Council Property File

Statement Of Passing Over

This building inspection has been supplied by the vendor in good faith. H&G (Powered by Ownly Limited, Licensed REAA 2008) is merely passing over this information as supplied to us.

We cannot guarantee its accuracy as we have not checked, audited, or reviewed the information and all intending purchasers are advised to seek your own advice as to the information contained in this document.

Please note this Council property file is provided for informational purposes only. There may be matters relating to pre-1992 consents or permits which may need further investigation in order to determine their relevance.

To the maximum extent permitted by law we do not accept any responsibility to any party for the accuracy or use of the information herein.

ALONG

WALL OR BRACING LINE		BRACING ELEMENTS PROVIDED			EARTHQUAKE		WIND	
1	2	3	4	5	6 EQ	7 EQ	6 W	7 W
Line Label	Minimum BU's Required	Bracing Element No.	Bracing Type	Length Element (m) L	Rating BU/m EQ	BU's Achieved (BU/m x L) EQ	Rating BU/m W	BU's Achieved (BU/m x L) W
		A1	BR5	2.2	85	187	115	253
A	70							
		B1	"	2.2	"	187	"	253
B	70	B2	"	2.2	"	187	"	253
C		[redacted]	BR4	1.0	85	85	100	100
D		[redacted]	BR4	.9	.85	76.5	100	90
		[redacted]	BR5	1.4	85	119	115	161
E		[redacted]	BR4	.9	85	76.5	100	90

TOTALS ACHIEVED	EQ	561	W	759
TOTALS REQUIRED	EQ	275	W	567

ACROSS

WALL OR BRACING LINE		BRACING ELEMENTS PROVIDED			EARTHQUAKE		WIND	
1	2	3	4	5	6 EQ	7 EQ	6 W	7 W
Line Label	Minimum BU's Required	Bracing Element No.	Bracing Type	Length Element (m) L	Rating BU/m EQ	BU's Achieved (BU/m x L) EQ	Rating BU/m W	BU's Achieved (BU/m x L) W
		M1	BR5	2.4	85	204	115	276
M	70							
		N1	"	1.2	"	102	"	138
N	70	N2	"	1.2	"	102	"	138
O								
P								
Q								

TOTALS ACHIEVED	EQ		W	552
TOTALS REQUIRED	EQ	275	W	483

4/11/2003

Amended Plan

COUNCIL COPY

APPROVED BY BUILDING
MARK FITZPATRICK
Officer

GIBRALTAR BOARD
Wall Bracing Systems

WALLBRACING CALCULATION SHEET A

(For use with NZS 3604 : 1990)

Name: CLASSIC HOMES

1. Location of STOREY: ~~GARAGE~~ Art room — foundation: single / (upper of two) / lower of two
   SITE WIND ZONE: (Table 2.4) — low / medium / high / (very high)
   EARTHQUAKE ZONE: (Fig. 2.2, Table 2.3) — (A) / B / C

SITE ADDRESS

City/Town or District: KAPITI

Street and Number: THE PALMS
or
LOT AND D.P. Number:

2. **FOR EARTHQUAKE**
   Roof weight: (light) / heavy
   Average Roof Pitch: 18°
   Type of Cladding: (light) / heavy
   Earthquake Zone: A
   Storey in Roof space: yes / (no)
   E = 5.6 BU's/m²

3. **FOR WIND**
   Building Height : 7 m
   Roof Height : 1.5 m
   Stud Height : 2.4 m
   Wind Speed : V HIGH
   W = 81 BU's/m Along
   W = 69 BU's/m Across

4.
   ~~ROOF~~ or BUILDING LENGTH — BL = 7.0 m
   ~~ROOF~~ or BUILDING WIDTH — BW = 7.0 m
   GROSS ~~ROOF~~ or BUILDING PLAN AREA — GPA = 49 m²

5.
   EARTHQUAKE LOAD (ACROSS and ALONG) E x GPA = 5.6 x 49 = 275 BU's
   WIND LOAD: ACROSS — W ACROSS x BL = 69 x 7.0 = 483 BU's
   WIND LOAD — W ALONG x BW = 81 x 7.0 = [redacted]

ALONG

WALL OR BRACING LINE		BRACING ELEMENTS PROVIDED			EARTHQUAKE		WIND	
1	2	3	4	5	6 EQ	7 EQ	6 W	7 W
Line Label	Minimum BU's Required	Bracing Element No.	Bracing Type	Length Element (m) L	Rating BU/m EQ	BU's Achieved (BU/m x L) EQ	Rating BU/m W	BU's Achieved (BU/m x L) W
		A1	BR5	2.2	85	187	115	253
A	70							
		B1	"	2.2	"	187	"	253
B	70	B2	"	2.2	"	187	"	253
C		[redacted]	BR4	1.0	85	85	100	100
			BR4	.9	85	76.5	100	90
D			BR5	1.4	85	119	115	161
			BR4	.9	85	76.5	100	90
E								
					[redacted]			[redacted]
TOTALS ACHIEVED					EQ	561	W	
TOTALS REQUIRED					EQ	275	W	567

change A

ACROSS

WALL OR BRACING LINE		BRACING ELEMENTS PROVIDED			EARTHQUAKE		WIND	
1	2	3	4	5	6 EQ	7 EQ	6 W	7 W
Line Label	Minimum BU's Required	Bracing Element No.	Bracing Type	Length Element (m) L	Rating BU/m EQ	BU's Achieved (BU/m x L) EQ	Rating BU/m W	BU's Achieved (BU/m x L) W
		M1	BR5	2.4	85	204	115	276
M	70							
		N1	"	1.2	"	102	"	138
N	70	N2	"	1.2	"	102	"	138
O								
P								
Q								
TOTALS ACHIEVED					EQ		W	552
TOTALS REQUIRED					EQ	275	W	483

4/11/2003

Amended Plan

Murray Seale.
273 Rosetta Rd
Raumati Bch.
Ph (04) 9040593

RECEIVED
24 OCT 2003
KAPITI COAST
DISTRICT COUNCIL

Building Dunsion . KCDC.

BC 030993

RE NEW HOUSE AT NO 5 The Palms,

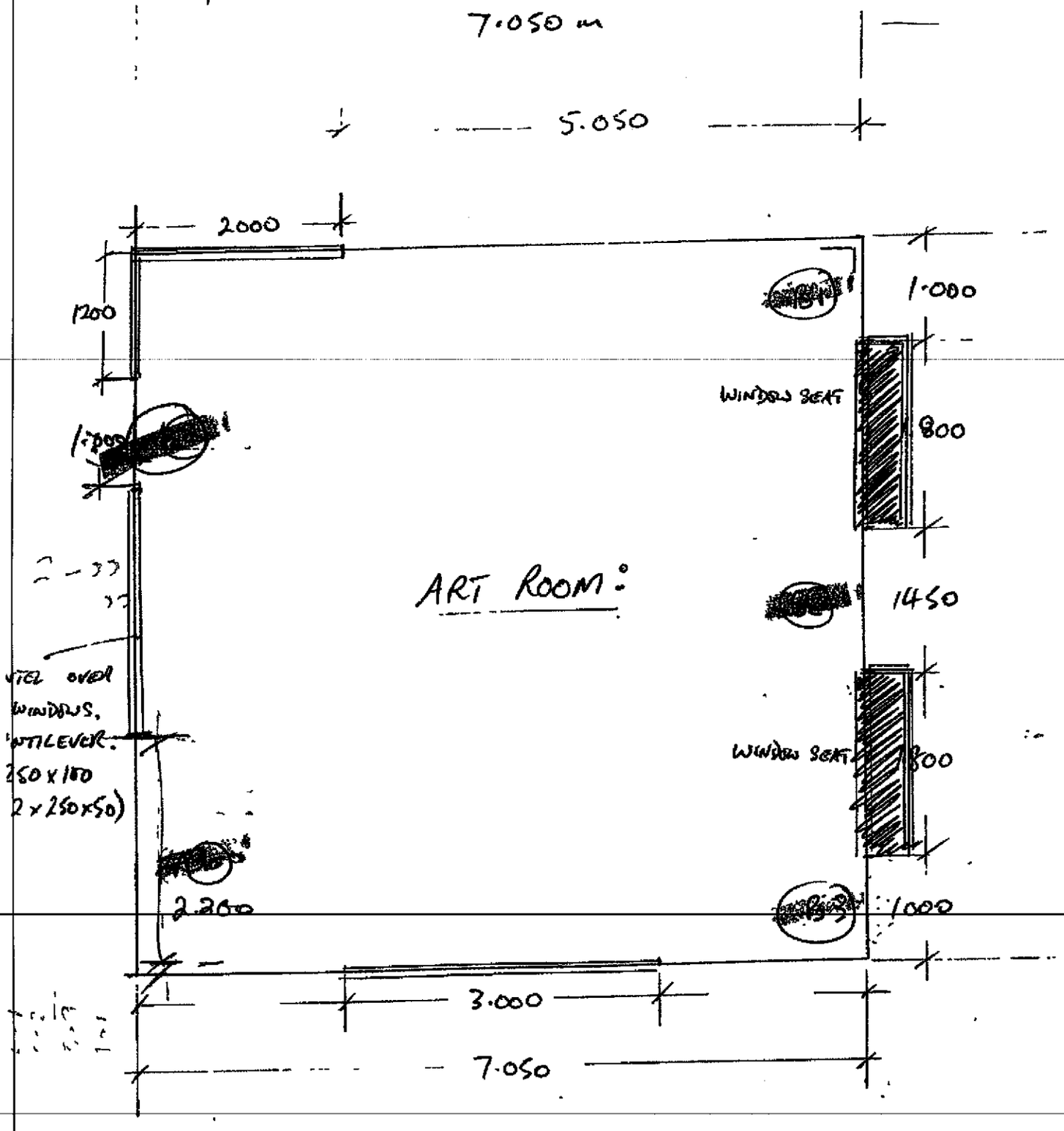
Changes to Windows to ART Room.
thus altering the Bracing : new calculations
as per attached.

Yours faithfully

Murray Seale.

NEW. WINDOWS TO EAST WALL.

Amended Plan



LINTEL HEIGHT = 2110

TRIMMER HEIGHT 800 (~~same~~ different for window seats

SCANNED

Kapiti Coast District Council

COPY RECEIVED
19 NOV 2003
KAPITI COAST DISTRICT COUNCIL

Base Consulting Engineers Limited

- Structural Design
- Foundation Design
- Geotechnical Investigations
- Contract Administration

279 Oxford Street
P.O. Box 434
Levin

Telephone Levin 06 367 0088
Paraparaumu 04 297 0088
Fax 06 367 0058
Mobile 027 44 44 080

DOCUMENT TRANSFER FORM

To: Murray Seale **Date:** 14-11-03

Attention: **Job No:** 43126

Job Description: 5 The Palms BC.030993

Please find enclosed:

- ☐ Drawings:
- ☑ Design:
- ☐ Letter of Recommendation:

A copy is enclosed for your distribution to:

- ☐ Client
- ☐ Contractor
- ☑ KCDC / HDC
- ☐ .....

In addition we have supplied a copy to:

	E-mail	Fax	Post	Delivered
☐ Client	☐	☐	☐	☐
☐ Construction	☐	☐	☐	☐
☐ KCDC / HDC / Enviroplus	☐	☐	☐	☐
☐	☐	☐	☐	☐

Instructions: Amendments for Interspan flooring, note some units rotated from original layout.
All lintels OK as paved. Topping Req.
75-100 thick HRC 665 mesh
100-200 thick HRC 663 mesh

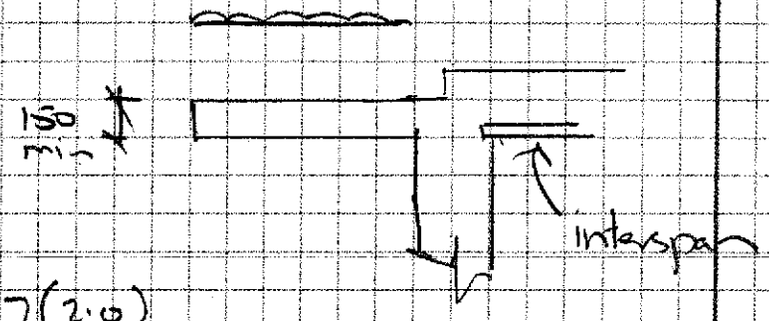
Peter Bolton
Base Consulting Engineers Ltd

Base Consulting Engineers Limited

Job No 43126 | Page A1

Job Seismic Detailing - Amendment | By P Bolton | Date 13-11-03

PREAMBLE
To cantilever concrete slab, provide design



$U = 1.4D + 1.7L$

$w_u = 1.4(0.15)24 + 1.7(2.0)$

$= 8.4$ kN/m

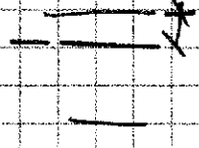
Bending Moment M

$M = w_u s^2/2$

$= 8.4 \times 1.0^2/2$

$= 4.2$ kNm

Try H12-400 ctrs



$a = \frac{A_s f_y}{0.85 f'_c b}$

$= \frac{226 \times 400}{0.85 \times 20 \times 1000}$

$= 6$ mm

Moment Capacity

$M_u = \phi A_s f_y (d - 0.5a)$

$= 0.9 \times 226 \times 400 (150 - 40 - 3 - 6)$

$= 8.2$ kNm/m ok

H12-400 ctrs
150 thick cantilever

c.f weights

125 Interspan + 100 tiling + 100 extra = 325 dry use

2.5 kPa
2.4
4.9
2.4
1.8 = 7.2 kPa

Base Consulting Engineers Limited

Job No 43126

Page SK 1 - A

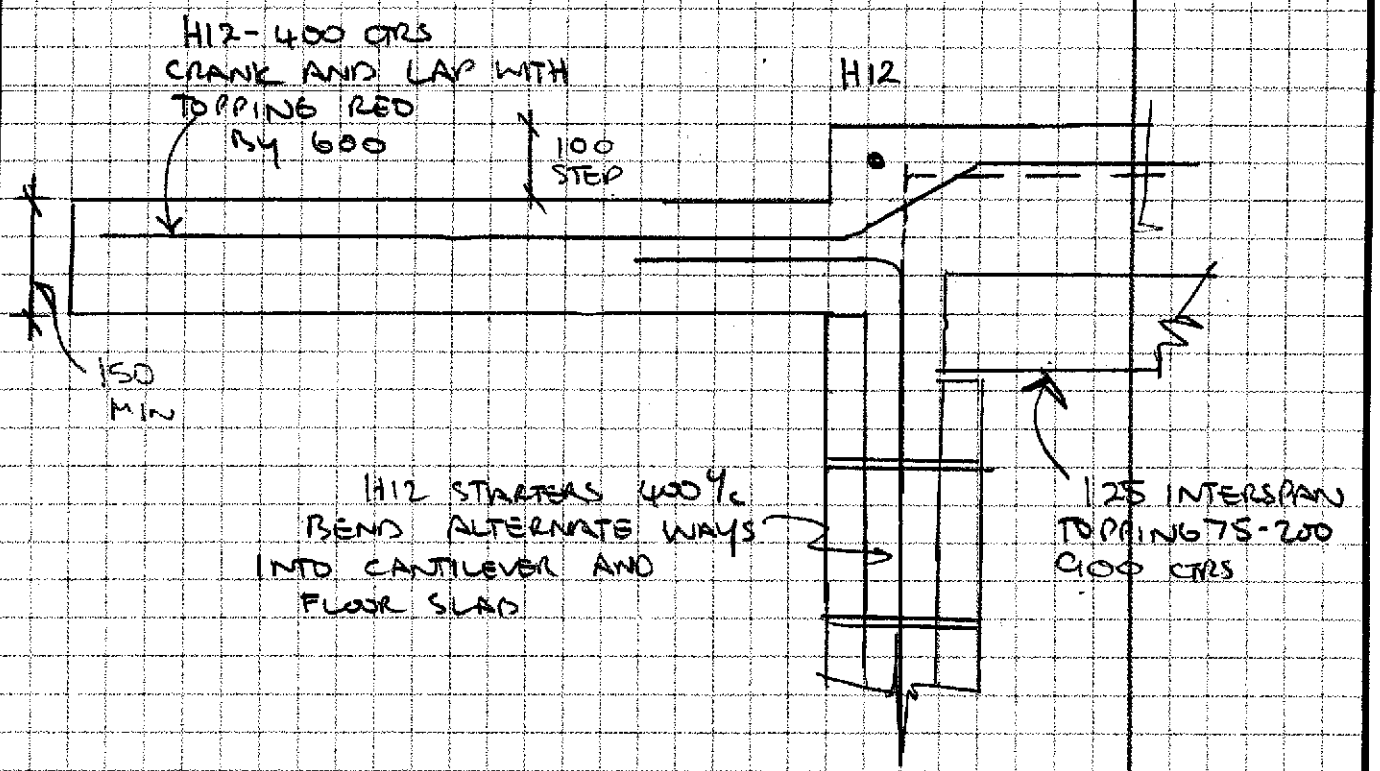
Job SEARLE DWELLING - AMENDMENT
5 THE PALMS RAUMATI

By P BOLTON

Date

CANTILEVER FLOOR DETAIL

MAXIMUM CANTILEVER 1000 m



Base Consulting Engineers Limited

Job No 43126 | Page A3

Job Seaside Dwelling
5 The Palms Raumati

By P Boyton

Date 14-11-03

Design check required for all lintels following change from cleaver to interspan and some change in direction of span

Loading.

Interspan + 200 topping 4.9 kPa

Interspan + 100 topping 2.5 kPa

Live load 2.0 kPa

LINTELS

10/20 Bed/garage Span = 2.0m

$w_1 = [1.4(4.9) + 1.7(2.0)] \times 10.3/2 + 1.4(0.4)\,3.0$.

