved Building Consent documents on site
- Check Conditions Check for previous Comments
- Request safety barrier around crossing
- In the event of a crossing being formed on a section of road which has not yet been fully constructed refer to Transportation
- Crossings in rural areas shall be constructed to the same standard as the road they come off. Design shall be as per Drawing No. DCS301 (Volume 5) If any concerns, refer to Transportation
- Shared environment crossing refer to Transportation
- If any of the following apply refer to Transportation. Driveway steeper than 12°. Coloured concrete required. Slot crossing required. Stormwater grate, manhole, bus stop, power pole, bin, trees etc. in crossing area
- Crossings shall not interfere with footpath or berm profile, except for minor filling between boundary and footpath. No retaining walls or structures are to encroach onto the berm and no lowering of the berm is permitted
- Crossing is to be constructed of the same material as the adjacent footpath, except that for chipsealed or slurry footpaths, the crossing shall be asphaltic concrete
- For wide commercial crossings, in areas of moderate to high pedestrian use, thought should be given to reinforce the priority of the footpath over the crossing. A pavement marked pedestrian crossing may be appropriate.
- Crossing standards apply to the full width of the berm between the kerb and road boundary. Crossing must be formed to property boundary
- When constructing a new crossing, cut out existing footpath if present, and reconstruct to vehicle crossing standards
- Cracked existing kerb and channel is to be removed and incorporated into crossing construction works
- Sub-grade and sub-base preparation is to extend 200m beyond the crossing edges

RESIDENTIAL CROSSINGS

- Crossing width 3.0m minimum
- Crossing width 5.5m maximum
- Crossing width 6.5m maximum at kerb & channel which includes 500mm splay each side of crossing
- 1000mm total splay each side of crossing if crossing width is less than 4.0m and street width is less than 9.0m
- Asphalt Footpath 25mm asphalt + 75mm gap 20

- Crossing less than 7 dwellings 25mm asphalt + 175mm gap 40
- Crossing 7 or more dwellings 30mm asphalt + 220mm gap 40
- Concrete Footpath 100mm concrete + 25mm sand
- Crossing less than 7 dwellings 125mm concrete + 75mm gap 20 or 665 mesh
- Crossing 7 or more dwellings 150mm concrete + 75mm gap 20 or 665 mesh
- Cobblestone Footpath 60mm paver + 25mm sand
- Crossing less than 7 dwellings 60mm paver + 25mm sand + 90mm gap 40
- Crossing 7 or more dwellings 80mm paver + 25mm sand + 95mm gap 40

COMMERCIAL/INDUSTRIAL OR 7 OR MORE DWELLINGS

- Crossing width 5.0m minimum
- Crossing width 7.5m maximum
- Crossing width 9.5m maximum at kerb & channel, kerb & channel reinforced beam to extend 1.5m past each side of crossing width
- 500mm splay each side of crossing
- 1000mm total splay each side of crossing where street width is less than 9.0m
- If asphalt footpath, remove footpath and construct as per crossing standard
- If concrete footpath, remove footpath and construct as per crossing standard
- If no footpath, can construct crossing in asphalt, concrete or cobblestones

ASPHALT

- Commercial / Industrial crossing 50mm MIX 10 asphalt + 250 gap 40

CONCRETE

- Commercial / Industrial crossing, 150mm concrete + 75mm gap 20 + 2 Layers of 665 mesh
- Or 175mm concrete + 75mm gap 20

INTERLOCKING BLOCK PAVING

- Commercial / Industrial crossing, 80mm paving block + 25mm bedding sand + 120mm gap 40

BEAM

- Depressed kerb channel crossing Pedestrian footpath/residential crossing less than 7 dwellings 75mm gap 20
- 7 or more dwellings 75mm gap 20 + 2 D12 & 6mm links at 600mm centres
- Industrial / commercial crossings 75mm gap 20 + 4 D12 & 6mm links & 600mm centres
- Beam must extend 1.5m each side of crossing

Any changes to the above, please have Transportation Unit approve prior to approval

Name of Builder/Sub-Contractor/Owner Completing Check List: Ensure R/C for Wille

Signature: _____ Date: 15/08/09

Comments Memo No: _____ Notice to Fix No: _____

Further Inspection Required Yes No

Inspector: [Signature] Date of Inspection: 16/12/09

Approved as in accordance with the plans & specifications approved for this consent Auditor: _____ Date: _____

GEON

SPECIFIC LOCATION:

NOTE TO BUILDERS/SUB CONTRACTOR/OWNER: Please check that you have completed all items as listed and ticked the appropriate boxes before arranging for an inspection. This completed form needs to be given to the inspector at the time of inspection.

PROPERTY ADDRESS: Bonnam RD

LOT 10

DP/S:

CONSENT NO: 2009/22919

Approved **Failed** **Not Applicable**

- Builder/Sub-Contractor/Owner
- Inspector
- Check you are on correct site
- Approved Building Consent documents on site
- Check Conditions
- Check previous Comments

BRICK VENEER

- Correct type, condition, fixing and support of building wrap
- Cavity size 40mm minimum
- Number, spacing and location of ties
- Connection of brick ties
- Cavity cleaned/rebate sealed
- Back support on foundation
- Weep/ventilation holes
- Flashing detail into joinery
- Flashing requirements/fixing position
- Minimum panel sizes
- Maximum height of veneer
- Lintel bars/type of fixing details
- Cavity sealed from roof space
- Slope to sills 15° min.
- Details at ground level
- Window support bars fitted

PREPLASTER - RIGID BACKING

- Fibre cement sheet
- H3 plywood
- H3 diagonal sheeting

PREPLASTER - SOLID PLASTER (MESH)

- Mesh type
- Reinforcement around openings
- 6-9mm spacers
- Galvanised
- Proprietary self-spacing mesh
- Fixings
- Proprietary control joints

- Builder/Sub-Contractor/Owner
- Inspector

PREPLASTER - NON RIGID BACKING (CAVITY SYSTEM)

- Support
- Allowable deflection of flexible backer (e.g. riblath)

MONOLITHIC TYPE CLADDING

- Correct type, position and condition of building wrap
- Fixing detail of backing
- Sheet joining/flashing detail
- Joinery head/sill and jamb flashing detail
- Flashing connections to each other
- Slope to parapet/sill detail
- Roof/wall and parapet flashing details
- Detail at ground level
- Requirements for expansion/contraction joint details both horizontal and vertical
- Spacer spacing, fixings etc.
- Battens (ventilated cavity)
- Reinforcement type/fixing etc.
- General workmanship
- Weathering detail for barriers/downpipes/weatherboards and penetrations
- Remind installer about installation certificate
- Internal/external angles

WEATHERBOARD TYPE SYSTEMS

- Correct type of building wrap, fixing and support
- Flashing requirements/fixing/position
- Cladding fixing details
- Details at ground level
- Battens (ventilated cavity)
- Bottom of cladding provides weathering to bottom plates, floor joists and behind decking

Name of Builder/Sub-Contractor/Owner Completing Check List: Phil COOMBS

Date: 17-11-09

OFFICE USE ONLY - Please Tick as appropriate

- Pass - in accordance with the plans & specifications approved for this consent
- Fail

- Further Documentation required
- Required Documents received / /
- Further Inspection needed

Comments Memo No: _____

Notice to Fix No: _____

Inspector [Signature]

Auditor _____

Inspection Date 17.11.09

Audit Date _____



SPECIFIC LOCATION:

NOTE TO BUILDERS/SUB CONTRACTOR/OWNER: Please check that you have completed all items as listed and ticked the appropriate boxes before arranging for an inspection. This completed form needs to be given to the inspector at the time of inspection.

PROPERTY ADDRESS: 379 Borman Rd.

LOT: 10 DP/S: 397340 CONSENT NO: 2009/22919

Inspected Failed Not Applicable

Builder/Sub-Contractor/Owner
 Inspector

Builder/Sub-Contractor/Owner
 Inspector

- Check you are on correct site
- Approved Building Consent documents on site
- Check Conditions
- Check previous comments

ACCESSIBILITY CHECKLIST/DISCUSS

- Floor/Ceiling nailed off as diaphragm
- Position of sheet bracing
- Fixing of sheet bracing
- Holes in sheet braces
- Safety glass
- Correct type of wall linings used
- STC rating requirements
- Stopping and penetrations, light switches, power points etc to fire walls
- Request acoustic engineers report

- Accessible Carpark
- Ramps
- Entrance
- Public Reception Area
- Lifts
- Stairs
- Doorways, corridors
- Controls (auto doors etc)
- Alerting devices
- Toilets
- Showers
- Laundering
- Food preparation
- Signage
- Surface finishes
- Accessible Route

COMMERCIAL

- Fire philosophy
- Fire rating
- Stopping of fire ratings
- Penetrations
- Discuss compliance schedule feature and request certificates for compliance
- Discuss spread of flame index for interior finish and request certificates required

Name of Builder/Sub-Contractor/Owner Completing Check List: Logan Homes

Signature: [Signature]

Date: 28-10-09

OFFICE USE ONLY - Please Tick as appropriate

- Pass - in accordance with the plans & specifications approved for this consent
- Fail

- Further Documentation required
- Required Documents received 1/1
- Further Inspection needed

Comments Memo No: _____

Notice to Fix No: _____

Inspector: [Signature]

Auditor: _____

Inspection Date: 28/10/09

Audit Date: _____

SPECIFIC LOCATION:

NOTE TO BUILDERS/SUB CONTRACTOR/OWNER: Please check that you have completed all items as listed and ticked the appropriate boxes before arranging for an inspection. This completed form needs to be given to the inspector at the time of inspection.

PROPERTY ADDRESS: 379 BORMAN RD HAMILTON

LOT: 10 DP/S: 397340 CONSENT NO: 2009/22919

Inspected Failed Not Applicable

Builder/Sub-Contractor/Owner

Builder/Sub-Contractor/Owner

- Inspector
- Check you are on correct site
- Approved Building Consent documents on site
- Check Conditions
- Check previous comments

Inspector

GENERAL

EXTERIOR

- Construction of decks, bracing, hangers etc
- Verandah post connections
- Roof cladding type, flashings, nailing
- Fire rating requirements
- Exterior bracing

- Stair rail openings
- Configuration of stair/type
- Width between rails
- Height of barriers and ballustrading to landings, decks and stairs
- Glazing requirements

INTERIOR

- Interior brace fixing
- Bottom plate fixings
- Moisture content (timber) = dry %
- Insulation/moisture content
- Holes and notches in framing
- Safety glass
- STC ratings (Design test for multi unit dwellings)
- Fire ratings, penetrations
- Joinery provides correct lighting, ventilation to each room
- Window sash heights above floor
- Discuss smoke alarm requirements
- Air seals fitted

COMMERCIAL

- Fire philosophy
- Discuss fire ratings
- Discuss compliance schedule features and request certificate for completion
- Fire collars/penetrations through fire ratings

ACCESSIBILITY CHECKLIST

- Accessible car parks
- Access ramps
- Entrance
- Public reception
- Lifts
- Stairs
- Doorways, corridors
- Controls (Auto Doors etc)
- Alerting devices
- Toilets
- Showers
- Laundering
- Food preparation
- Signage
- Surface finishes
- Accessible route

ROOF

- Roof underlay grade, netting
- Roof correct pitch for material used
- Correct trusses for roof material used and spacing
- Ceiling batten sizes, correct spans and nailing
- Ceiling diaphragms
- Vapour barrier for skillion roofs
- Insulation to ceiling, correct position certificate

Name of Builder/Sub-Contractor/Owner Completing Check List: Logan Homes

Signature: R. Egan

Date: 14-10-09

OFFICE USE ONLY - Please Tick as appropriate

- Pass - in accordance with the plans & specifications approved for this consent
- Fail

- Further Documentation required
- Required Documents received 1 1
- Further Inspection needed

Comments Memo No: _____

Notice to Fix No: _____

Inspector: [Signature]

Auditor: _____

Inspection Date: 14/10/09

Audit Date: _____

SPECIFIC LOCATION:

NOTE TO BUILDERS/SUB CONTRACTOR/OWNER: Please check that you have completed all items as listed and ticked the appropriate boxes before arranging for an inspection. This completed form needs to be given to the inspector at the time of inspection.

PROPERTY ADDRESS: 379 BORMAN RD HAMILTON

LOT: 10 DP/S: 397340 CONSENT NO: 2009/22 919

Inspected Failed Not Applicable

- Plumber
- Inspector
- Check you are on correct site
- Approved Building Consent documents on site
- Check Conditions
- Check for previous comments
- Approved type of pipes/identification/standard R2
- (complete details of pipe system used)
- Support of pipework
- Pipes secured to prevent water hammer
- Pipe pressure at time of inspection 1500 kpa mains only
- Producer statement required yes no
- Pipes sealed through building wrap.
- Sludge and relief drains run via tundish/air gap
- Soil and waste pipe work correctly installed.
- Pipes are protected from frost damage
- Pipes within 100mm of roof to be insulated
- Notches and holes in framing as per NZS 3604 Walls Section 8 Figure 8.4
Floors Section 7 Figure 7.8
- Terminal vent installed
- Pipes protected from electrolysis and sharp objects
- Pipes correctly sized
- Test on Stack System yes no
- Position of hot water cylinder/infinity system is closest to most frequently used tap (kitchen sink) as per AS3500.4 see 5.3.1 Page 36
- Check hot water cylinder if in ceiling and completed yes no
- Above ground relief pipes from HWC in copper or 99°C approved pipe system
- Fire hose reel pipe work run in metallic only

- Plumber
- Inspector
- Plumber
- Inspector
- Air conditioning condensate drains run to outside(not to outside gully dish)
- Back flow philosophy followed
- Solar panel installation correct yes no
- Wetback Installation correct yes no
- Fire Collars installed where required
- Overflows fitted to decks and run to exterior
- To be same size as outlet
- Further Inspection Fee Required yes no

Notes: _____

Name of Builder/Sub-Contractor/Owner Completing Check List: P. Owen

Signature: _____ Rego: 00045 Date: _____

OFFICE USE ONLY - Please Tick as appropriate
 Pass - in accordance with the plans & specifications approved for this consent
 Fail

Further Documentation required
 Required Documents received 1 1
 Further Inspection needed

Comments Memo No: _____
Inspector: [Signature]
Inspection Date: 13/10/09

Notice to Fix No: _____
Auditor: _____
Audit Date: _____

GEON



NOTE TO BUILDERS/SUB CONTRACTOR/OWNER: Please check that you have completed all items as listed and ticked the appropriate boxes before arranging for an inspection. This form needs to be shown to the inspector at the time of inspection.

Inspected Failed Not Applicable

PROPERTY ADDRESS: 379 BORNAN RD HAMILTON

LOT: 10 DP/S: 397340 CONSENT NO: 2009/22919

Builder/Sub-Contractor/Owner
 Inspector

- Check you are on correct site
- Approved Building Consent documents on site
- System as per consent documents
- Check conditions

CAVITY/BATTEN

- M3 treatment timber or plywood
- 20mm minimum thickness
- Spacing of battens
- H Grade polystyrene
- Correct batten size
- Sheet layout/construction joints
- Slope to horizontal battens/gaps each end
- Moisture content of battens %
- Building wrap conditions
- Sealing of penetrations
- Flashing systems
- Cavity closures
- Building wrap strapping at 300mm centres if stud spacing greater than 400mm
- Nogs at 800mm centres max for stud spacing of 450mm or greater
- Stop ends to flashings
- H grade polystyrene 40mm thick
- S grade polystyrene 60mm thick
- Insulation Requirements

Name of Builder/Sub-Contractor/Owner Completing Check List: Rogan

Signature: [Signature]

Date: 2-10-09

Comments Memo No: _____

Notice to Fix No: _____

Further Inspection Required

Yes No

Inspector: [Signature]

Date of Inspection: 2-10-09

Approved as in accordance with the plans & specifications approved for this consent

Auditor: _____

Date: _____

GEON

NOTE TO BUILDERS/SUB CONTRACTOR/OWNER: Please check that you have completed all items as listed and ticked the appropriate boxes before arranging for an inspection. This form needs to be given to the inspector at the time of inspection.

Approved **Failed** **Not Applicable**

PROPERTY ADDRESS: 379 BORMAN RD HAMILTON

LOT: 10 DP/S: 397340 CONSENT NO: 2009/22919

Builder/Sub-Contractor/Owner

Inspector

- Check you are on correct site
- Approved Building Consent documents on site
- Check for previous comments
- Check conditions

FLOOR FRAMING

- KPa floor loads/point loads
- Bearer/joist sizes/spans
- Joist hangers
- Bracing/braced piles/anchor piles
- Bracing/pile connections
- Solid blocking to joists
- Insulation
- Subfloor ventilation
- Crawl space
- Polythene on ground
- Confirm types of pile/bearer/floor joist fixings to be used and level of protection required, i.e. galvanised, stainless steel (including nails)
- Timber treatment
- Floor fixed as diaphragm

WALL FRAMING

- Timber treatment
- Framing sizes
- Framing height
- Bottom plate fixings - External
- Lintel sizes - connections
- Top plate for roof support, truss; beams. Bracing lines
- Nogging for vertical cladding

Builder/Sub-Contractor/Owner

Inspector

- Nailing general
- Exterior ply bracing
- Interior bracing
- Window sash heights above floor
- Stud-top plate connections
- Insulation

ROOF FRAMING

- Bracing, dragon ties etc
- Timber treatment
- Roof correct pitch for material used
- Correct trusses/rafters for roof material used and spacing
- Joist hangers and fixings to intersecting trusses and girder trusses/beams and girder trusses
- Support of girder trusses
- L nails connecting trusses/rafters to top plates
- Truss/rafter fixing to design requirements
- ~~Strutting beam and ceiling runner sizes to close coupled roofs~~
- ~~Rafter spans, collar ties, cleats and under purlin sizes to close coupled roofs~~
- Ceiling batten sizes, correct spans and nailing (if in place)
- Purlin fixings

OTHER

- Construction of decks, bracing, hangers etc
- Verandah post connections
- Timber treatment
- Nailing general
- Barrier framing
- Fire rating requirements/bottom plate fixing

Name of Builder/Sub-Contractor/Owner Completing Check List: LOGAN HOMES

Signature: R. Edgewood

Date: 26-9-09

Comments Memo No: _____

Notice to Fix No: _____

Please tick as appropriate

Pass - in accordance with the plans & Specifications approved for this consent

Fail

Further requirements: Documentation Inspection

Inspector: [Signature]

Auditor: _____

Date of inspection: 28 09 09

Date: _____

SPECIFIC LOCATION:

NOTE TO DRAINLAYER: Please check that you have completed all items as listed and ticked the appropriate boxes before arranging for an inspection. This form needs to be shown to the inspector at the time of inspection.

PROPERTY ADDRESS: 379 Borman Rd

LOT: 10 DP/S: _____ CONSENT NO: 2009/22919

Inspected Failed Not Applicable

Drainlayer
 Inspector

- Check you are on correct site
- Approved Building Consent documents on site
- Check Conditions

SEWER

- Ensure sanitary sewer is connected to correct connection
- Gradients/System as per G13 or AS3500.2
- Check pipe is approved and fittings are labeled
- Check material/pipe is bedded in
- Check for leakage during water test
- Drainlayer to release testing equipment to ensure full flow flush is obtained and connection clear
- Correct fittings used
- Check for terminal vents and positions
- Discuss protection over drains for inadequate depth
- Discuss heights of gully traps
- Ensure drains are laid within legal boundaries
- As laid plan received yes no
- One fixture above terminal vent only
- PS3 for engineer for sewage treatment system yes no
- Stability of ground/trench base covered by engineer, PS4 supplied yes no
- Further Inspection Fee Required yes no

Drainlayer
 Inspector

STORMWATER

- Confirm Drainlayers name
- Ensure stormwater is connected to the correct connection
- Gradients/System Used E1 or AS/NZS3500.3
- Check pipe size is correct for given roof/surface area refer E1 Page 35

Figure 3

- Check pipe/fittings are approved and labelled
- Check material pipe is bedded in
- Check adequate number of downpipes for roof area
- Correct fittings used
- Connections installed for future concreted/permanent paved areas
- Driveway catchpit installed for over 100m²
- All permanently paved areas over 10m² run to catchpit
- Discuss protection over drains for inadequate depth
- Ensure that drains are laid within legal boundaries
- All subsoil drains run via catch pit
- As laid plan received yes no
- HCC soak hole correctly sized (40m² max area)
- Stability of ground/trench base covered by engineer, PS4 supplied yes no
- PS3 supplied for engineered soak holes yes no
- Further Inspection Fee Required yes no

Name of Drainlayer Completing Check List: B. Gibson

Signature: [Signature]

Date: 16.9.09

OFFICE-USE ONLY - Please Tick as appropriate

- Pass - in accordance with the plans & specifications approved for this consent
- Fail

- Further Documentation Required
- Further Inspection Required

Comments Memo No: _____
Inspector: [Signature]
Inspection Date: 16.04.09

Notice to Fix No: _____
Auditor: _____
Audit Date: _____

NOTE TO BUILDERS/SUB CONTRACTOR/OWNER: Please check that you have completed all items as listed and ticked the appropriate boxes before arranging for an inspection. This form needs to be shown to the inspector at the time of inspection.

Inspected
 Failed
 Not Applicable

PROPERTY ADDRESS: 379 BORMAN ROAD HAMILTON

LOT: 10 DP/S: 397340 CONSENT NO: 2009/22919

Builder/Sub-Contractor/Owner
 Inspector

Check you are on correct site
 Approved Building Consent documents on site
 Check Conditions
 Check for previous Comments

Floor thickenings
 Confirm concrete grade 20 MPA
 Thickness of slab SET BOXING
 Location of piles if driven piles
 Sand fill compaction and excavation ie. No topsoil underneath
 Compaction Certificate
 Manufacture of steel/mesh
 Mesh is correct type and gauge and tied
 Mesh is cut if expansion cuts are required
 Mesh supported on chairs

Builder/Sub-Contractor/Owner
 Inspector

Check that polythene is correct thickness, is lapped and taped
 Holes and penetrations in polythene are taped
 Reinforcing bars to internal corners
 Clean bond will be made between floor slab and band beams or header blocks

Remind builder to seal brick rebate
 Emulsion sealer to be used inside header blocks on wet sites
 Types and spacing of bottom plate connectors to be used To Complete
 Floor levels will be sufficient for ground clearance
 Engineers design - request letter of supervision
 Request truss design

Name of Builder/Sub-Contractor/Owner Completing Check List: G.E.C

Signature: P. BARLOW Date: 10.9.09

Comments Memo No: _____ Notice to Fix No: _____

Further Inspection Required
 Approved as in accordance with the plans & specifications approved for this consent
 Inspector J. Williams

Date of Inspection 10/09/09
 Auditor [Signature]
 Date 10.9.09

GEON

SPECIFIC LOCATION:

NOTE TO BUILDERS/SUB CONTRACTOR/OWNER: Please check that you have completed all items as listed and ticked the appropriate boxes before arranging for an inspection. This completed form needs to be given to the inspector at the time of inspection.

PROPERTY ADDRESS: 379 Borman Rd.

LOT: 10 DP/S: 397360 CONSENT NO: 2009/22919

Inspected Failed Not Applicable

- Builder/Sub-Contractor/Owner
- Inspector
- Check you are on correct site
- Approved Building Consent documents on site
- Check Conditions

- SITING**
- Locate boundary pegs – where required
 - Lot number on pegs
 - Dimensions between pegs
 - Measure distance from project to boundary conforms to site plan
 - Dimensions of building
 - Profile height in relation to floor heights
 - Building height in relation to boundary
 - Excavations, safe slopes, hoarding, shoring, underpinning and barriers for site safety. (Plans for retaining walls)
 - Council or private drains under building
 - Siting by surveyor – to provide letter

- DESIGN**
- Engineers designed foundation
 - Request engineers letter of supervision
 - Name of Engineer Mark Mitchell Ltd
 - Foundation to NZS 3604
 - Amended plans required

- DRIVEN PILES**
- Request engineers confirmation of supervision and report on length of piles and sets achieved

- PILES/DRILLED FOUNDATIONS**
- Height of profile in relation to top of piles
 - Correct size and treatment of piles

- Builder/Sub-Contractor/Owner
- Inspector
- Pile spacing for bearers/joists
- Floor heights conform to bracing elements provided
- Height for 450mm crawl space
- Layout of subfloor bracing
- Pile heights correct for type of bracing element i.e. anchor or braced pile
- Pile depths into cleared ground
- 100kpa or greater bearing capacity (including pre-floor excavation)
- Holes clean and sides vertical
- Confirm types of pile bearer/floor joist fixing to be used and level of protection required, i.e. galvanized/stainless steel (including nails)

- CONCRETE FOUNDATIONS** By Egg
- Foundation dimensions and minimum 200 mm depth into cleared ground
 - Foundation clean, square, level and no water in excavation
 - 100kpa soil bearing capacity as per soil report
 - Discuss floor height to proposed finished ground levels as per NZS 3604
 - Manufacture of steel
 - Steel sizes
 - Correct type, i.e. high tensile or deformed etc
 - Steel laps
 - All steel has been tied up
 - Steel is clean
 - Cover and height pegs
 - Fire wall, foundation and reinforcement

Name of Builder/Sub-Contractor/Owner Completing Check List: GEC

Signature: [Signature]

Date: 09/09/09

- OFFICE USE ONLY - Please Tick as appropriate**
- Pass - in accordance with the plans & specifications approved for this consent
 - Fail

- Further Documentation Required
- Further Inspection Required

Comments Memo No: _____

Notice to Fix No: _____

Inspector: J. Williams

Auditor: _____

Inspection Date: 09/09/09

Audit Date: _____



NOTE TO PLUMBER: Please check that you have completed all items as listed and ticked the appropriate boxes before arranging for an inspection. This form needs to be shown to the inspector at the time of inspection.

Inspected [X] Failed [] Not Applicable []

PROPERTY ADDRESS: 379 Borman Rd.
LOT: 10 DP/S: 397-340 CONSENT NO: 29/22919

- Plumber [X] Inspector [X]
Check you are on correct site [X]
Approved Building Consent documents on site [X]
Check Conditions [X]
Check for previous comments [X]
System used AS3500 [X] G13 [X]
Fixture discharge pipe sizes followed [X]
Fall on all discharge pipes 1:40 for pipe diameter 65mm or less [X]
Length of all discharge pipes. An unvented waste pipe cannot exceed 3.5m for G13 [X]
Waste pipes protected where penetrating through floor slab [X]
Waste pipes are separated at foundation exit point to allow for bends [X]
Water heater drain pipe is graded/correctly terminated [X]
Check location of terminal vent off Vanity Ensuite [X]
Main or branch drain longer than 10m to be vented for AS3500 [X]
Main or branch drain longer than 6m to be vented for G13 [X]
Vent pipe down stream from last fixture connection [X]
Minimum vent diameter 50mm for AS3500 [X]
Minimum vent diameter 80mm for G13 [X]
80mm W/C pipe maximum length 2.5m unvented [X]
ORG min 150mm below lowest fixture outlet [X]
Test on AS3500 drains for 2 or more fixtures inline [X]

- Plumber [X] Inspector []
Venting continuous on AS3500 pipework [X]
Level inverts installed 2 o'clock or higher for AS3500 [X]
Clean outs (COS) installed where required or 2x 45° bends 2x diameter apart directly under fixture. [X]
Amended floor plan for all changes * [X]
Drainage behind masonry walls greater than 300mm [X]
One fixture only above terminal vent [X]
Flood relief floor waste for all urinals and multi unit buildings [X]
Stainless steel Straps installed at 1.0m intervals to support soil and waste pipes for pile driven foundations [X]
Copper waste to commercial machines operating over 65°C []
Further Inspection Fee Required [] yes [] no []
Soakage Drainage for Over 300mm step in Footing []
Notes:
Fit A.A.V Traps on Kitchen & Scullery.
Amended Floor Plan Showing Plumbing Changes.

Name of Plumber Completing Check List: Peter Owen plumbing
Name: Brook Rego: 17256 Signature: [Signature] Date: 7/9/09

Comments Memo No: Notice to Fix No:

Please tick as appropriate
Pass - in accordance with the plans & Specifications approved for this consent [X]
Fail []
Further requirements: Documentation [] Inspection []
Inspector: [Signature] Auditor:
Date of inspection: 8/9/09 Date:

Building Consent No: 2009/22919

Section 51, Building Act 2004

Issued by Hamilton City Council

Date: 28.08.2009

The building:

Street address of building: 379 Borman Road Hamilton 2001

Legal description of land where building is located: Lot 10 DP 397340

The owner

Name of owner: Logan Homes Ltd

Mailing Address: P O Box 12467
HAMILTON 2030

First point for communications with the council/building consent authority:

Hamilton City Council

Municipal offices

Garden Place

Private Bag 3010

Hamilton 2001

Phone 07 838 6677

Fax 07 838 6684

Building work

The following building work is authorised by this building consent:

Application Description:	New Dwelling attached Garage
Intended Use:	Detached Dwelling - Live As A Family
Work Type:	New Construction
Intended Life:	>50 years
Value of Work:	\$210000

This building consent is issued under section 51 of the building Act 2004. This building consent does not relieve the owner of the building (or proposed building) of any duty or responsibility under any other Act relating to or affecting the building (or proposed building).

This building consent also does not permit the construction, alteration, demolition, or removal of the building (or proposed building) if that construction, alteration, demolition, or removal would be in breach of any other Act.

Compliance schedule

A compliance schedule is not required for the building.

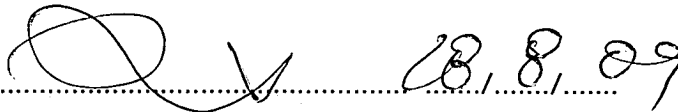
As per attached.

Attachments

Copies of the following documents are attached to this building consent:
Project information memorandum number 2009/22919

Signed for and on behalf of the Hamilton City Council:

Name:

Handwritten signature and date 28.8.09

Position: Authorised Officer

Building Control Unit

28 August 2009

Logan Homes Ltd
P O Box 12467
HAMILTON 2030

Dear Sir/Madam

Consent Number: 2009/22919
Project: New Dwelling attached Garage
Project Address: 379 Borman Road Hamilton 2001
Legal Description: Lot 10 DP 397340

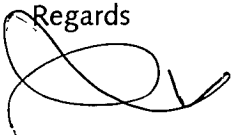
Thank you for the application for building consent. We are pleased to advise that this consent has been processed and is now ready for collection.

Your next steps are:

1. If this consent has not been pre-paid, please come in, pay for, and pickup your copy of the plans.
2. Please ensure that your approved documentation is kept on the building site for the building inspector to view.
3. This Building Consent is issued subject to the advisory notes outlined on page 2. In particular please note the requirements for inspections. The phone number to arrange inspections is 838 6677 available from 8:00 am to 4:45 pm. Please quote your consent number when making the booking.
4. Your final step after the completion of the project, is to apply for the issue of a Code Compliance Certificate.

Good luck with your building project and we look forward to our staff assisting you with this and any future building work.

Regards



Kim Southcombe
Council Building
Garden Place, Hamilton
Phone: 07 838 6677
Fax: 07 838 6684
Email: kim.southcombe@hcc.govt.nz

These are your Building Consent Advisory Notes.

Please read these carefully

Building

- (1) Please quote building consent number when requesting an inspection.
- (2) A foundation/siting inspection required. Please provide 48 hours notice
- (3) A bond beam inspection required. Please provide 24 hours notice.
- (4) A pre-concrete floor inspection required. Please provide 24 hours notice.
- (5) A pre-lining inspection required. Please provide 24 hours notice.
- (6) Completion inspection required prior to issue of final code compliance.
- (7) A post lining inspection is required. Please provide 24 hours notice and ensure that all sheet braces are nailed off and no skirtings or cornice are fitted.
- (8) Smoke alarms shall be located on the escape routes on all levels within the household unit. On levels containing the sleeping spaces, the smoke alarms shall be located either:
 - a) In every sleeping space, or
 - b) Within 3.0m of every sleeping space door. In this case the smoke alarms must be audible to sleeping occupants on the other side of the closed doors.Smoke alarms shall comply with at least one of the following standards:
UL 217, ULC S531, AS 3786, BS 5446 Part 1, and be fitted with a hush button.
- (9) A structural framing inspection is required. Please provide 24 hours notice and ensure that:
 - all sub floor bracing/connections are complete,
 - all wall and roof framing, including all bracing and connections, are completed
 - no wall or roof claddings are filled.
- (10) A cavity/batten inspection is required. Please provide 24 hours notice and ensure that:
 - all battens are as per cladding manufactures specification and;
 - that no claddings are fitted.
- (11) Truss layout plan to be made available to building inspector at pre-floor stage, and also show lintel and floor loading points.
- (12) Repiling materials showing signs of any decay shall be replaced.
- (13) All solid plaster systems, unless otherwise stated by manufactures recommendations, are to finish a minimum of 225mm above unpaved or 150mm above paved ground and be provided with a drip edge.
- (14) Inspection of foul water drains required. Please give 24 hours notice. Please note: If new internal drainage runs to existing connection, depth of connection must be confirmed before drainage is laid. If new connection has been requested, no internal drainage shall be laid until new connection has been installed.

- (15) Inspection of stormwater drains required. Please provide 24 hours notice.
- (16) Preline inspection of Plumbing Installation required. Please provide 24 hours notice.
- (17) Prefloor inspection of Plumbing and Soil Waste system required. Please provide 24 hours notice.
- (18) All under floor drainage systems serving 2 or more sanitary fixtures must be:
 - a) Plugged and filled with water to test and;
 - b) Left completely exposed until approved by inspector.
- (19) Crossing to be constructed to a minimum residential crossing specification.
- (20) Please call for inspection of prepared base for crossing. Please give 24 hours notice.
- (21) Please note that the final inspection for a crossing will be carried out at Code Compliance Certificate time or when requested.
- (22) Engineer to design and oversee foundation construction.

Water and Drainage

nil

Please refer to PIM 2009/22919 issued for this development for any addition requirements that may effect this development.

Roads and Traffic

nil

Please refer to PIM 2009/22919 issued for this development for any addition requirements that may effect this development.

Health

nil

Please refer to PIM 2009/22919 issued for this development for any addition requirements that may effect this development.

Important Notes:

- 1. The Project Information Memorandum lapses if a building Consent for the work concerned has not been issued within 24 months after the date of the issue of the Project information Memorandum.**
- 2. Please be aware that the consent has a lifespan of two years, and you need to apply for a Code of Compliance Certificate before this date. You will be notified before this time to remind you of the expiry date, and you may be able to extend this frame by**

agreement with HCC.

3. Please check with your local Network Utilities Operator as to where your services are located, i.e. Telecom, Wel Energy and Gas.
4. To avoid unreasonable noise affecting neighboring properties it is requested that noisy construction activities that would cause sleep disturbance not be undertaken until after 07:30am, and not at all on Sundays and public holidays.

5. Berm Protection

Kerb and channel, footpaths and grassed areas must be protected whilst work is undertaken on the site. You may be charged for any damage that is done to the berm in front of your property, or any berm that is damaged by you or your contractors accessing your site.

Where catchpits or berm pits are located within 1m of the temporary crossing point, the consent holder is responsible for ensuring that the grate is kept clear at all times.

5. Silt Control

Where stormwater runoff from the site is flowing to the road kerb and channel, or to an adjacent waterway, the consent holder is required to provide adequate silt control measures. Where material from the site is found to be causing a hazard on a road, the consent holder is required to remove the material as soon as possible. If this is not undertaken, Council will undertake to clear the hazard, the cost of which will be sought from the Consent holder.

28 August 2009

Logan Homes Ltd
P O Box 12467
HAMILTON 2030

Dear Sir/Madam

Consent Number: 2009/22919
Project: New Dwelling attached Garage
Project Address: 379 Borman Road Hamilton 2001
Legal Description: Lot 10 DP 397340

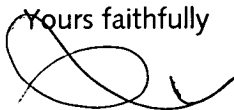
Thank you for the application for Project Information Memorandum. We are pleased to advise that this consent has been processed and is included in this letter.

Your next steps are:

1. PIM only:
 - Read carefully the Project Information Memorandum comments on page 2 of this letter. This information may be important to you during the construction process.
 - When you have completed the design and have all the documentation, please lodge your consent application with us. If you have carefully followed this PIM, then this should make the consent application process a lot quicker and easier for you.
2. PIM/Consent application:
 - Read carefully the Project Information Memorandum comments on page 2 of this letter. This information may be important to you during the construction process.

Good luck with your building project and we look forward to our staff assisting you with the consent and any future building work.

Yours faithfully



Kim Southcombe
Council Building
Garden Place, Hamilton
Phone: 838 6677
Email: kim.southcombe@hcc.govt.nz

This is your Project Information Memorandum

This describes (if relevant) any special features of the land, Information of other Acts relating to the land or buildings, Details of waste and storm water systems and confirmation that the works will comply with the Building Act subject to the requirements of the building consent.

Planning

- (1) The conditions of Resource Consent 10/2009/20382-2009/24NN apply to this project.

Building

- (1) Please ensure boundary pegs and boundary lines are clearly defined to check siting of building.
- (2) Wind zone is rated as low.
- (3) The Earthquake Zone for your area is designated as B.
- (4) Any damage to the Council footpath or berm area outside your property resulting from construction works, will be charged to the person responsible or the property owner if not repaired.

Electricity Transmission Lines and Towers

Please be aware that if your property is built under or adjacent to high-voltage electricity lines, or transmission towers/pylons, you are required to ensure that the proposed building complies with the clearances prescribed in the New Zealand Electrical Code of Practice for Electrical Safety Devices (NZCEP34:2001).

It is the responsibility of the property owner to ensure compliance with NZCEP34:2001 and if necessary to contact the line owner to determine whether the proposed building will comply, prior to commencing any site activity or construction.

Please check with your Local Network Utilities Operator as to where your services are located, ie Telecom, WEL Energy and the Gas Centre.

Project Information Memorandum

No: 8.2009.22919.1

Section 34, Building Act 2004

Issued by the Hamilton City Council

Date: 28 August 2009

Applicant: Logan Homes Ltd

Mailing Address: P O Box 12467
HAMILTON 2030

Application Lodged: 18/08/2009

Project

Application Description: New Dwelling attached Garage

Stage:

Intended Use: Detached Dwelling - Live As A Family

Work Type: New Construction

Intended Life: >50 years

Value of Work: \$210000

Property

Address: 379 Borman Road Hamilton 2001

Property Reference: Lot 10 DP 397340

This is:

Confirmation that the proposed building work may be undertaken, subject to the provisions of the Building Act 2004 and any requirements of the building consent.

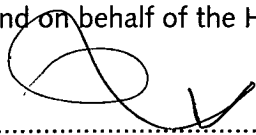
- () Not yet applied for.
- () No.:8.2009.22919.1 attached.
- () Not yet issued.

This Project Information Memorandum includes the following information:

- (a) Information likely to be relevant to the proposed building work that identifies
 - (i) the heritage status of the building (if any); and
 - (ii) each special feature of the land concerned (if any); and
- (b) Information likely to be relevant to the proposed building work that, in terms of any other Act, has been notified to the territorial authority by a statutory authority; and
- (c) Details of any existing stormwater or wastewater utility systems that
 - (i) relate to the proposed building work; or
 - (ii) are on, or adjacent to, the site of the proposed building work; and
- (d) details of any authorisation in respect of the proposed building work that the territorial authority, on its own behalf and on behalf of any network utility operator (if the territorial authority is acting as agent for a network utility operator by prior agreement with the network utility operator), is authorised to refuse or require under any Act, except this Act, and, in respect of each authorisation,
 - (i) a statement of the requirements to be met in order for the authorisation to be granted or imposed; and
 - (ii) the conditions to which an authorisation will be subject; and
- (e) if the territorial authority considers that the owner of the building or proposed building to which the project information memorandum relates is likely to be required, under section 21A of the Fire Service Act 1975, to make provision for a scheme that provides for evacuation from the scene of a fire, a statement to that effect; and
- (f) if the territorial authority considers that notification to the New Zealand Historic Places Trust is likely to be required under section 39, a statement to that effect; and
- (g) either
 - (i) confirmation, subject to this Act, that building work may be carried out subject to the requirements of a building consent and subject also to all other necessary authorisations being obtained; or
 - (ii) notification that building work may not be carried out because any necessary authorisation has been refused, despite the issue of any building consent; and
- (h) if section 75 applies, the statement referred to in section 75(2).

Signed for and on behalf of the Hamilton City Council:

Name:



28, 8, 09

Position: Authorised Officer
Building Control Unit

Creation date 28/08/2009 1:58:00 PM
Save date 28/08/2009 1:58:00 PM

BCU5-03
Version 1
20/03/07

Building

22 February 2010

Logan Homes Ltd
P O Box 12467
HAMILTON 2030

Dear Logan Homes Ltd

Issuing of Code Compliance Certificate for 2009/22919

On the a Building Inspector carried out an inspection of your building work at 379 Borman Road Hamilton 2001.

There are some items that will need to be addressed in order for your Code Compliance Certificate to be issued. These are as follows;

1. Outstanding fee is to be paid for your development contribution levies

Please make arrangements to provide the above information and arrange payment of the levies as soon as possible so that the Code Compliance Certificate can be issued.

If you have any queries please feel free to contact the undersigned on 07 838 6677

Yours Sincerely

Council Building
Garden Place, Hamilton
Phone: 07 838 6677
Fax: 07 838 6684
Email:

Kim Southcombe

From: Melissa Hawken [Melissa@loganhomes.co.nz]
Sent: Tuesday, 25 August 2009 8:25 a.m.
To: Kim Southcombe
Subject: Logan Homes Show Home

Phone 07 838 6699
Fax 07 838 6599info@hcc.govt.nz
www.hamilton.co.nz

Kim,

Please find attached an amended floor plan for our showhome where I have changed the 140mm thick walls back to 90mm studs @ 480mm ctrs due to your conversation with John the other day about wall heights. I hope this is alright.

Thanks

Regards

Melissa Hawken
NZDATLogan Homes
Ph 07 855 5800
Fax 07 855 2030

Information from ESET NOD32 Antivirus, version of virus signature database 4364
(20090824)

The message was checked by ESET NOD32 Antivirus.

<http://www.eset.com>

25/08/09

REVISION A 25/08/09:
ALTERED WALL TYPES.

Logan Homes Limited
P O Box 12467
HAMILTON
Phone 07 855 5800
Fax 07 855 2030
Email
info@loganhomes.co.nz

All plans and specifications, concepts and drawings are subject to copyright and cannot be copied or used in any way without the express permission of Logan Homes Limited.

CLIENT

PROJECT

NEW
RESIDENCE

SITE

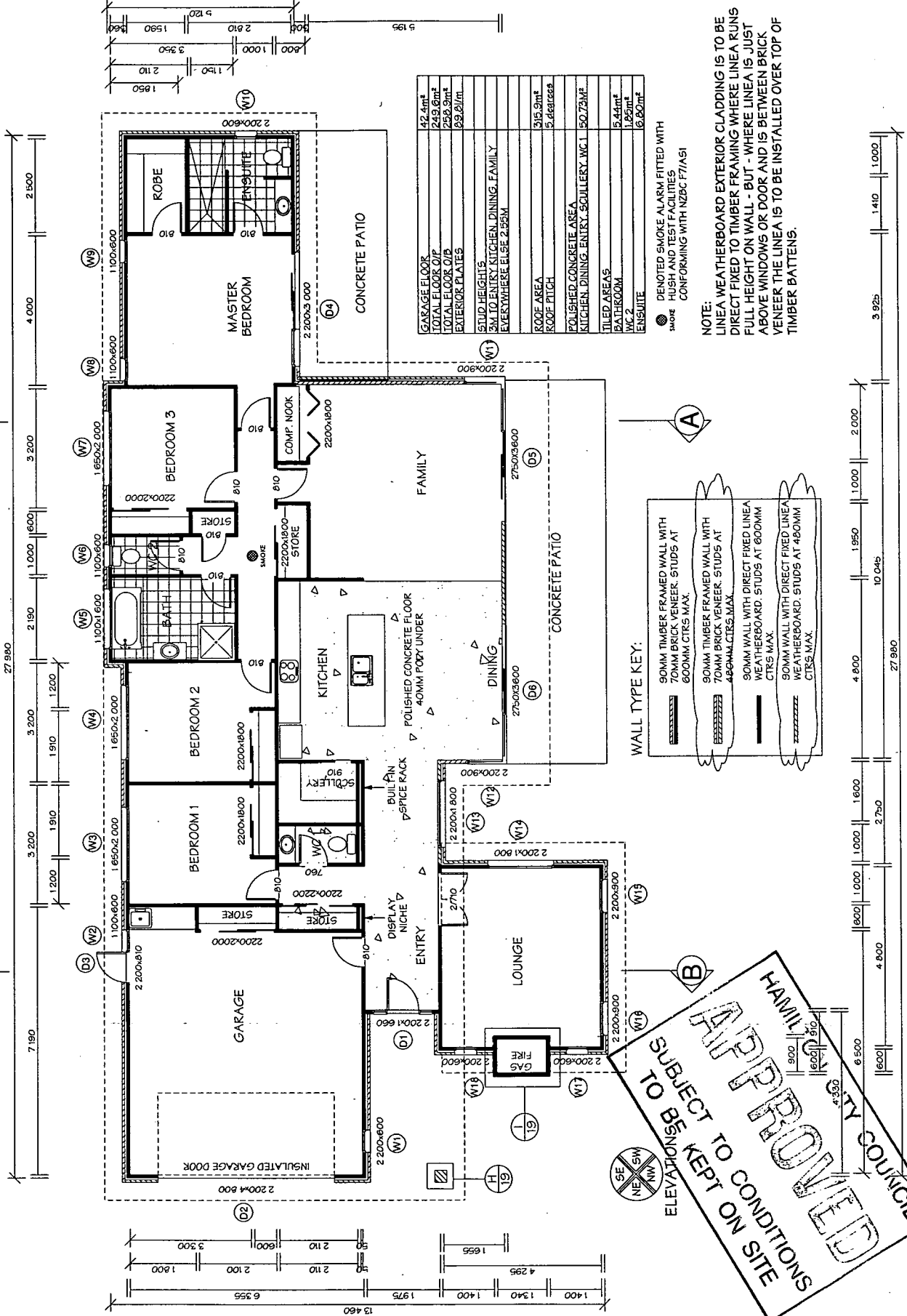
LOT 10
GLAISDALE
HAMILTON

CONSENT SET

FLOOR PLAN

Scale: 1:100
Date: 8/25/2009
Drawn By: M Hawken

© Logan Homes LTD
3



GARAGE FLOOR	42.4m ²
TOTAL FLOOR O/P	249.6m ²
TOTAL FLOOR O/P	252.9m ²
EXTERIOR PLATES	29.20/m ²
STUD HEIGHT'S	2M TO ENTRY, KITCHEN, DINING, FAMILY EVERYWHERE ELSE 2.25M
ROOF AREA	315.9m ²
ROOF PITCH	5.6degrees
POLISHED CONCRETE AREA	150.73m ²
KITCHEN, DINING, ENTRY, SCULLERY, WC.1	
TILED AREAS	5.44m ²
BATHROOM	1.95m ²
ENSUITE	16.80m ²

● DENOTED SMOKE ALARM FITTED WITH SMOKE HUSH AND TEST FACILITIES CONFORMING WITH NZBC F7/A51

NOTE:
LINEA WEATHERBOARD EXTERIOR CLADDING IS TO BE DIRECT FIXED TO TIMBER FRAMING WHERE LINEA RUNS FULL HEIGHT ON WALL - BUT - WHERE LINEA IS JUST ABOVE WINDOWS OR DOOR AND IS BETWEEN BRICK VENEER THE LINEA IS TO BE INSTALLED OVER TOP OF TIMBER BATTENS.

WALL TYPE KEY:

- 90MM TIMBER FRAMED WALL WITH 70MM BRICK VENEER, STUDS AT 600MM CTRS MAX.
- 90MM TIMBER FRAMED WALL WITH 70MM BRICK VENEER, STUDS AT 480MM CTRS MAX.
- 90MM WALL WITH DIRECT FIXED LINEA WEATHERBOARD, STUDS AT 600MM CTRS MAX.
- 90MM WALL WITH DIRECT FIXED LINEA WEATHERBOARD, STUDS AT 480MM CTRS MAX.

HAMILTON CITY COUNCIL
 APPROVED
 SUBJECT TO CONDITIONS
 TO BE KEPT ON SITE
 ELEVATIONS
 SE NE SW NW

25 August 2009

Logan Homes Ltd
P O Box 12467
HAMILTON 2030

Dear Sir/Madam

Consent Number: 2009/22919
Project: New Dwelling attached Garage
Project Address: 379 Borman Road Hamilton 2001
Legal Description: Lot 10 DP 397340

ADVISORY NOTE

In reference to the above application, the consent can not be issued until the following has been processed. If you have any problems or queries please contact the under signed.

- (1) We are just waiting on Planning Guidance to complete their check of this Building Consent.

Good luck with your building project and we look forward to our staff assisting you with this and any future building work.

Regards



Kim Southcombe
Council Building
Garden Place, Hamilton
Phone: 07 838 6677
Fax: 07 838 6684
Email: kim.southcombe@hcc.govt.nz

18 August 2009

Logan Homes Ltd
P O Box 12467
HAMILTON 2030

Dear Logan Homes Ltd

BUILDING CONSENT APPLICATION ACKNOWLEDGEMENT 2009/22919

Thank you for your building consent application. We are pleased to advise your application for the proposed works of New Dwelling attached Garage located at 379 Borman Road Hamilton 2001 will be processed by the 15/09/09.

While Council endeavours to process your application within the 20 statutory working days as prescribed in the Building Act 2004, if further information is required you will be advised in writing. Your Consent will then go on hold and the clock will stop until all requested information has been received and the clock will resume. Please be aware that until your consent is approved by Council you will not be able to book inspections.

We ask that you refrain from phoning or emailing staff to enquire about progress, unless it is regarding a request for further information. This ensures that our Building Review Officers can spend their time processing your plans and are not tied up discussing the progress of consents in their charge

If you require any information or would like to discuss this consent, please contact the Building Support Team on 07 8386677.

Yours Sincerely

Dawn Pritchard
Council Building
Garden Place, Hamilton
Phone: 07 838 6677
Fax: 07 838 6684
Email: dawn.pritchard@hcc.govt.nz

3 July 2009

Logan Homes Ltd
PO Box 12467
Hamilton

Dear Sir/Madam

LAND USE RESOURCE CONSENT 10.2009.20382.001 (2009/024NN) TO OPERATE A SHOW HOME WITHIN THE RESIDENTIAL ZONE, FAILING PLANTING, TOTAL GROSS FLOOR AREA, PARKING, CROSSING, LOADING AND SIGNAGE AT 379 BORMAN ROAD, HAMILTON

I wish to advise that consent for the abovementioned application was granted under delegated authority and subject to the following conditions being completed to the satisfaction of the Council:

*That pursuant to the provisions of sections 19, 94(B), 104B and 108 of the Resource Management Act 1991 and the Hamilton City Proposed District Plan (references version), Council **grants consent** to the application by Logan Homes Ltd being Resource Consent No. 010.2009.20382.001 — 2009/024NN to establish a residential dwelling that is to be used as a show home for a two year time period, in the Residential Zone (assessed as a Discretionary Activity); situated on Lot 10 DP 397340 located at 379 Borman Road Hamilton, subject to the following conditions:*

General

1. *That the development be in general accordance with the plans and the information submitted with the application on 15 May 2009 and the amended plans received 2nd July 2009.*
2. *That the show home shall be operated so as not to attract any vehicular or pedestrian traffic between the hours of 2200hr and 0700 hr the following day.*
3. *That car park two be used for the fulltime staff member only and that carpark one be used for clients and part time staff when required.*

Access

4. *That the new 5.8 metre wide vehicle crossing be constructed to a residential standard as specified in Hamilton City Development Manual.*
5. *That all on-site car parking spaces and associated vehicle manoeuvring areas and access(es) be formed and drained and thereafter maintained with an all-weather, dust-free surface such as concrete, cobblestones, chip seal or asphalt.*
6. *That all works shall be done to the requirements of the Hamilton City Development Manual and /or to the satisfaction of the General Manager Works and Services.*

7. That no other signage (including flags) be situated on site, other than the double sided stationary sign which has been given consent for (see reason j.).

Noise

8. Noise generated from showhome shall not exceed the following noise levels when measured at any point at or within the boundary of any site in the Residential Zone:

<i>Monday to Saturday</i>	<i>Noise levels measured in L10</i>	<i>Noise levels measured in Lmax</i>
0600 - 0700 hr	45 dBA	-
0700 - 2000 hr	50 dBA	-
2000 - 2300 hr	45 dBA	-
2300 - 0600 hr	40 dBA	75 dBA
<i>Sunday & public holidays</i>		
0700 - 2300 hr	45dBA	-
2300 - 0700 hr	40dBA	75 dBA

Construction Noise

- All construction/demolition activities shall comply with the provisions of NZS 6803:1999 'Acoustics - Construction Noise' and shall be measured and assessed in accordance with NZS 6803:1999.
- No noisy construction/demolition activities will be carried out Sundays and public holidays or at times that would cause sleep disturbance.

Dust

9. Construction activities must not create a dust nuisance. Dust nuisance will occur if:
- There is visible evidence of suspended solids in the air beyond the site boundary; and/ or
 - There is visible evidence of suspended solids traceable from a dust source settling on the ground, building or structure on a neighbouring site or water.

Glare & Lighting

10. The spill of light onto any other site shall not exceed 3 lux (vertical and horizontal) when measured at or within the boundary of any other site.
11. Artificial lighting shall not result in illumination on roads, which may dazzle or distract road users or interfere with any traffic aids or signals.

Duration of Consent

12. Resource consent to use the dwelling as showhome is granted for a period of 2 years only, and lapses on the 3rd July 2011. After this date either the use of the site shall revert to that of a single detached residential dwelling, or a new resource consent for the showhome activity will be required. If after two years the showhome does revert to a residential dwelling, conditions 2, 3, 5, 7 & 8 of this consent will no longer apply.

Reasons for the Decision

Objectives and Policies

- a. Subject to the above conditions, the proposal is not contrary to the relevant objectives and policies of the Hamilton City Proposed District Plan.

Consideration of Applications

- b. Having regard to section 104(1)(a) of the Act, the actual and potential adverse effects on the environment of granting consent will be able to be avoided, remedied, or mitigated by the imposition of the above conditions.

Non-notification

- c. Pursuant to section 94 of the Resource Management Act 1991 the application has not been publicly notified and notice has not been served as the adverse effects of the proposal will be less than minor as no parties have been considered to be potentially adversely affected. These factors enabled the application to be processed without public notification.

Resource Management Amendment Act 2003

- d. This resource consent application was received by Council after 1 August 2003 and has therefore been processed exclusively under the provisions of the Proposed District Plan (References version) in accordance with the requirements of the Resource Management Amendment Act 2003.

Relevant statutory Provisions Considered in the Assessment of This Application

- e. Part II Sections 19, 94, 104, 108, Resource Management Act 1991

Relevant Plan Provisions Considered in the Assessment of This Application

- f. Hamilton City Proposed District Plan (References Version):
 - 5.1 Residential Objectives and Policies
 - Rule 4.1 Residential Zone Standards
 - Rule 5.2 Parking, Loading and Access
- g. Formation of the parking and manoeuvring areas allows for all-weather use and helps to protect the amenity values of neighbouring properties.
- h. The noise and lighting conditions of consent will ensure that the proposal complies with the permitted noise and lighting rules of the Proposed District Plan.
- i. The duration of consent is the period of time the resource consent is granted. Condition 9 of the granted consent specifies a two year period, because the basis for granting dispensation to District Plan requirements in respect of parking, loading, landscaping and signage, is that the effects of non-compliance will be limited to a temporary period of time, after which the use of the building will revert to a residential dwelling.
- j. Dispensation is granted for a single stand alone double sided sign measuring 1.8m². The sign is contained onsite and will only be there for the duration of the consent. The sign is considered to have little effect on the surrounding residential zone. Transportation are happy with the signs positioning, taking into the account it is only temporary.
- k. Dispensation is granted for a reduction in car park spaces from the required 6 spaces and loading bay to 2 spaces and with no loading bay. The effects of the reduced parking and loading space is expected to be minor, as the showhome will only generate a small number of visitors over the specified hours of 9:00a.m to 5:00p.m.

- l. Dispensation is granted for a building greater than 250m² which is to be used as an office facility within the residential zone. The site is to be used as a show home with only a small portion of the building being used as official office space (39m²). The total gross floor area used for the show home is 257.5sqm which is only a small amount over what is permitted. No adverse effects are seen to be had in relation to the site having a further 7.5sqm of floor area, considering the proposed use and duration of the proposed activity being proposed being a show home in the residential zone.
- m. Dispensation is granted for the site, in relation to not being able to provide the full 30% planting of the front setback adjoining the road. A small 4.1m² garden will be implemented. It is felt that since the dwelling will be converted back into residential use, required planting is not as essential as in usual office based residential activities. The visual amenity will still be kept as the show home is trying to imitate that of a standard stand alone residential dwelling.
- n. Consent is given for the site to have an over width crossing of 5.8m in the residential zone. Borman Road is a minor arterial road and is still under development. It is essential for vehicles using the site to be able to manoeuvre correctly and to exit the site in a frontwards manor. No adverse effects are seen to be had as a result of the crossing being 0.3m over width.
- o. **Main Findings of Fact:**
The development is considered to result in a good standard of amenity for the occupants of the site, and will not adversely affect adjoining sites.

Advisory Notes

- That compliance in all other respects with Council Bylaws, all relevant Acts, Regulations, and rules of law be met.
- A Building Consent is required before giving effect to this Resource Consent. Please contact Council's Building Unit on 838 6677 for information on Building Consent matters.
- Please request approval from Hamilton City Council's Arborist (Doug Rowe ph 838 6671 or 021 967 377) if the development will have a potential impact on any of the existing street trees in the vicinity of the site.
- If this property is on-sold, please ensure that a copy of this resource consent is forwarded to the new owner(s).
- Council's rating policy charges rates based on the actual "use" or "uses" of a property as at 1 July each year, not the zoning. If the property is currently being used for residential purposes and is to be changed to commercial use, there will be a change in the rating of the property from residential to commercial. If you wish to discuss the rating impact, or other rating issues, please contact the Rates Department on (07) 838-6688.

Compliance and Monitoring

This resource consent allows the land use to be carried out at the site specified in the consent, provided the conditions of the consent are met. Under section 35 of the Resource Management Act 1991, Council will monitor and enforce compliance with resource consents it has granted.

Pursuant to section 127 of the Resource Management Act 1991, consent conditions may be amended or cancelled on application to Council if there has been a change in circumstances making the conditions unnecessary or inappropriate.

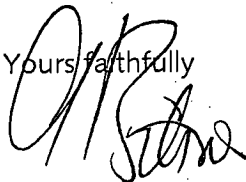
The application will be treated as a discretionary activity. In order for the application to proceed on a non-notified basis Council must be satisfied that any adverse effects resulting from the change or cancellation will be minor, and that written consent has been obtained from all persons Council considers could be adversely affected by the change or cancellation.

