

STATEMENT OF PASSING OVER INFORMATION

This information has been supplied by the vendor or the vendor's agents. Accordingly, Ownly (REAA 2008) and Sold On Kapiti Limited is merely passing over the information as supplied to us by the vendor of the vendor's agents.

We cannot guarantee its accuracy and reliability as we have not checked, audited, or reviewed the information and all the intending purchasers are advised to conduct their own due diligence investigation into the same.

To the maximum extent permitted by law Ownly (REAA 2008) and Sold On Kapiti Limited does not accept any responsibility to any person for the accuracy of the information herein.



SOLD ON KĀPITI
real estate

Code Compliance Certificate Number:

10067

(Section 57(3) (a), Building Act 1991)

Territorial Authority:

Building Consent Number:

Project Information Memorandum Number:

Resource Consent Number:

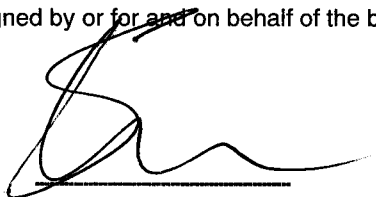
Project		Project Location	
Project Type:	<input type="text" value="New Building"/>	Owner:	<input type="text" value="John Adams"/>
Intended Use:	<input type="text" value="Dwelling"/>	Street Address:	<input type="text" value="56 Kakariki"/>
Lifespan:	<input type="text" value="Specified as 50 Years"/>		<input type="text" value="Waikanae"/>
Being Stage	<input type="text" value="1 of an Intended 1 Stages."/>	Legal Lot #	<input type="text" value="8"/>
Builder	<input type="text" value="Cameron Robert"/>	Legal DP	<input type="text" value="67906"/>
Plumber	<input type="text" value="Adams B A"/>		
Drainlayer	<input type="text" value="Adams J"/>		
Other	<input type="text"/>		

This certificate is issued by Stephen Paul Stradling (currently registered as a building certifier)
This certificate does not apply to electrical wiring or gas fitting work, which is covered by the installer's own certificate.

This is a final code compliance certificate issued in respect of all the building work under the above building consent.

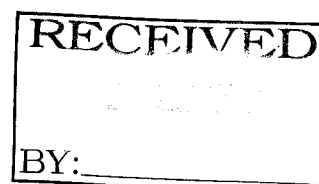
COPY FOR YOUR RECORDS

Signed by or for and on behalf of the building certifier



S. P. Stradling

Thursday, 1 November 2001





Building Consent

Section 35, Building Act 1991

Application

J ADAMS	No.	001690
C/- ENVIROPLUS LTD	Issue date	12/12/00
PO BOX 223	Application date	5/12/00
OTAKI	Overseer	STEPHEN STRADLING

Project

Description	New Construction Being Stage 1 of an intended 1 Stage NEW DWELLING
Intended Life	Indefinite, but not less than 50 years
Intended Use	RESIDENTIAL
Estimated Value	\$215,000
Location	56 KAKARIKI GROVE, WAIKANAE
Legal Description	LOT 8 DP 67900
Valuation No.	

Charges

The Council's charges paid on uplifting this Building Consent, in accordance with the attached details are:

	\$	1,272.50
Building Research Levy	\$	215.00
Building Industry Authority Levy	\$	139.75
Total	\$	1,627.25

This building consent is a consent under the Building Act 1991 to undertake building work in accordance with the attached plans and specifications so as to comply with the provisions of the building code. It is not a consent under the Resource Management Act and does not affect any duty or responsibility under any other Act nor permit any breach of any other Act.

This building consent is issued subject to the conditions specified in the attached page(s) headed Conditions of Building Consent 001690.

Signed for and on behalf of the Council:

Name: 

Date: 12-12-00

Building Certifier's Inspection Report

(Section 57(3) (a), Building Act 1991)

Territorial Authority:	<input type="text" value="Kapiti Coast District Council"/>	Building Consent Number:	<input type="text" value="001690"/>
Building Certificate Number:	<input type="text" value="10067"/>	Building Consent Issued:	<input type="text" value="30/06/00"/>
Project Information Memorandum Number:	<input type="text" value="001563"/>		
Resource Consent Number:	<input type="text"/>		

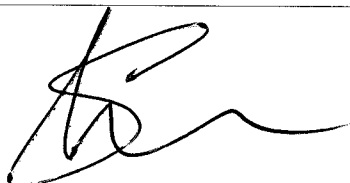
Project		Project Location	
Project Type:	<input type="text" value="New Building"/>	Owner:	<input type="text" value="John Adams"/>
Intended Use:	<input type="text" value="Dwelling"/>	Street Address:	<input type="text" value="56 Kakariki"/>
Lifespan:	<input type="text" value="Specified as 50 Years"/>		<input type="text" value="Waikanae"/>
Being Stage	<input type="text" value="1 of an Intended 1 Stages."/>	Legal Lot #	<input type="text" value="8"/>
Builder	<input type="text" value="Cameron Robert"/>	Legal DP	<input type="text" value="67906"/>
Plumber	<input type="text" value="Adams B A"/>		
Drainlayer	<input type="text" value="Adams J"/>		
Other	<input type="text"/>		

This Certificate does not apply to Electrical Wiring or Gas Fitting:

COPY FOR YOUR RECORDS

Assessment Detail


Date	Type	Pass	Comments	Notes
4/01/01	P & D Under Slab	<input checked="" type="checkbox"/>	<input type="text" value="Pipework layout conforms"/>	<input type="text" value="Lower Level"/>
7/01/01	Footings	<input checked="" type="checkbox"/>	<input type="text" value="Ground conditions verified by engineer"/>	
7/01/01	Footings	<input checked="" type="checkbox"/>	<input type="text" value="Steel reinforcement in place"/>	
7/01/01	Slab Pre Pour	<input checked="" type="checkbox"/>	<input type="text" value="Damp proof course in place"/>	<input type="text" value="Lower Level. Also footing for retaining wall. Driven piles in place"/>
7/01/01	Slab Pre Pour	<input checked="" type="checkbox"/>	<input type="text" value="Mesh in place"/>	<input type="text" value="Lower level"/>
13/02/01	Footings	<input checked="" type="checkbox"/>	<input type="text" value="Steel reinforcement in place"/>	<input type="text" value="Upper level"/>
13/02/01	P & D Under Slab	<input checked="" type="checkbox"/>	<input type="text" value="Pipework layout conforms"/>	
16/02/01	Slab Pre Pour	<input checked="" type="checkbox"/>	<input type="text" value="Mesh in place"/>	
16/02/01	Slab Pre Pour	<input checked="" type="checkbox"/>	<input type="text" value="Damp proof course in place"/>	
14/03/01	Framing / Bracing	<input checked="" type="checkbox"/>	<input type="text" value="Framing / bracing / connections checked"/>	
2/04/01	External Cladding	<input checked="" type="checkbox"/>	<input type="text" value="Sheet material fixing / weatherproof"/>	
25/04/01	Pre-lining	<input checked="" type="checkbox"/>	<input type="text" value="Timber moisture measured - OK to line"/>	<input type="text" value="Insulation in place."/>
25/04/01	Pre-lining	<input checked="" type="checkbox"/>	<input type="text" value="Internal pipework tested"/>	
3/05/01	Post-lining	<input checked="" type="checkbox"/>	<input type="text" value="Bracing elements fixed satis"/>	
14/09/01	Drainage	<input checked="" type="checkbox"/>	<input type="text" value="Tested & plotted"/>	



Assessment Detail

Date	Type	Pass	Comments	Notes
1/11/01	Final	<input checked="" type="checkbox"/>	Issue CCC	

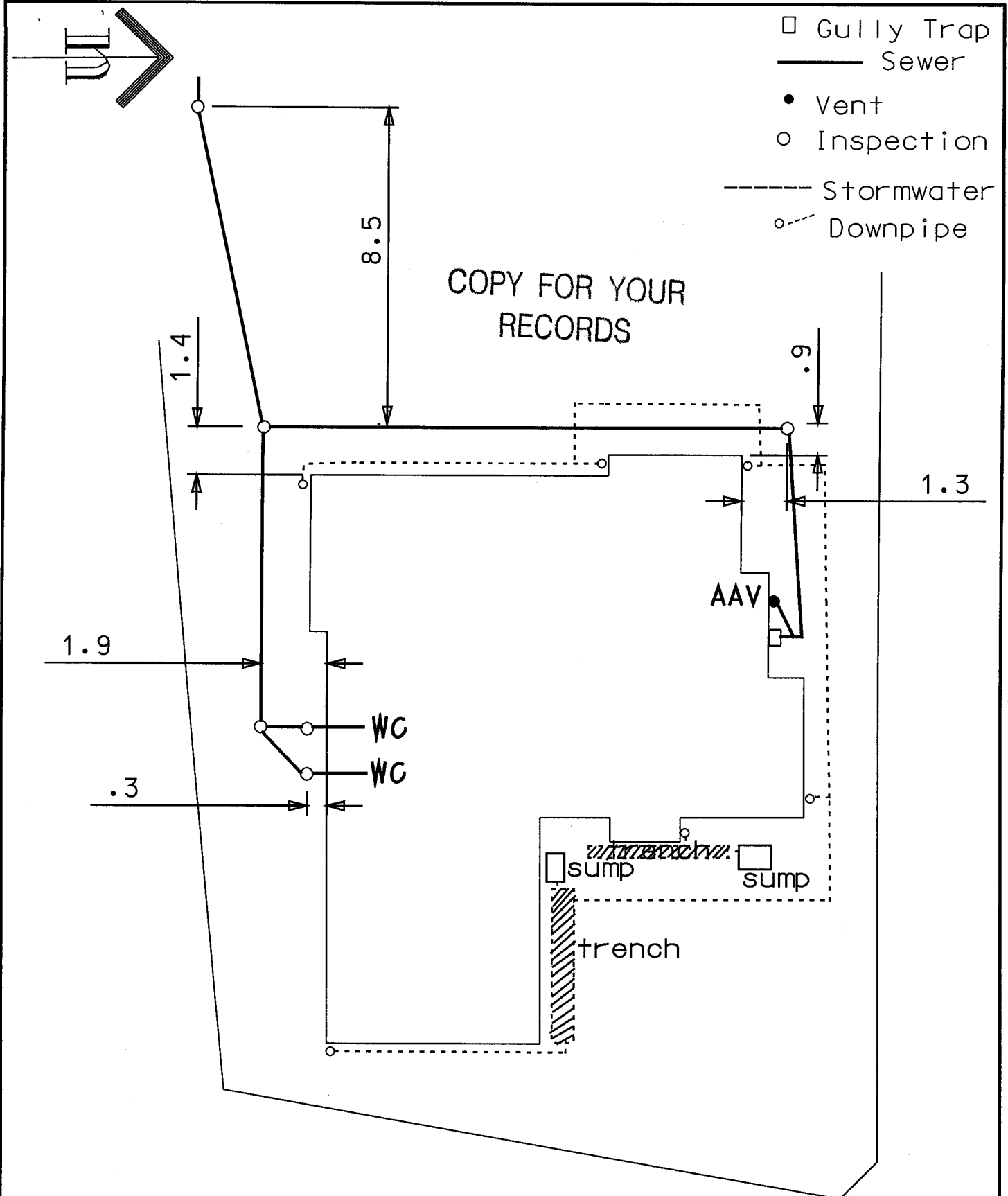
Signed by or for and on behalf of the building certifier



S. P. Stradling

Wednesday, 14 November 2001

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RECORDS



SCALE 1:150

ENVIRO + PLUS – Drainage Plan

56 Kakariki Grove, Waikanae

Registered Drainlayer

J Adams

ORIGINAL SHEET SIZE
A 4

BUILDING CONSENT No
DATE 14/09/01



eQUUS industries Ltd

25th January 2002

REF:WW927 BG:jm

**John Adam
56 Kakariki Grove
WAIKANAE**

**COPY FOR YOUR
RECORDS**

Dear Sus

**RESIDENCE AT 56 KAKARIKI GROVE, WAIKANAE
EQUUS THERMEXX NATURAL CLADDING SYSTEM
TO LIGHT TIMBER FRAME CONSTRUCTION
(Specification P7017)**

Further to our discussions regarding a materials warranty covering coating materials supplied for the above contract, we would confirm the Terms and Conditions of the Warranty as set out in this letter as follows:

1. **Limitations of Cover:** The terms and conditions of Warranty as set out in this letter refer specifically to materials supplied by Equus Industries Ltd., to your Company as our Approved Contractor for this contract.
2. **Warranty Cover:** The Warranty covers quality and suitability for use of materials supplied for exterior application and relates to film integrity in the sense that this covers waterproofing ability of the applied cladding system.
3. **Warranty Period:** The maximum period for which such materials are covered by a materials warranty is ten (10) years from such date stipulated in any form of warranty entered into by **Ronnie Stewart Plastering o.b.o John Adam**
4. **General Terms and Conditions:**
 - (a) This warranty is applicable only to materials manufactured by Equus Industries Ltd., and applied by **Ronnie Stewart Plastering o.b.o John Adam** on the above contract.
 - (b) This warranty is supplied to **Ronnie Stewart Plastering o.b.o John Adam** as the purchaser of the materials. It is not an application or Process Performance Warranty and may not replace or supplant any warranty required of **Ronnie Stewart Plastering o.b.o John Adam**
 - (c) The Warranty is valid only for the satisfactory performance of materials which are applied to this contract strictly in accordance with specifications supplied for this contract, information contained in relevant Know Hows, and any other specific written instructions supplied by Equus Industries Ltd., or amendments thereto.

postal address : p.o. Box 601 Blenheim New Zealand

plant: sheppards street riverlands Blenheim N.Z. ph 03-578 0214



Page 2
Ref: WW927

5. **Limitation of Liability:**

No responsibility is taken by Equus Industries Ltd., for any failure of the applicator to apply materials in the correct manner to correctly nominated, prepared and designed surfaces. No responsibility is taken by Equus Industries Ltd., for any alteration to performance of the materials caused by work carried out on the coated surfaces without prior written approval of Equus, or any change in use of the coated structure from that pertaining at the time coating work was completed.

There shall be no liability for Equus in respect of damage to or deterioration in performance of the coatings caused by Act of God, exceptional weather conditions, fire or riot civil commotion, vandalism, nuclear explosions or fall out, damage caused by objects dropped from above, bursting or other forms of destruction or failure of gas or fluid carrying pipes or other vessels, electrical faults, negligence or wilful damage by the main contractor, owner and/or occupier of the building and/or any visitors to the building on which the coatings are applied, or any criminal act, or any consequential damage, or any physical damage from mechanical causes, spillage of any substance or disruption of the surface to which the coatings are applied by any natural disturbance of the structure.

6. **Indemnity:**

If it is established that faulty materials have been supplied to **Ronnie Stewart Plastering o.b.o John Adam**, for this contract and the Terms and Conditions set out above have been satisfied, Equus Industries Ltd., will thereby indemnify **Ronnie Stewart Plastering o.b.o John Adam** against the costs of rectification or upgrading of any coated surfaces where such materials have been used, so that the original warranty period and performance are met.

7. **Disputes:**

Should there be any dispute in regard to any provisions of this warranty or the manner in which it is exercised or interpreted, the decision of an independently appointed arbitor will be accepted as final and binding.

Yours sincerely
EQUUS INDUSTRIES LIMITED


Brian Greenall
Managing Director

**COPY FOR YOUR
RECORDS**

postal address : p.o. Box 601 Blenheim new zealand

plant: sheffield street riverlands Blenheim N.Z. ph 0-3-578 0214

**SCHEDULE A
WEATHER SECURITY WARRANTY PRO RATA**

Year	Company Contribution	%	Purchaser Contribution (Owner)	%
	"	100%	"	Nil
1-25	"	50%	"	50%
26	"	48%	"	52%
27	"	46%	"	54%
28	"	44%	"	56%
29	"	42%	"	58%
30	"	40%	"	60%
31	"	38%	"	62%
32	"	36%	"	64%
33	"	34%	"	66%
34	"	32%	"	68%
35	"	30%	"	70%
36	"	28%	"	72%
37	"	26%	"	74%
38	"	24%	"	76%
39	"	22%	"	78%
40	"	20%	"	80%
41	"	18%	"	82%
42	"	16%	"	84%
43	"	14%	"	86%
44	"	12%	"	88%
45	"	10%	"	90%
46	"	8%	"	92%
47	"	6%	"	94%
48	"	4%	"	96%
49	"	5%	"	98%
50	"	0%	"	100%
51	"	0%	"	100%

**SCHEDULE B
SURFACE COATING WARRANTY PRO RATA**

Year	Company Contribution	%	Purchaser Contribution (Owner)	%
	"	100%	"	Nil
1 to 5	"	67%	"	33%
6	"	60%	"	40%
7	"	54%	"	46%
8	"	47%	"	53%
9	"	40%	"	60%
10	"	34%	"	66%
11	"	27%	"	73%
12	"	20%	"	80%
13	"	14%	"	86%
14	"	7%	"	93%
15	"	0%	"	100%
16 and thereafter	"	0%	"	100%

How to care for your roof

1. You should not walk on your roof unless absolutely necessary. To avoid denting, cracking or other damage to your roof, you should, if you have occasion to walk on it, firstly wear soft soled shoes and secondly place your feet on the lowest point of the tile at the front edge.
2. In certain locations due to humidity or the proximity of trees and shrubs, lichen and moss may grow on your roof. If left unchecked this may damage the surface coating. The manufacturers RECOMMEND this growth be removed by spraying. Consult your local distributor to ascertain the suitability of any cleaning material you wish to apply to your roof.

**COPY FOR YOUR
RECORDS**



A MEMBER OF TASMAN BUILDING PRODUCTS

90-104 Felton Mathew Ave, Glen Innes, Auckland
PO Box 18071, Glen Innes, Auckland 1130, New Zealand
Telephone 64 9 528 8100, Facsimile 64 9 521 1071

METAL TILE WARRANTY FOR NEW ZEALAND

(This warranty excludes installation in Rotorua)

40856AZ

Name of Purchaser **J Adams**
 Address Warranted **Lot 8 Kakariki Grove
 Waikanae, Wellington 0**
 Type of Warranty
 Installation Contractor **Ashton Roofing**
 Date of Warranty **March 2001**
 Brand **Gerard Satin Mint Green**
 Colour
PO Box 54076

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- (a) **Weather Security Warranty by AHI Roofing Limited (hereinafter called the Company).**
 If any "Zincalume" steel roofing tile (a "tile") manufactured by the Company before the date of this warranty comprised in the roof fitted to the Purchaser's property described above (the "property") does not remain weatherproof for a period of 50 years from the date of this warranty then the Company will, at its option, either repair or replace the tile. The Company's obligation under this weather security warranty is limited to the full cost of repair or replacement in respect of claims made during the first 25 years following the date of this warranty and thereafter is limited to its share (calculated in accordance with Schedule A overleaf) of the cost of repair or replacement.
- (b) **Surface Coating Warranty by AHI Roofing Limited**
 If, during the period of 15 years from the date of this warranty, the surface coating of a tile deteriorates to the extent that in the Company's reasonable opinion, the appearance of the roof is substantially affected, then the Company will at its option either replace the tile, apply the Company's surface coating to the affected tile or provide other reasonable compensation to the Purchaser. The Company's obligation under this surface coating warranty is limited to the full cost of remedial work in respect of claims made during the first five years following the date of this warranty and thereafter is limited to its share (calculated in accordance with Schedule B overleaf) of the cost of remedial work.
- (c) **Installation Warranty by the Installation Contractor**
 In the installation contract between the Purchaser and the installation contractor, the Company requires the installation contractor to warrant that defects in the Purchaser's roof arising within three years of the date of this warranty which are caused by faulty or defective workmanship in installation of tiles shall be made good by the installation contractor at no cost to the Purchaser.

Terms and Conditions of the Weather Security Warranty and Surface Coating Warranty (together the "warranties"):

- i. The warranties shall only apply if the Purchaser has made full payment for the supply and fitting of all tiles and thereafter will extend to subsequent owners of the property.
- ii. The warranties shall only apply in respect of claims arising as a direct result of a manufacturing defect in a tile (for example, and not in limitation, claims arising as a consequence of faulty workmanship in the fitting of tiles and damage caused by walking on tiles (whether by the owner or any other person such as a plumber, TV repairman, electrician, painter etc) or from defects in the structure on which the tiles are fitted, are not covered by the warranties).
- iii. The Company shall not be liable under these warranties, or any implied warranties arising under local laws which are not excluded pursuant to paragraph (xii) below, for any consequential, indirect or special damage or loss of any kind whatsoever, or loss of profits or anticipated savings, including any such losses arising due to any delay by the Company in complying with its obligations under the warranties.
- iv. As colour variations may exist in tiles manufactured at different times, the Company reserves the right to repair or replace a tile in a colour similar to the original tiles.
- v. The warranties shall not apply if any work, except temporary emergency work, is done to tiles other than work carried out under the supervision, or subject to the prior inspection and prior written approval, of the Company.
- vi. The Company gives no warranties if, during installation of the tiles, skillsaws, abrasive disks or hacksaws are used to cut tiles except as directed in fixing instructions issued by the Company.
- vii. The surface coating warranty shall not apply where the growth of organic matter such as moss or lichen occurs on tiles. Organic matter, if left unchecked, may damage the surface of tiles or cladding products.
- viii. Any remedial work carried out under the warranties shall not extend the term of the warranties.
- ix. The chip used in the manufacture of tiles is crushed rock from different quarries throughout New Zealand. The colour is natural and from time to time variations in colour or texture, and the presence of other minerals, will occur. These natural occurrences are not covered by the surface coating warranty.
- x. All surface coating systems will fade and chalk over time, particularly on roofing surfaces where they are subjected to the extremes or continuous ultra violet radiation. Gradual fading and chalking over the period of the surface coating warranty is expected, and is not covered by the surface coating warranty.
- xi. These terms and conditions shall not in any way limit the rights of the Purchaser, or the obligations of the Company, under applicable local laws except to the extent permitted by such laws.
- xii. All warranties implied by local laws are negated to the fullest extent permitted by such laws.
- xiii. Each of the above limitations is a separate limitation applying even though one or more of the other limitations may be held not to apply in the circumstances.

Special Note:

If rainwater is collected from the roof for drinking, the water connection system should be disconnected from the tank for three good rainfalls, or hosed down, after installation of tiles and before reconnection.

CONSUMERS' COPY

CERTIFICATE No. 226136

PLUMBERS, GASFITTERS AND DRAINLAYERS BOARD
GASFITTING CERTIFICATION CERTIFICATE

(Pursuant to the Gas Act 1992)

NOT TRANSFERABLE

P.O. BOX 30229
 LOWER HUTT
 TELEPHONE (04) 589 5310
 FAX No. (04) 589 5390
 Email: enquiries@pgdb.co.nz



INSTALLATION ADDRESS: 33 KARKARIKI GR.
(STREET NAME AND NUMBER)

CATEGORY: DOMESTIC
 COMMERCIAL
 INDUSTRIAL
 OTHER
 TEMPORARY

TOWN/CITY/SUBURBS:
 CONSUMER:

WAIKANAЕ

TYPE: NEW
 ADDITION
 ALTERATION
 REPLACEMENT

MR
(TITLE)

55
(INITIALS)

A OAMIS
(SURNAME OR BUSINESS NAME)

GAS TYPE: NATURAL GAS
 LPG
 L.P.G.
 B.I.G.

NAME OF GAS SUPPLIER: N.G.C.

THE FOLLOWING GASFITTING RELATES TO THIS CERTIFICATE

QTY	GAS APPLIANCE TYPE	APPLIANCES INSTALLED LOCATION	MAKE AND MODEL	FLUE TYPE AND LOCATION	VENTILATION TYPE/ LOCATION	GAS SUPPLIER INPUT RATING
1	CENTRAL HEATING	ROOFSPACE	BRIVIS 30 KW	DOWN FLOW ROOF	FROM ROOFSPACE	20 l
1	HOT WATER	OUTSIDE	DUNNIF 24 LTR INFINITY	POWER FLOW	FROM OUTSIDE	188 n
1	HOB	KITCHEN	SIMPSON 4 BURNER	NON FLEW	FROM KITCHEN	28 n

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PIPEWORK INSTALLED: YES (TICK) NO (TICK) ATTACH PIPEWORK DIAGRAM & DETAILS if appropriate

TEST RESULTS	DATE	TEST PRESSURE kPa	DURATION MINUTES	PRESSURE LOSS/GAIN kPa	COMBUSTION TEST	VENTILATION TEST
	10.10.01	5.00	10 mins	NO LOSS		

TESTING PROCEDURES USED NZS5261: YES (tick) NO (tick)
 IF NO STATE DETAILS OF TEST PROCEDURES USED

INSTALLATION WORKING PRESSURE
 kPa: 25

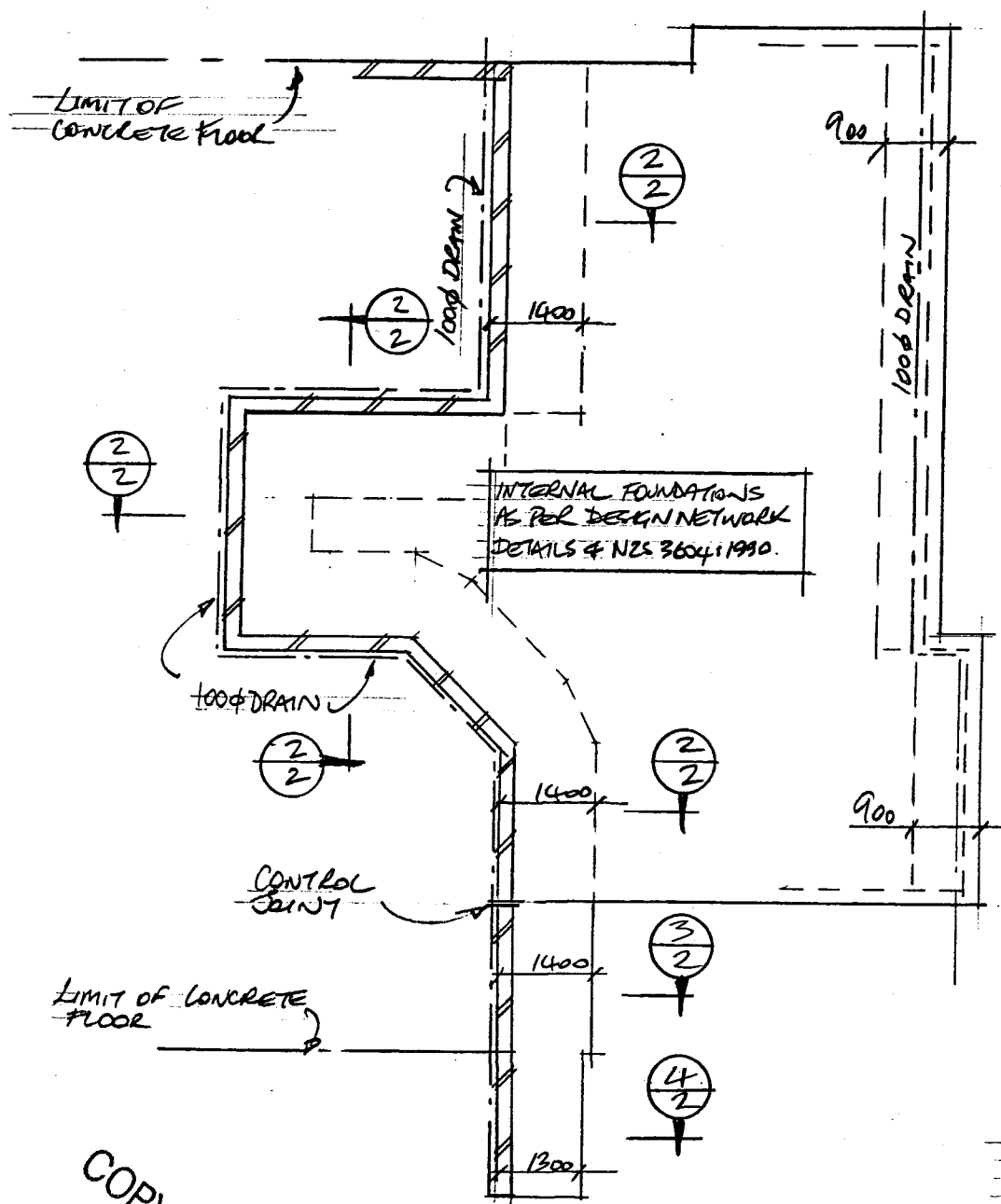
If during installation you fail to detect gas odour, mark box with a cross
 This will be followed up by Gas Supplier

I hereby certify that the installation or addition to the installation detailed above has been "Installed/supervised" (delete one) by myself
 has been tested, is safe and complies with the relevant legislative requirements

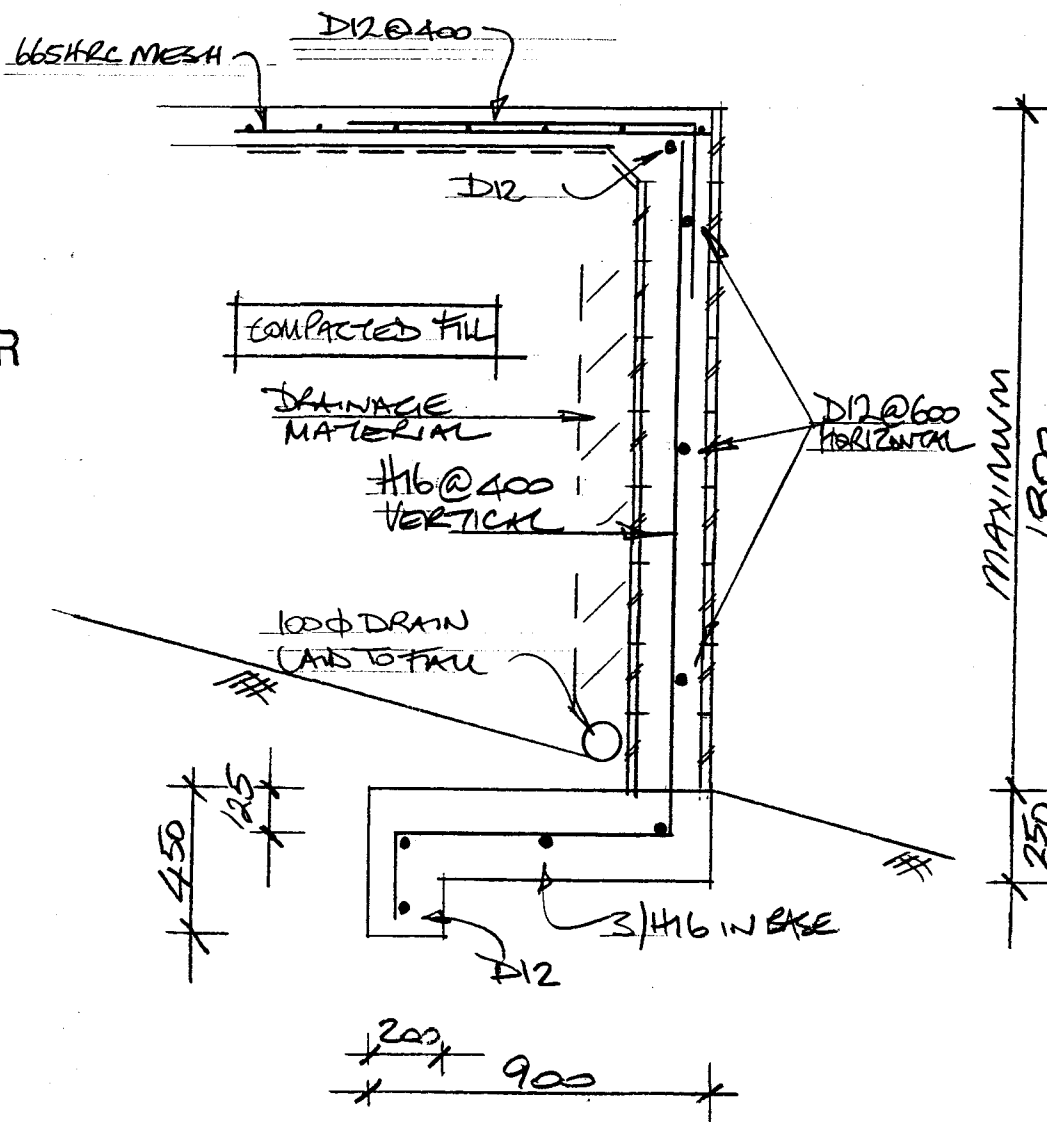
CERTIFIERS NAME: C R AMBROSE
(BLOCK LETTERS)
 ADDRESS: PO BOX 240
PARAPARAUMU
 CRAFTSMAN REG No: 4770
 SIGNATURE OF CERTIFIER: [Signature]

CERTIFICATE OWNER: _____
 CRAFTSMAN REG No: _____
 ON BEHALF OF COMPANY: _____
 ADDRESS: _____
(if other than certifying gasfitter)

NOTE: CHECK & VERIFY ALL BUILDING FLOOR PLAN DIMENSIONS BEFORE COMMENCING.