$= 32.6$ kN/m. $\rightarrow M = 16.3$ kN.m

Garage Door Span = 5.4m

$w_2 = 10.3 \times 1.0 + 1.4(0.4)\,14.3/2 \times 1.15$

$w_2 = 14.9$ kN/m $\rightarrow M = 54.3$ kN.m

Living Room 14/30 Span 3.0m

$w_3 = 14.9$ kN/m $\rightarrow M = 16.8$ kN.m

Entry Span 4.3m

$w_4 = 14.9$ kN/m $\rightarrow M = 34.4$ kN.m

Bed 2 Span 3.0m

$w_5 = 10.3 \times (5.2/2 + 1.0)$

$= 37.1$ kN/m $\rightarrow M = 41.7$ kN.m

Bed 2 14/24 Span 2.4m

$w_5 = 37.1$ kN/m $\rightarrow M = 26.7$ kN.m

Base Consulting Engineers Limited

Job No 4 3126 | Page A4

Job | By | Date

CAPACITY OF LINTELS Type A

$a = \frac{314 \times 400}{0.85 \times 8 \times 190}$

$= 97$



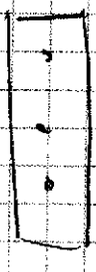
$M_u = \phi A_s f_y (d - 0.5a)$

$= 0.85 \times 314 \times 400 (390 - 48 - 10 - 60)$

$= 29.0$ kN.m OK for all but garage door.

Type B

$a = 97$



$M_u = 0.85 \times 314 \times 400 (390 - 48 - 10 - 60)$

$= 50.4$ kN.m OK

Minimum Reo

100 top $A_s = \frac{0.7}{f_y} = 0.00175$ → 175 mm² min 663

200 350 mm² 663

12 JAN 2004

Producer Statement

Private Sewer Drains

Construction Review

Issued by D. McKENZIE **Registration Number** 10635.

To Kapiti Coast District Council

In respect to the following

Private Sewer Drains installed in accordance with G13 AS2 or AS/NZS 3500 .2.2 as shown on the approved plans or as per the attached amended plan

Installed at LOT 4 (5) THE PALMS, KOHUTUHUTU RD, RAUMATI.

Building Consent No. B.C. 030993

As a registered drainlayer, currently holding an annual practicing license, certify that I, or personnel nnder my control, have carried out the installation of the above system and I believe on reasonable grounds that the installation complies with the New Zealand Building Code.

Signed.....**Date**.....

Note: ***Fully dimensioned as built drain plan to be supplied.(scale 1:100)***

Drains may be laid and backfilled without inspection provided that the drain is left under test with a min of 1.0 m head and the inspection at the lateral left exposed.

Producer Statement

Stormwater Drains

Construction Review

Issued by D. McKenzie **Registration Number** 10635

To Kapiti Coast District Council

In respect to the following

Stormwater Drains installed in accordance with E1 AS1 as shown on the approved plans or as per the attached amended plan

Installed at Lot 4 The Palms, Kohutuhutu RD, Raumati.

Building Consent No.....

As a registered drainlayer, currently holding an annual practicing license, certify that I, or personnel under my control, have carried out the installation of the above system and I believe on reasonable grounds that the installation complies with the New Zealand Building Code.

Signed ..... **Date** 8/1/04.

Note: Fully dimensioned as built drain plan to be supplied. (scale 1:100)

4. Landscaping and planting of the road frontage in front of Lots 1 & 3 shall be in accordance with the landscaping plan "Classic Homes Ltd" submitted to Council on 31 January 2000. No Pheonix Palms shall be planted within the road reserve. It is the on-going responsibility of the owners and occupiers of lots 1 and 3 to ensure that the landscaping and planting on the road reserve in front of lots 1 & 3 is maintained generally in accordance with the approved landscape plan. A copy of the approved plan is held on file No. RM990463 at the Council offices.

Issued in respect of application No. RM 990463 on this 28th day of November 2000.

AUTHORISED OFFICER **AUTHORISED OFFICER**

Electrical Certificate of Compliance

No. 1780087

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.

List of attachments

CUSTOMER INFORMATION - PLEASE PRINT CLEARLY

Name of customer: Murray Seale

Address of installation: 5 The Palms - Kaumati

Postal address of customer (if not as above):

WORK DETAILS

126	No. of lighting outlets	1	No. of ranges	Please tick (✓) as appropriate where work includes:	
58	No. of socket outlets	0	No. of water heaters	✓ Mains	✓ Main earthing system
Was any installation work carried out by the homeowner?		—	Yes ✓ No	✓ Switchboard	— Electric lines

Description: New House - New Comection:
3 x Heated Towel Rails
1 x Bathroom fan Heater
1 x In Line Shower fan
1 x Spa Bath - 2 x Heat/Light/Fan
5 x O/S power points
RCD (1) - 21 ma/80 ms/0·00V
RCD (2) - 24 ma/55 ms/0·00V
2 x Air Conditioning Circuits

If necessary attach any pages with sketches of work done

It is recommended that test results be recorded here:

- Visual Examination ✓
- Earth Continuity ✓
- Bonding ✓
- Polarity ✓
- Insulation Resistance: Inf Ω Mohm
- Other: RE - 1 Ω / 0·03V

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 (Safety) Regulations 1997.

ELECTRICAL WORKER DETAILS

Name	ANTHONY GILMORE
Registration no.	E 2088
Company	Gilmore Electrical
Signature	A. J. Gilmore
Date	13/4/2005
Contact Ph No.	0274 454 050

CERTIFICATION OF ELECTRICAL LINES

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

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	
Signature	
Registration no.	
Date	
Contact Ph No.	

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.

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 330924

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

THIS CERTIFICATE IS NOT TRANSFERABLE

Installation address: (Box No's not acceptable) (Number) 5. (Street name) THE PALMS.
(Suburb) RAUMATI.

Consumer: MR. M SEARL. (Title) (Initials) (Family/Business name) (Town/City)

Please complete in block letters

Category
- ☑ Domestic
- ☐ Commercial
- ☐ Industrial
- ☐ Temporary
- ☐ Other

Type (Regulation 24(1))
- ☑ New
- ☐ Addition, ☐ Extension,
- ☐ Replacement
- ☐ Alteration
- ☐ Repair following accident

Gas Type ☑ NG ☐ LPG ☐ TLP ☐ Bio

Name of Gas Supplier GENISIS.

Pipework Installed ☑ YES ☐ NO
(attach pipework diagram)

DESCRIPTION OF GASFITTING TO WHICH THIS CERTIFICATE APPLIES

	Appliance			Flue		Ventilation	
Qty	Type	Location	Make/model	Input rate	Type	Location	Type	Location
1	HOT WATER	OUTSIDE	RINNAI INFINITY 32.	250 MJ.	POWER	OUTSIDE	FROM	OUTSIDE.
1	11	11	RINNAI. INFINITY 24.	188. MJ	11	11	11	11
1	COOK TOP.	KITCHEN.	Fa P. CG 912 TM		NON FLUED		COMPLIES.	
1	SPACE HTR.	DOWNSTAIRS LOUNGE.	MASPORT P.36 CALAIS/GRENADA.	33 MJ.	DIRECT VENT.	OUTSIDE.	FROM	OUTSIDE.
1	BAYONET.	PATIO. UPSTAIRS	—	—	—	—	—	—
1	BAYONET.	PATIO DOWNSTAIRS.	—	—	—	—	—	—

Test Results

10	min	Duration
5.00	kPa	Test pressure
0	kPa	Loss / gain
2.5	kPa	Working pressure

Other Testing
Combustion ☐ Yes ☑ No
Ventilation ☑ Yes ☐ No

Test Date 18/11/04.

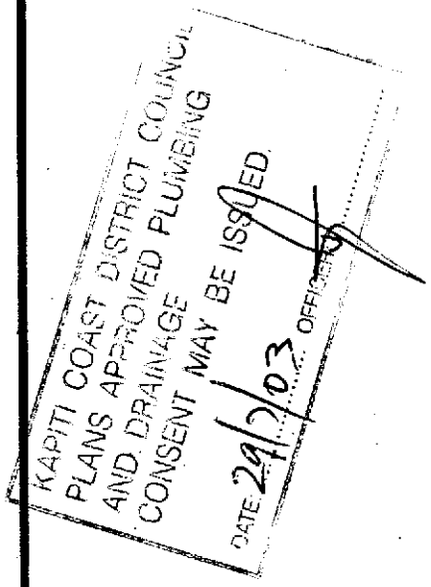
I certify that :-
1. All appliances and fittings worked on by me or by persons working under my supervision are safe and that all work carried out was in accordance with all applicable requirements of the Gas Act 1992 and Gas Regulations 1993 as amended.
2. The gasfitting to which this certificate applies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

Certifiers Name C. R. AMBROSE.
Address P.O. BOX 240. PARAPARAUMU.
Registration No 4770.
Signature
Date 18/11/04

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)

ROB MEECHAM DRAUGHTING & DESIGN WAIKANAE 04 905 7868



Proposed New Residence
at
5, The Palms, Kohutuhutu Road,
Raumati Beach.
for
Classic Homes Ltd

June 2003

ROB MEECHAM DRAUGHTING & DESIGN WAIKANAE 04 905 7868

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Specification

for the erection of _____

at _____

for _____

This is the specification referred to in an Agreement between

_____ as Owner, and

_____ as Builder,

dated _____ and if not mentioned in Agreement takes notice of the following completion and penalty clauses.

Time for completion _____ weeks from acceptance of tender.

Liquidated damages for delayed completion shall be $_____per week. Extensions to the contract period for extra work or for contingencies beyond the control of the contractor to be as agreed between the parties at the time and added to the time for completion.

PAYMENTS & RETENTIONS:

Payment in the form of progress payments at not less than one month intervals will be made on value of work carried out less 10% retention as required by the Wages Protection and Contractors' Liens Act, 1939. Retentions to be held until 31 days after completion of the contract after which a sum of 5% is to be held if maintenance has not been carried out as under clause P. & G. No. 10 Maintenance.

ARBITRATION:

If dispute or difference should arise between the Owner and Contractor the contract shall be subject to arbitration under the Arbitration Act 1908.

PRELIMINARY AND GENERAL:

1. Contract

This contract includes the supply and delivery of all materials, labour, fittings, tools, plant, toolshed, temporary water supply, temporary builders' power supply, etc., necessary for the due and proper completion of the building as shown on the drawings and herein specified, in a thorough workmanlike manner, in strict accordance with the Local By-Laws, manufacturers' specifications and to whatever regulations made by those loaning monies to complete this Contract.

2. Permits

Contractor to comply with the Labour and Building By-laws of the district, to apply for and obtain all the necessary permits and to pay all fees for same, unless otherwise mentioned.

3. Construction Act

The provision of the Construction Act 1959 and regulations are deemed to be part of this contract.

4. Provide and Fix

The words "provide" and "fix" shall be construed to mean "provide" and "fix" where mentioned separately unless otherwise mentioned.

5. Insurance

The Contractor to have all of his employees covered against accident by an Employers' Liability Policy and to take out insurance against fire and theft of materials off-site for a sum sufficient to cover the full amount of the Contract Sum, both policies to remain in force until the building is taken over by the Owner, the fire insurance to be in the joint names of the Owner, and Contractor.

6. Interpretation

Work or materials shown on the drawings or specified and not shown, must be supplied as though both shown and specified. Materials shown but not specified must be of the kinds commonly employed for the service they are intended to perform. All figured dimensions shall be taken in preference to scale and all detail drawings shall supersede those to a smaller scale. The Contractor shall be held responsible for the setting out of all work and he shall make good at his own expense any errors that occur through his lack of checking or faulty workmanship.

7. Stability

The Contractor shall carefully brace and support all parts of his work against damage by wind and also protect same from the elements.

8. Protection of Property

The Contractor shall protect adjoining properties during the currency of the contract and shall make good all damage at his own expense.

9. Damage

The Contractor shall make good at his own expense and to the satisfaction of controlling authorities, any damage done to footpaths, herbs, drainage etc, or other property under control of such authorities.
Each trade shall take care to prevent damage or disfigurement of the work of other trades and will be responsible for cost of restoring same.

10. Maintenance

Period to be a minimum of thirty days or to a time agreed on by both parties and entered into the agreement after the Owner has taken possession. Any defects in materials, workmanship or any part or parts that require replacing or adjusting, which have been included in this Contract, shall be adjusted or replaced at the Contractor's expense.

11. Materials

Any materials herein specified that are not procurable at the time they are required, thus tending to retard the progress of the Contract, may be substituted with other similar materials, providing that the substituted materials conform to the Local By-laws and with permission of the Owner. The Contractor is first to notify the Owner of any change proposed and at the completion of the Contract will adjust any difference in cost.

12. Contingencies

Provision is to be made by the Builder and Owner to meet any contingencies that may arise due to the fluctuations in the price of various materials or labour. Should there be either a rise or fall in the price of labour or materials, from the date that the tender is submitted until final payment, an adjustment to the Contract Price, is to be made accordingly provided that the Contract Price has been affected by such rise or fall in prices. The sum of $_____ is allowed in the Contract Price as a Contingency Fund.
The Owner will expect the Builder to submit proof of any increases claimed for by way of invoices or labour costs.

13. Visit Site

Tenderers shall visit the site and ascertain the nature and extent of the work and the rights and interests that may be interfered with and any other matter that may influence the making up of a tender or the carrying out of the Contract in its entirety. The levels shown on the drawings are approximately correct but tenderers shall verify these as no claims for extra will be allowed on the basis of incorrect levels shown.

14. Workmanship

All work shall be carried out in accordance with the best trade practice, in strict conformity with the drawings and specification and to the satisfaction of the Owner.

All defective or damaged work shall be removed and made good to the satisfaction of the Owner.

15. Cleaning

The Contractor, at the conclusion of the Contract, shall have all ceilings, walls and woodwork carefully dusted and wiped down, windows washed and glass free from scratches, floors brushed and wiped down and the entire building left in a perfectly clean condition for occupation.

EXCAVATOR

1. Preliminary and General

Read and note all clauses under Preliminary and General of this specification where they apply to this trade.

2. Levels

Levels shown are approximately correct, but in all cases the foundation shall be taken to a solid bottom to the satisfaction of the Local Building Authority. Check all levels and make allowances accordingly.

3. Clearing Building Area and Bulk Excavation

Clean off all vegetation and 150 mm top soil over building area and deposit on site as directed. Excavated material to be deposited as directed on site or if directed off site an extra will be allowed to the Contractor.

4. Building Excavation

Excavate for all foundations to the minimum depth shown as required to NZ Building Code or the Local Body Engineer or his agent, or where directed due to the nature of the country. Excavate for basement field tile drains to required depths and falls.
Fill and well ram on completion.

5. Hardfill

Under all concrete floors provide a minimum thickness of 100 mm of 50 mm graded down clean scoria well compacted and binded with fine scoria to a corrected level.

6. Field Tile Trenches

Provide for 100 mm diameter tile trench bedded in scoria to correct level.

7. Revet and Maintain

Secure and maintain the sides of all excavations and keep them clear of water and fallen materials

CONCRETE AND REINFORCING

1. PRELIMINARY & GENERAL:

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

2. Extent of Work

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

3. Materials

Concrete which shall be ordinary grade and reinforcing shall comply with requirements of NZBC 1992 and NZS 3604 1990
Builders mix may be used if agreed by Owner, providing the minimum crushing strength of 17.24 MPa is unaffected.

4. Formwork

Formwork generally shall be of plywood or 25 mm thickness non - staining timber and shall be so constructed that it can be removed without damaging concrete.

5. Foundations

Foundation footings, walls and reinforcing shall be to sizes shown on drawings and in accordance with NZS 3604 1990 If not shown elsewhere footings shall be not less than 300 mm wide x 150 mm high where required reinforced with two 12 mm longitudinal bars and foundation walls shall be not less than 130 mm thick reinforced with 12 mm dia. rods at 300 mm centres horizontally and 10 mm dia. rods at 600 mm centres vertically where height of wall is under 1.8m. Reinforcing steel shall be lapped at least 40-rod dia. for plain rods and not less than 30-bar dia. for deformed bars conforming to the requirements prescribed. Concrete foundation blocks shall be precast 200 x 200 x 600 mm high set on 300 x 300 x 100 mm concrete pads.

6. Concrete Slabs

Where required concrete slabs for floors and porches shall not be less than 115 mm thick poured on well compacted hard fill and reinforced with a layer of 150 x 150 x 5.30 mm mesh.
Where floor slabs occur in rooms for habitation they shall have an approved vapour and moisture proof barrier incorporated, such as polytheme sheet not less than 0.25 mm to the requirements NZS 3604 1990 and shall be welded into one continuous sheet or shall have joints lapped not less than 50 mm and sealed with a self adhesive plastic tape to manufacturers' specifications.

7. Build-in Bolts etc

Provide in concrete for openings for vents or as required by other trades and for holding down bolts in accordance with NZS 3604 1990

Timber grounds where required for fixing door frames etc. shall be heart totara dovetailed and where required water bars shall be of brass or galvanised iron.
Power powered tool fixings can be used where appropriate.

8. Paths

Where shown on drawings paths shall be laid not less than 75 mm thick reinforced with a layer of 150 x 150 x 4 mm mesh. Surface to be trowelled even with suitable drainage grade and left off with a wooden float.

9. Completion

Leave all clean and tidy at finish and make good any defective work.