For the purposes of determining who is adversely affected Council must consider, in particular, every person who made a submission on the original application, and every person who may be affected by the change or cancellation.

Lapse of Consent

This resource consent lapses on the expiry of **two years** after the date of this letter being 3/7/2009, unless the consent is given effect to by the end of that period. To give effect to this consent, the activity allowed by this consent must be established and the conditions contained in this consent complied with. Please note that there must be compliance with all of the consent conditions once the land use has been established.

Yours faithfully



GULAB BILIMORIA
PLANNING GUIDANCE MANAGER
Municipal Offices (Ground Floor)
Garden Place, Hamilton
Phone (07) 838 6804
Fax (07) 838 6819

Planning Guidance

Building Unit: Dwelling Checklist.

We strongly advise you talk to Planning Guidance about your project, **before** you lodge your building consent, or visit them at our offices. To assist you in filling this out, please read the attached Guidance Notes. These help explain what each item means.

Compulsory Items to be provided:

- | | Yes |
|---|-------------------------------------|
| 1. Two copies of Certificate of Title | <input checked="" type="checkbox"/> |
| 2. Two copies of a Site Plan | <input checked="" type="checkbox"/> |
| 3. Three copies of Floor plans | <input checked="" type="checkbox"/> |
| 4. Two copies of elevations | <input checked="" type="checkbox"/> |
| 5. Two copies of cross sections | <input checked="" type="checkbox"/> |
| 6. Two copies of foundation details | <input checked="" type="checkbox"/> |
| 7. Two copies of a soil Test | <input checked="" type="checkbox"/> |
| 8. Two copies of a drainage plan | <input checked="" type="checkbox"/> |
| 9. Two copies of a truss/rafter plan | <input checked="" type="checkbox"/> |
| 10. Two copies of Insulation calculations | <input checked="" type="checkbox"/> |
| 11. Two copies of specific construction details | <input checked="" type="checkbox"/> |
| 12. Two copies of a specification | <input checked="" type="checkbox"/> |
| 13. Two copies of bracing calculations | <input checked="" type="checkbox"/> |
| 14. A deposit cheque | <input type="checkbox"/> |

The following may be required. If unsure, please ask our front counter staff or Technical Officer

- | | Yes | No |
|---|-------------------------------------|-------------------------------------|
| 15. Two copies of mid floor layouts | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 16. Two copies of cladding risk matrix | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 17. Two copies of engineers details | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 18. Pre —Application meeting booked —phone 838 6677 to arrange this | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 19. Crossing details. Existing damage area.....m2 | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 20. Connection details | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Signed by applicant: M. Leach Date 13/8/09

OFFICE ONLY

I have NOT accepted this application for lodgment because the required documentation is INCOMPLETE

Checked by HCC..... Date.....

I have accepted this application for lodgment because the required documentation is complete

Checked by HCC..... Date.....

Fee category Dwelling, Minor, Garage/minor, Outblg, Alts/adds,

Guidance notes

Planning Guidance notes

It is important to talk to Planning Guidance staff at your earliest convenience. Your project will need to comply with the District Plan and Resource Management Act 1991. If you need a Resource Consent, or need to get neighbours consent, for example, you should organise these before you lodge your Building Consent. Please phone 07 838 6800 to arrange a Planning appointment.

If your site has frontage to a State Highway, please obtain written comments from the New Zealand Transport Authority by contacting Brad Moore at brad.moore@nzta.govt.nz. Tel: 07 903 5152

Building Guidance notes

Plans

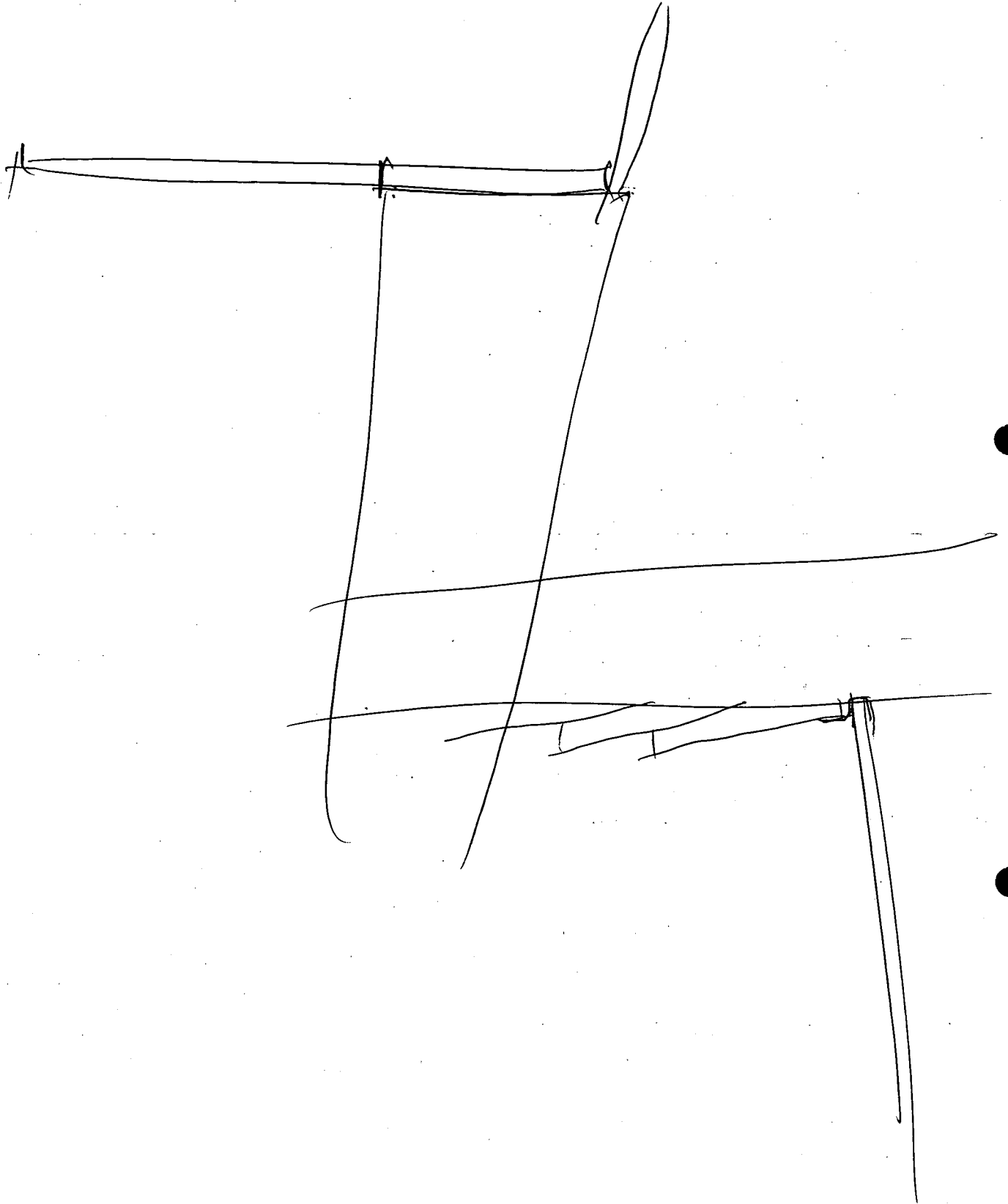
Please supply two sets of plans. These must be of a clear and professional standard. You should contact a design professional to assist you with this.

- Acceptable scales: 1:200, 1:100, 1:50, 1:10
1. **Certificate of Title.** This is an important document that identifies which piece of land the project is to be built on and **must** be supplied with all applications. This can be obtained from Land Information New Zealand; corner Victoria and Rostrevor Streets, Hamilton.
 2. **Site Plan** - You need to show:
 - From building line to boundary
 - All new and existing buildings on site
 - Dimensions:
 - New building roof gutter to boundary
 - Between new and existing buildings
 - Existing and proposed drainage on site
 - Reduced levels from the corners of the section
 - Building restriction lines and the top of gully (where applicable)
 - Vehicle crossing with dimensions
 3. **Floor Plan** - You will need to show:
 - Floor layout (existing and proposed) of each room including dimensions
 - Provide overall floor area including roof overhang
 - Window dimensions
 - Lintel & beam sizes
 - Show fittings and fixtures such as kitchen and bathrooms
 4. **Elevations** - You will need to show:
 - An elevation of each external wall
 - Heights from each corner to finished ground
 - Land contours for the site, proposed and existing
 - Specify claddings being used
 5. **Cross sections** - You will need to show:
 - Foundations
 - Walls
 - Truss/rafters
 - Insulation
 - Heights from ground
 6. **Foundation details** - Please **detail**:
 - Pile layout including bearers, joists bracing and anchor pile layout
 - For concrete floors:
 - Concrete floor plan showing location of corner bars
 - cross section plan showing width, depth, reinforcing, underlay and hard fill locations
 - Plan view showing thickening locations and corner bars
 - Foundation walls:
 - cross section plan and footing showing width, depth, reinforcing and brick veneer layout (where applicable)
 7. **Soil Test**

A copy of the sub-divisional soil test, with a test on your site, or a specific on site soil test will be required from a structural soils engineer.
 8. **Drainage plans** - On the site plan show:
 - Waste & Water Services application form to be filled out only if new connections are required
 - The location of the sewer and storm water drains, where they connect to the Council mains, soak holes

- Where a water connection has not been provided, please show the preferred size and location on site plan
Please provide a separate plan of:
 - A drainage longitudinal design showing the gradient of the drain detailing pipe sizes, venting etc
 - On two story plumbing please provide an isometric drainage design detailing pipe sizes, venting etc
- 9. Truss/rafter plan** - A plan of the trusses/rafters showing:
- The location of and types of trusses/rafters. **Note: a truss plan must be supplied by a truss manufacturer, supplying truss, framing and load bearing information**
 - Load bearing points
 - Roof bracing
- 10. Insulation calculations.** Please provide:
- Is floor, wall and ceiling insulation correctly specified
 - Is Double glazing specified
 - Calculations or method used to show compliance
- 11. Specific Construction Details** - Please provide the following specific details where appropriate
- Flashing details between roofs and walls
 - Flashing and weathering details between upper floor decks and floors
 - Fixings for ballustrading to decks
 - Flashing details between claddings and joinery
 - Ground heights to floor
 - Lintels designs supporting point loads
 - Post/beam fixings
 - Foundation details such as reinforcing size and location
- 12. Specification** - A specification must be provided to:
- Cover any building elements not included in the building plans
 - Summarise all trades and compliance with acceptable standards
 - The specification must be specific to the project
- 13. Bracing Calculations** - Please supply the following:
- Calculations for wall bracing and sub floor bracing
 - A floor plan showing the location of the braces
- 14. Mid floor framing layout** - Provide a plan that shows all joist and beam locations, any point loads and blocking
- 15. Fees:** A deposit will be required as part of the application for consent. Please check our fees and charges booklet to see what your deposit is. Payment options are cash, cheque or Eftpos.
- 16. Cladding Risk Matrix** - Please supply the following:
- A risk calculation for each face of the building
- 17. Engineers Details** - Please supply the following:
- Engineers calculations
 - A producer statement from the engineer (called a PS1)
 - Engineers plans for their design, or alternatively, the engineer to sign the architects plans where their designs are drawn
- 18. Pre-application Meeting** - Please book this meeting by either phoning 07 838 6677, or arranging with our Building Unit Administration Officer at the Front Counter.
- 19. Crossing details/Connection details** - Do you wish to construct a new/alter an existing crossing?
- Residential 3.0m minimum, 5.5m maximum.
 - Commercial 5.0m minimum, 7.5m maximum
 - Please detail width and location of new/alterd crossing on plan detailing pipe sizes, venting etc
 - Is there existing damage? If so please advise the approximate square area of damage on the front of the form.
- 20. Connection details** -Is there a new or altered connection required to Councils sewer, storm water or water services. If so, please fill out form "WWS—CS—Connection" form. Our front counter staff have a copy of this if you need it.

For Building Enquiries please contact the Hamilton City Council Building Unit Ph: 07 838 6677,
Web site: <http://www.buildhamilton.co.nz>



**PLANNING GUIDANCE UNIT PIM/BUILDING CONSENT
CHECKSHEET**

PG M10
Version July 2007

PIM/BUILDING CONSENT NUMBER: 22 919

RESOURCE CONSENT REQUIRED: NO YES

Resource Consent in progress Planner <input type="checkbox"/> File Number :	APPROVED <input checked="" type="checkbox"/> File Number : 10/2009/20382 2009/24 NN
---	--

DEVELOPMENT CONTRIBUTIONS NOT REQUIRED

DEVELOPMENT CONTRIBUTIONS REQUIRED YES

<ul style="list-style-type: none">• Entered into DC BC Invoicing database (F drive) <input checked="" type="checkbox"/>• DC advice letter sent to owner <input checked="" type="checkbox"/>• Copies of letter, calculation sheet, and map saved to Attachment folder in DC BC Invoicing database (F drive) <input checked="" type="checkbox"/> <p>Comments <i>Casey's jobs</i></p>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
--	---

RESERVE CONTRIBUTION: NO YES Condition No..... of Consent.....

****To be paid at time of building consent issue, and to be included in the BUILDING CONSENT FEES LIST AND ENTERED INTO AUTHORITY IN THE BUILDING CONSENT Amount**
\$ Inc GST

APPLICANT CONTACT: N/A YES Phone Fax Email

Unsuccessful Attempt Made NOTES

WITHHOLD BUILDING CONSENT

Comments:

~~_____~~

~~_____~~

~~_____~~

~~_____~~

~~_____~~

~~_____~~

~~_____~~

Planner: _____ Date: _____

*Attention Building Review Officer --
Please do not release any building consent for this work until the above issues have been resolved.*

RELEASE BUILDING CONSENT/PIM

Comments: *Conditions of Resource Consent apply*

Planner: *[Signature]* Date: *22/8/09*



**COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952**



Search Copy

R.W. Muir
Registrar-General
of Land

Identifier 388498
Land Registration District South Auckland
Date Issued 29 February 2008

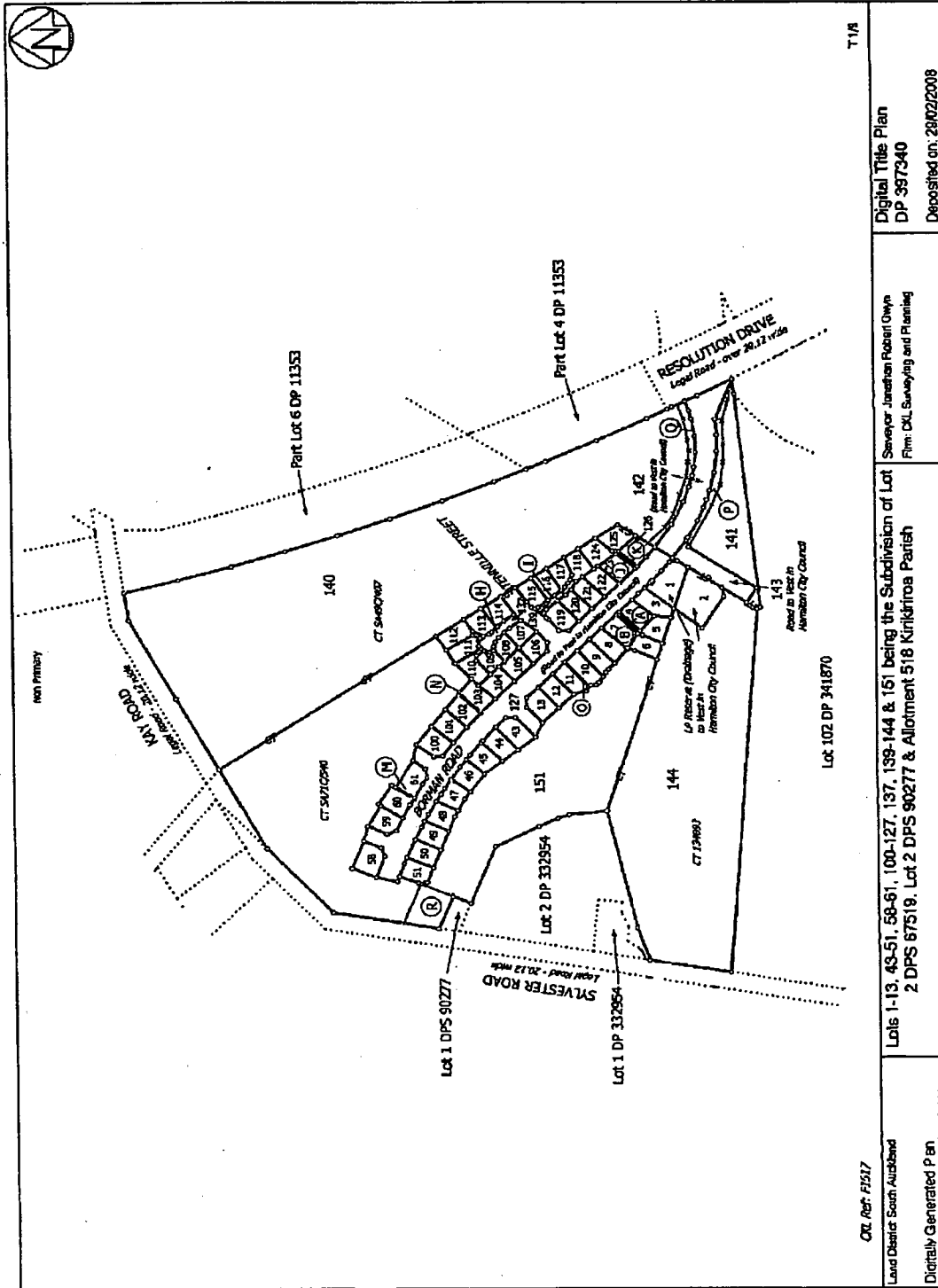
Prior References
SA71C/540

Estate	Fee Simple
Area	787 square metres more or less
Legal Description	Lot 10 Deposited Plan 397340

Proprietors
Logan Homes Limited

Interests

7733650.2 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 29.2.2008 at 9:00 am
Land Covenant in Easement Instrument 7733650.10 - 29.2.2008 at 9:00 am
7767009.2 Variation of the conditions of the Land Covenant specified in Easement Instrument 7733650.10 -
31.3.2008 at 12:18 pm



T18

<p>CTC Ref: F517</p>	<p>Land District: South Australia</p>	<p>Lots 1-13, 43-51, 59-61, 100-127, 137, 139-144 & 151 being the Subdivision of Lot 2 DPS 67519, Lot 2 DPS 90277 & Allotment 518 Kirikiriwa Parish</p>	<p>Digital Title Plan DP 397340 Deposited on: 28/02/2008</p>
<p>Surveyor: Jonathan Robert Owen Firm: CKL Surveying and Planning</p>		<p>Digitally Generated P en Generated on: 28/02/2008 11:05am Page 6 of 14</p>	



Hamilton City Council

Te kaunihera o Kirikiriroa

ACCOUNT DUE

Private Bag 3010 Waikato Mail Centre, Hamilton 3240
Phone 07 838 6699, Fax 07 838 6599
Office Hours: Monday to Friday 8am to 4.45pm

TAX INVOICE
G.S.T. REG. No. 11-174-531

PLEASE QUOTE ACCOUNT No. ON
ALL CORRESPONDENCE

Logan Homes Ltd
P O Box 12467
HAMILTON 2030

Account No. 65662.37
Page 1 of 1
Date 31/08/2009

DATE	INVOICE No.	DETAILS	BALANCE
31/08/2009	22919-01	2009/22919 - 379 Borman Road Hamilton	
		GST	0.00
		DBH Levy	413.70
		GST	0.00
		Branz Levy	210.00
		GST	357.22
		Building Consent	3,215.00
		GST	18.33
		Street Crossings	165.00
		GST	29.33
		A4 Microfilming	264.00
		GST	15.00
		A3 & A2 Microfilming	135.00
		Invoice Total (including GST if applicable)	4,402.70
		<i>Total Value non-taxable supply(s)</i>	<i>623.70</i>
		<i>Total Value taxable supply(s) excluding GST</i>	<i>3,359.12</i>
		<i>Total GST Payable</i>	<i>419.88</i>

ALL QUERIES TO ACCOUNTS RECEIVABLE SECTION

DUE DATE 31/08/2009

TOTAL DUE (Inc GST) 4,402.70

**PAYABLE BY DUE DATE (IF SHOWN ABOVE) OTHERWISE 20th OF MONTH FOLLOWING DATE OF INVOICE.
THE CUSTOMER WILL BE LIABLE FOR UNPAID DEBTS AS WELL AS ASSOCIATED COLLECTION COSTS.**

HAMILTON CITY COUNCIL
PRIVATE BAG 3010 WAIKATO MAIL CENTRE
HAMILTON 3240

DUE DATE 31/08/2009

TOTAL DUE **4,402.70**

INVOICE No. 22919-01

Logan Homes Ltd
P O Box 12467
HAMILTON 2030

ACCOUNT No. 65662.37

IF ADDRESS IS INCORRECT PLEASE
COMPLETE THE FOLLOWING:

NAME: _____

THIS ACCOUNT ONLY

ADDRESS: _____

ALL COUNCIL SERVICES

Private Bag 3010 Waikato Mail Centre, Hamilton 3240
 Phone 07 838 6699, Fax 07 838 6599
 Office Hours: Monday to Friday 8am to 4.45pm

TAX INVOICE
 G.S.T. REG. No. 11-174-531

PLEASE QUOTE ACCOUNT No. ON
 ALL CORRESPONDENCE

Logan Homes Ltd
 P O Box 12467
 HAMILTON 2030

Account No. 65662.39
 Page 1 of 1
 Date 31/08/2009

DATE	INVOICE No.	DETAILS	BALANCE
31/08/2009	22919-01	2009/22919 - 379 Borman Road Hamilton GST 21.11 Project Information Memorandum	190.00 190.00
Invoice Total (including GST if applicable)			190.00
<i>Total Value non-taxable supply(s)</i>			0.00
<i>Total Value taxable supply(s) excluding GST</i>			168.89
<i>Total GST Payable</i>			21.11

ALL QUERIES TO ACCOUNTS RECEIVABLE SECTION

DUE DATE 31/08/2009

TOTAL DUE (Inc GST) 190.00

**PAYABLE BY DUE DATE (IF SHOWN ABOVE) OTHERWISE 20th OF MONTH FOLLOWING DATE OF INVOICE.
 THE CUSTOMER WILL BE LIABLE FOR UNPAID DEBTS AS WELL AS ASSOCIATED COLLECTION COSTS.**

HAMILTON CITY COUNCIL
 PRIVATE BAG 3010 WAIKATO MAIL CENTRE
 HAMILTON 3240

DUE DATE 31/08/2009

TOTAL DUE 190.00

INVOICE No. 22919-01

Logan Homes Ltd
 P O Box 12467
 HAMILTON 2030

ACCOUNT No. 65662.39

IF ADDRESS IS INCORRECT PLEASE
 COMPLETE THE FOLLOWING:

NAME: _____

THIS ACCOUNT ONLY

ADDRESS: _____

ALL COUNCIL SERVICES

Producer Statement

Date: 29/01/10.....

Company: Logan Homes Limited.....

Address: 379 Borman Road, Hamilton.....

Building Consent #: 2009/22919.....

Waterproofed areas have been waterproofed with Daveco K10+. This membrane has been applied in accordance with manufacturer's instructions by an approved applicator.

James McMorran
Waikato Building Consent Group
Registration No; 0055

James McMorran

P 021 587 214 C1 PO Box 5760 Frankton, Hamilton



EXCELLENCE IN
TILING SYSTEMS

DESCRIPTION

Davco K10 Plus is a flexible, single pack water based polyurethane waterproofing membrane, which is capable of drying in approximately 6-8 hours @ 20°C depending on the number of coats required. It is available in two colours – green and grey.

USES

- Waterproofing of internal and external wet areas, such as showers, bathrooms, terraces and balconies, which can be tiled over if required, using Davco cement based adhesives.
- Ideal for roofs, including walkways and other exposed situations, as it is UV stable and foot trafficable.
- Suitable for retaining walls and planter boxes provided that adequate drainage is in place.

FEATURES AND BENEFITS

- A tough flexible membrane film which eliminates the need for a reinforcing layer.
- Being a liquid applied membrane, the risk of failure along the seams as in sheet membranes is eliminated.
- Davco K10 Plus is UV stable.
- Davco K10 Plus is foot trafficable.
- As there is no solvent release, Davco K10 Plus offers greatly reduced effects to the health of applicators and can be used in confined areas.
- Davco K10 Plus can be applied with airless spray equipment, allowing for faster installations, reducing time on the job.
- Fully tested for compatibility with Davco cement based tile adhesives
- Does not stain tiles or marble.
- Davco K10 Plus dries in 2-4 hours per coat, therefore allowing same day trafficking or tiling.
- Can be applied on damp, visibly dry surfaces without the fear of blistering.
- A reusable "green" product: the balance of Davco K10 Plus can be stored under proper conditions and re-used when necessary, reducing the pressure of waste on the environment as well as tipping fees.
- Davco K10 Plus is available in two colours, green and grey. This allows for ease of identification between coats and can be used as a quality control tool on job sites.
- Davco K10 Plus meets the requirements of AS4858:2004 Wet Area Membrane.

DAVCO K10 PLUS

SURFACE PREPARATION

General

- All surfaces must be structurally sound and free from dirt, dust, laitence, grease, paint, wax, oil and any other loose contaminants.
- Prior to application, remove all sharp protrusions, which may pierce the membrane.
- Any voids, potholes in the substrate must be appropriately filled up with a high strength mortar.

Concrete

- All new concrete slabs must have a wood float finish and be allowed to cure for at least 6 weeks.
- Old concrete must be cleaned with a strong commercial grade detergent or degreaser. Then thoroughly wash off all residue with clean water. Allow the surface to dry for at least 24 hours.
- If the concrete (new or old) has a steel trowel or power float finish, it must be mechanically abraded to expose the aggregate, and remove any signs of laitence.

Render

- New rendered surfaces must have a wood float finish and be allowed to cure for at least 7 days.

Lightweight Blocks

- Prime the surface with K10 Plus diluted 1 part to 3 with water.

Metal Surfaces

- All metal surfaces must be totally free of rust.
- Prime metal surfaces with etching primer.

Cracks/Joints - NOT subject to movement.

- Small hairline cracks, up to 1mm wide, may be filled by the first application of Davco K10 Plus.
- For cracks/joints wider than 1mm, a joint filler should be applied along the length of the crack prior to the application of Davco K10 Plus.

Cracks/Joints - subject to movement.

- All cracks/joints, irrespective of their width, must be filled firstly with Davco Davsil (Silicone Sealant) or Sodaflex 603 (Polyurethane Sealant). Then 50mm wide polyethylene/polypropylene tape should be placed over the crack, ensuring it adheres to the surface.

Building Boards

- Standard wall/floor building boards must be firmly fixed in accordance with manufacturer's instructions and appropriate Australian Standards. Such boards include plasterboard; fibre cement sheeting; marine grade ply and wet area composition board.
- Screw or nail heads must be sealed with epoxy.
- All sheeting joints need to be covered with 50mm wide polyethylene/polypropylene tape.

Falls to Drain

- In all wet areas, it is important that falls be provided to the drain outlet. The slope of this fall should be



DAVCO K10 PLUS

- 1:80 – which equates to a 12.5mm fall over 1m. If the existing substrate does not provide the necessary falls, a sand/cement screed needs to be created. Once the screed is in place, apply the membrane as per instructions below. Contact the Technical Advisory line for more information on an appropriate screed mix should this be required.
- For balconies and rooftops, it is important that falls be provided to the edges or the drain outlet. The slope of this fall should be 1:100 – which equates to a 10mm fall over 1m. If the existing substrate does not provide the necessary falls, a sand/cement screed needs to be created. Once the screed is in place, apply the membrane as per instructions below. Contact the Technical Advisory line for more information on an appropriate screed mix should this be required.

APPLICATION

Priming

All surfaces should be prepared in accordance with Surface Preparation instructions.

Concrete Surfaces

- This can be primed with Davco Ultraprime or using the K10 Plus diluted (3 parts water to 1 part membrane). Both the Ultraprime and the diluted K10 Plus will cover approx. 8-10m²/L depending on site conditions. Allow the primer to dry before application of the membrane.

Timber Surfaces

- This applies to solid timber floors, ply and particle board flooring. Prime the surface with Ultraprime, which will cover approx. 8-10m²/L depending on site conditions. Allow the primer to dry before application of the membrane.

Compressed Fibre Cement

- This should be primed using Dampflex Primer. This will cover approx. 8-10m²/L depending on site conditions. Allow the primer to dry before application of the membrane. Dampflex Primer is a solvent-based primer system – refer to datasheet and MSDS for application and handling instructions.

Bond Breaker

Abelrod

- When using Abelrod as a bond breaker, prime the surface first, as per instructions. Allow to dry.
- Place Abelrod along all wall/floor and wall/wall junctions, and secure into place with polyethylene/polypropylene tape.

Silicone or Polyurethane

- When using either Davsil (Silicone) or Sodaflex 603(Polyurethane) as a bond breaker, apply the bead into the corner, and smooth out with spatula or smoothing tool, to give a rounded cove in the corner.

- Allow to cure for 24 hours before subsequent application of membrane.

General Application

- Davco K10 Plus requires NO MIXING. Apply directly from the pail. Use a thick brush or a short nap roller to apply the first coat of Davco K10 Plus on the area to be waterproofed.
- Allow the first coat to dry for approximately 1-2 hours before applying the 2nd coat at 90° to the first coat.
- Apply a third coat only if necessary or required to do so.
- Allow the final coat to dry for at least 4-6 hours. This gives an overall drying time of 6-8 hours for the full application.

Note: The lower the temperature, the slower the drying time of the membrane.

Drain Application

- Prime inside and around the drain as per priming instructions.
- Apply the first coat of K10 Plus in and around the drain. Allow the first coat to dry for approximately 1-2 hours at 20°C.
- Apply a second coat in and around the drain ensuring no pinholes or air bubbles are present on the membrane surface. If necessary apply a third coat.

Ponding

- If pond testing is required, ensure the membrane is allowed to cure for a minimum of 7 days before pond testing. Contact our Technical Advisory line on 1800 653 347 if pond testing is required earlier than 7 days.

COVERAGE

Coverage will vary, depending on the application. K10 Plus is recommended for use at the following thicknesses in these specific applications:

- **Wet Areas**
0.6mm dry film thickness, applied at the rate of 1L/m² (two normal coats). A 20L pail will cover 20m².
- **Balconies / Patios – Covered External Areas**
0.8mm dry film thickness, applied at a rate of 1.25L/m² (two heavy coats). A 20L pail will cover 16m².
- **Rooftops – Exposed External Areas**
1.0mm dry film thickness, applied at the rate of 1.5L/m² (three heavy coats). A 20L pail will cover 13m².



Davco

EXCELLENCE IN
TILING SYSTEMS

PACKAGING

- Davco K10 Plus is available in the following colours and packages:
 - Green – 4 litre and 20 litre containers
 - Grey – 20 litre containers

SHELF LIFE

- Up to 12 months in unopened containers, stored in a cool dry elevated place.

CLEAN UP

- Tools and excess Davco K10 Plus can be cleaned up with water while it is still wet.

PRECAUTIONS

- Do not allow the product to freeze.
- Do not apply if the temperature is in excess of 45°C or less than 5°C.
- Delay external applications when inclement weather is imminent.
- Do not thin the liquid, it is supplied ready for use.
- Davco K10 Plus is not recommended for use in areas of permanent water immersion like swimming pools, spas etc.
- Do not use where negative hydrostatic pressure is evident (ie: rising damp), as it affects the bond of Davco K10 Plus. Contact your Davco office for product recommendation in areas where negative hydrostatic pressure exists.
- For other uses or the use of Davco K10 Plus over substrates/situations not mentioned, contact your nearest Davco office.

TECHNICAL DATA

Properties:

Appearance:	Green or Grey liquid
Drying Time at 20°C:	6 – 8 hours
Crack bridging:	Up to 2mm
Elongation at Break (7 day dry):	400%
Tensile strength (7 day dry):	3N/mm ²
Adhesion to concrete:	1.03N/mm ²
Shore hardness:	25
Re-coat Time (at 20°C):	1-2 hours
Full Cure (at 20°C):	3 days

DAVCO K10 PLUS

DISCLAIMER

The use of this product is beyond the manufacturer's control, and liability is restricted to the replacement of material proven faulty. The manufacturer is not responsible for any loss or damage arising from incorrect usage. All workmanship must be carried out in accordance with AS 3740 - 2004.

The information contained herein is to the best of our knowledge true and accurate. No warranty is implied or given as to its completeness or accuracy in describing the performance or suitability of the product for a particular application. Users are asked to check that the literature in their possession is the latest issue.

Davco

Davco Construction Materials Pty Limited

ABN 28 093 876 558

67 Elizabeth Street Wetherill Park NSW Australia 2154

Telephone: 61 2 9616 3000 Facsimile: 61 2 9725 5551

Toll Free Technical Advisory Line: 1800 653 347

Offices: Sydney, Melbourne, Brisbane, Perth, Singapore, Thailand & Malaysia

Email: marketing@davco.com.au Website: www.davco.com.au

PAREX GROUP

H1 2007 Compliance Report

Project Details

Designer: _____
 Project Name: Display Home
 Client: Logan Homes
 Lot No: Lot 10
 Comment: _____

Project Id: 8932
 Report Date: 14/08/2009

Compliance Result

This building complies with H1 via the following methods:

the Calculation Method in NZS4218:2004 (Sept 2008 R-values)

NZS4218:2004 Calculation Method Compliance

The use of the Calculation Method is permitted.

In order to comply the Actual Heat Loss must be the same or smaller than the Reference Heat Loss AND all component R-values must be the same or larger than 60% of the R-values in the '60% Rule' table below. This design complies with the NZS4218:2004 Calculation Method.

	Area	R-value
Floor	<u>258.9</u>	<u>1.3</u>
Wall	<u>146.1</u>	<u>1.9</u>
Roof	<u>325</u>	<u>2.9</u>
Glazing (30% of Total Wall)	<u>63.4</u>	<u>0.26</u>
Glazing (surplus of 30%)	<u>1.9</u>	<u>0.31</u>
Skylight	<u>0</u>	<u>0.31</u>

Heat Loss:	Reference	Actual
	<u>638</u>	<u>610</u>
<i>Minimum R-values ("60% rule"):</i>	<i>Permitted minimum</i>	<i>Actual minimum</i>
Floor R-value	<u>0.8</u>	<u>1.46</u>
Wall R-value	<u>1.1</u>	<u>1.94</u>
Roof R-value	<u>1.7</u>	<u>3.06</u>
Glazing R-value	<u>0.15</u>	<u>0.26</u>

Skylight R-value 0.15

Design Details

Building Dimensions

Floor Area	<u>258.9</u>
Gross Wall Area	<u>211.3</u>
Net Wall Area	<u>146.1</u>
Wall (North) Area	<u>28</u>
Wall (East, South and West) Area	<u>118</u>
Gross Roof Area	<u>325</u>
Net Roof Area	<u>325</u>
Glazing Area	<u>65.3</u>
Window (North) Area	<u>6.3</u>
Window (East, South and West) Area	<u>59</u>
Skylight Area	<u>0</u>

Glazing Area Percentages

Total Glazing Percentage	<u>30.9%</u>
East, South and West Window Percentage	<u>33.3%</u>
Total over 30%	<u>yes</u>
East, South and West over 30%	<u>yes</u>
Total over 50%	<u>no</u>

Information required for BPI calculation

Living Floor Area	<u>0</u>	Note: This includes also internal floors.
Average Room Height	<u>0</u>	
Thermal Mass Level	<u>Light weight</u>	<u>Suspended timber floor with timber framed walls or a heavily carpeted slab floor with timber framed walls.</u>

Wall Construction Type

Solid Construction	<u>non-solid</u>
--------------------	------------------

Climate

Location	<u>Hamilton & Ruakura</u>
Climate Zone	<u>2</u>

Heat Loss Details

	ID	Orientation	Width	Height	Net Area	R-value	Heat Loss	Shading Coeff.
<u>Floors</u>								
Floor 1	<u>1</u>				<u>258.9</u>	<u>1.46</u>	<u>177.3</u>	
<u>Walls</u>								

Wall 1	<u>A</u>	<u>North</u>	<u>13.46</u>	<u>2.55</u>	<u>28</u>	<u>1.94</u>	<u>14.4</u>	
Window 1-1	<u>1</u>		<u>1.66</u>	<u>2.2</u>	<u>3.7</u>	<u>0.26</u>	<u>14</u>	
Window 1-2	<u>2</u>		<u>0.6</u>	<u>2.2</u>	<u>1.3</u>	<u>0.26</u>	<u>5.1</u>	
Window 1-3	<u>3</u>		<u>0.6</u>	<u>2.2</u>	<u>1.3</u>	<u>0.26</u>	<u>5.1</u>	
Wall 2	<u>B</u>	<u>West</u>	<u>27.98</u>	<u>2.55</u>	<u>35.7</u>	<u>1.94</u>	<u>18.4</u>	
Window 2-1	<u>1</u>		<u>0.9</u>	<u>2.2</u>	<u>2</u>	<u>0.26</u>	<u>7.6</u>	
Window 2-2	<u>2</u>		<u>0.9</u>	<u>2.2</u>	<u>2</u>	<u>0.26</u>	<u>7.6</u>	
Window 2-3	<u>3</u>		<u>1.8</u>	<u>2.2</u>	<u>4</u>	<u>0.26</u>	<u>15.2</u>	
Window 2-4	<u>4</u>		<u>3.6</u>	<u>2.75</u>	<u>9.9</u>	<u>0.26</u>	<u>38.1</u>	
Window 2-5	<u>5</u>		<u>3.6</u>	<u>2.75</u>	<u>9.9</u>	<u>0.26</u>	<u>38.1</u>	
Window 2-6	<u>6</u>		<u>3.0</u>	<u>2.2</u>	<u>6.6</u>	<u>0.26</u>	<u>25.4</u>	
Window 2-7	<u>7</u>		<u>0.6</u>	<u>2.2</u>	<u>1.3</u>	<u>0.26</u>	<u>5.1</u>	
Wall 3	<u>C</u>	<u>South</u>	<u>13.46</u>	<u>2.55</u>	<u>27.1</u>	<u>1.94</u>	<u>14</u>	
Window 3-1	<u>1</u>		<u>1.8</u>	<u>2.2</u>	<u>4</u>	<u>0.26</u>	<u>15.2</u>	
Window 3-2	<u>2</u>		<u>0.9</u>	<u>2.2</u>	<u>2</u>	<u>0.26</u>	<u>7.6</u>	
Window 3-3	<u>3</u>		<u>0.6</u>	<u>2.2</u>	<u>1.3</u>	<u>0.26</u>	<u>5.1</u>	
Wall 4	<u>D</u>	<u>East</u>	<u>27.98</u>	<u>2.55</u>	<u>55.3</u>	<u>1.94</u>	<u>28.5</u>	
Window 4-1	<u>1</u>		<u>0.6</u>	<u>1.1</u>	<u>0.7</u>	<u>0.26</u>	<u>2.5</u>	
Window 4-2	<u>2</u>		<u>0.6</u>	<u>1.1</u>	<u>0.7</u>	<u>0.26</u>	<u>2.5</u>	
Window 4-3	<u>3</u>		<u>2.0</u>	<u>1.65</u>	<u>3.3</u>	<u>0.26</u>	<u>12.7</u>	
Window 4-4	<u>4</u>		<u>0.6</u>	<u>1.1</u>	<u>0.7</u>	<u>0.26</u>	<u>2.5</u>	
Window 4-5	<u>5</u>		<u>1.6</u>	<u>1.1</u>	<u>1.8</u>	<u>0.26</u>	<u>6.8</u>	
Window 4-6	<u>6</u>		<u>2.0</u>	<u>1.65</u>	<u>3.3</u>	<u>0.26</u>	<u>12.7</u>	
Window 4-7	<u>7</u>		<u>2.0</u>	<u>1.65</u>	<u>3.3</u>	<u>0.26</u>	<u>12.7</u>	
Window 4-8	<u>8</u>		<u>0.6</u>	<u>1.1</u>	<u>0.7</u>	<u>0.26</u>	<u>2.5</u>	
Window 4-9	<u>9</u>		<u>0.81</u>	<u>2.2</u>	<u>1.8</u>	<u>0.26</u>	<u>6.9</u>	
<u>Roofs</u>								
Roof 1	<u>1</u>		<u>10</u>	<u>29.4</u>	<u>294</u>	<u>3.06</u>	<u>96.1</u>	
Roof 2	<u>2</u>		<u>5.0</u>	<u>6.2</u>	<u>31</u>	<u>3.06</u>	<u>10.1</u>	
<u>Total Heat Loss</u>							<u>609.8</u>	

Note that the Shading Coefficient is only required for BPI calculations.

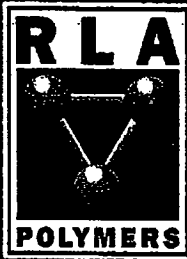
Compliance with Clause E3

This building complies with the R-value targets in NZBC Clause E3 .

<i>Component</i>	<i>Minimum R-value</i>	<i>Project R-value</i>
Framed wall constructions with cavities	1.5	<u>1.94</u>
Single skin masonry wall without a cavity	0.6	_____
Solid timber wall no less than 60 mm thick	0.6	_____
Roof or ceilings	1.5	<u>3.06</u>

This report was created with the Design-Navigator (www.design-navigator.co.nz).

[Print Report](#)



Waterproofing Solutions

Water is capable of causing huge damage to the structures that we build if it is not kept under control. RLA Polymers understand the many problems associated with keeping water where it should be. We offer water tight solutions for all of the important areas in any home and business (all based on water based liquid polymer technology). Whether it be for ground water control (positive hydrostatic pressure), for waterproofing decks, parapets, swimming pools, bathrooms, showers, kitchens, or even decorative finishing of concrete slabs (inside or outside); RLA Polymers can provide a specification to keep water in or out.

Contact us about our COMPLETE WATERPROOFING APPLICATION SYSTEM undergoing BRANZ® testing!

Product Range



RLA Miracryl 2-part

- RLA Miracryl 2-Part is a grey, 2-part, flexible waterproofing and sealing membrane. The liquid component is acrylic based and the powder component is cement based.
- RLA Miracryl 2-Part does not normally require complete fiberglass reinforcing only a reinforcement tape on high stress areas such as wall to floor joints.
- Ideal for complete waterproofing for shower recesses, wet areas, balconies, terraces, roofs, swimming pools and water tanks.
- RLA Miracryl 2-Part can be used for internal or external waterproofing applications.
- Currently undergoing BRANZ® testing.
- Size 12Ltr / 20kg kit.



Polymer 20 Hydrocoat

- 20 Hydrocoat is a two component, water based epoxy polymer moisture barrier system
- For use in control of hydrostatic pressure
- Available in both grey and clear (gloss and satin) where decorative finish is required.
- Can be used for internal or external applications
- 20 Hydrocoat is ideal for concrete slabs, concrete block work or coloured concrete where a hard trafficable surface is required
- Can be used on new concrete slabs with a relative humidity reading as high as 90%
- Size 10Ltr / 10Ltr kit.



Polymer Liquidseal

- Polymer Liquidseal is a 1-part, high build water based acrylic moisture barrier system
- Polymer Liquidseal has a built in latent curing mechanism
- Forms a tough, UV resistant flexible film.
- Can be used for internal or external applications
- It is ideal for decks, parapets, flat roof areas, water storage tanks (carries a potable water certificate), and general wet areas such as bathrooms and laundries.
- Available in White and Grey
- Size 20Ltr.



RLA Polymers Pty Ltd
67 Dalgely Drive, Manukau
Auckland
P.O.Box 97-575, South Auckland Mall Centre
Phone: (09) 267 2772 Fax: (09) 268 0305
Email: sales@rlapolymers.co.nz

www.rlapolymers.co.nz





RLA POLYMERS PTY LTD
(Incorporated in Australia)

67 Daigety Drive,
Manukau City, Auckland, New Zealand
P.O. Box 97-575, South Auckland Mail Centre
Telephone: (09) 267-2772 • Facsimile: (09) 268-0305

Recommended procedures for the installation of Miracryl 2-part Waterproofing System (M2P) – Approved Applicators

Firstly, have you completed a M2P training course with RLA Polymers? If you have not done this, call RLA Polymers immediately on (09) 267 2772 to register for the next available class. Some district councils require that **YOU MUST BE REGISTERED WITH RLA POLYMERS AS AN APPROVED APPLICATOR** before any work is commenced. It is your responsibility to ensure you are not in breach of any local council requirements when it comes to installing waterproofing membranes.

Secondly, is your approval status current? Every two years you must undergo a refresher course at RLA Polymers to ensure you keep up to date with changing technology and procedures. Check on your 'RLA Approved Applicators card' for your expiry date to see if you need to organize this.

Stage 1: Substrate preparation:

An approved applicator begins the installation by inspecting the substrate and area to be waterproofed. The applicator will communicate any problems with the installation of the wall, floor or deck substrates back to the installer or builder, who must remedy the situation prior to the installation of Miracryl 2-part waterproofing. The Miracryl 2-part system can be applied to most substrates, but generally, concrete, cement board, gip board, plywood and particle board are the common ones.

Concrete Substrate:

To be prepared in accordance with the Australian/NZ Standards and RLA Polymers relevant written recommendations. The sub floor must be free of oil, grease, wax, curing compounds, dust, old adhesive and any other contaminations, which may inhibit bond. Diamond grinding, shot blasting or scarifying is the preferred method of preparation to remove any contamination. (Acid should not be used). If there is a hydrostatic moisture problem (rising damp) within the concrete substrate, Polymer RL20 needs to be applied prior to any other coatings. This is a two coat waterborne epoxy system which stops any 'pressure water' from lifting / de-laminating the Miracryl 2-part membrane off the substrate. Vacuum the area thoroughly to remove all dust which will also inhibit bond. Substrates, which are contaminated with moss lichen and mould, will first require that this is removed by washing down with a suitable cleaner or / and water blasting

Wooden Substrate:

The wooden floor is to be mechanically cleaned free of all dirt, oil, grease and any other contaminates that may inhibit bond in accordance with Australian/NZ Standards and any specific RLA Polymers instructions. All timber must be screwed (not nailed) to eliminate any excessive movement that may have occurred. All timber joints need to be filled with a suitable flexible compound such as RL1017. Flooring joist should be at maximum centers of 450mm. Any holes need to be filled, particularly on plywood decks and particleboard floors. A suitable flooring compound should be used for this process.

Once the substrate has been checked and approved by the applicator, *Stage 1 Complete - Substrate* will be signed off on the 'Miracryl 2-part Warranty Registration Form (Approved Applicators)'. See section 10 of this folder.

Stage 2: Installing the Miracryl 2-part Waterproofing System:

Bond breaker:

Stage 2 continued

Prime:

Next, the application of a single coat of Miracryl Primer on porous substrates such as concrete, gip and cement board. This is applied to the entire area, paying attention to even coverage both to walls and floors. This is a milky white penetrative solution that will bind with the substrate, leaving either an invisible or slightly low sheen clear coating on the surface. Roberts 34 two part epoxy primer should be used on all wooden surfaces to ensure good adhesion of the membrane. Both types of primers should be applied in a thin layer with either a brush or short nap roller, ensuring that you do not get any puddles. After approximately 1-2 hours, joint reinforcing can then be commenced.

Joint preparation:

All junctions are then reinforced with Miracryl 90 butyl tape, as are floor and wall joints. Cracks in concrete floors also need Miracryl 90 butyl tape installed over them. On decks, Miracryl 90 butyl tape should be used over all substrate joints and variations also. Miracryl 90 butyl tape is a non cured, polyester weave reinforced butyl tape that is extremely flexible.

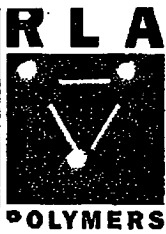
Apply Miracryl 2-part waterproofing:

This is a two coat process. Each coat is applied at a rate of approximately 1 litre per square metre. The two part membrane is mixed proportionally by weight and then applied to all surfaces. Care must be taken to prevent unnecessary buildup at joints and junctions. A diamond weave, polyester reinforcing mesh can be used to prove micron thickness of the membrane. If mesh is to be used, it should be encapsulated within the first coat. RLA Polymers does not recommend fiberglass mesh as you run the risk of subsequent osmosis if installed incorrectly. After approximate 45 - 60 minutes of drying/curing, the second coat can be applied, rolled or brushed in a different direction. As Miracryl 2-part dries it changes shading. This is so as the second coat is applied it can be easily seen to ensure 100% proof of coverage of the second coat. Once again attention is paid to unnecessary buildups and any pin holing which may have appeared in the first coat. Curing of the finally installed membrane is important. The final system must be fully cured prior to the installation of tiles or other floor or wall coverings over the top. Allow 24 hours minimum. Longer cure times may be experienced in colder temperatures or conditions with poor air circulation.

Once cured and a check of the membrane is made, the applicator will sign off *Stage 2 Complete - Waterproofing* on the 'Miracryl 2-part Warranty Registration Form (Approved Applicators)'. See section 10 of this folder.

Stage 3: Final membrane check:

This involves the applicator confirming the "Miracryl 2-part waterproofing system" is now ready for tile or floor/wall coverings. This is confirmed by a signature from the installer on *Stage 3 Complete - Warrantee* on RLA Polymers 'Miracryl 2-part Warranty Registration Form (Approved Applicators)', and by completing a 'Miracryl 2-part Installation 15 year Limited Warranty' and providing a copy of this to their customer. See section 10 of this folder.



Miracryl 2-Part

Waterproofing Membrane

Characteristics:

- Miracryl 2-Part is a high aluminate cement acrylic, 2-part flexible waterproofing and sealing membrane.
- It is a rapid curing, high build product.
- It is ideal for waterproofing wet areas, shower recesses, balconies, terraces, water tanks, swimming pools etc. and will handle limited flexural movement.
- Miracryl 2-Part can be applied to: Concrete, Rendered Brickwork, Blockwork, Fibre cement sheet, Gypsum Board, Particle Board, Plywood.

Preparation:

- All surfaces must be free of oil, dust, wax, curing compounds, release agents, paint etc. and any protrusions that may penetrate the membrane.
- They should be dry and free from excessive movement.
- Ensure all concrete surfaces have had sufficient cure time prior to coating, and that all other surfaces are fixed in accordance with manufacturers specifications and relevant standards.
- All screw and nail heads must be sealed with epoxy or other permanent protection to prevent "popping", and all sheet joins must be covered with a 50 mm wide bond breaker tape.
- Metal surfaces must be rust free and primed with Zinc Chromate etch primer.
- All other surfaces must be primed with a minimum of one coat of Miracryl Primer. Very absorbent surfaces will need 2 or more coats of primer.
- Small hairline cracks (up to 1 mm) may be filled with the first coat of Miracryl 2-Part. Larger cracks (up to 2mm) or structural shrinkage cracks/joints must be firstly filled with a flexible sealant, and then covered with a 50 mm wide bond breaker tape, followed by Miracryl 2-Part, reinforced with 100mm wide bandage.
- Apply bond breaker sealant to all wall/floor and wall/wall junctions.

Mixing:

- Mix the appropriate amount of powder/liquid allowing a minimum of 600-700 ml of mixed product/m² for each coat.
- Add powder to liquid (at ratio of 2 kg powder/1.2 kg liquid) while stirring, and mix to a lump free smooth consistency.
- Allow to stand 10 minutes, then re-stir prior to using.

Application:

- Apply Miracryl 2-Part to the primed surface using a thick brush, roller or flat trowel to achieve an even coat.
- Once the first coat is touch dry (about 40 minutes at 20°C), apply the second coat at 90° angle to the first coat.
- Inspect the area for any pinholes (recoat if necessary), and allow 6-8 hours (at 20°C) curing, prior to commencement of tiling.

All statements and technical information contained herein are based on tests we believe to be reliable but the accuracy thereof is not guaranteed. Users assume all risks and liability resulting from the use of this product and must confirm the suitability thereof by their own tests. Conditions of Sale contain a limited warranty against manufacturing defects.

RLA POLYMERS PTY LTD

67 Dalgely Drive (P.O. Box 97-575), Manukau City, Auckland, New Zealand Tel. (09) 267 2772 Fax. (09) 268 0305

Clean up:

- Excess Miracryl 2-Part, on tools and other equipment can be cleaned using water, while the product is still wet. Once dry/cured, it will be difficult to remove without mechanical means.

Coverage:

- The coverage of Miracryl 2-Part will vary depending upon the substrate, size and type of application and site conditions. As a guide mixed product approx. 1.5L/m² (2 coats).
- Kit 12L/20 kg approx. 15m².

Packaging/ Shelf Life:

- Miracryl 2-Part is available in a 12L/20 kg Kit. The bagged powder compound will have a shelf life of approximately 12 months if stored in a cool, dry environment. The liquid will store for 2 or more years under similar conditions.

Handy Tips:

- Miracryl 2-Part is fast setting (recoat 30-60 minutes), allowing waterproofing and tiling to proceed much more rapidly than conventional systems.
- Because it chemically reacts, Miracryl 2-Part can be used at lower temperatures than other "paint on" systems.
- Miracryl 2-Part is classified as a non-hazardous product.
- For a full MSDS on this product contact your nearest RLA office.

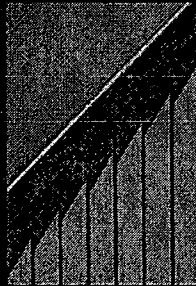
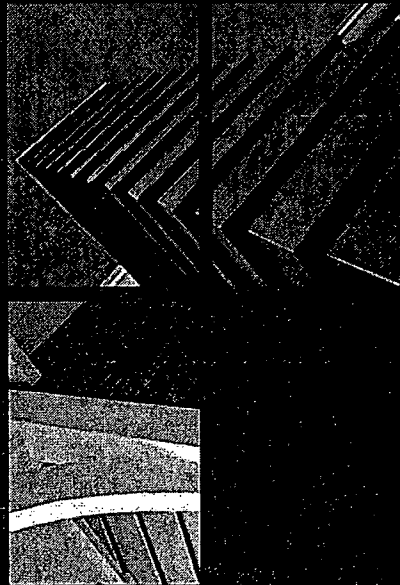
Technical Data:

<u>Properties</u>	<u>Results</u>
Appearance	Grey Paste (Black when dry)
Viscosity	Brushable/ rollerable when mixed
Optimum thickness	1.2-2.0 mm dry film thickness
Drying time @ 20°C	(Between coats) 30-60 min, (before tiling) 6-8 hrs
Full cure	7 days
Application temperature	5°C-35°C
% elongation at break	103%
Tensile Strength	1310kPa
Crack Bridging	Up to 2 mm (reinforced)

The information supplied is to the best of our knowledge true and accurate. The actual application of the product is beyond the manufacturer's control. Any failure or damage caused by the incorrect usage of the product is not the responsibility of the manufacturer. The manufacturer insist that all workmanship must be carried out in accordance with AS3958 part 1 1991. It is also the responsibility of the end user to ensure that the literature in their possession is the latest issue.



TECHNICAL SPECIFICATION



1 APPLICATION AND SCOPE

1.1 APPLICATION

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

- James Hardie also has available
 - CLD™ Fascia in two widths. CLD Fascia is a 18mm thick, pre-primed fibre cement product designed to accommodate James Hardie soffit linings.
 - CLD Trim comes in a variety of widths for use as decorative trims around openings and external corners. CLD Trim is a 18mm thick, pre-primed fibre cement product.

If you are a specifier...

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

If you are an installer...

Ensure that you follow the design, moisture management and associated figures and material selection provided by the designer and this James Hardie Technical Specification. All the details provided in this document must be read in conjunction with the specifiers specification.

Make sure your information is up to date

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

1.2 SCOPE

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

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

1.3 DETAILS

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

1.4 SPECIFIC DESIGN

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

CONTENTS

PAGE

1	APPLICATION & SCOPE	2
1.1	Application	2
1.2	Scope	2
1.3	Leaks	2
1.4	Spalling/Disin	2
2	DESIGN	3
2.1	Compliance	3
2.2	Permeability	3
2.3	Site and foundation	3
2.4	Ground preparation	3
2.5	Moisture management	3
2.6	Structure	3
2.7	Wind loading	3
2.8	Structural bracing	3
2.9	Fire rated walls	3
2.10	Energy efficiency	3
3	FRAMING	4
3.1	General	4
3.2	Drainage	4
3.3	Timber Guide	4
3.4	Durability	4
3.5	Frame Construction	4
3.5.1	Direct Fixed Construction Method	4
3.5.2	Cavity Construction Method	4
3.6	Roofscape	4
4	PREPARATION	4
4.1	Building wrap	4
4.2	Plastering	4
4.3	Verf strip	4
4.4	Quality stations	5
4.5	Impermeable cap	5
4.6	Connect	5
4.7	Junctions and Panel Slope	5
5	FIXING LINEA™ WEATHERBOARD	5
5.1	General	5
5.2	Fixing	5
5.3	Fastener Curability	5
5.4	Nail Sizes and Fixing Method	5
5.5	Gun nailing	5
6	JOINTING	6
6.1	Preparation & priming	6
6.2	Emboss	6
6.3	Painting	6
8	STORAGE & HANDLING	7
9	MAINTENANCE	7
10	PRODUCT INFORMATION	7
10.1	Manufacturing & classification	7
10.2	Iron	7
10.3	Durability	7
10.3.1	Resistance to Moisture/Moulding	7
10.3.2	Resistance to Fire	7
10.3.3	Alcove Ratings	7
10.4	Product Sizes and Weights	7
10.5	Fire and Weight	7
11	SAFE WORKING PRACTICES	8
12	PRODUCT SIZES	9
13	ACCESSORIES	10
14	DETAILS	12
15	WARRANTY	39

WE VALUE YOUR FEEDBACK

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

James Hardie
linea@feedback.jameshardie.co.nz
 Fax 0800 808 868

2 DESIGN

2.1 COMPLIANCE

Linea Weatherboard has been appraised by BRANZ. Refer to Appraisal Certificate number 448 (2005) and 447 (2005) at www.branz.co.nz or www.jameshardie.co.nz.
Note: the scope of the Appraisal Certificate takes precedence over the scope of this specification.

2.2 RESPONSIBILITY

The specifier or other party responsible for the project must ensure that the information and details in this specification are appropriate for the intended application and that additional detailing is performed for specific design or any areas that fall outside the scope of this technical specification. For applications outside the scope of this literature and figures which are not provided herein, the architect, designer or engineer must undertake specific design and it should be ensured that the intent of their design meets the requirements of the NZBC.

All dimensions shown are in millimetres unless noted otherwise. All New Zealand Standards referenced in this manual are current edition and must be complied with.

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

2.3 SITE AND FOUNDATION

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

2.4 GROUND CLEARANCES

The floor must have a minimum clearance to paved or unprotected ground as required by NZS 3604.

Linea Weatherboards must overhang the bottom plate on a concrete slab by a minimum of 50mm as required by NZS 3604. The bottom of claddings must comply with NZBC Acceptable Solution, E2/AS1, section 9.1.3.