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SECTION ①

NOTE:
WHERE RETAINING WALL HEIGHTS EXCEED THE MAXIMUM HEIGHTS DETAILED ON THE CROSS SECTIONS THE ENGINEER IS TO BE INFORMED BEFORE WALL CONSTRUCTION STARTS.

FOUNDATION CONCRETE 20MPa

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BLOCK WALL — PLAN
1/100

MM DEVELOPMENTS
Civil & Structural Engineers

17 Seaview Road, Paraparaumu Beach

P.O. Box 91; PARAPARAUMU

Phone 04 902 5115; Fax 04 902 5116

NEW DWELLING
LOT B KAKARIKI GROVE
WAIKANAE

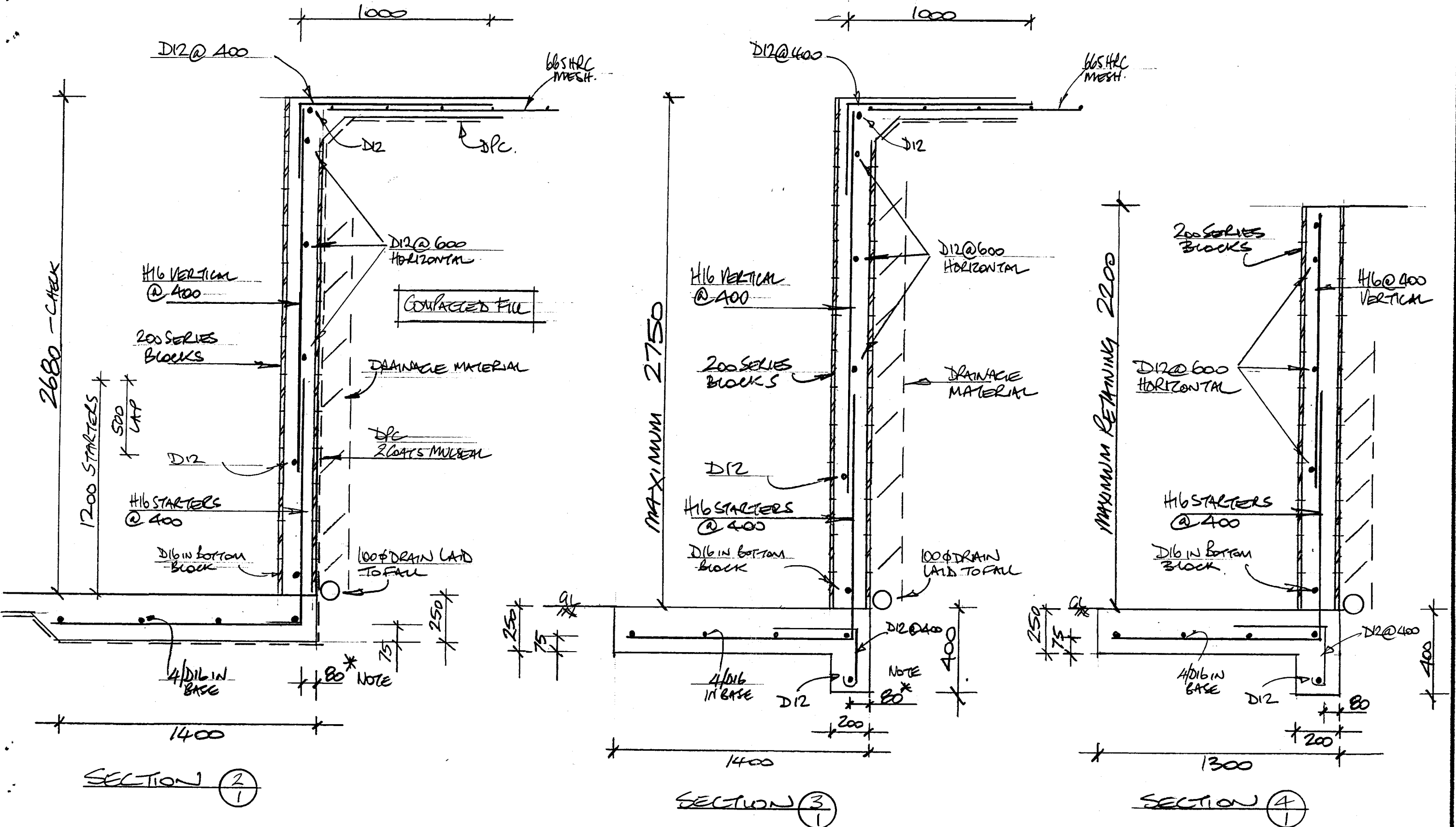
RETAINING WALL
DETAILS

SCALE	
DRAWN	NR
DESIGNED	
DATE	2/11/00
Q.A.	

PROJECT NO:	P20156
DRAWING FILE	

SHEET	1
REVISION	

NOTE: CHECK & VERIFY ALL BUILDING FLOOR PLAN DIMENSIONS BEFORE COMMENCING.



MM DEVELOPMENTS
Civil & Structural Engineers
17 Seaview Road, Paraparaumu Beach
P.O. Box 91; PARAPARAUMU
Phone 04 902 5115; Fax 04 902 5116

NEW DWELLING
LOT B KAKARIKI GROVE
WAIKANAPE

RETAINING WALL
SECTIONS

SCALE	1/20
DRAWN	NAH.
DESIGNED	
DATE	3/11/00
Q.A.	

PROJECT NO:
P20156
DRAWING FILE

SHEET
2.
REVISION

BLOCKWALL SPECIFICATIONS

1. GRADE B MASONARY
2. CHECK ALL DIMENSIONS ONSITE AND AGAINST ARCHITECTS PLANS
3. MASONARY WALLS ARE TO BE CONSTRUCTED BY AN APPROVED CERTIFICATED MASON, IN ACCORDANCE WITH THE RELEVANT NZ STANDARDS AND GOOD TRADE PRACTICE
4. THE BLOCKS ARE TO BE 200 SERIES AS SHOWN ON THE CROSS SECTIONS, LAID IN RUNNING BOND WITH ALL CAVITIES FILLED WITH CONCRETE. ADEQUATE WASHOUTS ARE TO BE PROVIDED AT THE BASE OF THE WALLS.
5. THE BLOCKFILL STRENGTH IS TO BE 20MPA AT 28 DAYS. A VIBRATOR IS TO BE USED DURING WALL FILLING.
6. WALL REINFORCING

H - DEFORMED GRADE 430.

D - DEFORMED GRADE 300.

ALL LAPS ARE TO BE 40 BAR DIAMETERS UNLESS OTHERWISE NOTED ON THE PLANS.

7. BACKFILLING

BLOCKWALLS ARE TO BE ALLOWED TO CURE FOR A MINIMUM OF 7 DAYS BEFORE ANY BACKFILLING IS UNDERTAKEN.

BACKFILLING MACHINERY IS TO BE KEPT 1.0 METRE AWAY FROM THE REAR OF THE BLOCKWALLS.

THE AREA IMMEDIATELY ADJACENT TO THE WALLS IS TO BE COMPACTED USING LARGE PLATE COMPACTORS.

The fill material at the rear of the wall is to be placed in layers not exceeding 300mm and fully compacted prior to the next layer being installed. The filling at the rear of the wall is to comply with the requirements of NZS 3604: 1990, namely 100kPa.

NOTICE OF WRITTEN APPROVAL

APPROVAL BY A PERSON AFFECTED BY AN APPLICATION FOR A RESOURCE CONSENT

To be completed by the person requesting approval:

APPLICANT: JOHN ADAMS

TYPE OF CONSENT: Land use (minor)

PROPOSED ACTIVITY: Side yard encroachment. ~~(2.500mm)~~
700mm inside 3meter boundary allowance.

LOCATION: LOT 8 56 KAKARIKI GROVE WAIKANAE

PLAN REFERENCE NO: _____

To be completed by the person giving his or her approval:

I am an owner/shareholder/occupier of the following property:

Street/Road Address 54 KAKARIKI GROVE WAIKANAE

Legal Description _____

Phone Number 2931290

- I/we have inspected and signed the attached plans and information for the above activity
- I/we understand that, if I give my approval, the District Council shall not take into account any effects that the proposed activity may have on me, when considering the application
- I/we hereby do give approval for it to proceed as presented
- I/we hereby do not give approval for it to proceed as presented

Note: If you do not understand what this form is for, do not sign it

COPY FOR YOUR RECORDS


(Signature)

STEPHAN GIBLIN
(Print Name)

11.5.01
(Date)

If you have any queries about this form or the reason it is required please contact the Resource Consents Department of Kapiti Coast District Council, (04) 904 5831.

Building Certifier's Inspection Report

(Section 57(3) (a), Building Act 1991)

Territorial Authority: Building Consent Number:

Building Certificate Number:

Project Information Memorandum Number:

Resource Consent Number:

Project		Project Location	
Project Type:	<input type="text" value="New Building"/>	Owner:	<input type="text" value="John Adams"/>
Intended Use:	<input type="text" value="Dwelling"/>	Street Address:	<input type="text" value="56 Kakariki"/>
Lifespan:	<input type="text" value="Specified as 50 Years"/>		<input type="text" value="Waikanae"/>
Being Stage	<input type="text" value="1 of an Intended 1 Stages."/>	Legal Lot #	<input type="text" value="8"/>
Builder	<input type="text" value="Cameron Robert"/>	Legal DP	<input type="text" value="67906"/>
Plumber	<input type="text" value="Adams B A"/>		
Drainlayer	<input type="text" value="Adams J"/>		
Other	<input type="text"/>		


This Certificate does not apply to Electrical Wiring or Gas Fitting:

Assessment Detail

Date	Assessment Type	Pass	Comments	Comments:
4/01/01	Site / Location	<input checked="" type="checkbox"/>	Conforms with approved pl	
4/01/01	P & D Under Slab	<input checked="" type="checkbox"/>	Pipework layout conforms	Lower Level
7/01/01	Footings	<input checked="" type="checkbox"/>	Steel reinforcement in plac	
7/01/01	Footings	<input checked="" type="checkbox"/>	Ground conditions verified	
7/01/01	Slab Pre Pour	<input checked="" type="checkbox"/>	Mesh in place	Lower level
7/01/01	Slab Pre Pour	<input checked="" type="checkbox"/>	Damp proof course in place	Lower Level. Also footing for retaining wall. Driven piles in place
13/02/01	Footings	<input checked="" type="checkbox"/>	Steel reinforcement in plac	Upper level
13/02/01	P & D Under Slab	<input checked="" type="checkbox"/>	Pipework layout conforms	
16/02/01	Slab Pre Pour	<input checked="" type="checkbox"/>	Mesh in place	
16/02/01	Slab Pre Pour	<input checked="" type="checkbox"/>	Damp proof course in place	
14/03/01	Framing / Bracing	<input checked="" type="checkbox"/>	Framing / bracing / connect	
3/05/01	Post-lining	<input checked="" type="checkbox"/>	Bracing elements fixed sati	



Signed by or for and on behalf of the building certifier



S. P. Stradling

Wednesday, 16 May 2001

MM DEVELOPMENTS

Civil & Structural Engineers

November 2, 2000

Kapiti Coast District Council
Rimu Road
Paraparaumu

Attention: Building Inspector

Dear Sir,

NEW DWELLING
LOT 8 KAKARIKI GROVE
WAIKANAE

Please find attached the calculations and design certificate for the following items for the new dwelling at the above address.

a) Internal retaining walls

Should you require any further information please contact the writer.

Yours faithfully,
MMDEVELOPMENTS



M.B. McEntegart.
MIPENZ Reg. Eng

**COPY FOR YOUR
RECORDS**

DESIGN CERTIFICATE

I, MICHAEL BERNARD MCENTEGART, being registered under the provisions of the Engineers Registration Act 1924 and currently holding an Annual Practising Certificate hereby certify that I have personally supervised the design of the following items from the job titled:

P.20156

NEW DWELLING
LOT 8 KAKARIKI GROVE
WAIKANAE

a) Internal retaining walls

I certify the design has been carried out in accordance with sound and widely accepted engineering principles and that they comply with the relevant requirements of:
NZS 4203., NZS 4320.

Signature.. *M. B. McEntegart*.....
Professional Qualifications. B.Sc. MIPENZ. Reg.Eng.
Registration Number 5644

For and behalf of MMDEVELOPMENTS.

Date.. *2/1/00*.....

BLOCKWALL SPECIFICATIONS

1. GRADE B MASONARY
2. CHECK ALL DIMENSIONS ONSITE AND AGAINST ARCHITECTS PLANS
3. MASONARY WALLS ARE TO BE CONSTRUCTED BY AN APPROVED CERTIFICATED MASON, IN ACCORDANCE WITH THE RELEVANT NZ STANDARDS AND GOOD TRADE PRACTICE
4. THE BLOCKS ARE TO BE 200 SERIES AS SHOWN ON THE CROSS SECTIONS, LAID IN RUNNING BOND WITH ALL CAVITIES FILLED WITH CONCRETE. ADEQUATE WASHOUTS ARE TO BE PROVIDED AT THE BASE OF THE WALLS.
5. THE BLOCKFILL STRENGTH IS TO BE 20MPA AT 28 DAYS. A VIBRATOR IS TO BE USED DURING WALL FILLING.
6. WALL REINFORCING

H - DEFORMED GRADE 430.
D - DEFORMED GRADE 300.

ALL LAPS ARE TO BE 40 BAR DIAMETERS UNLESS OTHERWISE NOTED ON THE PLANS.

7. BACKFILLING

BLOCKWALLS ARE TO BE ALLOWED TO CURE FOR A MINIMUM OF 7 DAYS BEFORE ANY BACKFILLING IS UNDERTAKEN.

BACKFILLING MACHINERY IS TO BE KEPT 1.0 METRE AWAY FROM THE REAR OF THE BLOCKWALLS.

THE AREA IMMEDIATELY ADJACENT TO THE WALLS IS TO BE COMPACTED USING LARGE PLATE COMPACTORS.

The fill material at the rear of the wall is to be placed in layers not exceeding 300mm and fully compacted prior to the next layer being installed. The filling at the rear of the wall is to comply with the requirements of NZS 3604: 1990, namely 100kPa.

MMDEVELOPMENTS
 PO Box 91
 Paraparaumu

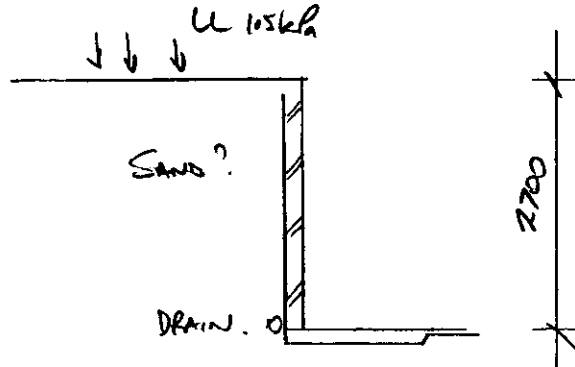
M.B.McEntegart
 MIPENZ Reg.Eng
 Tel 04 2971136
 025 419 230

CALCULATION SHEET

P 20156: NEW DWELLING, LOT 8 KAKARIKI GROVE, WAIKANAE

CONCRETE BLOCK RETAINING WALL DESIGN

WALL 1 - Internal



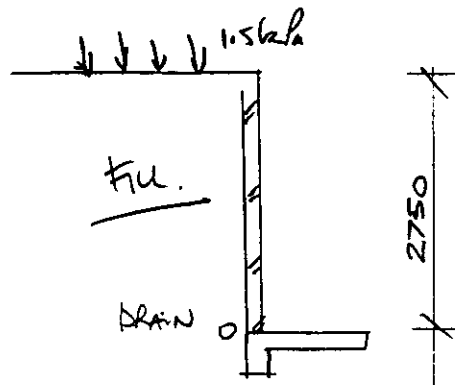
Retaining height		2700.00 mm
Angle of internal friction		35.00 deg
Surcharge LL 1.5kPa DL 2.4kPa		243.75 mm
At rest k1		.43
Density of backfill		16.00 kN/m3
Pressure on wall	$P=0.5*k2*D*H*(H+Hs)$	27.34 kPa
Propped cantilever		
Maximum Moment	$2PH/15$	9.84 kNm
Ultimate Base Moment	1.7M	16.73 kNm
Wall thickness		.20 m
try H16 at 400mm centres		
Bar diameter H16	Area=As	201.00 mm2
Cover to reinforcing d		110.00 mm
$p=2.5*As/d*b$.005
Fy		430.00 mPa
Fc'		8.00 mPa
$B=0.85*Fy(1-(pFy/1.7Fc)')$.31
$Mu=B*2.5*As*d$		17.28 kN/m
Base moment		10.75 kNm
Base width		1.40 m

House weight		1.00 kN/m
Wall weight	$H \cdot .2 \cdot 20 \text{ kN/m}^3$	10.80 kN/m
Base weight	$W \cdot .25 \cdot 24 \text{ kN/m}^3$	8.40 kN/m ³
Resisting Moment	$M = \text{wall} + \text{base}$	21.22 kNm

BASE PRESSURES

$X = RM / F_v$	1.05
$E_w = X - b / 2$.35
$e = (-F_v E_w + OTM) / F_v$.18 m
Maximum base pressure = $F_v(1 + 6e/B) / B$	24.41 MPa
Minimum base pressure = $F_v(1 - 6e/B) / B$	3.02 MPa

WALL 2 - External



Retaining height		2750.00 mm
Angle of internal friction		35.00 deg
Surcharge LL 1.5kPa DL 2.4kPa		243.75 mm
At rest k_1		.43
Density of backfill		16.00 kN/m ³
Pressure on wall	$P = 0.5 \cdot k_2 \cdot D \cdot H \cdot (H + H_s)$	28.32 kPa
Propped cantilever		
Maximum Moment	$2PH / 15$	10.38 kNm
Ultimate Base Moment	1.7M	17.65 kNm
Wall thickness		.20 m
try H16 at 400mm centres		
Bar diameter H16	Area = A_s	201.00 mm ²
Cover to reinforcing	d	110.00 mm
$p = 2.5 \cdot A_s / d \cdot b$.005
F_y		430.00 mPa
F_c'		8.00 mPa
$B = 0.85 \cdot F_y (1 - (p F_y / 1.7 F_c)')$.31
$M_u = B \cdot 2.5 \cdot A_s \cdot d$		17.28 kN/m

Base moment		11.33 kNm
Base width		1.40 m
House weight		2.56 kN/m
Wall weight	H*.2*20kN/m3	11.00 kN/m
Base weight	W*.25*24kN/m3	8.40 kN/m3

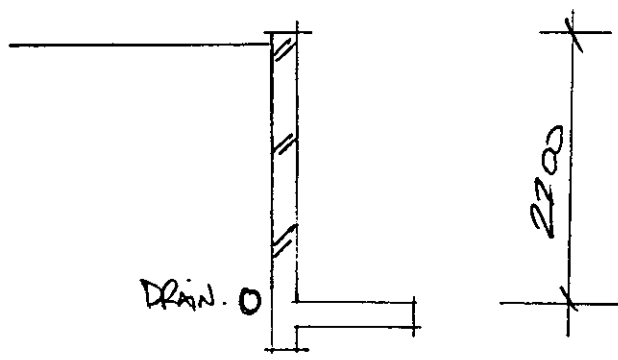
Resisting Moment M=wall+base 23.51 kNm

BASE PRESSURES

X=RM/Fv	1.07
Ew=X-b/2	.37
e=(-FvEw+OTM)/Fv	.15 m

Maximum base pressure = Fv(1+6e/B)/B	22.49 MPa
Minimum base pressure = Fv(1-6e/B)/B	5.22 MPa

Wall 3 - External



Retaining height		2200.00 mm
Angle of internal friction		35.00 deg
Backfill slope		0.00 deg
Active pressure k2		.27
Density of backfill		16.00 kN/m3
Pressure on wall	P=0.5*k2*D*H*H	10.45 kPa
Maximum Moment	PH/3	7.67 kNm
Ultimate Base Moment	1.7M	13.03 kNm

Wall thickness		.20 m
try H16 at 400mm centres		
Bar diameter H16	Area=As	201.00 mm ²
Cover to reinforcing d		100.00 mm
$p=2.5*As/d*b$.005
Fy		430.00 mPa
Fc'		8.00 mPa
$B=0.85*Fy(1-(pFy/1.7Fc)')$.31
$Mu=B*2.5*As*d$		15.45 kN/m

CHECK OVERTURNING

OTM		7.67 kNm
Resisting Moment > 1.5OTM		11.50 kNm

Base width		1.30 m
Wall weight	$H*.2*20kN/m^3$	8.80 kN/m
Base weight	$W*.25*24kN/m^3$	7.80 kN/m

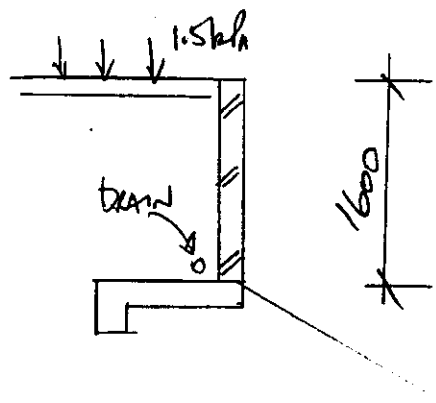
Resisting Moment	$M=wall*(b-0.1)+base*b/2$	15.63 kNm
------------------	---------------------------	-----------

BASE PRESSURES

$X=RM/Fv$.94
$Ew=X-b/2$.29
$e=(-FvEw+OTM)/Fv$.17 m
$B/6$.22 m

Minimum base pressure = $Fv(1-6e/B)/B$		2.73 MPa
Maximum base pressure = $Fv(1+6e/B)/B$		22.80 MPa

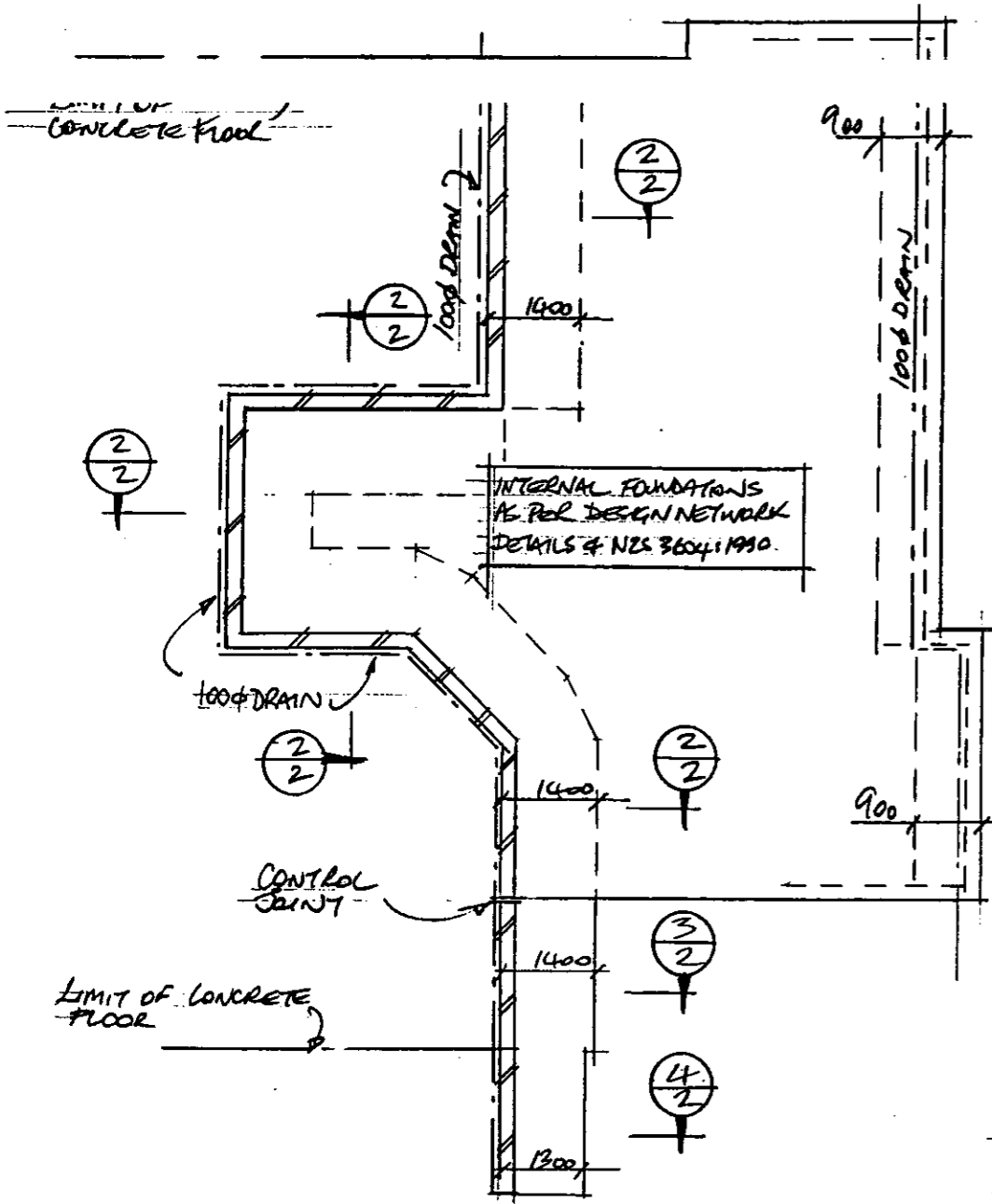
WALL 4 - Foundation wall



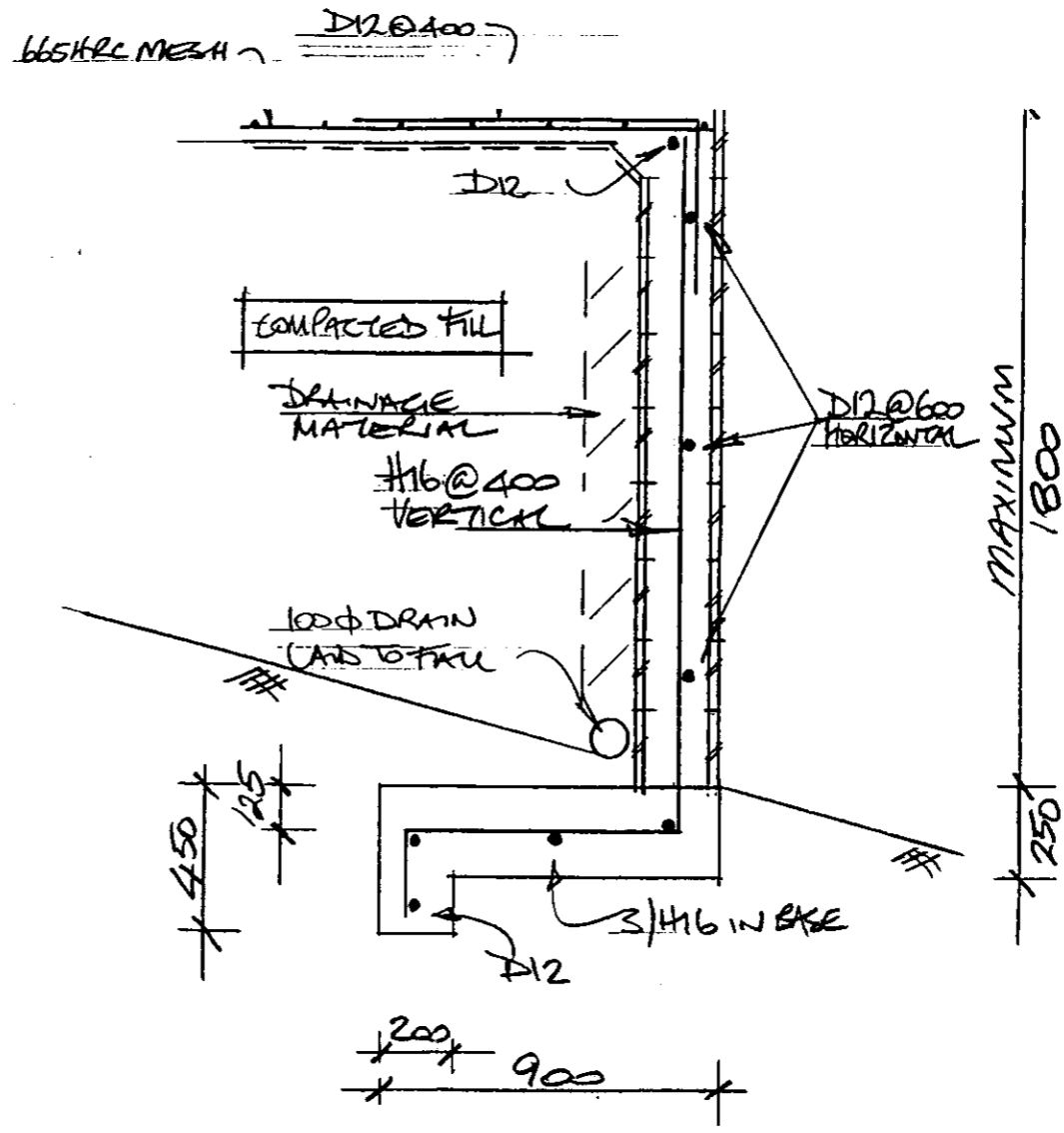
Retaining height		1600.00 mm
Angle of internal friction		35.00 deg
Surcharge LL 1.5kPa DL 2.4kPa		243.75 mm
At rest k1		.43
Density of backfill		16.00 kN/m ³

Pressure on wall	$P=0.5*k2*D*H*(H+Hs)$	10.15 kPa
Propped cantilever		
Maximum Moment	$2PH/15$	2.16 kNm
Ultimate Base Moment	1.7M	3.68 kNm
Cantilever during construction		
Maximum Moment	$PH/3$	5.41 kNm
Ultimate Base Moment	1.7M	9.20 kNm
Wall thickness		.20 m
try H16 at 400mm centres		
Bar diameter H16	Area=As	201.00 mm ²
Cover to reinforcing	d	90.00 mm
$p=2.5*As/d*b$.006
Fy		430.00 mPa
Fc'		8.00 mPa
$B=0.85*Fy(1-(pFy/1.7Fc)')$.30
$Mu=B*2.5*As*d$		13.61 kN/m
Base moment prop		2.50 kNm
Base moment cant		6.26 kNm
Base width		.90 m
House weight		2.56 kN/m
Fill weight		17.92 kN/m
Wall weight	$H*.2*20kN/m3$	6.40 kN/m
Base weight	$W*.25*24kN/m3$	5.40 kN/m
Resisting Moment	$M=wall+base+fill$	13.18 kNm
BASE PRESSURES		
$X=RM/Fv$.41
$Ew=X-b/2$		-.04
$e=(-FvEw+OTM)/Fv$.12 m
Maximum base pressure = $Fv(1+6e/B)/B$		59.26 MPa
Minimum base pressure = $Fv(1-6e/B)/B$		6.78 MPa

NOTE: CHECK & VERIFY ALL BUILDING FLOOR PLAN DIMENSIONS BEFORE COMMENCING.