CONCRETE BLOCKLAYER

1 PRELIMINARY AND GENERAL

Read and note all clauses under Preliminary and General of this specification where they apply to this trade

2. Extent of Work

Refer to drawings for layout and extent of work. Build the whole of the reinforced and unreinforced 200 mm concrete blockwork, building in as the work proceeds reinforcing steel, bolts and all other lugs, conduits, sleeves etc. required for the work of other trades. Keep surface clean and free from mortar, perpends true and faces true to line, laying all blocks dry.

3. Bond

Blocks shall be laid in stretcher or stack bond as shown with blocks evenly spaced, faces true and vertical. 200 mm blocks shall be free from all defects which would prevent a first class fair faced finish to both faces. Reject all defective blocks which do not comply with NZS 4210 P1. All joints shall be full and a complete bond shall be secured between the blocks and mortar. Great care shall be exercised to ensure that bond is not broken by making adjustments to blocks after mortar has taken a set.

4. MORTAR

All mortar shall have a compressive strength of 12.5 MPa and shall generally be in accordance with NZS 4210 P, Section 3.

5. Water

Water shall be free from salt, vegetable or organic matter in solution or suspension. Water from Local Authority mains is acceptable.

6. Sand

Sand shall comply to NZSS 19[illegible].2 filling of masonry cavities and NZSS 2129 "sands for Mortar, Plaster & external renderings"

7. Cement

All cement shall comply with NZSS 3122 and shall be properly stored at the site and adequately protected from dampness.

8. Minimum Reinforcing Steel Requirements

(a) In all reinforced masonry there shall be at least one vertical rod or bar not less than 12 mm diameter or two 10 mm rods or bars placed at all corners and wall ends except that where openings are carried around corners, the reinforcing steel shall be placed in any masonry used below or above the opening. In all reinforced masonry walls there shall be not less than one 12 mm rod or bar or two

10 mm rods or bars placed at all corners and wall ends except that where openings are carried around corners, the reinforcing steel shall be placed in any masonry used below or above the opening. In all reinforced masonry walls there shall be not less than one 12 mm rod or bar or two 10 mm rods or bars on all sides of, and adjacent to, every opening exceeding 600 mm in either direction.

(b) Such vertical reinforcing steel shall extend from the foundation or lower wall beam to the upper wall beam. Horizontal reinforcing steel shall extend not less than 600 mm beyond the corners of the openings.

(c) Reinforcing masonry shall be reinforced both horizontally and vertically. The vertical reinforcing steel shall be placed at not more than 1000 mm centre to centre and shall be not less than 10 mm in diameter.

(d) Any space containing reinforcing steel shall have a clear distance of not less than 6.35 mm between the steel and masonry at all points and shall be filled solid.

(e) Reinforcing steel shall be lapped at least 40-rod dia, for plain rods and not less than 30-bar dia. for deformed bars conforming to the requirements prescribed.

9. Joints to Blockwork

All blockwork joints shall be neatly stuck with a 10 mm rod jointer to form a neat concave recess to a good line, level and of consistant depth of approximately 6 mm.

10. Waterproofing

Approved silicone waterproofing applied to blockwork where required. Apply an approved waterproofer to the exterior of the concrete blockwork below ground level and around basement area.

11. Engineer's Drawings

If Engineer's Drawings are provided they shall be read in conjunction with the above and shall, if necessary, override.

BRICKLAYER

1. PRELIMINARY & GENERAL

Read and note all clauses under Preliminary and General of this specification where they apply to this trade.

2. Relevant Specifications

All work shall be in accordance with the requirements of NZ Building Code and NZS 3604 1990

3. Materials

(a) Bricks: Bricks for external veneers and foundation walls shall be _____ of the colour and type selected and shall comply with NZSS 366 Clay Building Bricks grade A or B. All fair face brickwork shall be laid with their best face outwards.

(b) Cement: Cement shall be ordinary Portland Cement and at the time of use shall comply with NZSS 3122 Portland Cement.

(c) Plasticizers: Plasticizers shall be used in accordance with the manufacturer's instructions and no other additives are to be used in conjunction with these materials. On no account will further additions be made at the time of retempering mortars.

(d) Water: Water shall be drinking quality and shall at the time of use be free from acids, alkalis and organic impurities.

(e) Sand for Mortars: Sand used shall be Mercer No. 1 sand

4. Preparation of Mortar

Mortar shall be prepared by mixing in an approved batch mixer. Measurement of materials shall be by volume in a suitably calibrated device. Mortar shall be mixed until a homogenous mass is obtained but for not less than 5 minutes. All mortar whether on the boards or left in the mixer shall be used within 90 minutes. Mortar not used in this time shall be discarded.

5. Bricklaying

Bricks shall be laid in stretcher bond true to line level and plumb, and in accordance with the best trade practice. All work shall be laid from the lowest corner and no corner shall be raised more than 900 mm above wall line. Corners shall be racked back. On no account will toothing be permitted. All joints will be completely filled with mortar and the bricks shall be shoved into place at least 12 mm and shall be disturbed as little as possible after initial positioning. Head joints shall be buttered on three edges, deeply furrowed joints will not be permitted and mortar shall be spread on on the bed joint not more than three bricks ahead of laying the next course.

Joints shall, unless otherwise specified, be not more than 9.5 mm thick and shall be tooled as directed as work proceeds. Where tapestry bricks are used care shall be taken to use a tool slightly smaller than joint width to prevent pushing mortar into the brick striations.

6. Brick Foundation Walls

Construct foundation walls in not more than 1200 mm in height in 100 mm brickwork with 200 mm bonded piers at centres as shown on drawings. Tie bricks shall be at not more than every third course and shall bond at least 50 mm into foundation wall. Bond in the foundation wall shall be maintained by the use of batts. Foundations over 1200 mm high shall be built in 230 mm work or as otherwise directed. Consult with Builder for size and position of access door.

7. Brick Veneer

Construct brick veneer as shown on the drawings and in accordance with NZBC-NZS 3604 1990 Motar and workmanship as previously specified. Veneer ties, and their anchorages, shall be designed and fixed so as to resist a lateral load in tension or compression of twice the weight of veneer which each tie supports, without elongation or shortening of the assembly by more than 1.6 mm. Ties shall be non-corrodible metal or shall be galvanised after forming, with a zinc coating of not less than 505 g/m2.
If of round bar they shall be of a minimum of 5mm dia., if of sheet metal they shall be of a minumum thickness of 1.5 mm and a minimum width of 25 mm. The latter shall be used whenever a breather type building paper is fixed to the face of external studs so that puncturing of the paper within the cavity space does not occur.
Approved ties shall be spaced at not more than 500 mm horizontally and not more than 345 mm vertically. An air space of at least 38 mm shall be maintained between timber frame and veneer and where necessary weep holes shall be left every third joint for the discharge of water. Care shall be taken to maintain the air-space and upstand free of any mortar droppings, protruding joints, or pipes or electrical wire, junction boxes etc. Incorporate galvanised vermin proofing. Where shown build in bricksize concrete vents as required All facing work shall be kept clean as the work proceeds. On completion all brick work shall be left in a clean state.

8. Sills

Sills to be brick on edge, brought to underside of wooden sills, junction between to be filled with 'Hydroseal' and overpointed with cement mortar.

9. Building Paper

Building paper where used on outside face of studs shall be of a bituminous or fire resistant breather type complying to NZSS 2295 and metal ties shall be of a sheetmetal type fixed to face of studs.

10. Vermin Proofing

Build-in 100 mm wide strips of approved galvanised wire mesh secured to bottom of wall plates with 20 mm galvanised wire staples carried across cavity and taken 25 mm into work. Vermin proof dividing wall and wherever necessary to prevent entrance of vermin.

11. Chimney

Chimney to be _____ brick to Owner's preference.
Cast in C.I tip grate to floor of hearth.
Construct fireplace with jambs in 230 mm work, lined with firebrick, with slanting sides and a tilted back giving a 75 mm max. throat opening, finished 150 mm above soffit of fireplace opening. Fill behind tilted back with mortar, with concave finish to top. Gather brickwork into flue liner and parge brickwork. Cast concrete lintel with 100 mm bearing, reinforced with two 12 mm dia. rods tied with 4 mm wire at 150 mm centres.
Slope back face of lintel into throat.
Construct flue with internal diamensions of 300 x 300 mm and build in 230 mm diameter earthenware flue liner for full height, wrapped with heavy quality building paper.

12. Firefront and Hearth

Allow the P.C sum of $.....for selected fire front and hearth.

13. Cement Composite Bricks

Cement composite bricks for external veneer and foundation wall shall be _____ of the colour and type selected and shall be manufactured in accordance with NZSS 3102P "specification for Concrete Masonry Units"

CARPENTER AND JOINER

1. PRELIMINARY AND GENERAL

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

2. Extent of Work

The work of this section shall include all labour, materials, equipment necessary to carry out and complete the carpentry as shown, or as further required by this specification. Together with any other items of work reasonably inferred as part of this section.

3. Attendance and Protection

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

4. Materials and Workmanship

All material used shall be the best of their respective class and type specified. Any materials which in the opinion of the Owner, Loan Body or Local Authority are not up to standard, to be removed immediately from the site. All work shall be carried out in a workmanlike manner in accordance with best trade practice and as or where especially specified. Any work that is intended or implied but not specifically shown, mentioned or specified as necessary for the proper completion of the building shall be included. All work shall comply with NZS 3604 1990 and NZ Building Code

5. Timber

All timber used shall be the best of its kind, conforming NZBC 1992 requirements (Building Timbers). All Pinus Radiata to be No.1. Framing Grade pressure treated or treated to requirements of the Timber Preservation Authority specifications.

6. Damp Proofing

All timber to be protected from dampness with 3-ply bituminous felt or other approved damp proofing material when in contact with concrete or brickwork.

7. Priming

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

8. Cleaning

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

9. Nails & Screws

All nails used in framing to be diamond head of sufficient length to penetrate the holding or second timber to at least half length. Flat head nails may be used if timber suitable. All bolts, screws etc. to be adequate for their respective purpose.

10. Insulation

All roofs, walls and floors are to be insulated in accordance with NZ Building Code, , NZS S 4214 and NZSS 4218P. No insulation material shall be used that does not comply with NZSS 1340 All insulation materials are to be installed in accordance with manufacturer's recommendations.

11. Moisture Control

Where a vapour barrier is required in the form of foil or polythene film, this barrier shall always be fixed on the inside (warm side) of the external stud, extending and fixed to top to bottom plate. (The shining side of the foil should be facing the airspace.) Fixing shall be by galvanised clouts or cadmium coated staples and joints shall be on studs and noggings all according to manufacturer's specifications. Foil or polythene film shall not be used as a substitute for building paper.

Construction materials must be dry before final closing in. There should be no openings between underfloor space and wall cavities or between wall and roof cavities. There should be no unsealed openings for service pipes and wiring etc. There should be no discharge from cooking extractors or clothes driers into any wall, roof or floor cavity.

There must be adequate vapour resistance directly above all ceiling installations.

A proper solvent based paint or varnish finish must be used for plasterboard linings to "wet" rooms, such as kitchens, bathroom, laundry. Water based emulsion paints must not be used.

12. Timber Groupings

All timber shall be the best of their respective kinds, and shall conform to NZSS 3631 Classification and Grading of New Zealand timbers

(a) Treated Timbers

Timbers shown in the shedule of timbers to be treated shall be treated with an approved preservative process in plants licensed by the Timber Preservation Authority.

SCHEDULE OF TIMBERS

LOCATION	SIZES	GRADE	REMARKS
Jack Studs & Sleeper Plates	Int. 100 x 75mm Ext. 100 x 50mm	B.A.H.R. or P/T Radiata No.1	1. 2 x 2m c.c
Floor Joists	See plan for size	" " "	450 mm
Plates to Conc, Floors	100 x 50mm	" " "	
GENERAL FRAMING. NZS 3604 1990			
Studs & Plates	100 x 50mm or 100 x 75mm or 75 x 50mm	Treated Radiata No.1	600mm c.c
Trimmers	Equal width to Built up framing		
Openings from	Solid or Laminated		
1m to 1.35m	75mm 150mm	" " "	
1.35m to 1.8 m	100 mm 150mm	" " "	
1.8 m to 2.25m	125mm 200mm	" " "	
2.25 m to 2.7 m	150 mm 200mm	" " "	
Ceiling Joists	Over 1.8m 100 x 50mm	" "	450mm c.c
Exposed Beams	Ash shown	" " "	See Plan
Rafters Max. span 2.4m " " 3.0 m " " 3.6m	100 x 50mm 125 x 50mm 150 x 50mm	" " "	450mm c.c For Tile (conc).
Rafters	100 x 50mm	" " " for iron or bituminous	900mm c.c
Roof Trusses	TO APPROVED		
Under Purlins and struts	100 x 50mm 100 x 75mm	T/d Radiat No.1 " " "	as required " "
Purlins	75 x 50mm	" " "	" " 750mm c.c
Tile Battens	50 x 25mm	" " "	" "
Ridges	200 x 25mm	" " "	See Plan
Hips	200 x 25m	" " "	" "
Valley Board	150 x 25mm	" " "	" "
Dragon Ties	100 x 50mm or 150 x 25mm	" " "	as required
Wall Noggings	75 x 50mm or 100 x 50mm as Reqd.	Treated Radiata No.1	3 rows
Collar Ties	150 x 25mm	" "	See Cl. 16
Ceiling Noggings	75 x 50mm	" "	As required

Timber Terraces: See plan Pressure Treated Pine or Hardwood

Finishing Timbers

Flooring	100 x 25mm or 18mm Particle Board	T & G D.A.H Rimu or Matai High Density	See Cl.31(b)
Fascia Board	150 x 25mm to 225 x 25mm	D.A.H.R.	
Frieze	150 x 25mm	"	
Weatherboard	D.A.H Rimu or P.T.D.A. Rimu or Matai or imported Cedar Horizontal or Vertical finishing grade. Weatherside or Fibroplanks. (Delete that not applicable)		
Internal Door Jambs	25mm	C.B.R.	
Architraves	75 x 12mm	C.B.R.	
Skirtings	75 x 12mm	C.B.R	or by agreement
Sill Boards	25mm	C.B.R	
Aprons		C.B.R. Scotia or ½ round	

ALL OTHER INTERNAL FINISHING TIMBERS NOT SPECIFICALLY MENTIONED TO BE C.B.R.

Window Jambs	150 x 40mm	D.A.H. Rimu
Window Sills	150 x 65mm	D.A.H. Rimu or Matai or Cedar
Mullions	75 x 65mm	" " " "
Facings Ext.	75 x 25mm	" " " "
Cornices	40mm	" " " "
Door Sills89	150 or 200 x 65mm	with 12mm Steel weather Bar
Scribers	50 x 12mm	Totara or Heart Rimu

14. Sub Floor Framing

a. Sleepers shall be 100 x 75 mm on edge. Supported at 1.2m centres along length. Spacing between sleepers to be max. 2m. Jack studs to be securely fixed to foundation blocks and sleeper plates. Brace with 100 x 75mm as required. Floor joists shall be gauged over plates to uniform levels. Laps not less than 150mm spiked . Nail plates may be used in place of lapping.

b. Plates to concrete to be bolted or fixed by power powered tools

15. General Framing

All framing to be 100 x 50mm stud or 75 x 50mm stud with 100 x 75mm to all openings. Top and bottom plates to be same sizes as studs in long lengths. Halved at angles and joints over bearings. All studs at 600mm c.c. Provide three (3) rows nogs to full height each wall and to suit plan.

16. Roof Framing

Construct roof as shown on drawings and detailed. Bird-mouthed over plates and fix securely. Fix valley boards, ridge etc. Allow for collar ties to every third set of rafters where rafters exceed 3m in length, struts, under-pulins etc. Fix pulins as required. Fix fascia, barge, frieze etc. as required for iron roof if purpose made metal sections are not shown on plan. Cover whole of roof with building felt or a breather type on wire netting.

Trussed Roof - shall comply to the requirements of NZ Building Code NZS 3604 1990 to the satisfaction of the Local Building Authority.

17. Post and Beams

If shown on plan fix all to detail, with all bolts, plates, holding down plates etc. All mail fixing with galvanised nails, all bolt fixing with galvanised bolts.

18. Timber Terraces

If shown on plan construct to detail or best trade practice. All nail fixing with galvanised nails, all bolt fixing with galvanised bolts, and all timber to be treated to the correct preservative retention as specified by "The Timber Preservation Authority".

19. Exterior Sheathing

a. Weatherboards: to be as shown on plan and complying to NZSS 495 To be laid true to line, level and plumb at all angles and gauged. Angles and joints to be mitred and covered with galvanised iron soakers. All boards to be fixed with galvanised nails.

b. Vertical Weatherboards: to be as shown on plan. To be laid true to line and plumb. All boards to be fixed with galvanised nails, and if to be stained to be sealed against the elements prior to fixing.

(i) Timber Weatherboards The moisture content shall not exceed that as specified in NZSS 632 for Timber Weatherboards.

c. Hardiflex Coverings: To be as shown on plan. To be laid and fixed to manufacturer's specifications, and to meet the requirements of NZBC 1992

d. Other Types of Sheathing: i.e Stone-clad, cerecrete, External Ply claddings, etc. to be laid and fixed to manufacturer's specifications

e. Building Paper: Unless otherwise approved material with similar characteristics in accordance with NZSS 873 shall be fixed under all external wall coverings, from top plate to bottom plate. A vapour barrier of foil or polythene types will not be permitted to be used in its place.

20. Aluminium Joinery

If shown on plan allow for supply and fixing to manufacturer's specification Sizes and type to be a shown on plan.

21. Exterior Joinery

All exterior joinery shall be as detailed on plan to sizes shown and shall be constructed to best trade practice, all primed before leaving manufacturers' premises.

22. Stringer

To be 100 x 75mm on edge. Spaced at approximately 2m c.c. All joints scarfed over solid bearings.