On the rofts and decks the minimum clearance must be 50mm. Do not install external cladding such that it may remain in contact with water or ground.

2.5 MOISTURE MANAGEMENT

It is the responsibility of the specifier to identify moisture related risks associated with any particular building design.

Wall construction design must effectively manage moisture, considering both the interior and exterior environments of the building, particularly in buildings that have a higher risk of wind driven rain penetration or that are artificially heated or cooled. Walls shall include those provisions as required by NZBC Acceptable Solution, E2/AS1 'External Moisture', in addition all wall openings, penetrations, junctions, connections, window sills, heads and jambs must incorporate appropriate flashing for waterproofing. The other

materials, components and installation methods used to manage moisture in the walls, must comply with the requirements of relevant standards and the NZBC. For information in relation to designing for weather-tightness, refer to the Building Research Association of New Zealand (BRANZ) and the Department of Building & Housing (DBH) updates on the following websites, respectively www.branz.co.nz and www.dbh.govt.nz.

2.6 STRUCTURE

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

2.7 WIND LOADING

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

2.8 STRUCTURAL BRACING

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

- Wind 66 - 120BU'S
- Earthquake 60 - 105 BU'S

Refer to the James Hardie Bracing manual for details.

2.9 FIRE RATED WALLS

Walls clad with Linea Weatherboard using a direct fix or cavity construction method can achieve fire ratings of up to R0/0/30 when constructed in accordance with the James Hardie 'Fire and Acoustic' Technical Specification Manual.

Refer to Fire and Acoustic Technical Specification Manual for further information about fire rated systems.

2.10 ENERGY EFFICIENCY

External walls constructed using Linea Weatherboard, bulk insulation, where the area of glazing is 30% or less of the total wall area and constructed as per this technical specification complies with the requirements for walls in NZBC Acceptable Solution H1/AS1 (NZBC Clause H1 Energy Efficiency - Third Edition). Replacement Table 1, to meet thermal insulation requirements for the construction, the bulk insulation as specified in Table-1 must be used. This insulation may be substituted with insulations having higher R-values. The thermal insulation of a wall gets affected when the depth of the timber framing is increased or decreased. The calculation used in Table below is based on a timber framing size 90 x 45mm and using an internal lining material such as James Hardie Villaboard® Lining or a 10mm plasterboard.

TABLE 1

INSULATION CAPABILITY		Minimum R-Value of Insulation Required
Climate Zone	Construction R-Value Requirement	
1 & 2	1.5 m ² °C/W	R1.8
3	1.9 m ² °C/W	R2.2

* These requirements will increase to 1.9 m² °C/W in Zone 1 & 2 and 2.0 m² °C/W in Zone-3 as per the new requirements of NZBC Clause 'H1 - Energy Efficiency' (Third Edition).
The insulation requirements will change in a phased manner as noted below:
Zone 1 on 30 September 2008,
Zone 2 on 30 June 2008,
Zone 3 on 31 October 2007.

To achieve higher thermal insulation values of construction the insulation material must be replaced with an insulation material having R2.2 or higher to suit the requirements.
For further guidance on insulation requirement refer to 'House Insulation Guide' published by BRANZ.

3 FRAMING

3.1 GENERAL

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

3.2 DIMENSIONS

A 30mm minimum stud width is required unless noted otherwise in this specification.

3.3 TIMBER GRADE

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

3.4 DURABILITY

To comply with NZBC requirements the external framing must be treated to a minimum H1.2 treatment. Refer to NZBC Acceptable Solution 'E2/AS1' Durability for further information about the durability requirements. For timber treatment information refer to NZS 3602 (Timber and Wood-Based Products for use in Buildings) and NZS 3640 (Chemical Preservation of Round and Sawn Timber) for minimum timber treatment selection and treatment requirements. Also refer to framing manufacturer's literature for further guidance on timber selection.

Framing must be protected from moisture at sites in accordance with the recommendations of framing manufacturers.
Note: refer to NZS 3602 for information about the allowable moisture content in timber.

3.5 FRAME CONSTRUCTION

All timber framing sizes and set-out must comply with NZS 3604 and stud, noggs / owings centres as required by this specification.

3.5.1 DIRECT FIXED CONSTRUCTION METHOD

The following framing must be provided for direct fixed construction method:

- Studs must be provided at 600mm centres maximum.
- Nogs must be provided at 1200mm centres maximum.
- Double studs are required at internal corners.
- Extra packers may be required at external corners.
- Extra studs are required for aluminium internal corner sections.

3.5.2 CAVITY CONSTRUCTION METHOD

The following framing must be provided for cavity construction method:

- When studs are at 600mm centres the nogs must be provided at 800mm centres maximum.
- When studs are at 400mm centres the nogs may be provided at 1200mm centres maximum.
- Double studs are required at internal corners.
- Extra packers may be required at external corners.
- Extra studs are required for aluminium internal corner sections.

3.6 TOLERANCES

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

4 PREPARATION

4.1 BUILDING WRAP

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

4.2 FLASHING

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

Note: Special fixing arrangements are required for bracing and fire-resistance rated wall systems. For more information Ask James Hardie on 0800 808 888.

5.3 NAIL SIZE AND FIXING METHOD

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

- Linea Weatherboard must be fixed into studs. Fixing centres to coincide with stud spacing.
- All concealed nails must be driven flush with the board surface.
- When concealed fixing Linea Weatherboards, nails must be driven behind the lap of the boards, except at all corners and vertical edges of openings where Linea Weatherboards must be face fixed/exposed nailed. Refer to Figure 2 and Figure 28. Or alternatively use 30mm Brad nails at the corners and beside openings to fix Linea Weatherboard together.
- Nails must be fixed 20mm from the end of the board when hand nailing.
- Linea Weatherboards may be face fixed when site conditions create a gap under the lap.

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

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

4.7 JUNCTIONS AND PENETRATIONS

Refer to Clause 2.5 of this specification for moisture management requirements. All windows and doors must be detailed as per the requirements of this specification. James Hardie has developed the window details for Linea Weatherboards which meet the requirements of E2 'External Moisture', an approved document of the NZBC. Refer to Figures 11 to 24 and 36 to 33.

4.3 VENT STRIP

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

4.4 CAVITY BATTENS

Buildings with a risk score of 13-20 calculated in accordance with NZBC Acceptable Solution 'E2/AS1', Table 2 require Linea Weatherboards to be installed on a cavity. The cavity battens provide airspace between the frame and cladding and are considered a "backer" only in this specification. The timber battens must be minimum H3.1 treated in accordance with NZS 3840 (Chemical preservation of Round and sawn timber) to comply with the durability requirements of 'E2/AS1'. Cavity battens must comply with 'E2/AS1' and:

- be minimum 18mm thick.
- be minimum as wide as the width of studs.
- be fixed by the cladding fixings to the main framing through the building wrap.
- unit claddings are fixed the battens need only to be locked to framing.
- (Batten fixing is required temporarily to keep them straight on the wall during construction.)
- The cavity battens are installed as described below:
 - Fix cavity battens to studs.
 - Battens should be fixed with 40mm x 2.8mm nails at 800mm centres maximum.

4.5 INTERMEDIATE SUPPORT

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

- intermediate cavity batten between the studs.
 - 75 mm galvanized mesh.
 - polypropylene tape.
- No intermediate supports are required;
- where studs are at 400mm centres. Or;
 - when rigid sheathings instead of building wraps are used.

4.6 CORNERS

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

- 90° corner soaker in aluminium, copper or stainless steel. Refer to Figures 7 and 32.
- Box corners using CLD Trim. Refer to Figures 3, 4 and 28.
- Mitred corners to weatherboards. Refer to Figures 5 and 30.
- Aluminium boxed corners. Refer to Figures 6 and 31.

5 FIXING LINEA WEATHERBOARD

5.1 GENERAL

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

5.2 FASTENER DURABILITY

Fasteners must meet the minimum durability requirements of the NZBC. NZS 3804 specifies the requirements for fixing materials to be used in relation to the exposure conditions and are summarised in Table 2.

TABLE 2:
EXPOSURE CONDITIONS AND NAIL SELECTION
PRESCRIBED BY NZS 3804

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

* (Zone 1 areas where local knowledge dictates that increased durability is required, appropriate selection shall be made) Also refer to NZBC Acceptable Solution 'E2/AS1' Table 20 and 21 for information regarding the selection of suitable fixing materials and their compatibility with other materials.

5.3 NAIL SIZE AND FIXING METHOD

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

- Linea Weatherboard must be fixed into studs. Fixing centres to coincide with stud spacing.
- All concealed nails must be driven flush with the board surface.
- When concealed fixing Linea Weatherboards, nails must be driven behind the lap of the boards, except at all corners and vertical edges of openings where Linea Weatherboards must be face fixed/exposed nailed. Refer to Figure 2 and Figure 28. Or alternatively use 30mm Brad nails at the corners and beside openings to fix Linea Weatherboard together.
- Nails must be fixed 20mm from the end of the board when hand nailing.
- Linea Weatherboards may be face fixed when site conditions create a gap under the lap.

TABLE 3
NAIL REQUIREMENTS FOR LINEA WEATHERBOARDS

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

CAVITY FIXING

Concealed Nailing	Finish flush with the board surface
60 x 3.15mm HandiFlex® nails	

Face Nailing

75 x 3.15mm jolt head nails	Hot-dipped galvanised may be driven through both thicknesses at board lap without pre-drilling
Stainless steel jolt heads will require pre-drilling*	

* Use a 3.0mm drill bit

TABLE 4:
NAIL REQUIREMENTS FOR TRIM

Single Thickness	60mm jolt head nails. If fixing over Linea Weatherboard use pre-drilled: 75 x 3.15mm jolt head nails.
Double Thickness	60mm jolt head nails. If fixing over Linea Weatherboard use pre-drilled* holes. When fixing to timber support use 60mm jolt head nails.
Single plus packer	

* Use a 3.0mm drill bit

6 JOINTING

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

7 FINISHING

Note: Protective coating of Linea Weatherboard and CLD Trim is required in order to meet the durability requirements of the NZBC.

7.1 PREPARATION AND PRIMING

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

7.2 SEALANTS

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

7.3 PAINTING

All Linea Weatherboards are pre-primed on their face and bottom edge with a factory applied acrylic base coat. Linea Weatherboard must be painted within 90 days of installation. All exposed faces, including the top edges under the sills and bottom edges of Linea Weatherboard, Trim and accessories must be finished with latex exterior paint system complying with any of parts 7, 8, 9, and 10 of AS 3730.

Dark coloured paints can be used on Linea Weatherboard and Trim. Some environments require special coatings. Paint selection and the preparation required is dependant on paint chosen. Refer to the paint manufacturer for information before starting painting.

8 STORAGE AND HANDLING

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

9 MAINTENANCE

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

- Washing down exterior surfaces every 6-12 months;
- Re-applying exterior protective finishes*;
- Maintaining the exterior envelope and connections including joints, penetrations, flashings and sealants;
- Clearing out gutters, blocked pipes and overflows as required;
- Pruning back vegetation close to or touching the building;
- The clearances between the bottom edge of Linea Weatherboard and the finished/unfinished ground must always be maintained. *Refer to your paint manufacturer for washing down and recoating requirements related to paint performance.

10 PRODUCT INFORMATION

10.1 MANUFACTURING AND CLASSIFICATION

James Hardie New Zealand is an ISO 9001(2000) (Isac certified manufacturer. Linea Weatherboard and CLD Trim are manufactured to meet the requirements of AS/NZS 2908.2: 2000 'Cellulose-Cement Products'. Linea Weatherboard has a classification of Type A Category 3 in accordance with this Standard. Linea Weatherboard is a reduced density cellulose cement formulation incorporating James Hardie patented CLD® (Ceramic Low Density) technology. Linea Weatherboard has a bevel back and tongue and groove at the ends for joining. The bottom front edge of Linea Weatherboard is chamfered. The weatherboards are supplied pre-primed on their face and bottom edge with an acrylic primer. Linea Weatherboards and CLD Trim are identified by the printing at regular intervals of the name LINEA on the back face.

10.2 JAMES HARDIE TRIM

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

10.3 DURABILITY

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

10.3.1 RESISTANCE TO MOISTURE/ROTTING

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

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

10.3.2 RESISTANCE TO FIRE

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

10.3.3 ALPINE REGIONS

In regions subject to freeze/thaw conditions, Linea Weatherboard must not be in direct contact with snow or ice build up for extended periods, e.g. external walls in alpine regions subject to snow drifts over winter.

The Linea Weatherboard has been tested in accordance with AS/NZS 2908.2 Clause 8.2.3.

TABLE 5:

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

10.4 PRODUCT SIZES AND MASS

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

10.5 SIZE AND WEIGHT

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

11 SAFE WORKING PRACTICES

WARNING

DO NOT BREATHE DUST AND CUT ONLY IN WELL VENTILATED AREA

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

WORKING INSTRUCTIONS

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

HARDBLADE® SAW BLADE

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

HOLE-FORMING

For smooth clean cut circular holes:
Mark the centre of the hole on the sheet.
Pre-drill a 'pilot' hole.

Using the pilot hole as a guide, cut the hole to the appropriate diameter with a hole saw fitted to a heavy duty electric drill.

For irregular holes:

Small rectangular or circular holes can be cut by drilling a series of small holes around the perimeter of the hole then tapping out the waste piece from the sheet face.

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

STORAGE AND HANDLING

All James Hardie building products should be stored to avoid damage, with edges and corners of the sheets protected from chipping.

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

QUALITY

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

JAMES HARDIE RECOMMENDED SAFE WORKING PRACTICES

CUTTING OUTDOORS

- Position cutting station so that wind will blow dust away from user or others in working area.
- Use a dust reducing circular saw equipped with HardBlade® Saw Blade and HEPA vacuum extraction.

DRILLING/OTHER MACHINING

When drilling or machining you should always wear a P1 or P2 dust mask and warn others in the immediate area.

IMPORTANT NOTES:

1. NEVER use a power saw indoors
2. NEVER use a circular saw blade that does not carry the HardBlade® logo
3. NEVER dry sweep - Use wet suppression or HEPA Vacuum
4. NEVER use grinders
5. ALWAYS follow tool manufacturer's safety recommendations

P1 or P2 respirators can be used in conjunction with above cutting practices to further reduce dust exposures. Additional exposure information is available at www.jameshardie.co.nz to help you determine the most appropriate cutting method for your job requirements. If concern still exists about exposure levels or you do not comply with the above practices, you should always consult a qualified industrial hygienist or contact James Hardie for further information.

12 PRODUCT SIZES

TABLE 6:
















Product	LINEA WEATHERBOARD AND TRIM SIZES							COVERAGE INFORMATION	
	Length (mm)	Width (mm)	Thickness (mm)	End Details	Effective Cover (mm ²)	No. of planks/ metre height (approx.)	Mass kg/lineal m (approx. at EMC)	Mass kg/m ² approx. at EMC)	weight/pack (60 units/ pack)
135 Linea Weatherboard	4200*	135	16	T & G	105	9.5	2.62	24.93	660.00
150 Linea Weatherboard	4200*	150	16	T & G	120	8.3	3.1	25.70	781.00
180 Linea Weatherboard	4200*	180	16	T & G	150	6.7	3.57	23.92	899.00
84mm CLD Trim	2600	84	16	Square	N/A	N/A	1.6	N/A	N/A
100mm CLD Trim	2600	100	16	Square	N/A	N/A	1.9	N/A	N/A
135mm CLD Trim	4200	135	16	T & G	N/A	N/A	2.6	N/A	N/A
180mm CLD Trim	4200	180	16	T & G	N/A	N/A	3.4	N/A	N/A

*Length is 4200mm plus 5mm for the tongue and groove making overall length 4205mm

*The effective thickness of finished Linea Weatherboard on the wall at the top is approximately 33 to 35mm

13 ACCESSORIES

ACCESSORIES/TOOLS SUPPLIED BY JAMES HARDIE

	ACCESSORY AND MATERIAL NUMBER	SIZE (MM)	MATERIAL / APPEARANCE
	External corner soaker 90° for 180mm weatherboards • Aluminium 301188 • Copper 301188 • Stainless Steel 301187	200 long	Self colour
	External corner soaker 90° for 150mm weatherboards • Aluminium 302820 • Stainless Steel 302821	170 long	Self colour
	External corner soaker 90° for 135mm weatherboards • Aluminium 301185 • Copper 301187 • Stainless Steel 301188	155 long	Self colour
	External Sillline Box Corner Mould 301185	2700 long	Etch Primed Aluminium
	Box Corner 'Z' Flashing 301203	2700 long	PVC Grey
	Internal 'W' Mould 90° 301184	2700 long	Etch Primed Aluminium
	Internal 'W' Mould 135° 301183	2700 long	Etch Primed Aluminium
	Vent Strip 302460	3000 long	PVC White
	JH Corner Under Flashing 50 x 50 303745	3000 long	PVC White
	Joint Head Nail 316 Stainless Steel 301233	60 x 3.15mm	Self colour
	Joint Head Nail 316 Stainless Steel 301234	76 x 3.15mm	Self colour
	Insool 3103 Sealing Strip 302324	5 x 3 x 25	Black compressible foam
	CLD Trim 18mm 401943	84 x 2600 long	Fibre Cement primed
	CLD Trim 16mm 401830	100 x 2600 long	Fibre Cement primed
	HardiFlex nail - Jar - 5kg 302761 302762	60 x 3.15mm	316 Stainless Steel
	HardiFlex nail - Jar - 5kg 302763 302764	60 x 3.15mm	Hot Dip Galvanised
	HardiBlade® Saw Blade 300660	4 tooth - 184mm	Diamond Tipped
	CLD Fascia - 180mm - 250mm 401843 402230	4200 long	Fibre cement Primed
	Linea and Fascia Screw 303460	40mm x 9 gauge	Stainless Steel

14 DETAILS


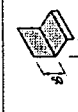
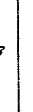
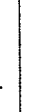











Various details outlined in the following table are available on Pages 12 to 34.

TABLE 7:

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

ACCESSORIES NOT SUPPLIED BY JAMES HARDIE

James Hardie recommends the following products for use in conjunction with its Linea Weatherboard and CLD Trim. James Hardie does not supply these products. There may also be some other accessories required depending upon the application. Please contact component manufacturer for information on their warranties and further information on their products.

ACCESSORY AND MATERIAL NUMBER	SIZE (MM)	MATERIAL / APPEARANCE
	To suit	Etch Primed Aluminium/ Powder Coated
	To suit	Etch Primed Aluminium/ Powder Coated
	40 x 2.8mm	316 Stainless Steel
	40 x 2.8mm	Hot Dip Galvanised
	Tube	Fosroc, Hoflfast
	Polyethylene foam	Fosroc or similar
	Proprietary tapes to adhere to building wrap	Tyvek, Protecto wrap or similar
		Flashing Fabricator
	50 x 2.8 S/S Steel 50 x 2.8 Galvanised 60 x 3.15 Galvanised 75 x 3.15 Galvanised	Self colour
	As shown	H2.1 Treated Timber Timber Merchant or cut on site
	3.0mm	
	As required	H2.1 Treated Timber Timber Merchant or cut on site
	254mm	Diamond Tipped
	305mm	Diamond Tipped
		