COPY FOR YOUR RECORDS



NOTE:
 WHERE RETAINING WALL HEIGHTS EXCEED THE MAXIMUM HEIGHTS DETAILED ON THE CROSS SECTIONS THE ENGINEER IS TO BE INFORMED BEFORE WALL CONSTRUCTION STARTS.

Foundational Concrete 20MPa

MM DEVELOPMENTS Civil & Structural Engineers 17 Seaview Road, Paraparaumu Beach P.O. Box 91; PARAPARAUMU Phone 04 902 5115; Fax 04 902 5116	NEW DWELLING LOT B KAKARIKI GROVE WAIKANAE	RETAINING WALL DETAILS	SCALE	PROJECT NO: P2015L	SHEET	
			DRAWN		NR	1
			DESIGNED			REVISION
			DATE		2/11/00	
			Q.A.			

BLOCKWALL SPECIFICATIONS

1. GRADE B MASONARY
2. CHECK ALL DIMENSIONS ONSITE AND AGAINST ARCHITECTS PLANS

CERTIFICATED MASON, IN ACCORDANCE WITH THE RELEVANT NZ STANDARDS AND GOOD TRADE PRACTICE

4. THE BLOCKS ARE TO BE 200 SERIES AS SHOWN ON THE CROSS SECTIONS, LAID IN RUNNING BOND WITH ALL CAVITIES FILLED WITH CONCRETE. ADEQUATE WASHOUTS ARE TO BE PROVIDED AT THE BASE OF THE WALLS.
5. THE BLOCKFILL STRENGTH IS TO BE 20MPA AT 28 DAYS. A VIBRATOR IS TO BE USED DURING WALL FILLING.
6. WALL REINFORCING

H - DEFORMED GRADE 430.

D - DEFORMED GRADE 300.

ALL LAPS ARE TO BE 40 BAR DIAMETERS UNLESS OTHERWISE NOTED ON THE PLANS.

7. BACKFILLING

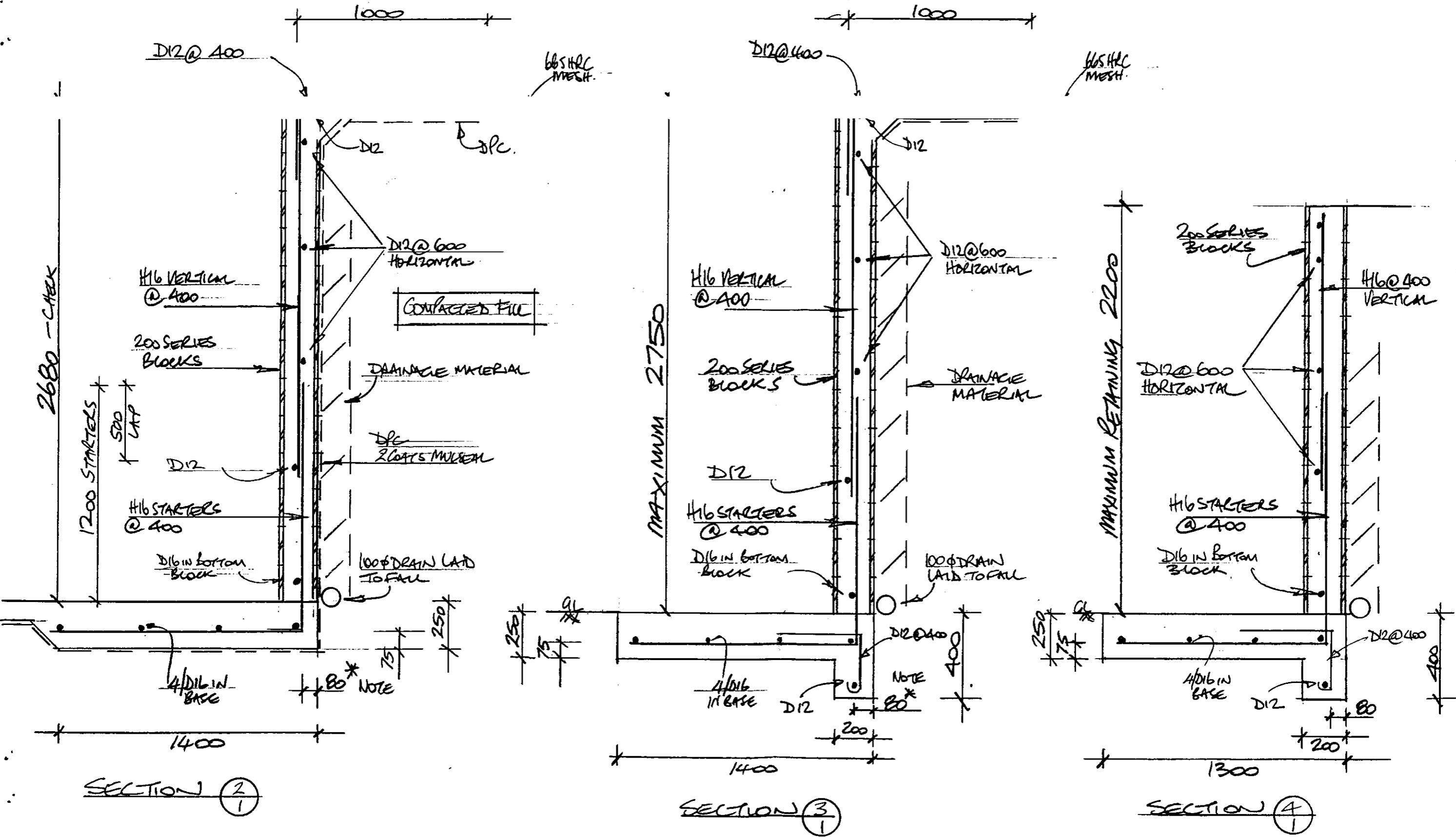
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BACKFILLING MACHINERY IS TO BE KEPT 1.0 METRE AWAY FROM THE REAR OF THE BLOCKWALLS.

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The fill material at the rear of the wall is to be placed in layers not exceeding 300mm and fully compacted prior to the next layer being installed. The filling at the rear of the wall is to comply with the requirements of NZS 3604: 1990, namely 100kPa.

NOTE: CHECK & VERIFY ALL BUILDING FLOOR PLAN DIMENSIONS BEFORE COMMENCING.



MM DEVELOPMENTS
Civil & Structural Engineers
17 Seaview Road, Paraparaumu Beach
P.O. Box 91; PARAPARAUMU
Phone 04 902 5115; Fax 04 902 5116

NEW DWELLING
LOT B KAKARIKI GROVE
WAIKANGA

RETAINING WALL
SECTIONS

SCALE	1/20
DRAWN	NAH.
DESIGNED	
DATE	3/11/00
Q.A.	

PROJECT NO:
P20156
DRAWING FILE

SHEET
2.
REVISION

PROPOSED RESIDENCE FOR J ADAMS LOT 8 KAKARIKI GROVE, WAIKANAE

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INDEX

- 1 Site Plan, Plumbing Schematic
- 2 Ground Floor Plan
- 3 Basement Floor Plan
- 4 Foundation Plan, Joist Plan, Roof Plan
- 5 Elevations, Window Schedule
- 6 Section
- 7 Electrical Plans
- 8 Bracing Plans

ENVIRO+PLUS

BUILDING CERTIFICATION

Design Network Kapiti
ARCHITECTURE

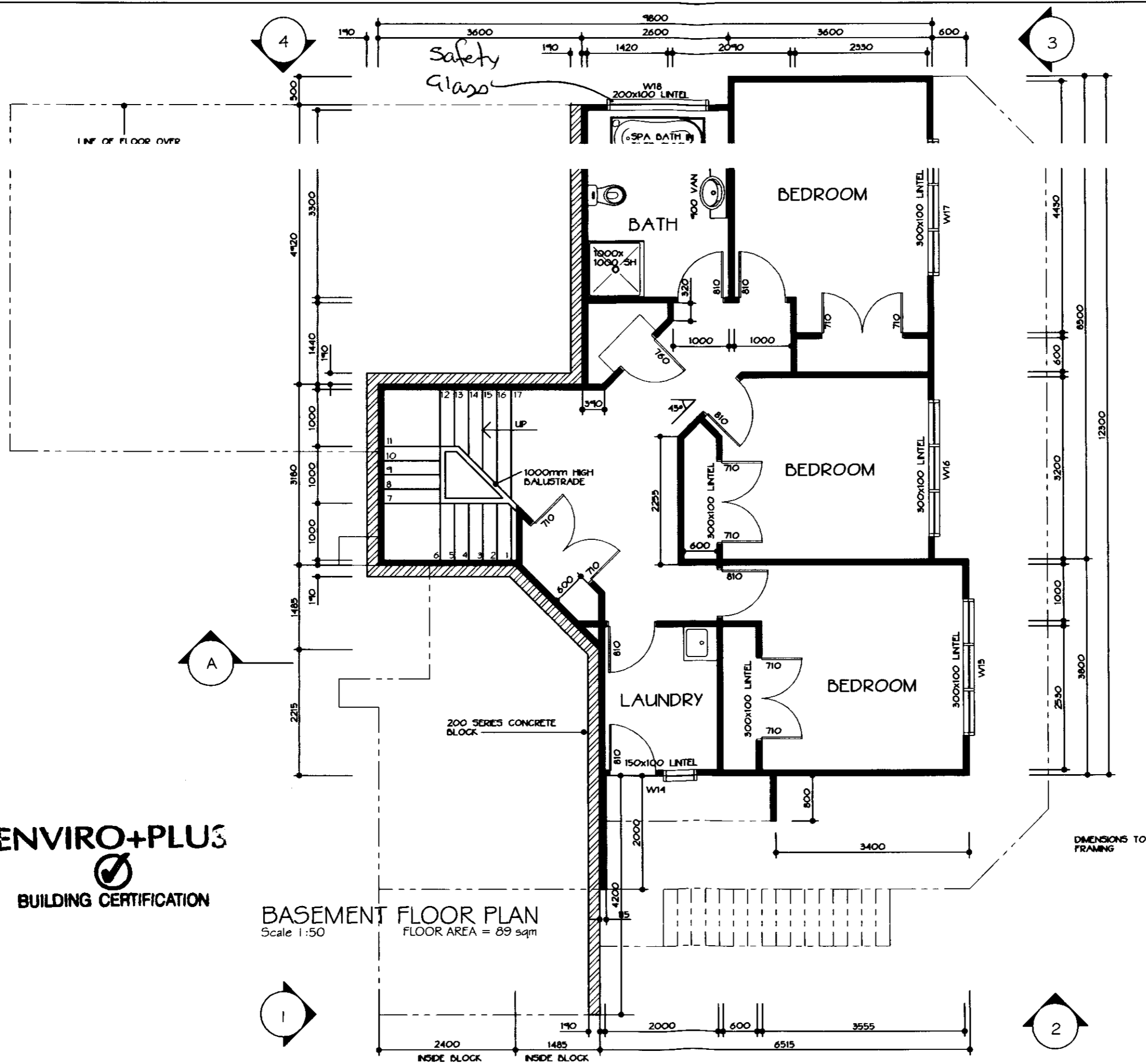
301 Kapiti Road
PO Box 1616
Paraparaumu Beach
New Zealand

Tel: 04 902 5505
Fax: 04 902 5504
Email: kapiti@desnet.co.nz

ENVIRO+PLUS

BUILDING CERTIFICATION

BASEMENT FLOOR PLAN
 Scale 1:50
 FLOOR AREA = 89 sqm



MS
 AE

PROJECT: **PROPOSED RESIDENCE FOR J A
 LOT 8 KAKARIKI GROVE, WAIKI**

DesignNetwork Kapiti

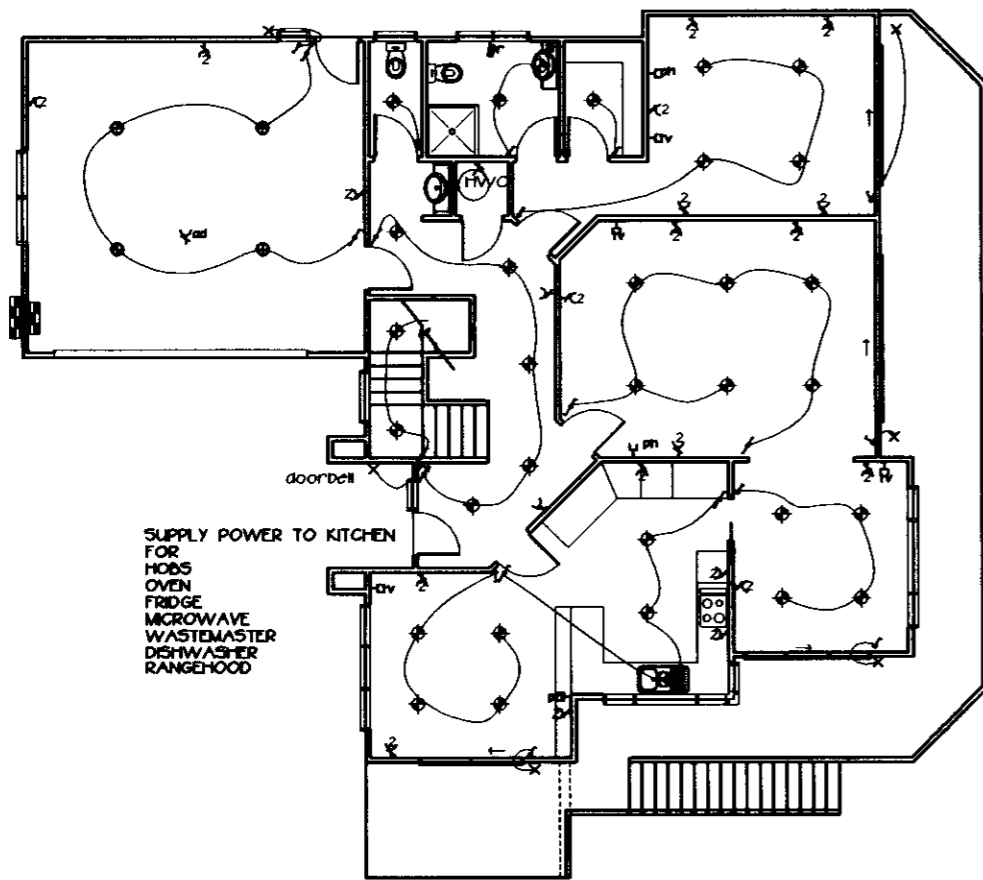
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DRAWN:	R.G & B.F
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SCALE:	AS SHOWN

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2059/3
 (A2 original) OF 8

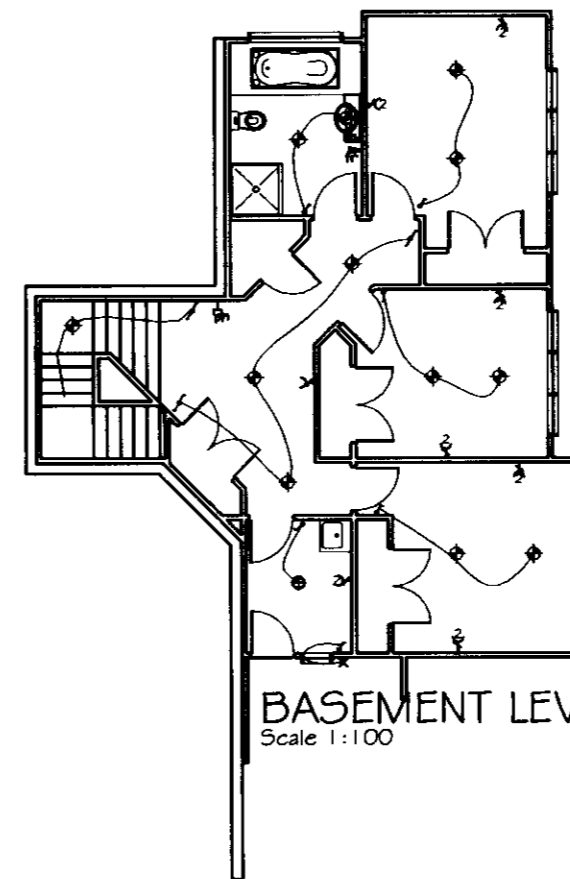


GROUND FLOOR ELECTRICAL PLAN
Scale 1:100

ELECTRICAL LEGEND			
⊕	Ceiling Mounted Lighting Point	TV	Television Point
⬇	Recessed Downlight	TP	Telephone Point
X	Wall Mounted Lighting Point	SP	Shaving Point
—	One-Way Switch	TR	Heated Towel Rail
— /	Two-Way Switch	AD	Auto Garage Door Opener
⌋	Power Point (2 denotes double)	MB	Meter board
⊞	Switch board		

ENVIRO+PLUS

 BUILDING CERTIFICATION



BASEMENT LEVEL ELECTRICAL PLAN
Scale 1:100

AMS
IAE

PROJECT: PROPOSED RESIDENCE FOR J A
LOT 8 KAKARIKI GROVE, WAIK

Design Network Kapiti

REVISIONS:

301 Kapiti Road
PO Box 1616
Paraparaumu Beach
New Zealand
Tel: 04 902 5505
Fax: 04 902 5504
Email: kapiti@desnet.co.nz

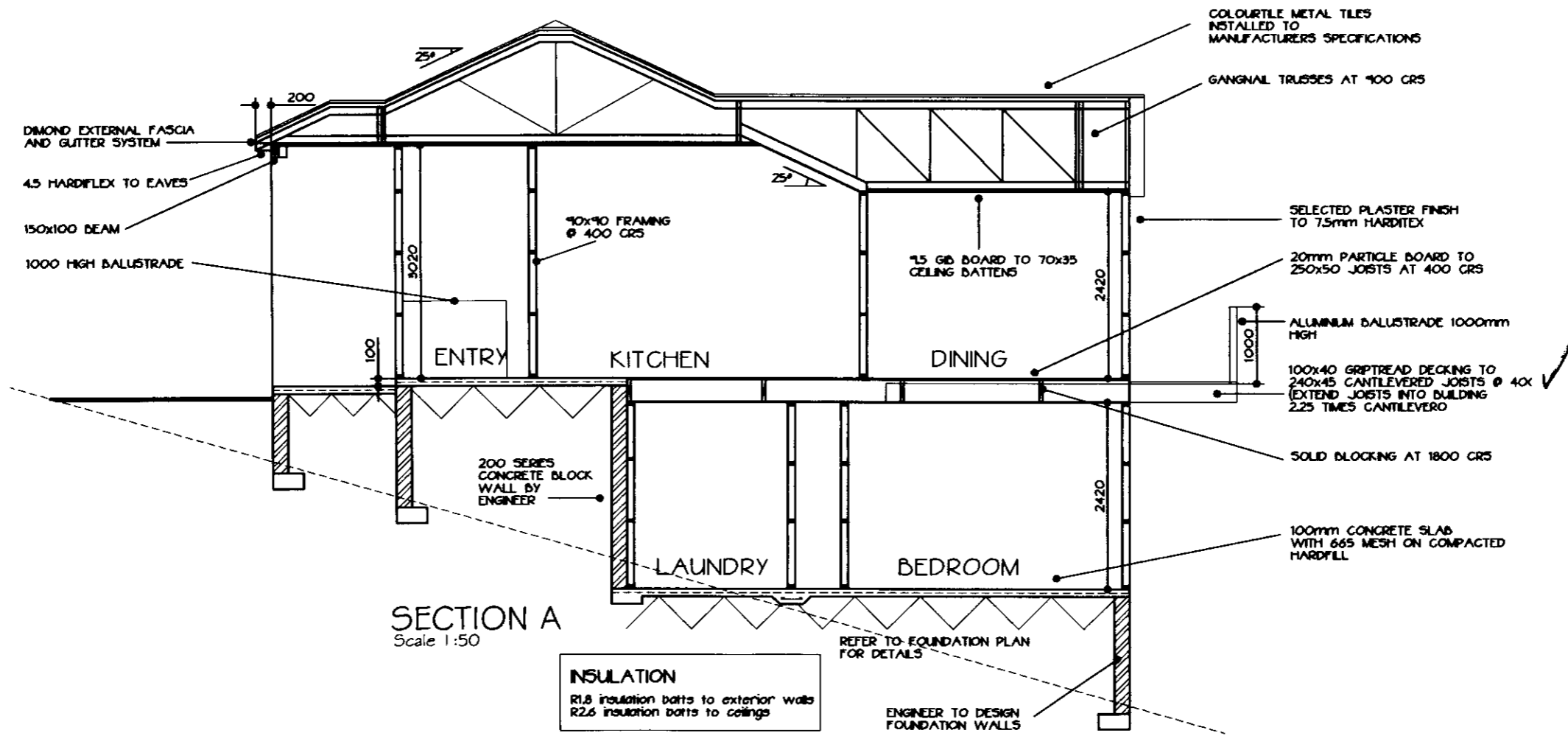
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SCALE:	AS SHOWN

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2059/7

(A2 original) OF 8



SECTION A
Scale 1:50

INSULATION
R1.8 insulation batts to exterior walls
R2.6 insulation batts to ceilings

REFER TO FOUNDATION PLAN FOR DETAILS

ENGINEER TO DESIGN FOUNDATION WALLS

ENVIRO+PLUS

BUILDING CERTIFICATION

IMS
/AE

PROJECT: **PROPOSED RESIDENCE FOR J A
LOT 8 KAKARIKI GROVE, WAIK**

Design Network Kap

REVISIONS:

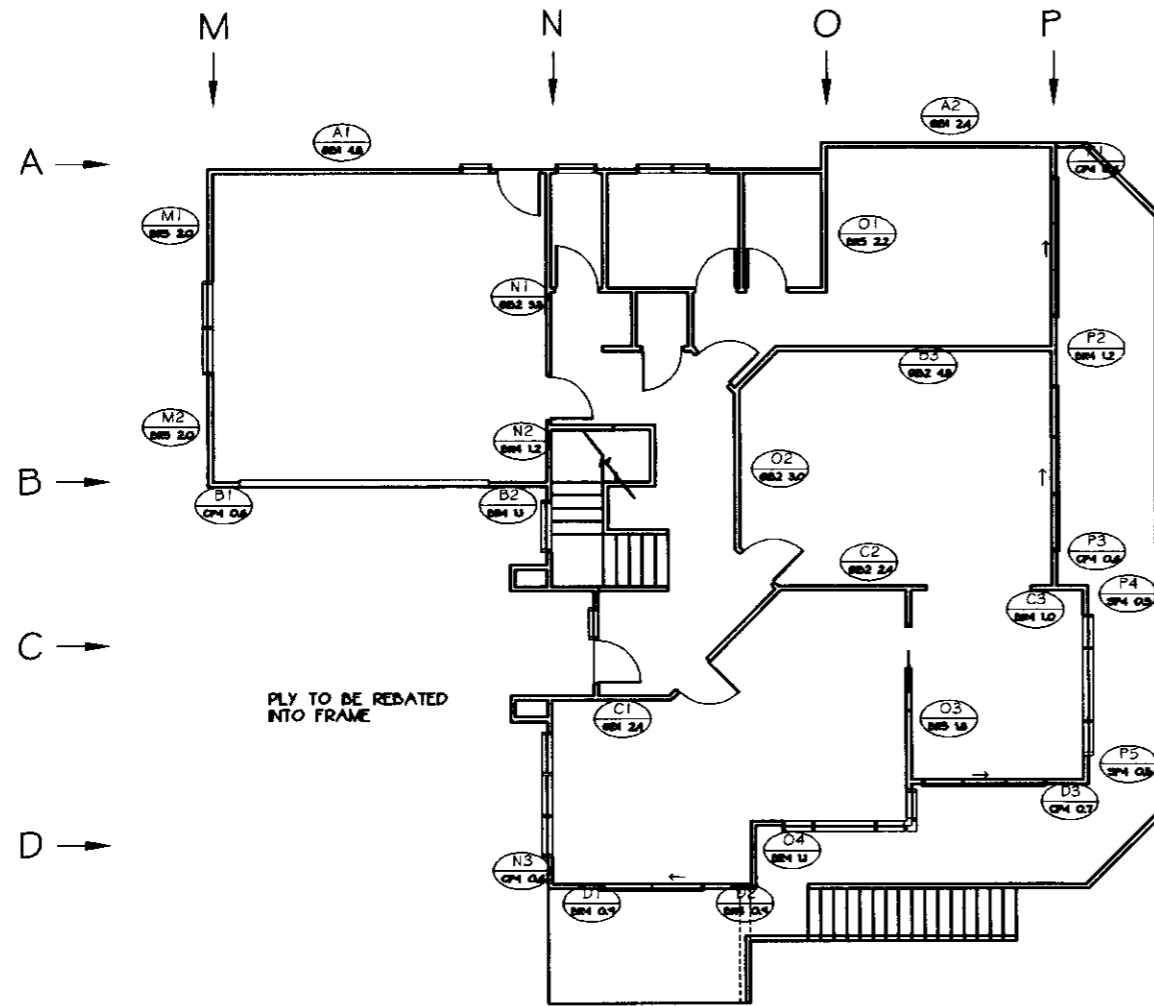
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PO Box 1616
Paraparaumu Beach
New Zealand
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Fax: 04 902 5504
Email: kapiti@desnet.co.nz

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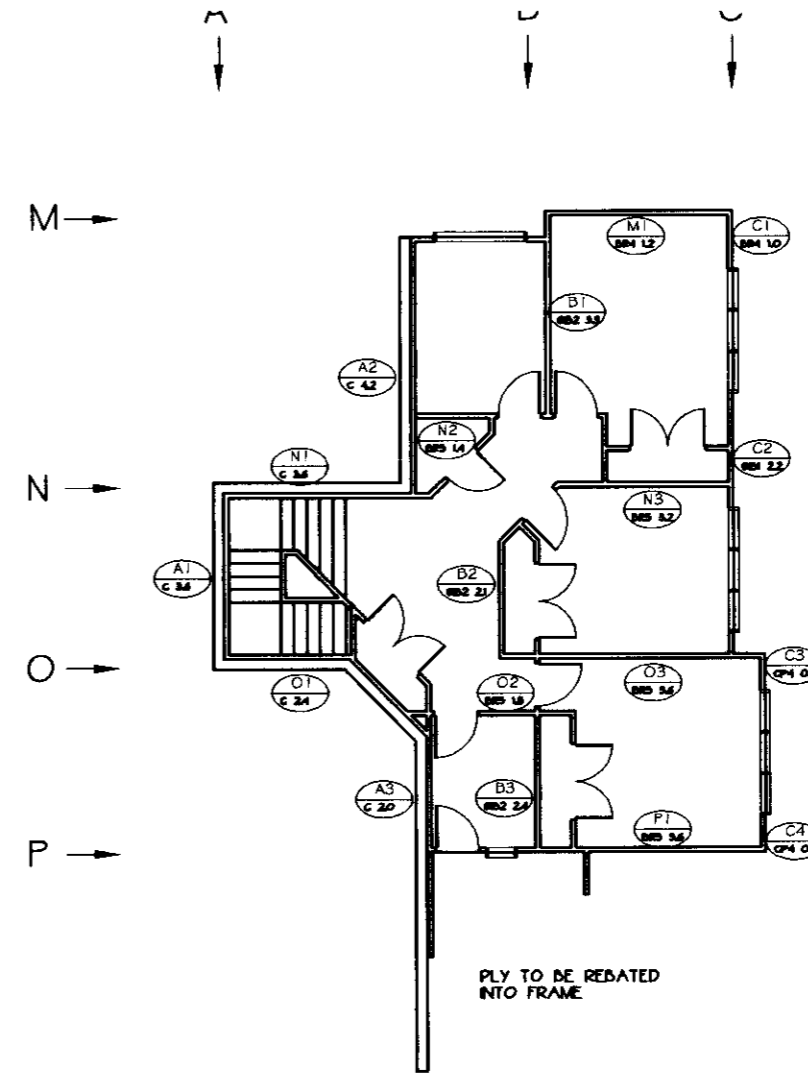
DATE:	OCTOBER 2000
DESIGNED:	M STEVENS
DRAWN:	R.G & B.F
CAD REF:	2059
SCALE:	AS SHOWN