23. Floor Joists

To be spaced 450mm c.c (see plan for sizes and spacing). Gauge to even flush finish. Securely spike to stringers. Provide double joists under all main bearing walls.

24. Plates

All to be straight and true and in long lengths. Scarfed at all joints, halved at corners and dovetailed at intersections. See manufacturers' instructions where nail plates are used in lieu of.

25. Studs

Stud height generally to 2400mm (refer to plans) at approximately 600mm c.c. Double stud to all openings over 1000mm and check trimmers to studs.

26. Bracing

Brace all interior bearing walls with 100 x 25mm cut flush with studs. Brace interior corners where possible with 150 x 25mm diagonal bracing checked flush with outside face and 150 x 25mm dragon ties to ceiling joists. Refer to manufactuers' specifications when using metal strap bracing.

27. Ceiling joists

To be generally 100 x 50mm spaced as required (refer to plan) and to be well spiked to all plates. Provide adequate ceiling runners to spans of 2400mm and over.

28. Roof

Roof to be framed up to pitch indicated on plans and to detail, properly checked, birds mouthed and well spiked. Strut rafters off bearing partitions at 1800mm c.c with 100 x 50mm supporting 100 x 75mm under pulins. Fix 150 x 25mm collar ties to rafters as specified in clause 16.

29. Purlins Refer to Plan

30. Eaves Allow to overhang as shown on plan and line as directed.

31. Flooring

Refer to plans for type.

a. T & G Flooring to be 100 x 25mm of the moisture content between 12 to 16%, as required by NZSS 632, well cramped, nailed and punched well below finished surface. Clean off all by-wood and sand off with power sander.

b. Particle Board: Flooring shall be 18mm high density, manufactured to the requirements of NZSS 2214.

Storage, Handling

Particle Board sheets shall be protected from rain and excessive heat from sun. Sheets shall be stacked on firm level dry base free of the ground. Care shall be exercised when handling sheets to ensure that scoring and other mechanical damage is prevented.

Layout/Joints between Sheets: Joints between sheets shall be positioned as indicated on the drawings. Unless otherwise shown all sheets shall be laid in (i) a pattern with as few joints as practicable. Joints at right angles to the joists shall be backed by (ii) noggings set flush with the top face of the joists and firmly nailed.

Fixing of Flooring: Flooring shall be laid with brand indentification facing downwards. Fixings for the flooring shall be 60mm long x 3.15mm g. flooring brads or equivalent at 150mm centres along the edges and at 300mm centres to the intermediate joists. Fixings shall not be closer than 10mm to edge of sheets. When prelaying all flooring brads shall be galvanised or cadmium plated. Nails shall not be punched below the surface until immediately prior to sanding.

Finishing of Plycopyne (TWP): The Contractor shall protect the floor from staining or physical damage during the construction period. When prelaying techniques are used the particle board shall be protected from heavy rain and excessive heat from the sun. After punching nails the floor shall be all carefully sanded using 60-100 grit paper on a spinner sanding machine. Remove all sanding dust and grit. All nail holes and other depression defects shall be stopped with an approved wood flour filler applied strictly in accordance with the manufacturers' recommendations. After stopping apply finishing material strictly in accordance with the manufacturers' recommendations. Before stopping apply one coat of finishing material.

32. Gable Ends: See plan for overhang and sheathing.

33. Nogging

To be 50mm at aporoximately 600mm c.c or 3 rows to each wall. Provide 75 x 50mm nogging to ceiling where required for fixing of ceiling sheathing.

34. Ceiling

Gilbraltar Board - Fix painting quality 9.5mm gilbraltar board to joists and rafters with 30mm flat head galvanised clouts, with nails punched and stopped and all joints flushed up to a true even smooth surface.

b. Pinex - First quality tiles or planks as directed by Owner to be fixed to manufacturer's specification.

Wall Linings

Generally, shall be 9.5mm gilbralter boarding or gib foil fixed by expert fixers. All nailed with galvanised flat head nails on joints at approximately 150mm c.c All stopping to be done with best quality plaster of paris, filled to an even surface and sanded off.

36. Windows & Sashes

Fix window frames plumb both ways and in proper alignment. Nail strongly to grounds at not more than 750mm intervals with full width folding wedges.

Frames may be 40mm rebated full width or out of 100 x 40mm with 25mm jamb lining. Sills to be run properly splayed and weathered to

to standard profile.

Windows if of metal to be screw fixed all as recommended by the manufacturer.

Fix all flashings required in 0.45mm galvanised iron. Sashes and frames shall be of standard profile, except if shown differently on drawings and shall be of clean heart Totara, Redwood or Imported Cedar. If Radiata Pine is used the timber shall be treated to the requirements of the "Timber Preservation Authority". Hang all sashes as required for openings, with suitable hinges and/or friction stays, fix stays and fasteners as supplied under P.C sum.

37. Doors & Frames

External door frames shall be of 40mm full width material rebated and internal shall be 40mm rebated or 25mm material with 12mm planted stops. Doors shall comply with NZSS 1158, where external shall be framed, ledged and braced or timber or glass panel as shown on drawings, all properly constructed with stiles and rails out of 50mm material. Internal doors shall not be under 40mm hollow-core faced with ply wood or hardboard with clashing strips, fixed to lock stiles. All timber core material shall be treated and doors shall be of approved manufacture. Doors over 1400mm in height shall be hung on one and one half pairs of 100 x 70mm antique butt hinges.

38. Wardrobes

To be lined full height. Provide inside each with 300 x 25mm full width shelf at 1700mm from floor and 20mm galvanised pipe coat rail at 75mm below shelf. Provide cupboard over wardrobe where required.

39. Linen & Coat Cupboards

Lined full height inside and to have 25mm shelving. Full depth for linen at approximately 400mm c.c. Coat cupboard to have hat shelf at 1800mm from floor and coat hooks to side and rear.

40. Kitchen Cupboard

Construct cupboards and dresser unit to sizes as shown on plans, with doors and shelves to Owner's approval.

41. Sink Tops

Provide for standard sink top. Unit to have standard 450 x 300mm stainless steel sink. Fix on unit either indicated on plan or to Owner's final approval.

Units to be generally 900mm high and 500mm in depth, 100mm toe space. Provide flush cupboard doors to front and shelving to approval. Timber used in doors to be approved by Owner.

42. Hot Water Cupboard

To be constructed where shown and fitted with slat shelving above cylinder spaced at 500mm c.c. Provide two flush doors with thermostat boxed in.

43. Architraves, Skirtings etc

Finish all windows internally, foor openings and wherever required with 50 x 12mm rounded or splayed architraves.
Finish at junction of floor and wall with 75 x 12mm skirtings neatly mitred at angles and scribed to floor.
Supply and fix beads, half rounds and where required scotia mould at ceiling junction and all trim as required to complete the work.

44. Bathroom

Provide and fix in bathroom one toilet cabinet 550 x 400mm recessed into wall with mirrored door. Bath to be built in with 75 x 50mm framing and gibraltar board or bath panels as agreed by Owner. Allow for toe space. Provide for stainless steel shower tray, and fix wall linings to manufacturers' specifications and Owner's approval, if shown. Provide for vanity unit P.C sum of $_____ if shown.

45. Meter Recess

Provide recess for Electric meter board where directed to the satisfaction of the Local Electric Supply Authority.

46. Manhole

Provide manhole in ceiling 500 x 500mm where directed.

47. Access Door

Provide access door under house where shown on the drawings or where directed to the satisfaction of the Local Building Authority

48. Hardware

Allow the P.C sum of $_____ for the supply of all hardware required. Door handles, locks, window fittings, door and drawer pulls, stops, angles, vents, towel rails etc. Allow to take delivery and fix. The supply of hinges and butts for all doors and windows is not included in this P.C sum.

49. Internal Wood Stairs

All internal wood stairs manufactured for this private dwelling shall comply to B.S 585 "Wood Stairs".

TILE ROOFER

1. Preliminary & General

Read and note all clauses under Preliminary and General of this specification where they apply to this trade.

2. Tile Roof

Tile roof as shown on drawings with tiles. Colour to be selected

3. Setting Out

a. All spoutings, flashings, valleys, bent pipes etc. to be completed before tiling contractor commences.

b. Wherever possible set out tiles on the main slope so that when laid there is a complete course of tiles both at the eaves and ridge. No end lap shall be less than 65mm. Keep tiles in straight vertical and horizontal lines.

c. Battens shall be of the specific size required, proof loaded and fixed to hip rafter.

d. Interlocking tiles shall lock and no cut tiles shall be less than half tile and shall be laid at verges only. All cutting to be neatly performed and all cut tiles shall be of adequate size and shape for their purpose.

e. In all cases the manufacture, supply, colouring, battening, laying, setting out and fixing of concrete roof tiles, hipcaps, ridge caps, apex caps shall comply with all requirements as specified in NZS 4206 - 1973, "Specification for Concrete Interlocking Roofing Tiles".

4. Ridging

All ridging to be adequate and neat. All concrete tiles to be pointed with matching mortar.

5. Securing Tiles

Concrete tiles - each alternate tile in every second course shall be wired. Tiles to be staggered.

6. Decramastic, Harvey Tiles, Castle Steel
Each tile to be secured to battens.

7. NOTE

If sheet metal roofing is shown on drawings read in conjunction with roofing in Plumber's section.

8. Guarantee

In all cases tiles selected shall be fixed by approved "FIXERS" and a guarantee furnished for one year as to the water tightness and security of the roof.

PLUMBER

1. Preliminary & General

Read and note all clauses in the Preliminary and General of this specification which shall apply to all work in this section.

2. General

The whole of the work shall be carried out and completed and tested in the best trade manner by licensed plumbers only, in accordance with the requirements of the Local Authority and Drainage and Plumbing and NZBC 1992 The Plumber shall arrange all permit fees.
Materials shall be the best of their respective kinds, lead, wrought iron and tin shall be the best commercial quality, copper shall conform to NZS 3501, and brass shall be approved composition and manufacture. All copper pipes shall be smooth full bore free from defects, seamless and suitable gauge for high pressure fittings. Joints in copper and other pipes shall be made in accordance with the specified regulations and shall be air and water tight.

3. FLASHINGS

Fix thoroughly watertight flashings and counter flashings where shown on the drawing and as necessary to render the building water tight.

Head and tray flashings to be anodised aluminium. All flashings shall be accurately cut and machine bent to the required profile to fit the work. Cut in as long lengths as possible with all joints well lapped and soldered. Allow for expansion of flashings by provision of suitable water tight laps in flashings at 2400mm intervals.

Fix flashings with 19mm galvanised flat head clouts at 75mm

All exposed flashings shall be fixed in straight lines, free from buckles and dents and shall have beaded edges.

Fit 0.45mm flashings to all window and door heads and tray flashings to all window sills.

Over flash vents and other roof penetrations with 1.8mm thick lead, well beaten down and tacked or soldered.

4. Spouting

Provide and fix rigid P.V.C spouting and downpipes and fix to manufactuers' specifications.

5. COLD WATER SUPPLY

From the toby connection of the Local Authority water supply, lay 20mm or 15mm i.d. pipe, buried 450mm underground to an isolation Stop Cock located in a suitable toby box located against the building foundations. Where a high pressure water reticulation system is specified, supply and fit a NEFA 3 in 1 stopcock or other suitable valves. From feed valve, take 20mm or 15mm i.d. lead to hot water cylinder and 20mm or 15mm i.d. branch, or branches, to service other cold water outlets, terminating at the bath. From this 20mm i.d. branch, take 12mm i.d. branches to sink, basins, tubs, washing machine, shower and W.C. flushing cisterns. For wall, use Qest Qickee supply set for connection to cistern and for exposed pipes to basins.

From main supply, take 12mm i.d. branch to provide supply for exterior hose taps. Provide stopcock on supply line to hot water cylinder.

Where a low pressure water supply is specified, using a water storage tank, lay 20mm i.d. pipe underground from toby to isolating stopcock with 12mm branches for exterior hose taps and 12mm branches to sink and flushing cisterns. The 20mm dia. main shall reduce to 12mm i.d. before entering the storage tank. Supply and install one 135 litre Nura rotational moulded polythene supply tank in roof space where shown, complete with tray, overflow, 12mm ball valve and ballcock, lids and other fittings. Take 20mm dia. outlet from tank leading to hot water cylinder and bath, with 12mm branches to basins, tub, washing machine, and shower. Note the 20mm dia. lead, or leads, should be carried to the second to last outlet on any branch. The final branch to outlets may be 12mm dia. The whole of the cold water system shall be charged to test for leaks before linings are fixed.

6. PIPING

Piping for water supplies shall be polybutylene piping (Qest. Dux or similar approved).

All piping shall be protected by wrapping in Densotape or similar, for its full length. Piping shall be polybutylene, spirally wound with two layers of Densotape or hair felt, wrapped in opposing directions. Polybutylene piping laid underground shall be protected from damage by sharp objects.

Poly-

butylene piping shall be jointed only with special jointing fittings manufactured by the makers of the brand of piping used. Preference shall be given to Qest-Dux piping and Qicktite fittings in polybutylene. Piping shall be installed in long lengths. Polybutylene piping should be continuous as far as possible, for the whole length of the system. Thread pipes through holes drilled through the centre lines of framing. Where possible, pipes shall be curved to change direction but where curving is not possible, standard elbows and tees shall be used. Support all piping at recommended centres with ready made clips. Standard fittings and couplings for copper and polybutylene piping, shall be used, including couplings linking the two materials. Polybutylene piping may be used for both hot and cold water reticulation, except for circulating pipes between wet back and boiler units and hot water cylinders. Where wet back or boiler units provide supplementary heating of hot water, the first 600mm of pipe from the cylinder shall be copper. Where instantaneous gas water heaters are installed, the first 200mm of piping on the inlet and outlet shall be copper.

7. Vents

(a) Provide and fix 75mm diameter P.V.C. terminal vent, conceal within walls - Fit plastic cowl at top.

(b) Provide and fix 50mm diameter back vents, conceal within walls - fit plastic cowl at top.

Flash all vents with lead flashings and counter flashings at penetration of the roof.

Traps and Wastes

All traps and wastes are to be concealed. "Terrain" P.V.C. extrusions to be used in compliance with the manufacturer's specifications, recommendations and instructions. Provide all necessary flanges at wall and floor junctions and inspection plugs where necessary at changes in direction.

All wastes discharging into gully traps do so below the grating.

8. Fittings

1. W.C. Pan complete with double flap plastic seat
1. W.C Cisten complete with C.P or White P.V.C flush pipe
1. 1655mm Bath Type
1. Basin - wall or vanity. Type _____
1. Sink top Formica or Stainless Steel See Plan 450 x 300 x 175mm S/S sink.
1. Stainless Steel Shower Tray 900 x 900mm or 900 x 750mm See Plan
1. Hot Water cylinder 136 litres standard complete with electric element, thermostat, all taps, stopcocks etc.
1. Stainless Steel single or twin tub comination on stand with cupboard below.
1. Sink faucet and taps
1. Bath faucet and taps

And all other taps etc. as required, which are to be chromium plated marked Hot & Cold with the exception of stand pipes. Consult with Owner on choice of brands of taps and fittings.
The Plumber shall provide and fix all other fittings and fixings necessary to complete the Contract
Make complete connections, providing traps, vents etc. in accordance with regulations.

Iron Roof (If shown on plan)

Provide roof in 0.50mm galvanised corrugated iron with laps painted and securely fixed with lead headed nails. Cover ridges or hips with 0.60mm lead edged ridging.

Cover roof with _____ brand 0.60mm galvanised trough type sheathing in long runs, all fixed in accordance with manufacturers' specifications and leave complete.

DRAINLAYER

All work to be carried out in accordance with the NZ Building Code and in conformity with the City Council By-Laws, and Health Act. No drain to be covered in until insepcted, tested and approved by the Health Inspector.

Material used shall be unplasticised P.V.C. pipes and fittings complying with NZS 7643 (1979): NZS 7649 (1974) and the P & D Regs. Pipes to be factory marked with bore, class of pipe and compliance with NZS 7642. Lubricants and solvent cement shall be those supplied by the pipe manufacturer. Handle pipes with care.

Jointing shall be by solvent weld or rubber ring joint. Cut pipe at right angles with fine tooth saw and chamfer ends at 15^{o} for half the wall thickness and remove burrs. For solvent welds, clean end of pipe with fine abrasive cloth, degrease and clean with cleaning fludi, then apply even coating of solvent cement to the contact surfaces, insert pipe and hold in position for 30 seconds. Remove excess solvent cement.

For rubber ring joints, clean end of pipe and rubber ring seal, check ring is properly seated, apply lubricant and insert pipe. See NZS 7643 Part 3 for full details.

Toilet pan connection to uPVC shall be made by:

(a) Purpose made rubber sleeve.

(b) A collared pipe and flexible caulking compound.

(c) A moulded adapter incorporating a rubber diaphragm.

Gulley traps shall be purpose made uPVC gulley traps and gulley dish. Set in 75mm concrete surround finishing 150mm above ground.

Excavate trenches to required depth and width support same as necessary. All bedding of pipes shall be Type D shown in NZS 7643 Appendix D. Granular bedding shall be between 5mm to 10mm.

Lay pipes in accordance with manufacturer's instructions. Pipes may be assembled outside the trench and carefully placed into position.

SOLID PLASTERER

1. Preliminary & General

Read and note all clauses under Preliminary and General of this Specification where they apply to this trade.

2. Work Included

The solid plastering of all interior floors, if on plan, and the front and back porches, slabs and steps, also terrace if shown.

3. Materials

Cement - Shall be as specified under "Concretor".

Sand - Shall be river sand sharp and course grained and free of any foreign matter.