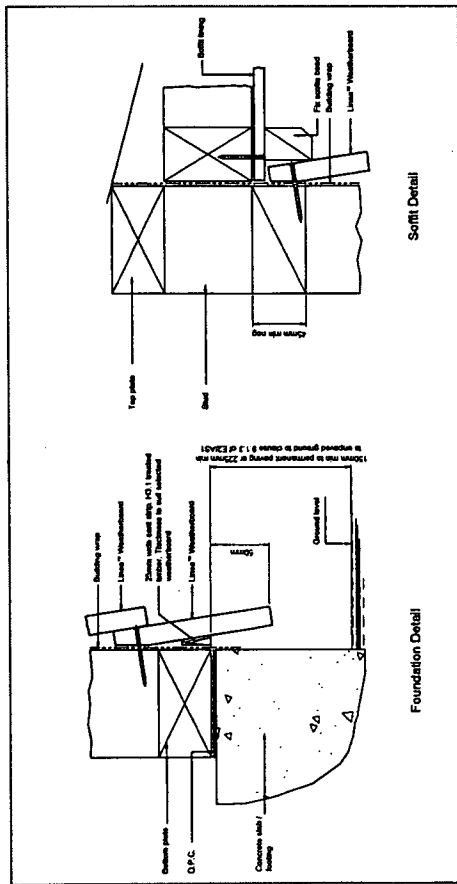


FIGURE 1: DIRECT FIX CONCRETE SLAB AND SOFFIT

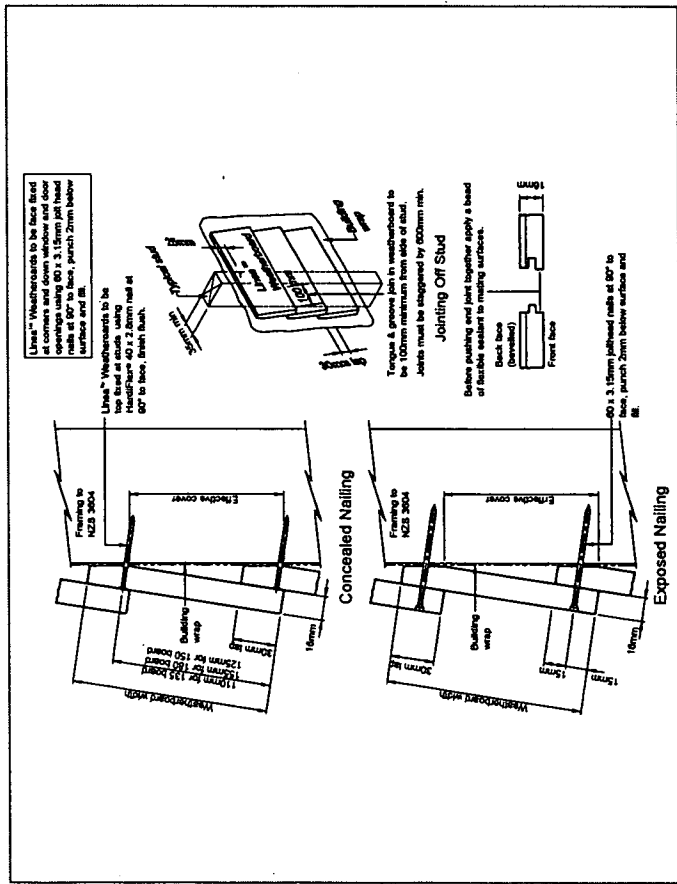


FIGURE 2: DIRECT FIX WEATHERBOARD FIXING

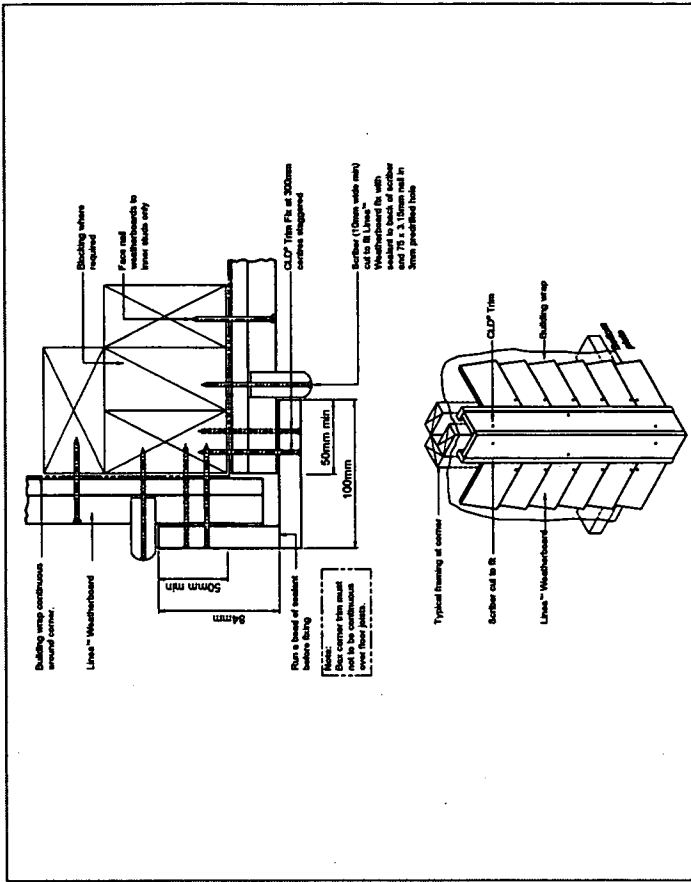


FIGURE 3: DIRECT FIX BOXED CORNER

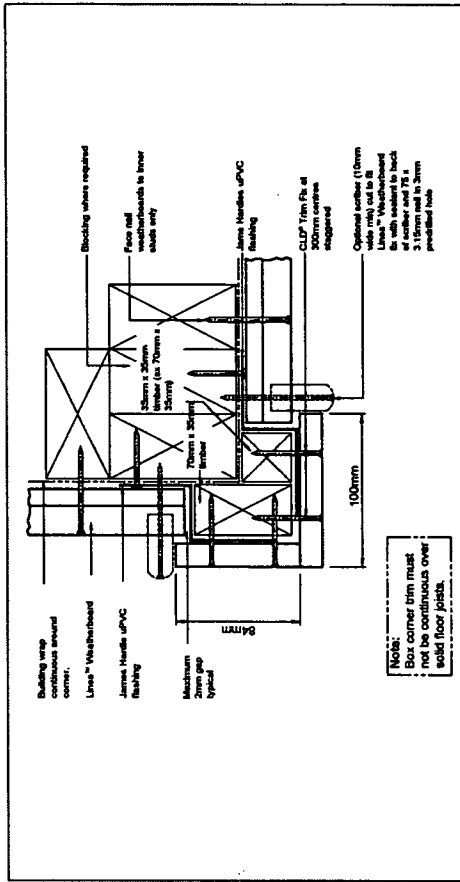


FIGURE 4: DIRECT FIX BOXED CORNERS

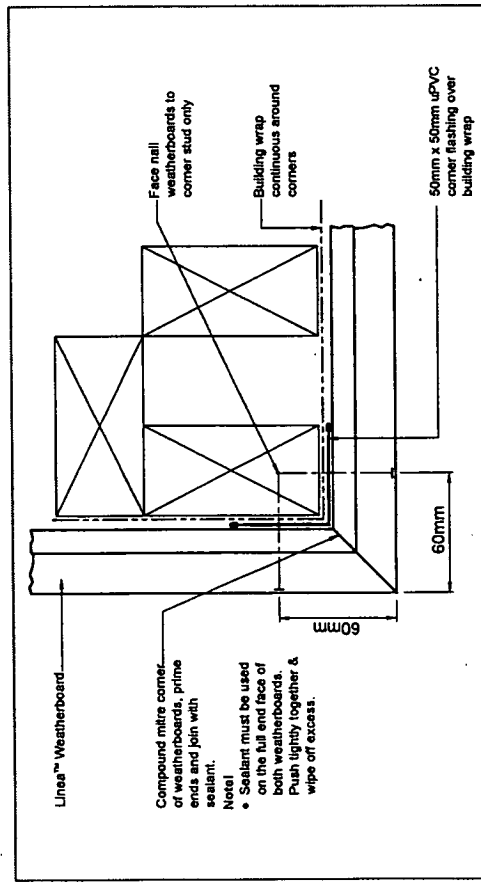


FIGURE 5: DIRECT FIX MITRE CORNER

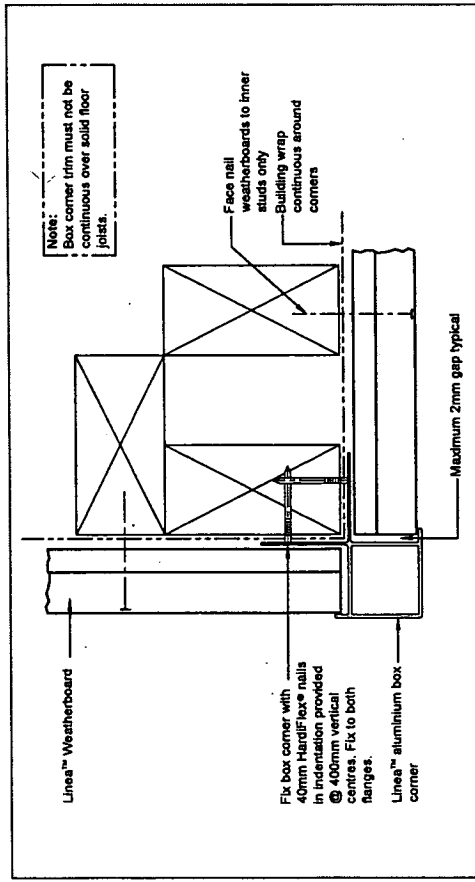


FIGURE 6: DIRECT FIX ALUMINIUM BOX CORNER

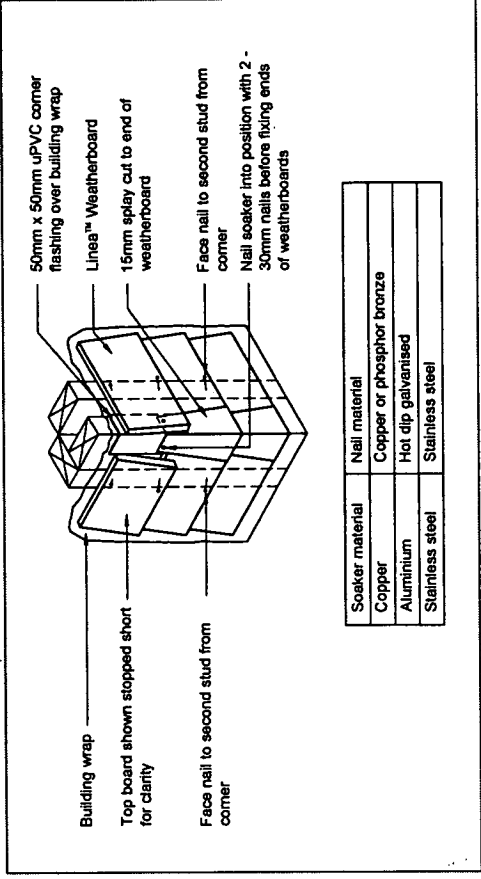


FIGURE 7: DIRECT FIX CORNER SOAKER

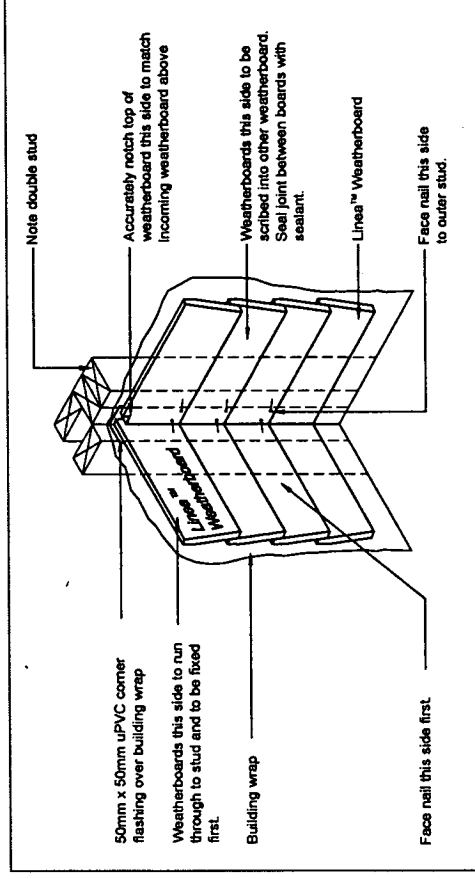


FIGURE 8: DIRECT FIX INTERNAL CORNER

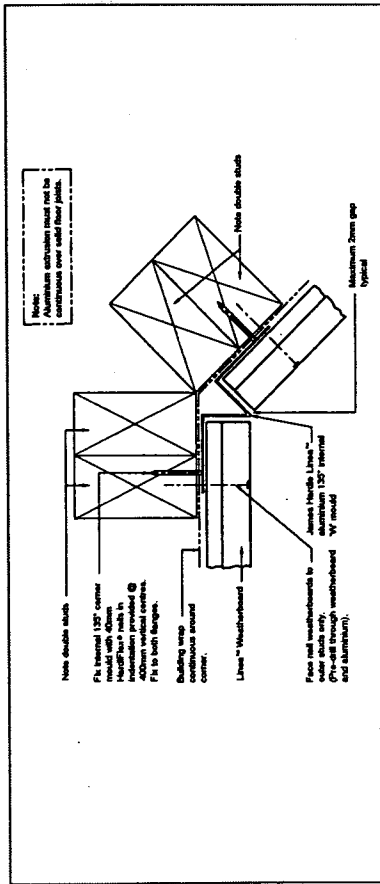


FIGURE 9: DIRECT FIX INTERNAL 135° ALUMINIUM 'W' MOULD CORNER

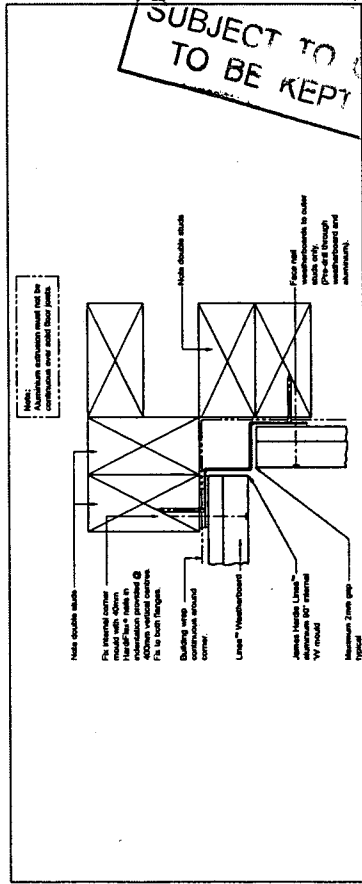


FIGURE 10: DIRECT FIX INTERNAL 90° ALUMINIUM 'W' MOULD CORNER

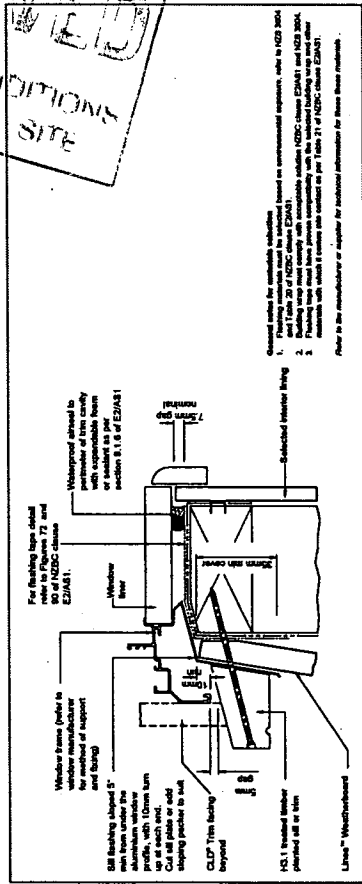


FIGURE 11: DIRECT FIX WINDOW SILL WITH FACINGS

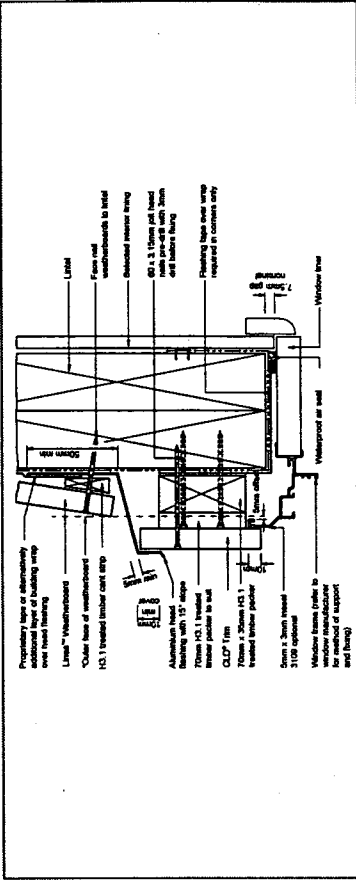


FIGURE 12: DIRECT FIX WINDOW HEAD WITH FACINGS

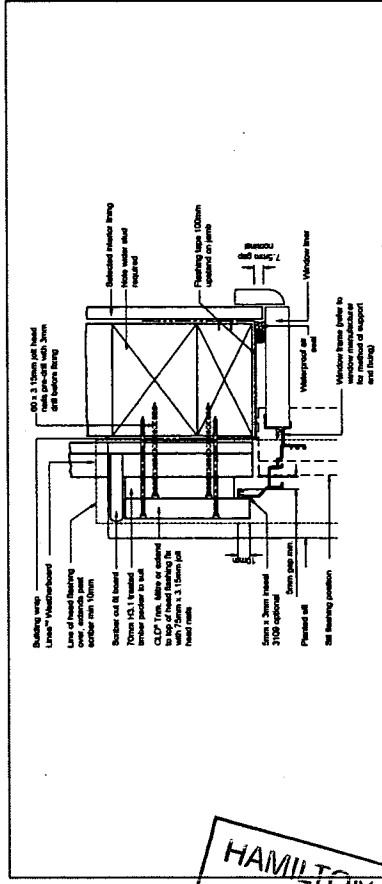


FIGURE 13: DIRECT FIX WINDOW JAMB WITH FACINGS

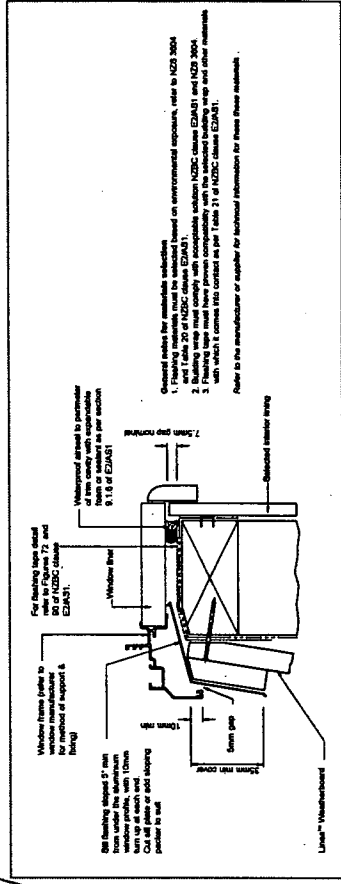


FIGURE 14: DIRECT FIX WINDOW SILL WITHOUT FACINGS

HAMILTON CITY COUNCIL
APPROVED
 SUBJECT TO CONDITIONS
 TO BE KEPT ON SITE

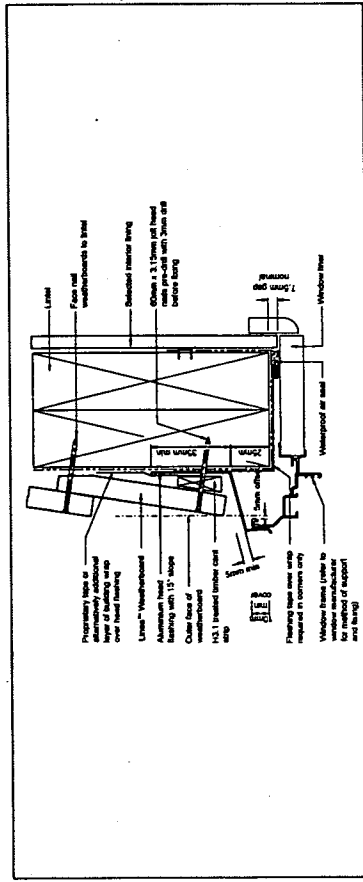


FIGURE 15: DIRECT FIX WINDOW HEAD WITHOUT FACINGS

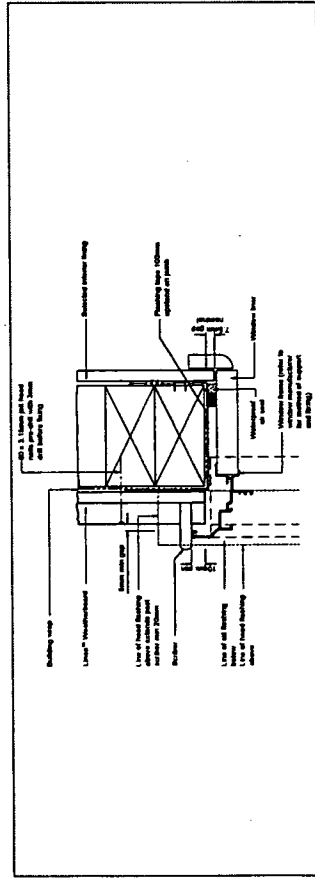


FIGURE 16: DIRECT FIX WINDOW JAMB WITHOUT FACINGS

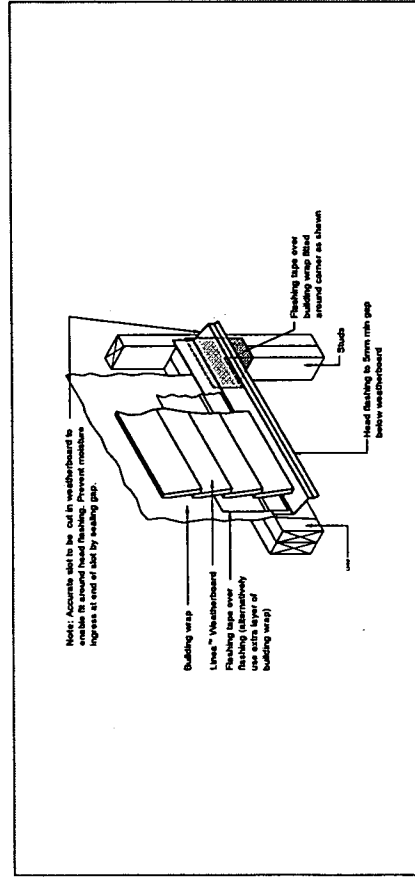


FIGURE 17: DIRECT FIX HEAD FLASHING TERMINATION

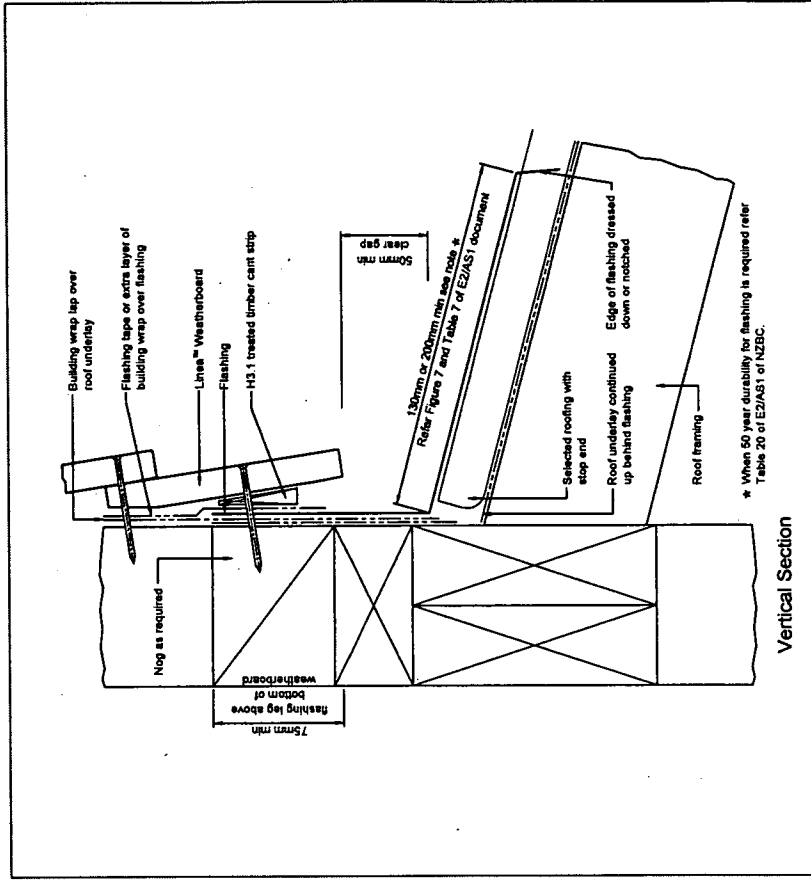


FIGURE 18: DIRECT FIX ONE PIECE APRON FLASHING JOINT

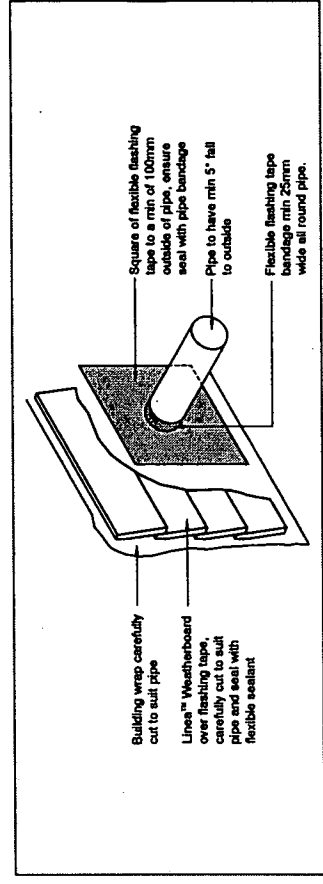


FIGURE 19: DIRECT FIX PIPE PENETRATION

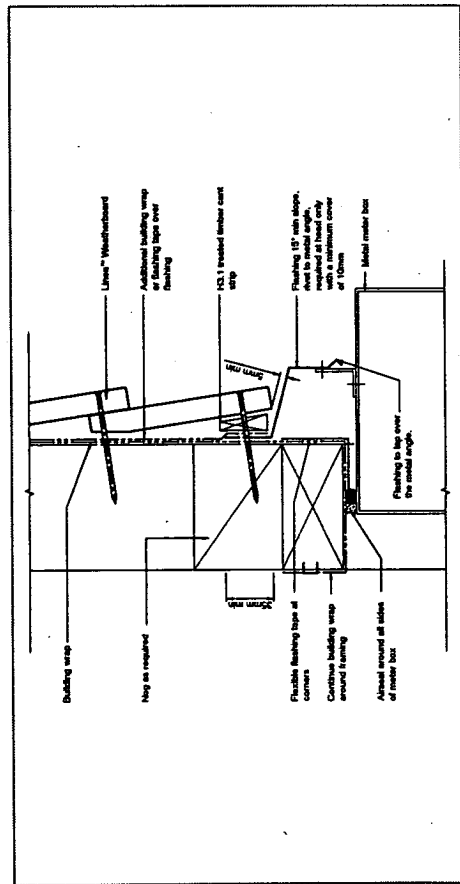


FIGURE 20: DIRECT FIX METER BOX AT HEAD

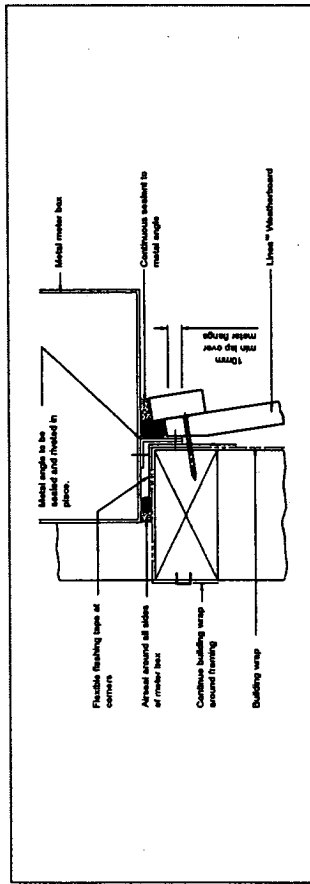


FIGURE 21: DIRECT FIX METER BOX AT SILL

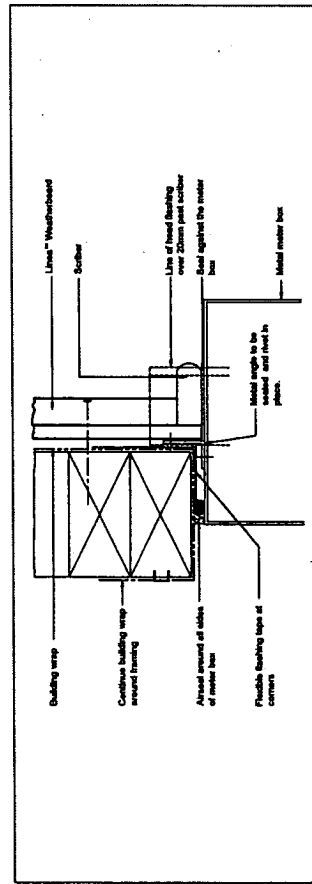


FIGURE 22: DIRECT FIX METER BOX AT JAMB

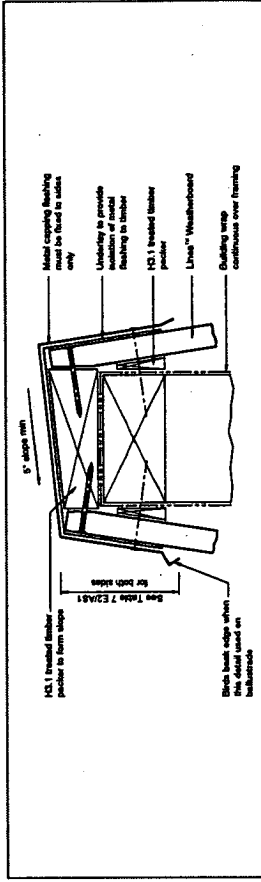


FIGURE 23: DIRECT FIX PARAPET FLASHING

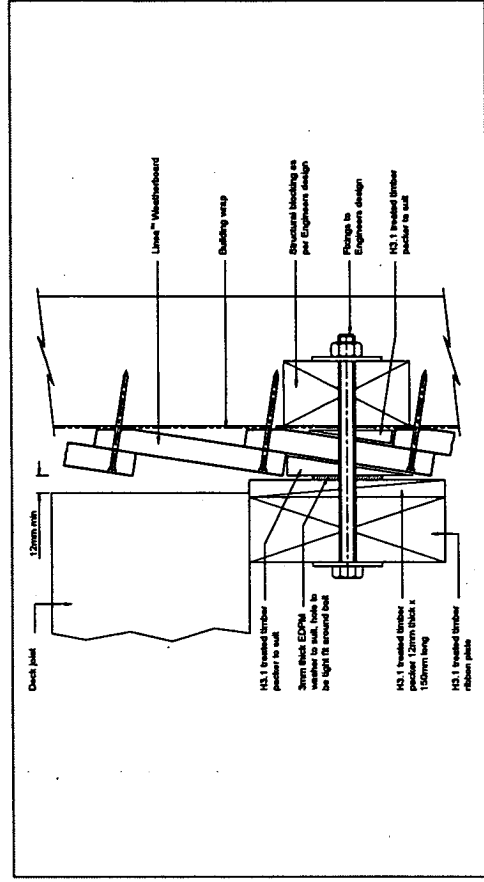


FIGURE 24: DIRECT FIX DECK JUNCTION

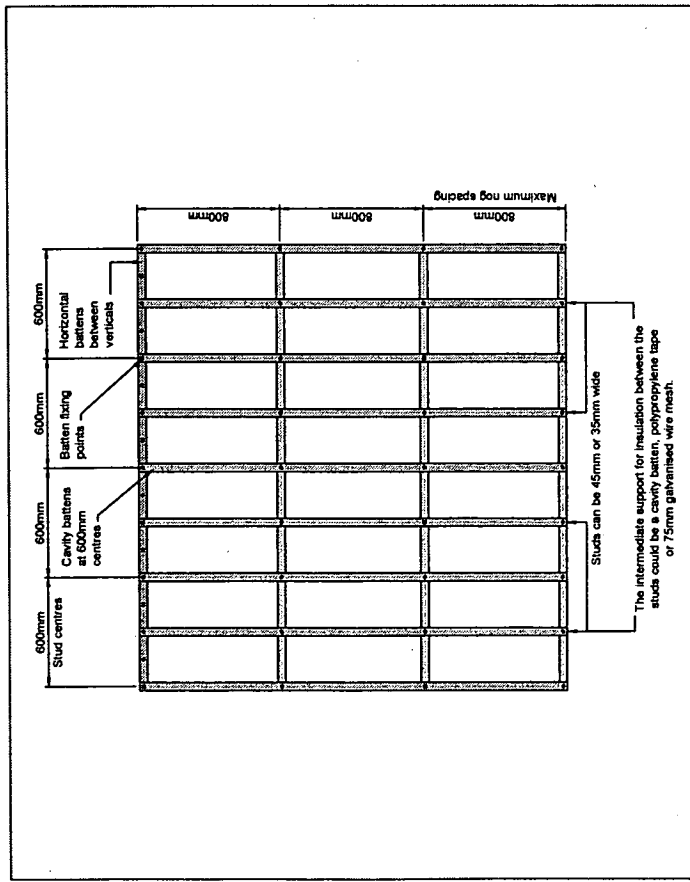


FIGURE 25: CAVITY BATTEN FIXING

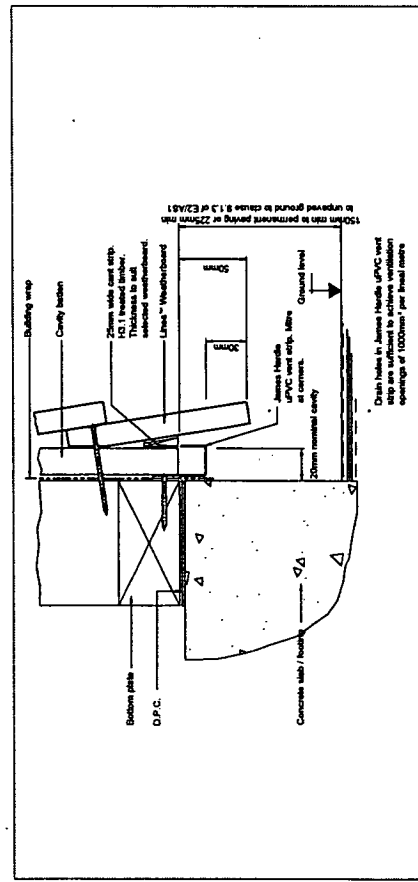


FIGURE 26: CAVITY FOUNDATION

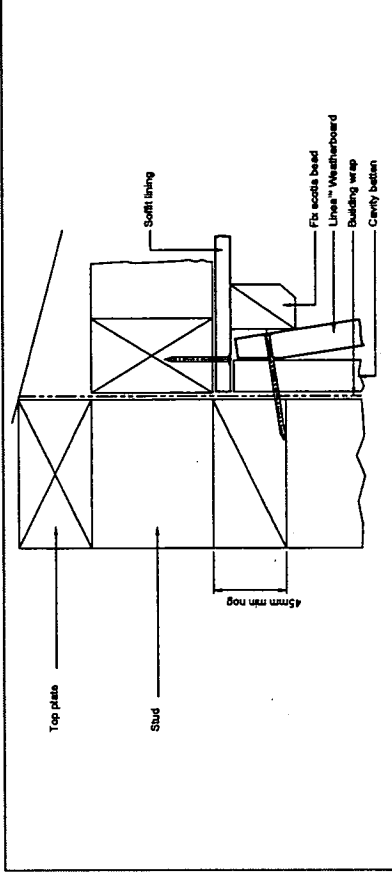


FIGURE 27: CAVITY SOFFIT JUNCTION

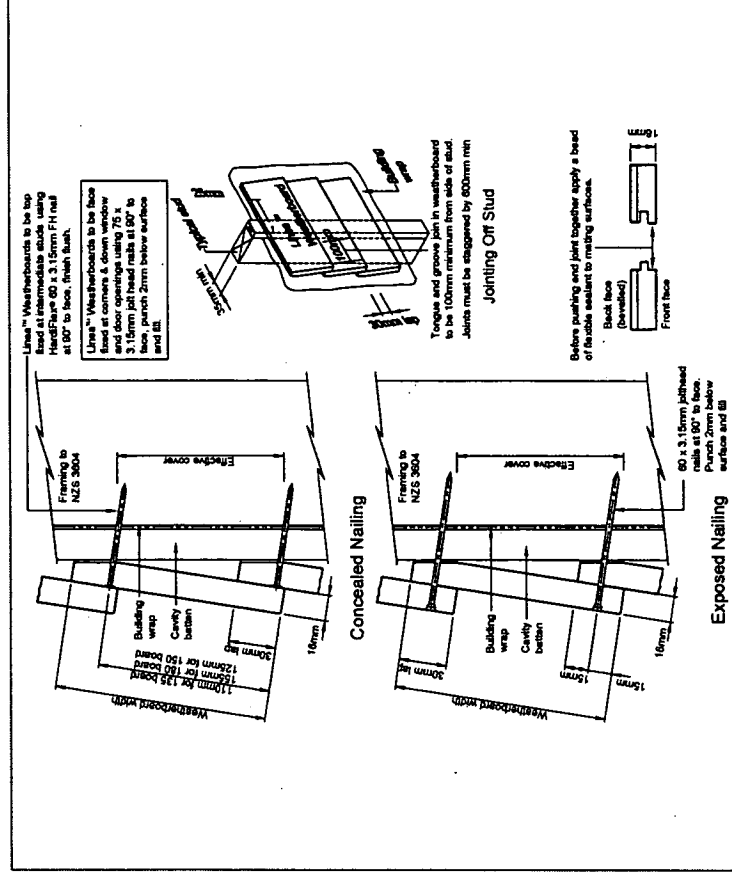


FIGURE 28: CAVITY WEATHERBOARD FIXING

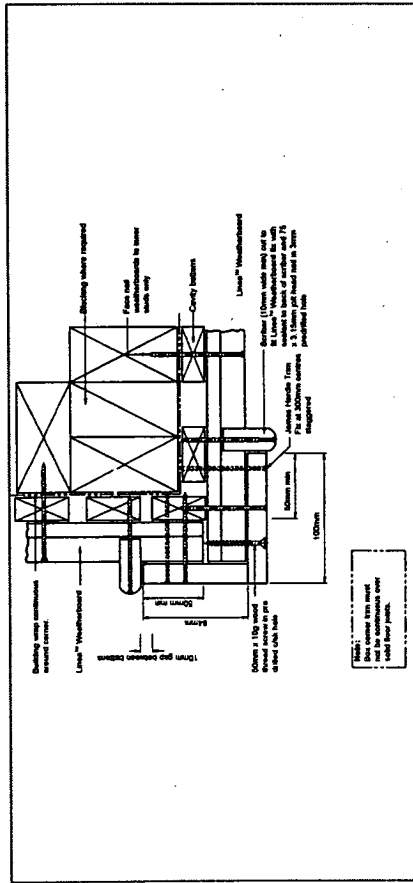


FIGURE 29: CAVITY BOXED CORNER

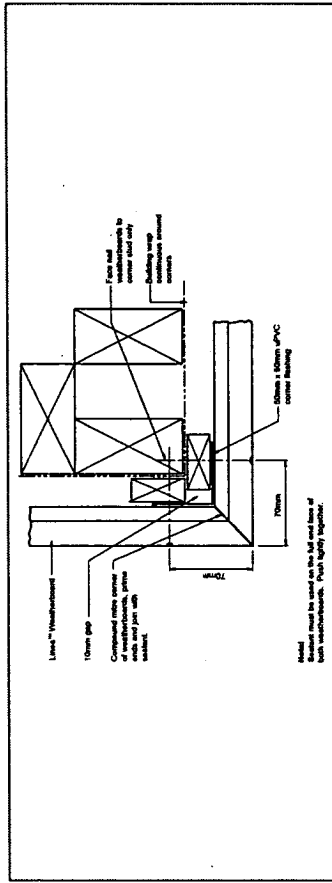


FIGURE 30: CAVITY MITRE CORNER

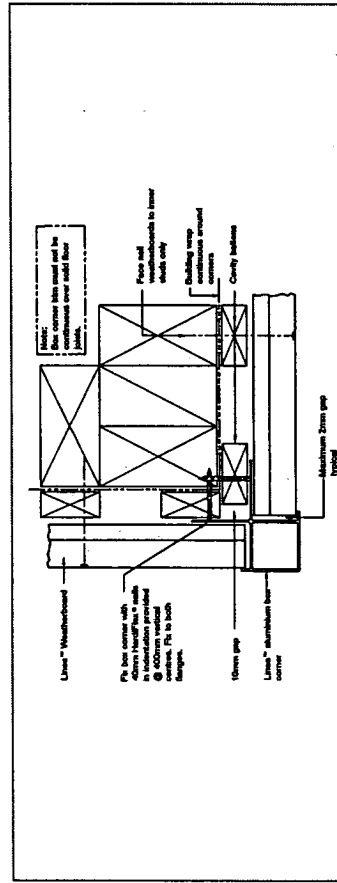


FIGURE 31: CAVITY ALUMINIUM BOX CORNER

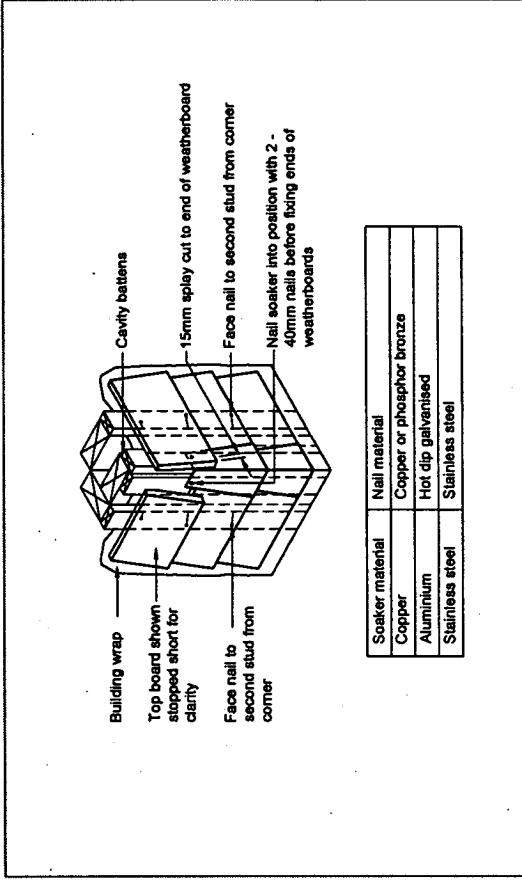


FIGURE 32: CAVITY EXTERNAL CORNER SOAKER

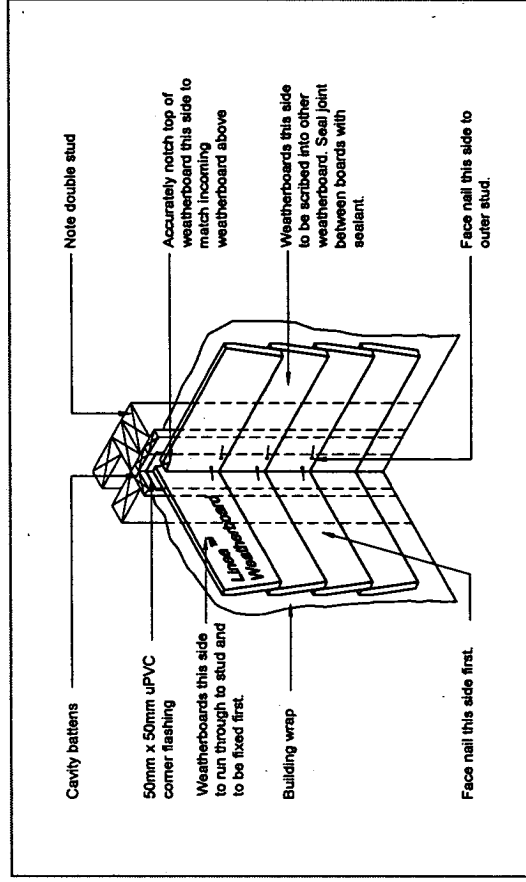


FIGURE 33: CAVITY INTERNAL CORNER

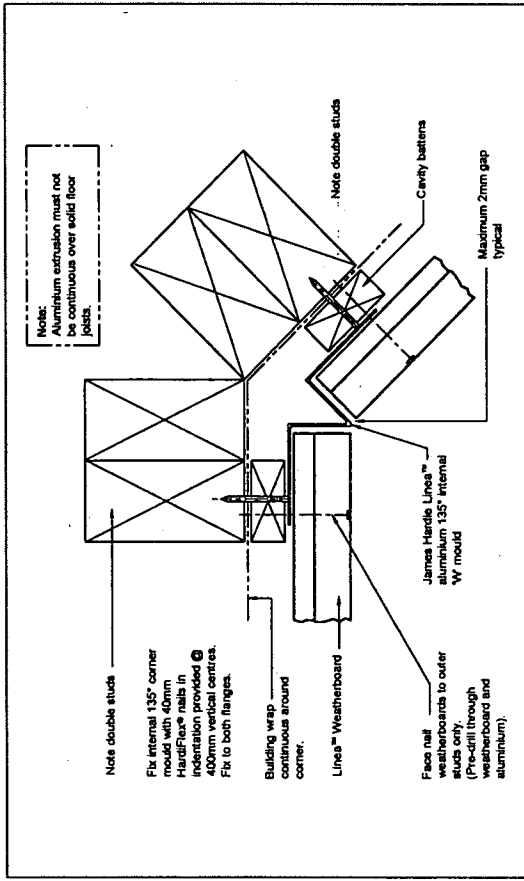


FIGURE 34: CAVITY INTERNAL 135° ALUMINIUM 'W' MOULD CORNER

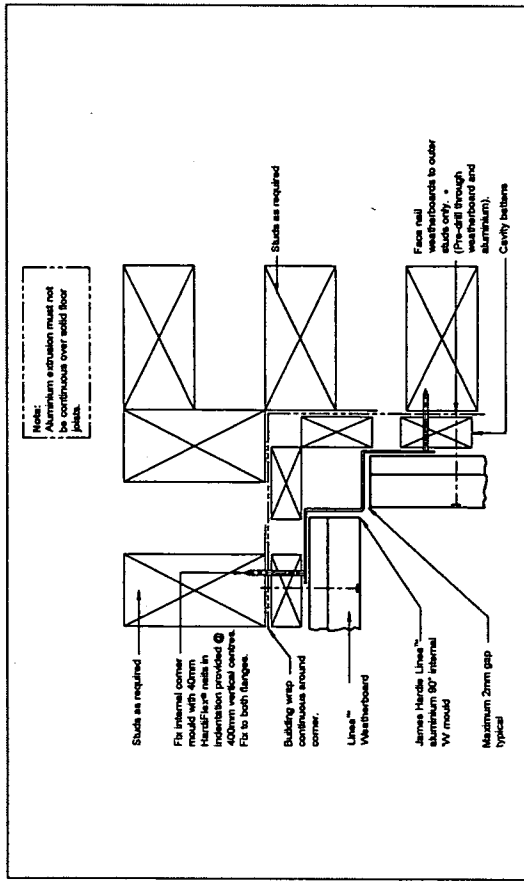


FIGURE 35: CAVITY INTERNAL 90° ALUMINIUM 'W' MOULD CORNER

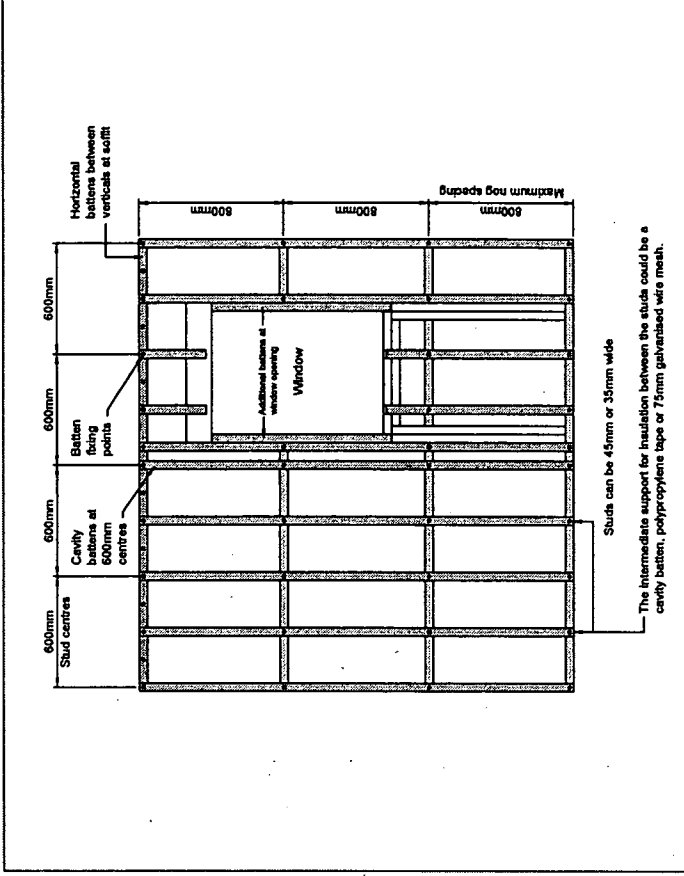


FIGURE 36: CAVITY BATTEN LAYOUT AT WINDOW OPENING

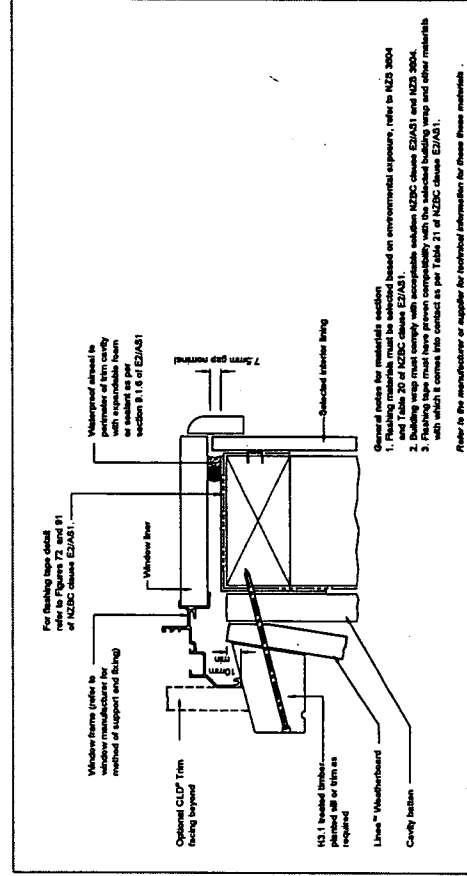


FIGURE 37: CAVITY WINDOW SILL WITH FACINGS

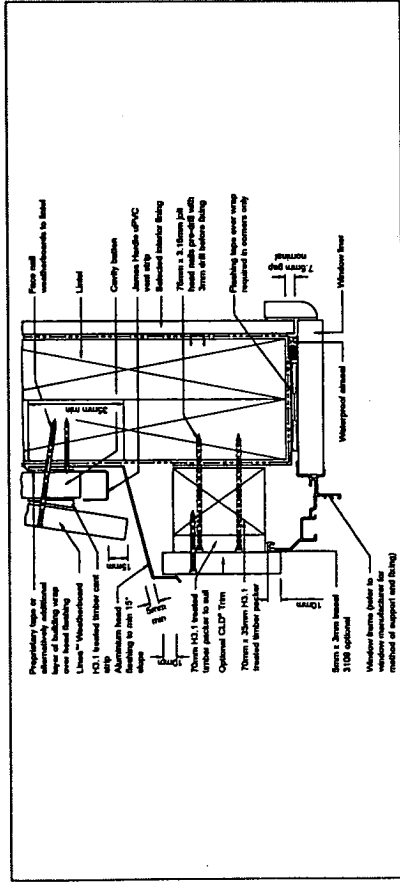


FIGURE 38: CAVITY WINDOW HEAD WITH FACINGS

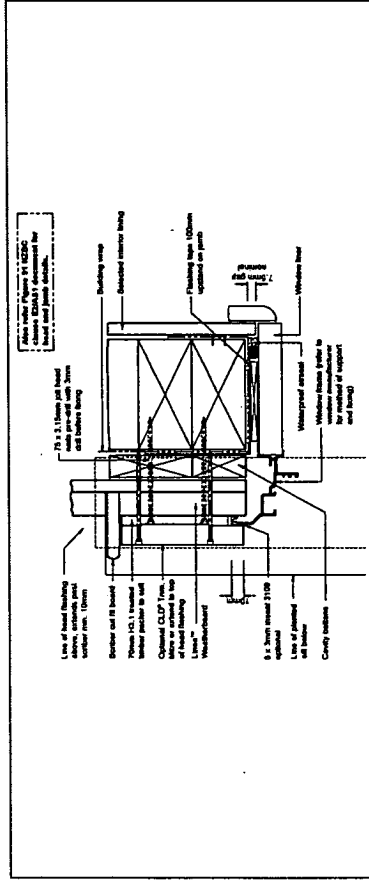


FIGURE 39: CAVITY WINDOW JAMB WITH FACINGS

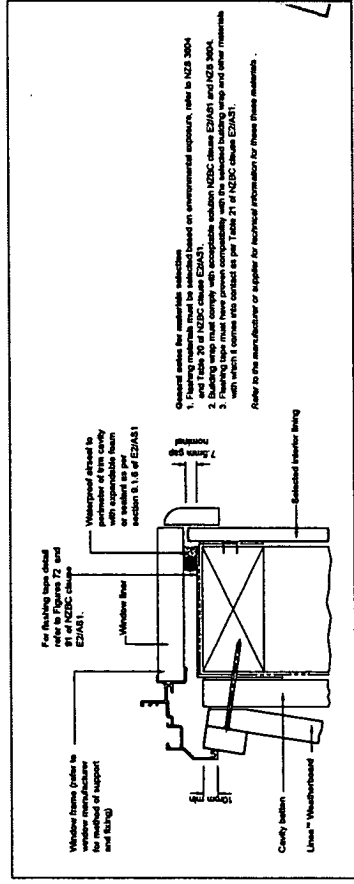


FIGURE 40: CAVITY WINDOW SILL WITHOUT FACINGS

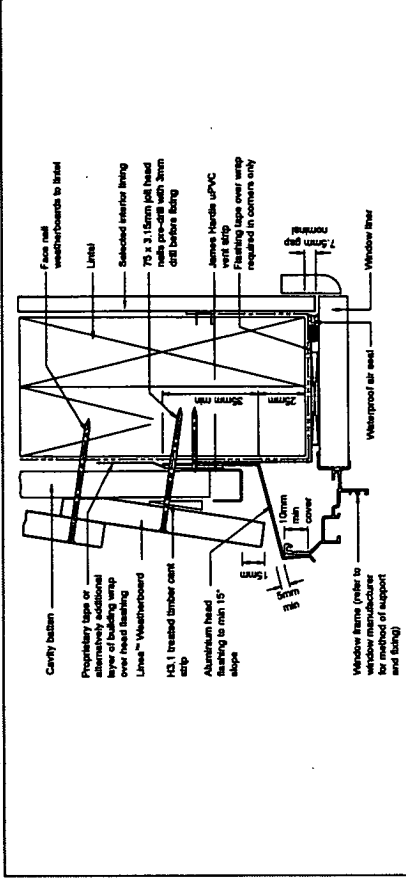


FIGURE 41: CAVITY WINDOW HEAD WITHOUT FACINGS

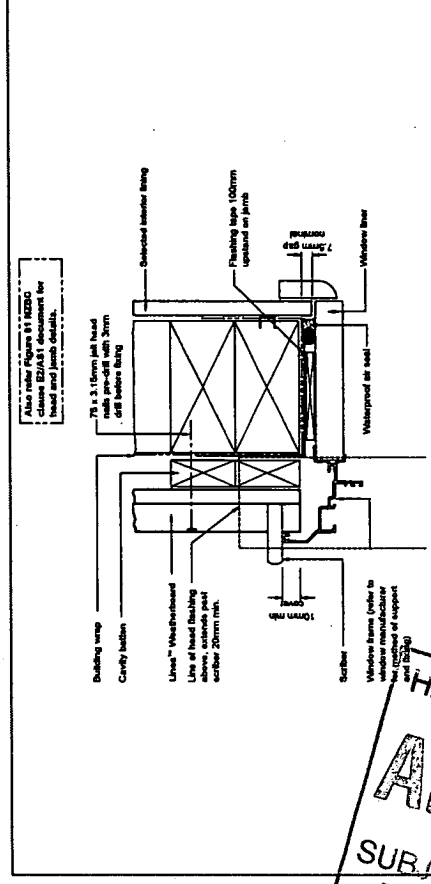


FIGURE 42: CAVITY WINDOW JAMB WITHOUT FACINGS

HAMILTON CITY COUNCIL
APPROVED
 SUBJECT TO CONDITIONS
 TO BE KEPT ON SITE

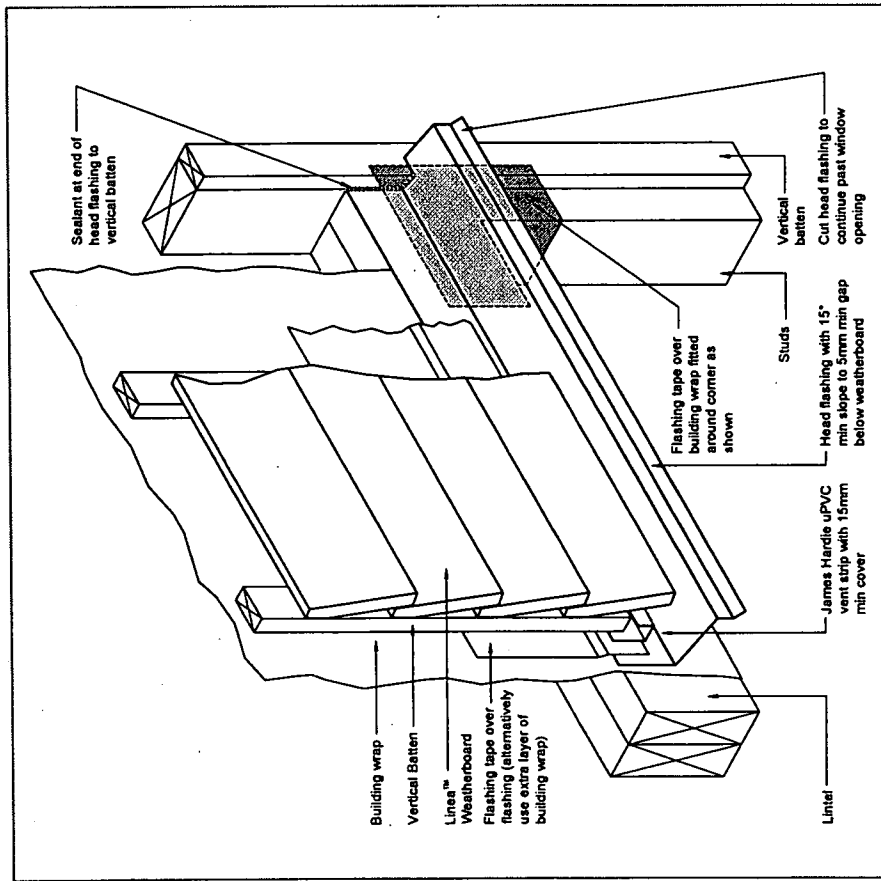


FIGURE 43: HEAD FLASHING TERMINATION

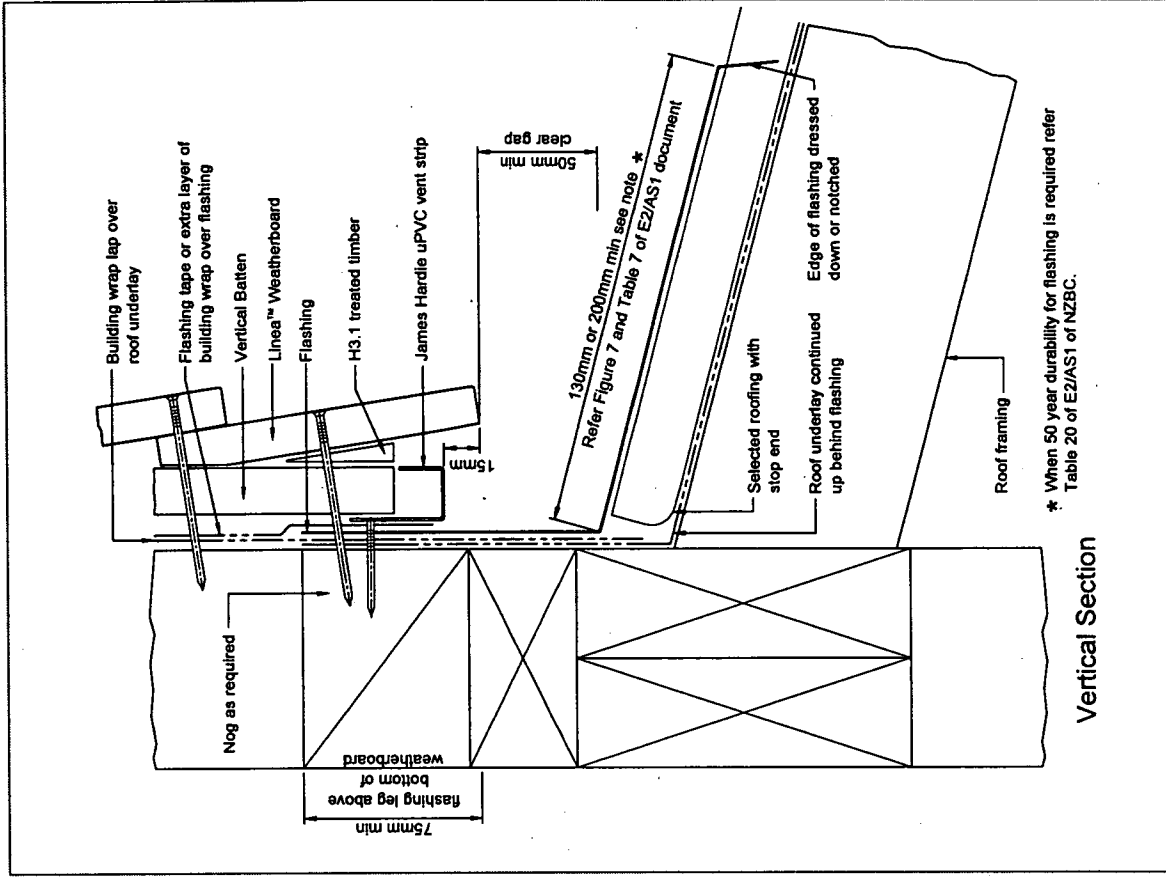


FIGURE 44: CAVITY ONE PIECE APRON FLASHING JOINT

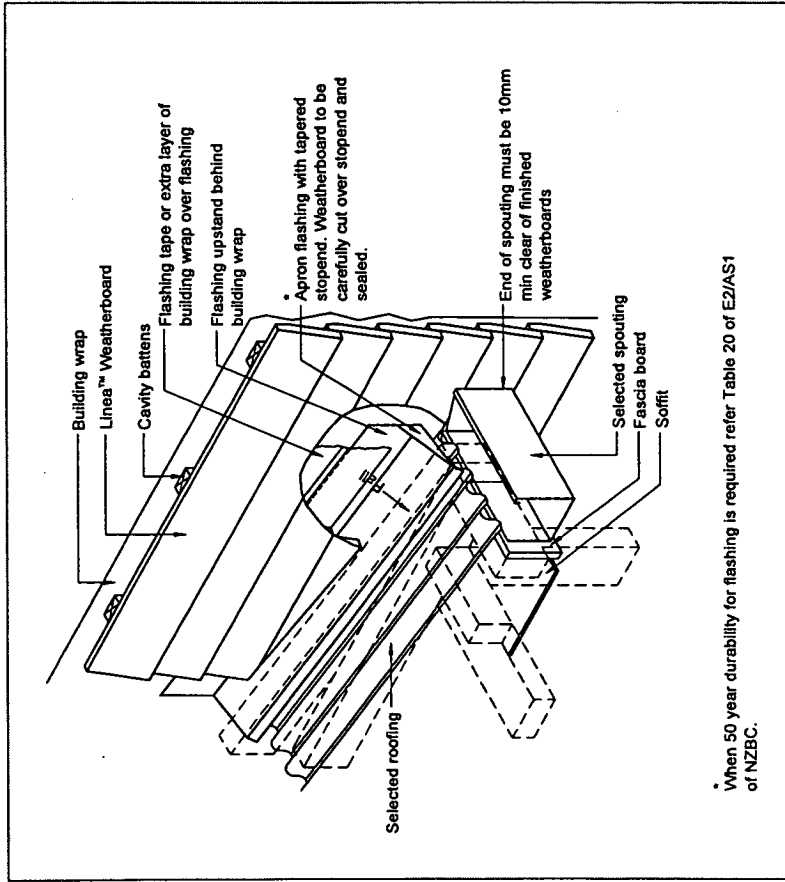


FIGURE 45: CAVITY ONE PIECE GUTTERWALL JUNCTION

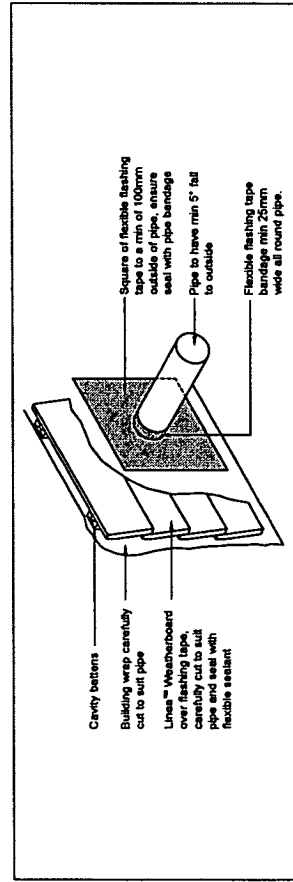


FIGURE 46: CAVITY PIPE PENETRATION

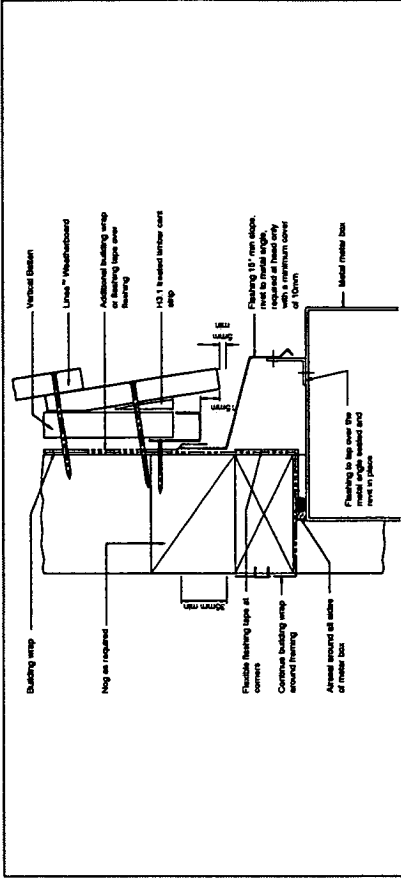


FIGURE 47: CAVITY METER BOX AT HEAD

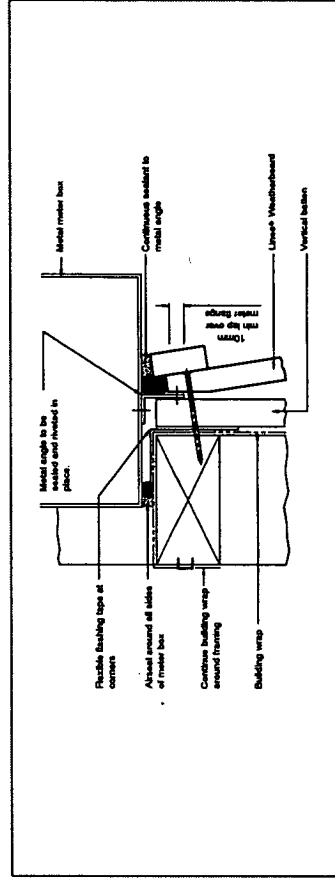


FIGURE 48: CAVITY METER BOX AT SILL

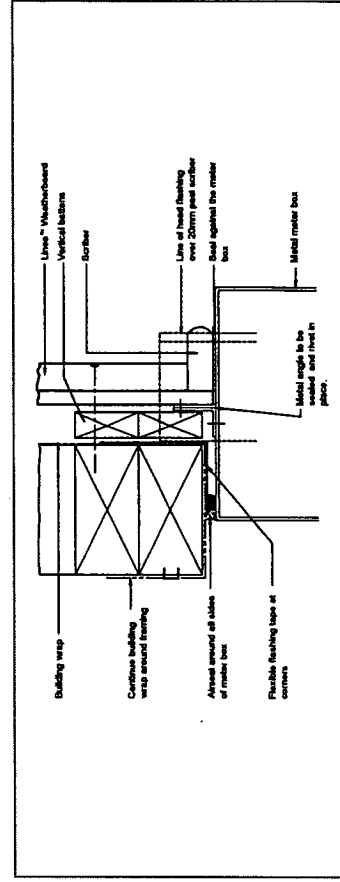


FIGURE 49: CAVITY METER BOX HEAD FLASHING AT JAMB

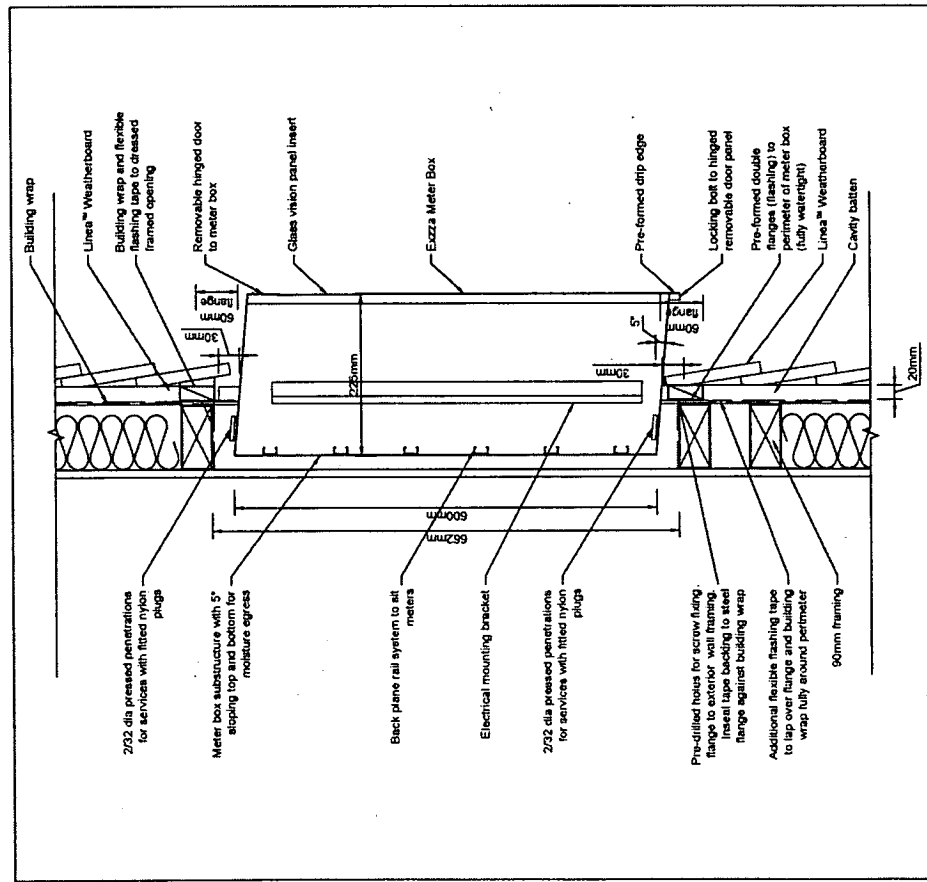


FIGURE 50: CAVITY FIX METER BOX

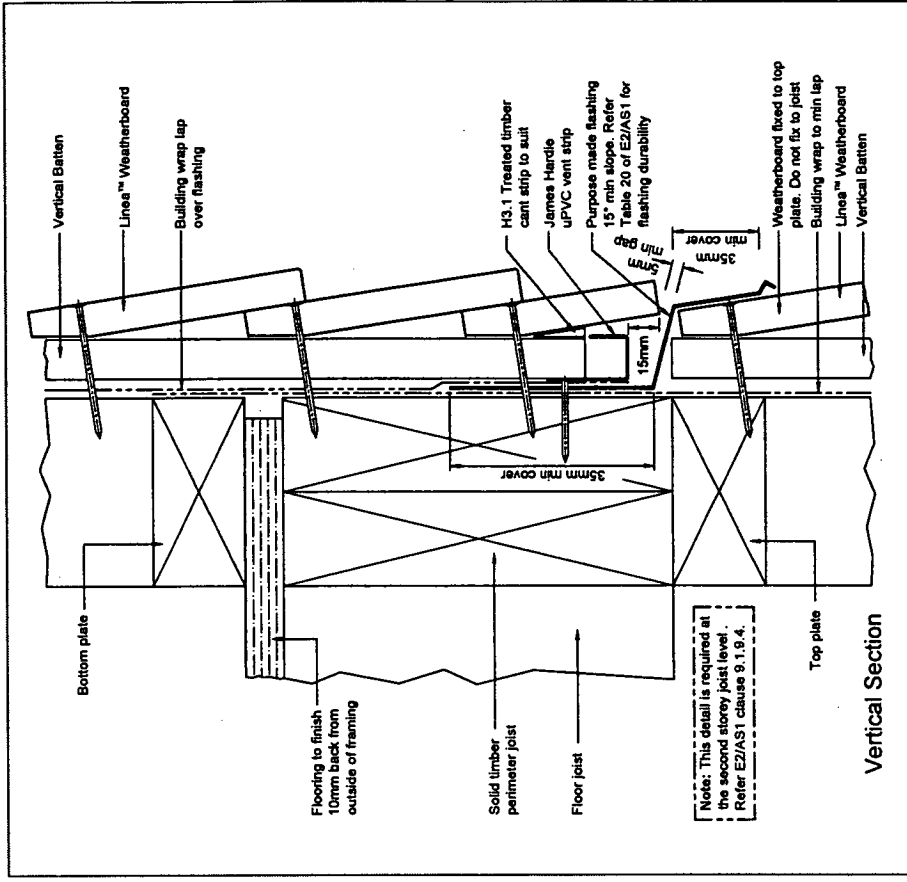


FIGURE 51: CAVITY DRAINAGE JOINT

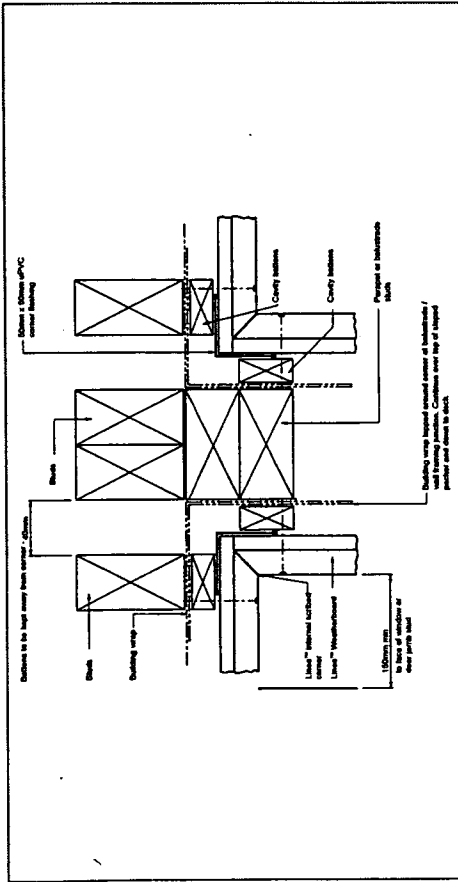


FIGURE 52: CAVITY ENCLOSED DECK BALUSTRADE TO WALL

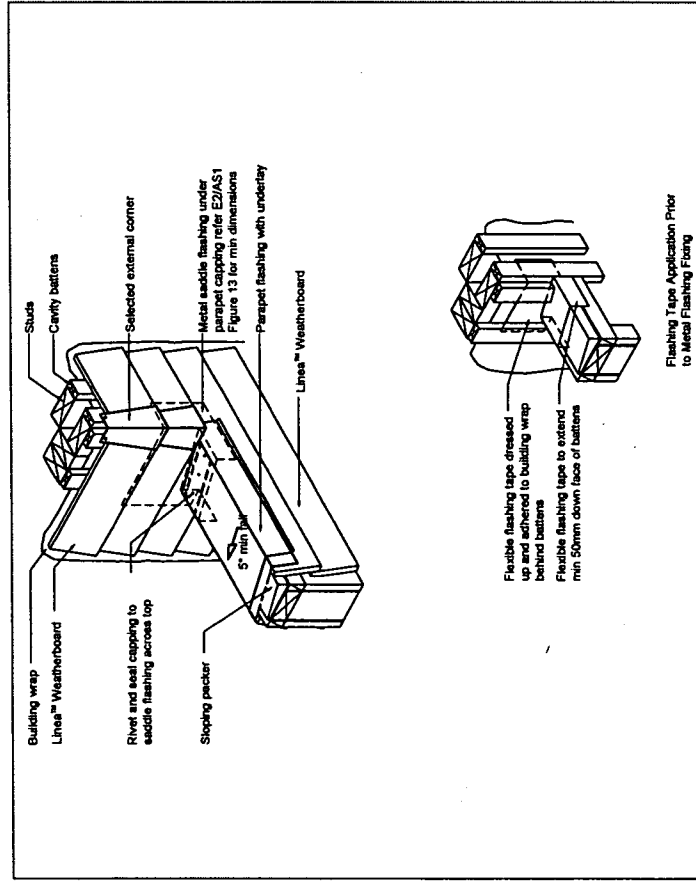


FIGURE 53: CAVITY ENCLOSED BALUSTRADE TO WALL

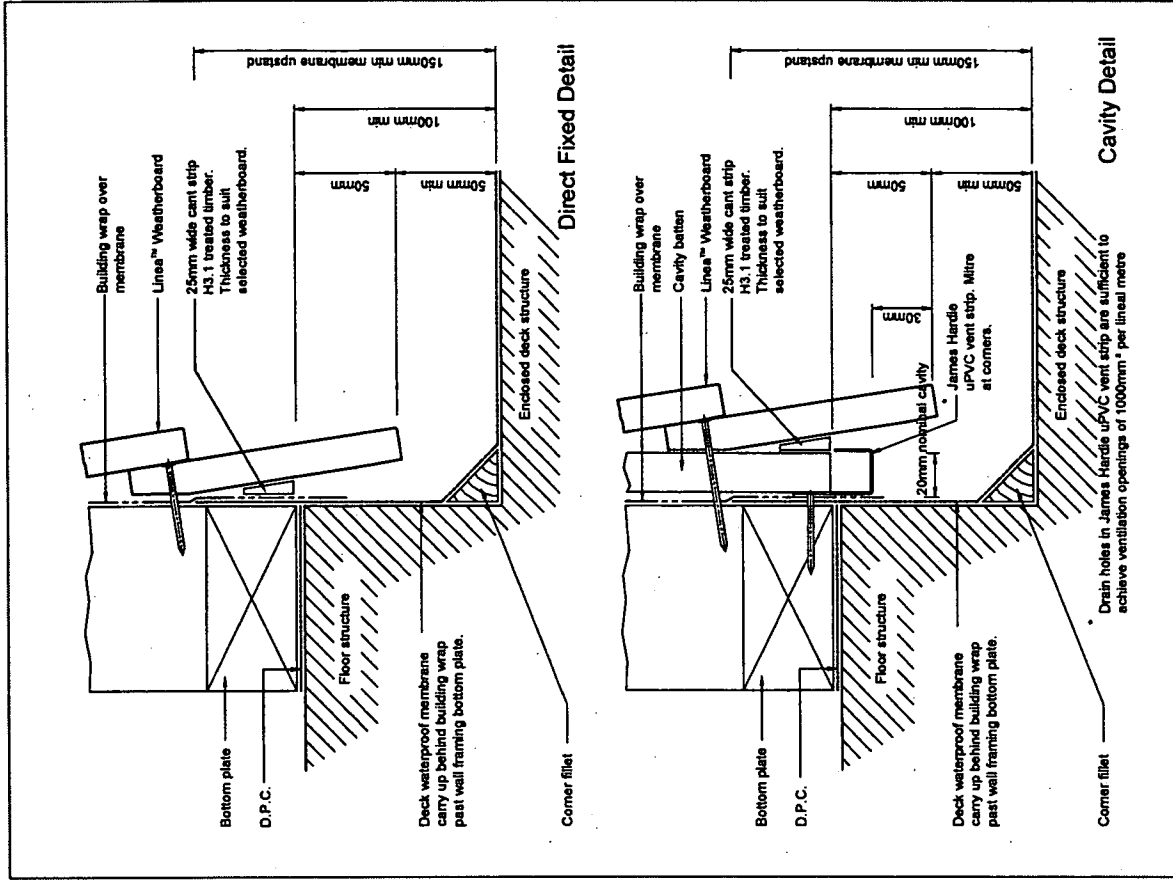


FIGURE 54: DIRECT FIXED AND CAVITY AT ENCLOSED DECK

15 WARRANTY

Linea™ WEATHERBOARD

PRODUCT WARRANTY

August 2007

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

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

CONDITIONS OF WARRANTY:

- The warranty is strictly subject to the following conditions:
- James Hardie will not be liable for breach of warranty unless the claimant provides proof of purchase and makes a written claim either within 30 days after the defect would have become reasonably apparent or, if the defect was reasonably apparent prior to installation, then the claim must be made prior to installation.
 - This warranty is not transferable.
 - The Product must be installed and maintained strictly in accordance with the relevant James Hardie literature current at the time of installation and must be installed in conjunction with the components or products specified in the literature. Further, all other products, including ceiling and joining systems, applied to or used in conjunction with the Product must be applied or installed and maintained strictly in accordance with the relevant manufacturer's instructions and good trade practice.
 - The product must be designed and constructed in strict compliance with all relevant provisions of the current New Zealand Building Code ("NZBC"), regulations and standards.
 - The claimant's sole remedy for breach of warranty is (at James Hardie's option) that James Hardie will either supply replacement product, rectify the affected product or pay for the cost of the replacement or rectification of the affected product.
 - James Hardie will not be liable for any losses or damages (whether direct or indirect) including property damage or personal injury, consequential loss, economic loss or loss of profits, arising in contract or negligence or howsoever arising. Without limiting the foregoing James Hardie will not be liable for any claims, damages or defects arising from or in any way attributable to poor workmanship, poor design or detailing, settlement or structural movement and/or movement of materials to which the Product is attached, incorrect design of the structure, acts of God including but not limited to earthquakes, cyclones, floods or other severe weather conditions or unusual climatic conditions, efflorescence or performance of paint/coatings applied to the Product, normal wear and tear, growth of mould, mildew, fungi, bacteria, or any organism on any Product surface or Product (whether on the exposed or unexposed surfaces).
 - All warranties, conditions, liabilities and obligations other than those specified in this warranty are excluded to the fullest extent allowed by law.
 - If meeting a claim under this warranty involves re-coating of Products, there may be slight colour difference between the original and replacement Products due to the effects of weathering and variations in materials over time.

DISCLAIMER: The recommendations in James Hardie's literature are based on good building practice, but are not an exhaustive statement of all relevant information and are subject to conditions (c), (d), (f) and (g) above. James Hardie has tested the performance of Linea™ Weatherboard when installed in accordance with the Linea™ Weatherboard technical specification. In accordance with the standards and verification methods required by the NZBC and those test results demonstrate the product complies with the performance criteria established by the NZBC. However, as the successful performance of the relevant system depends on numerous factors outside the control of James Hardie (e.g. quality of workmanship and design) James Hardie shall not be liable for the recommendations made in its literature and the performance of the relevant system, including its suitability for any purpose or ability to satisfy the relevant provisions of the NZBC, regulations and standards as it is the responsibility of the building designer to ensure that the details and recommendations provided in the relevant James Hardie installation manual are suitable for the intended project and that specific design is conformed where appropriate.

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

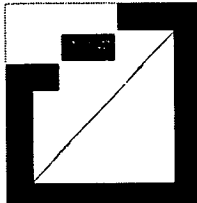


James Hardie

Copyright August 2007. © James Hardie New Zealand Limited.
TM and ® denotes a Trademark or Registered Mark owned by James Hardie International Finance BV

Ask James Hardie™
Call 0800 808 868

www.jameshardie.co.nz

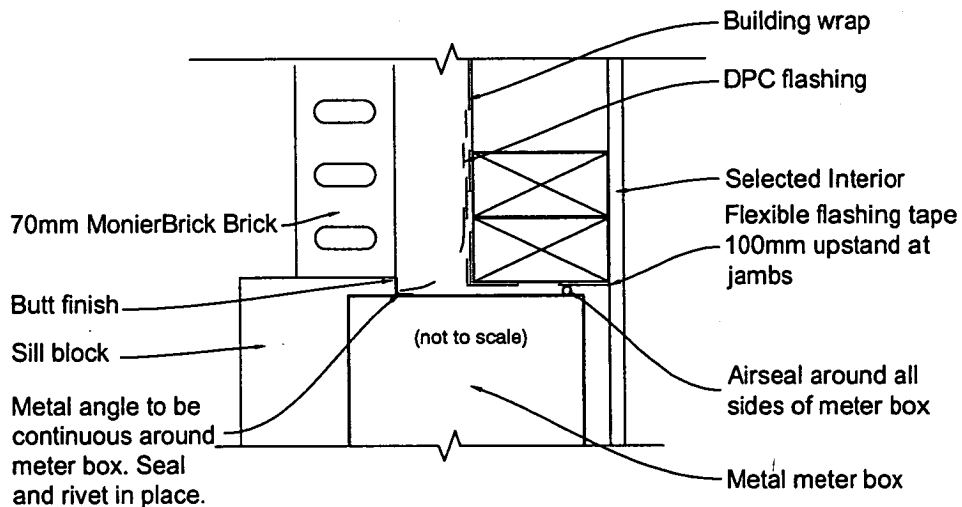


Openings Penetrations

MonierBrick

Detail:OP03

Meter Box Installation



Meter Box At Jamb

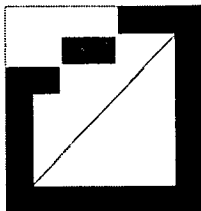
CAD Detail: op03-meter box install

Scale 1:5

Disclaimer: This information is intended solely as a guide for use of MonierBrick products. Before using MonierBrick product you should ensure that the product is suitable for use in the specific application. Nothing in this information constitutes a statement of fitness for particular purpose - appropriate expert advice should always be obtained. MonierBrick makes no warranty regarding the use of this information with non-MonierBrick product.

© 2006 . The copyright of this document is the property of CSR Building Products (NZ) Ltd trading as MonierBrick and shall not be reproduced, copied, loaned or disposed of directly, or indirectly, nor used for any purpose other than that for which it is specifically furnished without prior consent.



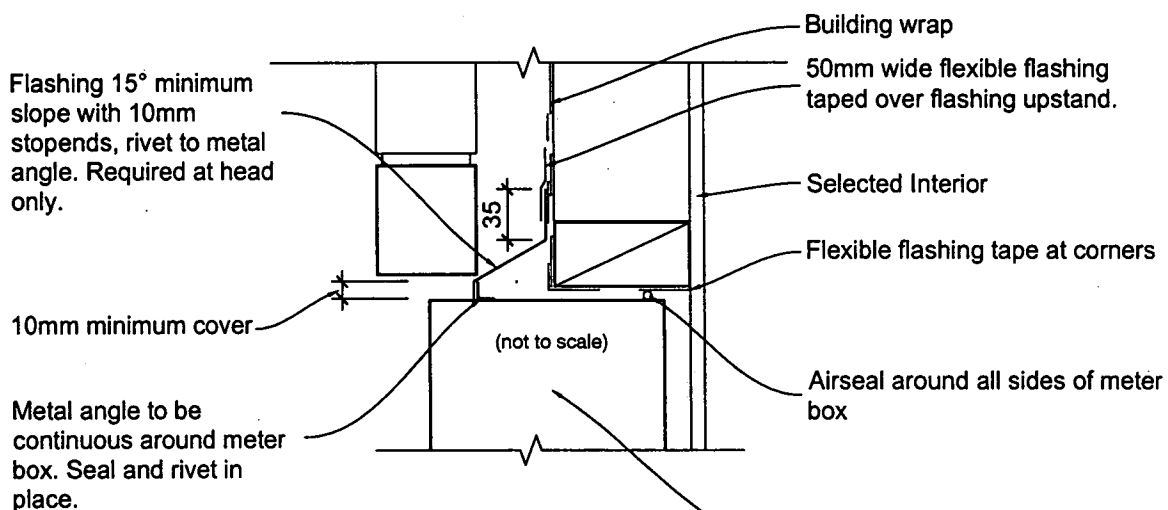


Openings Penetrations

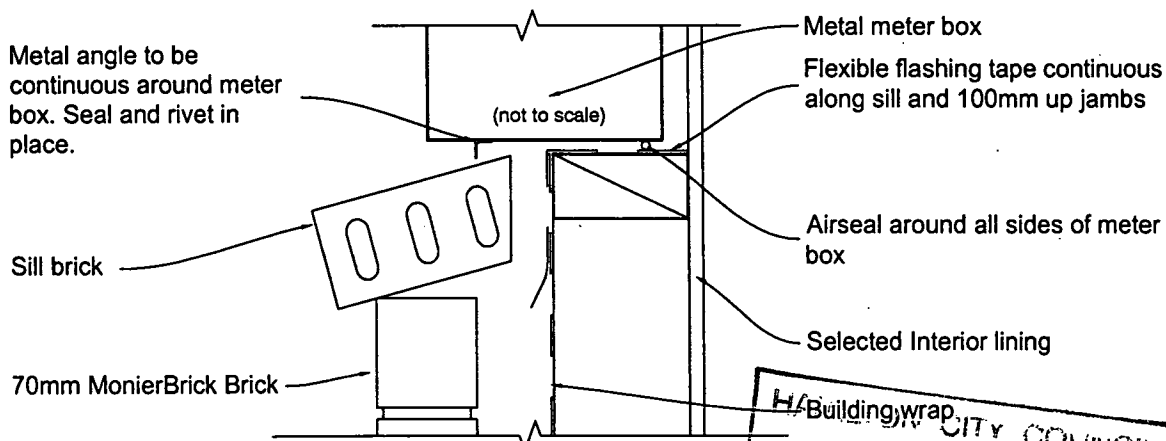
MonierBrick

Detail:OP02

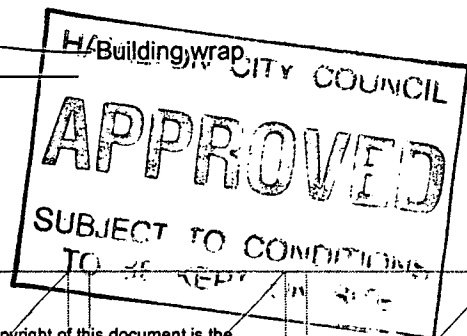
Meter Box Installation



Meter Box At Head



Meter Box At Sill



CAD Detail: op02-meter box install

Scale 1:5

Disclaimer: This information is intended solely as a guide for use of MonierBrick products. Before using MonierBrick product you should ensure that the product is suitable for use in the specific application. Nothing in this information constitutes a statement of fitness for particular purpose - appropriate expert advice should always be obtained. MonierBrick makes no warranty regarding the use of this information with non-MonierBrick product.

© 2006 . The copyright of this document is the property of CSR Building Products (NZ) Ltd trading as MonierBrick and shall not be reproduced, copied, loaned or disposed of directly, or indirectly, nor used for any purpose other than that for which it is specifically furnished without prior consent.



REVISION A 19/08/09:
ADDED FLASHINGS.

Logan Homes Limited
P O Box 12467
HAMILTON
Phone 07 855 5800
Fax 07 855 2030
Email info@loganhomes.co.nz

All plans and specifications, concepts and drawings are the property of Logan Homes Limited and must be copied or used in anyway without the express permission of Logan Homes Limited.

CLIENT

PROJECT

**NEW
RESIDENCE**

SITE

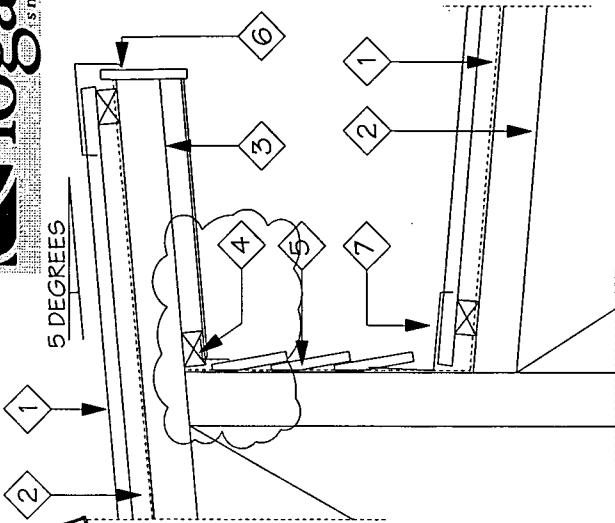
**LOT 10
GLAISDALE
HAMILTON**

CONSENT SET

DETAILS

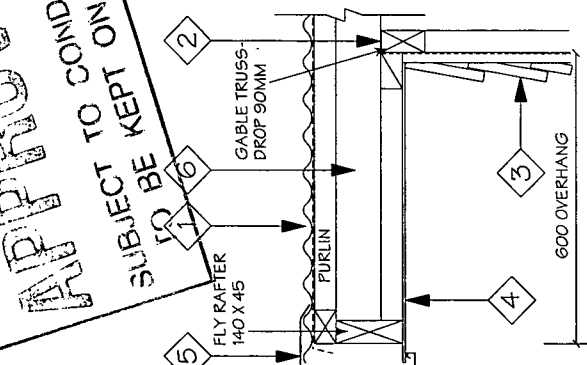
Phone 07 855 5800
Fax 07 855 2030
Email info@loganhomes.co.nz
www.hamilton.co.nz

© Logan Homes LTD



D EAVE DETAIL
SCALE 1:10

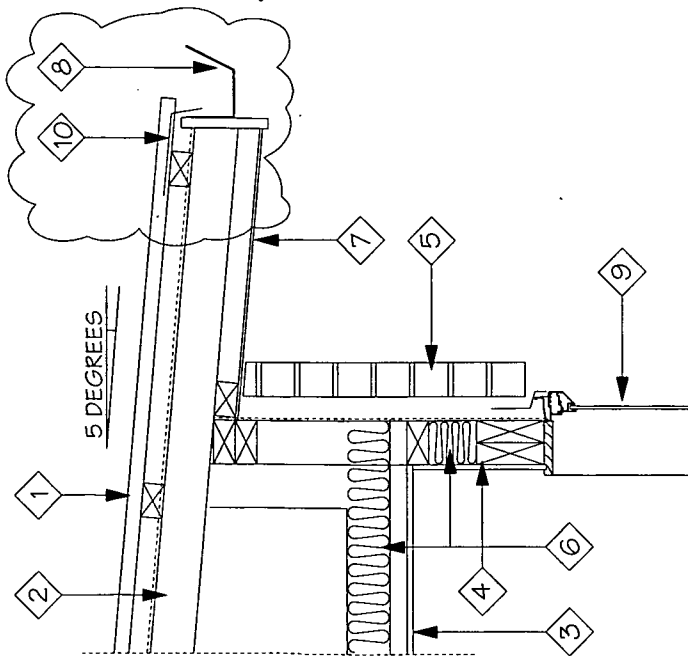
- 1 MC770 COLORSTEEL ROOFING FIXED WITH COLOUR MATCHED TECH SCREWS WITH FLASHINGS TO MATCH OVER ON HI 70X45 PURLINS @ 800MM CTRS MAX ON BUILDING PAPER.
- 2 TRUSSES TO MANUFACTURERS DESIGN AND IN ACCORDANCE WITH NZS3603 @ 900MM CTRS MAX. TOP CHORD OF TRUSS TO EXTEND OUT TO FORM EAVES.
- 3 4-5MM HARDIFLEX SOFFIT LINING FIXED TO HI 70X45 SOFFIT BATTENS @ 600MM CTRS MAX.
- 4 SUPER COURSE 200MM FLASHING FROM UNDER SOFFIT LINING AND OVER TOP OF LINEA WEATHERBOARD.
- 5 JAMES HARDIE LINEA WEATHERBOARD EXTERIOR CLADDING DIRECT FIXED TO TIMBER FRAMING OVER TOP OF G3 FRAMEGUARD BUILDING PAPER.
- 6 COLORSTEEL BARGE FIXED WITH COLOUR MATCHED BRACKETS WITH COLORSTEEL APRON FLASHING FROM UNDER WEATHERBOARDS AND OUT OVER TOP OF ROOFING.
- 7



C VERGE DETAIL
SCALE 1:10

- 1 MC770 COLORSTEEL ROOFING FIXED WITH COLOUR MATCHED TECH SCREWS WITH FLASHINGS TO MATCH ALL OVER ON H3.1 70X45 TIMBER PURLINS @ 800MM CTRS MAX ON BUILDING PAPER.
- 2 TRUSSES TO MANUFACTURERS DESIGN AND IN ACCORDANCE WITH NZS3603 @ 900MM CTRS MAX.
- 3 JAMES HARDIE LINEA WEATHERBOARD EXTERIOR CLADDING DIRECT FIXED TO TIMBER FRAMING OVER TOP OF G3 FRAMEGUARD BUILDING PAPER.
- 4 4-5MM HARDIFLEX SOFFIT LINING FIXED TO 70X45 SOFFIT BATTENS.
- 5 COLORSTEEL BARGE FIXED WITH COLOUR MATCHED BRACKETS WITH COLORSTEEL BARGE FLASHING OVER TOP.
- 6 90X45 MSG8 H3.1 OUTRIGGERS @ 900MM CTRS MAX. FIXED BACK AT FOR TRUSS WITH JOIST HANGERS.

NOTE:
PURLINS TO BE FIXED IN ACCORDANCE WITH NZS304 TABLE 10.10.