JOB/SHEET No:
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(A2 original) OF 8



GROUND FLOOR BRACING PLAN
Scale 1:100



BASEMENT FLOOR BRACING PLAN
Scale 1:100



PROJECT: **PROPOSED RESIDENCE FOR J AD, IS LOT 8 KAKARIKI GROVE, WAIKAI E**

REVISIONS:

301 Kapiti Road
PO Box 1616
Paraparaumu Beach
New Zealand
Tel: 04 902 5505
Fax: 04 902 5504
Email: kapiti@desnet.co.nz

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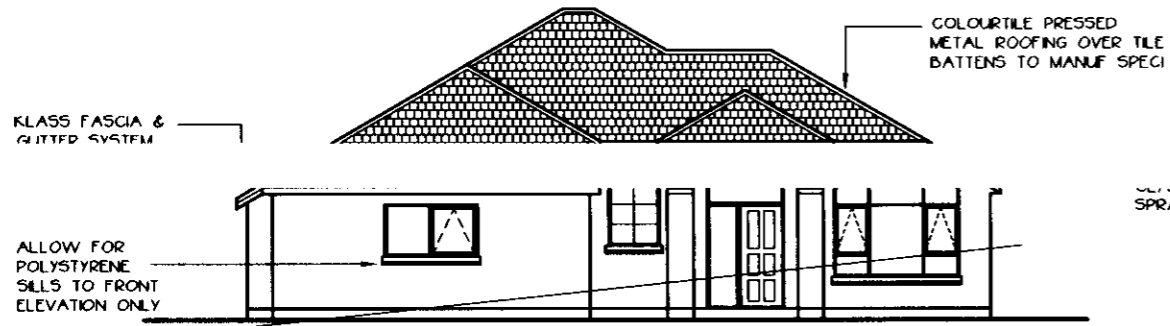
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DESIGNED:	M STEVENS
DRAWN:	R.G & B.F
CAD REF:	2059
SCALE:	AS SHOWN

JOB/SHEET No:

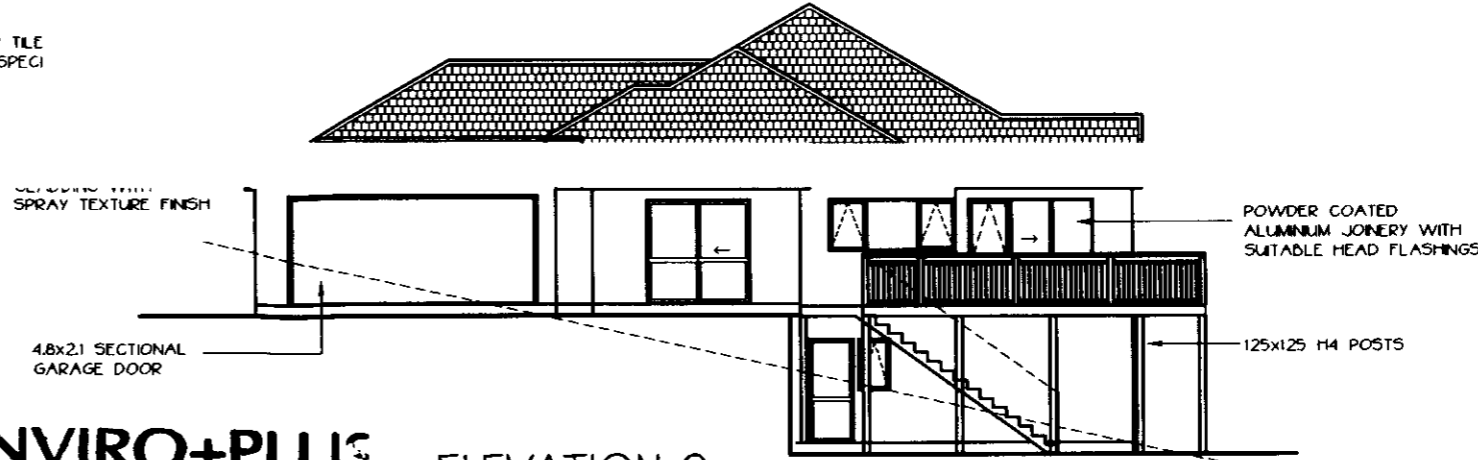
2059/8

(A2 original) OF 8

Design Network Kapi

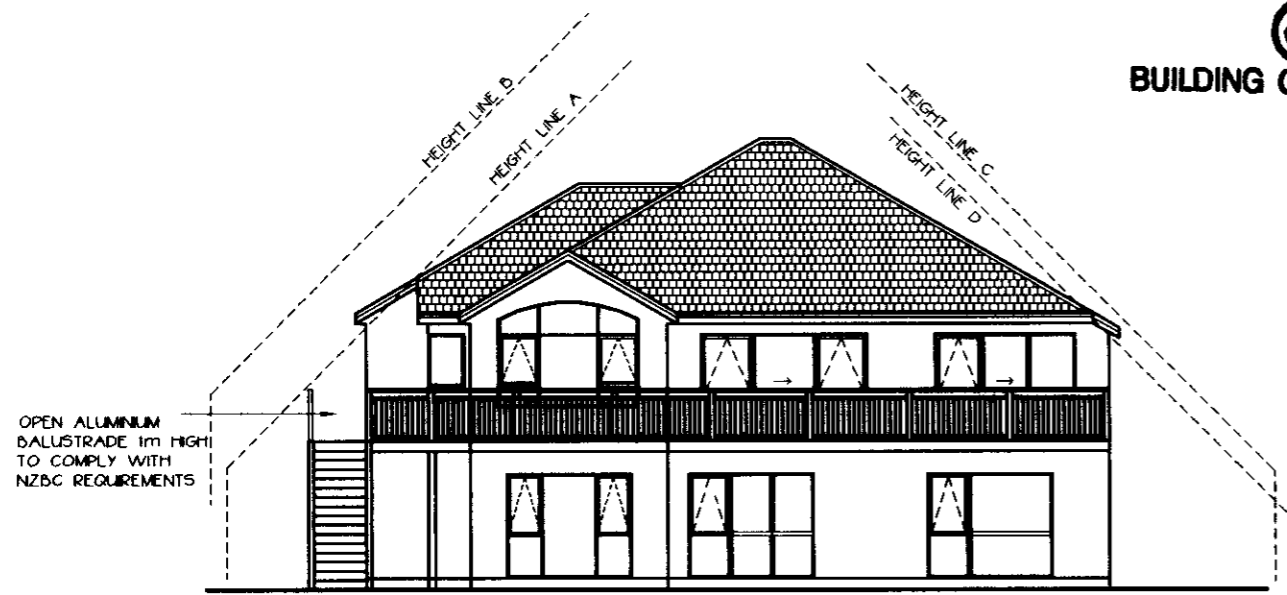


ELEVATION 1
SCALE 1:100

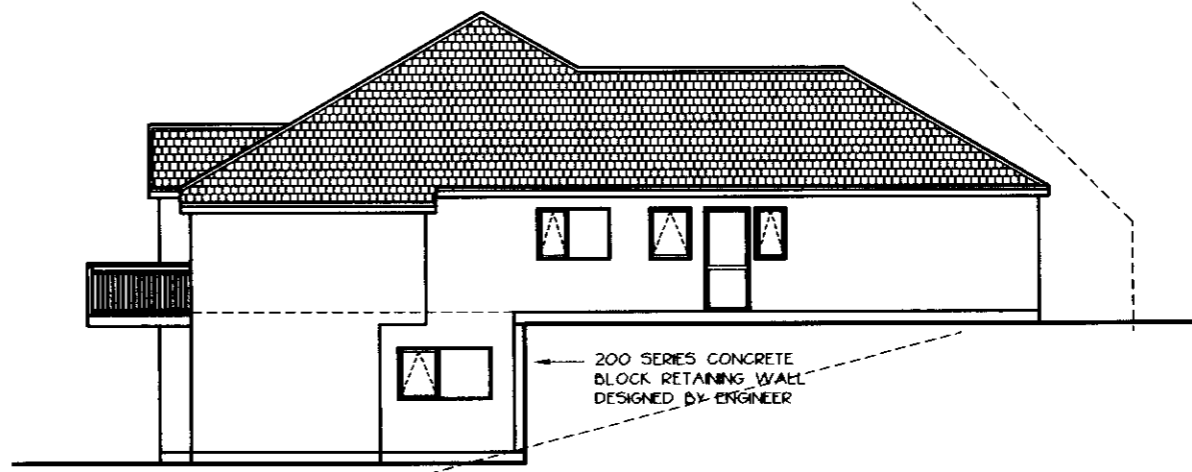


ELEVATION 2
SCALE 1:100

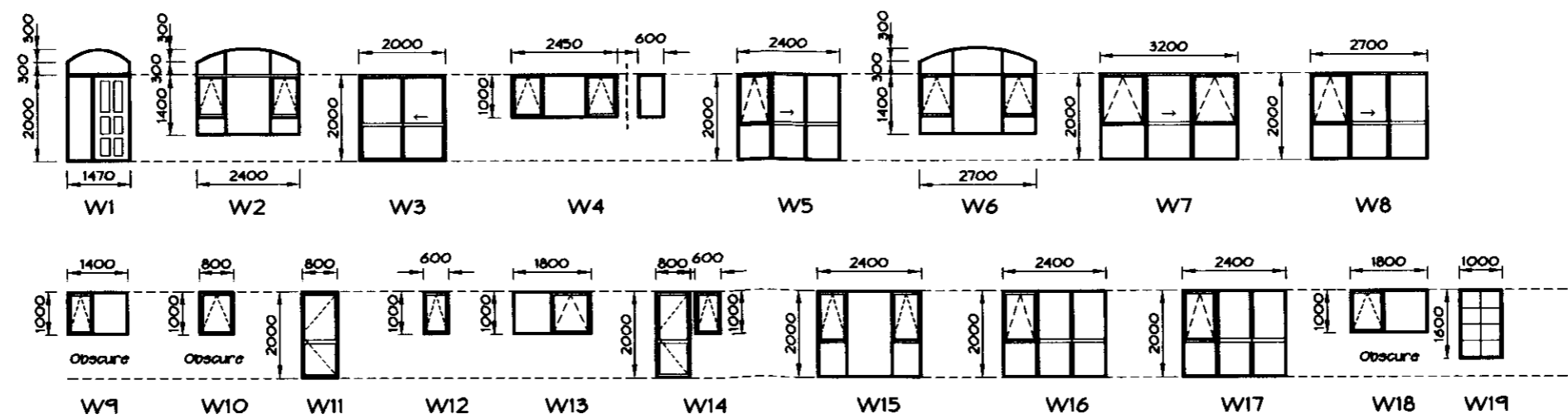
ENVIRO+PLUS
BUILDING CERTIFICATION



ELEVATION 3
SCALE 1:100



ELEVATION 4
SCALE 1:100



WINDOW SCHEDULE
Scale 1:100

PROJECT: **PROPOSED RESIDENCE FOR J AD
LOT 8 KAKARIKI GROVE, WAIKAI**

REVISIONS:

301 Kapiti Road
PO Box 1616
Paraparaumu Beach
New Zealand
Tel: 04 902 5505
Fax: 04 902 5504
Email: kapiti@desnet.co.nz

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DESIGNED:	M STEVENS
DRAWN:	R.G & B.F
CAD REF:	2059
SCALE:	AS SHOWN

JOB/SHEET No:
2059/5
(A2 original) OF 8

Design Network Kapi i

**MR J ADAMS
LOT 9 KAKARIKI GROVE
WAIKANAЕ.**

NEW RESIDENCE

BRACING CALCULATIONS

ENVIRO+PLUS

BUILDING CERTIFICATION

**COPY FOR YOUR
RECORDS**

Gib® Wall Bracing Calculation Sheet A

lower of two

Job Details

Name	ADAMS	
Street and Number	KAKARIKI GROVE	
Lot and DP Number	LOT 8	
City/Town/District	WAIKANAЕ	
Designer and date	DESIGN NETWORK	1-Nov-00

Building Specification

Location of Storey	lower	▼	
Floor Loading	2 kPa	▼	
Foundation Type	slab	▼	
Building Height to Apex (m)	9	▼	
Roof Height above Eaves (m)	4	▼	
Stud Height (m)	2.4	▼	
Cladding Weight (top or single)	light	▼	
Cladding Weight (lower)	light	▼	
Cladding Weight (subfloor)	light	▼	<i>not applicable (slab)</i>
Roof Weight	light	▼	
Roof Pitch (degrees)	25-45	▼	
Room in Roof Space	no	▼	
Building Length (m)	12.3		<i>Use roof length including eaves</i>
Building Width (m)	10.6		<i>Use roof length including eaves</i>
Gross Building Plan Area (m2)	92		

Building Location

Wind Zone	High		Earthquake Zone	
Region	R1	▼	A	▼
Terrain	Inland	▼		
Exposure	Exposed	▼		
Topography	Moderate	▼		

Bracing Units required for Wind

per m	subfloor	walls
W along	n/a	168 BUs/m
W across	n/a	192 BUs/m
Totals	subfloor	walls
W along	n/a	1781 BUs
W across	n/a	2362 BUs

Bracing Units required for Earthquake

per m2	subfloor	walls
E	n/a	10.3 BUs/m2
Totals	subfloor	walls
E along	n/a	948 BUs
E across	n/a	948 BUs

Gib® Wall Bracing Calculation Sheet B

lower of two

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	CONC2	WALL2 ▼	3.6	2.4	360	360	
		2	CONC2	WALL2 ▼	4.2	2.4	420	420	
		3	CONC1	WALL1 ▼	2	2.4	84	84	
<i>line totals</i>		4		none ▼		2.4			
W	864	5		none ▼		2.4			
EQ	864	6		none ▼		2.4			
B	enter	1	Gib®	Gib2b ▼	3.3	2.4	264	231	
		2	Gib®	Gib2a ▼	2.1	2.4	158	126	
		3	Gib®	Gib2b ▼	2.4	2.4	192	168	
<i>line totals</i>		4		none ▼		2.4			
W	614	5		none ▼		2.4			
EQ	525	6		none ▼		2.4			
C	enter	1	Gib®	BR4 ▼	1	2.4	100	85	
		2	Gib®	Gib1a ▼	2.2	2.4	121	110	
		3	Ply	CP4 ▼	0.7	2.4	68	67	
<i>line totals</i>		4	Ply	CP4 ▼	0.7	2.4	68	67	
W	357	5		none ▼		2.4			
EQ	328	6		none ▼		2.4			
D	enter	1		none ▼		2.4			
		2		none ▼		2.4			
		3		none ▼		2.4			
<i>line totals</i>		4		none ▼		2.4			
W		5		none ▼		2.4			
EQ		6		none ▼		2.4			
E	enter	1		none ▼		2.4			
		2		none ▼		2.4			
		3		none ▼		2.4			
<i>line totals</i>		4		none ▼		2.4			
W		5		none ▼		2.4			
EQ		6		none ▼		2.4			
							Wind	Earthq.	
Totals Achieved							1834	1717	
							OK	OK	
Totals Required (from Sheet A)							1781	948	

Gib® Wall Bracing Calculation Sheet B

lower of two

Across		Bracing Elements provided					Wind	Earthq.	
Wall or Bracing Line	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	
M	enter	1	Gib®	BR5	3.4	2.4	391	289	
		2		none		2.4			
		3		none		2.4			
<i>line totals</i>		4		none		2.4			
<i>W</i>	391	5		none		2.4			
<i>EQ</i>	289	6		none		2.4			
N	enter	1	CONC2	WALL2	3.6	2.4	360	360	
		2	Gib®	BR4	1.4	2.4	140	119	
		3	Gib®	BR5	3.2	2.4	368	272	
<i>line totals</i>		4		none		2.4			
<i>W</i>	868	5		none		2.4			
<i>EQ</i>	751	6		none		2.4			
O	enter	1	CONC1	WALL1	2.4	2.4	101	101	
		2	Gib®	BR5	1.8	2.4	207	153	
		3	Gib®	BR5	3.6	2.4	414	306	
<i>line totals</i>		4		none		2.4			
<i>W</i>	722	5		none		2.4			
<i>EQ</i>	560	6		none		2.4			
P	enter	1	Gib®	BR5	3.6	2.4	414	306	
		2		none		2.4			
		3		none		2.4			
<i>line totals</i>		4		none		2.4			
<i>W</i>	414	5		none		2.4			
<i>EQ</i>	306	6		none		2.4			
Q	enter	1		none		2.4			
		2		none		2.4			
		3		none		2.4			
<i>line totals</i>		4		none		2.4			
<i>W</i>		5		none		2.4			
<i>EQ</i>		6		none		2.4			
Totals Achieved							2395	1906	
							OK	OK	
Totals Required (from Sheet A)							2362	948	

Gib® Wall Bracing Calculation Sheet A

upper of two

Job Details

Name	ADAMS	
Street and Number	KAKARIKI GROVE	
Lot and DP Number	LOT 8	
City/Town/District	WAIKANAЕ	
Designer and date	DESIGN NETWORK	1-Nov-00

Building Specification

Location of Storey	upper	▼	
Floor Loading	2 kPa	▼	
Foundation Type	slab	▼	
Building Height to Apex (m)	9	▼	
Roof Height above Eaves (m)	4	▼	
Stud Height (m)	2.4	▼	
Cladding Weight (top or single)	light	▼	
Cladding Weight (lower)	light	▼	
Cladding Weight (subfloor)	light	▼	not applicable (slab)
Roof Weight	light	▼	
Roof Pitch (degrees)	25-45	▼	
Room in Roof Space	no	▼	
Building Length (m)	17.3		Use roof length including eaves
Building Width (m)	14.7		Use roof length including eaves
Gross Building Plan Area (m2)	162		

Building Location

Wind Zone	High		Earthquake Zone	
Region	R1	▼	A	▼
Terrain	Inland	▼		
Exposure	Exposed	▼		
Topography	Moderate	▼		

Bracing Units required for Wind

per m	subfloor	walls
W along	n/a	93 BUs/m
W across	n/a	117 BUs/m
Totals	subfloor	walls
W along	n/a	1367 BUs
W across	n/a	2024 BUs

Bracing Units required for Earthquake

per m2	subfloor	walls
E	n/a	6.0 BUs/m2
Totals	subfloor	walls
E along	n/a	972 BUs
E across	n/a	972 BUs

Gib® Wall Bracing Calculation Sheet B

upper of two

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®	Gib1b	2.4	2.4	180	120
		2	Gib®	Gib1b	2.4	2.4	180	120
		3		none		2.4		
<i>line totals</i>		4		none		2.4		
W	360	5		none		2.4		
EQ	240	6		none		2.4		
B	enter	1	Ply	CP4	0.6	2.4	58	57
		2	Gib®	BR4	1.1	2.4	110	94
		3	Gib®	Gib2b	2.4	2.4	192	168
<i>line totals</i>		4		none		2.4		
W	360	5		none		2.4		
EQ	319	6		none		2.4		
C	enter	1	Gib®	Gib1b	2.4	2.4	180	120
		2	Gib®	Gib2b	2.4	2.4	192	168
		3	Gib®	BR4	1	2.4	100	85
<i>line totals</i>		4		none		2.4		
W	472	5		none		2.4		
EQ	373	6		none		2.4		
D	enter	1	Gib®	BR4	0.9	2.4	90	77
		2	Gib®	BR4	0.9	2.4	90	77
		3	Ply	CP4	0.7	2.4	68	67
<i>line totals</i>		4		none		2.4		
W	248	5		none		2.4		
EQ	220	6		none		2.4		
E	enter	1		none		2.4		
		2		none		2.4		
		3		none		2.4		
<i>line totals</i>		4		none		2.4		
W		5		none		2.4		
EQ		6		none		2.4		
							Wind	Earthq
Totals Achieved							1440	1151
							OK	OK
Totals Required (from Sheet A)							1367	972

Gib® Wall Bracing Calculation Sheet B

upper of two

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	
M	enter	1	Gib®	BR5	2	2.4	230	170	
		2	Gib®	BR5	2	2.4	230	170	
		3		none		2.4			
	<i>line totals</i>		4		none		2.4		
	<i>W</i>	460	5		none		2.4		
	<i>EQ</i>	340	6		none		2.4		
N	enter	1	Gib®	Gib2b	3.8	2.4	304	266	
		2	Gib®	BR4	1.2	2.4	120	102	
		3	Ply	CP4	0.6	2.4	58	57	
	<i>line totals</i>		4		none		2.4		
	<i>W</i>	482	5		none		2.4		
	<i>EQ</i>	425	6		none		2.4		
O	enter	1	Gib®	BR5	2.2	2.4	253	187	
		2	Gib®	Gib2b	3	2.4	240	210	
		3	Gib®	BR5	1.8	2.4	207	153	
	<i>line totals</i>		4	Gib®	BR4	1.1	2.4	110	94
	<i>W</i>	810	5		none		2.4		
	<i>EQ</i>	644	6		none		2.4		
P	enter	1	Ply	CP4	0.6	2.4	58	57	
		2	Gib®	BR4	1.2	2.4	120	102	
		3	Ply	CP4	0.6	2.4	58	57	
	<i>line totals</i>		4	Ply	SP4	0.5	2.4	35	43
	<i>W</i>	306	5	Ply	SP4	0.5	2.4	35	43
	<i>EQ</i>	301	6		none		2.4		
Q	enter	1		none		2.4			
		2		none		2.4			
		3		none		2.4			
	<i>line totals</i>		4		none		2.4		
	<i>W</i>		5		none		2.4		
	<i>EQ</i>		6		none		2.4		

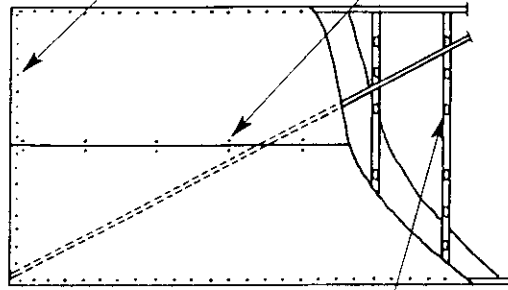
							Wind	Earthq.
Totals Achieved							2059	1710

							OK	OK
Totals Required (from Sheet A)							2024	972

Fastener Layouts

32mm x 6g Gib® Grabber screws or 30mm Gib® Nails at 150mm centres to perimeter of Bracing Element

Single 32mm screws or Gib® Nails where sheets cross studs

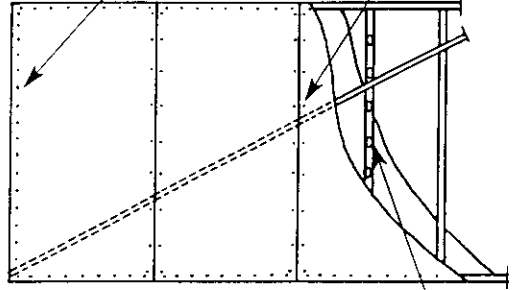


Gib® 1 (lined one side)
Gib® 2 (lined both sides)
(Horizontal Fixing)

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

32mm x 6g Gib® Grabber or 30mm Gib® Nails at 150mm centres to perimeter of Bracing Element

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

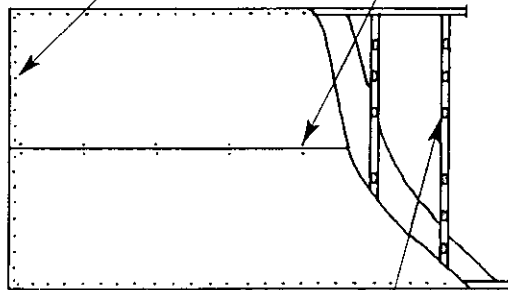


Gib® 1 (lined one side)
Gib® 2 (lined both sides)
(Vertical Fixing)

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

32mm x 6g Gib® Grabber screws or 30mm Gib® Nails at 150mm centres to perimeter of Bracing Element

Single 32mm screws or Gib® Nails where sheets cross studs

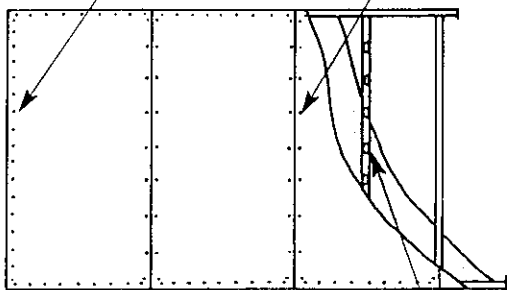


Gib® 3 (lined both sides)
Gib® 10 (lined one side)
Gib® 11 (lined both sides)
(Horizontal Fixing)

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

32mm x 6g Gib® Grabber screws or 30mm Gib® Nails at 150mm centres to perimeter of Bracing Element

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

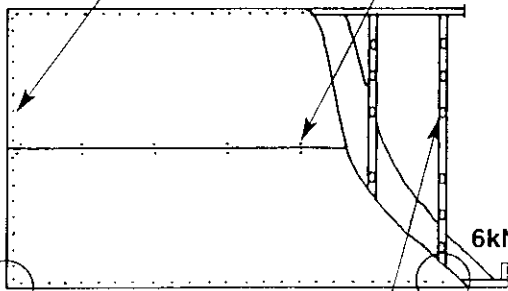


Gib® 3 (lined both sides)
Gib® 10 (lined one side)
Gib® 11 (lined both sides)
(Vertical Fixing)

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

32mm x 6g Gib® Grabber screws or 30mm Gib® Nails at 150mm centres to perimeter of Bracing Element

Single 32mm screws or Gib® Nails where sheets cross studs

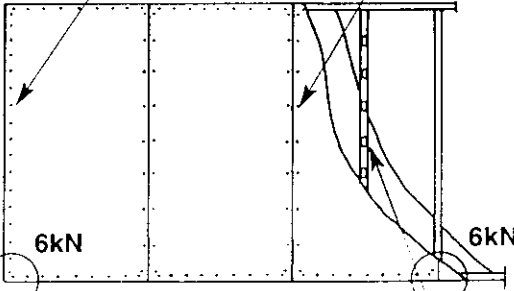


UL1 (lined one side)
UL2 (lined both sides)
(Horizontal Fixing)

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

32mm x 6g Gib® Grabber screws or 30mm Gib® Nails at 150mm centres to perimeter of Bracing Element

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



UL1 (lined one side)
UL2 (lined both sides)
(Vertical Fixing)

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

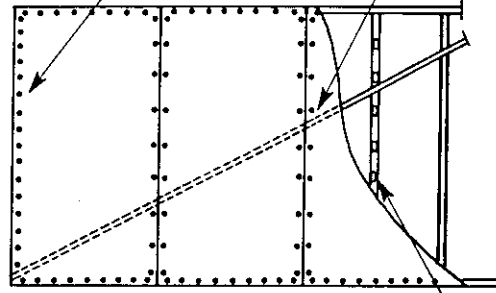
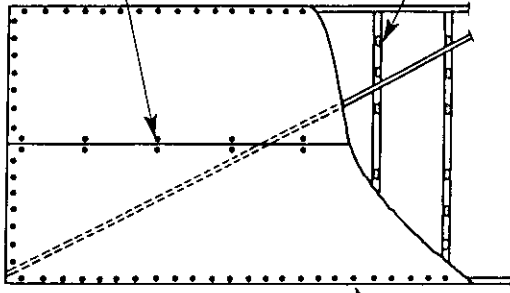
Fastener Layouts - continued

32mm single screws or Gib® Nails where sheets cross studs

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

32mm Gib® Braceline screws or 30mm Gib® Braceline clouts and washers at 150mm centres to perimeter of braced element

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



BR1 (lined one side) (Horizontal Fixing)

32mm Gib® Braceline screws or 30mm Gib® Braceline clouts and washers at 150mm centres to perimeter of braced element

BR1 (lined one side) (Vertical Fixing)

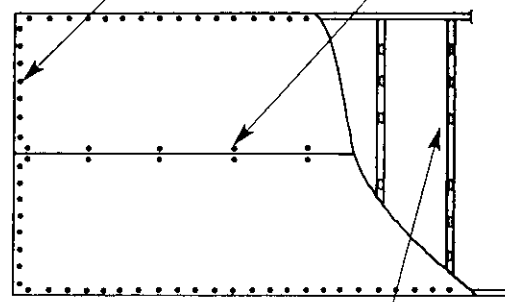
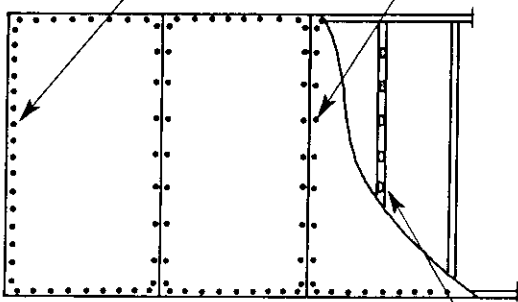
Daub of Gib® Fix Wood Bond adhesive at 300mm centres to intermediate studs

32mm Gib® Braceline screws or 30mm Gib® Braceline clouts and washers at 150mm centres to perimeter of braced element

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

32mm Gib® Braceline screws or 30mm Gib® Braceline clouts and washers at 150mm centres to perimeter of braced element

Single 32mm screws or Gib® Nails where sheets cross studs



BR2 (lined one side) (Vertical Fixing Only)

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

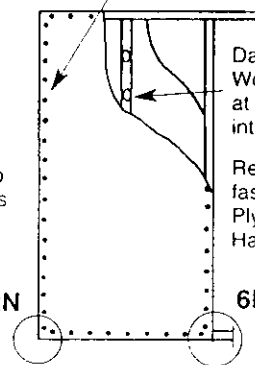
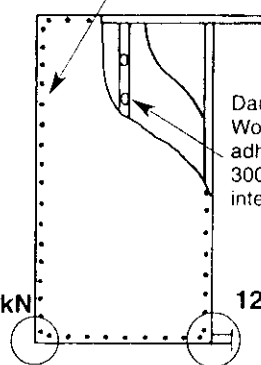
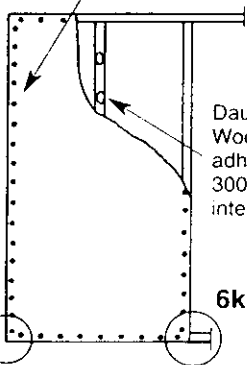
BR3 (lined one side) (Horizontal Fixing Only)