Hydrated Lime - Shall be mill hydrated of an approved brand.

Adhesion Agents - If used shall be in accordance with maker's instructions.

4. Workmanship

All to be best trade practice and generally where plastering is required by drawings it shall mean finishing to 12mm thickness with a mix of one part cement to three parts sand with 10% of hydrated lime added and finished to a straight and even surface with a wood float.

5. Foundations

Concrete foundation walls shall be prepared by removing projectors making good any defects and finishing with a dash coat of 1 to 3 cement and sand applied to give a regular and satisfactory coverage.

6. Concrete Floors (Main - See Plan)

Co-operate with Concretor and allow for plastering of main floor. Float up to true level and steel float finish to remove pattern. Do not over-trowel. A hard dense finish is required.

7. Porch & Steps & Terrace (if shown)

Plaster up in one operation. One coat 12mm thick to terraces and porch slabs, 12mm thick to verticals and sides etc. Wood float up then given light sweeps with steel float to remove blemishes.

8. Completion and Curing

Leave all work complete and clear away all plaster droppings. Keep work damp and maintain all finished to completion.

ELECTRICIAN

1. Preliminary & General

Read and note all clauses under Preliminary and General of this specification where they apply to this trade.

2. Fees

Pay all fees and charges and obtain all necessary permits for this trade

3. Scope of Work

Carry out the whole of the electrical installations in strict accordance with the latest Electrical Wiring Regulations and Local Authority's by-laws, and meter wiring diagrams.

4. Materials and Workmanship

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

5. Co-Operation

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

6. Completion and Connection of Power.

Leave work complete, pay all charges and arrange for all inspections and tests and for the connection of power to the works. It is the responsibility of the Electrical Contractor to ensure that no delay is occasioned to the job once the contract is complete.

7. Power Board Supply

Arrange with the Power Board, allow for and pay all fees for the connection of an underground, or overhead, suuply to the residence.

8. Meter Box

Provide and install recessed meter box where shown on plan. Confer with Carpenter for trimming same.

9. Main Switchboard

Provide and install in recess main switchboard complete with all necessary control and auxiliary equipment

10. Electric Stove

Allow the P. C sum of $_____ for the supply only of the stove. Provide and fix a 30 amp flush switch for stove and sufficient cable for connection and allow for installation.

11. Water Heater

Allow for the permanent connection of the water heater to the electrical system. Provide and install 3 K/M element and thermostat to 136 litres hot water cylinder provide by the Plumber. Refer clause 3 of this section.

12. Power Points

All wall plugs shall be 230v. 10 amp 3 pin flush type Generally install plugs 300mm above floor or 225mm above bench top. Points to washer/dryer space and refrigerator 1200 mm from floor. The exact position of all power points shall be determined on the job by the Owner.

13. Lights

All lights to be first quality, plastic batten holder shall be reinforced. All roses and holders not covered by fittings shall be white.

14. Light Switches

Light switches generally shall be 10 amp. All insulated P.D.L. ,micro-gap type or equivalent. Where indicated fit flush type with plain bakelite flush plate. Fix switches generally 1200mm above floor.

15. Special Fittings

Allow the sum of $_____for fittings to be selected by Owner.

16. Light Points

Allow for installing a total of_____outlets in building.

17. Power Points

Allow for installing a total of _____power points in the building.

PAINTER & GLAZIER

1. Preliminary & General

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

2. Materials

Generally all materials shall be of N.Z Manufacture of approved brands and of the paint selected respective coats shall be of the same brand.

3. Workmanship

All work shall be carried out in accordance with good trade practice. Surfaces shall be clean and properly prepared before coating and work shall be in accordance with Code of Practice NZSS 2239, "Painting of Buildings."

4. Colour Scheme

The Owner will select from standard colour charts, colours he will require and Contractor is to allow for picking out sashes, doors, porches or any other reasonable colour change required.

5. Stopping

After priming all nail holes or joints are to be stopped and cleaned off before undercoating for painted work and for varnished work etc. are to be stopped with matching putty after first coat of sealer.

6. Painting of External Woodwork

After priming all external woodwork and adjacent metalwork such as flashings, spouting and downpipes is to be given one good coat of undercoat followed by finishing coat of high gloss paint. Priming coat before painting shall be well brushed in and all faces shall be covered, ends of laps and sides of sashes, door etc

7. Painting of Interior Surfaces

Refer to plan or separate instructions to accompany this specification. Wallboard and ceilings as required to be given one coat of sealer and finished with two coats of approved paint, finishing flat or semi-gloss as required.
Where full gloss is required such as kitchen and bathroom finishing coat shall be full gloss enamel.

8. Varnishing

Where varnishing is required such as doors, architraves and skirtings give one coat of approved P.V.A. sealer followed by two coats of clear varnish finishing egg-shell gloss and lightly sanding between coats.

9. Concrete

To concrete base walls or concrete block work apply two coats of exterior quality P.V.A paint of an approved type finishing semi-gloss.

10. Roof

Roof - if corrugated iron prime all laps before fixing.
For corrugated iron or galvanised trough section roofing after fixing prime roof with calcium plumbate galvanised iron primer and then apply one good coat of approved roof paint.

11. Paperhanging

All rooms to be papered shall have paper hung to a value of $_____ per roll.
Walls shall be properly prepared by sizing, paper hung straight and true with butt joints, and paste used shall have a fungicide incorporated.

12. Glazier

Glaze all sashes, glass doors or screens with appropriate weight glass properly fixed and puttied or beaded into rebates. Where required glazing shall be selected obscure patterned glass.

13. Mirror

Provide a 6mm plate glass mirror and mount on bathroom cabinet door with mirror clips.

14. Completion

The Painter and Glazier are to do all that is required of their trades to leave the work complete and all must be left clean including all glass at completion.

PROVISION FOR VARIATION No.1

Cost of Variation Order No. $_____ Signatures _____

Date _____

PROVISION FOR VARIATION No. 2

Cost of Variation Order No. 2 $_____ Signatures _____

Date _____

PROVISION FOR VARIATION No.3

Cost of Variation Order No.3 $_____ Signatures _____

Date _____

PROVISION FOR VARIATION No.4

Cost of Variation Order No. 4 $_____ Signatures _____

Date _____

PROVISION FOR VARIATION No.5

Cost of Variation Order No.5 $_____ Signatures _____

Date _____

PROVISION FOR VARIATION No.6

Cost of Variation Order No.6 $_____ Signatures _____

Date _____

Palmerston North
Display Area and Sales Office
489 Rangitikei Street, PO Box 750,
PALMERSTON NORTH
Phone: 06-356 7649
Fax: 06-355 3193
Email: quins.pn@xtra.co.nz
Website: www.quinbuildings.co.nz
Freephone: 0800-GARAGE 0800-427 243

QUIN
BUILDINGS & ROOFING

We're Strong on construction, Selection & customer care

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GARAGES PORTAL BUILDINGS STABLES GARDEN SHEDS WORKSHOPS BACH SHELLS
GALVANISED ZINCALUME COLOURSTEEL ROOFING FLASHINGS ACCESSORIES

23 September 2004

Coastal Timber
14 Ihakara Street
Paraparaumu

Dear Sir

Re: MURRAY S CARLE, NO 5 THE PALMS, KOHUTUHUTU ROAD, RAUMATI

WARRANTY

Date of Completion: JULY 2004

Warranty Terms;

Colorcote ZRX pre-painted metal products used for Residential Buildings will perform as follows.

1. Resistance to flaking, peeling and excessive fade.	**ZRX 7 years.**
2. Will not perforate as a result of corrosion	**ZRX 15 years.**

Colorcote products will inevitably weather, chalk and fade over time as a result of normal wear and tear.

If the product fails to perform as warranted we will, at our sole option, repair or replace the affected material.

Please note this warranty is subject to the following terms and conditions:

- **This warranty will not apply to weathering, chalking or fading over time as a result of normal wear and tear.**
- **If inappropriate fastenings are used this warranty will not apply.**
- **Defects caused by faulty design, or method of manufacture of Residential Buildings are not covered by the warranty.**
- **We must be given the opportunity for inspection on site prior to any remedial action being offered or taken.**
- **Damage or corrosion resulting from the following are not covered by this warranty:**

  1) **Damage sustained during storage, handling, or installation.**
  2) **Damage sustained after installation.**
  3) **Causes after the product has left our control.**
  4) **Failure to remove debris leading to the accumulation of moisture retaining matter in gutters and downpipes.**

Our liability under this warranty shall in all cases be limited to replacing or repairing the defective product as specified above excluding labour. Any repaired or replaced product will be covered by this warranty up to the unexpired portion of the warranty of the original product. Quin Custom Buildings Ltd will not be liable for consequential loss or damage. All claims must be made promptly in writing and accompanied by the original warranty document. This warranty does not in any way affect the rights of a consumer under the Consumer Guarantees Act.

MINIMUM MAINTENANCE REQUIREMENTS

1. **Washing of Naturally Unwashed Areas every 6 months.**
2. **Removal of Debris from guttere every 6 months.**
3. **Any noticeable buildup of salt deposits and/or other contaminants are removed when identified.**
4. **When considering overpainting, please consult with your local distributor to ensure correct procedures are undertaken.**

Yours faithfully

Bruce Love
Roofing Manager

Producer Statement

Piped Services
&
Sanitary Plumbing Stacks

Construction Review

Issued by P.G Robinson **Registration Number** 7184

To Kapiti Coast District Council

In respect to the following

Piped Services installed in accordance with G12/AS1 as shown on the approved plans or as per the attached amended plan and Sanitary Plumbing Stacks installed in accordance with G13/AS1 or AS/NZS 3500.2.2

Installed at 5 The Palms Raumati Beach

Building Consent No. 030993

As a Craftsman plumber, currently holding an annual practicing license, certify that I, or personnel under my control, have carried out the installation of the above system and I believe on reasonable grounds that the installation complies with the New Zealand Building Code. Both hot and cold systems have been pressure tested for a period of 15 minutes at a pressure of 1500 kPa.

Signed P G Robinson **Date** 17/1/2005

15 Year Guarantee

Scie Construction Ltd

Client / Owner: Kelly
Site Address: 3 The Palms
Description of Building: Residence
Membrane applied: DecKing Pearl
Date of Completion: 03.08.04

Scie Construction Ltd guarantee for the period of Fifteen Years from completion of the deck roofing contract, that if any failure in the deck waterproofing system is due to faulty workmanship in the manufacture of the DecKing deck/roofing membrane, or faulty installation methods or workmanship on our part, we will, at our own expense, make, or cause to be made, any repairs that may become necessary to maintain the deck roof membrane in a watertight condition, subject to the terms and conditions below.

Terms and Conditions.

1. Liability under this guarantee which shall commence from the date of completion of specified waterproofing works shall be conditional upon;

a) Any water penetration being reported to Scie Construction Ltd in writing immediately upon discovery.
b) Facilities being afforded to Scie Construction Ltd or another approved DecKing applicator without delay to inspect the defects and carry out the necessary repairs covered by this guarantee. Any such repairs are to be carried out by Scie Construction Ltd or an approved DecKing Applicator.
c) Full payment for the contract works of which the specified waterproofing is part of, having been made in accordance with the terms and conditions of the contract/sub contract.

2. This Guarantee shall not apply should the specified waterproofing works have been affected by any act or omission of parties other than Scie Construction Ltd or by uses of the premises or perils for which such works were not designed.
3. The Guarantee excludes damage to the roof from extreme natural phenomena such a direct lightning strike, tornado, waterspout, cyclone/hurricane, volcanic eruption or earthquake.
4. The Guarantee does not cover the cost of removing any surface, other than the waterproofing membrane.
5. Any defects made good under the Guarantee by means of replacement of waterproofing membranes may be treated as if they formed part of the original waterproofing works to the intent that the cover provided by the Guarantee shall apply hereto for the unexpired balance of the term of the Guarantee.
6. This Guarantee does not cover or provide for the reimbursement or payment for incidental or consequential damage to the specified building or its contents thereof.
7. Scie Construction Ltd. shall not be liable for any damage to the said roof membrane system caused by settlement, distortion or failure of the roof deck substrate, walls or foundations of the building, nor failure of any flashing or metal work due to expansion/contraction (unless forming part of the roofing contract and fitted by Scie Construction Ltd.).
8. The Guarantee shall be void in the event that after the roof deck membrane system is completed, alterations to the DecKing membrane or installation of structures, fixtures or utilities on or through the membrane are made without prior consultation and written approval of Scie Construction Ltd.
9. Whenever possible Scie Construction Ltd will replace defective DecKing with DecKing of the same colour, gauge and pattern. Scie Construction Ltd reserves the right to replace defective DecKing with DecKing of the nearest colour or pattern available at the time of replacement. Scie Construction will not be responsible for differences in colour, between replacement DecKing and original DecKing, due to fading and reduction of gloss due to weathering and usage
10. The completed DecKing system applied may have a sealant(caulking) applied in a number of areas, such as around posts or against cladding, to ensure total waterproofing against the existing structure. Scie Construction Ltd have sourced the best sealants available on the market in New Zealand at the time of application, which are compatible with the DecKing membrane. However neither Scie Construction Ltd or DecKing accept responsibility for failure of the sealant during the period of this guarantee beyond the warranty offered by the sealant supplier.

For and on behalf of
Scie Construction Ltd

Director. 24/08/04 **Date**

WGTN Region Council's Partnership – Scope of Inspection Sheet

Date 23/12/05 SR or BCA 030993 Inspection No. 1

Time 11am Documents on site YES / NO

Owner Name S Palms Project Description New Dwg.

Site Address M Searle

Building Plumbing Circle appropriate Type & Inspection Other: .....

Site Found Piles PreSlab Subfloor Drainage PreWrap PreClad Weathertight PreLine PostLine Block Brick Ret.Wall Final

Engineer Supervision Yes No n/a - Name.....

Notes Elite VH level 2.
landscaping not complete. Advised
owner of FGL regs:
Infinity 24

Diagram (if necessary)

Rechecked 29/12/05
all ok to issue
CCC
AA.

Photo's taken - Nos. ..... saved/scanned? Y / N

Site instruction issued.....

Seal top shower to wall. & ens & laundry & Bath. XX
Smoke detector reqd x ~~1~~ 2 + workshop.
Ext gate self closing tensioner repair. + recommend studio.
Infinity 24.
Seal waste pipe to s/t on wksp - tidy s/trap.

Result: Pass Part pass Fail

Confirmation of inspection by person on site

Person on site Builder ☐ Owner ☑ Other ☐ M Searle No One on site ☐

Your next inspection will be Recheck.

(Guidance notes for inspection on the rear of this sheet)

Agreed, ... Sign .....Date...../...../.....

(Print name)

Officer sign ..... Name SAGE Date 29/12/05

Additional Insp. Sheet No. .....

Information entered into data base ☐ ***initial*** ..... ***date***.../...../.....

FINAL INSPECTION

Date 23/12/2005 SR or BCA ..... Inspection No. 1

Time 11 Am' ..... Documents on site YES / NO

Owner Name M. Searle' Project Description New Dwg

Site Address 5 The Palms.

All inspections are carried out with strict reference to the building consent granted.
P = Pass F = Fail NA = Non - Applicable
Inspection decisions are based on the extent of work inspected at the time of inspection.
Please refer to the related scope sheet for definition of the inspections extent.

Applicable to all inspections

Sighted previous inspection notes	(Y)	N	NA	Conforms with approved drawings	(Y)	N	NA	Confirm additional information/amended plan	Y	N	NA

FINAL - Exterior

Sub-floor ventilation	P	F	(NA)	Roof fixings	(P)	F	NA	Spouting + Down-pipes	(P)	F	NA
Deck Structure	(P)	F	NA	Flashings - Roof	(P)	F	NA	Penetrations - Flashings	P	(F)	NA
Barriers	(P)	F	NA	Gully Dishes	P	(F)	NA	Storm-water + site drainage	(P)	F	NA
Handrails	(P)	F	NA	Wastes to gully	P	(F)	NA	Fixings - Durability	(P)	F	NA
Steps/Stairs	(P)	F	NA	Terminal vents/AAV's	(P)	F	NA	Cladding painted/sealed	(P)	F	NA
Flashings – Windows/Doors	(P)	F	NA	Cladding Ground Clearance	(P)	F	NA		P	F	NA

FINAL - Interior

Service areas – floors/walls	(P)	F	NA	Food storage	(P)	F	NA	Hot water Temp. 54	(P)	F	NA
Stair design	(P)	F	NA	Ventilation	(P)	F	NA	Solid fuel heater	(P)	F	NA
Handrails	(P)	F	NA	Insulation + clearance	(P)	F	NA	Water supply tank	P	F	(NA)
~~Balustrades~~	(P)	F	NA	~~HWC flues~~	(P)	F	NA	~~Trap seals + AAV's~~	(P)	F	NA
Lightings	(P)	F	NA	HWC valves	P	F	(NA)	Cistern flushing ✓	(P)	F	NA
Laundering	(P)	F	NA	HWC restraint	P	F	(NA)	WC pan connection ✓	(P)	F	NA
Cooking facilities	(P)	F	NA	Tempering valve	P	F	(NA)	Septic tank	P	F	(NA)
Smoke detectors	(P)	(F)	NA	Glazing – Human Impact	(P)	F	NA	Window labels	(P)	F	NA

FINAL – Intertenancy/Commercial

Fire/Life systems sighted	P	F	(NA)	Guarantees/Warranties/ Certificates/Expert Opinion	P	F	NA	Intertenancy STC	P	F	(NA)

All Inspections

Road Crossing Complete	Y	N	(NA)	Energy Certificates supplied	(P)	F	NA	Final Check Complete	Y	N

Officer Sign: [signature] **Name:** SACHE **Date:** 23.12.05

COUNCIL CHECK SHEET.