B EAVE DETAIL
SCALE 1:10

- 1 MC770 COLORSTEEL ROOFING FIXED WITH COLOUR MATCHED TECH SCREWS WITH FLASHINGS TO MATCH ALL OVER ON HI 70X45 TIMBER PURLINS @ 800MM CTRS MAX ON BUILDING PAPER.
- 2 TRUSSES TO MANUFACTURERS DESIGN AND IN ACCORDANCE WITH NZS3603 @ 900MM CTRS MAX. TOP CHORD OF TRUSS TO EXTEND OUT TO FORM EAVES.
- 3 19MM GIB BOARD CEILING ON METAL BATTENS @ 600MM CTRS MAX.
- 4 90X45 H12 TIMBER FRAMED EXTERIOR WALLS WITH STUDS @ 600MM CTRS AND NOGS @ 800MM CTRS MAX. 1X NOG @ MID-HEIGHT FOR INTERNAL WALLS.
- 5 70MM BRICK VENEER CLADDING ON A 50MM WIDE CAVITY WITH G3 FRAMEGUARD BUILDING PAPER BACK TO TIMBER FRAMING.
- 6 R3.2 INSULATION TO ALL CEILING CAVITIES AND R2.2 TO ALL EXTERIOR WALL CAVITIES.
- 7 4-5MM HARDIFLEX SOFFIT LINING FIXED TO 70X45 SOFFIT BATTENS.
- 8 COLORSTEEL GUTTER AND FASCIA FIXED WITH COLOUR MATCHED BRACKETS.
- 9 POWDER COATED ALUMINIUM EXTERIOR WINDOW AND DOOR JOINERY.
- 10 EAVE FLASHING FROM UNDER ROOFING AND INTO GUTTER.

HAMILTON CITY COUNCIL
APPROVED
SUBJECT TO CONDITIONS TO BE KEPT ON SITE

Mark T Mitchell Ltd

Consulting Geotechnical Engineers

1150 Victoria Street
P O Box 9123
Hamilton 3240
New Zealand
Facsimile 07 839 3125
Telephone 07 838 3119
email: mtm@geocon.co.nz

Ref: W – 11502.2
14 December 2009

The Building Control Manager
Hamilton City Council
Private Bag 3010
Hamilton 3240

Dear Sir,

**Re: Inspection of Driven Piles and Concrete Slab Reinforcement.
Proposed New Dwelling – Lot 10 Borman Road, Hamilton
Owner/Builder: Logan Homes Piling Contractor: King Drilling Ltd
Builder: Ineffable Floors Ltd**

We wish to advise that we were retained by the Owner/Builder of the above referenced project to inspect the installation of the driven timber piles for the above referenced project. Our inspections also included checking the foundation and floor slab steel reinforcement, as stipulated in our design drawings.

1. Test Pile Installation

Our staff visited the site during the driving of the test piles to ensure they met the specifications and design requirements as stipulated by this office. The test piles were driven with a 600kg hammer with a drop of 1.0 metre.

Records taken on the site at the time of this inspection are indicative of the test piles being satisfactorily constructed.

2. Production Piles

Subsequently, King Drilling Ltd under instruction drove the production piles in the same manner as the test piles. Records taken by our staff after the production piles were driven are shown on the attached Drawing No. 11502-20. These records indicate the set achieved and an approximate length of pile below existing ground level.

Our design required ultimate load capacities (R_u) of 110 and 115kN for the dwelling, requiring maximum final sets of 25 and 23mm respectively for the pile driving criteria as specified. Actual final sets were between 10 and 25mm for all piles.

Our review of this data indicates that the piles on this site have been driven to achieve the specified design foundation loads. It is therefore considered that the substructure is adequate to support the structural load from the building as designed.

3. Foundation and Floor Slab Construction

Our inspections also included checking of the construction joint, foundation and floor slab steel reinforcement prior to the pouring of the concrete.

The purpose of these inspections was to ensure that the details shown on our Drawing Nos. 11514-10 & 11 had been followed. We confirm that this was carried out.

We understand that the inspection of the perimeter footing steel, bond beam steel and concrete slab reinforcement was also carried out by the Area Building Inspector.

A Producer Statement PS4 – Construction Review is also attached.

Yours faithfully

Mark T Mitchell Ltd



Mark T Mitchell
Director

c.c Logan Homes
PO Box 12467
Hamilton 3241





P.I.M. No.....
 Building Regulation Clause(s)

PRODUCER STATEMENT – PS4 – CONSTRUCTION REVIEW
 (Guidance notes on the use of this form are printed on the reverse side)

ISSUED BY: Mark T Mitchell Limited..... (Job Reference No. W-11502)
(Suitably qualified Design Professional)

TO: Logan Homes
(Owner or Builder)

TO BE SUPPLIED TO: Hamilton City Council
(Territorial Authority)

IN RESPECT OF: Inspection and Verification of Driven Foundation Installation & Foundation Completion including floor slab steel reinforcement
(Description of Building Work)

AT: Borman Road, Hamilton
(Address)

LOT 10 DP..... SO.....

Mark T Mitchell Limited (Design Firm) has been engaged by Logan Homes (Owner/Developer/Contractor) to provide:

Inspection and Verification of Driven Foundation Installation & Foundation Completion including floor slab steel reinforcement services in respect of clause(s) B1 – Structure
(Extent of Engagement)

of the Building Regulations 1992 for the building work described by the drawings and specifications prepared by:

(N/A – refer to the attached Foundation Completion Report dated 14 December, 2009)

(We have not been sighted Building Consent No. and their attached conditions).

On the basis of this review and information supplied by the contractor during the course of the works.

I believe on reasonable grounds that:

For Part only of the construction works, as specified in the attached Foundation Completion Report dated 14 December, 2009 which provides particulars of the building work under the above Building Consent with respect to Clause B1 - Structure of the Building Regulations has been completed to the extent required by that Building Consent identified above.

I, Mark T Mitchell am registered as: CPEng Reg. No. 15278

I am a Member of: IPENZ and hold the following qualifications: BE, MSCE, MIPENZ, MASCE, CP Eng, IntPE(NZ)

The Design Firm issuing this statement holds a current policy of professional Indemnity Insurance no less than \$200,000*.

The Design Firm is a member of ACENZ

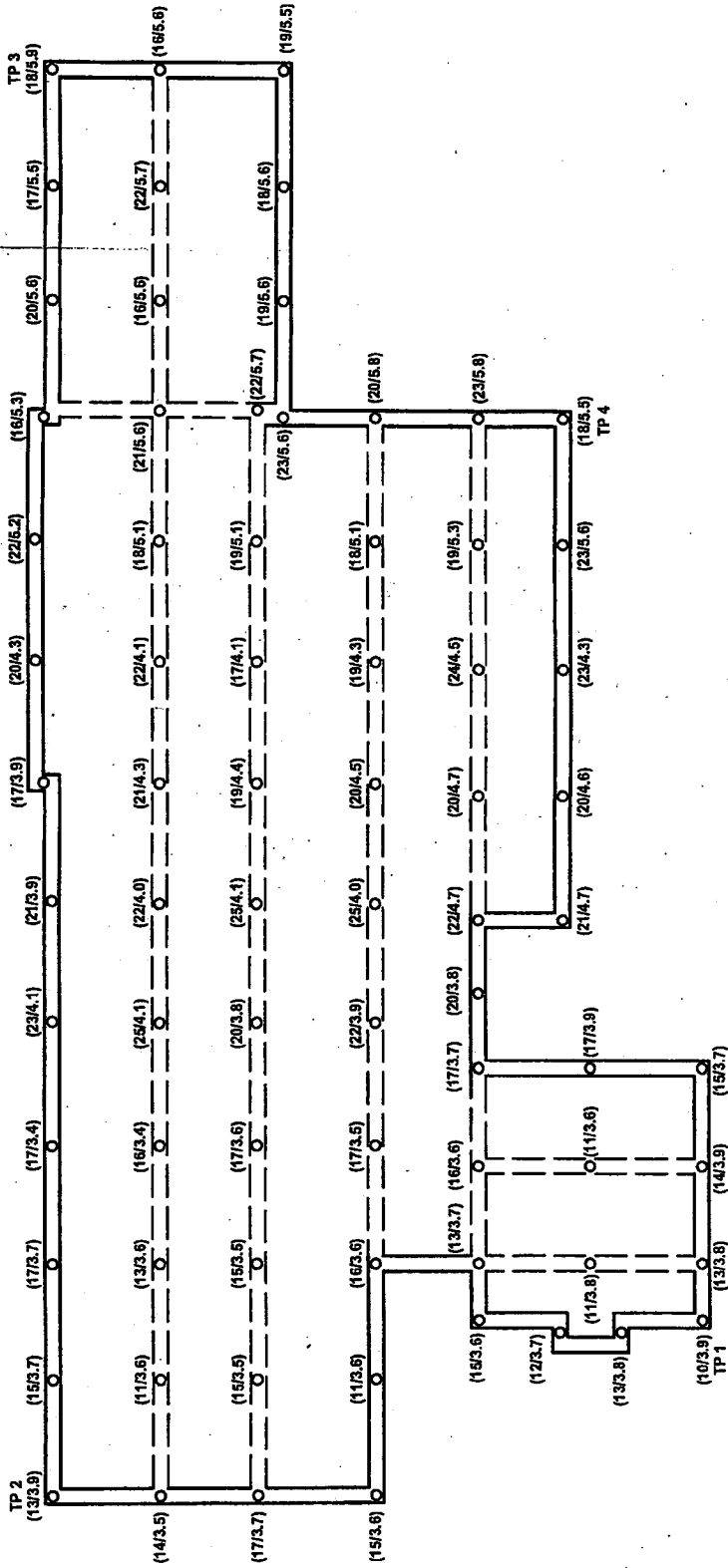
SIGNED BY Mark T Mitchell ON BEHALF OF Mark T Mitchell Limited
(Signature suitably qualified Design Professional) (Name of Firm)

DATE: 14/12/2009 (signature)

Note: This statement shall only be relied upon by the Building Consent Authority named above. Liability under this statement accrues to the Design Firm only. The maximum amount of damages payable, whether in contract, tort or otherwise, is limited to the sum \$200,000.*

This form to accompany Forms 6 or 8 of the Building (Form) Regulations 2004 for the issue of a Code Compliance Certificate.

REDUCED



LEGEND
(30/5.0) denotes Set Achieved (mm) / Depth of Pile below ground level (m)

Mark T Mitchell Ltd
Consulting Geotechnical Engineers
1150 Victoria Street, P.O. Box 9123, Hamilton

LOGAN HOMES
Proposed New Residential Dwelling
Lot 10 Borman Road, Hamilton

SITE PLAN

DRAWING No. 11502-20
DATE December 2009
ISSUE One

Mark T Mitchell Ltd

Consulting Geotechnical Engineers

1150 Victoria Street
P O Box 9123
Hamilton 3240
New Zealand
Facsimile 07 839 3125
Telephone 07 838 3119
email: mtm@geocon.co.nz

Ref: W – 11502.8
30 July, 2009

Logan Homes
PO Box 12467
Hamilton 3248

Attention: John Jarvis

Dear Sir,

Re: Proposed New Residential Dwelling– Lot 10 Borman Road, Hamilton

In accordance with your request we have prepared foundation design details associated with the proposed new dwelling at the above referenced site.

We enclose five copies of the following documents:

- Design Detail Drawing Nos. 11502-10 and -11
- Producer Statement & calculations
- Letter of Inspection
- Letter of Inspection for the Client

Please note that three copies of these documents are for yourselves.

In a separate envelope, we have included two copies to accompany the Building Consent Application to the Hamilton City Council. The enclosed copy of the Mark T Mitchell Ltd Soils Report for this project, dated 28 April, 2009 is also to be provided to the Council.

Yours faithfully,

Mark T Mitchell Ltd



Mark T Mitchell
Director

Mark T Mitchell Ltd

Consulting Geotechnical Engineers

1150 Victoria Street
P O Box 9123
Hamilton 3240
New Zealand
Facsimile 07 839 3125
Telephone 07 838 3119
email: mtm@geocon.co.nz

Ref: W – 11502.8
30 July, 2009

Logan Homes
PO Box 12467
Hamilton 3248

Dear Sir,

Re: Foundation Preparation – Proposed New Residential Dwelling
Owner/Builder: Logan Homes
Location: Lot 10 Borman Road, Hamilton

Please find enclosed a copy of the letter sent to Hamilton City Council informing them of our involvement prior to the foundation construction of the above referenced property. The enclosed letter outlines any special requirements of foundation construction on this site. Please ensure all contractors associated with foundation preparation are provided with a copy of the accompanying letter, which contains relevant information for builders.

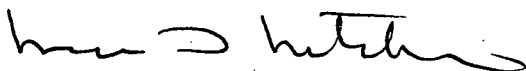
One of the requirements to ensure that foundations for the proposed building are installed in accordance with sound engineering practice and to the design requirements of the project, is that our staff must inspect various stages of foundation construction.

As a minimum, our staff will carry out an inspection of the site during the initial test piling. After production piling, it is *imperative* that our staff are contacted to *inspect the piles before they are cut off*, otherwise a Code of Compliance cannot be provided for the dwelling foundations. The purpose of our inspections will be to ensure that foundations for the proposed building are installed in accordance with sound engineering practice and to the design requirements of the project.

To ensure these inspections are carried out to your convenience, please provide at least **48 hours notice** to our office prior to test pile driving and reinforcing steel placement, so that our office can programme the required inspections into our schedule. At the conclusion of our work, a foundation completion report will be forwarded to the Hamilton City Council.

Yours faithfully,

Mark T Mitchell Ltd



Mark T Mitchell
Director

Mark T Mitchell Ltd

Consulting Geotechnical Engineers

1150 Victoria Street
P O Box 9123
Hamilton 3240
New Zealand
Facsimile 07 839 3125
Telephone 07 838 3119
email: mtm@geocon.co.nz

Ref: W – 11502.8
30 July, 2009

The Building Control Manager
Hamilton City Council
Private Bag 3010
Hamilton 3240

Dear Sir,

Re: Foundation Preparation – Proposed New Residential Dwelling
Owner/Builder: Logan Homes
Location: Lot 10 Borman Road, Hamilton

We advise that we have been retained by the Owner of the above referenced property to carry out inspections of driven pile foundation installations.

Staff from this office will be present during the initial test pile driving. The purpose of our inspections will be to ensure that foundations for the proposed dwelling are installed in accordance with sound engineering practice and to the design requirements of the project.

We will also carry out inspections of the foundation steel reinforcement covered in the Mark T Mitchell Ltd Design Details, to ensure that it complies with the design drawings for the project.

At the conclusion of our work, a foundation completion report will be forwarded to the Hamilton City Council.

Yours faithfully,

Mark T Mitchell Ltd



Mark T Mitchell
Director

Mark T Mitchell Ltd

Consulting Geotechnical Engineers

1150 Victoria Street
P O Box 9123
Hamilton 3240
New Zealand
Facsimile 07 839 3125
Telephone 07 838 3119
email: mtm@geocon.co.nz

PRODUCER STATEMENT - PS1 - DESIGN

Issued by: Mark T Mitchell Ltd, Consulting Geotechnical Engineers

Issued to: (Owner): Logan Homes

To be supplied to: (TA): Hamilton City Council

In respect of: (Building Work): Construction of Foundations only

Located at: Lot 10 Borman Road, Hamilton

Mark T Mitchell Ltd, Consulting Geotechnical Engineers has been engaged by:

The Owner, Logan Homes

to provide Design and Construction Inspection Services in respect of Clause B1 (Structure) of the Building Regulations 1992 for the part only as specified below for the building work:

The following specific design elements have been considered:

- *Concrete Floor and Foundation Beams*: Mark T Mitchell Ltd Drawing No. 11502-10 & -11 dated July, 2009

The following specific design elements have not been reviewed:

- *Wall, Roof and above floor components*

Structure Class (1), Verification Level (1), Verification to be carried out by: (not required)

The design has been prepared in accordance with acceptable solutions of the approved document Verification Method B1/VM4 issued by the Department of Building & Housing and the Design Code(s) as listed below and the work is as outlined on attached specifications (where appropriate), and described on the Drawings which are listed above

On behalf of the Design Firm which holds a current policy of Professional Indemnity Insurance to a minimum value of \$200,000 and is a member of ACENZ, I believe on reasonable grounds subject to:

(i) the site verification of the following design assumptions:

NZS 3101:1995 Code of Practice for Reinforced Concrete Design, and
Soil Conditions as per the Mark T Mitchell Soils Report, dated 28 April, 2009 and

(ii) all proprietary products meeting the performance specification requirements,

the drawings, specifications and other documents according to which the building is proposed to be constructed, comply with the relevant provisions of the building code.

Signed: 

Date: 30 July, 2009

Mark T Mitchell, BE(Civil), MS, MIPENZ, CPEng (Reg No. 15278)
(Member ACENZ, ASCE)

Note: This statement shall only be relied upon by the Building Consent Authority named above. Liability under this statement accrues to the Design Firm only. The total maximum amount of damages payable arising from this statement and all other statements provided to the Building Consent Authority in relation to this building work, whether in contract, tort or otherwise (including negligence), is limited to the sum of \$200,000.*

Mark T Mitchell Ltd

Consulting Geotechnical Engineers

Ph 07 838 3119

Pile-supported Garage and Suspended Floor Slab Design

Ref. W - 11502

for Proposed Dwelling at Lot 10 Borman Road, Hamilton

Date: 30 July, 2009

B. Garage Area

		Exterior	Interior	Bar Centres
Building Construction	Load (kPa)			
Timber Frame & Plastered Brick cladding	1.8			
Colorsteel roof	0.5			
Concrete Floor	2.5			
Live Load (ex NZS203:1992 - residential)	2.5			
		Footings		
		Footing width (mm)	300	300
		Footing Depth (mm) (external)	330	200
		Footing Depth (mm) (Internal)		200
		Unit weight (kN/m ³)	25	25
		Number of Bars (Bottom)	2	2
		Diameter of Steel (mm)	12	12
		Number of Bars (Top)	2	2
		Diameter of Steel (mm)	12	12
		Depth of Cover (mm)	75	75

Perimeter Beam (A-A)

Loads on footing

	Contribution Width (m)	Area Load (kPa)	Unfactored Load	Load factor	Load /m (kN/m)
Roof	1.0	0.5	0.5	1.2	0.6
Walls	2.8	1.8	5.0	1.2	6.0
Floor (live load)	1.2	2.5	3.0	1.6	4.8
Floor (dead load)	1.2	2.5	3.0	1.2	3.6
Footing	0.3	8.25	2.5	1.2	3.0
			14.0		18.0

Maximum pile centres

	(m)	Bending Moment (kN-m)
Simply Supported (w ² /8)	2.5	13.6
Uniformly Distributed (w ² /10)	2.7	13.1

Internal Beam (B-B)

Loads on footing

	Contribution Width (m)	Area Load (kPa)	Unfactored Load	Load factor	Load /m (kN/m)
Floor (live load)	2.2	2.5	5.5	1.6	8.8
Floor (dead load)	2.2	2.5	5.5	1.2	6.6
Footing	0.3	8.3	2.5	1.2	3.0
			13.5		18.4

Maximum pile centres

	(m)	Bending Moment (kN-m)
Simply Supported (w ² /8)	2.4	13.6
Uniformly Distributed (w ² /10)	2.6	12.4

Design Capacity External Beam

Footing width (m)	300.00
Effective Footing Depth (m)	0.25
Yield Stress of Bars (mPa)	300
Area of Steel As (mm ²)	226
Tension Force (kN)	68

Balanced strain criterion therefore Tension = Compression

Depth to center of Compression Zone 'a/2' (mm)	19.1
Effective Lever Arm 'jd' (mm)	236.6
Design Factored Moment (kN-m)	13.6

Design Capacity Internal Beam

Footing width (m)	300.00
Effective Footing Depth (m)	0.25
Yield Stress of Bars (mPa)	300
Area of Steel As (mm ²)	226
Tension Force (kN)	68

Balanced strain criterion therefore Tension = Compression

Depth to center of Compression Zone 'a/2' (mm)	0.0
Effective Lever Arm 'jd' (mm)	236.6
Design Factored Moment (kN-m)	13.6

Ref. W - 11502

30 July, 2009

PILE LOADS FOR PILE DESIGN - SPACING AND DIAMETER

LOCATION	Unfactored Load/metre	Pile Spacing (metres)	Working Pile Load (kN)	Ru at FS=3.5 (kN)	USE Ru = (kN)
Exterior Row of Piles	14.0	2.270	31.8	112.4	115.0
Interior Row of Piles	13.5	2.270	30.6	108.1	110.0

Concrete Slab - Mesh Design

	Contribution Width (m)	Area Load (kPa)	Unfactored Load	Load factor	Load /m (kN/m)
Floor (live load)	1.0	2.5	2.5	1.6	4.0
Floor (dead load) slab thickness =	100	1.0	2.5	1.2	3.0
					7.0

Effective Beam - Main Floor Slab

	(m)	Bending Moment (kN-m)
Simply Supported (w ² /8)	2.1	4.0
Uniformly Distributed (w ² /10)	2.4	4.0

Design Capacity of Main Slab

Slab width (m)	1.00		663 mesh As =	205
Effective Slab depth (m)	0.050	(100mm slab)		
Yield Stress of Bars (MPa)	485		665 mesh As =	147
Area of Steel As (mm ²)	205	(663 mesh)		
Tension Force (kN)	99			

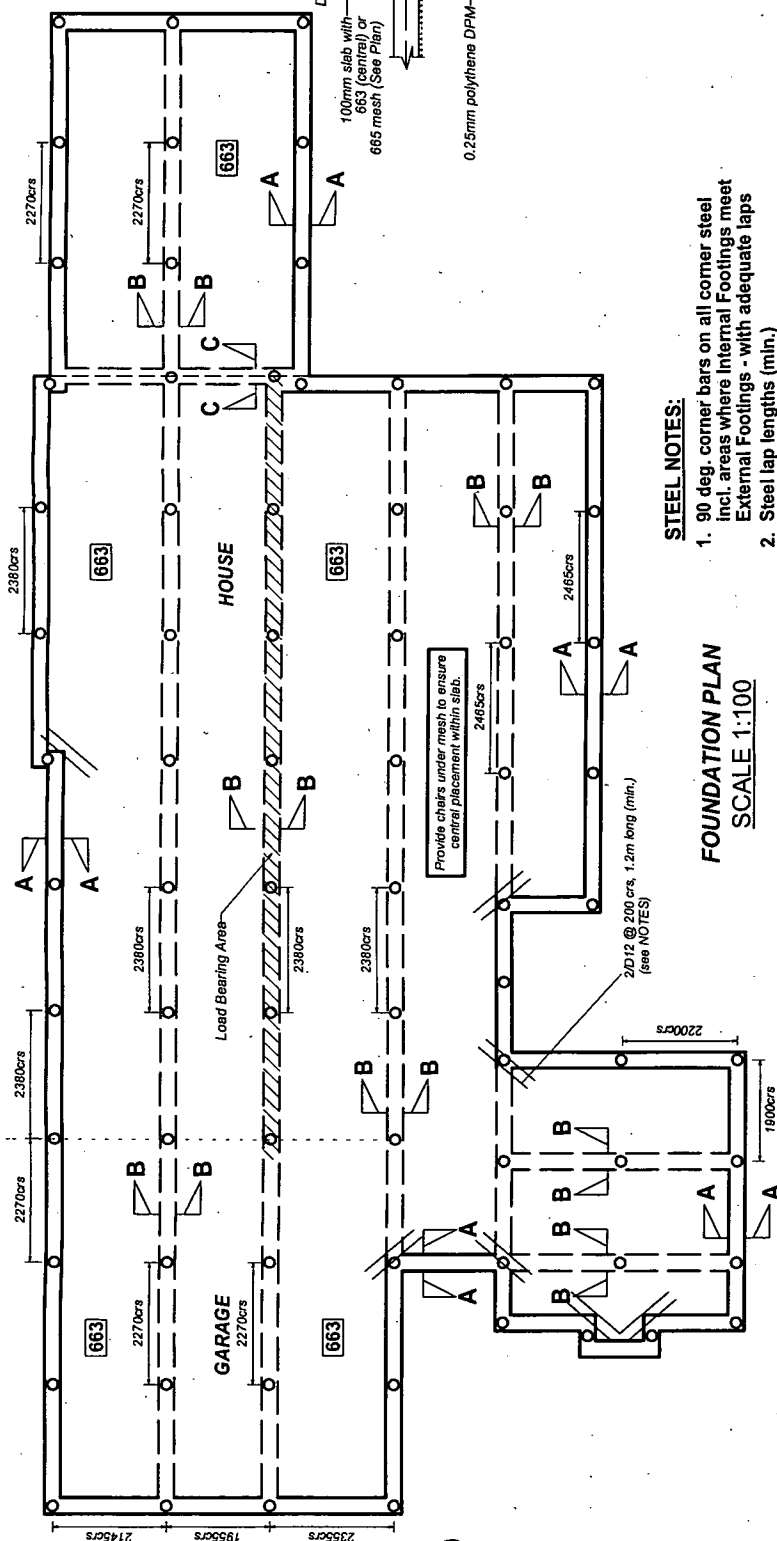
Balanced strain criterion therefore Tension = Compression

Depth to center of Compression Zone 'a/2' (mm)	5.8
Effective Lever Arm 'jd' (mm)	47.5
Design Factored Moment (kN-m)	4.0

Mark T Mitchell Ltd						
Consulting Geotechnical Engineers						Ph 07 838 3119
Pile-supported Garage and Suspended Floor Slab Design						Ref. W - 11502
for Proposed Dwelling at Lot 10 Borman Road, Hamilton				Date:	30 July, 2009	
House Area						
Building Construction	Load (kPa)		Footings	Exterior	Interior	Bar Centres
Timber Frame & Plastered Brick cladding	1.8		Footings width (mm)	300	300	
Colorsteel roof	0.5		Footings Depth (mm) (external)	330		200
Concrete Floor	2.5		Footings Depth (mm) (Internal)		330	200
Live Load (ex NZS203:1992 - residential)	1.5		Unit weight (kN/m ³)	25	25	
			Number of Bars (Bottom)	2	2	
			Diameter of Steel (mm)	12	12	
			Number of Bars (Top)	2	2	
			Diameter of Steel (mm)	12	12	
			Depth of Cover (mm)	75	75	
Perimeter Beam (A-A)						
Loads on footing						
		Contribution Width (m)	Area Load (kPa)	Unfactored Load	Load factor	Load /m (kN/m)
Roof		1.0	0.5	0.5	1.2	0.6
Walls		2.8	1.8	5.0	1.2	6.0
Floor (live load)		1.3	1.5	1.9	1.6	3.0
Floor (dead load)		1.3	2.5	3.1	1.2	3.8
Footings		0.3	8.25	2.5	1.2	3.0
				13.0		16.4
Maximum pile centres	(m)	Bending Moment (kN-m)				
Simply Supported (wl ² /8)	2.6	13.6				
Uniformly Distributed (wl ² /10)	2.8	12.8				
Internal Beam (B-B)						
Loads on footing						
		Contribution Width (m)	Area Load (kPa)	Unfactored Load	Load factor	Load /m (kN/m)
Floor (live load)		2.5	1.5	3.7	1.6	5.9
Floor (dead load)		2.5	2.5	6.1	1.2	7.4
Footings		0.3	8.3	2.5	1.2	3.0
				12.3		16.2
Maximum pile centres	(m)	Bending Moment (kN-m)				
Simply Supported (wl ² /8)	2.6	13.6				
Uniformly Distributed (wl ² /10)	2.8	12.7				
Design Capacity External Beam						
Footings width (m)	300.00					
Effective Footings Depth (m)	0.25					
Yield Stress of Bars (mPa)	300					
Area of Steel As (mm ²)	226					
Tension Force (kN)	68					
Balanced strain criterion therefore Tension = Compression						
Depth to center of Compression Zone 'a/2' (mm)	19.1					
Effective Lever Arm 'jd' (mm)	236.6					
Design Factored Moment (kN-m)	13.6					
Design Capacity Internal Beam						
Footings width (m)	300.00					
Effective Footings Depth (m)	0.25					
Yield Stress of Bars (mPa)	300					
Area of Steel As (mm ²)	226					
Tension Force (kN)	68					
Balanced strain criterion therefore Tension = Compression						
Depth to center of Compression Zone 'a/2' (mm)	0.0					
Effective Lever Arm 'jd' (mm)	236.6					
Design Factored Moment (kN-m)	13.6					
Ref. W - 11502		30 July, 2009				
PILE LOADS FOR PILE DESIGN - SPACING AND DIAMETER						
LOCATION		Unfactored Load/metre	Pile Spacing (metres)	Working Pile Load (kN)	Ru at FS=3.5 (kN)	USE Ru = (kN)
Exterior Row of Piles		13.0	2.45	31.9	112.7	115.0
Interior Row of Piles		12.3	2.50	30.7	108.4	110.0
Concrete Slab - Mesh Design						
		Contribution Width (m)	Area Load (kPa)	Unfactored Load	Load factor	Load /m (kN/m)
Floor (live load)		1.0	1.5	1.5	1.6	2.4
Floor (dead load) slab thickness =	100	1.0	2.5	2.5	1.2	3.0
				105.0		5.4
Effective Beam - Main Floor Slab	(m)	Bending Moment (kN-m)				
Simply Supported (wl ² /8)	2.1	2.9		ie. max span end panel = 2.1m		
Uniformly Distributed (wl ² /10)	2.3	2.9		ie max span cont slab = 2.3m		
				Otherwise use 663 mesh - OK for span up to 2.4m		
Design Capacity of Main Slab						
Slab width (m)	1.00			663 mesh As =	205	
Effective Slab depth (m)	0.050	(100mm slab)				
Yield Stress of Bars (MPa)	485			665 mesh As =	147	
Area of Steel As (mm ²)	147	(665 mesh)				
Tension Force (kN)	71					
Balanced strain criterion therefore Tension = Compression						
Depth to center of Compression Zone 'a/2' (mm)	4.2					
Effective Lever Arm 'jd' (mm)	47.5					
Design Factored Moment (kN-m)	2.9					

NOTE:

Hammer fall must not exceed 1000mm at any time. Split or mushroomed piles are to be cut and re-driven to obtain set indicated. Length removed to be recorded and laid next to pile for engineers inspection.



FOUNDATION PLAN
SCALE 1:100

STEEL NOTES:

- 90 deg. corner bars on all corner steel incl. areas where Internal Footings meet External Footings - with adequate laps
- Steel lap lengths (min.)
- 40 x diameter - mild steel
- 60 x diameter - high tensile steel
- Mesh lap lengths
- 300mm min.
- All high tensile steel to be joined with ties (no welding of HD steel)

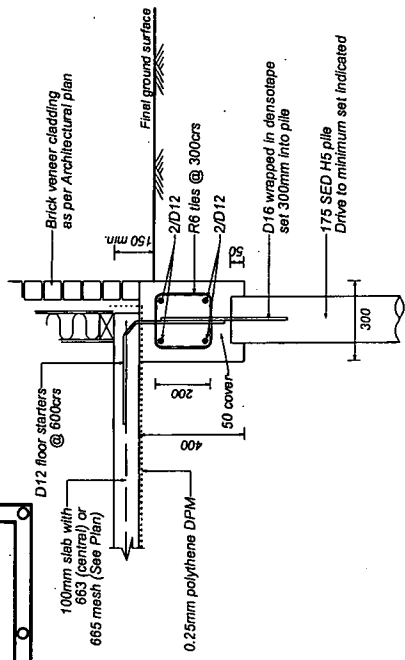
NOTE:
665 mesh used unless otherwise indicated.

NOTES:

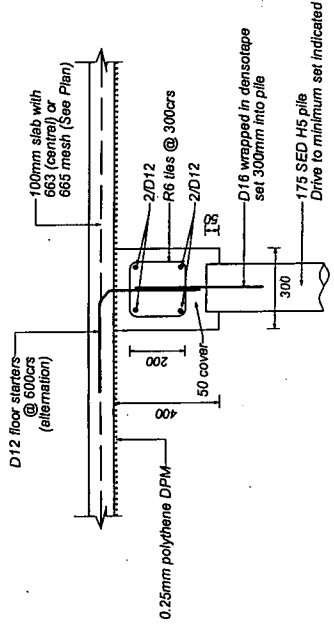
- This Drawing is reproduced from the plans prepared by the Architectural Designers.
- All measurements are in millimetres.
- Ensure that Internal Floor Strengthening Bars do not cross Shrinkage Control Joints.
- This drawing is intellectual property and has copyright © to the designer, Mark T Mitchell Ltd. No form of unauthorised reproduction in full or part, is permitted. Concrete strength to be a minimum 20MPa. Vibrator to be used on all concrete pours.

PILE NOTES:

- Unless otherwise shown, locate piles equal space between exterior walls or load-bearing walls.
- Hammer fall must not exceed 1000mm at any time. Split or mushroomed piles are to be cut and re-driven to obtain set indicated. Length removed to be recorded and laid next to pile for engineers inspection.
- Piles are not to be cut off until Mark T. Mitchell Ltd staff have inspected and recorded marks on the piles.
- Pile loads (unless indicated on Foundation Plan.)
Exterior Piles Ru = 115kN
Interior Piles Ru = 110kN



EXTERIOR FOOTING A - A
Brick Veneer Cladding
SCALE 1:20



INTERIOR FOOTING B - B
SCALE 1:20

PILE DRIVING SPECIFICATION - DRIVEN TIMBER PILE INSTALLATION

1. MATERIALS

All timber poles and piles shall be Corsican or Radiata Pine or other species, provided they are permitted by the appropriate standard. They shall be milled and treated in accordance with NZS 3605:1977 "Load Bearing Rounded Timber Piles and Poles". The minimum small end diameter (SED) shall be as shown on the drawings.

2. TIMBER PRESERVATIVE

The piles shall be treated in accordance with the NZ Timber Preservation Authority Specification C2B. All cut faces and notches, including the top of the piles, shall be coated with two liberal coatings of 'Ensele' (Pentachlorophenol) or 'Metalex' (Copper Naphthenate). The faces of the other timbers in contact with the poles shall be treated in a similar fashion.

3. TEST BORES AND PROBES

Test borings have been taken at the site, and a soils investigation report, which includes the results of the test borings and their respective locations is available for inspection at the Engineer's Office and at that of the principal Contractor/Owner of the project. Contractors must make their own interpretation of driving conditions and quote accordingly.

4. SETTING OUT

The contractor shall be responsible for all setting out. The pile shall be set out and placed to a tolerance of 20mm at the top of the pile and shall be true to line over the remainder of their length.

5. PILE DRIVING EQUIPMENT

The plant to be used for pile driving is to be approved by the Engineer. The monkey shall be designed so that it falls freely under its own weight from the height as specified and is positioned centrally over the pile. The height of the drop shall be clearly marked and readily identified during driving.

6. PILE DRIVING

The piles shall be driven to the Hiley Formula. Where alternative methods or formula are to be used, they are to be approved by the Engineer prior to the commencement of driving. Refer to the attached table for pile driving requirements.

7. LOAD TESTING

No allowance is made for load testing of piles. Should there be any evidence of faulty workmanship, the effected pile shall be load tested by the contractor at his own expense.

8. COMMENCEMENT OF WORK

The contractor shall notify the engineer of proposed commencement of work at least two working days prior to the pile driving. The initial piles driven at the project are termed 'test piles' and they shall be located at opposite ends and sides of the project in order to assess the likely driving conditions and depths over the full extent of the project. The test piles shall also be used as production piles. The Engineer or his representative shall be present during this operation and a continuous driving record shall be taken.

For this project, the number of 'test piles' required = 2 piles.

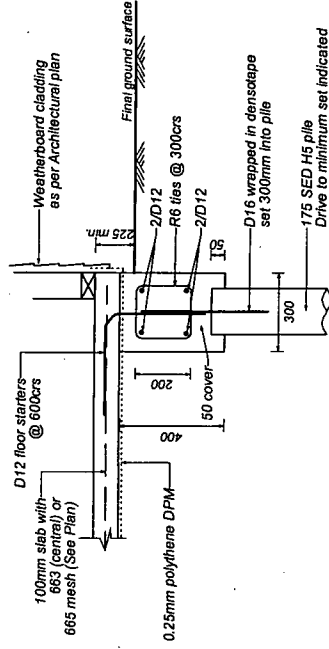
9. PRODUCTION DRIVING OF PILES

Following the driving of 'test piles', the remainder of the production piles shall be ordered and delivered to the site. The contractor shall mark on each pile the total length so it may be seen after the completion of driving operations. The tops of the piles shall not be cut off until after the final inspection has been made by the Engineer or his representative. The final series of at least 20 blow counts shall be clearly marked on each pile, with the distance over the final 10 being recorded as the "final set".

10. PILE RECORDS

The contractor shall supply to the engineer within 7 days of completion of the pile driving, a summary of the final depths and average final sets.

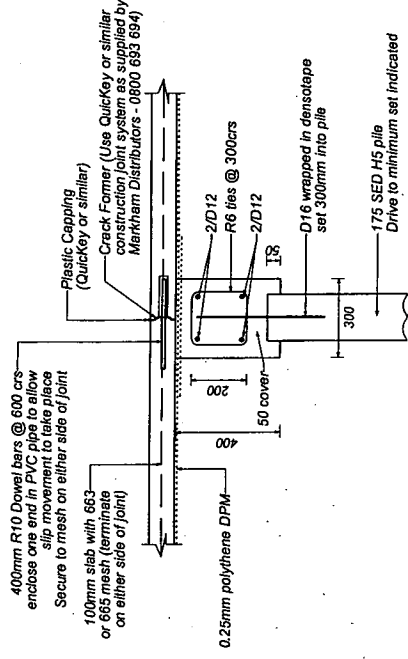
FINAL SET REQUIRED, average last 10 blows (mm), for Ru indicated.			
CONCRETE FLOOR DWELLING			
Hammer Weight (kg)	Hammer Fall (mm)	RU=110kN	RU=115kN
500	500	7	7
1000	1000	19	18
500	500	10	9
610	1000	25	23



EXTERIOR FOOTING A - A

Weatherboard Cladding

SCALE 1:20



CONSTRUCTION JOINT C - C

SCALE 1:20

NOTE:
- Ensure R10 Dowel and PVC pipe sleeve are flat within slab and fastened to mesh on either side of joint.
- 2 x layers of DPM polythene between floor slab and footing to aid slip movement

Mark T Mitchell Ltd
Consulting Geotechnical Engineers

1150 Victoria Street, P.O. Box 9123, Hamilton

LOGAN HOMES

Proposed New Residential Dwelling
Lot Borman Road, Hamilton

**FOUNDATION
DESIGN DETAILS**

DRAWING No. 11502-11
DATE July 2009
ISSUE One

GIB® EzyBrace™ FP for GIB® EzyBrace™ Systems, 2009



GIB® Wall Bracing Calculation Sheet A

single storey

V01/09

Job Details

Name: Display Home
 Street and Number: Borman Road, Glaisdale
 Lot and DP Number: Lot 10 DP397340
 City/Town/District: Hamilton
 Designer: M. Hawken
 Company Name: Logan Homes
 Date: 10/08/2009



Select GIB® Lining Option

10 mm GIB® Plasterboard

Building Specification

Number of storeys	single	▼		
Floor Loading	2kPa	▼		
Foundation Type	slab	▼		
		▼		
	Single Floor		Complete Single Floor Column only	
Cladding Weight	heavy	▼		▼
Roof Weight	light	▼		▼
Room in Roof Space	no	▼		▼
Roof Pitch (degrees)	5	▼	15	▼
Roof height above eaves (m)	1:0	▼	1:0	▼
Building height to apex (m)	4:0	▼		
Ground to lower floor level (m)	0:2	▼		
Stud Height (m)	2:55	▼	3:0	▼
Building Length (m)	28:0	▼	2:4	▼
Building Width (m)	13:5	▼	10:0	▼
Building Plan Area (m2)	258:9	▼	10:0	▼
			200	▼

Building Location

Wind Zone	Medium		Earthquake Zone	B
Region	Preference selected	▼		▼
Terrain	Preference selected	▼		
Exposure	Preference selected	▼		
Topography	Preference selected	▼		
Select by Building Consent Authority Map or Preference	Medium	▼	<i>Consult GIB® EzyBrace™ Systems, 2009 for Wind Zone definitions</i>	

Bracing Units required for Wind

Demand W (BU)		Walls single
along	slab	510
across	slab	895

Bracing Units required for Earthquake

Demand along / across E (BU)	
Walls	single
slab	1162

©Winstone Wallboards Limited, 1999-2009. All rights reserved.

GIB® EzyBrace™ FP for GIB® EzyBrace™ Systems, 2009



GIB® Wall Bracing Calculation Sheet B Single or Upper Walls Along V01/09

Along		Bracing Elements provided						Wind	Earthq.
1	2	3	4	6	5	7	8	9W	10EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Available Wall Length L (m)	Angle to Bracing line (degrees)	Element Height H (m)	Bracing Type	Supplier	BUs Achieved	BUs Achieved
A	280	1	2.4		2.55	GS1(10)	GIB®	156	124
	OK	2	2.2		2.55	GS1(10)	GIB®	143	114
<i>line totals</i>		3	2.5		2.55	GS1(10)	GIB®	162	129
W	461	4							
EQ	368	5							
B	70	1	1.9		2.55	GS1(10)	GIB®	123	98
	OK	2	1.9		2.55	GS1(10)	GIB®	123	98
<i>line totals</i>		3	1.9		2.55	GS2(10)	GIB®	161	143
W	569	4	1.9		2.55	GS2(10)	GIB®	161	143
EQ	483	5							
C	70	1	3.2		2.55	GS1(10)	GIB®	208	166
	OK	2	2.8		3.05	GS1(10)	GIB®	152	121
<i>line totals</i>		3							
W	360	4							
EQ	287	5							
D	70	1	2.4		2.55	GS1(10)	GIB®	156	124
	OK	2							
<i>line totals</i>		3							
W	156	4							
EQ	124	5							
E	enter	1							
		2							
<i>line totals</i>		3							
W		4							
EQ		5							
F	enter	1							
		2							
<i>line totals</i>		3							
W		4							
EQ		5							
G	enter	1							
		2							
<i>line totals</i>		3							
W		4							
EQ		5							
H	enter	1							
		2							
<i>line totals</i>		3							
W		4							
EQ		5							

©Winstone Wallboards Limited, 1999-2009. All rights reserved.

							Wind	Earthq.
Totals Achieved	Achieved/Demand	W	303%	EQ	109%		1545	1261
Concrete Slab							OK	OK
Totals Required (from Demand)								
							510	1162

GIB® EzyBrace™ FP for GIB® EzyBrace™ Systems, 2009



GIB® Wall Bracing Calculation Sheet B **Single or Upper Walls Across** V01/09

Across		Bracing Line						Bracing Elements provided		Wind	Earthq.
1	2	3	4	6	5	7	8	9W	10EQ		
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Available Wall Length L (m)	Angle to Bracing line (degrees)	Element Height H (m)	Bracing Type	Supplier	BUs Achieved	BUs Achieved		
M	70	1	0.8		2.55	GS1(10)	GIB®	50	41		
	OK	2	0.8		2.55	GS1(10)	GIB®	50	41		
<i>line totals</i>		3									
W	99	4									
EQ	83	5									
N	70	1	0.45		2.55	SP4	Ecoply	30	36		
	OK	2	0.45		2.55	SP4	Ecoply	30	36		
<i>line totals</i>		3	0.45		2.55	SP4	Ecoply	30	36		
W	119	4	0.45		2.55	SP4	Ecoply	30	36		
EQ	144	5									
O	70	1	3.9		2.55	GS1(10)	GIB®	253	202		
	OK	2	1.2		2.55	GS1(10)	GIB®	78	62		
<i>line totals</i>		3									
W	331	4									
EQ	264	5									
P	70	1	3.4		2.55	GS1(10)	GIB®	221	176		
	OK	2									
<i>line totals</i>		3									
W	221	4									
EQ	176	5									
Q	70	1	2.1		2.55	GS1(10)	GIB®	136	109		
	OK	2	2.2		2.55	GS1(10)	GIB®	143	114		
<i>line totals</i>		3									
W	279	4									
EQ	223	5									
R	110	1	3.4		2.55	GS1(10)	GIB®	221	176		
	OK	2	2.4		2.55	GS1(10)	GIB®	156	124		
<i>line totals</i>		3									
W	377	4									
EQ	300	5									
S	70	1	1.2		2.55	BL1(10)	GIB®	149	120		
	OK	2									
<i>line totals</i>		3									
W	149	4									
EQ	120	5									
T	70	1	1.6		2.55	GS1(10)	GIB®	104	83		
	OK	2	0.9		2.55	GS1(10)	GIB®	57	47		
<i>line totals</i>		3									
W	160	4									
EQ	129	5									

©Winstone Wallboards Limited, 1999-2009. All rights reserved.

		Wind	Earthq.
Totals Achieved	Achieved/Demand	W 194% EQ 124%	1736 1439
Concrete Slab		OK	OK
Totals Required (from Demand)		895	1162

PlaceMakers Frame & Truss

Job: HN10996

Client: PlaceMakers Ellis Street
Phone:

Site: Loganhomes
Lot 10 Glaisdale
Hamilton

Description:
Building Consent No.:
MITek 20/20 Engineering 4.5.117

MITek New Zealand Ltd.

Phone:
Printed: 08:58:43 10 Aug 200

PRODUCER STATEMENT for MITek 20/20™ TRUSS DESIGN

The MITek 20/20™ truss design program has been developed by MITek New Zealand Ltd for the design of GANG-NAIL® timber roof, floor and attic trusses in New Zealand. The truss designs computed by MITek 20/20™ are prepared using sound and widely accepted engineering principles, and in accordance with compliance documents of the New Zealand Building Code and Verification Method B1/VM1; and internationally accepted standard ANSI/TPI 1 - 2002 as an alternative solution to satisfy the requirements of Clause B1 of the Building Code.

This producer statement covers the MITek 20/20™ truss design and the structural performance of the GANG-NAIL plate.

On behalf of MITek New Zealand Ltd, and subject to:

- i) All proprietary products meeting their performance specification requirements
- ii) The provision of adequate roof bracing and overall building stability
- iii) Correct selection and placement of fixings
- iv) Correct input of Truss Design Data below
- v) The design being undertaken by suitably trained personnel
- vi) The truss design being carried out in accordance with MITek 20/20 User Terms and Conditions,

I believe on reasonable grounds that the trusses, if constructed in accordance with the MITek 20/20™ truss design and shop drawings, will comply with the relevant provisions of the Building Code.

MITek New Zealand Ltd holds a current policy of Professional Indemnity Insurance no less than \$500,000.

On behalf of MITek New Zealand Ltd,

In Ling Ng, BE (Hons), CPEng, IntPE, MIPENZ (ID: 146585)
TECHNICAL SERVICES MANAGER, MITek New Zealand Ltd

MITek 20/20™ TRUSS DESIGN DATA

The MITek 20/20™ computer design for this job is based on the following design parameters entered into the program. The GANG-NAIL Fabricator shall ensure that these job details are current and relevant to the project for the design of the trusses.

Job Details		Importance Level : 2	Design Working Life : 50 years
Roof Truss			
Timber Group:	PMFT Truss_H3.1	Pitch:	5.000 deg
Roof		Celling	
Material:	Light	Material:	Gib Board 12mm
Dead Load:	0.250 kPa	Dead Load:	0.200 kPa
Restraints:	1200 mm centres	Restraints:	600 mm centres
Live Load:	Q _r = 0.250 kPa	Live Load:	Q _c = 1.400 kN
	Q _c = 1.100 kN		
		Std Overhang:	600 mm
		Wind	
		Area:	Medium (37.0 m/s)
		Pressure Coeff:	C _{pe} = varies; C _{pi} = -0.30, 0.20

The timber for these trusses shall be standard gauged and treated to the requirements of NZS 3602:2003. Unless otherwise noted, this design assumes that the steel fixings and timber connectors proposed are located in a "closed environment", as defined by NZS3604:1999 Section 4.

Truss List

Legend: * = detail only, ? = input only, ✕ = failed design, Ø = non certified, Unmarked trusses = designed successfully, LB = lateral bracing required

Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)	Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)
T1	1	6420	5.000	900	T8	9	2180	5.000	900
T2	8	6510	5.000	900	T9	6	4500	5.000	900
T3	7	4180	5.000	900	T10	1	1490	5.000	900
T4	9	4620	5.000	900	T11	1	1400	5.000	900
T5	8	5120	5.000	900					
T6	12	6750	5.000	900					
T6A	1	6750	5.000	900					
T7	4	4510	5.000	900					

Total quantity : 67

PlaceMakers Frame & Truss

Job: HN10996

Client: PlaceMakers Ellis Street
Phone:

Site: Loganhomes
Lot 10 Glaisdale
Hamilton

Description:
Building Consent No.:
MITek 20/20 Engineering 4.5.117

MITek New Zealand Ltd.

Phone:

The computer design input has been carried out by:

Signed:

Date:

Name of Computer Operator:

Qualifications and Title:

Company: Placemakers Manufacturing

Verification / Acceptance of Input Data:

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

Signed:

Date:

Name:

Company:

Design Certificate – Technical basis for structural design methodology contained in designIT for houses - New Zealand.

designIT for houses, New Zealand has been developed by experienced timber engineers to assist designers in selecting appropriate sizes of structural laminated veneer lumber products manufactured by Carter Holt Harvey (including hySPAN, hy90, hyONE and hyJOIST) and other generic stress grades of timber, to be used as structural elements for the construction of buildings that fall within the scope and limitations of NZS 3604.

The design methodology used for the software complies with the loading and general design requirements contained within AS/NZS 1170:2002 and with timber structural design in accordance with NZS 3603:1993 including Amendment 4 (Verification method B1/MM1, 6.1).

The methodology for designIT uses the most up to date information available from joint Australian/New Zealand standards to ensure designIT solutions correspond with performance levels of design solutions given in NZS 3604:1999

designIT relies on the accurate input of span and loading information by the user. Where accurate inputs are submitted the product and/or stress grade and the size given will comply with the structural requirements of the New Zealand Building Code, provided the installation is in accordance with the installation requirements provided by designIT and/or in product literature and/or NZS 3604, as appropriate.

References:

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

7 July 2009

For further information or advice please contact:

Carter Holt Havey Woodproducts New Zealand
173 Captain Springs Road, Onehunga. Auckland
Telephone 0800 808 131
Facsimile 0800 808 132
Email: designIT@chh.co.nz

Specifier details:

Specifier:	Melissa Hawken		
Business name:	Logan Homes		
Address:			
Phone: Ph 07 855 5200	Mobile:	Facsimile:	

Project & Site details:

Project:		Ref. no.:
At (address):		
For (owner/s):		
Wind Zone:	MEDIUM	
Snow loading	Snow region: N0, snow loading not applicable	

MEMBER DESIGN DETAILS

Member 1

- 1) Member code and description L1 - Lintels - In single or upper storey load bearing walls
- 2) Date prepared 13/08/2009
- 3) Design inputs

Span	4.8 m
Roof load width 'RLW'	1.8 m
Roof type and mass	Light roof & ceiling - 40 kg/m ²
Serviceability criteria	AS 1684.1-1999
- 4) Member specification

Size, stress grade/product	Use 2/240 x 45 hySPAN
Material type	Structural Laminated Veneer Lumber to AS/NZS 4357
- 5) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - $G+\psi_L Q^*$	10.0 mm	8.2 mm (long term)	$\frac{10.0}{8.2} = 1.21$
*Critical serviceability load case			
See 'Notes for interpretation of serviceability data' at the end of this report			

6) Installation requirements

Provide at least 30 mm bearing at end supports
Nail lamination in accordance with Detail H1.
Tie-down requirement - Uplift reaction at support = 2.29 kN for application in accordance with propriety lintel tie-down systems

Member 2

1) Member code and description VB1 - Verandah beams

2) Date prepared 13/08/2009

Design inputs

Span 4.5 m - single
Roof mass 30 kg/m²
Roof Load Width 'RLW' 1.7 m
Serviceability criteria AS 1684.1-1999

4) Member specification

Size, stress grade/product Use 2/200 x 45 hySPAN
Material type Structural Laminated Veneer Lumber to AS/NZS 4357

5) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - $G+\psi_L Q^*$	10.0 mm	9.0 mm (long term)	$\frac{10.0}{9.0} = 1.11$
*Critical serviceability load case			
See 'Notes for interpretation of serviceability data' at the end of this report			

6) Installation requirements

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



Notes for interpretation of serviceability data

- "average deflection" is an engineering concept based upon a notional estimated load, notional member rigidity and, in some cases, an approximate model of material response to environmental conditions. These parameters are, 'standardised' in AS/NZS 1170, AS 1684.1 and AS 1720. Deflections calculated using this methodology cannot therefore be usefully compared with deflections calculated using other methods, eg GLTAA design methodology.
- Deflection is the flexural response to load – 'out-of-level' measurements of installations are not necessarily deflections and can incorporate 'initial out-of-straightness', whether intended or not. Furthermore, loads can be higher/lower than the notional estimate and in any comparison with measured levels, material variability needs to also be considered. AS 1720 gives the following basis for estimation of upper bound deflections for various materials.

No 1 Framing – visually graded to NZS 3631	Average + 100%
MSG grades - mechanically graded to AS/NZS 1748	Average + 43%
GL grades for glulam to AS/NZS 1328	Average + 33%
LVL to AS/NZS 4357 (includes hySPAN and hyJOIST)	Average +18%

As can be seen, comparison of the 'average deflection' for different materials, even if calculated on the same basis, does not give the whole picture!
- The limits referred are those specified in AS 1684.1 for the stated load case.
- 'Rigidity ratio' expresses the rigidity of the specified beam relative to the rigidity of a notional beam just meeting the serviceability requirements of AS 1684.1

PRELIMINARY & GENERAL

General

This section relates to the following specification as a whole; to each specification for any work to which a separate contract is let by Logan Homes Ltd, and to the work of all Subcontractors.

Regulations and Standards

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

Logan Homes 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 conversant with their contents. The following is a list of Approved Documents referred to in this Specification:

- B1/AS1 Structure - general
- B1/AS2 Structure - timber barriers
- B1/AS4 Foundations
- B2/AS1 Durability
- C2/AS1 Means of Escape
- C3/AS1 Spread of Fire
- C4/AS1 Structural Stability during fire
- D1/AS1 Access routes
- E1/AS1 Surface water
- E2/AS1 External Moisture
- E3/AS1 Internal moisture
- F1/VM1 Hazardous agents on site
- F2/AS2 Hazardous substances and processes
- F4/AS1 Safety from falling
- F5/AS1 Construction and demolition hazards
- G1/AS1 Personal hygiene
- G2/AS1 Laundering
- G3/AS1 Food preparation
- G4/AS1 Ventilation
- G8/AS1 Airborne and impact sound
- G7/AS1 Natural light
- G8/VM1 Artificial light
- G9/VM1 Electricity
- G10/AS1 Piped services
- G11/AS1 Gas as an energy source
- G12/AS1 Water Supplies
- G13/AS1 Foul water - sanitary plumbing
- G13/AS2 Foul water - drainage
- H1/AS1 Energy efficiency

Standards

Throughout this specification, references are made to Standards produced by the Standards Association of New Zealand and other associations as well as various Acts and Regulations. The latest edition at the date of contract applies, unless stated otherwise. It is the responsibility of Logan Homes or the Subcontractor to be informed of the material in those publications that are referred to in this specification.

Scope of Work

The scope of work is to construct, completely finish and maintain for a specified time the various works described or indicated on the plans and in the specifications.

Documents

Logan Homes and its subcontractors shall be deemed to have familiarised themselves with all the documents comprising the contract including any amendments thereto.

Consents, Permits and Certificates

Logan Homes will lodge a Building Consent Application with the Territorial Authority and pay all fees in connection therewith. Work in all trades shall be in accordance with the consent and the New Zealand Building Code.

All Subcontractors are to obtain all other necessary permits and give all necessary notices.

Where Producer Statements are required by the Territorial Authority prior to the issue of a Code Compliance Certificate the Supplier or Subcontractor shall obtain and provide such required statements to Logan Homes.

Logan Homes shall uplift a Code Compliance Certificate (covering the whole of the building work) from the Territorial Authority or the Building Certifier as applicable on completion of the contract.

Inspections

Logan Homes shall establish from the Territorial Authority or Building Certifier before construction commences, a list of their required site inspections during the construction process. Logan Homes (unless otherwise agreed) shall notify them at least 24 hours prior to a scheduled inspection item being available for a site inspection.

Drawings and Specifications

The drawings, with all notes and explanations, the specifications, and the general conditions of contract as present at the time of the signing of the contract, must be signed when the contract is executed. A copy of all drawings and specifications shall be kept on the site at all times.

In the event of there being differences between the drawings and this specification, the drawings shall take precedence.

Trade Names and Approvals

Where any article or material is referred to by a trade name this shall be deemed to mean the article or material mentioned. Logan Homes, at its discretion, may substitute other brands or materials as Logan Homes deems suitable.

Dimensions

Figured dimensions shall be taken in preference to scale measurements and large scale details in preference to those of small scale. Where dimensions are not shown on the drawings and cannot be deduced from other drawn details they shall be agreed with Logan Homes.

Boundaries

Logan Homes shall arrange for the location of appropriate survey pegs to be established.

Setting out of work

The Foundation subcontractor shall accurately set out the building in accordance with the site plan and shall take full responsibility for the accuracy of such setting out. Any error shall be made good at the Subcontractor's expense.

In case of alteration to the drawings being found necessary, the Subcontractor shall immediately report the matter to Logan Homes.

Tradesmanship

The whole of the work is to be carried out in a thoroughly tradesman-like manner to the true intent and meaning of the plans and this specification.

Protection of Property

The Subcontractor shall be held solely responsible for all damage to any adjoining buildings or property caused by him or his employees during the execution of the contract and shall indemnify Logan Homes against all claims on account thereof.

Temporary Vehicular Crossings

Logan Homes shall provide such temporary as are necessary for the protection from damage of all kerbs, channels, footpaths, berms, and public utility services over which vehicles in any way connected with the supply of materials or services for the contract are likely to pass.

Site Access

Logan Homes shall provide access before work commences.

The Subcontractor shall take all possible measures to maintain safe and clear access to all neighbouring buildings at all times during the currency of this contract and in particular, to avoid construction vehicles or processes blocking thoroughfares or pedestrian routes adjoining the site.

Toilets

Logan Homes shall provide toilet facilities.

Water and Power

Logan Homes shall arrange and pay for all temporary supply of water and power as required to be used during the construction of the works.

Rubbish Removal

Subcontractors shall ensure that all work sites are cleaned regularly and all rubbish is removed to a location indicated by Logan Homes.

EARTHWORKS AND EXCAVATIONS:

General

Refer to Preliminary & General and other sections which may have clauses affecting work done under this section.

Scope

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

The Subcontractor shall arrange to check existing site levels before commencing work, as no claim will be entertained in respect of any discrepancy on levels or amount of variation from what may have been anticipated, once the work has started.

Where a geotechnical investigation report is available the Subcontractor shall obtain a copy of this report and be fully familiar with its contents and recommendations.