Daub of Gib® Fix Wood Bond adhesive only at 300mm centres to intermediate studs

32mm Gib® Braceline screws or 30mm Gib® Braceline clouts and washers at 150mm centres to perimeter of braced element

32mm Gib® Braceline screws or 30mm Gib® Braceline clouts and washers at 150mm centres to perimeter of braced element

32mm Gib® Braceline screws or 30mm Gib® Braceline clouts and washers at 150mm centres to perimeter of braced element



Daubs of Gib® Fix Wood Bond adhesive at 300mm centres to intermediate studs

Daubs of Gib® Fix Wood Bond adhesive at 300mm centres to intermediate studs

Daubs of Gib® Fix Wood Bond adhesive at 300mm centres to intermediate studs

Refer page 12 re fastener details for Plywood (BR7) Hardboard (BR8)

BR4 (lined one side) BR5 (lined one side)

BR6 (lined both sides)

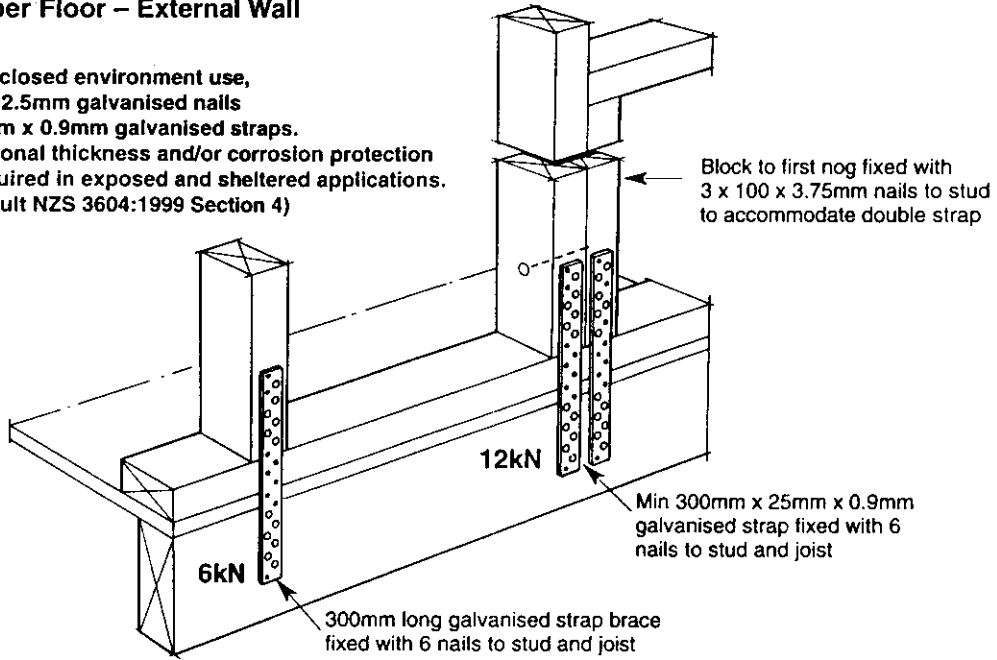
BR7 (lined both sides) BR8 (lined both sides)

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

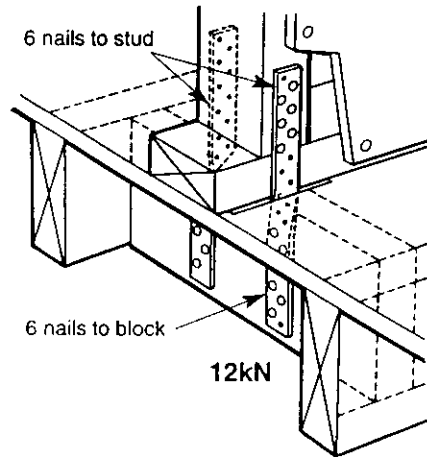
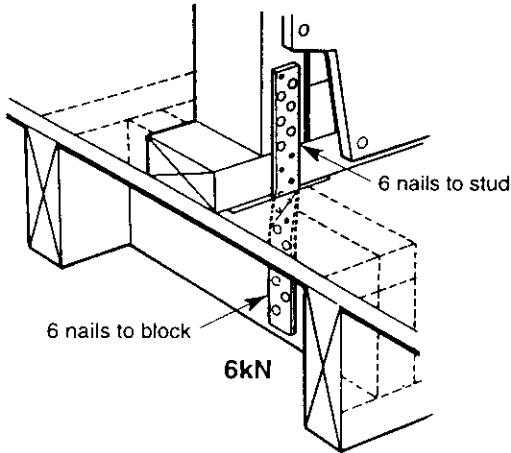
Hold-Down Straps

Timber Floor – External Wall

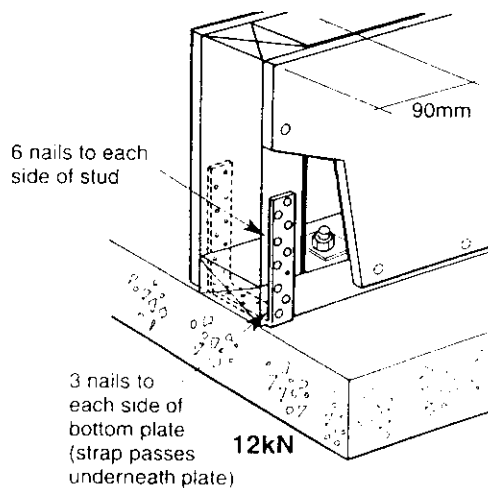
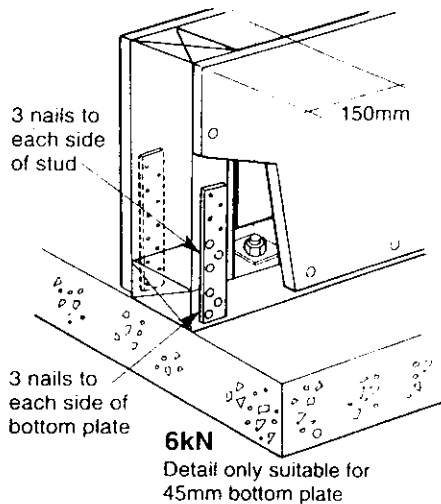
For a closed environment use,
 • 30 x 2.5mm galvanised nails
 • 25mm x 0.9mm galvanised straps.
 Additional thickness and/or corrosion protection is required in exposed and sheltered applications.
 (Consult NZS 3604:1999 Section 4)



Timber Floor – Internal Wall

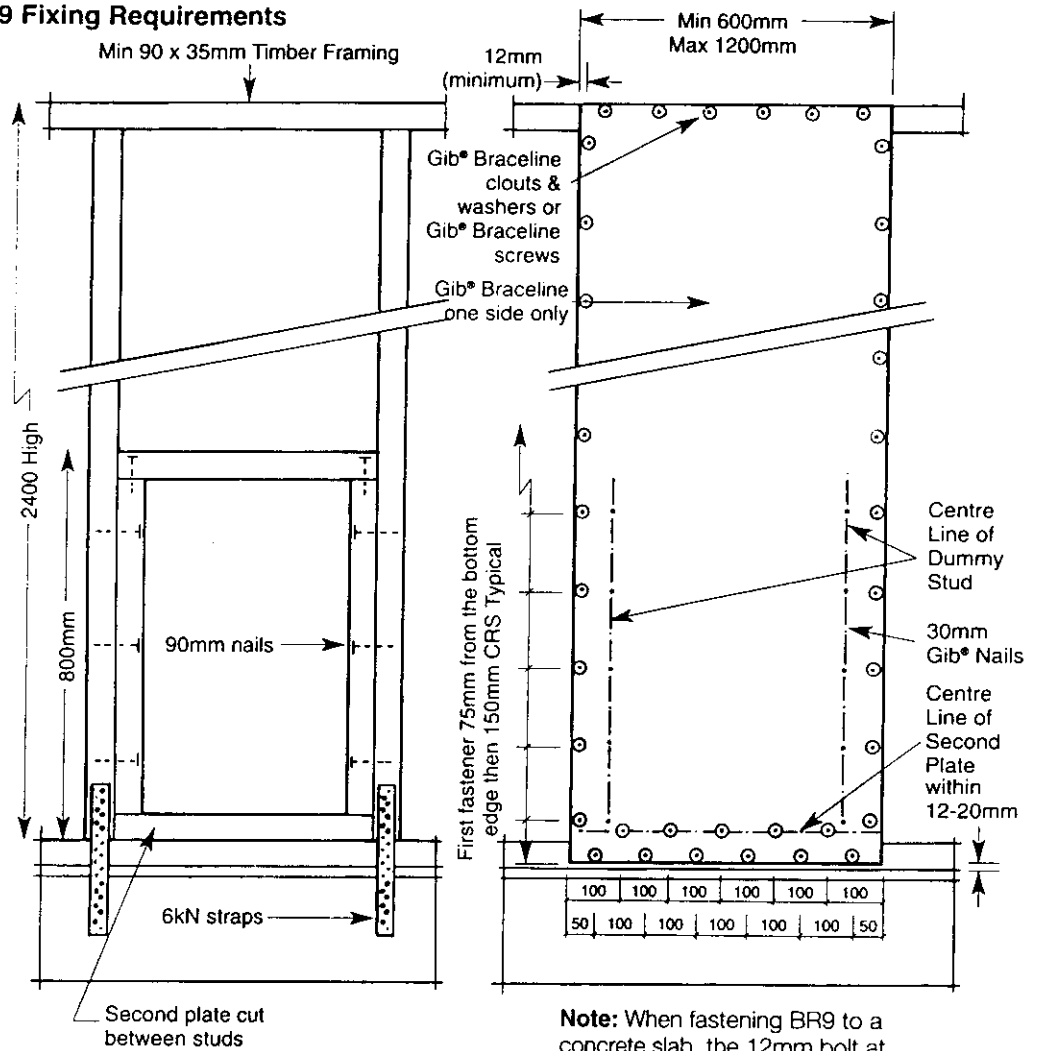


Concrete Floor



6kN Connections – UL1, UL2, BR4, BR5, BR7, BR8 & BR9
 12kN Connections – BR6

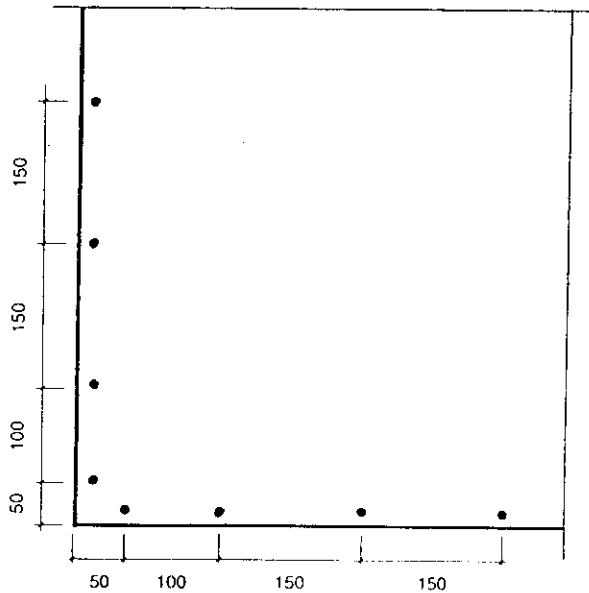
BR9 Fixing Requirements



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

IMPORTANT Corner Fastening Details

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



Ratings Table

BRACING PERFORMANCE OF WALLS INCORPORATING 7.5mm CD CONSTRUCTION PLYWOOD CLADDING

Wall Type	Primary bracing elements	Length	Bracing Performance	
			Wind bracing units per metre length	Earthquake bracing units per metre leng
CP3	Plywood on one side only	0.6-1.2m	88	83
CP5		0.9-1.8m	94	92
CP9		1.8-3.6m	108	96
CP4	Plywood on one side, Standard Gibraltar Board on the other	0.6-1.2m	97	95
CP6		0.9-1.8m	100	99
CP10		1.8-3.6m	142	122
BR7	Plywood on one side, Braceline Gibraltar Board on the other	0.9-1.8m	124	148
GIB3	Standard Gibraltar Board both sides	1.2m upwards*	65	60

Fixings as clause K4.5 or E13.2 (Fig. E8), NZS 3604.

* no special fixing required.

Gibraltar Board and Braceline are products of Winstone Wallboards Ltd.

Data source: 3604 Fix List, February 1992, BRANZ

CH PANELBRACE

CARTER HOLT HARVEY PLYWOOD
PO Box 8551, Auckland, New Zealand.
Ph: 0-9-638 9929. Fax: 0-9-638 6346.
A Division of Carter Holt Harvey Timber Limited

Wall Type	Minimum wall length (m)	Minimum Plywood thickness (mm)	Nail* Spacing (mm)	Hold down (kN)	Stud spacing (mm)	Bracing units/m (20 bracing units = 1kN)	
						Wind	Earthquake
Ratings for plywood component only							
SP4	0.45	7	75	6	450	70	85
SP2	0.6	7	150	6	600	85	85
SP1	0.8	7	150	6	450 or 600	100	100
SPST1	1.2	7	150	-	500	90	80
SP6	0.9	12	150	6	450 or 600	115	110
SP8D	0.9	7	150	12	450	125	135
SP5D	1.2	7	75	12	600	130	135
SP10	1.8	7	75	6	450	135	135

Ratings for plywood one side and additional sheathing on the other

**MR J ADAMS
LOT 9 KAKARIKI GROVE
WAIKANAE.**

NEW RESIDENCE

SPECIFICATION

**COPY FOR YOUR
RECORDS**

ENVIRO+PLUS

BUILDING CERTIFICATION

**NEW RESIDENCE
MR J ADAMS
LOT 8 KAKARIKI GROVE.**

INDEX

1201:-	Preliminaries and General
2201:-	Preparation and Ground Work
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3101:-	Concrete
3302:-	Blockwork
3401:-	Steelwork
3701:-	Metalwork
3801:-	Carpentry
3801L:-	Laserframe Carpentry
4201:-	Cladding
4201H:-	James Hardie Cladding
4301:-	Roofing
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5101H:-	James Hardie Linings
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6601:-	Painting and Paperhanging
7101:-	Water
7201:-	Gas
7401:-	Rainwater Plumbing
7402:-	Sanitary Plumbing
7403:-	Drainage
7701:-	Electrical

1201 PRELIMINARIES AND GENERAL

1. THE PROJECT

1.1 DESCRIPTION

The scope of the works to be as described in this specification and as shown on the drawings.

1.2 SITE

The site of the works, the site address and the legal description are shown on the drawings. Confine access and work to the area of the site indicated.

2. DOCUMENTATION

2.1 SPECIFICATION SECTIONS

The designation and numbering of individual specification sections follows the CBI (Association for Co-ordinated Building Information in New Zealand) system for the co-ordination and classification of construction information. Sections are for reference and convenience only and do not constitute individual trade sections or work elements.

Read all sections together and read 1201 PRELIMINARIES AND GENERAL with all other sections.

2.2 INTERPRETATIONS

Required:	Required by the documents, or by a statutory authority.
Proprietary:	Identifiable by naming the manufacturer, supplier, installer, trade name, brand name, catalogue or reference.
Approval:	Approval in writing.
Direction:	Direction in writing.
Notified:	Notified in writing.

2.3 SUBSTITUTIONS

A substitution may be proposed where specified products are not available, or if substitute products are brought to the attention of the owner and are considered by the owner to be equivalent or superior to those specified.

Any proposed substitution of specified products to be notified. Notification to include sufficient information to allow the owner to confirm that the substitution is equivalent or superior to that specified.

Any approval of substitutions to be in writing.

2.4 THE WORDS "PROVIDE" OR "FIX"

The words "provide" or "fix" if used separately mean provide and fix unless explicitly stated otherwise.

2.5 MANUFACTURER'S AND SUPPLIER'S

Manufacturer's and supplier's requirements, instructions, specifications or details means those issued by them for their particular material, product or component and are the latest edition.

2.6 MANUFACTURER'S AND SUPPLIER'S DOCUMENTS

Refer to individual sections for a detailed list of manufacturer's and supplier's documents relating to work on this project. Retain current copies of the documents listed, and all other relevant manufacturer's technical literature, on site. Make this information available to all personnel and ensure they are familiar with requirements for handling, storing, preparing for, fixing and finishing products before commencing work. Provide a copy of all manufacturer's literature to the owner.

2.7 ABBREVIATIONS

The following abbreviations are used throughout the specification sections.

AS	Australian Standard
AS/NZS	Joint Australian/New Zealand Standard
BRANZ	Building Research Association of New Zealand
BS	British Standard
CSA	Canadian Standards Association
HERA	Heavy Engineering Research Association
NZBC	New Zealand Building code
NZMP	New Zealand Miscellaneous Publication
NZS	New Zealand Standard
NZS/AS	Joint New Zealand/Australian Standard

2.8 DEFINED WORDS

Words defined in the conditions of contract, New Zealand Standards, or other reference documents, to have the same interpretation and meaning when used in their lower case, title case or upper case form in the specification text.

2.9 REFERENCED DOCUMENTS

Throughout this specification, reference is made to various New Zealand Building Code (NZBC) acceptable solutions and verification methods for criteria and/or methods used to establish compliance with the Building Act.

Reference is also made to various Standards produced by Standards New Zealand (NZS, NZMP, AS/NZS, NZS/AS), Transit New Zealand specifications, overseas standards (AS, BS, CSA) and to listed Acts, Regulations and various industry codes of practice and practice guides. The latest edition (including amendments and provisional editions) at the date of this specification applies unless stated otherwise.

It is the responsibility of the contractor to be familiar with the materials and expert in the techniques quoted in these publication

Documents cited both directly and within other cited publications are deemed to form part of this specification. However, this specification takes precedence in the event of it being at variance with the cited documents, with the resolution of any variance being confirmed by the owner in writing and then notified to the territorial authority for consent prior to any further work proceeding.

2.10 DOCUMENTS REFERRED TO

Documents referred to in this section are:

- Building Act 1991
- Building Regulations 1992
- Health and Safety in Employment Act 1992
- Smoke Free Environments Act 1990

2.12 BUILDING CONSENT COMPLIANCE

It is an offence under the Building Act 1991 to carry out any work not in accordance with the building consent. The resolution of matters concerning compliance to be referred to the owner for a direction. If required, the owner to refer the matter to the territorial authority for consent.

2.13 BUILDING CONSENT

Obtain the original or copies of the building consent form and documents from the owner and keep on site. Liaise with the territorial authority for all notices to be given and all inspections required during construction to ensure compliance. Return the consent form and documents to the owner on completion.

2.14 PRODUCER STATEMENTS

When producer statements verifying construction are required, provide copies to both the territorial authority and the owner. Producer statements to be in the form required by the Building Act.

2.15 COMPLIANCE SCHEDULE

Obtain from the owner the list of all systems and features agreed as comprising the compliance schedule when application was made for building consent. Supply to the owner the inspection, maintenance and reporting procedure information for each system or feature of the building needed to complete the schedule for issue by the territorial authority.

2.20 GUARANTEES

Provide executed guarantees in favour of the owner in respect of, but not limited to, materials, elements, service, application, installation and finishing called for in that specified section of work. The terms and conditions of the guarantee in no case negate the minimum remedies available under common law as if no guarantee had been offered. Failure to provide guarantees does not reduce liability under the terms of the guarantee called for in that specified section of the work.

2.21 OVERALL WEATHERTIGHTNESS AND WATERTIGHTNESS

A guarantee is required from the contractor for a minimum period of 2 years, covering the weathertightness of the complete building envelope and the watertightness of all liquid supply and disposal systems and fittings. This general guarantee is in addition to any specific guarantees required.

2.22 TRADE GUARANTEES AND WARRANTIES

Where specific trade guarantees/warranties are offered covering materials and/or execution of proprietary products or complete installations, provide copies of all such guarantees/warranties to the owner.

2.23 FORM OF GUARANTEE

Conform with the form of guarantee included in this specification. Commence all guarantees from the date of practical completion. Maintain their effectiveness for the times stated.

2.28 SERVICES PLANS

Prepare services plans setting out the actual positions as constructed of all sewer, stormwater, sanitary plumbing, piped and duct services, electrical and mechanical services. Except where specified otherwise, as-built plans may be marked up on copies of relevant project drawings. Provide 1 set of services plans to the owner. Provide services plans required by the building consent to the territorial authority.

3. ESTABLISHMENT

3.1 COMPLY

Comply with all statutory obligations and regulations of regulatory bodies controlling the execution of the works.

3.2 APPROVALS

Attend on territorial authority officers, statutory and network utility inspectors, as necessary to obtain approvals (in addition to building consent approval) for and the satisfactory completion of, the works.

4. TEMPORARY WORKS AND SERVICES**4.1 SITE ACCOMMODATION**

Provide, erect and maintain all scaffolding, sheds, toilets, water, power, hoardings and access to the site. Allow for all cartage, craneage, plant hire and storage. Arrange for all temporary works and services necessary for the completion of the works. Pay a fees and remove temporary works and services on completion of the works.

4.2 PROTECT

Protect all parts of the work liable to damage, including all adjoining public or private property, existing buildings, existing roads, footpaths, fences, site services, trees, landscaping and all existing retained site features, until completion of the works. Take all precautions necessary to protect the works from damage by unauthorised entry or inclement weather. Brace and support all parts of the works against damage during construction.

Make good all damage to existing property and site features arising from construction activities or failure to protect.

4.3 STORAGE

Provide temporary storage areas and protective covers and screens. Framing and structural members to be fillet stacked and protected from moisture and contamination. Finishing materials to be completely protected from the weather and damage and stored in accordance with the manufacturer's requirements. Fabricated elements to be protected from the weather and damage, and stored in accordance with the supplier's requirements.

5. PROJECT MANAGEMENT**5.1 WORKING HOURS**

Work outside normal hours may be permitted, but 24 hours notice is required in writing to the owner before proceeding. Obtain any necessary permits and permission for such work.

5.2 HEALTH AND SAFETY

Refer to the requirements of the Health and Safety in Employment Act 1992. Comply with all relevant New Zealand safety legislation.

Take all necessary steps to make the site and the contract works safe and to provide and maintain a safe working environment. Ensure that all those working on or visiting the site are aware of the rules governing site safety, are properly supervised and are unnecessarily exposed to hazards.

Maintain proper procedures for dealing with any emergencies that may arise. Immediately investigate accidents, identify their cause and maintain a register of accidents and serious harm. Provide copies of the register to the owner, together with copies of reports supplied to a public authority.

5.3 SMOKING

Do not smoke on site except in a designated location in accordance with the Smoke Free Environments Act 1990. This location to be determined by the contractor with the approval of the owner.

6. CONSTRUCTION**6.1 QUALITY ASSURANCE**

Carry out and record regular checks of material quality and accuracy, including:

- Concrete quality and finishes (refer to 3101 CONCRETE).
- Dimensional accuracy of structural columns (following completion of foundations).
- All perimeter columns and frames for plumb.
- Levels of all floors relative to the site datum.
- Framing timber moisture content (refer to 3801 CARPENTRY).

Where any material, quality or dimension exceeds specified or required tolerances, obtain written confirmation from the owner when building consent approval is affected, confirm remedial action with the territorial authority.

Provide all materials, equipment, plant, attendances, supervision, inspections and programming to ensure the required quality standards are met.

6.2 NUISANCE

Take all reasonable precautions to prevent damage and nuisance from water, fire, smoke, vehicles, dust, rubbish, noise and all causes resulting from the contract works. Comply with the requirements of the territorial authority and all relevant Acts and Standards.

6.3 SET OUT

Establish a permanent site datum to confirm the proposed building ground floor level and its relationship to all other existing and new building levels.

While it remains the contractor's responsibility to set out the works accurately and correctly and to confirm any changes from the approved location with the territorial authority, obtain the owner's written confirmation that they have sighted the proposed building location, site datum and profiles, before commencing any further work.

6.4 EXECUTION

Conform to the requirements of this specification. All work to be level, plumb, and true to line and face. Employ only experienced workers familiar with the materials and techniques specified.

6.5 MATERIALS

Materials to be new unless stated otherwise, of the specified quality and complying with all cited documents. Substitution of alternative materials, plant or equipment from those specified to be confirmed by the owner in writing. If required the owner to obtain approval from the territorial authority for the substitution.

6.6 COMPLETE ALL SERVICES

Ensure all building services are operational, with all temporary labelling removed, required labelling fixed and service instructions provided.

6.7 CLEAR AWAY

Clear away all trade debris, unused materials and elements from the site and leave the building clean and ready for occupancy, with all services operating and mechanical parts in good working order. Remove all temporary markings, coverings and protective wrappings. Ensure that any maintenance requirements on temporary markings are conveyed to the owner.

6.8 CLEAN

Clean and wash down all external surfaces to remove dirt, debris and marking. Clean all interior surfaces including cabinetwork, joinery, sanitary and hardware items. Vacuum or polish all floor finishes. Clean and polish all glass, both sides.

6.9 SPARES

Collect, protect and store safely all spare materials required under the contract. Give the owner an inventory of all spares.

2201 PREPARATION AND GROUNDWORK

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:

NZS 3604 Light timber frame buildings not requiring specific design

Occupational Safety and Health Service (OSH) publication: Approved code of practice for safety in excavation and shafts for foundations

1.3 SITE SAFETY

Provide adequate support for all excavations. Cover holes and fence off open trenches and banks.

2. PRODUCTS

2.1 EXCAVATED FILL

Material from other formations in the excavation which may be selected and approved as suitable for filling by having grading and moisture content properties that will allow recompaction to 95% of maximum density.

2.2 ROCK FILL

Hard material comprising rock, broken stone, hard brick, concrete, run of pit scoria, or other comparable inert material capable of being placed and compacted as specified.

2.3 SAND FILL

Clean sand of such grading in particle size as to allow for mechanical compaction to 90% maximum density.

2.4 HARDCORE

Scoria or crushed rock to GAP (General All Passing) 40 grading.

2.5 GRANULAR BASE

Approved screened crushed gravel or scoria graded in size from 20mm to 7mm, clean. When tested with a standard sieve of 4.75 opening no material is to pass.

2.6 DRESSING COURSE

Scoria to GAP 20 grading, or "dirty footpath scoria", or equivalent "all in" graded crushed metal aggregate.

2.7 FREE-DRAINING AGGREGATE

Scoria or crushed gravel graded 50 to 14 clean.

3. EXECUTION

3.1 CARRY OUT

Carry out all excavation to the guidelines set by the Occupational Safety and Health Service (OSH) publication: "Approved code of practice for safety in excavation and shafts for foundations."

3.2 FIRES

Do not light rubbish fires on site.

3.3 EXISTING WORK

Protect from damage existing buildings, structures, roads, paving and services nominated on the drawings as being retained, throughout the course of the work.

3.4 PREPARATION

Comply with NZS 3604, section 3.5. Remove all turf, vegetation, trees, topsoil, stumps and rubbish from the area to be built on.

3.5 UNDERGROUND ELEMENTS AND SERVICES

Break out and remove old foundations, slabs, drainage pipes, manholes, tanks, cables and redundant services. Refer for instructions when any unexpected voids, made-up ground or services are encountered. Seal off the ends of drains or remove to territorial authority approval.

3.6 TOPSOIL

Stockpile excavated topsoil on site where directed. Keep separate from other excavated materials. Spread and level where directed before completion of the works.

2301 FOUNDATIONS

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:

NZS 3109	Concrete construction
NZS 3602	Timber and wood-based products for use in buildings
NZS 3603	Timber structures standard
NZS 3604	Timber frame buildings
NZS 3605	Timber piles and poles for use in buildings
NZS 3631	New Zealand timber grading rules
NZMP 3640	Minimum requirements of the NZ Timber Preservation Council

2. PRODUCTS

2.1 CONCRETE PILES IN-SITU

To NZS 3604 for concrete, reinforcement, footing and type.

2.2 CONCRETE PILES PRE-CAST

200mm square parallel-sided to NZS 3604 for footing and type.

2.3 ROUND TIMBER PILES

Corsican pine or radiata pine, treated to NZMP 3640, hazard class H5, Group B, to design data assigned in NZS 36 section 7 and complying with NZS 3605 for cross section, length, straightness, strength and branding. All to NZS 36 for footing and type.

2.4 SQUARE TIMBER PILES

Corsican pine or radiata pine, treated to NZMP 3640, hazard class H5, Group B, to design data assigned in NZS 36 section 7 and complying with NZS 3605 for cross-section, length, straightness, strength and branding. All to NZS 36 for footing and type.

2.5 TIMBER SUB-FLOOR FRAMING

Species, grade, moisture content in service and level of treatment as set out in NZS 3602. Grading to NZS 3631 and treated to NZMP 3640.

2.6 NAILS

Steel, stainless steel and galvanised steel of pattern to NZS 3604, table 6.8 and section 4 - Durability.

2.7 BOLTS AND SCREWS

Steel, stainless steel and galvanised steel to NZS 3604.

2.8 NAIL PLATES

Stainless steel and galvanised steel toothed or nailed steel plates to the plate manufacturer's design for the particular locations shown on the drawings.

2.9 CONCRETE

For piles and footings ordinary grade 17.5 MPa to NZS 3109, section 6 and NZS 3604, section 6.4.5.

2.10 SHEET DAMPPROOFING

Rubberised bitumen membrane specifically produced for waterproofing applications, possessing high resistance to water, water vapour and gas permeability and resistant to the attack of ground bacteria and ageing effects, joined by proprietary techniques and applied by the use of special adhesives. Thickness not less than 1.5mm.

2.11 BRUSH ON LIQUID-APPLIED MEMBRANE

Fully stable, water-based colloidal bitumen emulsion.

3. EXECUTION

3.1 GENERALLY

Comply with NZS 3602 and NZS 3604 except as varied by this specification. Execution to include those methods, practices and processes contained in the unit standards for the National Certificate in Carpentry and the National Certificate in Joinery (cabinetry, exterior joinery, stairs).

3.2 EXCAVATIONS

Refer to 2201 PREPARATION AND GROUND WORK.

3.3 INSTALL CONCRETE PILES IN-SITU

Box form, reinforce and pour in 17.5 MPa concrete the footings and piles in the various types to NZS 3604.