Gib® Wall Bracing Calculation Sheet B — upper of two — V104B

Across								
Wall or Bracing Line		*Bracing Elements provided*					*Wind*	*Earthq.*
1	2	3	4	5	6	7	8W	9EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Supplier	Bracing Type	Element Length L (m)	Element Height H (m)	BUs Achieved	BUs Achieved
N	enter	1	Gib®	BR9	0.7	2.7	68	59
line totals		2	Gib®	BR5	1.9	2.7	194	144
W	263	3						
EQ	203	4						
.	enter	1						
line totals		2						
W		3						
EQ		4						
O	enter	1	Gib®	BR6	1.2	2.7	160	117
line totals		2	Gib®	Gib2b	3.6	2.7	256	224
W	416	3						
EQ	341	4						
P	enter	1	Gib®	Gib2b	3.5	2.7	249	218
line totals		2	Gib®	Gib2b	2.6	2.7	185	162
W	844	3	Gib®	Gib2b	2.4	2.7	171	149
EQ	689	4	Gib®	Gib1b	3.6	2.7	240	160
Q	enter	1	Gib®	Gib1b	2.4	2.7	160	107
line totals		2	Gib®	Gib1b	2.4	2.7	160	107
W	320	3						
EQ	213	4						
R	enter	1						
line totals		2						
W		3						
EQ		4						
S	enter	1						
line totals		2						
W		3						
EQ		4						
T	enter	1						
line totals		2						
W		3						
EQ		4						
U	enter	1						
line totals		2						
W		3						
EQ		4						
V	enter	1						
line totals		2						
W		3						
EQ		4						

						Wind	Earthq.
Totals Achieved						1843	1446
						OK	*OK*
Totals Required (from Sheet A)						1787	986

SHEET 9

Gib® Wall Bracing Calculation Sheet B — upper of two — V104B

Along								
Wall or Bracing Line		*Bracing Elements provided*					*Wind*	*Earthq.*
1	2	3	4	5	6	7	8W	9EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Supplier	Bracing Type	Element Length L (m)	Element Height H (m)	BUs Achieved	BUs Achieved
A	enter	1	Gib®	BR9	0.6	2.7	59	51
line totals		2	Gib®	BR9	0.6	2.7	59	51
W	206	3	Gib®	BR4	1	2.7	89	76
EQ	177	4						
B	enter	1	Gib®	BR6	1.2	2.7	160	117
line totals		2	Gib®	BR9	0.6	2.7	59	51
W	448	3	Gib®	BR9	0.6	2.7	59	51
EQ	368	4	Gib®	Gib2b	2.4	2.7	171	149
C	enter	1	Gib®	Gib2b	2.4	2.7	171	149
line totals		2	Gib®	Gib2b	3.6	2.7	256	224
W	603	3	Gib®	BR9	0.8	2.7	78	68
EQ	524	4	Gib®	BR4	1.1	2.7	98	83
D	enter	1	Gib®	BR4	1	2.7	89	76
line totals		2	Gib®	Gib1a	2.3	2.7	112	102
W	324	3	Gib®	BR5	1.2	2.7	123	91
EQ	268	4						
E	enter	1						
line totals		2						
W		3						
EQ		4						
F	enter	1						
line totals		2						
W		3						
EQ		4						
G	enter	1						
line totals		2						
W		3						
EQ		4						
H	enter	1						
line totals		2						
W		3						
EQ		4						
I	enter	1						
line totals		2						
W		3						
EQ		4						
J	enter	1						
line totals		2						
W		3						
EQ		4						

						Wind	Earthq.
Totals Achieved						1581	1337
						OK	*OK*
Totals Required (from Sheet A)						1516	986

REFER SHEET 9

Gib® Bracing Systems (1999)

For details see Gib® Bracing Systems, 1999 and appropriate manufacturer's literature

Supplier	System	Minimum Length (m)	BUs W/m	BUs EQ/m
	none			
Gib®	Gib1a	1.8	55	50
Gib®	Gib1b	2.4	75	50
Gib®	Gib2a	1.8	75	60
Gib®	Gib2b	2.4	80	70
Gib®	Gib3	1.2	65	60
Gib®	Gib10	1.8	65	60
Gib®	Gib11	1.2	65	65
Gib®	UL1	1.2	70	60
Gib®	UL2	1.2	100	85
Gib®	BR1a	1.8	70	60
Gib®	BR1b	2.4	90	75
Gib®	BR2a	1.8	75	60
Gib®	BR2b	2.4	85	60
Gib®	BR3a	1.8	60	45
Gib®	BR3b	2.4	95	65
Gib®	BR4	0.9	100	85
Gib®	BR5	1.2	115	85
Gib®	BR6	1.2	150	110
Gib®	BR7	0.9	145	145
Gib®	BR8	0.9	120	95
Gib®	BR9	0.6	110	95
CP5	SP1	0.9	100	110
CP6	SP1G	0.9	100	100
CP3	SP2	0.6	90	80
CP4	SP2G	0.6	95	95
Custom	SP4	0.45	70	85
Custom	SP6	0.9	115	110
Custom	SP6G	0.45	120	110
CP10	SP11G	1.8	140	120
Custom	SP12*	1.8	120	105
Custom	SP2*	0.6	90	80
Custom	SP5D	1.2	130	135
Custom	SP10	1.8	135	135
Custom	SP6	0.9	115	110
Custom	HT1	1.2	100	90
Custom	HT2	0.9	100	100
Custom	HT3	1.2	115	100
HT4	HT5	1.2	130	100
Custom	CP9	1.8	110	95
Custom	HT6	0.9	100	80
Custom	HT7	1.2	115	90
Custom	HT8	2.4	120	100
Custom	HT9/10	0.6	93	98

WIND **Single or Upper Story**

REF GIB BRACING 1999 page 24
table W1a

					Very High Wind	
1		39.5	53.5		50	68.5
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
2		58.5	68.5		74.5	87
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
2.8						
2.9						
3		82.5	82.5		105.5	105.5
3.1						
3.2						
3.3						
3.4						
3.5						
4		119	97.5		154.5	124
4.5						
5		184.5	111.5		235	142.5

ACROSS
BUILDING LENGTH 18
WIND ACROSS

BU'S

ALONG
BUILDING WIDTH 14.9
WIND ALONG 101·8

BU'S

FROM PLANS (ADD EAVES IF GREATER THAN 25 DEGREE PITCHED ROOF)

FROM THE TABLE ABOVE

SEE DESIGNERS COPY

Pg 9

WIND **Single or Upper Story**

REF GIB BRACING 1999 page 24
table W1a

Roof Height				Very High	Wind
	WIND				
1		35	49	44	63
1.1					
1.2					
1.3					
1.4					
1.5					
1.6					
1.7					
1.8					77.4
1.9					79.2
2		54	64	69	81
2.1					82.9
2.2					84.8
2.3					86.7
2.4					
2.5					
2.6					
2.7					
2.8					
2.9					
3		78	78	100	100
3.1					
3.2					
3.3					
3.4					
3.5					
4		117	93	149	118
4.5					127.5
5		180	107	229	137

9-Sep-02

ACROSS
BUILDING LENGTH 7
WIND ACROSS [redacted]

BU'S [redacted]

ALONG
BUILDING WIDTH 7
WIND ALONG [redacted]

BU'S [redacted]

FROM PLANS. (ADD EAVES IF GREATER THAN 25 DEGREE PITCHED ROOF)

FROM THE TABLE ABOVE

Fax

Base Consulting Engineers Limited

- Structural Design
- Foundation Design
- Geotechnical Investigations
- Contract Administration

279 Oxford Street
P.O. Box 434
Levin

Telephone Levin 06 367 0088
Paraparaumu 04 297 0088
Fax 06 367 0058
Mobile 027 44 44 080

To: KAPITI COAST DISTRICT COUNCIL
RIMU ROAD
PARAPARAUMU

RECEIVED
05 AUG 2003
KAPITI COAST DISTRICT COUNCIL

DESIGN CERTIFICATE

SEARLE DWELLING
5 THE PALMS RAUMATI

I, Peter Bolton, being a Registered Engineer and holding a current Annual Practising Certificate, hereby certify that

* This Consulting Practice has been engaged to design the appropriate engineering calculations for lintels, driven pile foundations, bracing for garage

Proposed to be constructed for: M Searle

The accompanying design and drawings titled and numbered 43126

and dated 30 July 03 adequately illustrate the design of the structure.

* I have exercised reasonable control over the design processes for the works defined which have been designed in accordance with the sound and widely accepted engineering principals to support the loads specified in NZS 4203:1984 and various aspects of the design are in accordance with NZS 3107

* Unless specifically noted, compliance of the drawings to non-specific codes such as NZS 3604 and NZS 4229 have not been checked by this pactice.

* I believe the stresses in the various materials of construction and force resisting elements of the structure are such as to ensure the safety and stability of the structure if the works are constructed in accordance with the above described drawings and specifications. This Certificate does not cover stability or suitability of the site unless accompanied by a separate report.

Signature: P Bolton Date: 5 Aug 03

P. Bolton **BE MIPENZ NZCE** **Registration 8837**
Director

Base Consulting Engineers Limited

Job No 43126 | Page 1

Job SEARLE DWELLING
5 THE PALMS RAUMATI

By P BOLTON

Date 30/7/03

PREAMBLE To provide the structural design for driven timber pile foundations, lintels and framing. Design to be in accordance with

NZS	4203:1984	Loadings Code
NZS	3101:1982	General Code
NZS	4230:1989	Block Code

LOADINGS

Roof	c/s	dead	0.40kPa
		live	0.25kPa
Walls	w/b	dead	0.35 kPa
	200 block	dead	4.85kPa
floor			
	20 pb	dead	0.40kPa
		live	1.50kPa
	dycare 200/60	2.4	3.84 kPa
		1.4	1.50 kPa
		1lk	

CONSIDER FOUNDATIONS

The client advises ground conditions comprise loose sand and driven timber piles are preferred

Determine Pile Capacity

for dycare floor use 20 mm set

W = 1000 kg
H = 500mm fall

$$Q_u = \frac{1}{1.7}\,\eta\,\frac{W H k}{s + c_2}$$

$$= \frac{0.55 \times 500 \times \frac{9.81}{1000} \times 1000 \times 0.8}{1.7 \times 23}$$

= 55 kN ultimate

For 10 set
Q_a = 98 kN

Q_a = 55kN 20 set
Q_a = 98kN 10 set

CONSIDER FLOOR SLAB

$U = 1.4D + 1.7L$

$W_u = 1.4(0.5)2.4 + 1.7(1.5)$

For slab spanning $5.5/2 + 3(0.3) = 2.3$

$6.4 - \frac{0.9}{2} = 2.8\,m$

Bending Moment M

$M = W_u S^2/8$

$= 4.2 \times 2.8^2/8$

$= 4.1\ kN.m$

For 100 slabs $Z = 1667\ cm^3$

Actual Bending Stress f_b

$f_b = \frac{M}{Z}$

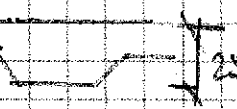
$= \frac{4.1 \times 10^6}{1667 \times 10^3}$

$= 2.5\ MPa$ ample

100 slab beam @ 320 c/c

CONSIDER INTERNAL BEAMS

$W_u = 4.2 \times 3.2 = 13.4\ kN/m$



Design Moment

$M_u = W_u S^2/8$

$= 13.4 \times 2.5^2/8$

$= 10.5\ kN.m$

Span = $5.5/13.4 = 4.1$

use 2500 c/c

For 250 H x 300W 2-HD12

$A_s = 226\ mm^2$

$F_y = 400\ MPa$

$a = \frac{A_s f_y}{0.85 f'_c b}$

$= \frac{226 \times 400}{0.85 \times 20 \times 300}$

$= 18$ —

Moment Capacity

$M_u = \phi A_s f_y (d - 0.5a)$

$= 0.85 \times 226 \times 400 (250 + 75 - 6.9/160)$

$= 12.3$ kN.m. OK.

INTERNAL BEAM 250 H x 300 W 2-H12 pile @ 2500

Consider INTERNAL LOAD BEARING

$W_u = 13.4 + [1.4\ 3.84 + 1.7\ 1.5]\ 12.6/2 + 1.4(0.4)2.44$

$+ 1.4(4.35)2.6.$

$= 80.5$ kN/m.

Pile Spacing

$S_{max} = \frac{\phi x_{10}}{W_u}$

$= \frac{98}{80.1}$

$= 1.2$ m c/c. use same beam

INTERNAL BEAM UNDER BLOCK WALLS piles @ 1200 c/c

Consider EXTERNAL BEAM

$W_e = 4.2 \times 5.5/2 + [1.4\ 3.84) + 1.7(1.5)]\ 6.6/2$ 7.93

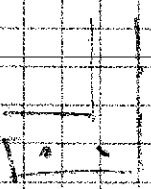
$+ 1.4(4.35)2.6 + 1.4(0.4)2.5$

$= 54.9$ kN/m

$S_{max} = \frac{98}{55} = 1.8$ m c/c

Consider GROUND BEAM

400 W x 250 H 2-H12



Design Moment

$M = W_u s^2/8$

$= 54.9 \times 1.8^2/8$

$= 22.3$ kN.m

Moment Capacity

2-H12
300 x 400 W.

$a = \frac{426 \times 400}{0.85 \times 20 \times 400}$

$= 13$ mm

$M_u = \phi A_s f_y (d - 0.5a)$

$= 0.85 \times 426 \times 400 \left(300 - 75 - \frac{212}{6} - 7\right)$

$= 16.3$ kNm

Use 3-H12
0.2-H16.

CONSIDER SHEAR

$V_u = w_u s / 2$

$= 54.9 \times 1.8/2$

$= 49.4$ kN

$v_i = \frac{V_u}{\phi b_w d}$

$= \frac{49.4 E3}{0.85 \times 212 \times 400}$

$= 0.7$ MPa

Shear Carried by Concrete

$v_c = (0.07 + 10\rho)\sqrt{f'_c}$

$= \left(0.07 + \frac{10 \times 339}{212 \times 400}\right)\sqrt{20}$

$= 0.49$ MPa < 0.7 MPa

For 25 MPa - 350 deep

$v_i = 0.55$ MPa

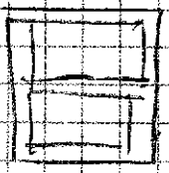
$v_c = 0.56$ MPa ok

EXT. WALL
FTG
600 x 300H
3-H12
per m @
1800 c/c

CONSIDER GARAGE FOUNDATION

$S = 6.0 - \frac{3(0.3)}{2}$

$= 2.55$ m



$W_u = 4.2 \times 2.55 = 10.7$ kN/m

For piles @ 2500 %

$P = 10.7 \times 2.5 = 26.8$ kN $\neq 55$

CONSIDER INTERNAL BEAM

$M_{sg} = wS^2/8$

$= 10.7 \times 2.5^2/8$

$= 8.4$ kN.m $\neq 10.5$ use same

GARAGE EXTERNAL BEAM

$W_e = 2.55/2 \times 4.2 + 1.4(0.4)4.88 + 1.7 \times 6.0/2$

$= 13.2$ kN/m

Piles @ 2.5 %

Design Moment

$M_u = 13.2 \times 2.5^2/8$

$= 10.3$ kN.m



For 300 x 300

Moment Capacity

$M_u = 0.85 \times 226 \times 400 (300 - 75 - 9 - 6)$ $a = \frac{226 \times 400}{0.45 \times 20 \times 300}$

$= 16.1$ kN.m $= 18$ mm

> 10.3 OK

CONSIDER RATIO LINTEL P1

Span = 6.2 m

$w_u = [1.4(3.84) + 1.7(2.0)] 6.2/2 + 1.4(0.6 \times 0.2 \times 24)$

$= 31.2$ kN/m

Bending Moment M

$M = w_u s^2/8$

$= 31.2 \times 6.2^2/8$

$= 150.0$ kN.m

For central column $s = (6.2 - 0.4)/2$

$= 2.9$ m.

$M = 31.2 \times 2.9^2/8$

$= 32.8$ kN.m

For 600 x 200 Lintel 1 H16

Moment Capacity

$M = 0.85(201 \times 400)(600 - 70 - 8 - 91/2)$

$= 33.6$ kN.m OK

$a = A_{sf} f_y / 0.85 f'_c b$

$= 201 \times 400 / 0.85 \times 8 \times 190$

$= 62$

For Shear

$V_f = 31.2 \times 2.9 \times 10^3 / 0.85 \times 190 \times 491 \times 2 = 0.57$ MPa.

$A_s = (V_f - V_c) b_w s / f_y$

$= (0.57 - 0.24) 190 \times 200 / 300$

$= 42$ mm²

$A_s = 63$

for 400 x 200 1 H20.

$V_f = 1.07$ MPa

$s = 200$ mm 2 leg R10

$R10 = 78.4 + 78.4 = 157$ OK

$s = 200$

Need 1 R10 leg

for $s = 300$

For 400x200 H20 - 2 leg R10-200 c/c 30.4 kN. a = 114 d = 362 No good use 600 grade 430 N = 32.9 kN $V_f = 1.1$

RATIO LINTEL Span 2.9m H16 1 leg R10-300 c/c 600 OK

BED 2 LINTEL Span = 2.4m

W = 31.2 kN/m W = 1.4DL+1.6L

Bending Moment

$M = \frac{31.2 \times 2.4^2}{8}$

= 22.5 kN.m

For 400 x 200 lintel

Try 1 H16. $A_s = 201 mm^2$ [•] H16

$a = \frac{A_s f_y}{0.85 f'_c b}$

$= \frac{201 \times 400}{0.85 \times 8 \times 190}$

= 62 mm

Moment Capacity

$M_u = \phi A_s f_y (d - 0.5a)$

$= 0.85 \times 201 \times 400 \left(390 - 70 \frac{280}{} - 32 - 8\right)$

= 19.1 kN.m < H20

Check Shear

$V_i = \frac{V_u}{\phi b_w d}$ $V_u = W_u S/2$

$= 37.4 kN/2$

$= 37.4 kN$

$= \frac{37.4 E3}{0.85 \times 190 \times 280}$

= 0.83 MPa

Shear Carried by Masonry Grade U

$V_m = 0.24$

Shear Required

$V_i - V_m = 0.83 - 0.24$

= 0.59 MPa

$\frac{A_v}{s} = (V_i - V_m)\frac{b_w}{f_y}$ f_y 200%.