NZ Building Code

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

- B1 Structure
- E1 Surface Water
- F1 Hazardous Agents on Site
- F5 Construction & Demolition Hazards

Where applicable the following standard and related documents and subsequent amendments shall form part of this specification:

NZS 3604:1999 Code of Practice for Light Timber Framed Buildings Not Requiring Specific Design.

[I] EARTHWORKS

Site Clearance

Demolish and remove from the site all existing structures, vegetation and rubbish as may be necessary for the proper conduct of the construction work. Provided that all such items as are mentioned in Part B hereof shall be protected, reclaimed or preserved from damage.

Topsoil

Strip all topsoil from all such areas as is necessary to construct the work or as is shown on the drawings and stockpile as directed for future use. The topsoil will remain in the ownership of Logan Homes.

Before any fill is placed the subgrade shall be inspected and approved by Logan Homes (or its nominated consultant).

Under areas to be metalled and paved, excavate down to subgrade level and trim off a true, even surface.

Sound material from the excavations may, where approved, be used for building up low areas and yards, etc., but not under building foundations or floor slabs.

Imported Filling

All such imported fill shall be fit for the purpose for which it is intended and where the work is under the observation of Logan Homes (or its nominated consultant) then it is to be to the approval of Logan Homes (or its nominated consultant).

Unsuitable Subgrade

Where any subgrade materials are unstable or have insufficient strength to carry the loads required of them, the Subcontractor shall excavate and remove from the site all such material.

Compaction

All fill and backfill materials shall be placed and compacted in layers in accordance with NZ Building Code B1/M4.

All imported fill shall be truck-spread to avoid segregation of particle sizes or be remixed and machine-spread in the appropriate layer before compaction.

The whole of the area to be paved shall be compacted to optimum density and present a homogeneous and stable surface with no signs of movement or weaving under a 10-12 tonne roller. This requirement shall apply to the compaction of the surface or cut areas formed for pavement subgrades.

Hardfill

Except where permitted in yard areas, all bulk filling shall be hardfill, which shall be pitsand of an approved grading.

Compaction shall be by rolling with an 8-10 tonne smooth-wheel roller or approved vibrating equivalent, until a firm unyielding base is obtained.

Clay Fill

In yard areas where clay filling is permitted, material shall be placed and compacted in accordance with NZ Building Code B1/M4

Fill Under Floor Slab

In areas where the ground is required to support a floor slab backfilling shall be all in Clean Pitsand.

Unless instructed otherwise placing and compaction shall be in compliance with NZS 3604: Appendix E5.

Surface or Filled or Cut Areas

Under concrete slabs the finished level shall at no point be more than +0 or -25mm in height to the correct level. This shall include the depth of granular fill as required for concrete floor slab on ground.

[II] EXCAVATIONS

Foundations Generally

Construct, form and trim all foundation excavations true to shape, line, level and profile, as shown on the drawings. Allow sufficient workspace.

Unsuitable Foundations

Where unsuitable material is encountered in foundation excavations, the Subcontractor shall notify Logan Homes (or its nominated consultant) forthwith and seek its instructions upon how to proceed.

For the purpose of this clause "unsuitable material" shall include all topsoil, organic material and any soft, wet or uncompacted material whose bearing strength appears to be lower than that required to carry the design loadings.

Protection of Open Excavations

The Subcontractor shall at all times protect from damage and deformation all open excavations. The Subcontractor shall provide adequate means of ensuring that water is not allowed to accumulate or remain in any excavation and shall keep all such excavations clear of any rubbish, soil or other detritus.

Excavated Material

All excavated unsuitable material shall be disposed of off the site.

All other excavated material shall be stockpiled well clear of excavations and disposed of as directed.

Site Concrete

Site concrete for use in foundation excavations shall be as specified generally in the Concrete section of this specification, or as directed by Logan Homes (or its nominated consultant).

Slab Foundations

Refer to specification for Floor Slab on Ground Construction.

Backfilling Foundation and Walls

After completion of foundation footings and walls, other construction below elevation of final grades, removal of forms, inspection and approval of proofing membranes and prior to backfilling, clean the excavation of rubbish and debris. Use approved excavated material for backfilling. Place backfill in horizontal layers not exceeding 150mm in thickness and compact with approved machine tampers to a density not less than 95% of its maximum. Allow for anticipated settlement and shrinkage.

In the case of retaining walls backfill shall be of granular material between the angle of the cut area and the back face of the retaining wall. The type of granular material shall be as detailed on the drawings.

Protection of Adjacent Structures

Provide all necessary supports, shoring, strutting, underpinning, etc., to ensure the stability of structure, in or adjacent to the site until such times as the permanent work is completed.

Existing Services

Refer to the plans provided, to the "Project Information Memorandum", and to the relevant Territorial and Network Utility Operator for the positions of existing services.

Care shall be taken not to damage any existing drains that are to be retained but all superfluous drains shall be grubbed up and sealed. Protect any existing retained drains under the new building with concrete to the satisfaction of the Regional or Territorial Authority.

Live services damaged in any way shall be made good at the Subcontractor's expense. Should it be necessary to remove any services to make way for new work, then new alternatives shall be properly installed before disturbing the existing services which shall then be removed and suitably stopped off. No drains shall be removed without the approval of Logan Homes (or its nominated consultant).

Trenching

All trenches for new underground services shall be excavated true to line and gradient and shall be of the minimum width necessary to permit the convenient construction of the service for which it is intended.

Ensure a minimum of disturbance to surrounding ground during all trenching operations.

Backfilling of Trenches

Backfill all trenches under paved areas, foundations and concrete floor, with hardfill and all other trenches with material excavated therefrom and compact to the same standard as the surrounding subsoil. Where hardfill is placed over services, the services shall be protected from damage by a layer of sand or equivalent to a minimum depth of 300mm over the top of the services.

Do not backfill trenches before services have been inspected and tested.

Dispose of all surplus material off the site.

Reinstatement

Upon completion and acceptance of construction work the Subcontractor shall forthwith restore all surfaces as appropriate to the same condition as that which was immediately precedent to the commencement of the construction of the service utilities.

Acceptance

Upon completion of construction work on each service utility the Subcontractor shall obtain from the Network Utility Operator a certificate to the effect that the work complies with the requirements of the Building Consent and shall

supply a copy of that certificate to Logan Homes (or its nominated consultant).

CONCRETE WORKS:

General

Refer to Preliminary & General and other sections which may have clauses affecting work done under this section.

Scope

The work covered by this specification is to provide all materials and execute all work necessary for the construction of the concrete floor slabs and other concrete works as detailed in the drawings and as described in this specification.

NZ Building Code

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

B1	Structure
B2	Durability
E1	Surface Water
E2	External Moisture
F5	Construction & Demolition Hazards
G15	Solid Waste

Where applicable the following standard and related documents and subsequent amendments shall form part of this specification: NZS 3604:1999 Code of Practice for Light Timber Framed Buildings Not Requiring Specific Design.

Site

The site shall be levelled within an accuracy of ± 0 or ± 28 mm to a height of at least 200mm below the finished floor level in preparation for the granular fill.

Granular Base, Vapour Barrier, Reinforcement etc

The granular base, vapour barrier, reinforcement etc., shall comply with the requirements of the New Zealand Building Code as listed above and NZS 3604: Appendix E.

Surface Finish

The surface finish of all concrete slabs is to be in accordance with NZS 3114:1987 or as specified on the drawings. Consideration shall be taken of the type of covering to be applied to the slab - e.g. carpet, vinyl, etc

MASONRY CONSTRUCTION:General

Refer to Preliminary & General and other sections which may have clauses affecting work done under this section.

Scope

Work covered by this specification is to provide all materials and execute all work necessary for the completion of the masonry content of the contract work.

NZ Building Code

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

- B1 Structure - general
- B2 Durability
- E1 Surface Water
- E2 External Moisture
- F5 Construction & Demolition Hazards

Where applicable the following standard and related documents and subsequent amendments shall form part of this specification:

NZS 3604:1999 Code of Practice for Light Timber Framed Buildings Not Requiring Specific Design

Registered Masonry

Masonry constructed to this specification shall be carried out by or under the continuous supervision of a Registered Mason.

A Registered Mason is a mason who is accepted for registration by the New Zealand Masons' Registration Committee and is a holder of a current registration certificate.

Masonry construction done under the supervision of a Registered Mason shall be carried out by tradespeople skilled in masonry construction.

Workmanship

Workmanship inspections and details of construction, unless specifically detailed on the plans and in this specification, shall be in accordance with NZ Building Code B1, E1 and NZS 3604; Appendix F and shall be approved as conforming to good trade practice.

Brick Veneer

Brick Veneer construction shall be as described in NZ Building Code B1, E1 and NZS 3604 as applicable. Where required by these codes or their commentaries, horizontal, seismic and vertical movement details between the brick veneer and its supporting structure shall be provided.

Bracing

The Subcontractor shall ensure that all masonry walls are adequately braced during erection as required for safe construction against wind, earthquakes, etc. The work shall be sufficiently strong at all times to resist all strains and stresses to which it may be subjected.

Attendance on Other Trades

The Subcontractor (Masonry) shall provide chases, openings and raglets, and install anchors, bolts, hangers, etc., where required to accommodate the work of other trades.

Starter Bar Positioning for Concrete Masonry

Refer to the New Zealand Concrete Research Association Information Bulletin 1B 047 for the correct placement of starter bars.

Finishing Up

On completion of work, all surfaces shall be thoroughly cleaned down using methods approved by Logan Homes (or its nominated consultant). The site shall be cleared of plant and rubbish and left in first class order.

CARPENTER AND JOINER:General

Refer to Preliminary & General and other sections which may have clauses affecting work done under this section.

Scope

The work covered by this section includes all work shown on the plans and in the specifications normally executed by carpenters, including all temporary work, preparatory work, fixing of metalwork, hardware and finishing etc., and attendance, and setting out and finishing for other trades.

NZ Building Code

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

- B1 Structure - general
- B2 Durability
- C3 Spread of Fire
- C4 Structural Stability during Fire
- D1 Access Routes
- E1 Surface Water
- E2 External Moisture
- E3 Internal Moisture
- F2 Hazardous Building Materials
- F4 Safety from Falling
- F5 Construction & Demolition Hazards
- G1 Personal Hygiene
- G2 Laundering
- G3 Food Preparation and Prevention of Food Contamination
- G4 Ventilation
- G5 Interior environment
- G6 Airborne and impact sound
- G7 Natural Light
- H1 Energy Efficiency

Where applicable the following standard and related documents and subsequent amendments shall form part of this specification:

NZS 3604:1999 Code of Practice for Light Timber Framed Buildings Not Requiring Specific Design.

Setting Out

The Subcontractor shall be responsible for setting out of all carpentry work in this section. All dimensions to be checked and any discrepancy notified to Logan Homes (or its nominated consultant).

Workmanship

The whole of the work is to be carried out in a thoroughly tradesman-like manner to the true intent and meaning of the plans and this specification.

Stability of Structure

The Subcontractor shall in all cases use proper care and diligence in bracing and supporting all parts of the work. The Subcontractor shall also protect the work from damage by water. The work shall be self-supporting, absolutely strong and fully equal to resisting all strains and stresses to which it may be subjected.

Quality of Internal Wall Finishes

The Subcontractor shall provide a timber framed wall with an in-service wall lining surface appropriate to the general acceptable level of finish and decor of the wall surface specified in the Painter and Paperhanger and Fibrous Plasterer and Gibraltair Board Stoppers.

The Subcontractor shall also ensure that he installs wall linings in accordance with the manufacturer's recommendations for the level of finish specified for the final decoration of the wall.

Wall Lining

All wall linings and bracing panels shall be installed in accordance with the manufacturer's installation instructions in the locations indicated on the drawings.

INTERIOR LININGS AND EXTERIOR CLADDINGS: PART A

General

Refer to Preliminary & General and other sections which may have clauses affecting work done under this section.

Scope

The work required under this specification is the supply of all cladding and/or lining material and its installation in the building.

NZ Building Code

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

- B2 Durability
- C3 Spread of Fire
- E2 External Moisture
- F2 Hazardous Building Material
- G1 Personal Hygiene
- G3 Food Preparation and Prevention of Food Contamination
- G6 Airborne and impact sound
- H1 Energy Efficiency

Where applicable the following standard and related documents shall form part of this specification:

NZS 3604:1989 Code of Practice for Light Timber Framed Buildings Not Requiring Specific Design

Workmanship

All workmanship shall be in accordance with the best trade practice and shall be carried out by a skilled tradesman. The installer shall be a Plumber, Carpenter, Wallboard Fixer depending on the type of cladding or lining specified.

Trade Literature

The tradesman undertaking the installation of the cladding or lining material shall obtain the manufacturer's written installation instructions (in the form of trade literature or other) and shall adhere rigidly to those instructions. Installation instructions obtained shall be kept

on site and freely available to Logan Homes (or its nominated consultant), the Building Certifier and/or Territorial Authority Inspector.

Quality of materials

Cladding and lining materials shall be new, best quality materials, of the manufacture or brand specified. No seconds or second hand materials will be accepted.

Installation

The Subcontractor undertaking the cladding and/or lining work shall familiarise himself with the contents of the finishes schedules.

The Subcontractor shall satisfy himself that the framework provided by the carpenter is satisfactory for the support of the cladding or lining material and the final acceptability to Logan Homes (or its nominated consultant) of the surface it will provide.

Cladding and lining materials shall be installed in strict accordance with the manufacturer's specifications and to a grade of surface suitable to accept the specified finish.

Completion

On completion of work the Subcontractor is to tidy up, remove all rubbish associated with the work, and leave the work in 'as new' condition ready to accept the decorative or protective finish as specified.

PLUMBER: PART A

General

Refer to Preliminary & General and other sections which may have clauses affecting work done under this section.

Scope

The work required under this specification is the provision of all materials and execution of all works necessary for the proper completion of the plumbing work.

Provide and install all special items and equipment, etc., as detailed on the drawings and/or as specified in Part B of this specification.

NZ Building Code

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

- B2 Durability
- C1 Outbreak Of Fire
- C3 Spread of Fire
- E1 Surface Water
- E2 External Moisture
- G1 Personal Hygiene
- G2 Laundering
- G3 Food Preparation and Prevention of Food Contamination
- G4 Ventilation
- G5 Interior environment
- G6 Airborne and impact sound
- G10 Piped Services
- G12 Water Supplies
- G13 Foul Water
- G14 Industrial Liquid Waste
- G15 Solid Waste

Where applicable the following standard and related documents shall form part of this specification:

NZ Standard Plumbing & Drainage
AS Standard Plumbing & Drainage

Other Trades

The Subcontractor (Plumber) is to inspect the work of other trades against which material or fittings associated with the plumber's work are to be placed. Any defects or irregularities, which would prevent the satisfactory execution or permanency of the work, shall be notified to Logan Homes (or its nominated consultant). All unsatisfactory work is to be corrected before work proceeds.

Liaise with other trades as is necessary for the proper completion of their work and of the contract work as a whole.

Flashings, Waterproofing, and Rainwater Plumbing

All work shall be carried out by skilled plumbers, sheetmetal works and/or specialists to provide full weather tightness.

Sanitary Plumbing and Water Supply

The sanitary plumbing and water supply work shall be executed by licensed plumbers in accordance with the appropriate regulations and bylaws.

Workmanship

All work to be completed according to New Zealand Plumbing and Drainage Standards AS/NZS/3500

All piping to be installed in accurate lines and uniform grades. Piping to be arranged so as free from vibration, while allowing for thermal movement. Ensure no direct contact between incompatible metals and keep the number of joints to a minimum.

All water pipes are to be held under test at main pressure during construction.

Where possible, all piping and fittings are to be concealed within non-habitable enclosed spaces, while allowing inspection access.

Adjacent pipelines are to be at least 25mm apart and subfloor pipelines are to be at least 150mm clear of the ground.

Any piping, which passes through building elements, is to be adequately protected or sleeved.

Any exposed piping emerging from wall, floor or ceiling finishes is to be cover-plated with stainless steel or any non-ferrous metal. Any fixings for stays to vent pipes shall be sealed watertight at the point of penetration.



Vent pipes must be terminated with bird-proof vent caps made of the same material and colour as the vent.

Cold water taps are to be to the right of, or below the hot water taps.

Ensure installation of accessories and fittings necessary for the proper functioning of the plumbing systems, including valves, taps, outlets, pressure and temperature control devices, strainers, gauges and pumps.

Water heaters are to be located so as to allow maintenance or replacement without damaging adjacent structures, fixtures or finishes. The maximum water temperature at ablation outlets is to be 50 degrees Celsius.

On Completion

On completion of any freshwater pipeline plumbing, the pipes are to be flushed with water and left clean.

The subcontractor must tidy up, remove all rubbish associated with the work from the site and leave the work in "as new" condition, upon completion of the plumbing work.

PLUMBER: PART B

Workmanship

All workmanship shall be in accordance with the best trade practice and shall be carried out by licensed, skilled tradesman.

Water in Excavations

- Standard
- All work to be completed according to New Zealand Plumbing and Drainage Standards AS/NZ3500.

• Stormwater/Wastewater Excavations

During construction openings are to be provided with temporary covers to keep the systems free of debris and upon completion to be flushed and left clean.

All excavation trenches are to be kept free of water.

Drain branch pipelines are to be turned up so that down-pipe connections are 50mm above finished ground or pavement level.

- Subsoil drains.
- Connect subsoil drains to the stormwater drainage system.

Scope

Work covered by this Specification is to provide all materials and execute all work necessary for the completion of the building decoration and includes all painting, varnishing, staining and polyurethaning, etc., and paperhanging

NZ Building Code

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

B2	Durability
C3	Spread of Fire
E1	Surface Water
E2	External Moisture
E3	Internal Moisture
G1	Personal Hygiene
G5	Interior environment

Where applicable the following standard and related documents and subsequent amendments shall form part of this specification:

- NZS 7703:1985 The Painting of Buildings
- NZS 5807:1990 Industrial Identification by Colour Working or other coding
- BS 5252:1976 Standard Colour Range
- NZS 3604:1999 Code of Practice for Light Timber Framed Buildings Not Requiring Specific Design

Materials

Paint materials shall be delivered in sound and sealed containers, labelled clearly by the manufacturer stating:-

1. The type of product
2. Brand name
3. Directions for use
4. The Manufacturer's batch number

Inspection of Previous Work

The Subcontractor shall inspect the finish of all surfaces to be painted, varnished, papered, etc., and report to Logan Homes (or its nominated consultant) any deficiencies, defects, blemishes or contamination, which could affect the provision of a first class, permanent finish. Any defects shall be corrected.

Workmanship

- Standard
- All work shall be completed in accordance with the requirements of the New Zealand Building

Code and New Zealand Standard Painting practices NZC 7703 and manufacturer's instructions.

- Painting
- Before commencing any painting, all exposed hardware, fittings, furniture, switch plates, light fixtures and other fixtures shall be removed and carefully stored ready for refixing in "as new" condition on completion of the painting.

Clear timber finishes are to be completed prior to the commencement of opaque paint finishes in the same area.

Marks, paint spots and stains are to be progressively cleaned and any touch ups are to be done with the paint batch used in the original finish.

Apply the first coat of paint as soon as possible after preparation of the substrate and ensure that each coat or paint or clear finish is uniform in colour, gloss, thickness and texture and free of runs, sags, blisters or other discrepancies.

Apply a first coat to any exposed timber roof trim, timber doors (including tops and bottoms), window frames, trims and scribes prior to fixing.

Steel is to receive a priming coat of zinc based paint.

Timber and cork floors are to be finished with three (3) coats of clear floor sealer.

Paperhanging

All walls to be papered shall be sized or sealed after stopping.

All wallpapers shall be trimmed, cut straight and true, butt jointed and hung plumb with patterns correctly matched. Each drop of paper shall be hung in one piece over its entire length. Cut-in patches will not be accepted unless approved by Logan Homes (or its nominated consultant).

Paste shall be an approved brand of prepared paste with a fungicide incorporated by the manufacturer.

Completion

Remove all scaffolding, planks, rubbish and debris, thoroughly sweep up, clean windows both inside and out, replace all hardware removed during the course of the work and leave the premises ready for occupation.

Minimum trench width 450mm.
Proprietary perforated plastic pipes are to be used.

Filter fabric: use a polymeric fabric formed from a plastic yarn containing stabilisers to make the filaments resistant to ultraviolet light deterioration.

Filter sock: use a polyester permeable sock capable of retaining particles of 0.25mm size. The sock is to be securely fitted at each joint.

Backfilling of Trenches

Refer to "Earthworks and Excavation" section for specific requirements relating to backfilling under floor slabs, foundations and pavement areas.

Trenches shall not be backfilled until inspected and approved by the Territorial Authority Inspector or the Building Certifier or Logan Homes' nominated Consultant, and any defects made good.

The Subcontractor shall ensure that the required "as-built" measurements are obtained for the Territorial Authority prior to backfilling. A copy of such "as-built" shall also be provided for Logan Homes' records.

Backfill with 20mm nominal sized washed screenings to the following levels;

- to the underside at the bases of overlying structures such as pavements, slabs and channels
- to within 75mm of the finished surface of unpaved or landscaped areas.

Septic Tanks

Any septic tank is to be made of precast concrete or glass fibre reinforced plastic.

When a septic tank system is to be installed the type of tank and method of effluent disposal shall be as designed by a Registered Engineer.

PAINTER AND PAPERHANGER: PART A

General

Refer to Preliminary & General and other sections, which may have clauses affecting work done under this section.

ELECTRICIAN: PART A**General**

Where applicable the following standard and related documents and subsequent amendments shall form part of this specification:

Handbook to the Electrical Wiring Regulations: 1976
[Building Code reference G9VM1]

Scope

The electrical subcontract shall comprise the supply of all materials and fittings and the execution of all work necessary for the proper completion of the electrical installation.

The electrician shall give all necessary notices, obtain all permits and pay all fees or charges as required.

NZ Building Code

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

B2 Durability
C3 Spread of Fire
F3 Hazardous Substances and processes
G5 Interior environment

Handbook to the Electrical Wiring Regulations: 1976
[Building Code reference G9VM1]

Liaison With Other Trades

The Subcontractor (Electrical) shall liaise with the carpenter and other trades as necessary for the correct placement of slots, chases, and holes in concrete and concrete blockwork and all noggings and blockings in timber stud walls.

Circuit Wiring

Circuit wiring shall be carried out with concealed TPS cables.

Wiring in concrete and concrete blockwork shall be TPS cables run through PVC conduit.

Interior Lighting

The placement of light fittings shall be as shown on the plans and/or as specified in Part B of this specification.

Where no lighting plan is provided the placement of light fittings and illumination from such fittings shall be in accordance with the requirements of the New Zealand Building Code Approved Documents. The design shall be undertaken by a person competent in the field of lighting design.

Switches, Sockets, Roses, etc

All switches, sockets and ceiling roses shall be of approved manufacture. Where no colour has been specified in Part B of this section then fittings shall be white unless directed otherwise.

Responsibility for Correct Completion

Where any work does not comply with the drawings and this specification the Subcontractor shall correct such non-complying work at the Subcontractor's own expense.

Testing and Completion of Work

The Subcontractor shall carry out all testing as required by Regulations and the Network Utility Authority. The electrical work shall be deemed completed when all requirements of the regulations and this specification have been met in full and the installation passed by the Network Utility Authority's Inspector.

ROOFER: PART A
(Incorporating Concrete Roof Tiles, and Metal Wall Claddings)**General**

Refer to Preliminary & General and other sections which may have clauses affecting work done under this section.

Scope

The work covered by this section comprises the supply of all the materials and execution of all works described on the plans and in the specifications necessary to complete the roofing work.

The Subcontractor (Roofer) shall provide lights, guards, fencing and notices, etc., as may be necessary for the protection of the roofing work and for the protection of the public.

NZ Building Code

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

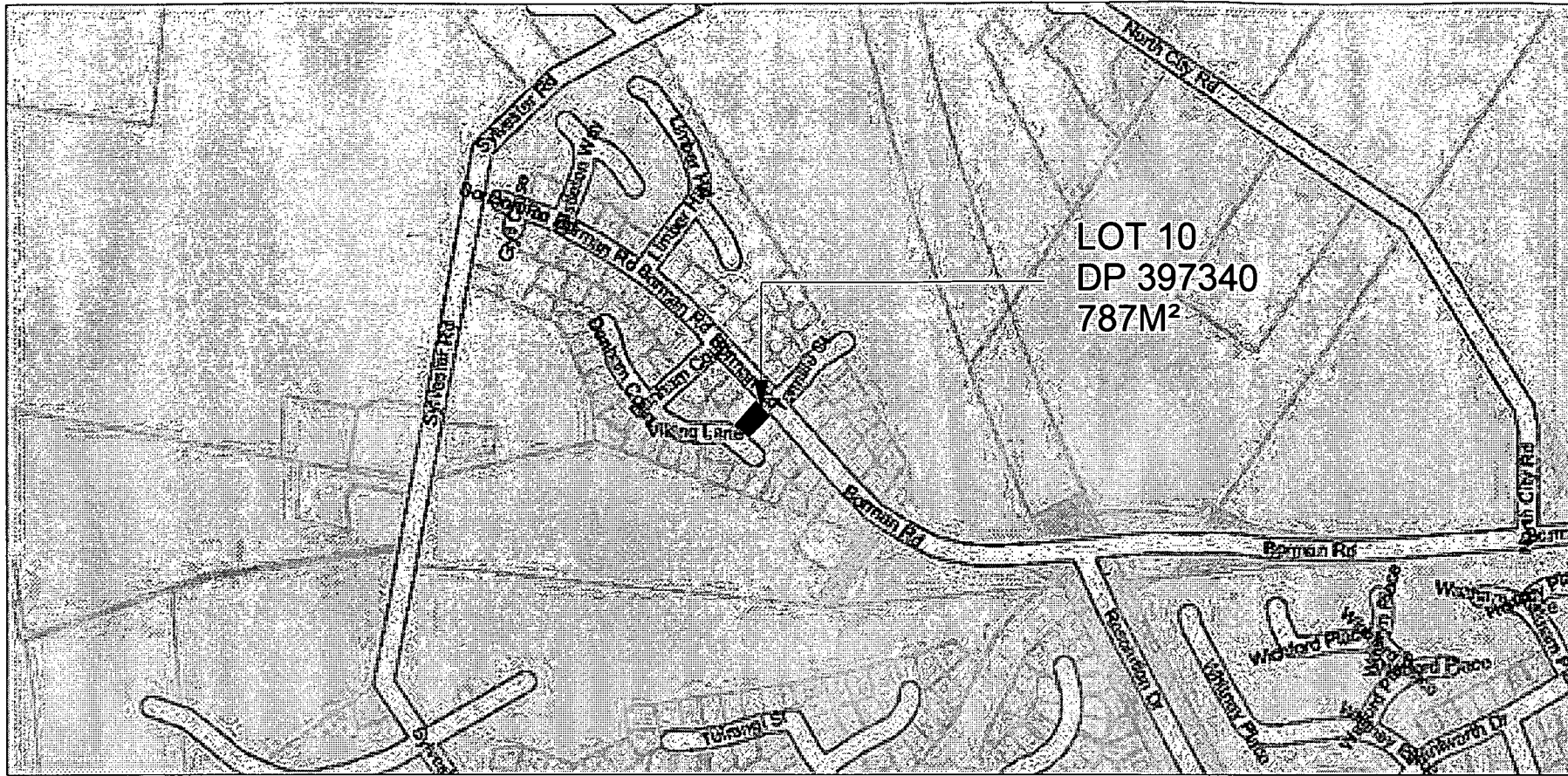
B2 Durability
C3 Spread of Fire
E1 Surface Water
E2 External Moisture
E3 Internal Moisture
G4 Ventilation
G12 Water Supplies

Where applicable the following standard and related documents and subsequent amendments shall form part of this specification:

NZS 3604:1999 Code of Practice for Light Timber Framed Buildings Not Requiring Specific Design

Workmanship

All workmanship shall be in accordance with the best trade practice and shall be carried out by licensed, skilled tradesman.



HAMILTON CITY COUNCIL
APPROVED
SUBJECT TO CONDITIONS
TO BE KEPT ON SITE

Logan Homes Limited
P O Box 12467
HAMILTON

Phone 07 855 5800
Fax 07 855 2030
Email
info@loganhomes.co.nz

All plans and specifications, concepts and drawings are subject to copyright and cannot be copied or used in anyway without the express permission of Logan Homes Limited.

CLIENT

PROJECT

**NEW
RESIDENCE**

SITE

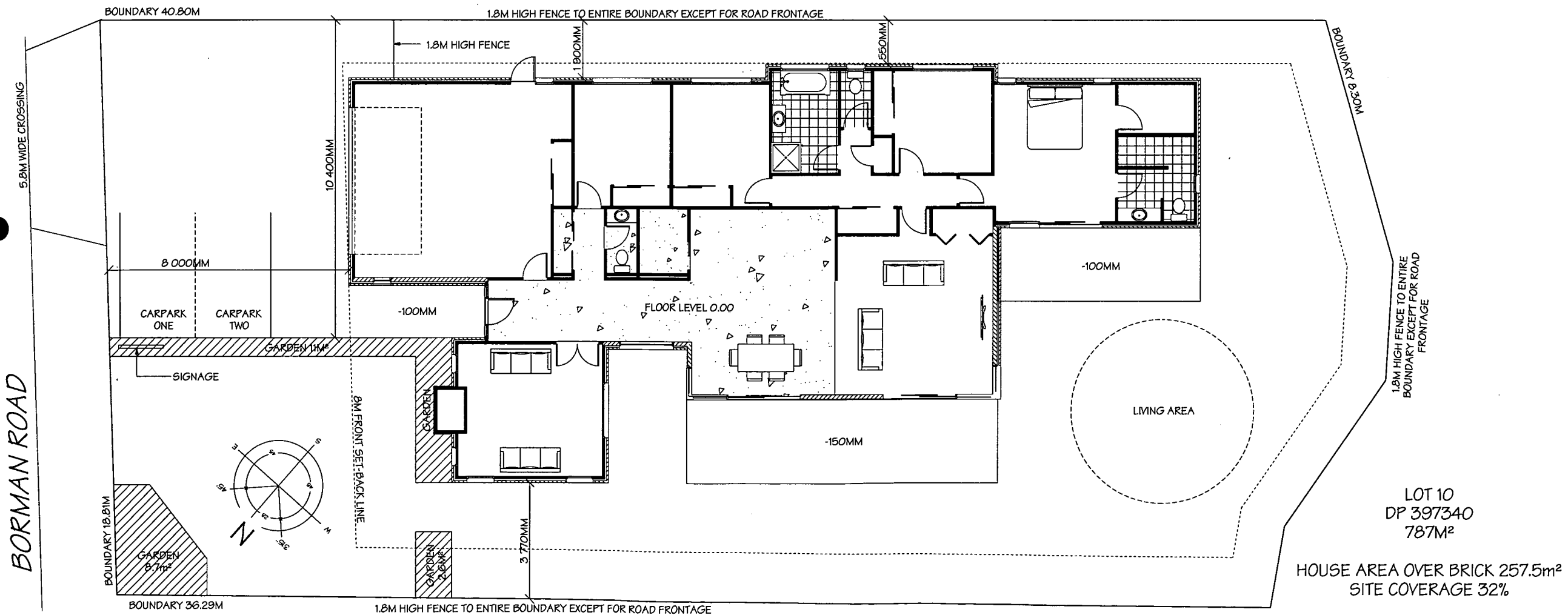
**LOT 10
GLAISDALE
HAMILTON**

CONSENT SET

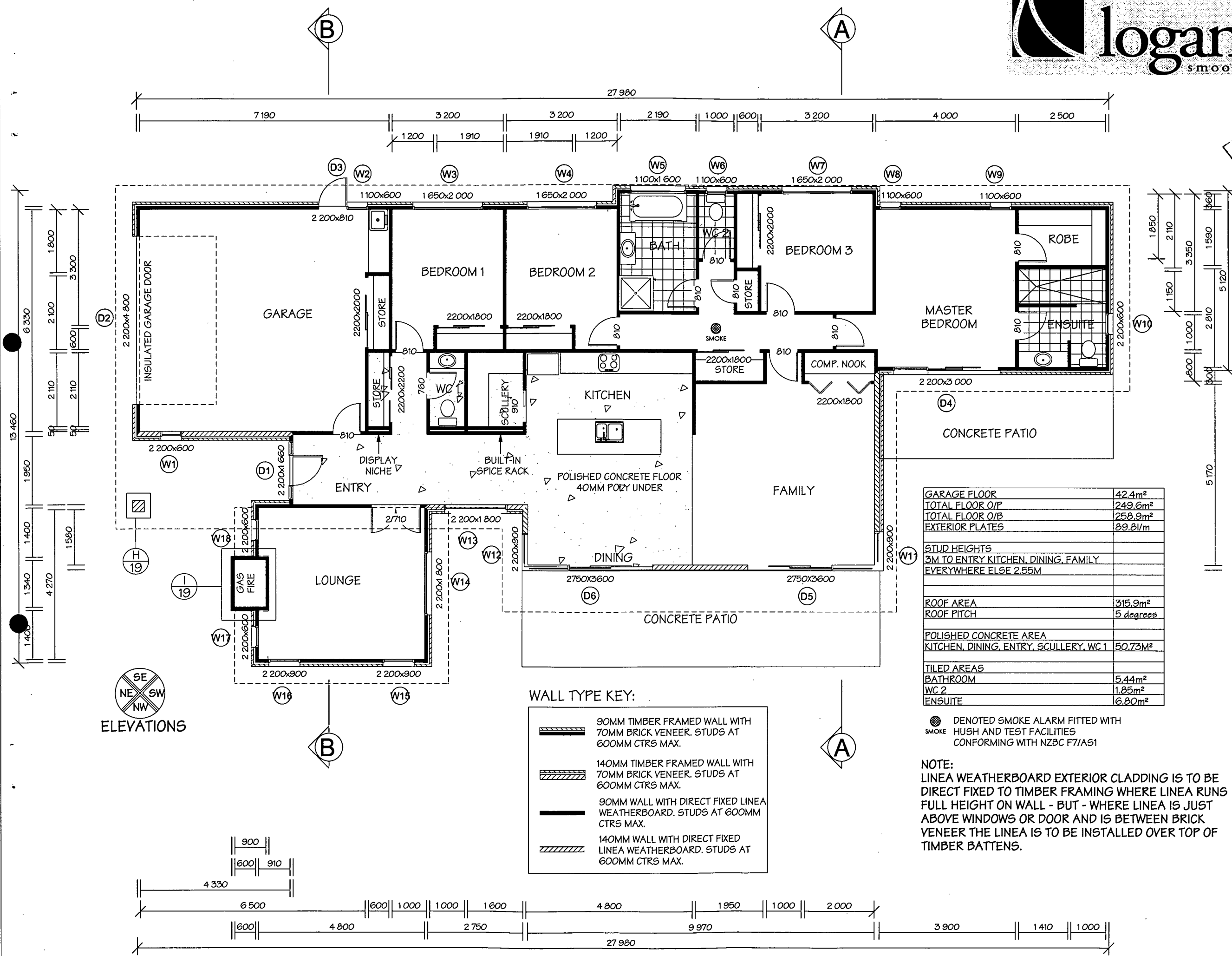
**LOCATION PLAN/
SITE PLAN**

Scale : 1:150 Date: 8/14/2009

Drawn By: M Hawken



HAMILTON CITY COUNCIL
APPROVED
SUBJECT TO CONDITIONS
TO BE KEPT ON SITE



GARAGE FLOOR	42.4m ²
TOTAL FLOOR O/P	249.6m ²
TOTAL FLOOR O/B	258.9m ²
EXTERIOR PLATES	89.81/m
STUD HEIGHTS	
3M TO ENTRY KITCHEN, DINING, FAMILY	
EVERYWHERE ELSE 2.55M	
ROOF AREA	
ROOF AREA	315.9m ²
ROOF PITCH	5 degrees
POLISHED CONCRETE AREA	
KITCHEN, DINING, ENTRY, SCULLERY, WC 1	50.73m ²
TILED AREAS	
BATHROOM	5.44m ²
WC 2	1.85m ²
ENSUITE	6.80m ²

Logan Homes Limited
P O Box 12467
HAMILTON
Phone 07 855 5800
Fax 07 855 2030
Email info@loganhomes.co.nz

All plans and specifications, concepts and drawings are subject to copyright and cannot be copied or used in anyway without the express permission of Logan Homes Limited.

CLIENT

PROJECT

NEW RESIDENCE

SITE

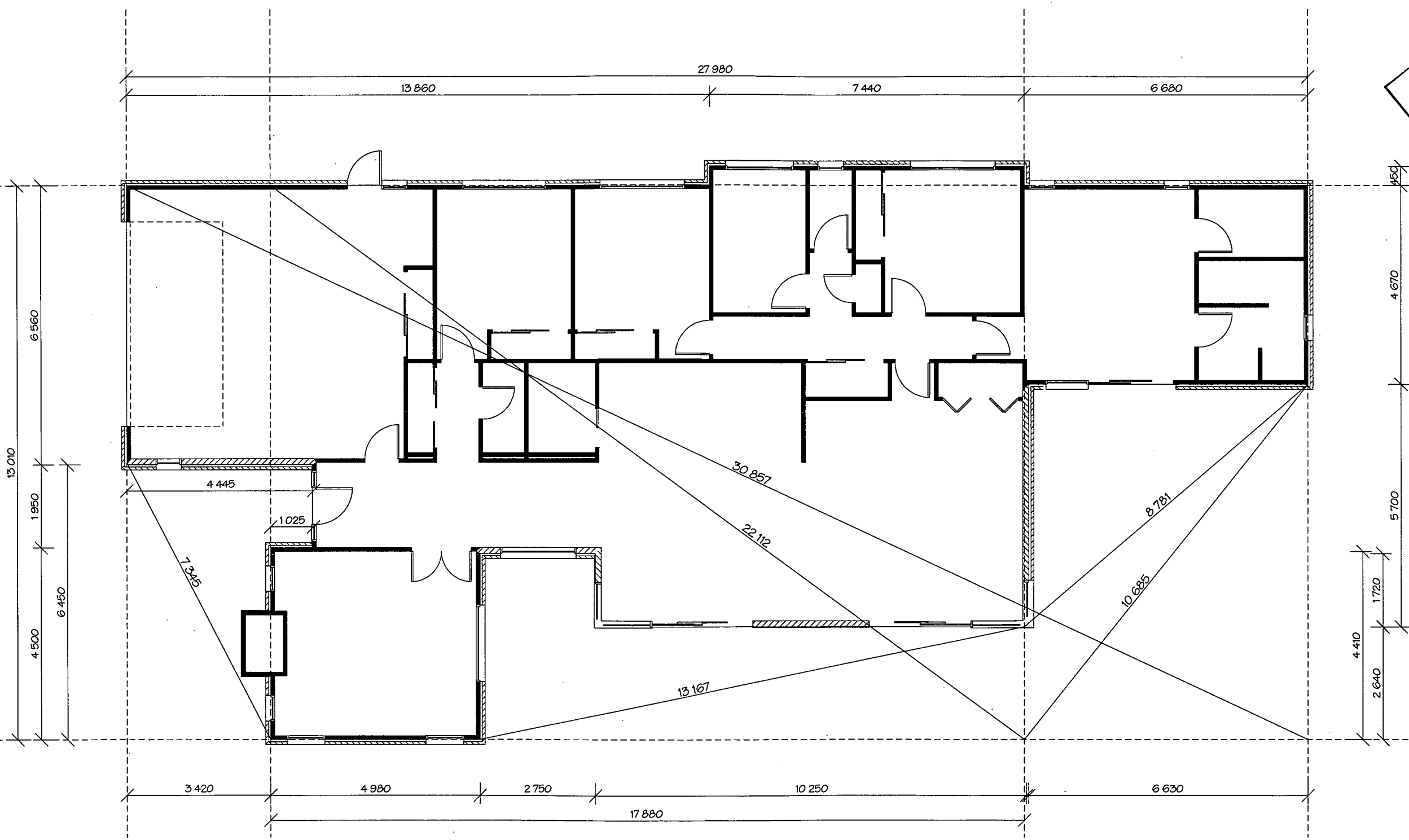
LOT 10 GLAISDALE HAMILTON

CONSENT SET

FLOOR PLAN

Scale: 1:100 Date: 8/14/2009

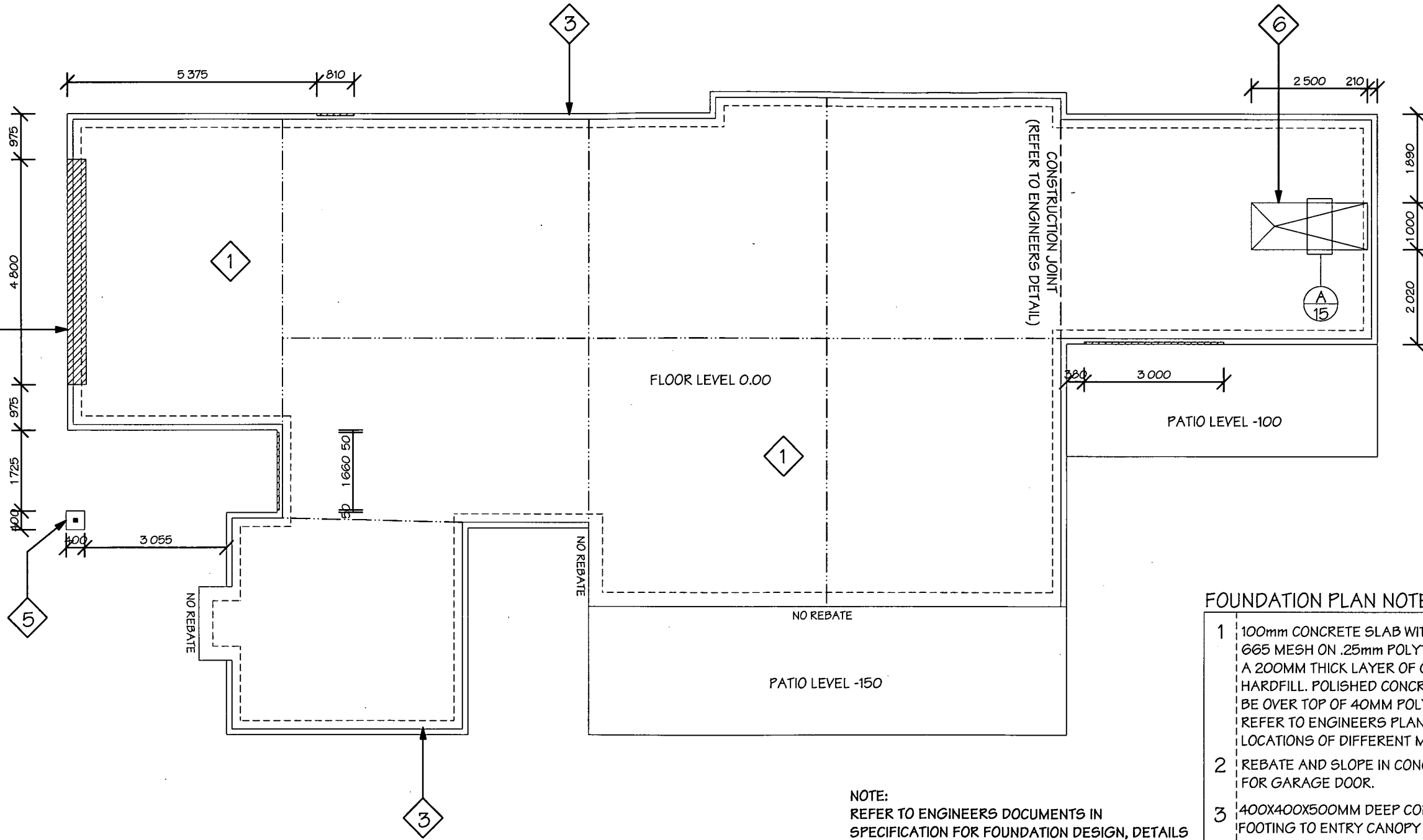
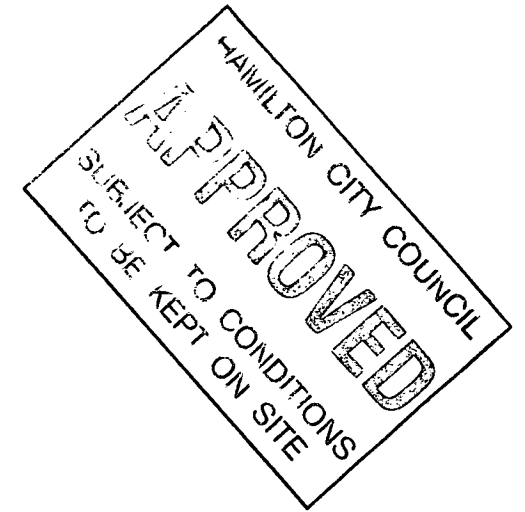
Drawn By: M Hawken



NOTE:
ALL DIMENSIONS ARE TO EXTERIOR FACE OF TIMBER FRAMING.

HAMILTON CITY COUNCIL
APPROVED
 SUBJECT TO CONDITIONS
 TO BE KEPT ON SITE

Logan Homes Limited P O Box 12467 HAMILTON Phone 07 855 5800 Fax 07 855 2030 Email info@loganhomes.co.nz	
All plans and specifications, concepts and drawings are subject to copyright and cannot be copied or used in anyway without the express permission of Logan Homes Limited.	
CLIENT	
PROJECT	
NEW RESIDENCE	
SITE	
LOT 10 GLAISDALE HAMILTON	
CONSENT SET	
SET-OUT PLAN	
Scale :	Date:
1:100	8/14/2009
Drawn By:	
M Hawken	
<div style="font-size: 2em; font-weight: bold; float: right;">4</div>	
© Logan Homes LTD	



NOTE:
REFER TO ENGINEERS DOCUMENTS IN
SPECIFICATION FOR FOUNDATION DESIGN, DETAILS
AND CALCULATIONS.

MINIMUM COVER TO REINFORCING IS AS FOLLOWS:
AGAINST GROUND 75MM
AGAINST FORMWORK 50MM
TOP COVER TO MESH 30MM

FOUNDATION PLAN NOTES:

- 1 100mm CONCRETE SLAB WITH 663 AND 665 MESH ON .25mm POLYTHENE DPM ON A 200MM THICK LAYER OF COMPACTED HARDFILL. POLISHED CONCRETE AREA TO BE OVER TOP OF 40MM POLYSTYRENE. REFER TO ENGINEERS PLAN FOR LOCATIONS OF DIFFERENT MESH TYPES.
- 2 REBATE AND SLOPE IN CONCRETE FLOOR FOR GARAGE DOOR.
- 3 400X400X500MM DEEP CONCRETE FOOTING TO ENTRY CANOPY POST.
- 4 70MM STEP DOWN IN FLOOR SLAB FOR BUILT IN TILES SHOWER. REFER TO DETAIL FOR FURTHER INFORMATION.

--- SAWCUT SLAB AS SHOWN

Logan Homes Limited
P O Box 12467
HAMILTON

Phone 07 855 5800
Fax 07 855 2030
Email
info@loganhomes.co.nz

All plans and specifications, concepts and drawings are subject to copyright and cannot be copied or used in anyway without the express permission of Logan Homes Limited.

CLIENT

PROJECT

NEW RESIDENCE

SITE

LOT 10 GLAISDALE HAMILTON

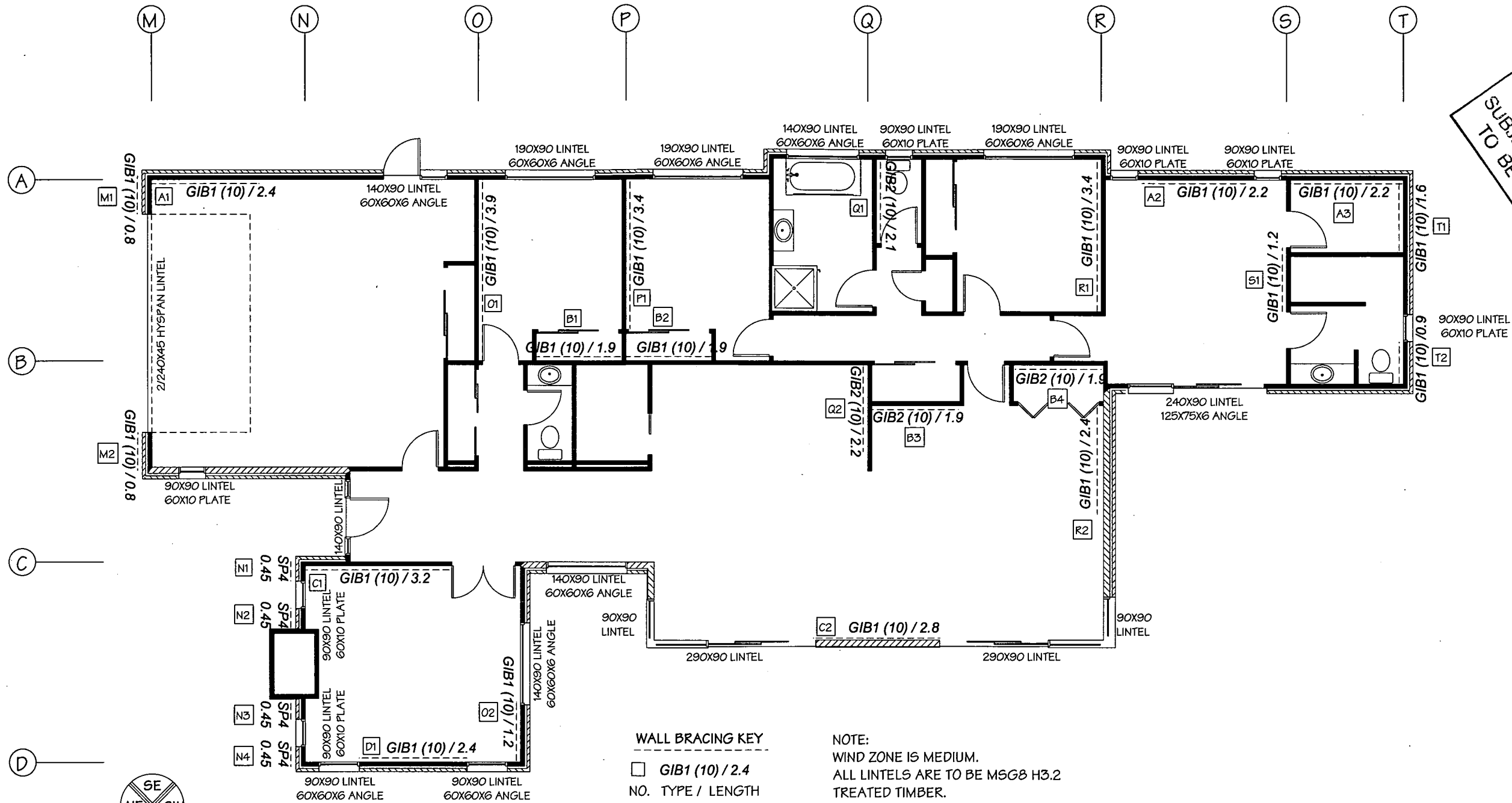
CONSENT SET

FOUNDATION PLAN

Scale : 1:100 Date: 8/14/2009

Drawn By: M Hawken

HAMILTON CITY COUNCIL
APPROVED
SUBJECT TO CONDITIONS
TO BE KEPT ON SITE



WALL BRACING KEY

□ GIB1 (10) / 2.4
NO. TYPE / LENGTH

NOTE:
WIND ZONE IS MEDIUM.
ALL LINTELS ARE TO BE MSG8 H3.2
TREATED TIMBER.



BUILDING ENVELOPE RISK MATRIX	
NORTH EAST ELEVATION	
RISK FACTOR	SCORE
WIND ZONE (PER NZS 3604)	0
NUMBER OF STOREYS	0
ROOF/WALL INTERSECTION DESIGN	0
EAVES WIDTH	1
ENVELOPE COMPLEXITY	1
DECK DESIGN	0
TOTAL SCORE	2

BUILDING ENVELOPE RISK MATRIX	
SOUTH EAST ELEVATION	
RISK FACTOR	SCORE
WIND ZONE (PER NZS 3604)	0
NUMBER OF STOREYS	0
ROOF/WALL INTERSECTION DESIGN	0
EAVES WIDTH	1
ENVELOPE COMPLEXITY	1
DECK DESIGN	0
TOTAL SCORE	2

BUILDING ENVELOPE RISK MATRIX	
SOUTH WEST ELEVATION	
RISK FACTOR	SCORE
WIND ZONE (PER NZS 3604)	0
NUMBER OF STOREYS	0
ROOF/WALL INTERSECTION DESIGN	0
EAVES WIDTH	1
ENVELOPE COMPLEXITY	1
DECK DESIGN	0
TOTAL SCORE	2

BUILDING ENVELOPE RISK MATRIX	
NORTH WEST ELEVATION	
RISK FACTOR	SCORE
WIND ZONE (PER NZS 3604)	0
NUMBER OF STOREYS	0
ROOF/WALL INTERSECTION DESIGN	3
EAVES WIDTH	1
ENVELOPE COMPLEXITY	1
DECK DESIGN	0
TOTAL SCORE	5

Logan Homes Limited
P O Box 12467
HAMILTON
Phone 07 855 5800
Fax 07 855 2030
Email info@loganhomes.co.nz

All plans and specifications, concepts and drawings are subject to copyright and cannot be copied or used in anyway without the express permission of Logan Homes Limited.

CLIENT

PROJECT

NEW RESIDENCE

SITE

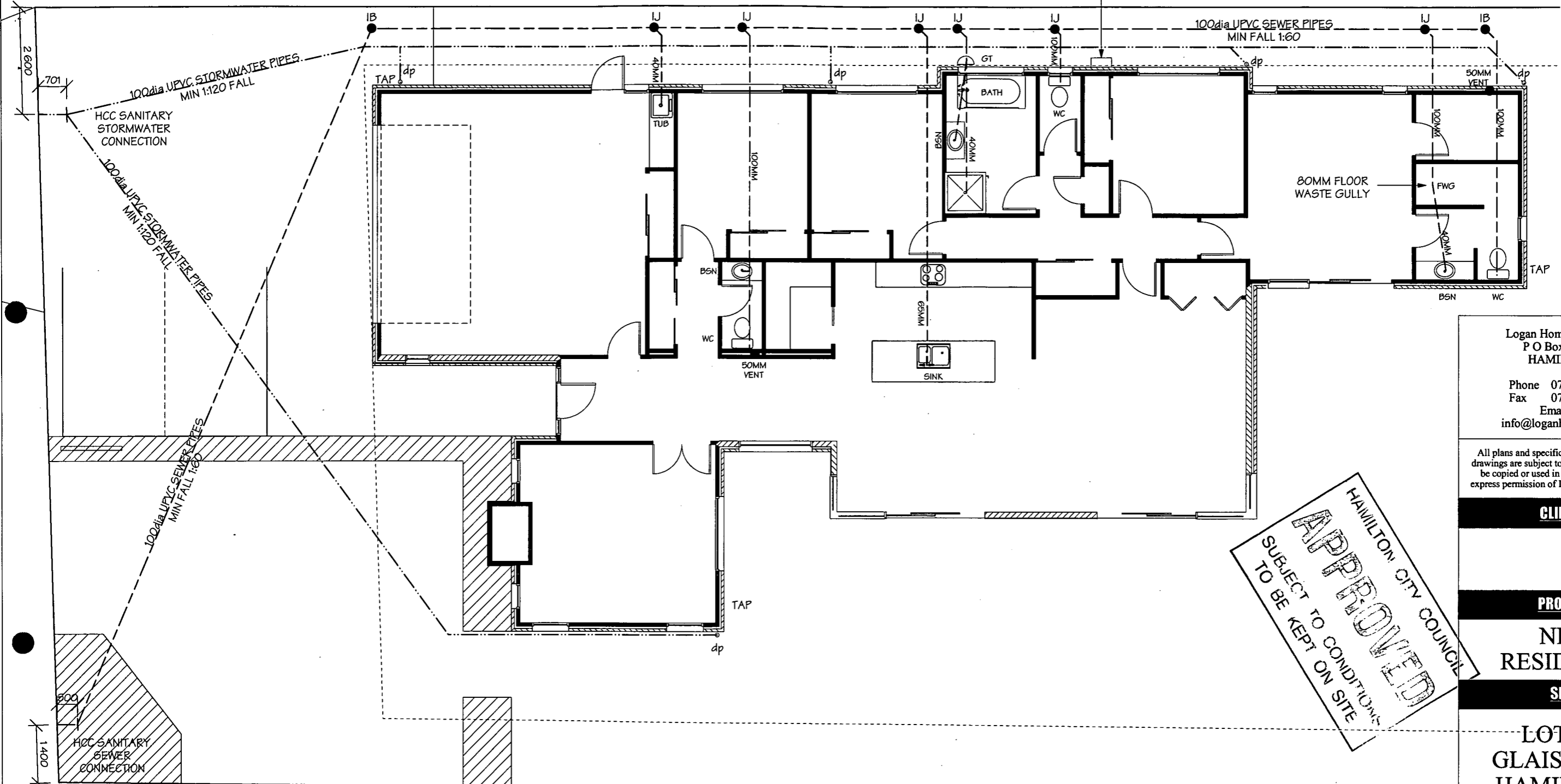
**LOT 10
GLAISDALE
HAMILTON**

CONSENT SET

BRACING PLAN

Scale: 1:100 Date: 8/14/2009

Drawn By: M Hawken



Logan Homes Limited
P O Box 12467
HAMILTON
Phone 07 855 5800
Fax 07 855 2030
Email info@loganhomes.co.nz

All plans and specifications, concepts and drawings are subject to copyright and cannot be copied or used in anyway without the express permission of Logan Homes Limited.