- 3.4 **INSTALL CONCRETE PILES PRECAST**
Pour 17.5 MPa concrete footing and set in pre-cast concrete piles in the various types to NZS 3604.
- 3.5 **INSTALL ROUND TIMBER PILES**
Prepare for and drive timber piles to NZS 3604, section 6.6. Protect pile heads with a suitable cushion.
- 3.6 **INSTALL SQUARE TIMBER PILES**
Prepare for, place and secure as detailed on the drawings.
- 3.7 **SUB-FLOOR FRAMING**
Frame up off foundation walls and piles, all fabricated, fastened and braced to NZS 3604, section 6.
- 3.8 **CONCRETE**
Refer to 3101 CONCRETE for poured concrete footings, foundations, foundation walls and floor slabs.
- 3.9 **BLOCKWORK**
Refer to 3302 BLOCKWORK for concrete block foundation walls.
- 3.10 **SHEET DAMPPROOFING**
Protect all horizontal surfaces to be dampproofed with a 50mm layer of 15MPa site concrete. Ensure surfaces to be dampproofed are free from voids, spalled areas, loose particles and sharp protrusions. Masonry joints to be struck flush. Apply primer, then install the rubberised bitumen membrane system, strictly in accordance with the dampproofing manufacturer's requirements. All work to be completed by applicators licensed by the dampproofing manufacturer. Protect all vertical surfaces with polystyrene sheets glued to the membrane and taped over joints.
- 3.11 **BRUSH ON LIQUID-APPLIED MEMBRANE**
Three coats of water-based bitumen emulsion applied in accordance with the membrane manufacturer's requirements. First coat at the rate of 0.20 litres/m², with the second and third coats each at the rate of 0.75/m². Protect all vertical surfaces with polystyrene sheets before backfilling.
- 3.12 **LEAVE**
Leave all work to the standard required by all following trades.

3101 CONCRETE

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:

NZS 3104	Concrete production - high grade and special grade
NZS 3108	Concrete production - ordinary grade
NZS 3109	Concrete construction
NZS 3114	Concrete surface finishes
NZS 3124	Concrete construction for minor works
NZS 3402	Steel bars for the reinforcement of concrete
NZS 3422	Welded fabric of drawn steel wire for concrete reinforcement
NZS 3604	Timber frame buildings

2. PRODUCTS

2.1 REINFORCEMENT

Bars to NZS 3402. Welded reinforcing mesh to NZS 3422.

2.2 TYING WIRE

Mild drawn steel wire not less than 1.2mm diameter.

2.3 SPACERS AND CHAIRS

Precast concrete or purpose made moulded PVC to approval. Concrete spacer blocks to only be used where the concrete surface is not exposed in the finished work.

2.4 VAPOUR BARRIER

0.25mm minimum polyethylene to NZS 3604, section 7.5.4.

2.5 READY-MIX CONCRETE

Ordinary grade 17.5 MPa, maximum aggregate size 19mm to NZS 3104.

2.6 SITE MIXED CONCRETE

To NZS 3124. Ordinary grade 17.5 MPa minimum strength, using either separate batching of sand and coarse aggregate to NZS 3108, or builder's mix.

2.7 SITE CONCRETE

To NZS 3124. 1:8 (cement : all-in aggregate) with minimum water for workability, all materials and batching to NZS 3108.

3. EXECUTION

3.1 HANDLE AND STORE

Handle and store all reinforcing steel and accessories without damage or contamination. Store on timber fillets on hard ground in a secure area clear of any building operation. Lay steel fabric flat. All reinforcement to be clean and kept clean so that at the time of placing concrete it is free of all loose mill scale, loose rust and any other contamination that may reduce bonding capacity.

3.2 FALSEWORK AND FORMWORK

Falsework and formwork to be of sufficient strength to retain and support the wet concrete to the required profiles and tolerances. Formwork finish to be selected to produce the specified finished quality. Timber or plywood used for formwork to be non-staining to the set concrete.

Securely fix and brace formwork with sufficient strength to support all loads and with joints and linings tight enough to prevent water loss. Tie wires or rods not to be used unless approved in writing by the owner. Unless detailed otherwise, all interior and exterior angles of beam and column forms to have a 19mm chamfer or fillet strip, mitred at intersections.

Water blast to clean formwork. Keep formwork wet before concrete is placed.

Unless detailed otherwise, set up soffit boxing for beams and slabs to provide a camber when forms are stripped, of 3mm rise for every 3 metres of total clear span.

3.3 REINFORCEMENT

All Grade 300 deformed other than ties, stirrups and spirals, unless shown otherwise on the drawings.

3.4 CUT AND BEND

Cut and bend bars using proper bending tools to avoid notching and to the requirements of NZS 3109. Do not rebend bars without written approval. Reject all bars with unspecified kinks or bends. Unless detailed otherwise bend main reinforcing bars, stirrups and ties to the former pin diameters as given in NZS 3109, table 3.1.

3.5 SECURE REINFORCEMENT

Secure reinforcement adequately with tying wire and place accurately, supported adequately and secured against displacement when concreting. Bend tying wire back well clear of the formwork. Spacing to be as dimensioned on the drawings but if not shown then clear distance to be to the minimums laid down in NZS 3109, clause 3.6.

3.6 LAPPED SPLICES

Length of laps where not dimensioned on the drawings to be in accordance with NZS 3109, clause 3.7. Increase laps of plain round steel by 100%.

3.7 COVER

Minimum cover to all reinforcing bars, stirrups, ties and spirals, as shown on the drawings and to NZS 3109, clause 3.8. Fix chairs top reinforcement in slabs at 1.0 metre centres or to ensure adequate support. Cover tolerances to NZS 3109, clause 3.9.

- 3.8 INSPECTION**
Do not place concrete until all excavations, boxing and reinforcing have been inspected and passed by the territorial authority inspector.
- 3.9 SURFACE FINISHES**
To comply with NZS 3114, section 105, or as denoted on the drawings.
- 3.10 EXPOSED CONCRETE**
Formwork linings and surface finishes as nominated for both fair face and concealed or exposed surfaces. Unless detailed, obtain written confirmation of the type and pattern of all joints.
- 3.11 CONCRETE SURFACE TOLERANCES**
To comply with NZS 3114, sections 104 and 105, with the suggested tolerances becoming the required tolerances.
- 3.12 INSTALL VAPOUR BARRIER**
Apply polythene membrane to prepared basecourse with 150mm laps. Tape seal laps and penetrations with 50mm wide pressure sensitive plastic tape. Refer to drawings for perimeter details.
- 3.13 DAMPPROOFING**
Refer to 2301 FOUNDATIONS.
- 3.14 CASTING IN**
Allow to build in all grounds, bolts and fixings for wall plates and bracing elements, holding down bolts, pipes, sleeves and fixings as required by all trades and as shown on the drawings, prior to pouring the concrete.
Continuous grounds (i.e. exceeding 100mm) must not be used. Location and form of conduits to be approved in writing by the owner. Minimum cover 40mm. Bare aluminium items not to be encased in concrete. Steel embedded items not to be painted more than 25mm into the concrete encasement. Any form ties to be cut back to specified cover and the cavities filled with mortar.
Form all pockets, chases and flashing grooves as required by all trades and as shown on the drawings.
Wrap all pipes embedded in concrete with tape to break the bond and to allow for expansion. Pipes for conveying liquids exceeding temperature of 50 degrees centigrade not to be embedded in concrete.
- 3.15 PUMPING CONCRETE**
Pump operation, placing and compaction of the mix to be set up and supervised in accordance with NZS 3109. Advise the ready-mix supplier of the type of pump to be used and the slump required, in addition to the concrete grade, strength and quantity.
- 3.16 COMPACTION**
Use power operated vibrators.
- 3.17 RESIDENTIAL FLOOR SLABS**
Construct in accordance with NZS 3604, section 7.5. Lay to true and straight surfaces, screeded, floated and steel (manual or power trowelled finish. Tolerance on flatness to be a maximum 3mm gradual deviation over a 3 metre straight-edge, to the requirements of NZS 3109.
- 3.18 CONSTRUCTION JOINTS**
Locate and construct as shown on the drawings.
- 3.19 SAW CUTS**
Floor slabs cast on the ground to be poured in areas not greater than 25 square metres, with a maximum ratio of length to breadth of 1:1.5
Cut slabs where indicated on the drawings and as required to control shrinkage cracking. Cutting to be carried out as soon as possible, without causing tear-out of aggregate and before shrinkage cracking has occurred, generally within 24 hours of pouring. Where saw cuts are made, cut out 100mm of every second wire of the mesh for a length of 50mm each side of the saw cut position. Saw cuts to be 1/3rd slab depth or 30mm minimum.
- 3.20 REPAIRS**
Make good surface defects immediately after forms are stripped. Make good hollows or bony areas with 1:2 mortar or plaster, finish to the same tolerances as the parent concrete. Fill any tie rod holes with 1:2 mortar.
- 3.21 CURING OF CONCRETE**
Keep damp for not less than seven days. Ensure curing of slabs commences as soon as possible after final finishing, by the use of continuous water sprays, or ponding. Alternately, apply a curing membrane. Make sure any membrane used will not affect subsequent applied finishes.
- 3.22 STRIKE FORMWORK**
Strike formwork without damaging or overloading structure. Do not remove formwork before the following minimum periods
- | | |
|---|----------|
| Sides of beams, walls and columns: | 12 hours |
| Slabs in beam and slab construction (leave props under slab spans over 2 metres): | 4 days |
| Props from under slab spans over 2 metres: | 10 days |
| Beams, soffits and slab spans over 5 metres: | 18 days |
- 3.23 CLEAN OUT**
Clean out saw cuts and fill with cement grout where the floor will be covered with carpet or vinyl.
- 3.24 REMOVE**
Remove all unused materials and all concrete and reinforcing debris from the site.

3302 BLOCKWORK

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:

NZBC	B1/AS1	Structure – general / 3.0 Masonry
AS/NZS 4455		Masonry units and segmented pavers
NZS 3109		Concrete construction
NZS 3604		Timber framed buildings
NZS 4210		Masonry construction: materials and workmanship
NZS 4229		Concrete masonry buildings not requiring specific design
NZS 4230		The design of masonry structures

1.2 QUALIFICATIONS

All blockwork to be carried out by people competent and experienced in this type of work, under the supervision of a registered mason. The registered mason to certify in writing to the owner that the observation has been carried out in accordance with the relevant New Zealand Standards.

1.3 INSPECTION

Call for inspection of the work at critical stages including set out, reinforcing, and the time prior to and during grouting. All to recognised trade practice as set out in NZS 4210, section 3.3.2.

1.4 TESTS

All required tests to be carried out in accordance with NZS 4210, appendix 2A.

1.6 QUALITY RECORDS

Keep accurate records relating to strength and quality of materials used in the construction, and make the information available to the territorial authority inspector on request.

2. PRODUCTS

2.1 BLOCKS

To conform with AS/NZS 4455.

2.2 BLOCKS SELF-INSULATING

200mm lightweight aggregate with polystyrene insulation insert. Block shells only to AS/NZS 4455.

2.3 REINFORCEMENT

Conform with NZS 3109.

2.4 MORTAR

Sand to comply with NZS 3101. Chloride levels to not exceed 0.04% by dry weight of sand. Mortar to conform with NZS 4210, section 2.2. To provide a compressive strength of not less than 12.5 MPa.

2.5 GROUT

Conform with NZS 4210, section 2.3. Spread value 450 - 530mm.

2.6 WATER

Water to be clean, fresh and free from excess alkali, salt, silt and organic materials.

3. EXECUTION

3.1 GENERALLY

Comply with NZS 4210 and NZS 4229.

3.2 SPECIFIC DESIGN

Comply with NZS 4210 and NZS 4230.

3.3 STORAGE

Store blocks clear of the ground, under cover and well ventilated until placed in the work.

3.4 MOISTURE CONTENT

Ensure blocks are air dry prior to laying.

3.5 CHECK BASE CONCRETE

Check the base concrete is true to line and level, requiring a base mortar bed of 10mm (minimum) to 20mm (maximum). Ensure that all laitance, loose aggregate, or anything preventing bond is removed prior to block laying.

3.6 STARTER POSITIONS

Before commencing block laying check the location of starter reinforcement by measure or by a dry trial lay up of the first course. Correct not correct misplacement by cranking bars.

3.7 REINFORCEMENT AND GROUTING

Reinforcement to be detailed, bent and placed in accordance with NZS 4210. Refer to drawings for details of reinforcement and extent of grout filling.

3.8 COVER

The minimum cover to be as required for reinforced concrete, with grout and blockwork treated as a homogeneous material. Maintain reinforcing bars for retaining walls a minimum of 15mm and for other blockwork a minimum of 6mm from the blockwork face, with the space filled with grout.

- 3.9 TOLERANCES**
Construct within the tolerances set out in NZS 4210, clauses 2.6.5 and 2.7.1. Lay blocks with bedding of consistent thickness throughout.
- 3.10 PROTECTION**
Protect fair-faced block walls to keep them clear of all mortar droppings, grout splashes, or stains of any kind.
- 3.11 LAY BLOCKS**
Ensure consistent, fully filled and tooled joints. Where walls are reinforced, prevent mortar droppings from entering the cells to be grouted. Provide clean out holes at base of wall, unless "low lift" (NZS 4210) grouting is used. Ensure reinforcement is accurately placed and tied. Lay in regular running bond with all necessary special units and sill blocks. Cut blocks, if necessary, true and square without chipping.
- 3.12 BLOCK JOINTS**
Not exceeding 10mm thick, or less than 8mm when the blocks are bedded in. Joints tooled concave, unless detailed otherwise.
- 3.13 LAY SELF INSULATING BLOCKS**
Lay to external walls where noted on the drawings and to the block manufacturer's recommendations.
- 3.14 CONTROL JOINTS**
Locate at major changes of wall height or thickness, at openings, and at not more than 8 metre centres, or, as shown on the drawing. Where reinforcement passes through a control joint, provide for breaking bond using methods detailed on NZS 4210, figure 2.10.1, unless specifically detailed otherwise.
- 3.15 BRACING**
Provide sufficient temporary lateral bracing to ensure stability until the final supporting construction is in place.
- 3.16 INSPECTION**
Inspect walls prior to grouting. Ensure cells are clean and reinforcement is correctly placed. Where "high lift" (to NZS 4210) grouting is used, seal the clean out holes and brace to prevent blow outs.
- 3.17 GROUTING OF CELLS**
Grout all blockwork cells below finished grades, all cells in retaining walls and all cells containing reinforcing.
- 3.18 GROUT CELLS**
Grout all blockwork cells.
- 3.19 GROUTING PROCEDURE**
Use procedures set out in NZS 4210 and in accordance with the requirements of NZS 4230, section 3.3. Methods acceptable on this project are: - high lift grouting with expansive admixture; - high lift grouting with reduced compaction - low lift grouting.
- 3.20 CONSTRUCTION JOINTS**
Form and treat construction joints between grout pours and between block walls and hardened concrete work to ensure bonding occurs. Comply with NZS 4210, section 2.16.
- 3.21 MORTAR IN COMPONENTS**
Mortar in components such as sills, copings, lintels, and steps, as work proceeds.
- 3.22 BUILD IN**
Build in all plugs, bolts, ties, metal flashings, dowels, fastenings and fixings as required by all trades and as shown on the drawings.
- 3.23 CAVITY WALLS**
Ensure cavities remain clear at completion of laying. Provide temporary clean-outs at the bottom of all cavities. Rake out every third joint of the bottom course 50mm high to provide weepholes. Flaunch base with mortar and apply a brush-on bituminous membrane to drain water effectively out of the cavity. Install precast concrete vents every third block of the top course.
- 3.24 CAVITY TIES**
To conform to NZS 4210 as modified by NZBC acceptable solution B1/AS1. Not less than 4mm hot-dipped galvanised strap section 20mm wide, ragged each end with folded in profile to the cavity. Ties staggered in each course and spaced uniformly at the rate of one tie per 0.225 square metres of wall area.
- 3.25 VENEER WORK**
Comply with NZS 3604, section 11.7. Ties to conform with NZS 4210 as modified by NZBC acceptable solution B1/AS1, pressed mild steel with screw or spiked end fixing, galvanised after fabrication. Fix to face of studs without damaging the building paper. placed and spaced to NZS 4210, clause 2.9 and installed to NZS 3504, clause 11.7.5.3.
- 3.26 CAVITY BASE**
Rake out every third joint of the bottom course 50mm high to provide weep holes. Flaunch base of cavity and apply a brush-on bituminous membrane to drain water effectively out of the cavity. Vent cavity to NZS 3604, clause 11.7.4.4.
- 3.27 PROGRESSIVE CLEANING**
Clean off mortar splashes and grout spills as they occur, making good any damage at the same time
- 3.28 FINAL CLEANING**
Clean down all blockwork and remove waste material from adjoining surfaces and floors at completion.

3401 STEELWORK

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:

NZBC	FS/AS1	Construction and demolition hazards
AS/NZS 1111		ISO metric hexagon bolts and screws
AS/NZS 1252		High-strength steel bolts with associated nuts and washers for structural engineering
AS/NZS 1554		Structural steel welding 1554.1 Welding of steel structures
NZS/AS 1650		Hot-dipped galvanised coatings on ferrous articles
AS 2204		Zinc rich organic priming paint
NZS 3404		Steel structures standard Part 1: Steel structures standard
AS/NZS HB62		Safe erection of steelwork
Heavy Engineering Research Association: HERA Report R4-99 "HERA specification for the fabrication, erection and surface treatment of structural steelwork"		

1.2 SHOP DRAWINGS

Supply 1 set of shop and erection drawings to the owner for review prior to fabrication.

1.3 SHOP DRAWINGS REVIEW

Shop drawings review indicates the design concept has been reviewed without the need for further modification. This does not relieve the contractor of any responsibility for the correctness of the shop drawings, site dimensions, or for ensuring the work is performed in compliance with the drawings and specifications.

1.4 REFER

Refer to drawings to ensure all required details and fixings are provided for in the structural steelwork. Verify dimensions against site measurements prior to fabrication.

1.5 TEST WELDING

Non-destructive test welding with method, extent and standards of acceptance to AS/NZS 1554.1, appendix F, with the suggested extent becoming the required extent.

2. PRODUCTS

2.1 STRUCTURAL STEEL

Comply with Australian, British and Japanese standards for steel as required by NZS 3404, part 1. Test and stress relieve for brittle fracture when required by NZS 3404, part 1, section 17. All steel Grade 300, except RHS sections Grade 350, unless noted otherwise on the drawings.

2.2 WELDING

Electrodes to comply with and be selected for the grade of steel being welded as required by AS/NZS 1554.1. Welding wire as required by the wire manufacturer for the materials to be joined and the welding position. Welding flux to be dry and used from sealed containers. Material for arc stud welding to comply with AS/NZS 1554.1.

2.3 BOLTS, NUTS AND WASHERS

To comply with NZS 3404, part 1, section 2.3. Hot dip galvanise all bolts, nuts and washers forming a permanent part of any structure subject to a protective coating to NZS/AS 1650.

2.4 PRIMER

Alkyd oil zinc chromate priming paint.

3. EXECUTION

3.1 SURFACE FINISH

Grind off all burrs and sharp arrises.

3.2 TOLERANCES

Discard material showing visual defects affecting its structural integrity. Structural elements to comply with NZS 3404, part 1 section 14.4 (straightness, full contact splices, length) and struts not prepared for full contact. Comply with the required tolerances laid down for holding down bolts, columns, beams and other members in HERA Report R4-99, sections 2.5, 4.5 and 5.6.

3.3 CUTTING

All cutting to comply with NZS 3404, part 1, clause 14.3.3 and HERA Report R4-99, sections 1.5 and 4.6. Hand cut only where machine cutting is not possible.

3.4 CONSTRUCT

Construct the steel structure as detailed and to NZS 3404, part 1, section 14 (fabrication) and part 1, section 15 (erection).

3.5 WELDING

Employ only qualified welders on the construction. Comply with NZS 3404, part 1, clause 14.3.4 and AS/NZS 1554.1. Comply with AS/NZS 1554.1 for guidance on welding inspection and quality control.

3.6 BOLTING

Comply with NZS 3404, part 1, clause 14.3.5 for sizes, alignment, finishing and punching of holes.

- 3.7 FASTENERS**
Bolts, nuts and washers to comply with AS/NZS 1111 and AS/NZS 1252. Bolting to comply with NZS 3404, part 1, clause 14.3
- 3.8 THREADS EXCLUDED FROM SHEAR PLANE**
Select length of bolts such that the threaded portion does not occur within the shear plane between joined parts.
- 3.9 START ERECTION**
Start erection only when the holding down bolts and anchorages have achieved sufficient strength. Carry out the erection of the structural steel to the requirements of AS/NZS HB62. Comply with NZBC acceptable solution F5 and NZS 3404, part 1, section 15. Provide temporary bracing as required to achieve stability during erection.
- 3.10 BASE PLATES**
Enlargement or site cutting of holes is not permitted. Bending or displacement of holding down bolts is not permitted.
- 3.11 COLUMNS**
Plumb columns using sawn steel packs and wedges not larger than necessary for the purpose. The column base must not be raised by more than 25mm. Fill space beneath the base plate with cement-sand grout, containing a non-shrink additive, the grout having minimum compressive strength of 30MPa at 28 days, or use a dry pack of 1:2 cement : sand mortar hammered in tight to ensure complete filling of space.
- 3.12 INSPECTION**
Inspect all stages of fabrication and construction of the structure to NZS 3404, part 1, sections 14 (fabrication) and 15 (erection).
- 3.13 GALVANISING**
Clean sections thoroughly and apply zinc coating to the requirements of NZS/AS 1650 to give a coating weight of not less than 60 grams per square metre.
- 3.14 ENCASED STEELWORK**
Clean the steelwork to be encased in concrete to remove all loose mill scale, rust, dirt and other matter affecting bond with concrete. Achieve this by wire brushing and the use of suitable solvents.
- 3.15 BRUSH CLEANING**
Remove oil and grease by the use of solvents. Scrape and power wire brush to bright metal. Avoid producing a polished surface. Ensure no burrs or sharp arrises remain which may prevent full coating thickness being attained. Prime immediately and paint as soon as practicable.
- 3.16 BLAST CLEANING**
Remove oil and grease by the use of solvents. Abrasive blast clean to bright metal. Select grit type and equipment such that the cleaned surface profile between peaks and valleys does not exceed one third of the dry film thickness. Ensure no burrs or sharp arrises remain which may prevent full coating thickness being attained. Prime immediately and paint as soon as practicable.
- 3.17 PRIMING**
After cleaning and grit blasting to bright metal in the workshop, unless noted otherwise coat all steelwork, with the specified priming paint. Patch prime on site after erection, using a compatible priming system.
- 3.18 UNPAINTED SURFACES**
Do not paint:
- facing face of bolted joints
- areas to be site welded, keeping 75mm clear all round
- surfaces to be embedded in concrete.
Where steel is only partly encased then extend priming 25mm maximum into the concrete encasement area
- 3.19 PATCH PRIMING**
Clean areas of damaged priming and areas left clear for site jointing to a standard comparable with that specified for shop cleaning. Wash off chemical deposits from welding fumes. Apply priming coats to the same standard as shop primers, ensuring thorough coating of bolts, nuts and connection areas. Reprime if more than 4 weeks elapse before the final coating system is applied.
- 3.20 COATING SYSTEMS**
Apply all coatings in accordance with the coating manufacturer's requirements. Apply coatings to steel within 4 hours of cleaning and before condensation or light rusting can occur. Steel to be dry and atmospheric conditions warm and dry, with an air temperature of greater than 12 degrees C and relative humidity less than 85%.
- 3.21 WELDING**
All touching or near-touching steelwork to be shop welded together all round with 5mm (one pass) continuous fillet welds unless denoted otherwise on the drawings.
- 3.22 TOUCH UP**
Touch up all primer. Apply protective coatings as specified.

3701 METALWORK

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:

NZS/BS 1387	Screwed and socketed steel tubes and tubulars and for plain end steel tubes suitable for welding c screwing to BS 21 pipe threads
AS/NZS 1554	Structural steel welding 1554.1 Welding of steel structures
AS 1566	Copper and copper alloys - Rolled flat products
AS 1567	Copper and copper alloys - Wrought rods, bars and sections
AS 1572	Copper and copper alloys - Seamless tubes for engineering purposes
AS 1594	Hot-rolled steel flat products
NZS/AS 1650	Hot-dipped galvanised coatings on ferrous articles
AS 1734	Aluminium and aluminium alloys - Flat sheet, coiled sheet and plate
AS 2105	Inorganic zinc silicate paint
AS 2204	Zinc-rich organic priming paint
NZS/BS 4848	Hot-rolled structural steel sections Part 2: Hollow sections Part 4: Equal and unequal a
BS 6265	Resistance seam welding of uncoated and coated low carbon steel
BS 6497	Powder organic coatings for application and stoving to hot-dip galvanised hot-rolled steel sections pre-formed steel sheet

1.2 QUALIFICATIONS

All work in this section to be carried out by qualified welders, experienced in working with the various metals.

1.3 FINISHES SAMPLES

Submit samples on request of finish offered.

2. PRODUCTS

2.1 STEEL SECTIONS

To be hot-rolled steel to NZS/BS 4848, part 4.

2.2 HOLLOW STEEL SECTIONS

To be hot steel rolled to NZS/BS 4848, part 2.

2.3 COPPER SECTIONS

To be plates/flat bars/square bars/rods/engineering tube respectively 122/110-147/110/110/122 alloys.

2.4 ALUMINIUM SECTIONS

Plates/tubes/square tubes/flat bars/square bars/rods/angles/channels and sections.

2.5 BRASS SECTIONS

To be plates/flat bars/square bars/round - hexagon rods/tubes/angles/channels complying with AS 1566, AS 1567 and AS 1572.

2.6 GALVANISED STEEL PIPE

Medium gauge galvanised steel pipe to NZS/BS 1387 with plain ends, complete with galvanised and bolted couplings

2.7 STEEL PIPE

Medium gauge black steel pipe to NZS/BS 1387, with plain ends.

2.8 STEEL FLAT

To be hot-rolled sheet/strip to AS 1594.

2.9 COPPER SHEET AND STRIP

To be sheet/strip alloy phosphorus deoxidised non-arsenical

2.10 ALUMINIUM SHEET AND STRIP

To be anodised/plain finish sheet/strip complying with AS 1734.

2.11 BRASS SHEET AND STRIP

To be sheet/strip cold rolled 70/30 copper size alloy cartridge brass to AS 1566

2.12 GALVANISING

After fabrication completely remove all surface contaminants and hot-dip galvanise to NZS/AS 1650. Minimum coating weight
610 grams/m²

2.13 ZINC SPRAY

After fabrication completely remove all surface contaminants and hot-wire zinc spray

2.14 STEEL PRIMER

2 pot anti-corrosion etch primer to AS 2204, or inorganic zinc silicate to AS 2105

2.15 EXTERNAL ORGANIC COATING

Polycster exterior grade coating to BS 6497

- 3. EXECUTION**
- 3.1 CORNERS**
Unless specified otherwise, mitre junctions of identical sections.
- 3.2 HOLES**
Form without distortion of surrounding metal.
- 3.3 PREPARATION FOR WELDING**
Remove grease, dirt, moisture and oxide from edges to be welded. Remove scale and residue from arc and power cutting by machining or hand grinding.
Ensure accurate fit using clamps and jigs where practical. Use tack welds for temporary attachment where jigging is not practical.
- 3.4 WELD QUALITY**
Make joints with parent and weld metal fully fused throughout with no inclusions, holes, porosity or cracks.
Prevent weld spatter falling on surfaces of materials which will be self finished and visible in completed work. Ensure complete removal of flux residues and slag.
Butt welds which will be visible in completed work to be ground smooth and flush with adjacent surfaces.
- 3.5 WELDING STEEL**
To be by one of the following methods:
- gas welding
- metal-arc welding to AS/NZS 1554.1 for mild steel
- seam welding to BS 6265
- other methods subject to approval.
- 3.6 BRASS**
Join brass sections using one of the following methods:
- Brazing
- Eazyflo
- Other methods subject to approval.
- 3.7 COPPER**
Join copper sections using one of the following methods:
- Eazyflo
- Soft-solder
- Other methods subject to approval.
- 3.8 PREPARATION FOR COATINGS**
Before applying coatings remove all welding slag, weld spatter, anti-splatter compounds, paints, grease, flux, rust, burrs and sharp arrises. Make good all defects which would show after application of coating. Finish surfaces smooth.
- 3.9 CLEANING**
Remove all burrs and sharp arrises which would be visible after fixing, or which could be a hazard to the user.
- 3.10 PRIMING STEEL**
After fabrication of steel completely remove all surface contaminants and coat with a 2 pot anti-corrosion etch primer
- 3.11 HANDLING**
Avoid distortion of elements during transit, storage and handling. Prevent pre-finished surfaces rubbing together, and any contact with mud, plaster or cement. Keep protective coverings dry.
- 3.12 SUBSTRATE**
Ensure location and substrate is ready to receive the elements and will allow work of the required standard
- 3.13 INSTALLATION**
Locate plugs accurately and use in accordance with the metalwork manufacturer's requirements. Fix to comply with the specified standards and installation details, including bedding compounds and sealants, and with all work plumb, level and true to line
- 3.14 MOVING PARTS**
When assembled, all moving parts to move freely and without binding
- 3.15 ENSURE**
Ensure all elements are free of marks or blemishes
- 3.16 REPLACE**
Replace any damaged, cracked or marked elements
- 3.17 LEAVE**
Leave all work to the standard required for all following trades

3801 CARPENTRY

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:

AS/NZS 1748	Mechanically stress-graded timber	
AS/NZS 1859	Reconstituted wood based panels	1859.1 Particle board
AS/NZS 2269	Plywood - structural	
NZS 3602	Specifying timber and wood-based products for use in building	
NZS 3603	Timber structures standard	
NZS 3604	Timber frame buildings	
NZS 3606	Manufacture of glue-laminated timber	
NZS 3631	NZ national timber grading rules	
NZMP 3640	Minimum requirements of the NZ Timber Preservation Council Inc.	
BRANZ Bulletin 328:	Selection and use of fasteners	
BRANZ Bulletin 343:	Moisture in timber	
BRANZ Bulletin 357:	Thermal insulation of houses	
BRANZ Bulletin 368:	Preventing moisture problems in timber framed skillion roofs	

2. PRODUCTS

2.1 BUILDING PAPER

Breather type kraft paper laminates.