$A_v = 0.59 \times 200 \times \frac{190}{400}$

$= 56$ R10 - 200%.

RED 2 LINTEL Span 2400 H16 H20 R10-200

CONSIDER RED 1 / GARAGE LINTEL Span 2.0

$W = 31.2$

$M = 31.2 \times 2.0^2/8$

$= 15.6$ kNm

FOR H16 $M_u = 19.1$ kNm OK

Bed 1/Garage Lintel Span 2000 H16 tens R10-200

check shear.

$V_i = V_u$ $V_u = 31.2 \times 1.0 = 31.2$

$0.8 f_{cu} b_w d$

$= \frac{31.2 E3}{190 \times 28 @ 0.85}$

$= 0.69$ MPa.

$A_v = (V_i - V_m)\frac{b_w s}{f_y}$

$= (0.62 - 0.24)\frac{190 \times 200}{300}$

$= 48$ mm² use R10 - 200 s.m.

CONSIDER LIVING ROOM LINTEL Span 2.4m

$W = [1.4(3.84) + 1.7(1.5)]12.4/2 + 1.4(0.6 \times 0.2 \times 24)$
$+ 1.4(0.4)(4.8 + 3.0)$

$= 57.5$ kN/L

Design Moment

$M = wL^2/8$

$M = 57.5 \times 2.4^2/8$

$= 41.4$ kNm

For 1 / 20. 600 x 200 lintel.

$a = \frac{342 \times 400}{0.85 \times 190 \times 8}$

$= 106$ mm

Moment Capacity

$M = \phi A_s f_y (d - 0.5a)$

$= 0.85 \times 342^2 \times 400 (600 - 70 - \frac{467}{2} - 10)$

$= 54.3$ kNm OK

Check Shear

$v_i = \frac{V_u}{\phi b_w d}$

$= \frac{57.5 \times 1.2}{0.85 \times 467 \times 0.19}$

$= 0.91$ MPa

R10 - 200 c/c

$A_s = (v_i - v_m) \frac{s}{f_y} \cdot b_w s$

$= (0.91 - 0.24) \frac{200 \times 190}{300}$

$= 85$ mm^2 R10 = 78 mm^2 OK

1 leg.

LIVING ROOM
LINTEL
Span 2400
H20
R10-200
600 x 200

GIBRALTAR BOARD
Wall Bracing Systems

WALLBRACING CALCULATION SHEET A

(For use with NZS 3604 : 1990)

Name: CLASSIC HOMES

1.

Location of STOREY	foundation / single / ~~upper of two~~ / (lower of two)
GARAGE	
SITE WIND ZONE: (Table 2.4)	low / medium / high / (very high)
EARTHQUAKE ZONE: (Fig. 2.2, Table 2.3)	(A) / B / C

SITE ADDRESS

City/Town or District: KAPITI

Street and Number: THE PALMS

or

LOT AND D.P. Number:

2. **FOR EARTHQUAKE**

Roof weight: (light) / heavy
Average Roof Pitch: 18°
Type of Cladding: (light) / heavy
Earthquake Zone:
Storey in Roof space: yes / (no)

E = 9.9 BU's/m²

3. **FOR WIND**

Building Height : 7 m
Roof Height : 1.5 m
Stud Height : 2.4 m
Wind Speed : V HIGH

W = 178 BU's/m Along
W = 165 BU's/m Across

4.

~~ROOF~~ or BUILDING LENGTH	BL	= 7.0 m
~~ROOF~~ or BUILDING WIDTH	BW	= 7.0 m
GROSS ~~ROOF~~ or BUILDING PLAN AREA	GPA	= 49 m²

5.

EARTHQUAKE LOAD (ACROSS and ALONG) E x GPA	= 9.9 x 49	= 485	BU's
WIND LOAD: ACROSS	W ACROSS x BL	= 165 x 7.0	= 1155 BU's
WIND LOAD: ALONG	W ALONG x BW	= 178 x 7.0	= 1246 BU's

ALONG

WALL OR BRACING LINE		BRACING ELEMENTS PROVIDED			EARTHQUAKE		WIND	
1	2	3	4	5	6 EQ	7 EQ	6 W	7 W
Line Label	Minimum BU's Required	Bracing Element No.	Bracing Type	Length Element (m) L	Rating BU/m EQ	BU's Achieved (BU/m x L) EQ	Rating BU/m W	BU's Achieved (BU/m x L) W
		A1	BES	3.6	185	306	115	414
		A2	BE6	1.2	110	132	150	180
A	70	A3	"	1.2	"	132	"	180
		B1	BES	2.2	185	187	115	253
B	70	B2	"	2.2	"	187		253
C								
D								
E								
TOTALS ACHIEVED					EQ	944	W	1280
TOTALS REQUIRED					EQ	485	W	1246

ACROSS

WALL OR BRACING LINE		BRACING ELEMENTS PROVIDED			EARTHQUAKE		WIND	
1	2	3	4	5	6 EQ	7 EQ	6 W	7 W
Line Label	Minimum BU's Required	Bracing Element No.	Bracing Type	Length Element (m) L	Rating BU/m EQ	BU's Achieved (BU/m x L) EQ	Rating BU/m W	BU's Achieved (BU/m x L) W
		M1	BE6	2.2	110	242	~~150~~	330
		M2	"	2.2	"	242	"	330
M	70							
N	70	N1	BE9	1.0	95	95	110	110
		N2	BE9	1.0	"	95	"	99
O		O1	HT14S	2.2			190	418
		O2	HT14B	2.2			190	418
P		P1	BE4	0.9			100	90
Q		Q1	HT11P	1.0			191	191
		Q2	HT9	0.6			93	56
TOTALS ACHIEVED					EQ	664	W	~~869~~ 1173
TOTALS REQUIRED					EQ	485	W	1155

AMENDED BCE 43126

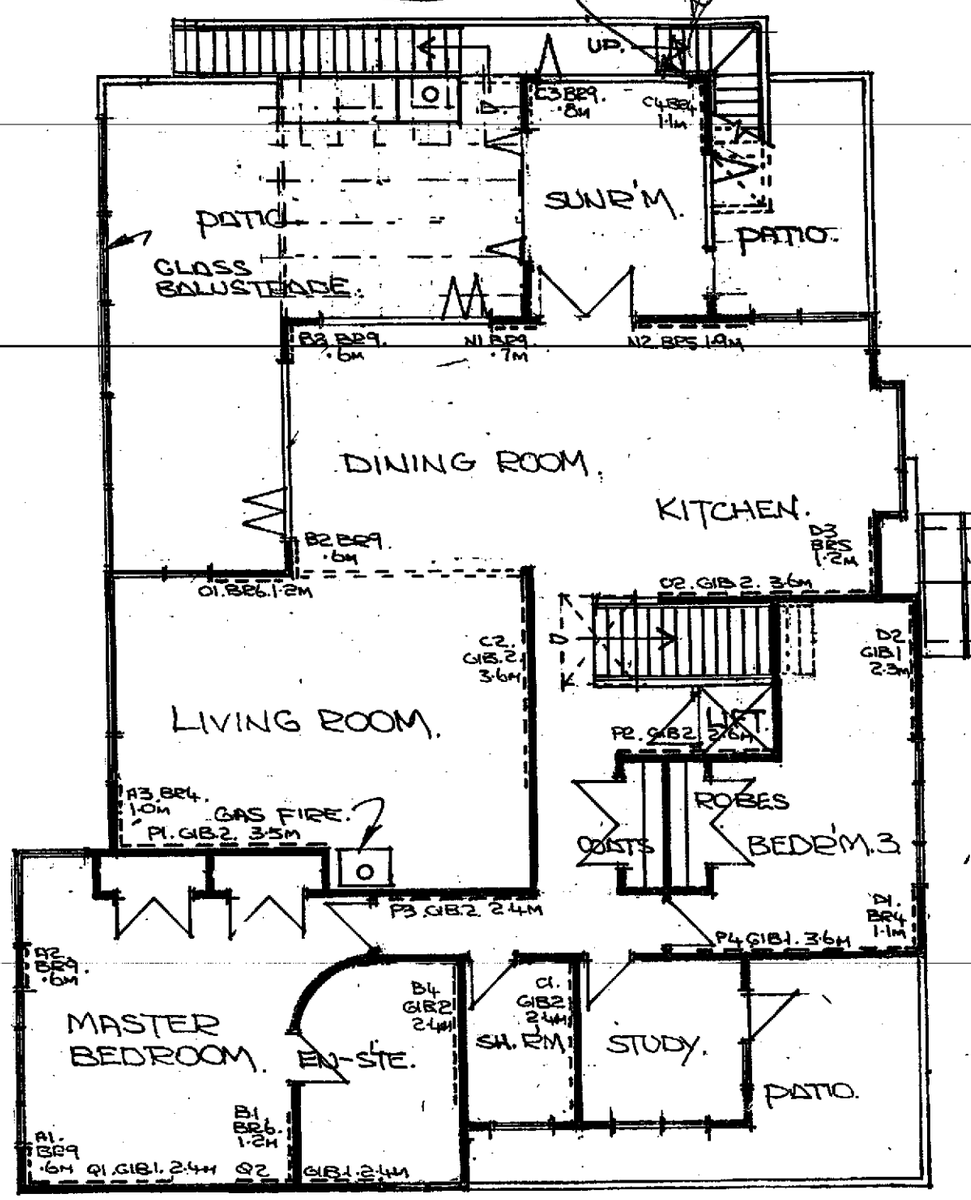
see page 12

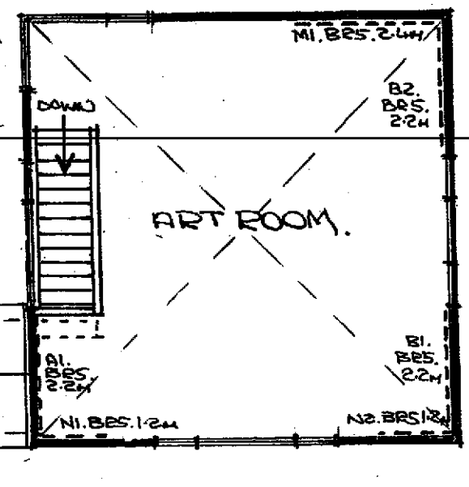
MURRAY, THIS WALL REALLY NEEDS A BRACE. BR9 .6M SHALL I REDUCE WINDOW TO GET IT IN.?

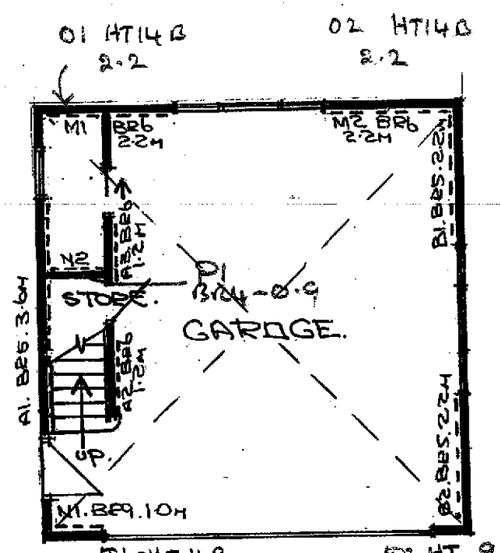
USE M1- SP4 -0.45 BASE CONSULTING ENGINEERS

NB:- FIX CEILING GIB TO ART ROOM & GARAGE TO FORM STRUCTURAL DIAPHRAGMS TO NZS 3604:13.5.

See page 10. & BRACING ACHIEVED & REQUIRED







Ground Floor.

garage timber walls

18.000

14.900

7.000

7.000

UPPER FLOOR BRACING PLAN. 1 : 100.

AMENDE BCE 43126

12.

GIBRALTAR BOARD
Wall Bracing Systems

WALLBRACING CALCULATION SHEET A

(For use with NZS 3604 : 1990)

Name: CLASSIC HOMES LTD

1. Location of STOREY: foundation / single / (upper of two) / lower of two

SITE WIND ZONE: (Table 2.4) low / medium / high / (very high)

EARTHQUAKE ZONE: (Fig. 2.2, Table 2.3) (A) / B / C

SITE ADDRESS

City/Town or District: KAPITI

Street and Number: THE PALMS
or
LOT AND D.P. Number:

2. **FOR EARTHQUAKE**

Roof weight: light / heavy
Average Roof Pitch: 12½°
Type of Cladding: light / heavy
Earthquake Zone: A
Storey in Roof space: yes / no

E = 6.2 BU's/m²

3. **FOR WIND**

Building Height : 8m
Roof Height : 2.8m
Stud Height : 2.7m
Wind Speed : VHIGH.

W = 111 BU's/m Along
W = 111 BU's/m Across

4. ~~ROOF~~ or BUILDING LENGTH BL = 18 m ✓
~~ROOF~~ or BUILDING WIDTH BW = 14.9 m ✓
GROSS ~~ROOF~~ or BUILDING PLAN AREA GPA = 176 m²

5. EARTHQUAKE LOAD (ACROSS and ALONG) E x GPA = 6.2 x 176 = 1091 BU's
WIND LOAD: ACROSS . W ACROSS x BL = 111 x 18 = 1998 BU's
WIND LOAD: ALONG W ALONG x BW = 111 x 14.9 = 1654 BU's

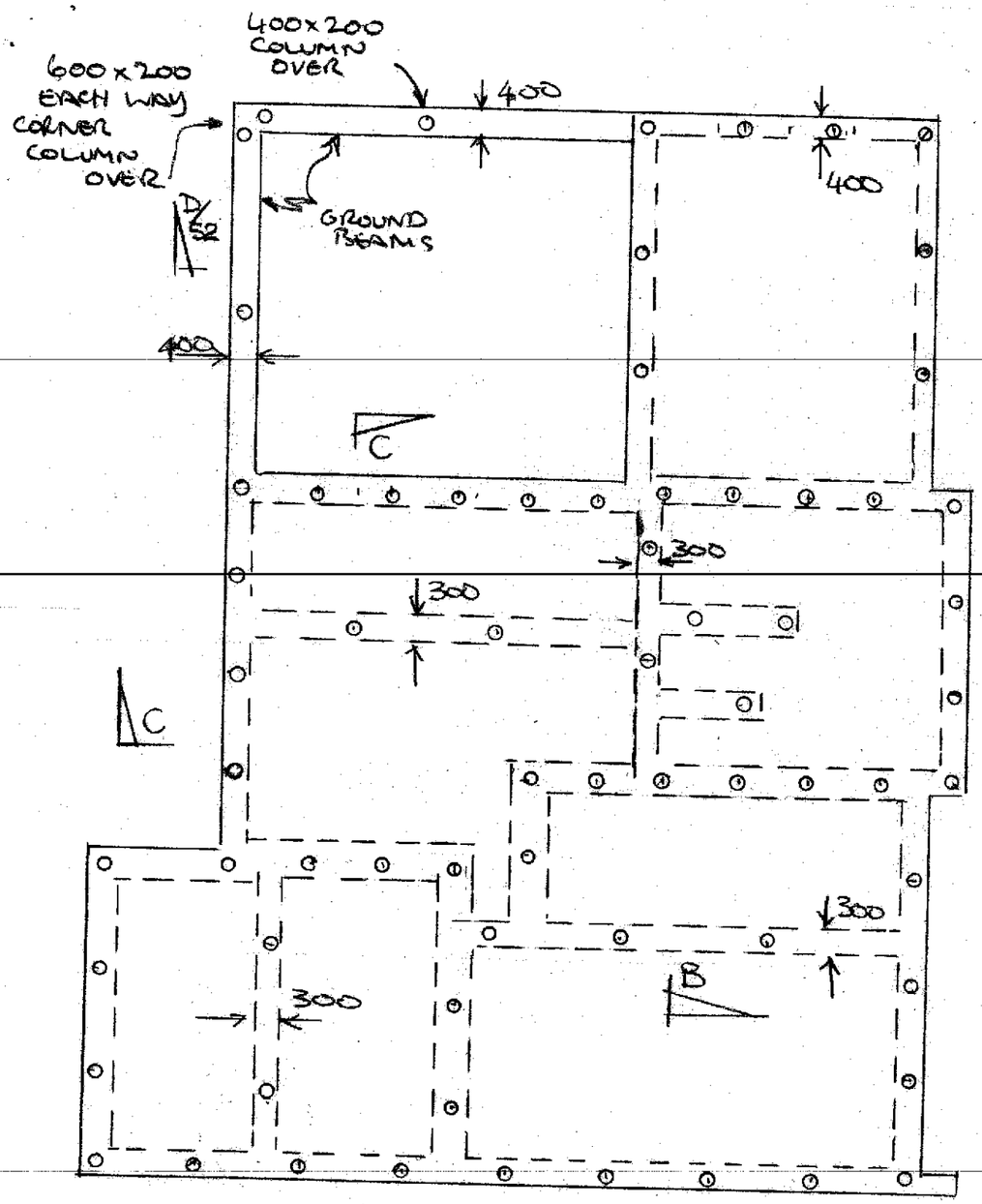
ALONG

WALL OR BRACING LINE		BRACING ELEMENTS PROVIDED			EARTHQUAKE		WIND	
1	2	3	4	5	6 EQ	7 EQ	6 W	7 W
Line Label	Minimum BU's Required	Bracing Element No.	Bracing Type	Length Element (m) L	Rating BU/m EQ	BU's Achieved (BU/m x L) EQ	Rating BU/m W	BU's Achieved (BU/m x L) W
A	100	A1	BP9	.6	95	57	110	66
		A2	"	.6	"	57	"	66
		A3	BP4	1.0	85	85	100	100
B	70	B1	BP6	1.2	110	132	150	180
		B2	BP9	.6	95	57	110	66
		B3	"	.6	"	57	"	66
C	70	B4	GIB2	2.4	70	168	80	192
		C1	GIB2	2.4	"	168	"	192
		C2	"	3.6	"	252	"	288
D	140	C3	BP9	.8	95	76	110	88
		C4	BP4	1.1	85	93	100	110
E		D1	"	1.0	"	85	"	100
		D2	GIB1	2.3	50	115	55	126
		D3	BP5	1.2	85	102	115	138
TOTALS ACHIEVED					EQ	1504	W	1678
TOTALS REQUIRED					EQ	1091	W	1654