HAMILTON CITY COUNCIL
APPROVED
 SUBJECT TO CONDITIONS
 TO BE KEPT ON SITE

CLIENT
PROJECT
NEW RESIDENCE
SITE
LOT 10 GLAISDALE HAMILTON

CONSENT SET
DRAINAGE PLAN

Scale : 1:100
Date: 8/14/2009
Drawn By: M Hawken

STORMWATER DRAINAGE NOTES:

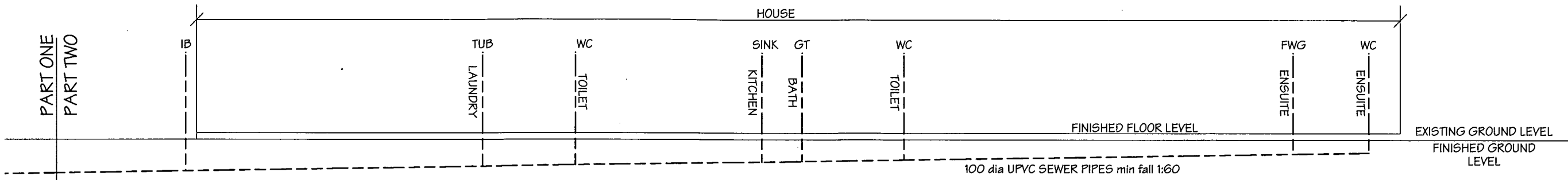
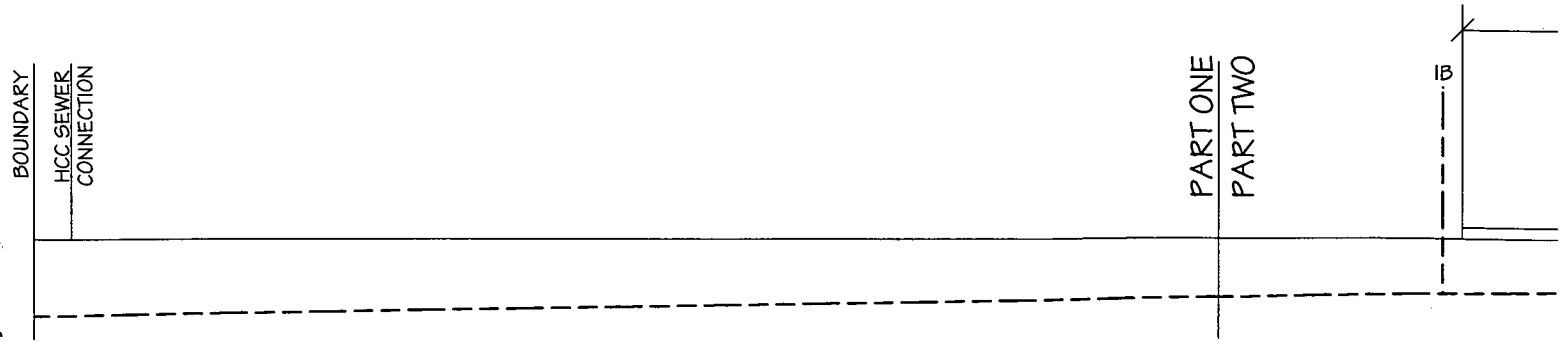
dp°	ALL DP 80mm UPVC
TAP	EXTERIOR WALL MOUNTED GARDEN TAPS
100 dia UPVC STORMWATER PIPES	

MINIMUM GRADIENT OF DISCHARGE PIPES:	
32MM	1:20 MIN FALL
40MM	1:40 MIN FALL
65MM	1:40 MIN FALL
80M	1:60 MIN FALL
100MM	1:60 MIN FALL

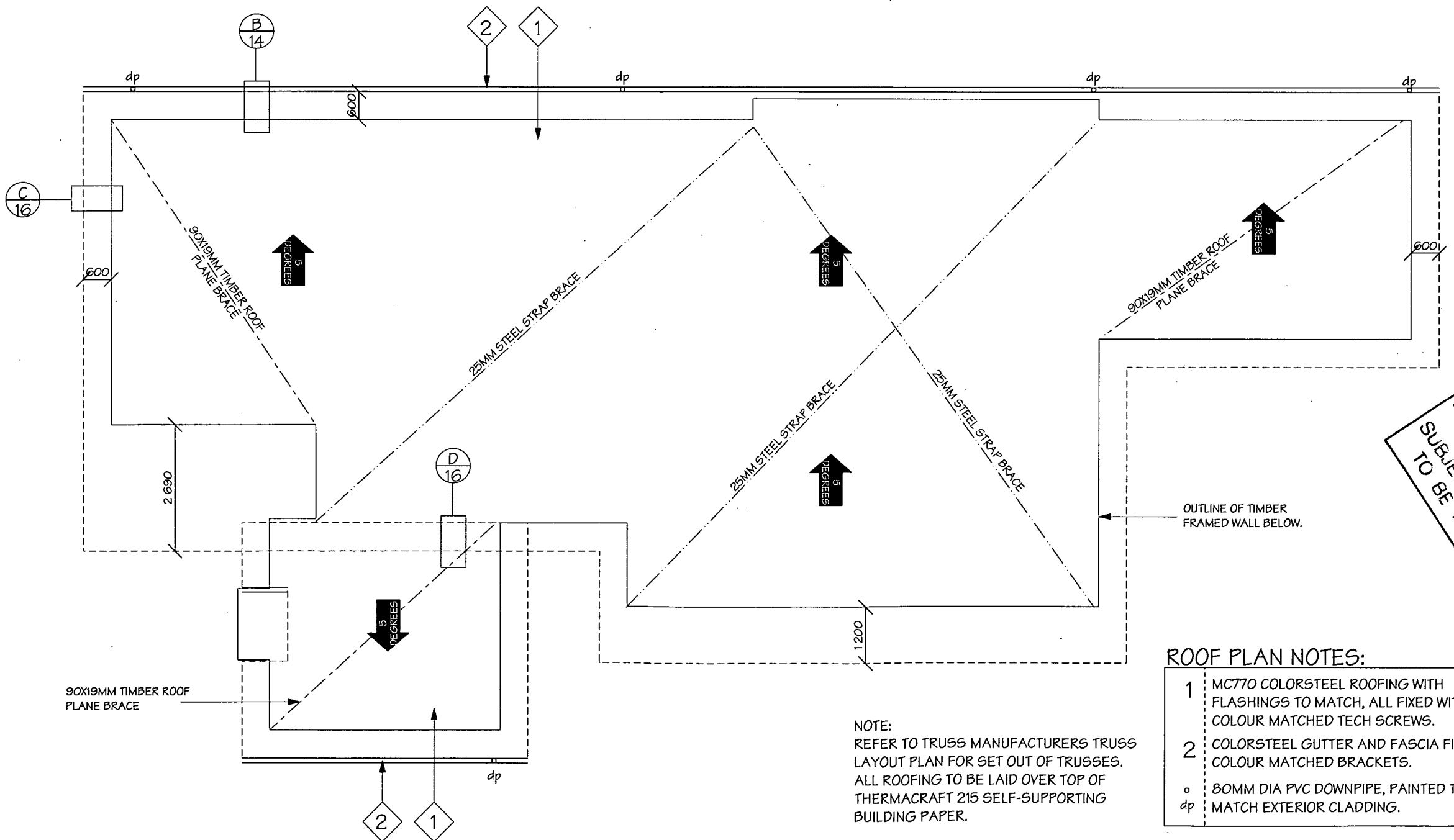
SANITARY DRAINAGE NOTES:

TV	TERMINAL VENT. TO COMPLY WITH NZBC G13.
GT	GULLY TRAP TO COMPLY WITH NZBC G13
IB	INSPECTION BEND. TO COMPLY WITH NZBC G13.
IJ	INSPECTION JUNCTION. TO COMPLY WITH NZBC G13.

SANITARY DRAINAGE TO AS/NZS 3500



DRAINAGE SECTION 1:100



NOTE:
REFER TO TRUSS MANUFACTURERS TRUSS LAYOUT PLAN FOR SET OUT OF TRUSSES. ALL ROOFING TO BE LAID OVER TOP OF THERMACRAFT 215 SELF-SUPPORTING BUILDING PAPER.

- ROOF PLAN NOTES:**
- 1 MC770 COLORSTEEL ROOFING WITH FLASHINGS TO MATCH, ALL FIXED WITH COLOUR MATCHED TECH SCREWS.
 - 2 COLORSTEEL GUTTER AND FASCIA FIXED WITH COLOUR MATCHED BRACKETS.
 - o 80MM DIA PVC DOWNPIPE, PAINTED TO MATCH EXTERIOR CLADDING.

HAMILTON CITY COUNCIL
APPROVED
SUBJECT TO CONDITIONS TO BE KEPT ON SITE

Logan Homes Limited
P O Box 12467
HAMILTON
Phone 07 855 5800
Fax 07 855 2030
Email info@loganhomes.co.nz

All plans and specifications, concepts and drawings are subject to copyright and cannot be copied or used in anyway without the express permission of Logan Homes Limited.

CLIENT

PROJECT

NEW RESIDENCE SITE

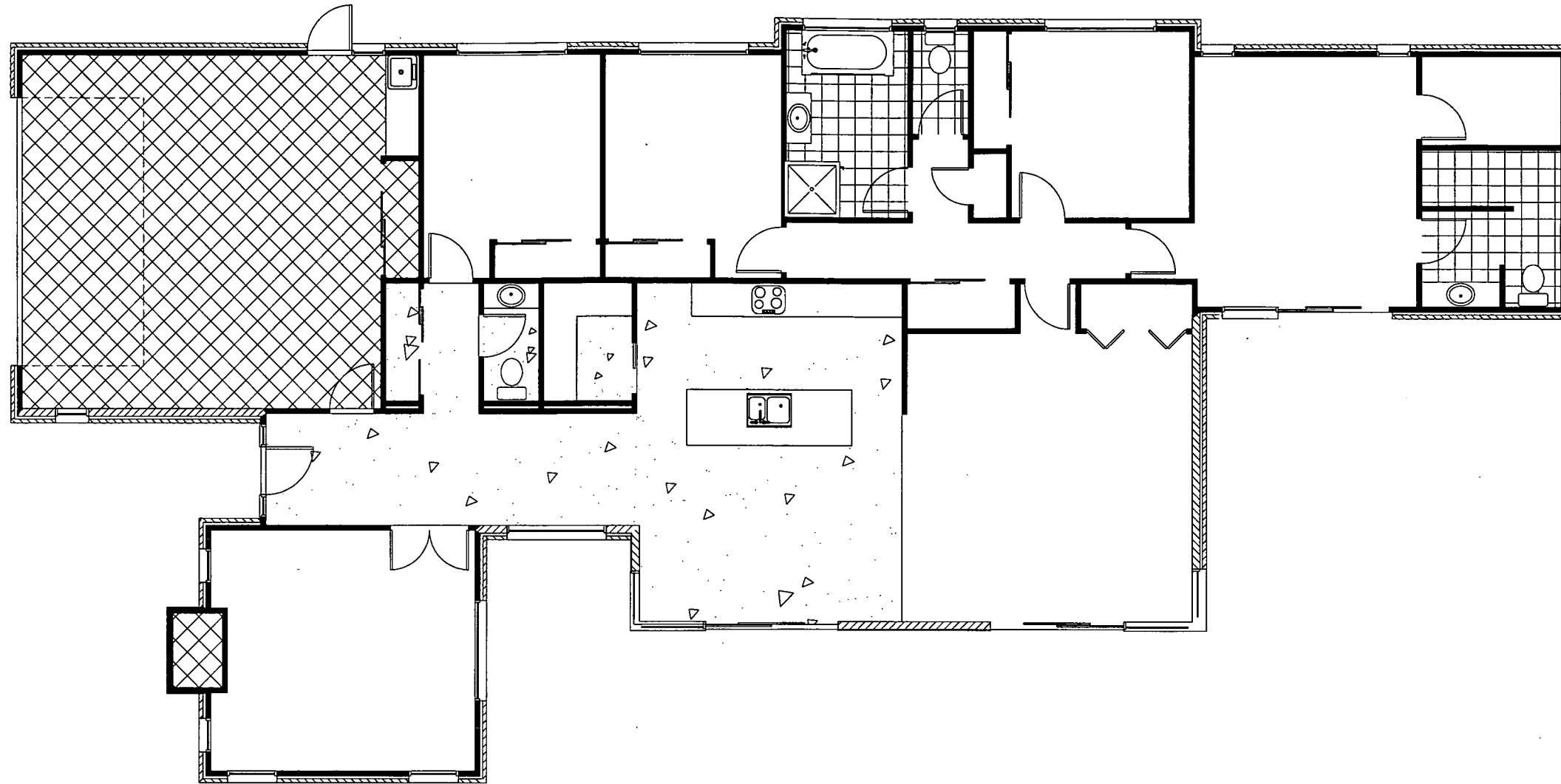
LOT 10 GLAISDALE HAMILTON

CONSENT SET

ROOF PLAN/ DRAINAGE SECTION





Scale: 1:100 Date: 8/14/2009
Drawn By: M Hawken

© Logan Homes LTD **8**



HAMILTON CITY COUNCIL
APPROVED
SUBJECT TO CONDITIONS
TO BE KEPT ON SITE

FLOORING PLAN NOTES:

-  AREA TO FLOOR TO BE TILED.
-  AREA OF FLOOR TO REMAIN AS STANDARD CONCRETE FINISH (GARAGE).
-  AREA TO FLOOR TO BE POLISHED CONCRETE OVER 40MM POLYSTYRENE.
-  ALL REMAINING UNHATCHED SPACES TO BE CARPETED.

Logan Homes Limited
P O Box 12467
HAMILTON
Phone 07 855 5800
Fax 07 855 2030
Email
info@loganhomes.co.nz

All plans and specifications, concepts and drawings are subject to copyright and cannot be copied or used in anyway without the express permission of Logan Homes Limited.

CLIENT

PROJECT

**NEW
RESIDENCE**

SITE

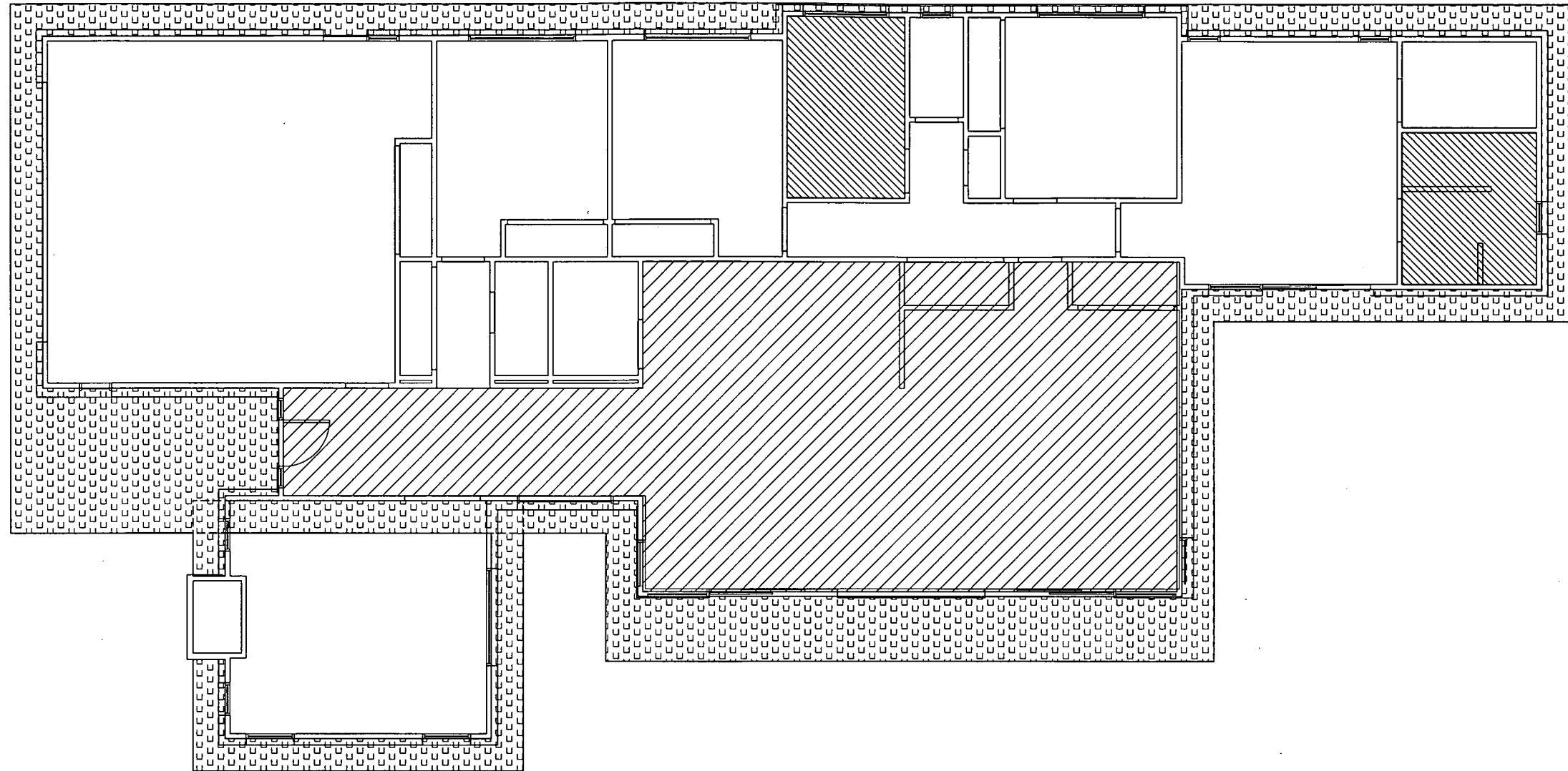
**LOT 10
GLAISDALE
HAMILTON**

CONSENT SET

**FLOOR COVERINGS
PLAN**

Scale : 1:100 Date: 8/14/2009

Drawn By:
M Hawken



HAMILTON CITY COUNCIL
APPROVED
 SUBJECT TO CONDITIONS
 TO BE KEPT ON SITE

Logan Homes Limited
 P O Box 12467
 HAMILTON
 Phone 07 855 5800
 Fax 07 855 2030
 Email info@loganhomes.co.nz

All plans and specifications, concepts and drawings are subject to copyright and cannot be copied or used in anyway without the express permission of Logan Homes Limited.

CLIENT

PROJECT

NEW RESIDENCE

SITE

**LOT 10
 GLAISDALE
 HAMILTON**





CONSENT SET

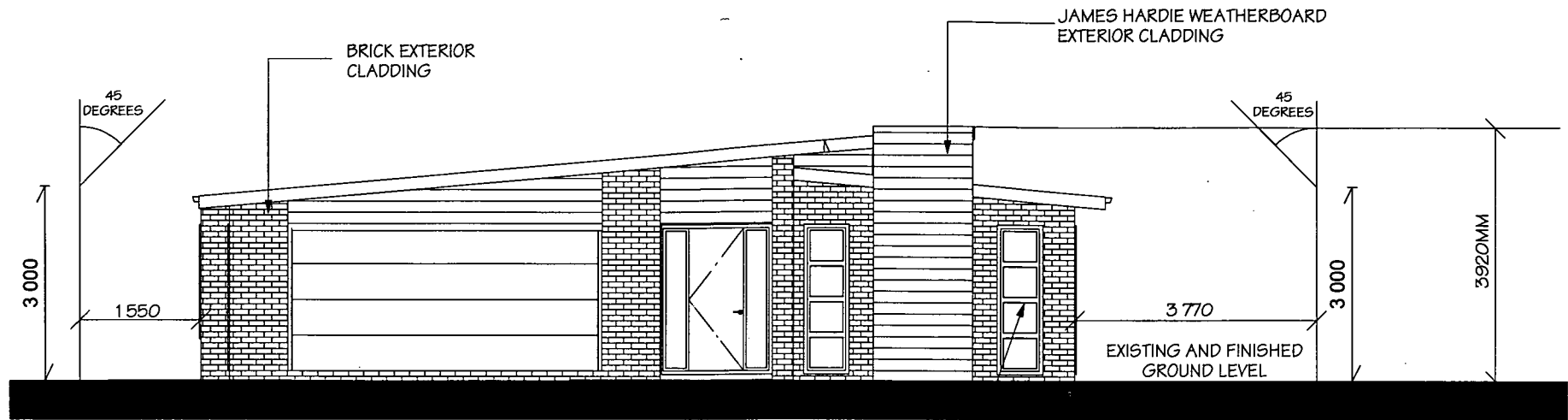
CEILING FINISHES PLAN

Scale : 1:100 Date: 8/14/2009

Drawn By: M Hawken

CEILING PLAN NOTES:

-  13mm STANDARD FLAT CEILING
2550mm STUD
-  13mm STANDARD GIB FLAT CEILING
3020mm STUD
-  13mm AQUALINE GIB FLAT CEILING
2570mm STUD
-  4.5mm HARDIES SLOPING SOFFIT



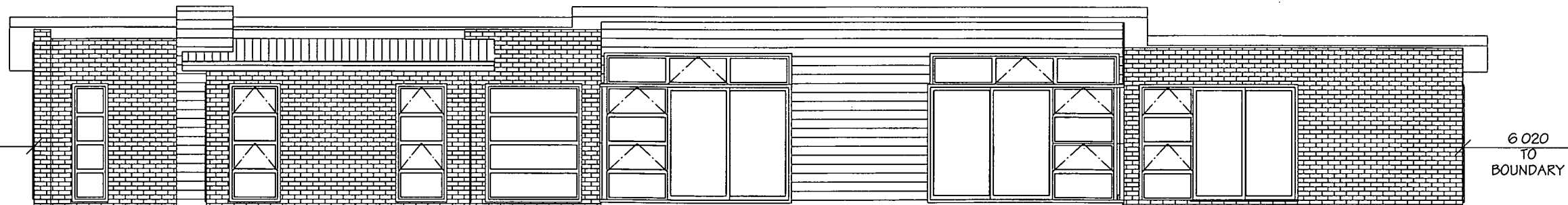
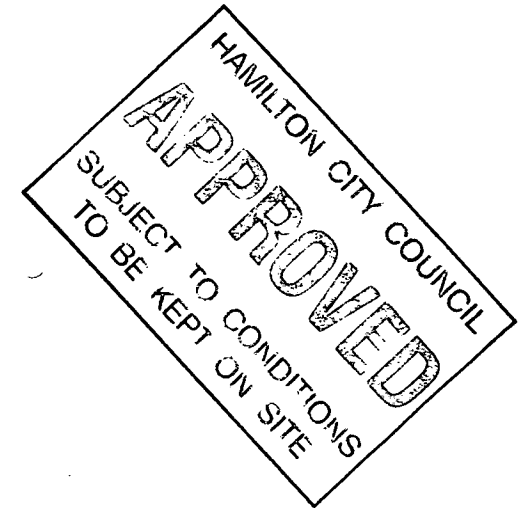
NORTH EAST ELEVATION

D1 2200X4800
D2 2200X1660
W1 2200X600
W3 2200X600
W4 (HIDDEN) 2200X900

DOUBLE GLAZED POWDER COATED ALUMINIUM WINDOW AND DOOR JOINERY

TOTAL WALL AREA	48.77M ²
TOTAL WINDOW AREA	8.27M ²
TOTAL BRICK AREA	14.73M ²
TOTAL WEATHERBOARD AREA	15.21M ²
GARAGE DOOR AREA	10.56M ²

NOTE:
INCLUDES HIDDEN WALL AREA AND CHIMNEY.
EXCLUDES ENTRY POST.



NORTH WEST ELEVATION

W1 2200X600
W2 2200X900
W3 2200X900
W4 2200X1800
D1 2750X3600
D2 2750X3600
D3 2200X3000

TOTAL WALL AREA	100.23M ²
TOTAL WINDOW AREA	35.64M ²
TOTAL BRICK AREA	43.71M ²
TOTAL WEATHERBOARD AREA	20.88M ²

NOTE:
INCLUDES HIDDEN WALL AREA AND CHIMNEY.
EXCLUDES ENTRY POST.

Logan Homes Limited
P O Box 12467
HAMILTON

Phone 07 855 5800
Fax 07 855 2030
Email info@loganhomes.co.nz

All plans and specifications, concepts and drawings are subject to copyright and cannot be copied or used in anyway without the express permission of Logan Homes Limited.

CLIENT

PROJECT

NEW RESIDENCE

SITE

LOT 10 GLAISDALE HAMILTON

CONSENT SET

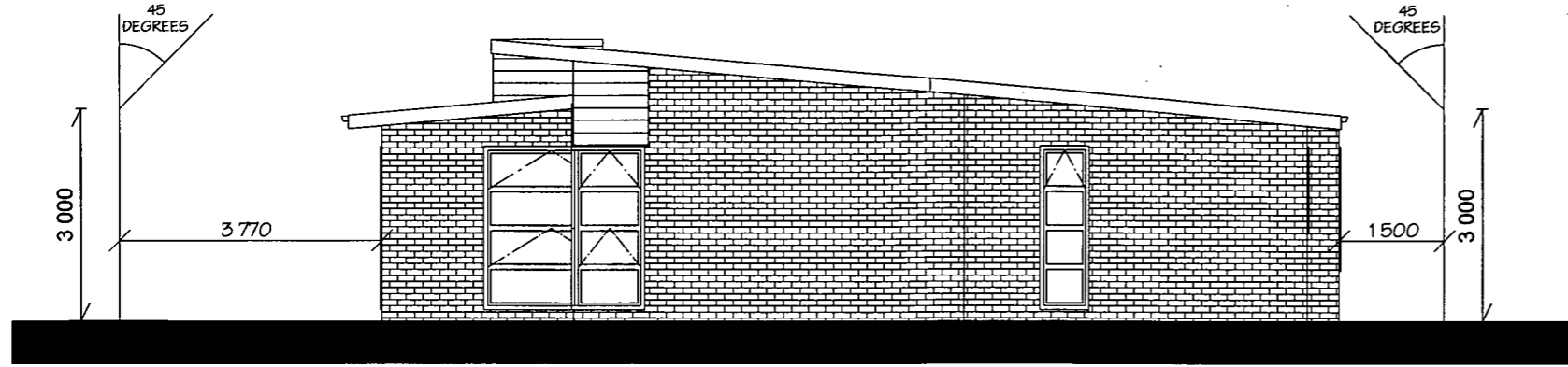
ELEVATIONS 1

Scale : 1:100 Date: 8/14/2009

Drawn By: M Hawken

© Logan Homes LTD **11**

HAMILTON CITY COUNCIL
 APPROVED
 SUBJECT TO CONDITIONS
 TO BE KEPT ON SITE



SOUTH WEST ELEVATION
 W1 2200X1800
 W2 2200X900
 W3 2200X600

TOTAL WALL AREA	49.62M ²
TOTAL WINDOW AREA	7.26M ²
TOTAL BRICK AREA	39.82M ²
TOTAL WEATHERBOARD AREA	2.54M ²

NOTE:
 INCLUDES HIDDEN WALL AREA AND CHIMNEY.
 EXCLUDES ENTRY POST.

Logan Homes Limited
 P O Box 12467
 HAMILTON
 Phone 07 855 5800
 Fax 07 855 2030
 Email
 info@loganhomes.co.nz

All plans and specifications, concepts and drawings are subject to copyright and cannot be copied or used in anyway without the express permission of Logan Homes Limited.

CLIENT

PROJECT

NEW RESIDENCE

SITE

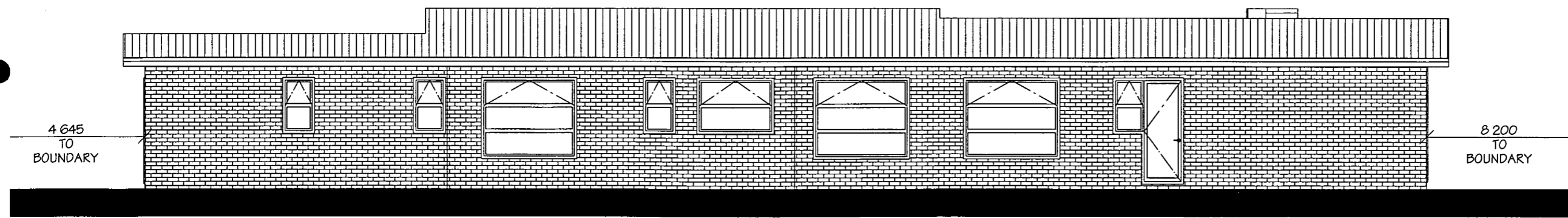
**LOT 10
 GLAISDALE
 HAMILTON**

CONSENT SET

ELEVATIONS 2

Scale : 1:100 Date: 8/14/2009

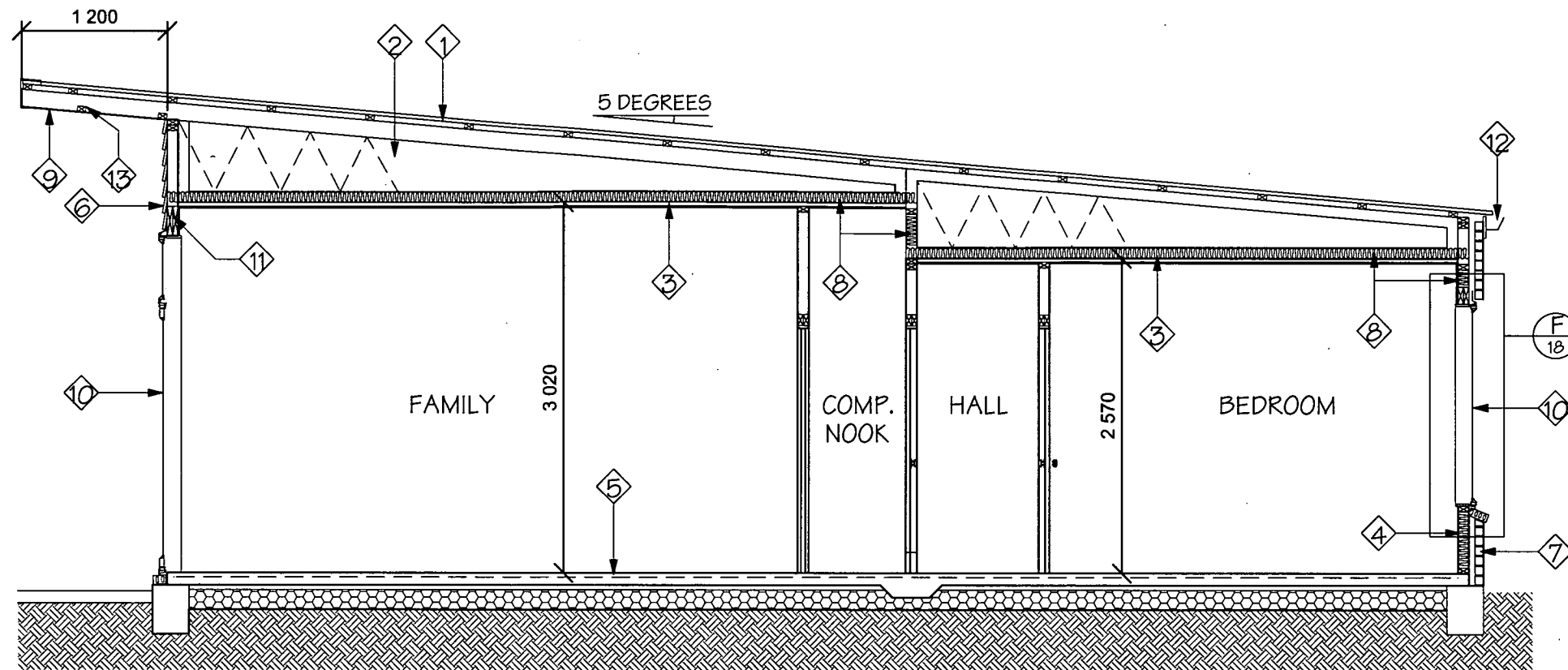
Drawn By:
M Hawken



SOUTH EAST ELEVATION
 W1 1100X600 W2 1100X600 W3 1650X2000 W4 1100X600 W5 1100X1600 W6 1650X2000 W7 1650X2000 W8 1100X600 D1 2200X810

TOTAL WALL AREA	84.38M ²
TOTAL WINDOW AREA	16.10M ²
TOTAL BRICK AREA	65.35M ²
TOTAL WEATHERBOARD AREA	2.93M ²

NOTE:
 INCLUDES CHIMNEY
 EXCLUDES ENTRY POST.



HAMILTON CITY COUNCIL
 APPROVED
 SUBJECT TO CONDITIONS
 TO BE KEPT ON SITE

AA
03 CROSS-SECTION

- 1 MC770 COLORSTEEL ROOFING FIXED WITH COLOUR MATCHED TECH SCREWS WITH FLASHINGS TO MATCH ALL OVER ON H3.1 70X45 TIMBER PURLINS @ 800MM CTRS MAX ON BUILDING PAPER.
- 2 TRUSSES TO MANUFACTURERS DESIGN AND IN ACCORDANCE WITH NZS3603 @ 900MM CTRS MAX. TRUSSES ARE TO BE INSTALLED BETWEEN WALL FRAMING AND NOT ON TOP.
- 3 13MM GIB BOARD CEILING ON METAL BATTENS @ 600MM CTRS MAX.
- 4 90X45 H1.2 TIMBER FRAMED EXTERIOR WALLS WITH STUDS @ 600MM CTRS UNLESS LABELLED OTHERWISE AND NOGS @ 800MM CTRS MAX. INTERNAL WALLS TO HAVE SINGLE NOG STAGGERED @ MID-HEIGHT.
- 5 100MM THICK CONCRETE FLOOR SLAB WITH 663 AND 665 MESH REINFORCING LAID ON DPM ON A 200MM THICK LAYER OF COMPACTED HARDFILL TO 100 KPA MIN. POLISHED FLOOR AREA TO BE OVER TOP OF 40MM POLYSTYRENE. REFER TO ENGINEER DOCUMENTS IN SPECIFICATION FOR LOCATION OF DIFFERENT MESHES.
- 6 JAMES HARDIE LINEA WEATHERBOARD EXTERIOR CLADDING ABOVE DOORS AND WINDOWS ON EX25MM CAVITY BATTENS OVER TOP OF G3 FRAMEGUARD BUILDING PAPER. WHERE LINEA IS INSTALLED FULL HEIGHT LINEA IS TO BE DIRECT FIXED TO TIMBER FRAMING OVER BUILDING PAPER.

- 7 70MM BRICK VENEER CLADDING ON A 50MM WIDE CAVITY WITH G3 FRAMEGUARD BUILDING PAPER TIED BACK TO TIMBER FRAMING.
- 8 R3.2 INSULATION TO ALL CEILING CAVITIES AND R2.2 TO ALL EXTERIOR WALL CAVITIES.
- 9 4.5MM HARDIFLEX SOFFIT LINING FIXED TO 70X45 SOFFIT BATTENS @ 600MM CTRS MAX.
- 10 POWDER COATED ALUMINIUM EXTERIOR DOUBLE GLAZED WINDOW AND DOOR JOINERY.
- 11 ALL LINTELS TO BE MSG8 H3.2. REFER TO BRACING PLAN FOR SIZES.
- 12 COLORSTEEL FASCIA AND GUTTERS FIXED WITH COLOUR MATCHED BRACKETS.
- 13 TIMBER BATTENS TO WIDE EAVE TO BE CUT BETWEEN TOP CHORD OF TRUSS.

NOTE:
 REFER TO ENGINEERS DOCUMENTS FOR DETAILS REGARDING FLOOR SLAB AND FOUNDATIONS.

Logan Homes Limited
 P O Box 12467
 HAMILTON

Phone 07 855 5800
 Fax 07 855 2030
 Email
 info@loganhomes.co.nz

All plans and specifications, concepts and drawings are subject to copyright and cannot be copied or used in anyway without the express permission of Logan Homes Limited.

CLIENT

PROJECT

NEW RESIDENCE

SITE

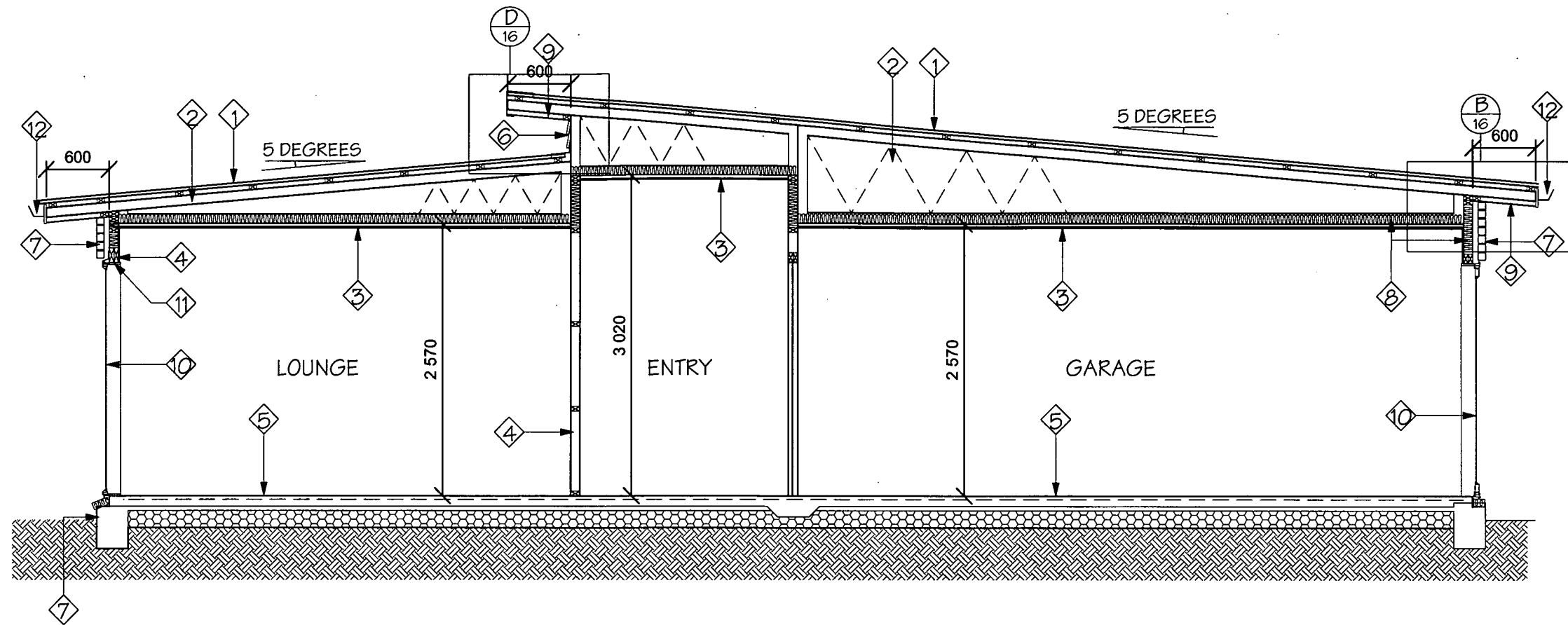
LOT 10 GLAISDALE HAMILTON

CONSENT SET

SECTION A - A

Scale : 1:50 Date: 8/14/2009
 Drawn By: M Hawken

© Logan Homes LTD **13**



HAMILTON CITY COUNCIL
APPROVED
SUBJECT TO CONDITIONS
TO BE KEPT ON SITE

BB
03 CROSS-SECTION

- 1 MC770 COLORSTEEL ROOFING FIXED WITH COLOUR MATCHED TECH SCREWS WITH FLASHINGS TO MATCH ALL OVER ON H3.1 70X45 TIMBER PURLINS @ 800MM CTRS MAX ON BUILDING PAPER.
- 2 TRUSSES TO MANUFACTURERS DESIGN AND IN ACCORDANCE WITH NZS3603 @ 900MM CTRS MAX. TRUSSES ARE TO BE INSTALLED BETWEEN WALL FRAMING AND NOT ON TOP.
- 3 13MM GIB BOARD CEILING ON METAL BATTENS @ 600MM CTRS MAX.
- 4 90X45 H1.2 TIMBER FRAMED EXTERIOR WALLS WITH STUDS @ 600MM CTRS UNLESS LABELLED OTHERWISE AND NOGS STAGGERED @ 800MM CTRS MAX. INTERNAL WALLS TO HAVE SINGLE NOG @ MID-HEIGHT.
- 5 100MM THICK CONCRETE FLOOR SLAB WITH 663 AND 665 MESH REINFORCING LAID ON DPM ON A 200MM THICK LAYER OF COMPACTED HARDFILL TO 100 KPA MIN. ENTIRE FLOOR SLAB TO BE OVER TOP OF 40MM POLYSTYRENE. REFER TO ENGINEER DOCUMENTS IN SPECIFICATION FOR LOCATION OF DIFFERENT MESHES.
- 6 JAMES HARDIE LINEA WEATHERBOARD EXTERIOR CLADDING ABOVE DOORS AND WINDOWS ON EX25MM CAVITY BATTENS OVER TOP OF G3 FRAMEGUARD BUILDING PAPER. WHERE LINEA IS INSTALLED FULL HEIGHT LINEA IS TO BE DIRECT FIXED TO TIMBER FRAMING OVER BUILDING PAPER.

- 7 70MM BRICK VENEER CLADDING ON A 50MM WIDE CAVITY WITH G3 FRAMEGUARD BUILDING PAPER TIED BACK TO TIMBER FRAMING.
- 8 R3.2 INSULATION TO ALL CEILING CAVITIES AND R2.2 TO ALL EXTERIOR WALL CAVITIES.
- 9 4.5MM HARDIFLEX SOFFIT LINING FIXED TO 70X45 SOFFIT BATTENS @ 600MM CTRS MAX.
- 10 POWDER COATED ALUMINIUM EXTERIOR DOUBLE GLAZED WINDOW AND DOOR JOINERY.
- 11 ALL LINTELS TO BE MSG8 H3.2. REFER TO BRACING PLAN FOR SIZES.
- 12 COLORSTEEL FASCIA AND GUTTERS FIXED WITH COLOUR MATCHED BRACKETS.

NOTE:
REFER TO ENGINEERS DOCUMENTS FOR DETAILS REGARDING FLOOR SLAB AND FOUNDATIONS.

Logan Homes Limited
P O Box 12467
HAMILTON
Phone 07 855 5800
Fax 07 855 2030
Email
info@loganhomes.co.nz

All plans and specifications, concepts and drawings are subject to copyright and cannot be copied or used in anyway without the express permission of Logan Homes Limited.

CLIENT

PROJECT

**NEW
RESIDENCE**

SITE

**LOT 10
GLAISDALE
HAMILTON**

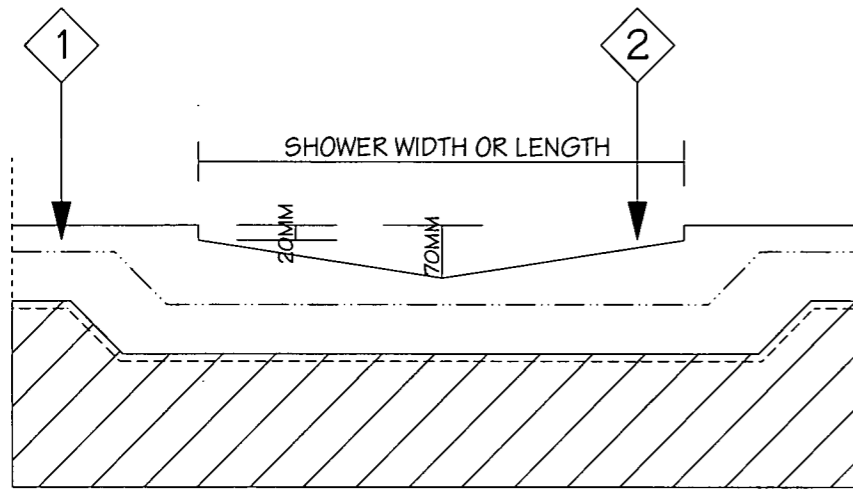
CONSENT SET

SECTION B - B

Scale : 1:50 Date: 8/14/2009

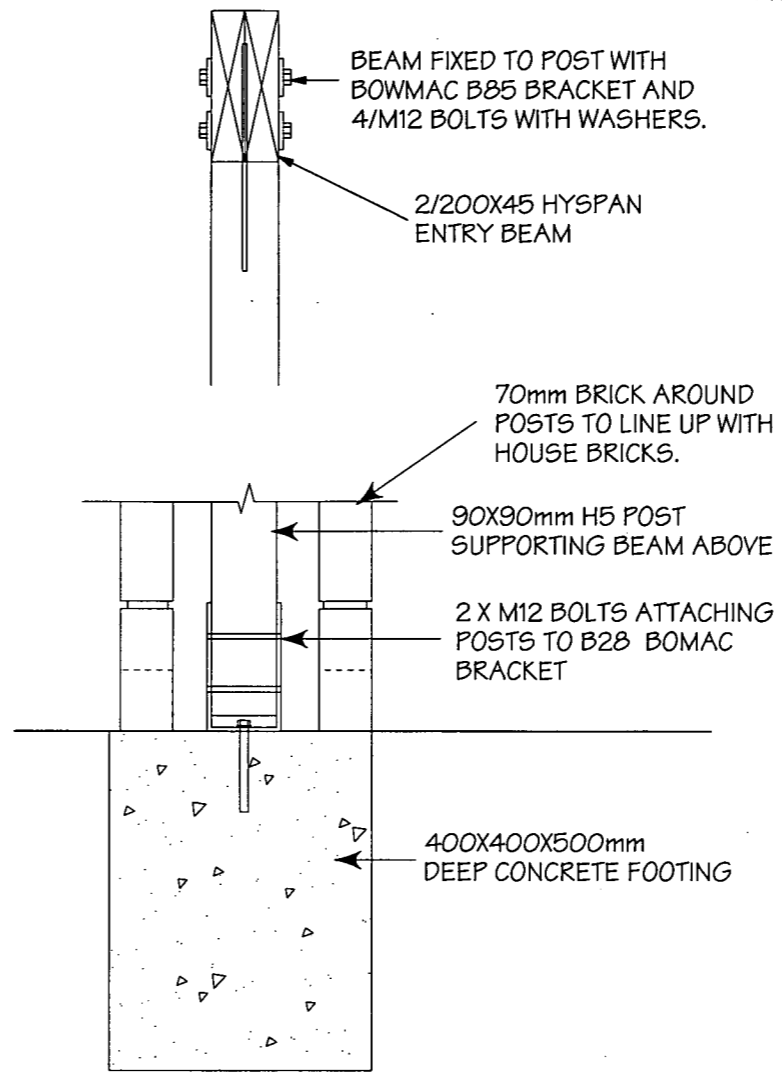
Drawn By:
M Hawken

HAMILTON CITY COUNCIL
APPROVED
 SUBJECT TO CONDITIONS
 TO BE KEPT ON SITE

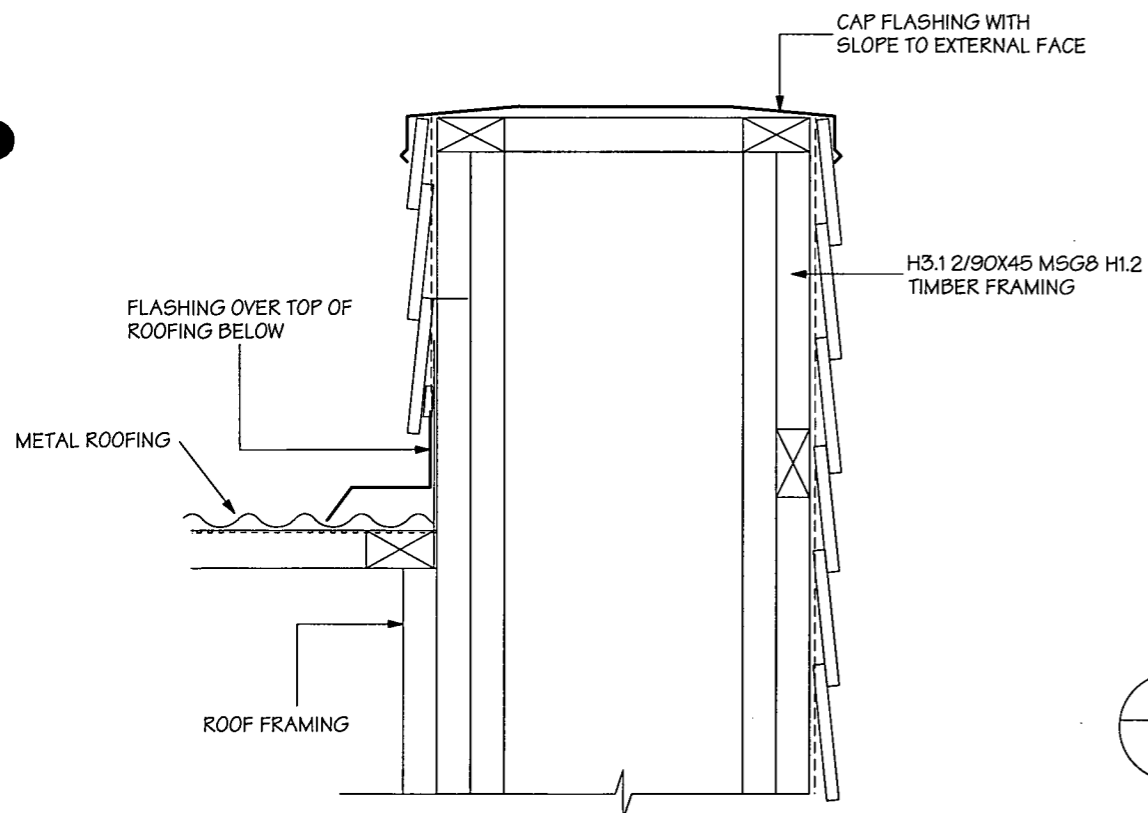


A
 5
SHOWER RECESS DETAIL
 SCALE 1:10

- 1 100MM THICK CONCRETE FLOOR SLAB WITH 663 AND 665 REINFORCING MESH ON DPM AND A 200MM THICK LAYER OF COMPACTED HARDFILL. POLISHED CONCRETE TO BE OVER 40MM POLYSTRENE. REFER TO ENGINEERS DOCUMENTS FOR LOCATION OF DIFFERENT MESH TYPES.
- 2 20MM DEEP RECESS IN FLOOR SLAB FOR SHOWER SLOPING DOWN TO 70MM IN CENTRE OF SHOWER BASE.
- 3 MIRACRYL 2-PART WATERPROOFING SYSTEM TO BE USED BENEATH TILES TO SHOWER. REFER TO SPECIFICATION FOR FURTHER INFORMATION.



H
 3
ENTRY POST DETAIL
 SCALE 1:10



I
 3
CHIMNEY DETAIL
 SCALE 1:10

Logan Homes Limited
 P O Box 12467
 HAMILTON
 Phone 07 855 5800
 Fax 07 855 2030
 Email info@loganhomes.co.nz

All plans and specifications, concepts and drawings are subject to copyright and cannot be copied or used in anyway without the express permission of Logan Homes Limited.

CLIENT

PROJECT

NEW RESIDENCE

SITE

LOT 10 GLAISDALE HAMILTON

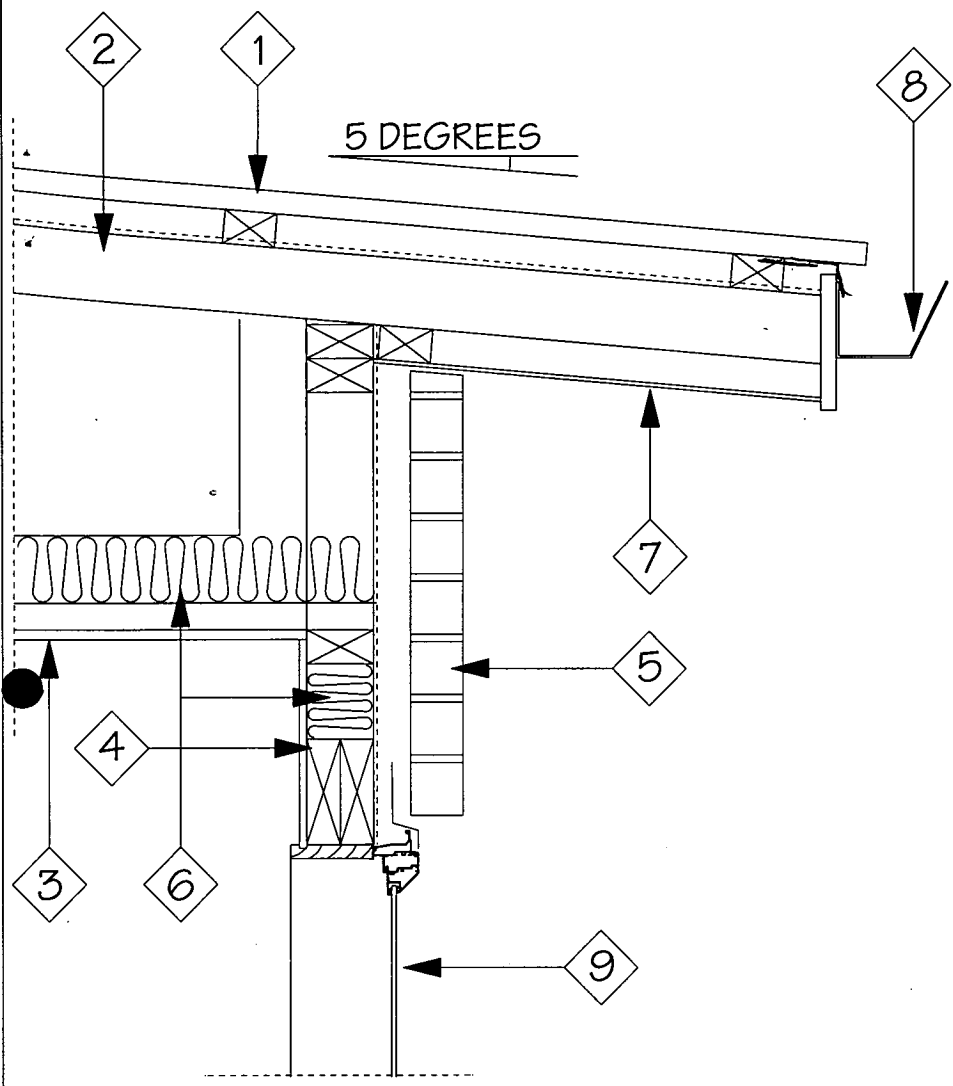
CONSENT SET

DETAILS 1

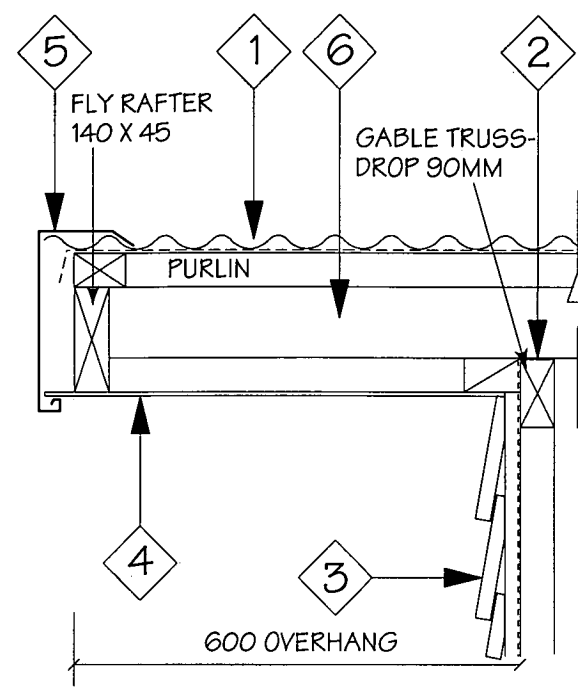
Scale : 1:10 Date: 8/14/2009
 Drawn By: M Hawken

© Logan Homes LTD **15**

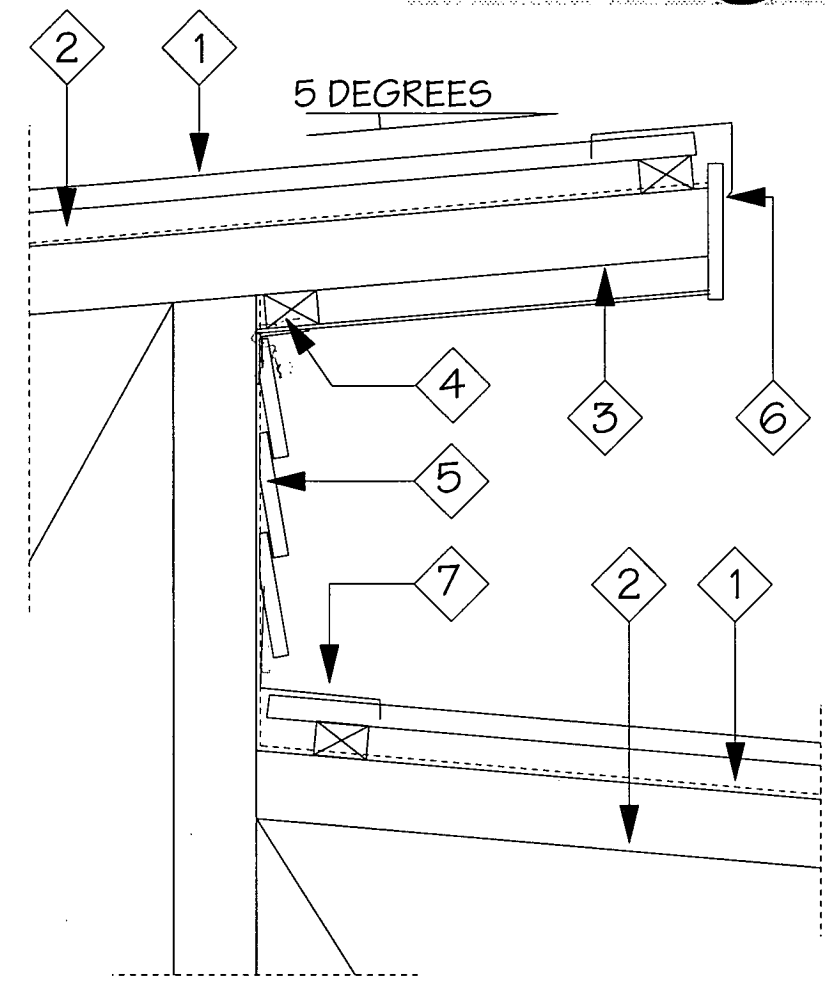
HAMILTON CITY COUNCIL
APPROVED
SUBJECT TO CONDITIONS
TO BE KEPT ON SITE



B
14
EAVE DETAIL
SCALE 1:10



C
8
VERGE DETAIL
SCALE 1:10



D
14
EAVE DETAIL
SCALE 1:10

- 1 MC770 COLORSTEEL ROOFING FIXED WITH COLOUR MATCHED TECH SCREWS WITH FLASHINGS TO MATCH ALL OVER ON H1 70X45 TIMBER PURLINS @ 800MM CTRS MAX ON BUILDING PAPER.
- 2 TRUSSES TO MANUFACTURERS DESIGN AND IN ACCORDANCE WITH NZS3603 @ 900MM CTRS MAX. TOP CHORD OF TRUSS TO EXTEND OUT TO FORM EAVES.
- 3 13MM GIB BOARD CEILING ON METAL BATTENS @ 600MM CTRS MAX.
- 4 90X45 H1.2 TIMBER FRAMED EXTERIOR WALLS WITH STUDS @ 600MM CTRS AND NOGS @ 800MM CTRS MAX. 1X NOG @ MID-HEIGHT FOR INTERNAL WALLS.
- 5 70MM BRICK VENEER CLADDING ON A 50MM WIDE CAVITY WITH G3 FRAMEGUARD BUILDING PAPER BACK TO TIMBER FRAMING.
- 6 R3.2 INSULATION TO ALL CEILING CAVITIES AND R2.2 TO ALL EXTERIOR WALL CAVITIES.
- 7 4.5MM HARDIFLEX SOFFIT LINING FIXED TO 70X45 SOFFIT BATTENS.
- 8 COLORSTEEL GUTTER AND FASCIA FIXED WITH COLOUR MATCHED BRACKETS.
- 9 POWDER COATED ALUMINIUM EXTERIOR WINDOW AND DOOR JOINERY.