2.2 ALUMINIUM FOIL

Aluminium sheet, kraft paper fibre reinforced laminates.

2.3 GLASS FIBRE INSULATION

Interleaved glass fibre quilt in block form.

2.4 FOIL-FACED INSULATION

Foil faced glass fibre quilt in roll form.

2.5 NATURAL WOOL INSULATION

Natural wool insulation blanket in roll form blended with polyester.

2.6 POLYESTER INSULATION

Polyester insulation blanket in roll form.

2.7 POLYSTYRENE INSULATION

Polystyrene, closed cell, in panel form.

2.8 TIMBER FRAMING GENERALLY.

Species, grade and level of treatment as set out in NZS 3602. Grading to NZS 3631 and treated to NZMP 3640. Mechanical stress grading to be acceptable as an alternative to visual grading.

2.9 TIMBER FRAMING DRY, CHEMICAL FREE, MECHANICALLY STRESS GRADED

Species, grade and moisture content in service as set out in NZS 3602. Machine stress graded to AS/NZS 1748, with an average moisture content at supply of 16% or less.

2.10 TIMBER FRAMING DRY, TREATED

Species, grade and moisture content in service as set out in NZS 3602. Treated H1 to NZMP 3640, with an average moisture content at supply of 16% or less. Either mechanically stress graded to AS/NZS 1748, or visual grading to NZS 3631.

2.11 EXTERIOR TIMBER WALL BATTENS

Grading to NZS 3631 and treated to H3 as required by NZS 3604, clause 11.8.9.

2.12 CEILING BATTENS

Species, grade, moisture content in service and level of treatment as set out in NZS 3602. Grading to NZS 3631 and treated to NZMP 3640.

2.13 LAMINATED TIMBER

Radiata pine laminations to NZS 3606, table 1; treated as required by NZS 3602, to the requirements of NZMP 3640, with special attention to section 4 "Requirements and advisory notes." Supply weather resistant sealed.

2.14 TIMBER STRIP FLOORING

Dressing grade to NZS 3631, section 4.4. H1 treated to NZMP 3640.

- 2.15 **PARTICLE BOARD FLOORING**
Flooring grade high density resin bonded to AS/NZS 1859.1.
- 2.16 **PLYWOOD**
Structural plywood to AS/NZS 2269 for bracing, bracketing, sarking and floors.
- 2.17 **COMPRESSED FIBRE CEMENT SHEET FLOORING**
18mm thick high density sheet of Portland cement, fine sand, cellulose fibre and water, with a smooth finish both sides.
- 2.18 **HARDWOOD SPACED BOARDING FOR EXTERIOR DECKS**
Plantation-grown hardwood. Dressed four sides and with arrises removed. Provide a timber sample for approval prior to laying.
- 2.19 **SOFTWOOD SPACED BOARDING FOR EXTERIOR DECKS**
Selected radiata pine, treated to H3 to NZMP 3640, sections 8.6 and 9.3. Dressed four sides and with arrises removed. Provide a timber sample for approval prior to laying.
- 2.20 **DAMP-PROOF COURSE**
2-ply/3-ply kraft felt strip saturated and coated with bitumen.
- 2.21 **NAILS**
Steel, stainless steel and galvanised steel of pattern to suit the location and to BRANZ Bulletin 328 "Selection and use of fasteners."
- 2.22 **BOLTS AND SCREWS**
Steel, stainless steel and galvanised steel of pattern to suit the location and to BRANZ Bulletin 328 "Selection and use of fasteners."
- 2.23 **NAIL PLATES**
Stainless steel and/or galvanised steel toothed or nailed plates to the plate manufacturer's design for the particular locations as shown on the drawings.
- 2.24 **CONNECTORS**
Galvanised steel connectors and structural brackets to the connector manufacturer's design for particular locations shown on drawings.
- 3. EXECUTION**
- 3.1 **ATTENDANCE**
Provide and fix blocks, nogs, openings and other items as required by other trades.
- 3.2 **MOISTURE CONTENT**
Maximum allowable equilibrium moisture content (EMC) in accordance with BRANZ Bulletin 343 for framing supporting internal linings:
- | | <u>EMC</u> |
|---|------------|
| - Framing at erection | 24% |
| - Framing at enclosure | 20% |
| - Framing at lining | 16% |
| - Timber strip flooring (at time of laying) | 10% |
- 3.3 **GENERALLY**
To NZS 3603 and 3604 except as varied in this specification. Execution to include those methods, practices and processes contained in the unit standards for the National Certificate in Carpentry and the National Certificate in Joinery (cabinetry, exterior joinery, stairs).
- 3.4 **DIMENSIONS**
All timber sizes are nominal sizes.
- 3.5 **SET OUT**
Set out framing in accordance with the requirements of NZS 3604 and as required to support sheet linings and claddings.
- 3.6 **SUB-FLOOR FRAMING**
Frame up off foundation walls and piles, all fabricated, fastened and braced to NZS 3604 section 6.10.
- 3.7 **FLOOR FRAMING**
Framed and fastened to NZS 3604, section 7.
- 3.8 **WALL FRAMING**
Frame to required loading and bracing complete with lintels, sills and nogs, all fabricated and fastened to NZS 3604 section 8.

- 3.9 ROOF FRAMING**
Frame to required loading and bracing complete with valley boards, ridge boards and purlins. Design and fit roof trusses complete with anchorage. All fabricated and fastened to NZS 3604, sections 9 and 10.
- 3.10 INSTALLING WALL BATTENS**
Lay out, fabricate and fasten to suit the selected wall cladding or lining.
- 3.11 INSTALLING CEILING BATTENS**
Fabricate and fasten in accordance with NZS 3604, section 13.
- 3.12 INSTALLING PERFORATED FOIL FLOOR UNDERLAY**
Lay and secure to the underlay manufacturer's requirements and to BRANZ Bulletin 357 "Thermal insulation of houses."
- 3.13 INSTALLING BUILDING PAPER DECK UNDERLAY**
Lay and secure in accordance with BRANZ Bulletin 368 "Preventing moisture in timber framed skillion roofs."
- 3.14 INSTALLING INSULATION**
Lay and fit insulation as detailed, to the insulation manufacturer's requirements, and to the requirements of BRANZ Bulletin 357 "Thermal insulation of houses."
- 3.15 LAYING TIMBER STRIP FLOORING**
Lay, cramp and fasten to NZS 3604, section 7.2.2. Punch nails, fill holes, then sand off with one coarse and one fine paper, hand sanding into corners.
- 3.16 LAYING PARTICLE BOARD FLOORING**
Lay and fasten to the flooring manufacturer's requirements and NZS 3604, section 7.2.3. Punch nails, fill holes, then sand with one coarse and one fine paper, hand sanding into corners.
- 3.17 LAYING PLYWOOD SARKING AND FLOORING**
Lay and countersink screw fix to the plywood manufacturer's requirements and to NZS 3604, section 7.2.3.
- 3.18 LAYING COMPRESSED FIBRE CEMENT SHEET FLOORING**
Set out and countersink screw fix through pre-drilled holes strictly in accordance with the flooring manufacturer's requirements and NZS 3604, section 7.
- 3.19 LAYING HARDBOARD UNDERLAY**
Punch existing floor fixings and course sand level. Lay underlay with joints staggered, with a 1mm gap between sheets and a 2mm gap at all perimeters. Use 18mm divergent staples at 100mm centres throughout the whole sheet and 30mm apart, 18mm in from the edges of the sheets. Punch staples below the surface and sand joints level.
- 3.20 LAYING FIBRE CEMENT UNDERLAY**
Punch existing floor fixings and course sand level. Set out and fix strictly in accordance with the underlay manufacturer's requirements, using 25mm x 2.5mm annular-threaded underlay nails. Drive heads flush with the sheet surface.
- 3.21 LAYING TIMBER SPACED BOARDING FOR EXTERIOR DECKS**
Confirm with the owner whether the grooved side of the boards are to be face up or face down. Avoid excessively short or long lengths, drill for all fixings, stagger end joints and space boards a maximum of 2mm apart. Fix using annular grooved galvanised jolt head nails, heads driven flush with the board surface.
- 3.22 LEAVE**
Leave all work to the standard required by all following trades.

3801L LASERFRAME CARPENTRY

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:

ASNZS 1748	Mechanically stress-graded timber	
AS/NZS 1859	Reconstituted wood based panels	1859.1 Particle board
AS/NZS 2269	Plywood - structural	
NZS 3602	Specifying timber and wood-based products for use in building	
NZS 3603	Timber structures standard	
NZS 3604	Timber frame buildings	
NZS 3606	Manufacture of glue-laminated timber	
NZS 3631	NZ national timber grading rules	
NZMP 3640	Minimum requirements of the NZ Timber Preservation Council Inc.	

Laserframe product information:

Laserframe technical information
 Instruction manual
 Stud design tables
 Construction information sheets

BRANZ Bulletin 328: Selection and use of fasteners

BRANZ Bulletin 343: Moisture in timber

BRANZ Bulletin 357: Thermal insulation of houses

BRANZ Bulletin 368: Preventing moisture problems in timber framed skillion roofs

2. PRODUCTS

2.1 BUILDING PAPER

Breather type kraft paper laminates.

2.2 ALUMINIUM FOIL INSULATION

Aluminium sheet, kraft paper fibre reinforced laminates.

2.3 GLASS FIBRE INSULATION

Interleaved glass fibre quilt in block form.

2.4 FOIL-FACED INSULATION

Foil faced glass fibre quilt in roll form.

2.5 NATURAL WOOL INSULATION

Natural wool insulation blanket in roll form blended with polyester.

2.6 POLYESTER INSULATION

Polyester insulation blanket in roll form.

2.7 POLYSTYRENE INSULATION

Polystyrene, closed cell, in panel form.

2.8 TIMBER SUB-FLOOR FRAMING

Species, grade, moisture content in service and level of treatment as set out in NZS 3602 Grading to NZS 3631 and treated to NZMP 3640

2.9 TIMBER FRAMING, CHEMICAL FREE

Laserframe kiln dried, machine stress graded to AS/NZS 1748, radiata pine with an average moisture content at supply of 16% or less.

2.10 TIMBER FRAMING, TREATED

Laserframe kiln dried, machine stress graded to AS/NZS 1748, treated to H1 NZMP 3640, radiata pine with an average moisture content at supply of 16% or less.

2.11 EXTERIOR TIMBER WALL BATTENS

Grading to NZS 3631 and treated to H3 as required by NZS 3604, section 11.8.9

2.12 CEILING BATTENS

Laserframe kiln-dried radiata pine ceiling battens, with an average moisture content at supply of 16% or less

2.13 LAMINATED TIMBER

Radiata pine laminations to NZS 3606, table 1; treated as required by NZS 3602, to the requirements of NZMP 3640, with special attention to section 4 "Requirements and advisory notes." Supply weather resistant sealed

- 2.14 **TIMBER TRUSSES, CHEMICAL FREE**
Moisture content at supply: 16%
- 2.15 **TIMBER STRIP FLOORING**
Dressing grade to NZS 3631, section 4.4. H1 treated to NZMP 3640.
- 2.16 **PARTICLE BOARD FLOORING**
Flooring grade high density resin bonded to AS/NZS 1859.1.
- 2.17 **PLYWOOD**
Structural plywood to AS/NZS 2269 for bracing, bracketing, sarking and floors.
- 2.18 **COMPRESSED FIBRE CEMENT SHEET FLOORING**
18mm thick high density sheet of Portland cement, fine sand, cellulose fibre and water, with a smooth finish both sides.
- 2.19 **HARDWOOD SPACED BOARDING FOR EXTERIOR DECKS**
Plantation-grown hardwood. Dressed four sides and with arrises removed. Provide a timber sample for approval prior to laying
- 2.20 **SOFTWOOD SPACED BOARDING FOR EXTERIOR DECKS**
Selected radiata pine, treated to H3 to NZMP 3640, sections 8.6 and 9.3. Dressed four sides and with arrises removed. Provide timber sample for approval prior to laying
- 2.21 **DAMPPROOF COURSE**
2-ply/3-ply kraft felt strip saturated and coated with bitumen.
- 2.22 **NAILS**
Steel, stainless steel and galvanised steel of pattern to suit the location and to BRANZ Bulletin 328 "Selection and use of fasteners". For Laserframe, to type, size and number for each of the particular types of joint as laid down in NZS 3604, section 4, 6, 7, 8, 9 and 10: Nailing schedule, table 1A. Except that 75 x 3.15 nails may be used in wall frames in lieu of 100 x 3.75 nail: avoid splitting the timber.
- 2.23 **BOLTS AND SCREWS**
Steel, stainless steel and galvanised steel of pattern to suit the location and to BRANZ Bulletin 328 "Selection and use of fasteners."
- 2.24 **NAIL PLATES**
Stainless steel and/or galvanised steel toothed or nailed plates to the plate manufacturer's design for the particular locations as shown on the drawings.
- 2.25 **CONNECTORS**
Galvanised steel connectors and structural brackets to the connector manufacturer's design for particular locations shown on drawings.
- 3. EXECUTION**
- 3.1 **PROTECT**
Keep Laserframe dry and wrapped prior to erection. Protect against damage and from inclement weather and ensure that any variation in moisture content is kept to a minimum, before and after erection and before enclosure
- 3.2 **GENERALLY**
To NZS 3602 and NZS 3604 and the Laserframe Instruction Manual and stud design tables, except as varied in this specification. Execution to include those methods, practices and processes contained in the unit standards for the National Certificate in Carpentry and the National Certificate in Joinery (cabinetry, exterior joinery, stairs)
- 3.3 **ATTENDANCE**
Provide and fix blocks, nogs, openings and other items as required by other trades
- 3.4 **MOISTURE CONTENT**
Maximum allowable equilibrium moisture content (EMC) in accordance with BRANZ Bulletin 343 for framing supporting internal linings
- | | EMC |
|---|-----|
| - Framing at erection | 24% |
| - Framing at enclosure | 20% |
| - Framing at lining | 16% |
| - Timber strip flooring (at time of laying) | 10% |
- 3.5 **DIMENSIONS**
All Laserframe timber sizes are actual sizes

- 3.6 SET OUT**
Set out framing in accordance with the requirements of NZS 3604 and as required to support sheet linings and claddings. Follow the Laserframe construction information sheets when setting out 35mm wide studs for claddings and linings and at all bracing panels.
- 3.7 NAIL JOINTS**
For Laserframe, 75 x 3.15 nails may be used in lieu of 100 x 3.75 nails in wall frames. Where splitting could occur, pre-drill to 80% of nail diameter.
- 3.8 SUB-FLOOR FRAMING**
Frame up off foundation walls and piles, all fabricated, fastened and braced to NZS 3604, sections 6.10.
- 3.9 FLOOR FRAMING**
Framed and fastened to NZS 3604, section 7.
- 3.10 WALL FRAMING**
Frame to required loading and bracing complete with lintels, sills and nogs, all fabricated and fastened to NZS 3604, section 8.
- 3.11 ROOF FRAMING**
Frame to required loading and bracing complete with valley boards, ridge boards and purlins. Design and fit roof trusses complete with anchorage. All fabricated and fastened to NZS 3604, sections 9 and 10.
- 3.12 INSTALLING WALL BATTENS**
Lay out, fabricate and fasten to suit the selected wall lining.
- 3.13 INSTALLING CEILING BATTENS**
Fabricate and fasten in accordance with NZS 3604, section 13.
- 3.14 INSTALLING PERFORATED FOIL FLOOR UNDERLAY**
Lay and secure to the underlay manufacturer's requirements and to BRANZ Bulletin 357 "Thermal insulation of houses."
- 3.15 INSTALLING BUILDING PAPER DECK UNDERLAY**
Lay and secure in accordance with BRANZ Bulletin 368 "Preventing moisture in timber framed skillion roofs."
- 3.16 INSTALLING INSULATION**
Lay and fit insulation as detailed, to the insulation manufacturer's requirements, and to the requirements of BRANZ Bulletin 357 "Thermal insulation of houses."
- 3.17 LAYING TIMBER STRIP FLOORING**
Lay, cramp and fasten to NZS 3604, section 7.2.2. Punch nails, fill holes, then sand off with one coarse and one fine paper, hand sanding into corners.
- 3.18 LAYING PARTICLE BOARD FLOORING**
Lay and fasten to the flooring manufacturer's requirements and NZS 3604, section 7.2.3. Punch nails, fill holes, then sand with one coarse and one fine paper, hand sanding into corners.
- 3.19 LAYING PLYWOOD SARKING AND FLOORING**
Lay and countersink screw fix to the plywood manufacturer's requirements and to NZS 3604, section 7.2.3.
- 3.20 LAYING COMPRESSED FIBRE CEMENT SHEET FLOORING**
Set out and countersink screw fix through pre-drilled holes strictly in accordance with the flooring manufacturer's requirements NZS 3604, section 7.
- 3.21 LAYING HARDBOARD UNDERLAY**
Punch existing floor fixings and course sand level. Lay underlay with joints staggered, with a 1mm gap between sheets and a 2mm gap at all perimeters. Use 18mm divergent staples at 100mm centres throughout the whole sheet and 30mm apart, 18mm in from the edges of the sheets. Punch staples below the surface and sand joints level.
- 3.22 LAYING FIBRE CEMENT UNDERLAY**
Punch existing floor fixings and course sand level. Set out and fix strictly in accordance with the underlay manufacturer's requirements, using 25mm x 2.5mm annular-threaded underlay nails. Drive heads flush with the sheet surface.
- 3.23 LAYING TIMBER SPACED BOARDING FOR EXTERIOR DECKS**
Confirm with the owner whether the grooved side of the boards are to be face up or face down. Avoid excessively short or long lengths, drill for all fixings, stagger end joints and space boards a maximum of 2mm apart. Fix using annular grooved galvanneal jolt head nails, heads driven flush with the board surface.
- 3.24 LEAVE**
Leave all work to the standard required by all following trades.

4201 CLADDING

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:

NZBC	E2/AS1	External moisture	2.1 Timber weatherboards
AS/NZS 1491		Finger jointed structural timber	
AS/NZS 2269		Plywood - Structural	
NZS/AS 2908		Cellulose-cement products	2908.2 Flat sheets
NZS 3602		Specifying timber and wood-based products for use in building	
NZS 3604		Timber frame buildings	
NZS 3611		Exterior plywood	
NZS 3617		Profiles of weatherboards fascia boards and flooring	
NZS 3631		NZ national timber grading rules	
NZMP 3640		Minimum requirements of the NZ Timber Preservation Council	
NZS 4214		Methods of determining the total thermal resistance of parts of	buildings
BRANZ Bulletin 284: Sealed joints in external claddings - 2. Sealants			
BRANZ Bulletin 304: Flashing design			
BRANZ Bulletin 305: Domestic flashing installation			
BRANZ Bulletin 326: Cladding buildings on exposed sites			
BRANZ Bulletin 328: Selection and use of fasteners			
BRANZ Bulletin 343: Moisture in timber			

2. PRODUCTS

2.1 BUILDING PAPER

Breather type kraft paper laminates.

2.2 WOOD FIBRE SUB-SHEATHING

Low density insulating board, 10.5mm thick and faced with bitumen emulsion.

2.3 FIBRE CEMENT SUB-SHEATHING

Treated cellulose fibre in a matrix of cement and sand autoclaved sheet, 4.5mm thick, tinted.

2.4 PLYWOOD

Structural plywood to AS/NZS 2269.

2.5 PLYWOOD CLADDING

Rotary cut radiata pine veneer ply sheet to NZS 3611 treated H3.

2.6 TIMBER WEATHERBOARD

Dressing grade to NZS 3631, to NZS 3617 for profile and to NZS 3602 for selection.

2.7 FIBRE-CEMENT WEATHERBOARD

Cellulose cement autoclaved sheets to NZS/AS 2908.2.

2.8 FIBRE CEMENT SHEET CLADDING

Cellulose cement autoclaved sheets to NZS/AS 2908.2.

2.9 FIBRE-CEMENT SOFFIT LINING

Cellulose cement autoclaved sheets to AS/NZS 2908.2.

2.10 TIMBER FASCIAS AND BARGE BOARDS

Dressing grade to NZS 3631 and H3 treated to NZMP 3640. Finger jointed timber to AS/NZS 1491

2.11 EXTERIOR FINISHING TIMBER

2.12 PVC JOINTERS

To suit sheet thickness.

2.13 NAILS, SCREWS AND FASTENINGS

Steel, stainless steel and galvanised steel of pattern to suit location and to BRANZ Bulletin 328 "Selection and use of fasteners"

3. EXECUTION

3.1 MOISTURE CONTENT

Maximum allowable equilibrium moisture content (EMC) in accordance with BRANZ Bulletin 343 for

-	Framing at enclosure	<u>EMC</u> 20%
-	Weatherboards (at time of fixing)	14%
-	Exterior joinery and trim	14%

- 3.2 GENERALLY**
To NZS 3604 except as varied in this specification. Execution to include those methods, practices and processes contained in the unit standards for the National Certificate in Carpentry and the National Certificate in Joinery (cabinetry, exterior joinery, stairs)
- 3.3 FIX BUILDING PAPER**
Fix breather type building paper to NZS 4214, as detailed and to the sheathing manufacturer's requirements.
- 3.4 INSTALL WOOD FIBRE SUB-SHEATHING**
Fix to framing to the sub-sheathing manufacturer's requirements. Seal all ends and edges. Prime backs of sheets before fixing.
- 3.5 INSTALL FIBRE CEMENT SUB-SHEATHING**
Fix strictly in accordance with the sub-sheathing manufacturer's requirements, including expansion joints and control joints as required. Liaise with the solid plasterer regarding the timing of fixing the building paper overlay. Install overlay in accordance with the sub-sheathing manufacturer's and the plasterer's requirements.
- 3.6 INSTALL PLYWOOD**
Fix to framing to the plywood manufacturer's requirements and to BRANZ Bulletin Number 326 "Cladding buildings on exposed sites."
- 3.7 INSTALL PLYWOOD CLADDING**
Fix to framing to the cladding manufacturer's requirements and to BRANZ Bulletin 326 "Cladding buildings on exposed sites."
- 3.8 PRIME OR SEAL**
Prime or seal all front and back faces, edges and end grain before fixing of all weatherboards and exterior trim, to the finish and quality specified in 6701 PAINTING AND PAPERHANGING.
- 3.9 INSTALL TIMBER WEATHERBOARDS**
Fix to framing, level, true to line and face, to NZBC acceptable solution E2/AS1, 2.1, to NZS 3604, sections 11.5.2 and to BRANZ Bulletin 326 "Cladding buildings on exposed sites."
- 3.10 INSTALL FIBRE CEMENT WEATHERBOARDS**
Fix to framing to the weatherboard manufacturer's requirements and to BRANZ Bulletin 326 "Cladding buildings on exposed sites."
- 3.11 INSTALL FIBRE CEMENT SHEET CLADDING**
Fix to timber framing to detail and to the cladding manufacturer's requirements and to BRANZ Bulletin 326 "Cladding buildings on exposed sites."
- 3.12 INSTALL FIBRE CEMENT SOFFITS**
Cut sheets dry and scribe fit to fully support all edges and joints. Nail and drill for and insert fasteners to the sheet manufacturer's requirements. Fit complete with jointers and capping moulds.
- 3.13 INSTALL EXTERIOR TIMBER FINISHINGS**
Fix timber fascias, barge boards, facings, beads, trim and enclosures level, true to line and face, with all end grain sealed and join mitred.
- 3.14 INSTALL FLASHINGS**
Fix flashings, covers and soakers as detailed and to BRANZ Bulletins 304 "Flashing design" and 305 "Domestic flashing installation."
- 3.15 USE OF SEALANTS**
Selection and use of sealants to follow BRANZ Bulletin 284 "Sealed joints in external claddings - 2 Sealants"
- 3.16 LEAVE**
Leave all work to the standard required by all following trades

4201H JAMES HARDIE CLADDING

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:

NZS/AS 2908	Cellulose-cement products	2908.2 Flat sheets
NZS 3602	Timber and wood-based products for use in building	
NZS 3604	Light timber frame buildings not requiring specific design	
NZS 4214	Methods of determining the total thermal resistance of parts of buildings	
BRANZ appraisal certificate 229: James Hardie wall bracing systems		
BRANZ Bulletin 284: Sealed joints in exterior claddings - 2. Sealants		
BRANZ Bulletin 304: Flashing design		
BRANZ Bulletin 305: Domestic flashing installation		

1.2 JAMES HARDIE DOCUMENTS

James Hardie documents that relate to work in this section are:

- Harditex™ Technical
 - Harditex™ Selling
 - Harditex™ Premium Selling
 - Harditex™ BRANZ appraisal certificate 243
 - Hardibacker® Technical
 - Hardibacker® BRANZ appraisal certificate 240
 - Hardiflex® Technical
 - Hardiflex® Selling
 - Hardiflex® BRANZ appraisal certificate 242
 - James Hardie Weatherboards Technical
 - James Hardie Weatherboards Selling
 - James Hardie Weatherboards BRANZ appraisal certificate 241
 - James Hardie Soffits Technical
 - James Hardie Soffits Selling
 - BRANZ Appraisal Certificate 229: James Hardie wall bracing systems
- Copies of the above literature are available by phoning the James Hardie Helpline on 0800 808 868.

2. PRODUCTS

2.1 BUILDING PAPER

Breather type kraft paper laminates.

2.2 GENERALLY

James Hardie fibre cement sheets to comply with NZS/AS 2908.2.

2.3 HARDIBACKER® SUBSTRATE PANELS

Treated cellulose fibre in a matrix of cement and sand autoclaved sheet, 4.5mm thick, tinted blue.

2.4 HARDIFLEX® CLADDING PANELS

Treated cellulose fibre in a matrix of cement and sand autoclaved sheet.

2.5 HARDITEX™ FLUSH CLADDING SYSTEM

Treated cellulose fibre in a matrix of cement and sand autoclaved sheet, with rebated joints both sides and one edge, oxide tint pink.

2.6 JAMES HARDIE WEATHERBOARDS

Treated cellulose fibre in a matrix of cement and sand, formed into boards and cured by autoclaving.

2.7 HARDISOFFIT™ SOFFIT PANELS

Treated cellulose fibre in a matrix of cement and sand autoclaved sheet with an unsanded finish.

2.8 SILKLINE™ SOFFIT PANELS

Treated cellulose fibre in a matrix of cement and sand autoclaved sheet, pre-painted in off-white.

2.9 VILLABOARD® FLUSH FINISH PROTECTED SOFFIT PANELS

Treated cellulose fibre in a matrix of cement and sand autoclaved sheet, sealed one side.

2.10 HARDIFLEX® SOFFIT PANELS

Treated cellulose fibre in a matrix of cement and sand autoclaved sheet with an unsanded finish.

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2.6 JAMES HARDIE WEATHERBOARDS

Treated cellulose fibre in a matrix of cement and sand, formed into boards and cured by autoclaving.

2.7 HARDISOFFIT™ SOFFIT PANELS

Treated cellulose fibre in a matrix of cement and sand autoclaved sheet with an unsanded finish.

2.8 SILKLINE™ SOFFIT PANELS

Treated cellulose fibre in a matrix of cement and sand autoclaved sheet, pre-painted in off-white.

2.9 VILLABOARD® FLUSH FINISH PROTECTED SOFFIT PANELS

Treated cellulose fibre in a matrix of cement and sand autoclaved sheet, sealed one side.

2.10 HARDIFLEX® SOFFIT PANELS

Treated cellulose fibre in a matrix of cement and sand autoclaved sheet with an unsanded finish.

- 3.6 SUBSTRATE FOR JAMES HARDIE PRODUCTS**
Do not commence work until the substrate is of the standard required by relevant James Hardie technical literature for the specific finish; plumb, level and in true alignment. Moisture content of timber framing to comply with NZS 3602 moisture content maximums, to minimise shrinkage and movement after sheets are fixed.
- 3.7 THERMAL BREAK WITH JAMES HARDIE PRODUCTS**
Install thermal break to steel framing, strictly in accordance with relevant James Hardie technical literature.
- 3.8 INSTALLING JAMES HARDIE PRODUCTS**
Install in accordance with relevant James Hardie technical literature. Refer to the JAMES HARDIE DOCUMENTS clause. Retain current copies of all relevant James Hardie publications on site and ensure that all installers are familiar with requirements for preparation, fixing and finishing James Hardie cladding products and accessories.
- 3.9 FIRE RESISTANCE RATING JAMES HARDIE PRODUCTS**
Form fire resistance ratings using James Hardie fibre cement sheets, in accordance with James Hardie technical literature.
- 3.10 BRACING SYSTEM JAMES HARDIE PRODUCTS**
Fix sheets in accordance with relevant James Hardie technical literature and BRANZ appraisal certificate 229.
- 3.11 INSTALL HARDIBACKER® SUBSTRATE PANELS**
Set out panels with all joints fully supported. Fix in accordance with relevant James Hardie technical literature, including expansion joints and control joints as required. Liaise with the solid plasterer regarding the timing of fixing the building paper overlay. Install overlay in accordance with relevant James Hardie technical literature.
- 3.12 INSTALL HARDIFLEX® CLADDING PANELS**
Cut sheets dry, form holes and work sheets in accordance with relevant James Hardie technical literature. Cover framing with building paper to James Hardie requirements. Fit and nail sheets to all framing, with all joints fully supported, progressively installing PVC jointers to vertical joints, PVC flashings to horizontal joints and capping moulds to any exposed edges.
- 3.13 INSTALL HARDITEX™ FLUSH CLADDING SYSTEM**
Cut sheets dry, form holes and work sheets to relevant James Hardie technical literature. Cover framing with building paper to NZS 3604. Fit butynol rubber sealing strips behind control joints before scribe fitting and nailing sheets to all framing. Fit control joints at 5.4 metre maximum centres horizontally and vertically and at inter-storey floor joist level, with vertical structural expansion joints at 14.4 metre centres. Finalise location and form of control and expansion joints on site before commencing cladding work.
- 3.14 INSTALL JAMES HARDIE WEATHERBOARDS**
Establish a level line and assess the number of boards required, allowing a minimum overlap of 30mm. Fix boards strictly in accordance with relevant James Hardie technical literature, fixing to each stud by fastening through both thicknesses of boards 20mm up from the underside of the lap. Install external and internal corner moulds, soakers and cappings as detailed and as required.
- 3.15 INSTALL HARDISOFFIT™ SOFFIT PANELS**
Cut sheets dry and scribe fit to fully support all edges and joints. Nail and drill for and insert PVC fasteners to relevant James Hardie technical literature. Fit complete with colour matched jointers and capping moulds.
- 3.16 INSTALL SILKLINE™ SOFFIT PANELS**
Cut sheets dry and scribe fit to fully support all edges and joints. Nail and drill for and insert PVC fasteners. Fit complete with colour matched jointers and capping moulds. Refer to relevant James Hardie technical literature.
- 3.17 INSTALL VILLABOARD® FLUSH FINISH PROTECTED SOFFIT PANELS**
Cut sheets dry, and scribe fit to fully support all edges and joints. Fit expansion joints to limit finished areas to 9 metres x 6 metres. Flush joints with bedding compound, paper reinforcing tape and finishing compound to flush width of 150mm. Refer to relevant James Hardie technical literature.
- 3.18 INSTALL HARDIFLEX® SOFFIT PANELS**
Cut sheets dry and scribe fit to fully support all edges and joints. Nail and drill for and insert PVC fasteners. Fit complete with jointers and capping moulds. Refer to relevant James Hardie technical literature.
- 3.19 INSTALL EXTERIOR TIMBER FINISHINGS**
Fix timber fascias, barge boards, facings, beads, trim and enclosures level, true to line and face, with all end grain sealed and jointed.
- 3.20 FIX FLASHINGS**
Fix flashings, covers and soakers as detailed and to BRANZ Bulletins 304 "Flashing design" and 305 "Domestic flashing installation."