ACROSS

WALL OR BRACING LINE		BRACING ELEMENTS PROVIDED			EARTHQUAKE		WIND	
1	2	3	4	5	6 EQ	7 EQ	6 W	7 W
Line Label	Minimum BU's Required	Bracing Element No.	Bracing Type	Length Element (m) L	Rating BU/m EQ	BU's Achieved (BU/m x L) EQ	Rating BU/m W	BU's Achieved (BU/m x L) W
M	70	M1	SP 4	0.45			85	38
		~~M1~~	~~BP9~~	~~.7~~	~~95~~	~~66~~	~~110~~	~~77~~
		M2	BP5	1.9	85	161	115	218
N	70							
		O1	PR6	12	110	132	150	180
O	70	O2	GIB 2	3.6	70	252	80	288
		P1	GIB 2	3.5	70	245	80	280
P	70	P2	"	2.6	"	182	"	208
		P3	"	2.4	"	168	"	192
		P4	GIB 1	3.6	50	180	75	270
Q	73	Q1	"	2.4	"	168	"	180
		Q2	"	2.4	"	168	"	180
TOTALS ACHIEVED					EQ	1722	W	~~2073~~ 2111
TOTALS REQUIRED					EQ	1091	W	1998

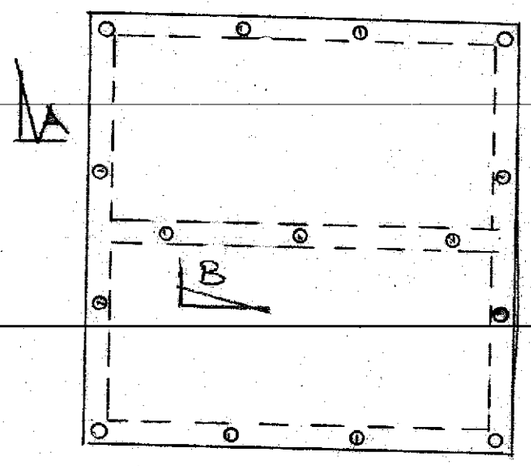
BCE 43126 ADD



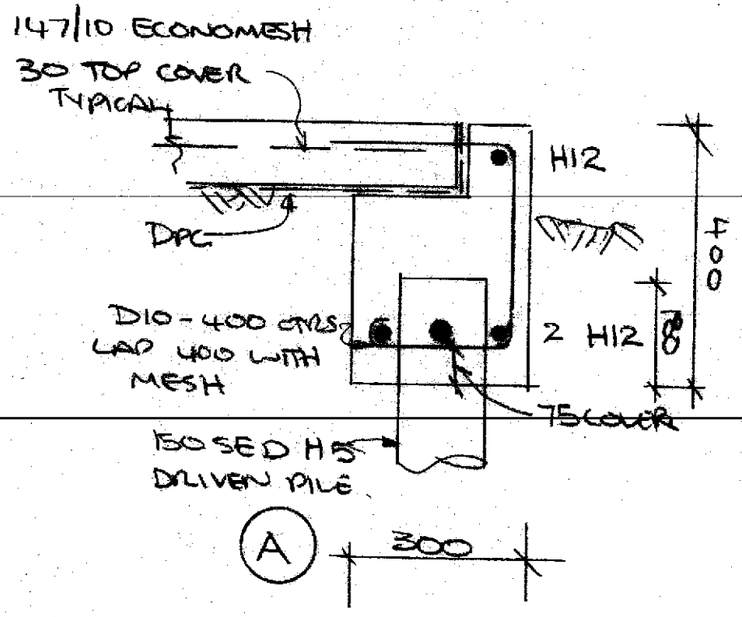
FOUNDATION PLAN

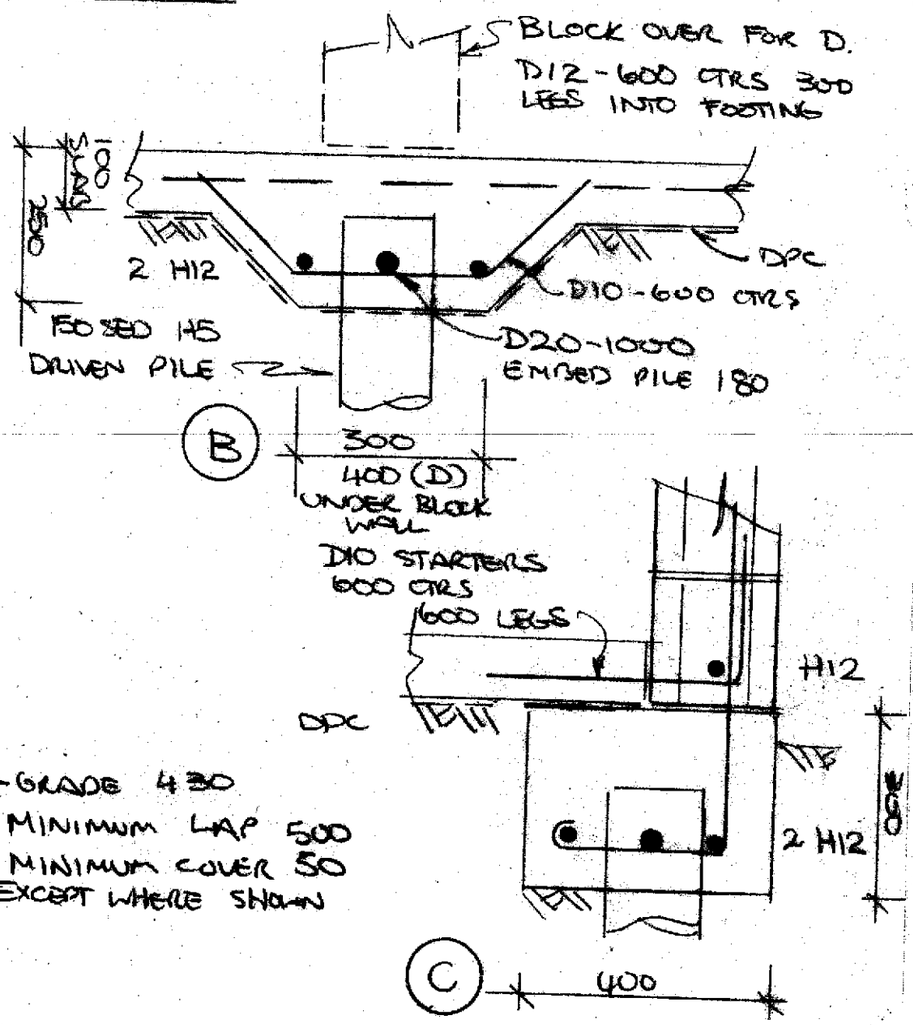
REFER ARCHITECTURAL PLANS FOR DIMENSIONS
ALL FOOTINGS 400 WIDE EXCEPT WHERE SHOWN

RETURN ALL H12 300 INTO ADJOINING GROUND BEAMS



GARAGE





NOTES

PILES TO BE H5 150 SED DRIVEN TO A SET OF 200mm /10 BLOWS FOR ALL EXCEPT FOUNDATIONS UNDER INTERNAL BLOCK WALLS WHERE SET SHALL BE 100mm /10 BLOWS FOR 480kg HAMMER FALLING 1000mm.

RECORD ALL SETS AND LENGTHS AND SUBMIT COPY TO ENGINEER

ALL PILES TO HAVE D20-1000 LONG THRU CAP.

CONCRETE TO BE 20MPA AT 28 DAYS. VIBRATED IN PLACE. ADD NO WATER ON SITE.

H12 - GRADE 430
MINIMUM LAP 500
MINIMUM COVER 50
EXCEPT WHERE SHOWN

Issue	Amendment	By	Date
2	CONSENT		4/8
1	PRELIM		1/4

Base Consulting Engineers Ltd

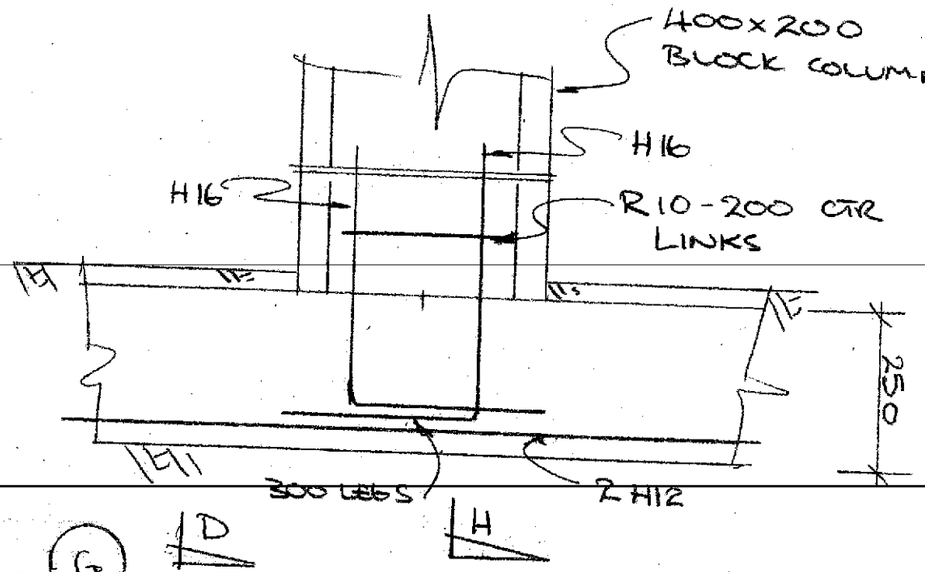
279 Oxford Street
P O Box 434
Levin

Telephone Levin (06) 367 0088
Parapararumu (04) 297 0088
Fax (06) 367 0058
Email base@paradise.net.nz

FOUNDATION PLAN
FOUNDATION DETAILS

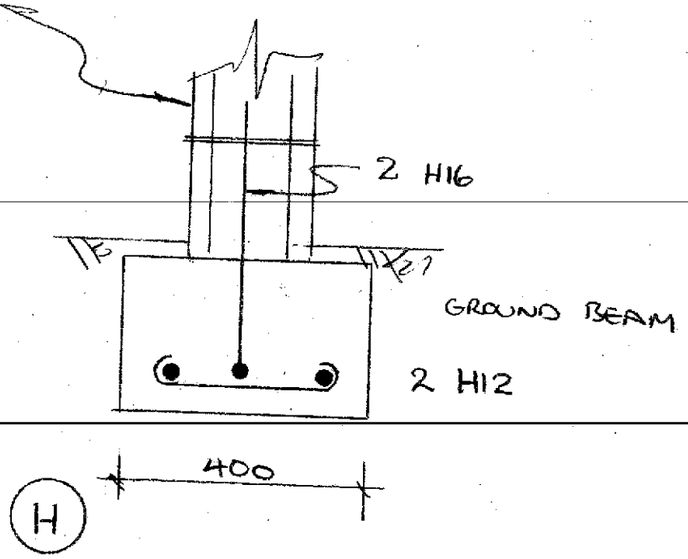
SEARLE DWELLING
5 THE PALMS
RAUMATI

Date	12/6 03	Scale	1:100 1:10
Surveyed		Sheet	A3
Designed	PB 03	Drawing No.	1 of 2
Drawn			43126 S1
Checked			



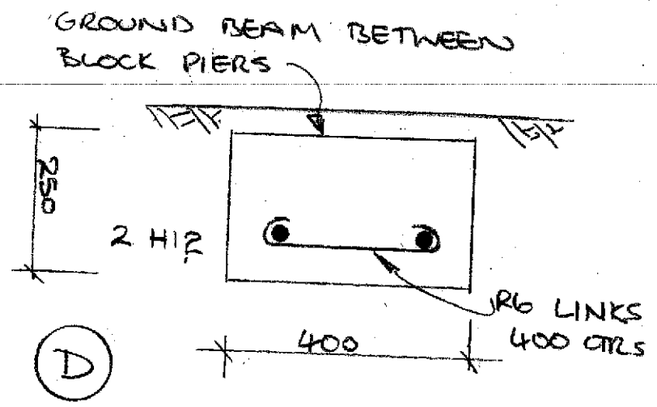
G

D H

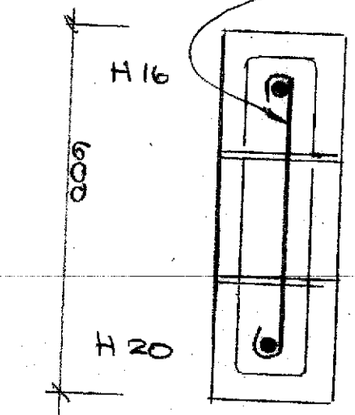


H

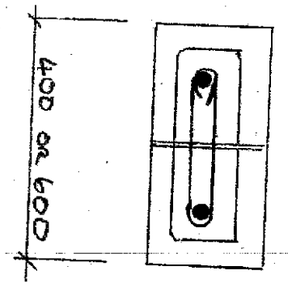
REINFORCING FOR 600x200 CORNER PIER TO BE H16 VERT 200 CRS (5) R10 LINKS 400 CRS HORIZONTAL
REFER PAGE 5 DWGS



D



E ALL OTHER LINTELS



F PATIO BEAM
SPAN 2900

Issue	Amendment	By	Date
2	CONSENT	MS	4/8

Base Consulting Engineers Ltd
279 Oxford Street
P O Box 434
Levin
Telephone Levin (06) 367 0088
Paraparaumu (04) 297 0088
Fax (06) 367 0058
Email base@paradise.net.nz

BLOCK LINTELS
FOUNDATION DETAIL

SEARLE DWELLING
5 THE PALMS
RAUMATI

Date	Scale	Sheet
AUG 03	1:10	A3
Surveyed	Drawing No.	2 of 2
Designed PGSAC		43126-S2
Drawn		
Checked		

6 H16 VERT
R10-400 HOR

490x200 PIER

PATIO.

UP.

CS1.

CS.2.

3m WIDE BI-FOLD DOORS

BEDROOM.2.

SEAT

ROBES

ROBES

WM

TUB

LAUNDRY

WC.

C/S

SK

STORE.

GARAGE.

5.4m SECTIONAL DOOR, REMOTE.

GLAZED ROOF OVER.

LIVING ROOM.

100x50mm No1, H1, PG. FRAMING, SEC.8.

STORE.

ENTRY.

LIFT.

WC.

BATHROOM

VANITY.

SK

CUPBD

BEDROOM.1.

ROBES

ROBES

WORK BENCH

GARAGE.

5.4m SECTIONAL DOOR, REMOTE

OUTLINE OF UPPER STOREY.

200 SERIES CONCRETE BLOCKWORK.

CS.1.

CS.2.

GROUND FLOOR PLAN. 1:100.

AMENDED 5 AUG 03 43126

BASE CONSULTING ENGINEERS

5

A1

5 The Palms

KAPITICOAST
DISTRICT COUNCIL

there's a future here

KAPITI COAST DISTRICT COUNCIL

CONSENT NOTICE PURSUANT TO SECTION 221

OF THE RESOURCE MANAGEMENT ACT 1991

IN THE MATTER OF LAND TRANSFER PLAN 90203

BEING THE SUBDIVISION OF LOT 6 DP 10116 AND LOTS 7 & 8 DP 10047,

14 KOHUTUHUTU ROAD, RAUMATI,

FOR M SEARLE

The District Land Registrar at Wellington:

PURSUANT to Section 221 of the Resource Management Act 1991 the Kapiti Coast District Council hereby gives notice that it has consented to the subdivision and the following conditions are to be complied with on a continuing basis:

1. The bulk and location of the dwelling to be constructed within lot 3 shall be in general accordance with the plans drawn by Rob Meecham Draughting & Design Service titled "Proposed new residence Lot 3, Kohutuhutu Road, Raumati Beach for Classic Homes Oct.99, revised Nov.99" submitted with application RM980463. The yard encroachments of the dwelling shall not exceed the encroachments shown on the plans.

2. That foundation design and construction for any new dwelling or additions and alterations to a dwelling on Lots 1, 2, 4, 5 & 6 land transfer plan 90203 shall be in accordance with the recommendations within the geo-technical assessment prepared by MM Developments, dated 16 September 2000, submitted to Council in relation to application No. RM 990463 a copy of which is available in Council's Resource Consents Office.

3. Except for minor boundary adjustments no further subdivision of lot 4 shall be allowed.