- 1 MC770 COLORSTEEL ROOFING FIXED WITH COLOUR MATCHED TECH SCREWS WITH FLASHINGS TO MATCH ALL OVER ON H3.1 70X45 TIMBER PURLINS @ 800MM CTRS MAX ON BUILDING PAPER.
- 2 TRUSSES TO MANUFACTURERS DESIGN AND IN ACCORDANCE WITH NZS3603 @ 900MM CTRS MAX.
- 3 JAMES HARDIE LINEA WEATHERBOARD EXTERIOR CLADDING DIRECT FIXED TO TIMBER FRAMING OVER TOP OF G3 FRAMEGUARD BUILDING PAPER.
- 4 4.5MM HARDIFLEX SOFFIT LINING FIXED TO 70X45 SOFFIT BATTENS.
- 5 COLORSTEEL BARGE FIXED WITH COLOUR MATCHED BRACKETS WITH COLORSTEEL BARGE FLASHING OVER TOP.
- 6 90X45 MSG8 H3.1 OUTRIGGERS @ 900MM CTRS MAX, FIXED BACK AT FOR TRUSS WITH JOIST HANGERS.

NOTE:
PURLINS TO BE FIXED IN ACCORDANCE WITH NZS304 TABLE 10.10.

- 1 MC770 COLORSTEEL ROOFING FIXED WITH COLOUR MATCHED TECH SCREWS WITH FLASHINGS TO MATCH OVER ON H1 70X45 PURLINS @ 800MM CTRS MAX ON BUILDING PAPER.
- 2 TRUSSES TO MANUFACTURERS DESIGN AND IN ACCORDANCE WITH NZS3603 @ 900MM CTRS MAX. TOP CHORD OF TRUSS TO EXTEND OUT TO FORM EAVES.
- 3 4.5MM HARDIFLEX SOFFIT LINING FIXED TO H1 70X45 SOFFIT BATTENS @ 600MM CTRS MAX.
- 4 SUPERCOURSE 200MM FLASHING FROM UNDER SOFFIT LINING AND OVER TOP OF BUILDING PAPER.
- 5 JAMES HARDIE LINEA WEATHERBOARD EXTERIOR CLADDING DIRECT FIXED TO TIMBER FRAMING OVER TOP OF G3 FRAMEGUARD BUILDING PAPER.
- 6 COLORSTEEL BARGE FIXED WITH COLOUR MATCHED BRACKETS WITH COLORSTEEL BARGE FLASHING OVER TOP.
- 7 COLORSTEEL APRON FLASHING FROM UNDER WEATHERBOARDS AND OUT OVER TOP OF ROOFING.

Logan Homes Limited
P O Box 12467
HAMILTON

Phone 07 855 5800
Fax 07 855 2030
Email
info@loganhomes.co.nz

All plans and specifications, concepts and drawings are subject to copyright and cannot be copied or used in anyway without the express permission of Logan Homes Limited.

CLIENT

PROJECT

NEW RESIDENCE

SITE

LOT 10 GLAISDALE HAMILTON

CONSENT SET

DETAILS 2

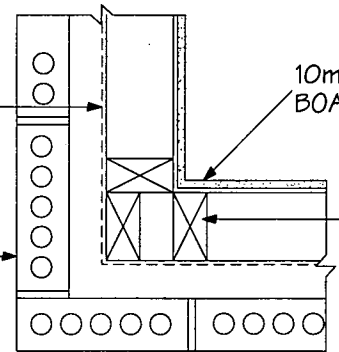
Scale : 1:10 Date: 8/14/2009

Drawn By: M Hawken

HAMILTON CITY COUNCIL
APPROVED
SUBJECT TO CONDITIONS
TO BE KEPT ON SITE

FRAMEGARD BUILDING WRAP CONTINUOUS AROUND CORNERS

70mm MONIER BRICK VENEER ON A 50mm CAVITY



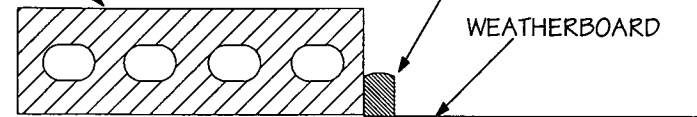
10mm STANDARD GIB BOARD LINING

90X45 MSG8 H1.2 TIMBER FRAMED WALL

EXTERIOR CORNER - BRICK
SCALE 1:10

70 SERIES BRICK

40X20mm H3.1 TIMBER SCRIBER



WEATHERBOARD

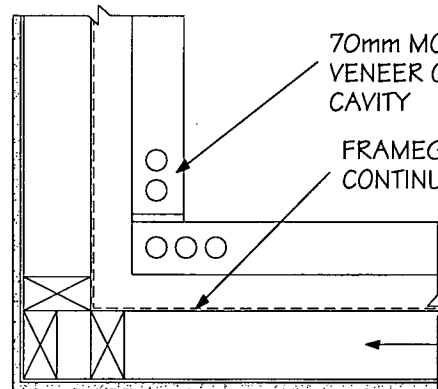
H3.2 RIPPED FRAMING TO FINISH FACE OF WEATHERBOARDS OVER FACE OF ALUMINIUM JOINERY

BUILDING WRAP FRAMING

VERTICAL JUNCTION BRICK -WEATHERBOARD
SCALE 1:5

70mm MONIER BRICK VENEER ON A 50mm CAVITY

FRAMEGARD BUILDING WRAP CONTINUOUS AROUND CORNERS



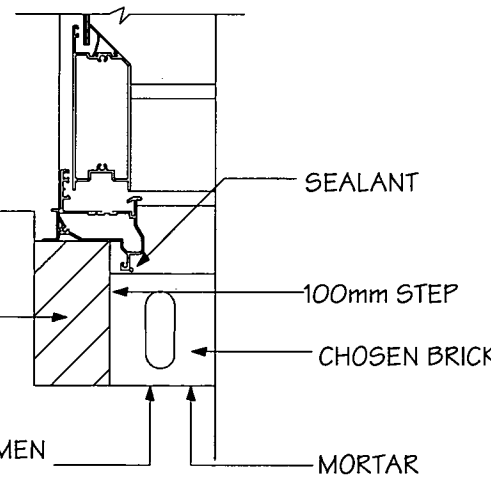
90X45 MSG8 H1.2 TIMBER FRAMED WALL

10mm STANDARD GIB BOARD LINING

INTERIOR CORNER - BRICK
SCALE 1:10

SLAB TO CONTINUE OUT INTO CAVITY AT DOORS AND FULL HEIGHT WINDOWS ONLY TO SUPPORT JOINERY ABOVE.

2 COATS OF BITUMEN EMULSION



SEALANT

100mm STEP

CHOSEN BRICK

MORTAR

E
13

BRICK DOOR SILL
SCALE 1:5

Logan Homes Limited
P O Box 12467
HAMILTON
Phone 07 855 5800
Fax 07 855 2030
Email
info@loganhomes.co.nz

All plans and specifications, concepts and drawings are subject to copyright and cannot be copied or used in anyway without the express permission of Logan Homes Limited.

CLIENT

PROJECT

NEW
RESIDENCE

SITE

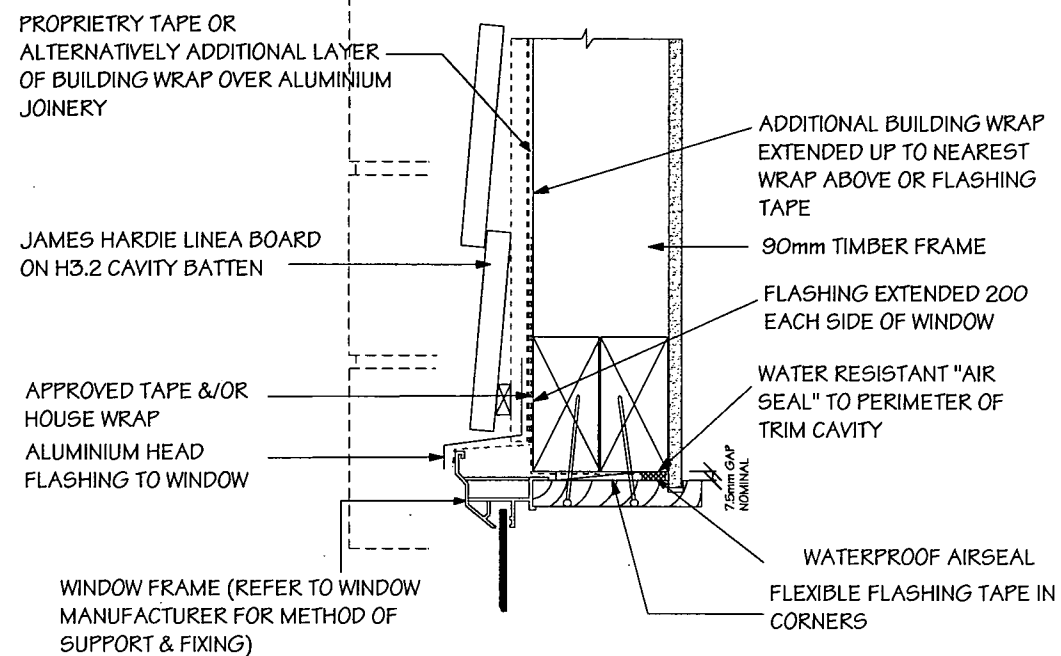
LOT 10
GLAISDALE
HAMILTON

CONSENT SET

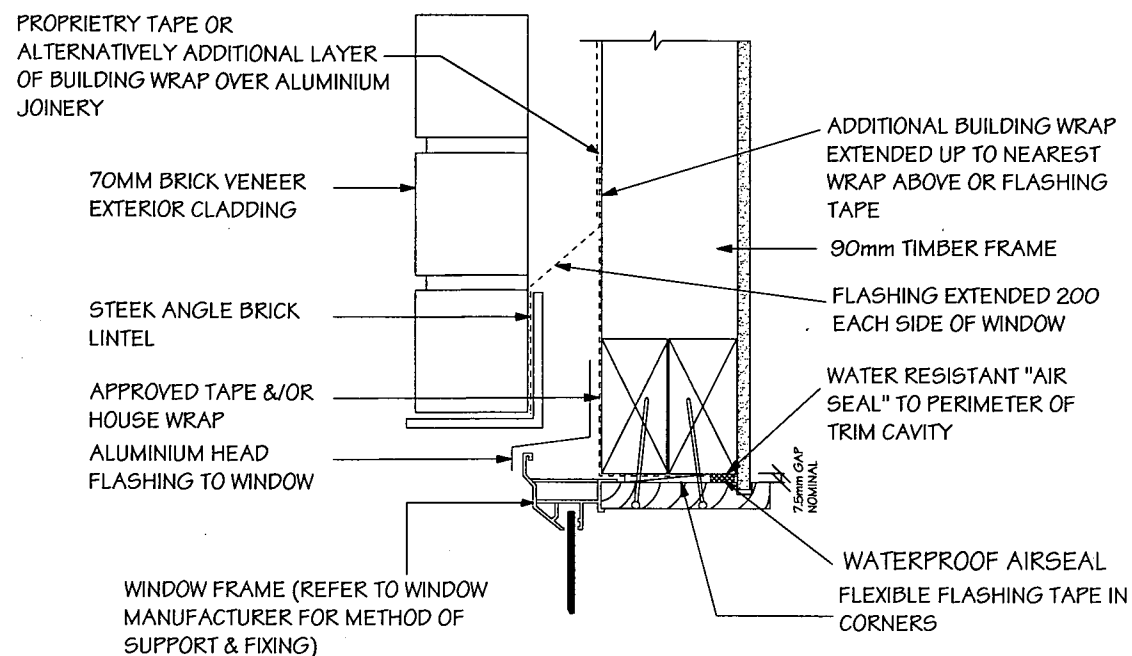
DETAILS 3

Scale: 1:5 Date: 8/14/2009

Drawn By: M Hawken



HEAD -WEATHER-BOARD FIXING
SCALE 1:5

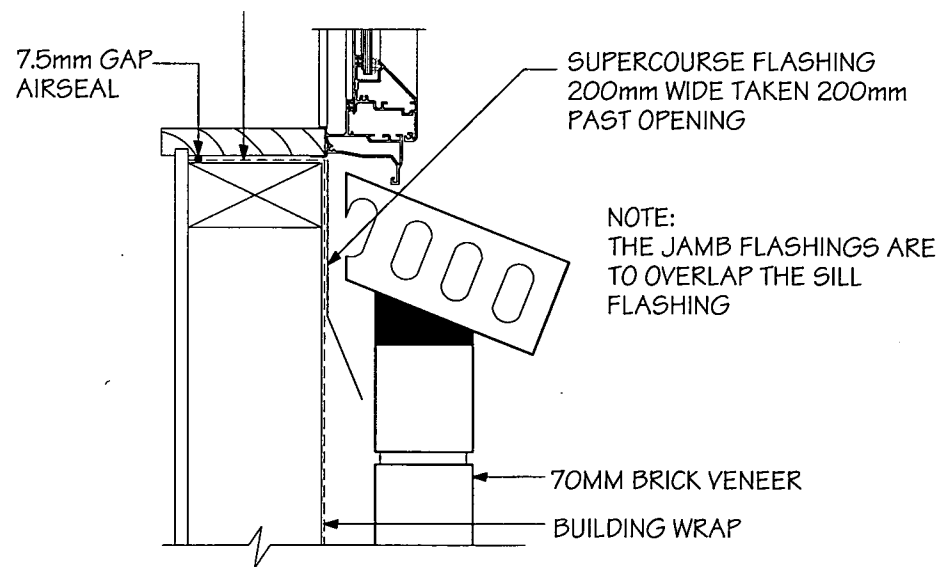


HEAD -BRICK
SCALE 1:5

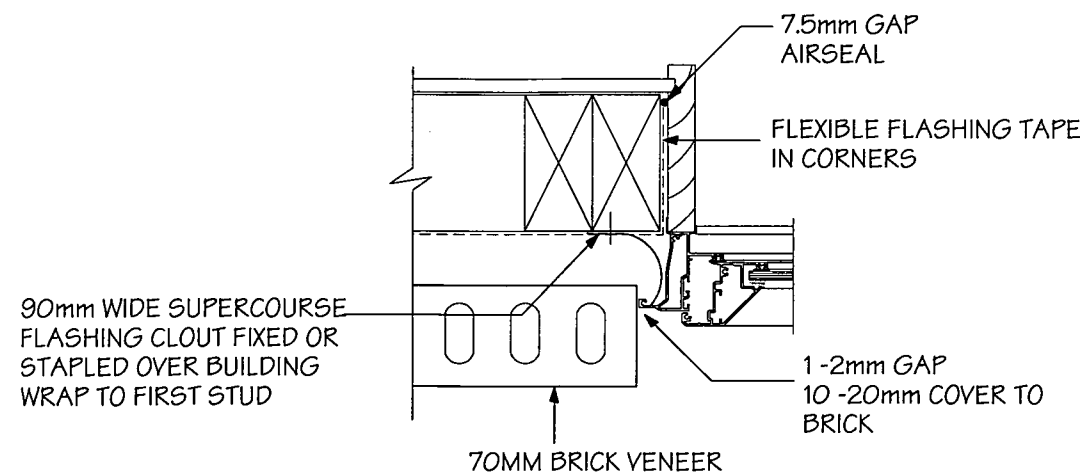
F
13

WINDOW DETAILS
SCALE 1:5

FLEXIBLE FLASHING FULL LENGTH OF SILL TO COMPLY WITH E2/AS1 cl9.1.5 AND figure 72



WINDOW SILL - ALUMINIUM
SCALE 1:5



WINDOW JAMB - ALUMINIUM
SCALE 1:5

HAMILTON CITY COUNCIL
APPROVED
SUBJECT TO CONDITIONS
TO BE KEPT ON SITE

Logan Homes Limited
P O Box 12467
HAMILTON

Phone 07 855 5800
Fax 07 855 2030
Email
info@loganhomes.co.nz

All plans and specifications, concepts and drawings are subject to copyright and cannot be copied or used in anyway without the express permission of Logan Homes Limited.

CLIENT

PROJECT

NEW
RESIDENCE

SITE

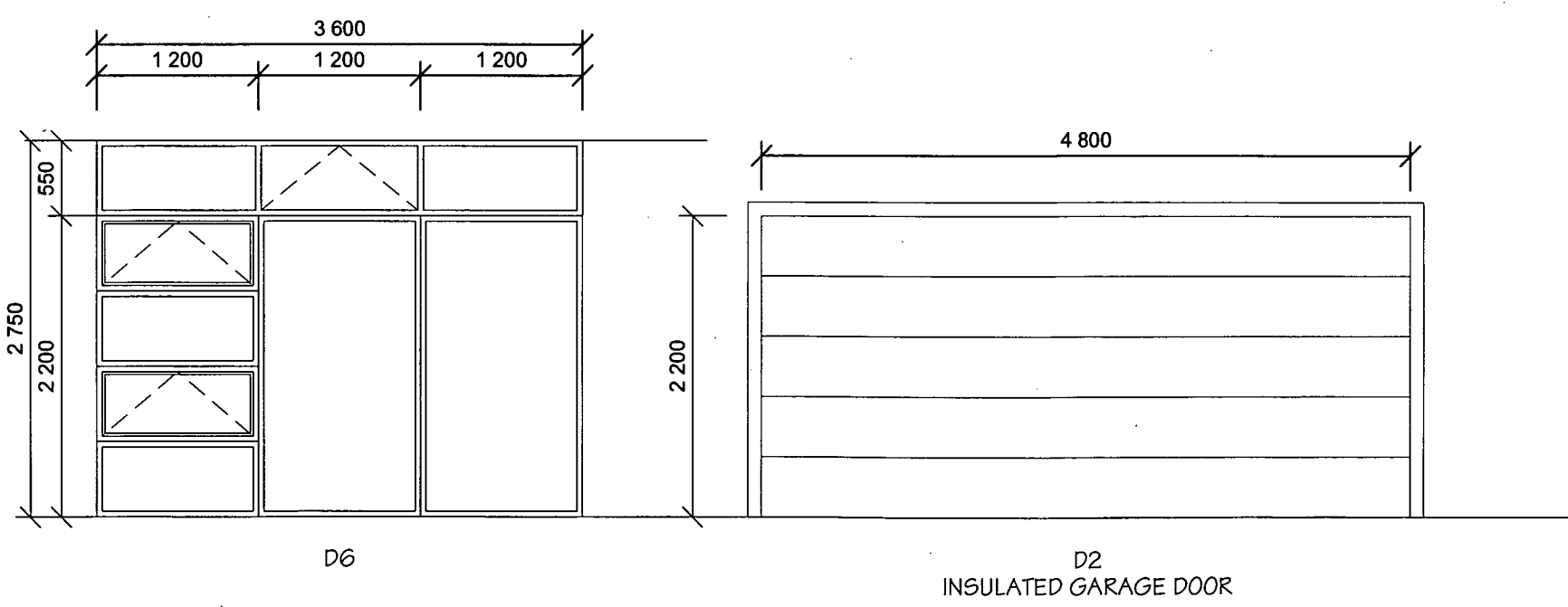
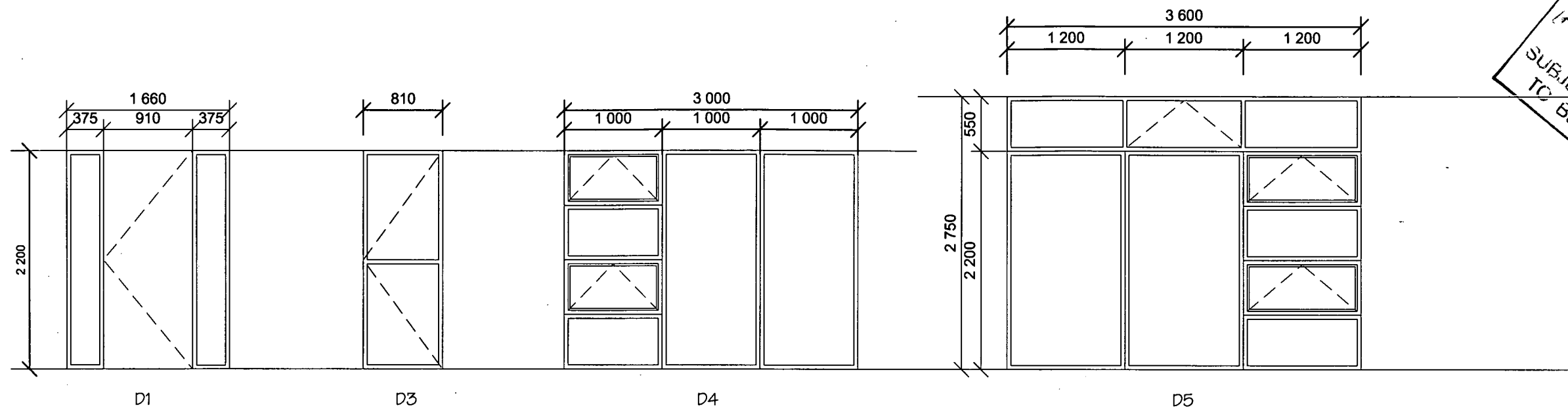
LOT 10
GLAISDALE
HAMILTON

CONSENT SET

DETAILS 4

Scale : 1:5 Date: 8/14/2009

Drawn By: M Hawken



DOOR NOTES:
 ALL EXTERIOR DOORS ARE TO BE POWDER COATED ALUMINIUM, UNLESS NOTED OTHERWISE.
 EXTERIOR DOORS ARE TO HAVE 19MM FLAT LINERS.
 REFER TO TRUSS MANUFACTURERS LAYOUT PLAN FOR SIZES AND LOCATION OF LINTELS.
 ALL LINTELS ARE TO BE H3.2 TREATED AND MSG8 GRADE, UNLESS LABELED OTHERWISE.
 ALL GLAZING TO COMPLY WITH NZS 4223.
 CHECK ON FLOOR PLAN FOR HANDING OF DOORS.
 ALL GLAZING TO BE DOUBLE GLAZING TO COMPLY WITH NZBC H1 AND NZS 4218.
 ALL UNITS VIEWED FROM EXTERIOR.
 WIND ZONE IS MEDIUM.

HAMILTON CITY COUNCIL
APPROVED
 SUBJECT TO CONDITIONS
 TO BE KEPT ON SITE

Logan Homes Limited
 P O Box 12467
 HAMILTON
 Phone 07 855 5800
 Fax 07 855 2030
 Email info@loganhomes.co.nz

All plans and specifications, concepts and drawings are subject to copyright and cannot be copied or used in anyway without the express permission of Logan Homes Limited.

CLIENT

PROJECT

NEW RESIDENCE

SITE

LOT 10 GLAISDALE HAMILTON

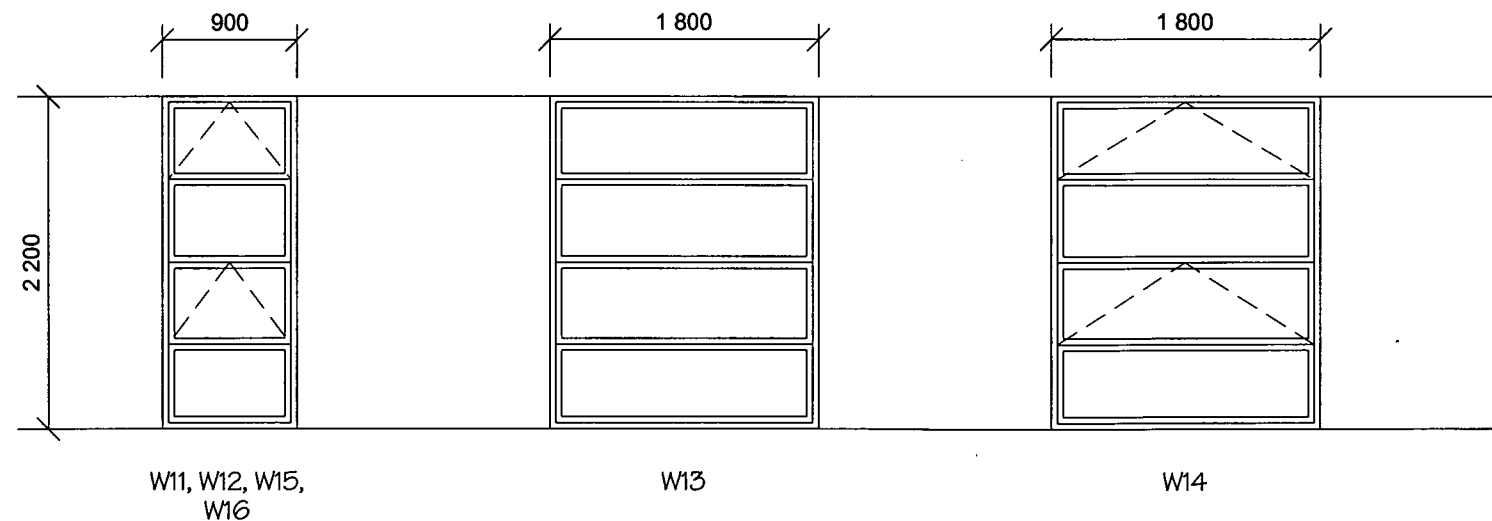
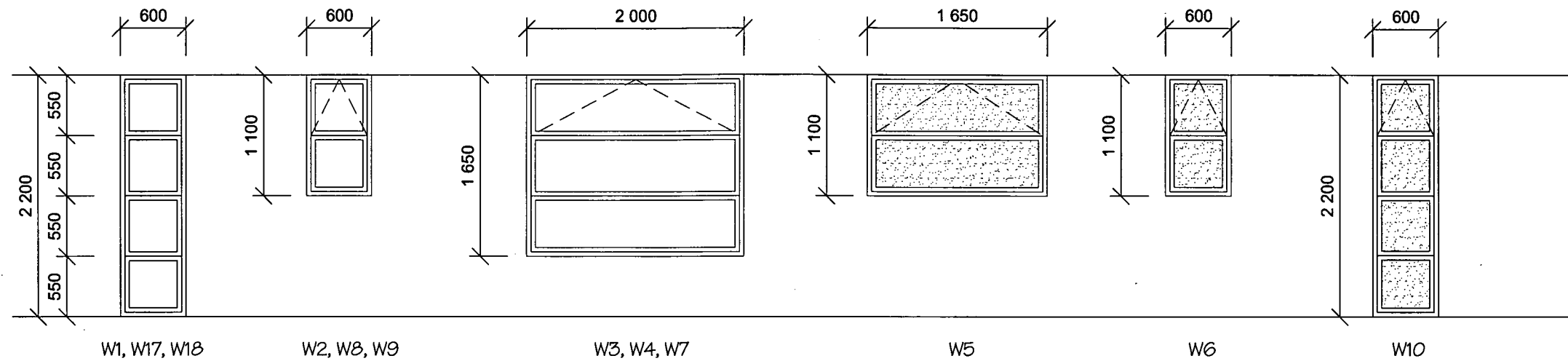
CONSENT SET

DOOR SCHEDULE

Scale: 1:50 Date: 8/14/2009
 Drawn By: M Hawken

© Logan Homes LTD **19**

HAMILTON CITY COUNCIL
APPROVED
SUBJECT TO CONDITIONS
TO BE KEPT ON SITE



WINDOW NOTES:

ALL WINDOWS TO BE POWDER COATED ALUMINIUM.
ALL WINDOWS ARE TO HAVE 19MM TIMBER FLAT JAMBS.
REFER TO TRUSS MANUFACTURERS LAYOUT PLAN FOR SIZES AND LOCATION OF LINTELS.
ALL LINTELS ARE TO BE H3.2 TREATED AND MSG8 GRADE, UNLESS LABELED OTHERWISE.
ALL GLAZING TO COMPLY WITH NZS 4223.
ALL GLAZING TO BE DOUBLE GLAZING TO COMPLY WITH NZBC H1 AND NZS 4218.
ALL UNITS VIEWED FROM EXTERIOR.
WIND ZONE IS MEDIUM.

Logan Homes Limited
P O Box 12467
HAMILTON

Phone 07 855 5800
Fax 07 855 2030
Email info@loganhomes.co.nz

All plans and specifications, concepts and drawings are subject to copyright and cannot be copied or used in anyway without the express permission of Logan Homes Limited.

CLIENT

PROJECT

NEW RESIDENCE

SITE

LOT 10 GLAISDALE HAMILTON

CONSENT SET

WINDOW SCHEDULE

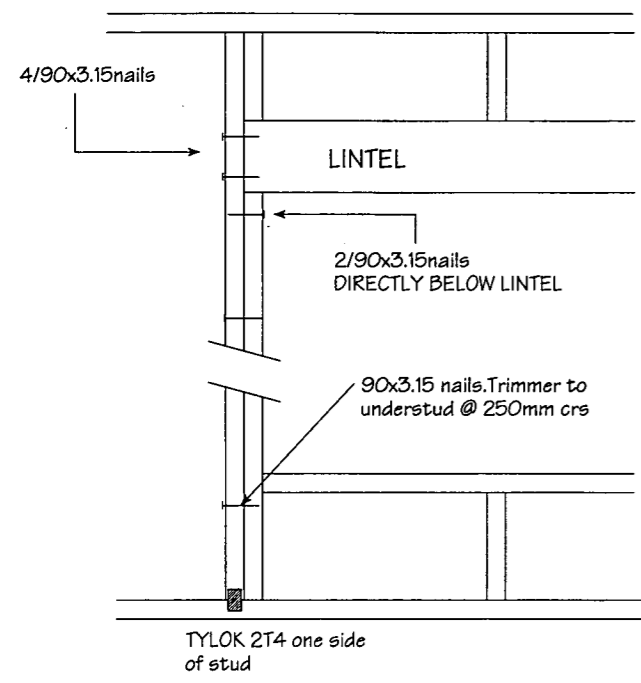
Scale : 1:50 Date: 8/14/2009

Drawn By: M Hawken

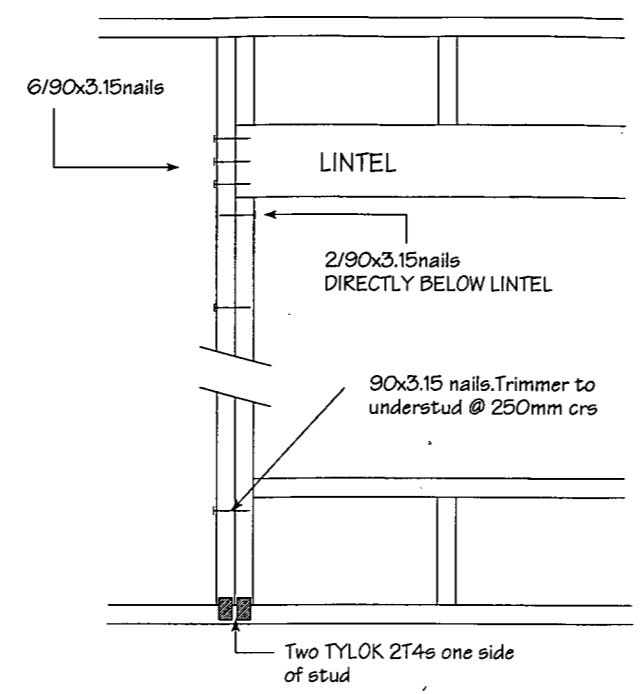
© Logan Homes LTD **20**

HAMILTON CITY COUNCIL
APPROVED
SUBJECT TO CONDITIONS
TO BE KEPT ON SITE

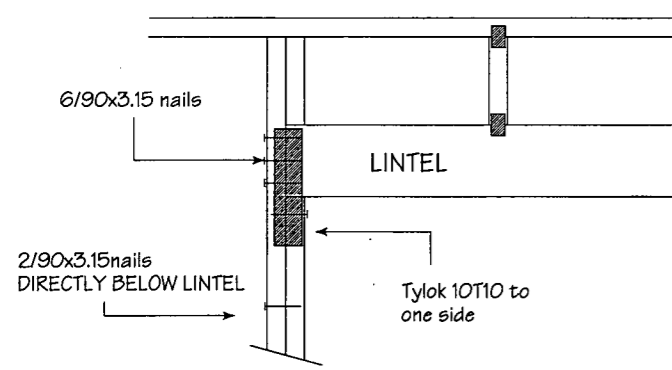
TYPE E
1.4kN



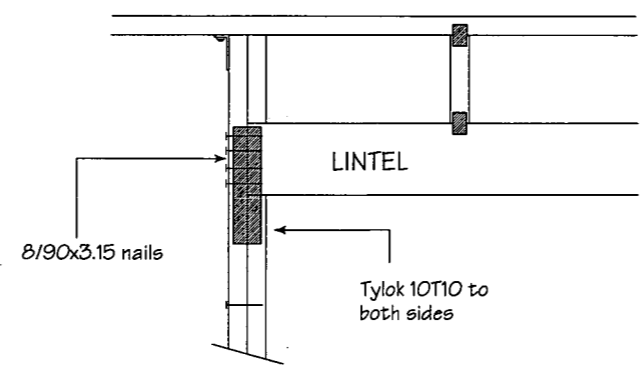
TYPE F
4.0kN



TYPE G
7.5kN



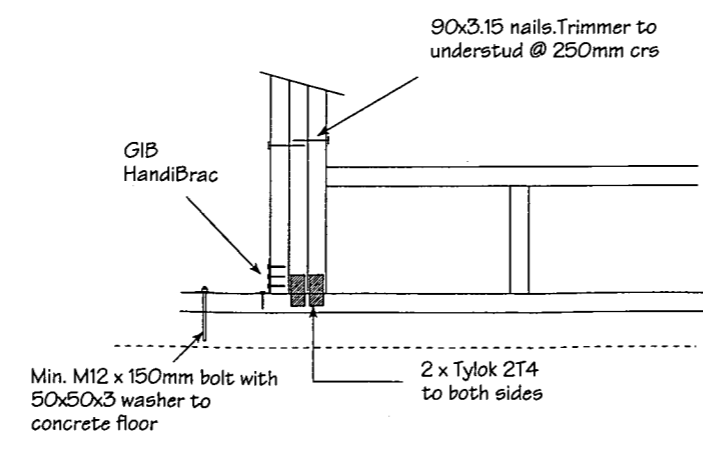
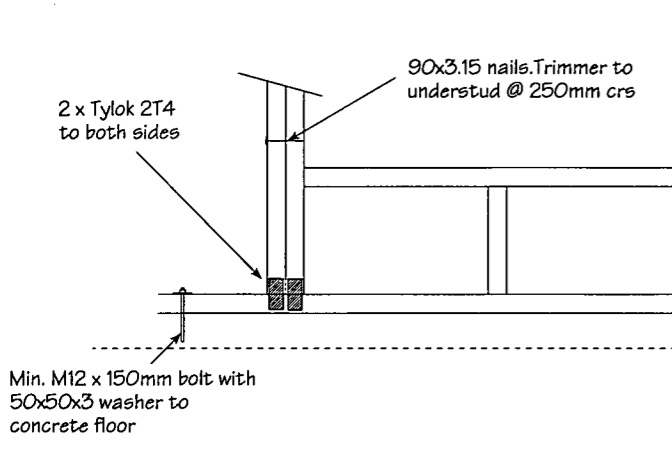
TYPE H
13.5kN



For fixing of jack studs refer to stud to top plate fixing page 6

WINDOW	FIXING TYPE	
W1	2200x600	TYPE F
W2	1100x600	TYPE F
W3	1650x2000	TYPE F
W4	1650x2000	TYPE F
W5	1100x1600	TYPE F
W6	1100x600	TYPE E
W7	1650x2000	TYPE E
W8	1100x600	TYPE E
W9	1100x600	TYPE E
W10	2200x600	TYPE E
W11	2200x900	TYPE E
W12	2200x900	TYPE E
W13	2200x1800	TYPE F
W14	2200x1800	TYPE F
W15	2200x900	TYPE E
W16	2200x900	TYPE E
W17	2200x600	TYPE E
W18	2200x600	TYPE E

DOOR	FIXING TYPE	
D1	2200x1660	TYPE F
D2	2200x4800	TYPE G
D3	2200x810	TYPE F
D4	2200x3000	TYPE F
D5	2200x3600	TYPE G
D6	2200x3600	TYPE G



Logan Homes Limited
P O Box 12467
HAMILTON

Phone 07 855 5800
Fax 07 855 2030
Email info@loganhomes.co.nz

All plans and specifications, concepts and drawings are subject to copyright and cannot be copied or used in anyway without the express permission of Logan Homes Limited.

CLIENT

PROJECT

NEW RESIDENCE

SITE

LOT 10 GLAISDALE HAMILTON

CONSENT SET

LINTEL FIXING SCHEDULE

Scale: 1:20 Date: 8/14/2009

Drawn By: M Hawken

© Logan Homes LTD **21**

Buildable Layout

ARCHITECTS NOTE

It is the Architects responsibility to insure that all lintels and beams are sized for the loads applied by the trusses & rafters in this buildable layout.

It is also the Architects responsibility to insure that any internal loadbearing walls have the correct slab thickening required to support the trusses.

The Architect MUST check the Job Notes below are correct.



JOB NOTES

WIND ZONE	Medium
SNOW LOAD	N/A
ROOF PITCH	5°
ROOF TYPE	Light
CEILING MATERIAL	12mm Gib
ROOF LIVE LOAD	0.250 kPa
FLOOR LIVE LOAD	N/A
WIND SPEED	Medium (37.0m/s)
TRUSS CTRS	900mm
TREATMENT	H3.1
FASCIA TYPE	metalcraft
SOFFIT WIDTH	600 / 1200mm
VERGE WIDTH	600mm

- X - 90x45 Joist hanger
- O - 120x45 Joist hanger
- # - 190x45 Joist hanger
- D - 165x90 Joist hanger
- C - Pair of CT200 ceiling ties
- M - Multigrip each side
- N - 110 Nailon plate
- N2 - 1Pair of N21 Nailon Plate
- P - Pair of CPC 80 cleats

JOB NUMBER

HN10996

JOB NAME

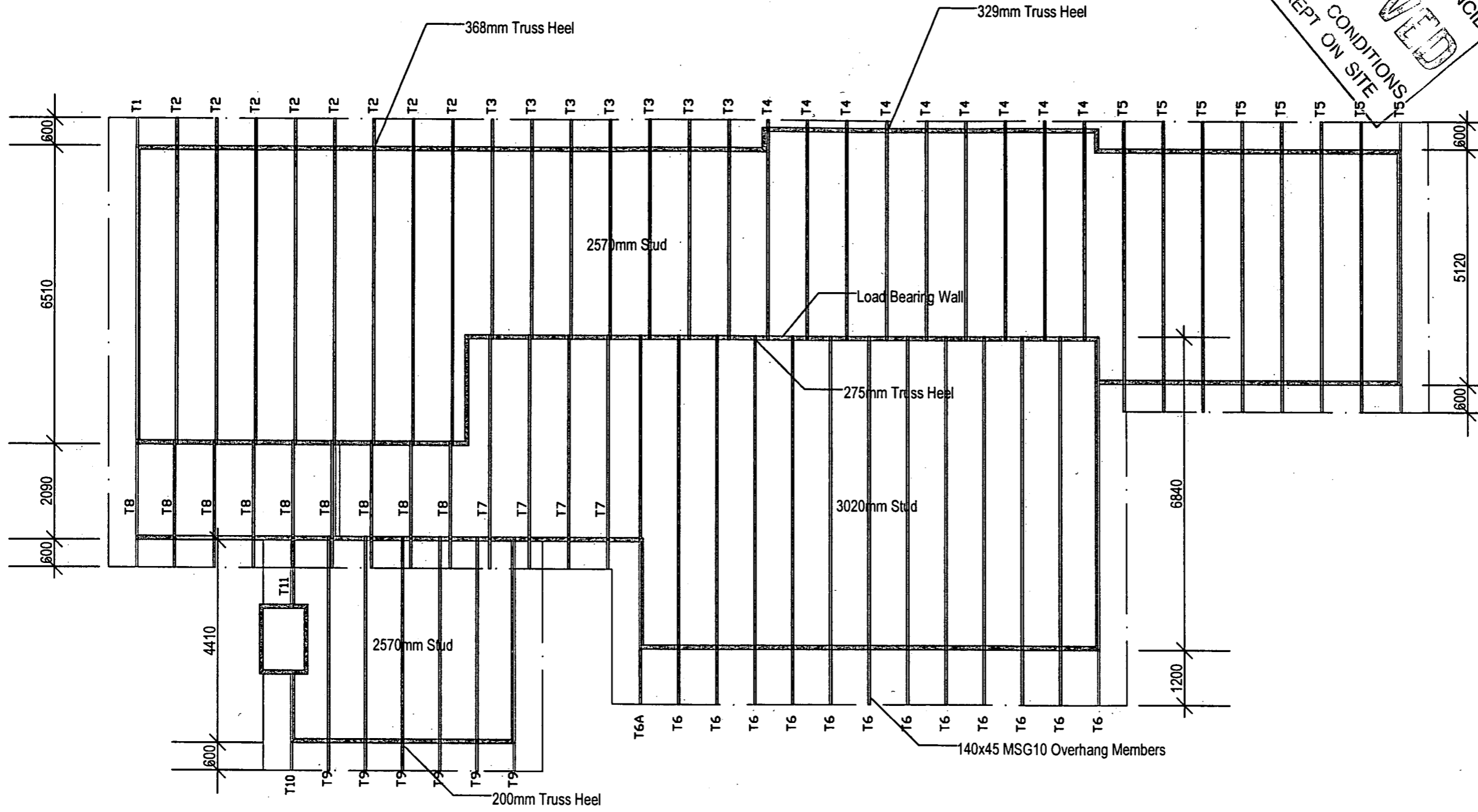
Showhome
Lot 10 Glaisdale
Hamilton

CLIENT NAME

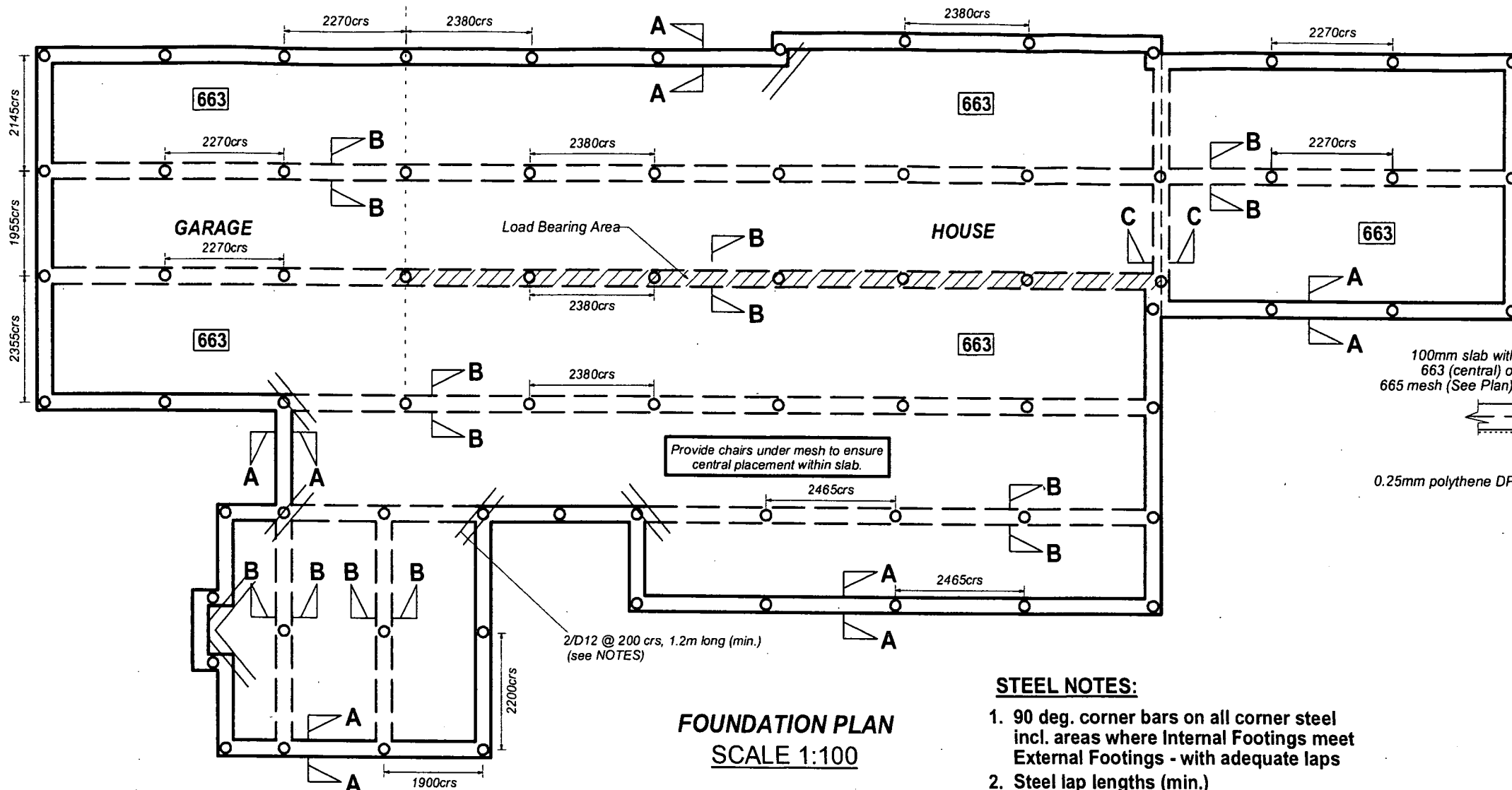
LoganHomes

DETAILER	Warren
DATE	10/08/09
SCALE	A3

HAMILTON CITY COUNCIL
APPROVED
 SUBJECT TO CONDITIONS
 TO BE KEPT ON SITE



BUILDABLE LAYOUT
SCALE 1:100



FOUNDATION PLAN
SCALE 1:100

NOTE:
665 mesh used unless otherwise indicated.

NOTES:

1. This Drawing is reproduced from the plans prepared by the Architectural Designers.
2. All measurements are in millimetres.
3. Ensure that Internal Floor Strengthening Bars do not cross Shrinkage Control Joints.
4. This drawing is intellectual property and has copyright © to the designer, Mark T Mitchell Ltd. No form of unauthorised reproduction in full or part, is permitted.
5. Concrete strength to be a minimum 20MPa. Vibrator to be used on all concrete pours.

STEEL NOTES:

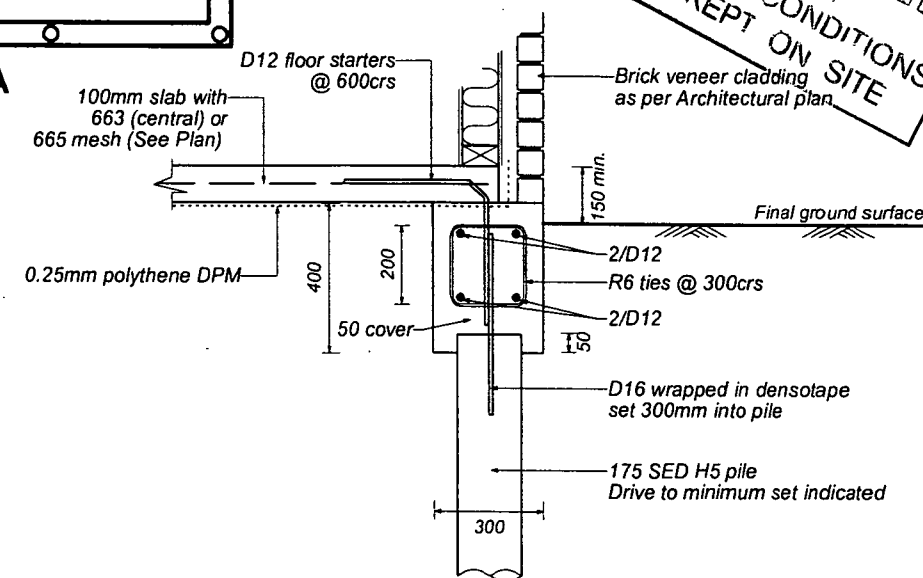
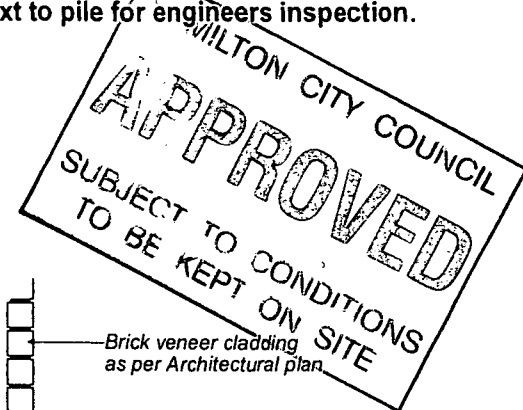
1. 90 deg. corner bars on all corner steel incl. areas where Internal Footings meet External Footings - with adequate laps
2. Steel lap lengths (min.)
- 40 x diameter - mild steel
- 60 x diameter - high tensile steel
3. Mesh lap lengths
- 300mm min.
4. All high tensile steel to be joined with ties (no welding of HD steel)

PILE NOTES:

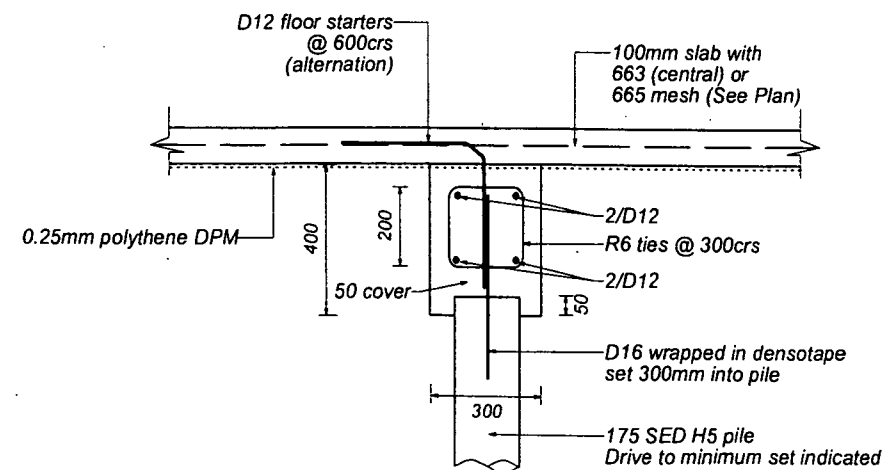
1. Unless otherwise shown, locate piles equal space between exterior walls or load-bearing walls.
2. Hammer fall must not exceed 1000mm at any time. Split or mushroomed piles are to be cut and re-driven to obtain set indicated. Length removed to be recorded and laid next to pile for engineers inspection.
3. Piles are not to be cut off until Mark T. Mitchell Ltd staff have inspected and recorded marks on the piles.
4. Pile loads (unless indicated on Foundation Plan.)
Exterior Piles $R_u = 115\text{kN}$
Interior Piles $R_u = 110\text{kN}$

NOTE:

Hammer fall must not exceed 1000mm at any time. Split or mushroomed piles are to be cut and re-driven to obtain set indicated. Length removed to be recorded and laid next to pile for engineers inspection.



EXTERIOR FOOTING A - A
Brick Veneer Cladding
SCALE 1:20



INTERIOR FOOTING B - B
SCALE 1:20

Mark T Mitchell Ltd

Consulting Geotechnical Engineers

1150 Victoria Street, P.O. Box 9123, Hamilton

LOGAN HOMES

Proposed New Residential Dwelling
Lot 10 Borman Road, Hamilton

**FOUNDATION
DESIGN DETAILS**

DRAWING No. 11502-10

DATE July 2009

ISSUE One

PILE DRIVING SPECIFICATION - DRIVEN TIMBER PILE INSTALLATION

1. MATERIALS

All timber poles and piles shall be Corsican or Radiata Pine or other species, provided they are permitted by the appropriate standard. They shall be milled and treated in accordance with NZS 3605:1977 "Load Bearing Rounded Timber Piles and Poles". The minimum small end diameter (SED) shall be as shown on the drawings.

2. TIMBER PRESERVATIVE

The piles shall be treated in accordance with the NZ Timber Preservation Authority Specification C2B. All cut faces and notches, including the top of the piles, shall be coated with two liberal coatings of 'Ensele' (Pentachlorophenol) or 'Metalex' (Copper Napthenate). The faces of the other timbers in contact with the poles shall be treated in a similar fashion.

3. TEST BORES AND PROBES

Test borings have been taken at the site, and a soils investigation report, which includes the results of the test borings and their respective locations is available for inspection at the Engineers Office and at that of the principal Contractor/Owner of the project. Contractors must make their own interpretation of driving conditions and quote accordingly.

4. SETTING OUT

The contractor shall be responsible for all setting out. The pile shall be set out and placed to a tolerance of 20mm at the top of the pile and shall be true to line over the remainder of their length.

5. PILE DRIVING EQUIPMENT

The plant to be used for pile driving is to be approved of by the Engineer. The monkey shall be designed so that it falls freely under it's own weight from the height as specified and is positioned centrally over the pile. The height of the drop shall be clearly marked and readily identified during driving.

6. PILE DRIVING

The piles shall be driven to the Hiley Formula. Where alternative methods or formula are to be used, they are to be approved of by the Engineer prior to the commencement of driving. Refer to the attached table for pile driving requirements.

7. LOAD TESTING

No allowance is made for load testing of piles. Should there be any evidence of faulty workmanship, the effected pile shall be load tested by the contractor at his own expense.

8. COMMENCEMENT OF WORK

The contractor shall notify the engineer of proposed commencement of work at least two working days prior to the pile driving. The initial piles driven at the project are termed 'test piles' and they shall be located at opposite ends and sides of the project in order to assess the likely driving conditions and depths over the full extent of the project. The test piles shall also be used as production piles. The Engineer or his representative shall be present during this operation and a continuous driving record shall be taken.

For this project, the number of 'test piles' required = 2 piles.

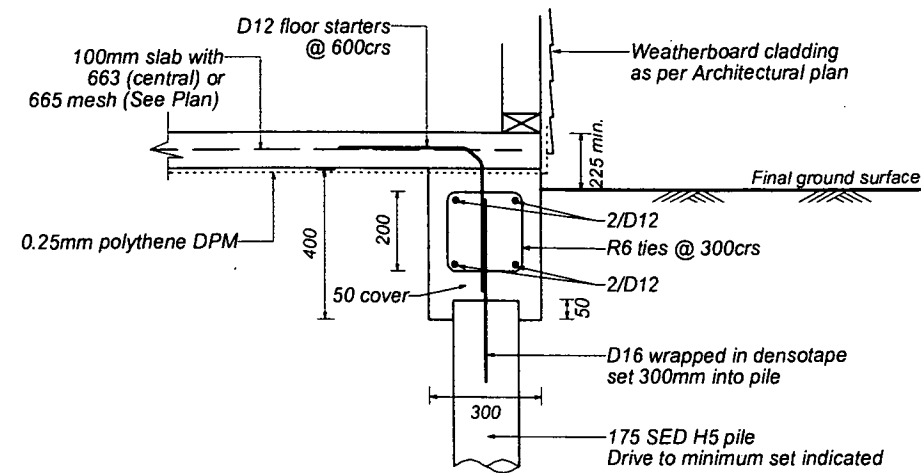
9. PRODUCTION DRIVING OF PILES

Following the driving of 'test piles', the remainder of the production piles shall be ordered and delivered to the site. The contractor shall mark on each pile the total length so it may be seen after the completion of driving operations. The tops of the piles shall not be cut off until after the final inspection has been made by the Engineer or his representative. The final series of at least 20 blow counts shall be clearly marked on each pile, with the distance over the final 10 being recorded as the "final set".

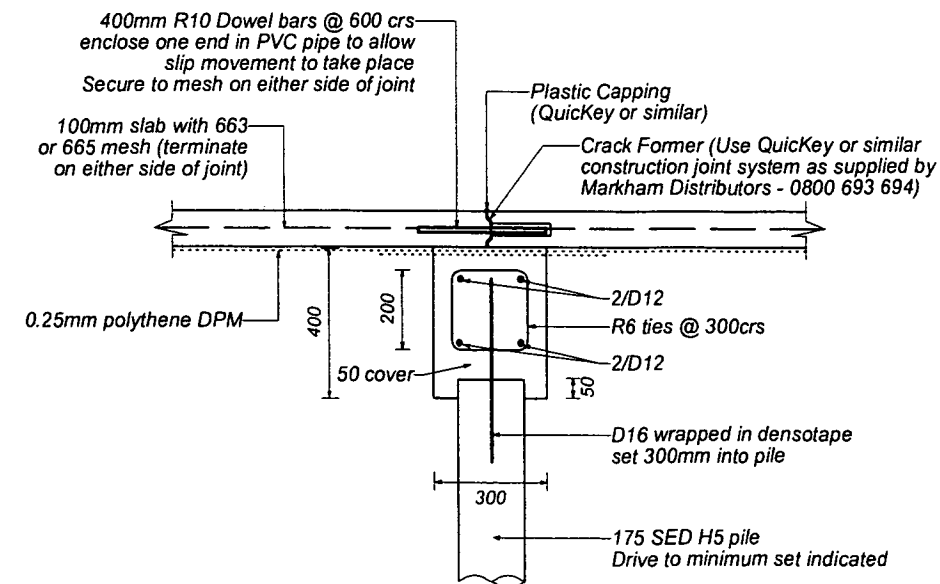
10. PILE RECORDS

The contractor shall supply to the engineer within 7 days of completion of the pile driving, a summary of the final depths and average final sets.

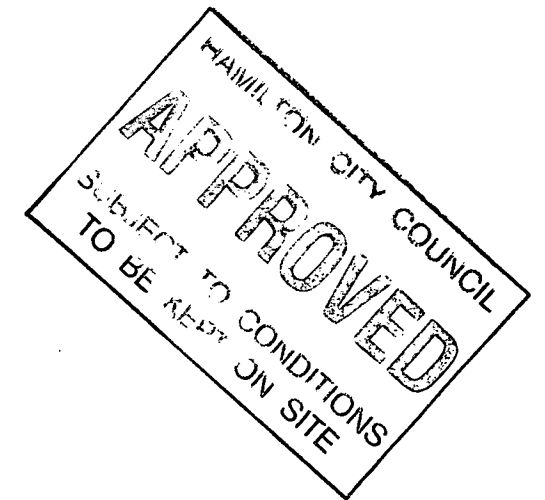
FINAL SET REQUIRED, average last 10 blows (mm), for Ru indicated.			
CONCRETE FLOOR DWELLING			
Hammer Weight (kg)	Hammer Fall (mm)	RU=110kN	RU=115kN
500	500	7	7
	1000	19	18
610	500	10	9
	1000	25	23



EXTERIOR FOOTING A - A
Weatherboard Cladding
SCALE 1:20



CONSTRUCTION JOINT C - C
SCALE 1:20



NOTE:
- Ensure R10 Dowel and PVC pipe sleeve are flat within slab and fastened to mesh on either side of joint.
- 2 x layers of DPM polythene between floor slab and footing to aid slip movement

Mark T Mitchell Ltd
Consulting Geotechnical Engineers
1150 Victoria Street, P.O. Box 9123, Hamilton

LOGAN HOMES
Proposed New Residential Dwelling
Lot Borman Road, Hamilton

FOUNDATION DESIGN DETAILS

DRAWING No. 11502-11
DATE July 2009
ISSUE One