3.21 USE OF SEALANTS

Selection and use of sealants to follow BRANZ Bulletin 284 "Sealed joints in external claddings - 2. Sealants."

3.22 LEAVE

Leave all work to the standard required by all following trades.

4301 ROOFING

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:

NZBC	E2/AS1	External moisture	1.0 Roofs
NZS/AS 1397		Steel sheet and strip - hot-dipped, zinc-coated, or aluminium/zinc-coated	
NZS 3403		Hot-dipped galvanised corrugated steel sheet for building purposes	
NZS 3602		Timber and wood-base products for use in building	
NZS 3604		Timber frame buildings	
NZMP 3640		Minimum requirements of the NZ Timber Preservation Council	
NZS 4206		Concrete interlocking roofing tiles	
NZS 4217		Pressed metal tile roofs	
NZS 4222		Materials for the thermal insulation of buildings	

BRANZ Bulletin 284: Sealed joints in external claddings - 2. Sealants

New Zealand Metal Roofing and Cladding Manufacturers' Association Inc: Profiled metal roofing design and installation handbook

1.2 QUALIFICATIONS

Carry out all roofing work using experienced, competent roofers familiar with the materials and techniques specified.

1.3 WIND AND EARTHQUAKE LOADINGS

Use fixings and methods capable of sustaining the loads appropriate to the area as set out in NZS 3604, section 5.

1.4 COORDINATE

Coordinate to ensure substrate and preparatory work is complete and other work programmed in the order required for access at completion of the roof.

2. PRODUCTS

2.1 TILE BATTENS

Douglas fir, or No 1 framing radiata pine to NZS 3602. Size to NZS 3604, section 10. Treated to NZMP 3640, group A, hazard class H1.

2.2 BUILDING PAPER

Breather type kraft paper laminates.

2.3 ALUMINIUM FOIL

Aluminium sheet, kraft paper fibre reinforced laminates to NZS 4222, part 4.

2.4 WIRE MESH

50mm hexagon mesh of 1mm diameter galvanised steel wire in 900mm (minimum) width sheets.

2.5 PROFILED METAL ROOFING

Steel sheet galvanised to NZS 3403, aluminium-zinc coated to NZS/AS 1397. Finish as specified. Accessories, cappings, flash and fixings to match and to the roofing manufacturer's requirements.

2.6 METAL ROOFING TILES

Pressed steel sheet galvanised to NZS 3403, aluminium-zinc coated to NZS/AS 1397. Accessories, cappings, flashings, and fix to match and to the roofing manufacturer's requirements.

2.7 CONCRETE ROOFING TILES

To NZS 4206. Finish as specified. Accessories, capping, flashings, fixings and mortar pointing to match and to the roofing manufacturer's requirements.

2.8 TIMBER SHINGLES

Taper sawn/hand split, L.O.S.P. treated, kiln dried.

3. EXECUTION

3.1 STORAGE

Stack roofing and accessories on clean, level areas of the site and protect from damage and from weather until ready to fix in pl

3.2 SET OUT

Set out the planned layout before fixing commences, to ensure true lines and the correct relationship to module, grid and roof features.

- 3.3 **LAY ROOF UNDERLAY**
Lay and fix to NZBC acceptable solution E2/AS1, NZS 3604, clause 11.2.2 and the roofing manufacturer's requirements.
- 3.4 **LAY ROOFING, GENERALLY**
Take care to avoid damaging pre-finished roofing both during and after fixing. Wear only soft-soled shoes on the finished surface.
- 3.5 **CUT PROFILED METAL ROOFING**
Cut profiled metal roofing with required tools, fold ends and seal cut edges all to the roofing manufacturer's requirements.
- 3.6 **LAY PROFILED METAL ROOFING**
Lay profiled metal roofing and fix complete with all matching accessories, flashed to all roof features and penetrations; and in accordance with the requirements in the New Zealand Metal Roofing and Cladding Manufacturers' Association Inc. publication "Profiled metal roofing design and installation handbook."
- 3.7 **FIX THE TILE BATTENS**
Fix the tile battens to the roofing manufacturer's requirements and with all joints fully supported and staggered.
- 3.8 **CUT METAL TILES**
Cut with required tools, fold ends and seal cut edges of tiles and accessories without damaging their integrity or finish, all to the roofing manufacturer's requirements.
- 3.9 **LAP METAL TILES**
Lap metal tiles and fix complete with all matching accessories, flashed to all roof features and penetrations; all to the roofing manufacturer's requirements and NZS 4217.
- 3.10 **LAY CONCRETE TILES**
Lay concrete tiles and fix with metal ties every third tile. Incorporate matching accessories, flash to roof features and penetrations with anti-ponding boards and under-cloaks, to the roofing manufacturer's requirements and NZS 4206.
- 3.11 **FIX TIMBER SHINGLES**
Fix timber shingles complete with all matching accessories, flashed to all roof features and penetrations, fitted with under-cloaks and all to the roofing manufacturer's requirements.
- 3.12 **FIX COVERS AND FLASHINGS**
To comply with NZBC acceptable solution E2/AS1, 1.0. Install and fixed as detailed and to the roofing manufacturer's details.
- 3.13 **PENETRATIONS**
Flash and overflash all penetrations through the roof.
- 3.14 **USE OF SEALANTS**
Selection and use of sealants to follow BRANZ Bulletin 284 "Sealed joints in external claddings - 2. Sealants."
- 3.15 **LEAVE**
Leave the work complete with all flashings, undercloaks, valleys, ridges and hips properly installed so the finished roof is completely weathertight.
- 3.16 **CLEAR**
Clear all trade rubbish and unused materials from the roof and surrounds regularly during the work and at completion. Sweep down the completed roof and flush out all spoutings, gutters and rainwater pipes, ensuring that metal filings, metal scraps and loose fixings are removed.
- 3.17 **REPLACE**
Replace damaged or marked elements. Remove unused materials from the site.

4502 ALUMINIUM WINDOWS AND DOORS

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:

NZBC	F2/AS1	Hazardous building materials	1.0 Glazing
AS/NZS 2208		Safety glazing materials in buildings	
NZS 3604		Timber frame buildings	
AS 3715		Metal finishing - Thermoset powder coatings for architectural applications	
NZS 4211		Performance of windows	
NZS 4223		Code of practice for glazing in buildings	
		Part 1: The selection and installation of glass in buildings	
		Part 2: The selection and installation of manufactured sealed insulating glass units	
		Part 3: Human impact safety requirements	
		Window Association of New Zealand: Aluminium Window Handbook	
		Window Association of New Zealand: Specification for powder coatings on architectural aluminium products	
		Window Association of New Zealand: Installation code for aluminium joinery products	
		BRANZ Bulletin 349: Finishes for aluminium	

1.2 SUBMIT

Submit full size section samples, with the selected finish of all profiles offered.

1.3 CERTIFICATION

The building wind zone is determined from Table 5.1 and 5.2 of NZS 3604. Provide a certificate from a laboratory accredited by International Accreditation of New Zealand that the windows and doors offered comply with the requirements of NZS 3604 at the required site and building design wind pressure, air leakage and water leakage levels to NZS 4211.

1.4 QUALIFICATIONS

To be fabricated by a member of the Window Association of New Zealand.

1.5 PERFORMANCE

The structural and weather-tight performance of glazing and infill panels to be the responsibility of the window manufacturer.

2. PRODUCTS

2.1 WINDOW AND DOOR SECTIONS

All aluminium members to be formed from extruded sections. Folded sections restricted to flashings and concealed members or

2.2 GLASS GENERALLY

All glazing to comply with NZS 4223, with particular attention to NZS 4223, part 3 and AS/NZS 2208 where glass could be subject to human impact.

2.3 FLOAT GLASS

To NZS 4223, part 1, clause 101.2.2.2: Glazing quality (selection G). Thickness as required by NZS 4223, part 1.

2.4 PATTERNED GLASS

Translucent, annealed glass with a decorative pattern on one surface.

2.5 LAMINATED GLASS

Grade A safety glazing material to AS/NZS 2208, with PVB or CIP resin interlayer.

2.6 TOUGHENED GLASS

Grade A safety glazing material to AS/NZS 2208.

2.7 SEALED INSULATING GLASS UNITS

To the performance requirements of NZS 4223, part 2, clause 209.

2.8 SOLAR FLOAT GLASS

Float glass, body-tinted or reflective coated glazing.

2.9 ORGANIC POWDER COATING FINISH

To AS 3715 and the Window Association of New Zealand's "Specification for powder coatings on architectural aluminium products." All finished surfaces to show uniformity of gloss and colour (to match approved sample) free of all coating defects

2.10 ANODISING

To BRANZ Bulletin 349 "Finishes for aluminium."

2.11 FABRICATION SEALANT

To the window manufacturer's requirements.

- 2.12 **GLAZING TAPE AND GASKETS**
To the window manufacturer's requirements.
- 2.13 **FIXINGS**
All fixings and bracketing to be compatible with aluminium. Do not use electroplated zinc fasteners or brass fastenings.
- 3. EXECUTION**
- 3.1 **SITE MEASURE**
All window frame measurements to be verified on site prior to fabrication.
- 3.2 **GENERALLY**
Execution to be in accordance with the requirements of NZS 4211 and the Window Association of New Zealand's "Aluminium window handbook" and "Installation code for aluminium joinery products."
- 3.3 **HANDLING**
Avoid distortion of elements during transit, handling and storage. Prevent pre-finished surfaces from rubbing together. Prevent contact with mud, plaster and cement. Do not deliver to site any elements which cannot be immediately unloaded into suitable conditions of storage.
- 3.4 **CORROSION PROTECTION**
All cut ends and holes drilled in aluminium to be sealed, or suitably coated before the frames are installed. Before fixing, apply bituminous coatings, slips or underlays between dissimilar metals in contact, or aluminium in contact with concrete.
- 3.5 **FIX FRAMES**
Fix frames rigidly in place without distortion, to the window manufacturer's and the Window Association of New Zealand's "Aluminium window handbook" requirements, plumb, true to line and face, weathertight and with all openings operating freely.
- 3.6 **DRAINAGE**
All sills to incorporate anti-condensation channels. All sills to sashes and fixed lights to incorporate positive drainage to the exterior.
- 3.7 **GLAZING INSTALLATION**
All glass to be held in aluminium beads and black PVC gaskets.
- 3.8 **SAFETY GLASS INSTALLATION**
Use in all doors, sidelight panels, low level windows and all other locations to comply with NZS 4223, part 3, as modified by NZBC acceptable solution F2/AS1. Glass to comply with AS/NZS 2208.
- 3.9 **INSTALL FLASHINGS**
Install flashings to heads, jambs and sills of frames as supplied and required by the window manufacturer and as detailed on the drawings. Head flashings to be finished to match window finish.
- 3.10 **SEAL FRAMES ON SITE**
Seal frames to each other and to adjoining structure and finishes, all as required by the window manufacturer and to make the installation weathertight.
- 3.11 **RETAIN PROTECTIVE COVERINGS**
Retain protective coverings and coatings in place during fixing wherever possible. Provide additional protection to prevent marking of surfaces which will be visible in the completed work. Remove protection on completion.
- 3.12 **SAFETY**
Indicate the presence of transparent glasses for the remainder of the contract period, with whiting, tape or signs compatible with glass type. Indicators other than whiting must not be applied to the glass surface.
- 3.13 **MANIFESTATIONS**
To comply with NZS 4223, part 3, 303.1.
- 3.14 **CLEAN GLASS**
Clean off or remove glass indicators at completion of the building. Clean all glass inside and out to a shining finish.
- 3.15 **CLEAN FRAMES**
On completion clean down both sides of all window and door frames using the methods required by the window and door manufacturer.
- 3.16 **CONFIRM**
Confirm the proper operation of all hardware and operating systems on completion of the installation and again at completion of the contract works.

5101 LINING

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:

NZMP 9	Fire properties of building materials and elements of structure
AS/NZS 1859	Reconstituted wood-based panels
	1859.1 Particleboard
	1859.2 Medium density fibreboard (MDF)
	1859.4 Hardboard
	1859.5 Fibre insulating board (insulation board)
AS/NZS 2269	Plywood - structural
AS 2458	Hardboard
AS/NZS 2589	Gypsum linings in residential and light commercial construction - Application and finishing
	Part 1: Gypsum plasterboard
NZS/AS 2908	Cellulose-cement products 2908.2 Flat sheets
NZS 3602	Timber and wood-based products for use in buildings
NZS 3604	Light timber frame buildings not requiring specific design
NZS 3610	Profiles of mouldings and joinery
NZS 3612	Interior plywood
NZS 4221	Fibrous plaster sheet
	New Zealand Fibrous Plaster Association: Code of recommended practice for the application and fixing of fibrous plaster
	BRANZ Bulletin 328: Selection and use of fasteners
	BRANZ Bulletin 343: Moisture in timber

1.2 MOISTURE CONTENT

Maximum allowable equilibrium moisture content (EMC) in accordance with BRANZ Bulletin 343 for:

	EMC
- Framing at lining (timber-based)	20%
- Framing at lining (plasterboard/fibrous)	16%

1.3 STORAGE

Protect all joinery, fittings and finishes already in place from water staining or damage from lining installation. Immediately report any damage.

1.4 TIMING OF WORK

Building to be weatherproof before lining work commences.

2. PRODUCTS

Plasterboard

2.1 PLASTERBOARD

Gypsum plaster core encased in a durable face and backing paper formed for standard use, bracing use, water resistance, and fire rated use as approved by the fire ratings committee of Standards New Zealand for inclusion in NZMP 9. Refer to the drawings and/or the finishing schedule for the location of standard, water resistant, bracing, special ceiling, fire rated sound rated panels.

2.2 EXTERNAL ANGLE

Slim type 0.5mm galvanised steel.

2.3 CASING BEAD

Slim type 0.5mm galvanised steel or PVC.

2.4 CORNICE

Plasterboard scotia type.

2.5 NAILS

Galvanised clouts 40mm x 2.5mm.

2.6 SCREWS

40 x 6 gauge zinc electro-plated bugle head gypsum drywall screws

2.7 JOINTING

Compound and paper tape to the board manufacturer's requirements

2.8 ADHESIVE

Multi-purpose water based wallboard adhesive

Fibrous Plaster

2.9 STANDARD SHEET

Standard hardness, fungicide treated, fibreglass reinforced fibrous plaster sheet to NZS 4221. Thickness and sheet size to suit location.

- 2.10 **PREMIUM SHEET**
Premium grade, fungicide treated, fibreglass reinforced fibrous plaster sheet to NZS 4221. Thickness and sheet size to suit the location.
- 2.11 **WATER RESISTANT SHEET**
Water repellent added to standard hardness fibrous plaster sheet to NZS 4221. Thickness and sheet size to suit the location.
- 2.12 **EXTERNAL ANGLES**
Slim type 0.5mm galvanised steel.
- 2.13 **CORNICE**
Cast fibrous plaster as detailed or described on the drawings.
- 2.14 **ORNAMENTS**
Cast fibrous plaster as detailed or described on the drawings.
- 2.15 **NAILS**
Galvanised steel clouts 40mm x 2.5mm.
- 2.16 **TAPE**
Fibreglass mesh 40mm wide.
- 2.17 **STOPPING COMPOUND**
White gypsum stopping compound to the board manufacturer's requirements.
- 2.18 **ADHESIVE**
Multi-purpose water-based wallboard adhesive.
- Sundry Linings And Finishings**
- 2.19 **TIMBER BOARDING**
Selection to NZS 3602.
- 2.20 **STRUCTURAL PLYWOOD**
To AS/NZS 2269 for bracing.
- 2.21 **INTERIOR PLYWOOD**
To NZS 3612 for interior finish.
- 2.22 **PARTICLE BOARD**
Medium density resin bonded to AS/NZS 1859.1.
- 2.23 **MEDIUM DENSITY FIBREBOARD**
Medium density fibreboard resin bonded to AS/NZS 1859.2.
- 2.24 **MEDIUM DENSITY FIBREBOARD, WOOD VENEER FINISH**
Selected veneer factory applied to form panel.
- 2.25 **MEDIUM DENSITY FIBREBOARD, MELAMINE FINISH**
Medium density fibreboard veneered on both sides with melamine-impregnated decorative sheet
- 2.26 **FIBRE CEMENT SHEET**
Cellulose cement autoclaved sheets to NZS/AS 2908.2.
- 2.27 **PRE-FINISHED FIBRE CEMENT SHEET**
Factory applied water resistant coating on cellulose cement autoclaved sheets to NZS/AS 2908.2
- 2.28 **WOOD FIBREBOARD**
Low density wood fibre insulating board to AS/NZS 1859.5, face-coated with fire-retardant primer/undercoat
- 2.29 **HARDBOARD**
High density wood fibreboard panels to AS/NZS 1859.4
- 2.30 **PRE-FINISHED HARDBOARD**
High density wood fibreboard panels to AS/NZS 1859.4, pre-finished with simulated woodgrain laminate, grooved or plain
- 2.31 **OIL TEMPERED HARDBOARD, COATED**
Factory applied, water resistant coating on high density oil tempered hardboard sheet to AS/NZS 1859.4
- 2.32 **LAMINATE PANELS**
High pressure decorative melamine laminate, bonded to a high density oil-tempered hardboard sheet to AS/NZS 1859.4 with melamine backing
- 2.33 **NAILS**
Zinc-plated steel, stainless steel and galvanised steel of pattern to suit location and to BRANZ Bulletin 328 "Selection and use of fasteners"
- 2.34 **TIMBER INTERIOR FINISHING TRIM**
Selection to NZS 3602. As detailed, or if not shown, profile to NZS 3610
- 2.35 **PVC JOINTERS**
Profiles to suit location and sheet thickness

- 2.36 **METAL JOINTERS**
Profiles to suit location and sheet thickness.
3. **EXECUTION**
- 3.1 **SUBSTRATE**
To NZS 3604, sections 8, 10, 12, 13 and the standard required by the lining manufacturer's requirements. Moisture content of timber framing to be at or below specified levels. Starting work implies acceptance the substrate will allow work of the required standard.
- 3.2 **CONFIRM LEVELS OF FINISH**
Before commencing work, confirm the surface finish assessment procedures necessary to ensure the specified levels of finish will be obtained.
- Plasterboard**
- 3.3 **LEVELS OF FINISH**
Provide levels of finish to standards laid down by AS/NZS 2358.1 as follows:
Level 3: surfaces receiving heavy to medium texture finishes
Level 4: surfaces receiving light texture or wall covering finishes
Level 5: surfaces receiving thin coating finishes.
- 3.4 **LINE CEILINGS**
Line ceilings with plasterboard sheets, fastened to the plasterboard manufacturer's requirements.
- 3.5 **LINE WALLS**
Line walls that are up to 2400mm high by the horizontal method and walls above 2400mm high by the vertical method, with plasterboard sheets, fastened to the plasterboard manufacturer's requirements.
- 3.6 **LINE WET AREA WALLS**
Line wet area walls with water resistant plasterboard sheets using adhesive and nail fixing to studs at centres to suit the surface finish and to the plasterboard manufacturer's details.
- 3.7 **FORM BRACING PANELS AND SYSTEMS**
Form using high density plasterboard sheets fixed with clout-washers and clouts to the plasterboard manufacturer's details. For panels strap substrate and for systems diagonal brace to NZS 3604, sections 5, 8 and 13.5.
- 3.8 **FORM FIRE RATED PANELS AND SYSTEMS**
Form following the sheet manufacturer's specifications and details for the required fire rating.
- 3.9 **FORM SOUND RATED PANELS AND SYSTEMS**
Form following the sheet manufacturer's specifications and details for the required sound rating.
- 3.10 **FIX EXTERNAL ANGLES**
Fix full length to all external corners with clouts at 100mm each side staggered.
- 3.11 **FIX CORNICE**
Fix with adhesive and with all joints scribe-fitted to the plasterboard manufacturer's requirements
- 3.12 **FILL JOINTS**
Fill joint recess with bedding compound, centre the paper tape, apply second coat of bedding compound followed by a coat of finishing compound; allow to dry and lightly sand off, all to the plasterboard manufacturer's requirements
- 3.13 **STOPPING**
Fill nail holes and flush up external angles with two successive coats of bedding compound followed by a coat of finishing compound, allow to dry and lightly sand off, all to the plasterboard manufacturer's requirements
- Fibrous Plaster**
- 3.14 **GENERALLY**
All fibrous plaster work to be in accordance with the New Zealand Fibrous Plaster Association's "Code of recommended practice for the application and fixing of fibrous plaster."
- 3.15 **LEVELS OF FINISH**
Provide levels of finish to standards laid down by the fibrous plaster panel manufacturer
- 3.16 **REBATES**
Form rebates in sheets for taping of joints
- 3.17 **LINE CEILINGS**
Line ceilings with fibrous plaster sheets and fix with adhesive using temporary double-head nailing all as required by the sheet manufacturers
- 3.18 **LINE WALLS**
Line walls with fibrous plaster sheets and fix with adhesive using temporary double-head nailing all as required by the sheet manufacturers
- 3.19 **FIX EXTERNAL ANGLES**
Fix full length angles to all external corners with clouts at 100mm centres, each side staggered

- 3.20 **FIX CORNICE**
Fix with the sheet manufacturer's required adhesive, all joints mitred and with pattern matched.
- 3.21 **FIX ORNAMENTS**
Fix as required by the sheet manufacturer and to detail.
- 3.22 **JOINTS**
Dip tape in stopping plaster, set in joint rebates and flush up to a smooth surface as required.
- 3.23 **STOPPING**
Fill fastening holes, angles and damaged arrises with stopping plaster and flush up to a smooth surface as required by the sheet manufacturer.
- Sundry Linings And Finishings**
- 3.24 **INSTALL TIMBER BOARDING**
Selected profile timber boarding, secret nailed. Mix and match board grain before installation.
- 3.25 **FIX PLYWOOD PANELLING**
Fix to timber framing to detail and to the panel manufacturer's requirements.
- 3.26 **FIX PARTICLE BOARD**
Fix to timber framing to detail and to the panel manufacturer's requirements.
- 3.27 **FIX MEDIUM DENSITY FIBREBOARD**
Fix to timber framing to detail and to the panel manufacturer's requirements.
- 3.28 **FIX MEDIUM DENSITY FIBREBOARD, WOOD VENEER**
Fix to timber framing to detail and to the panel manufacturer's requirements.
- 3.29 **FIX MEDIUM DENSITY FIBREBOARD, MELAMINE VENEER**
Fix to timber framing to detail and to the panel manufacturer's requirements.
- 3.30 **FIX FIBRE CEMENT SHEET**
Fix to timber framing with jointing as detailed and to the panel manufacturer's requirements.
- 3.31 **FIX COATED FIBRE CEMENT SHEET**
Fix to timber framing with jointing as detailed and to the panel manufacturer's requirements.
- 3.32 **FIX WOOD FIBREBOARD**
Fix to timber framing with jointing as detailed and to the panel manufacturer's requirements.
- 3.33 **FIX HARDBOARD**
Fix to timber framing with jointing as detailed and to the panel manufacturer's requirements.
- 3.34 **FIX PRE-FINISHED HARDBOARD**
Fix to timber framing with jointing as detailed and to the panel manufacturer's requirements.
- 3.35 **FIX COATED OIL TEMPERED HARDBOARD**
Fix to timber framing with jointing as detailed and to the panel manufacturer's requirements.
- 3.36 **FIX LAMINATE PANELS**
Fix to timber framing with jointing as detailed and to the panel manufacturer's requirements.
- Sundry Items**
- 3.37 **FIX PROPRIETARY ACCESS HATCH**
Install and fix to the hatch manufacturer's requirements.
- 3.38 **CEILING ACCESS**
Trim out ceiling to form 600mm x 500mm square clear opening. Fit finished 40mm x 12mm timber facings to perimeter, set to support a lift-out panel of the ceiling material.
- 3.39 **INSTALL TRIM**
Scribe and fit reveal linings to exterior timber joinery, architraves to interior joinery, skirtings to all walls and timber head cornice as detailed and shown
- 3.40 **CLEAN**
Clean all adjoining surfaces and fittings of spots, marks, dust and droppings
- 3.41 **LEAVE**
Leave all work to the standard required by all following trades

5101H JAMES HARDIE LINING

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:

NZS/AS 2908	Cellulose-cement products	2908.2 Flat sheets
NZS 3602	Timber and wood-based products for use in buildings	
NZS 3610	Profiles of mouldings and joinery	
BRANZ appraisal certificate 229: James Hardie wall bracing systems		

1.2 JAMES HARDIE DOCUMENTS

James Hardie documents that relate to work in this section are:

- Hardiglaze® Technical
 - Hardiglaze® Selling
 - Hardiglaze® Premium Selling
 - Hardiglaze® BRANZ appraisal certificate 243
 - Villaboard® Technical
 - Villaboard® Selling
 - Villaboard® BRANZ appraisal certificate 239
 - Villaboard® Drywall Systems Technical
 - Villaboard® Installation Checklist
 - Villaboard® Bedding and Finishing Compound Fixing and Finishing Schedules
 - BRANZ Appraisal Certificate 229: James Hardie wall bracing systems
- Copies of the above literature are available by phoning the James Hardie Helpline on 0800 808 868.

1.3 MOISTURE CONTENT

Maximum allowable equilibrium moisture content (EMC) for framing at lining 18%.

1.4 PROTECT

Protect all joinery, fittings and finishes already in place from water staining or damage from plasterboard installation. Immediately make good any damage.

1.5 BUILDING

Building to be weatherproof before lining work commences.

2. PRODUCTS

James Hardie Villaboard® Products

2.1 GENERALLY

All James Hardie fibre cement sheets to comply with NZS/AS 2908.2.

2.2 VILLABOARD® SHEET LINING

Treated cellulose fibre in a matrix of cement and sand autoclaved sheet, primed on one side.

2.3 VILLABOARD® NAILS

Hardiflex® 40mm x 2.8mm galvanised flathead nails for 6mm and 9mm thick linings.
Weatherboard 50mm x 2.8mm galvanised flathead nails for fixing over gypsum plaster board.

2.4 TILE AND SLATE UNDERLAY ANNULAR THREADED NAILS

James Hardie 25mm x 2.5mm annular threaded hot dipped galvanised for 6mm sheet linings under ceramic tiles.

2.5 VILLABOARD® SCREWS FOR POWER SCREW GUN DRIVING

For timber framing: Villadrive 3.5mm - 18 x 30mm with self embedding head, supplied by James Hardie.
For steel framing: Villadrive 3.5mm x 25mm with self embedding head, supplied by James Hardie.

2.6 VILLABOARD® CONTROL JOINTS SECTION

James Hardie purpose made 45mm x 10mm shaped PVC control joint.

2.7 VILLABOARD® EXTERNAL CORNER SECTIONS

James Hardie 30mm x 30mm x 1.2mm PVC angle.

2.8 VILLABOARD® PVC JOINTERS

Hardijointer® 6mm PVC jointer

2.9 VILLABOARD® PVC PERIMETER ANGLES

James Hardie 30mm x 30mm PVC 2-piece perimeter angles.

2.10 BATTENS, TIMBER

Minimum ex 45mm wide x 40mm gauged timber

2.11 BATTENS, STEEL

Minimum 72mm wide x 23mm deep x 0.55mm thick with 37mm bearing surface face galvanised steel (275 gm/m² zinc coat)

- 2.12 **PACKERS**
3mm James Hardie fibre cement packers.
- 2.13 **POLYETHYLENE TAPE FOR VILLABOARD®**
Self adhesive polyethylene for behind expressed joints and expressed control joints.
- 2.14 **JOINT REINFORCING TAPE FOR VILLABOARD®**
52mm wide perforated paper tape.
- 2.15 **WALL BOARD ADHESIVE FOR VILLABOARD®**
Solvent based wall board adhesive.
- 2.16 **VILLABOARD® BEDDING COMPOUND**
Pre-mixed bedding compound.
- 2.17 **VILLABOARD® FINISHING COMPOUND**
Finishing compound in powder form.
- 2.18 **SEALANT FOR VILLABOARD®**
Silicone or polyurethane sealant. Refer to relevant James Hardie technical literature.

James Hardie Hardiglaze® Products

- 2.19 **HARDIGLAZE® SHEET LININGS**
Treated cellulose fibre in a matrix of cement and sand autoclaved sheet, polyurethane coated on one side.
- 2.20 **HARDIGLAZE® FIXINGS**
40mm nylon Fastfix fasteners.
- 2.21 **HARDIGLAZE® CORNER MOULDS**
Flexible edge 1-piece external and 2-piece internal corner moulds in PVC gloss white.
- 2.22 **HARDIGLAZE® PVC ACCESSORIES**
Extruded PVC supplied by James Hardie.
- 2.23 **WALL BOARD ADHESIVE FOR HARDIGLAZE®**
Solvent based or foam polyurethane wallboard adhesive. Refer to relevant James Hardie technical literature.
- 2.24 **SEALANT FOR HARDIGLAZE®**
Silicone sealant. Refer to relevant James Hardie technical literature.

Sundry Items

- 2.25 **INTERIOR FINISHING, TIMBER**
Selection to NZS 3602. As detailed, or if not shown, profile to NZS 3610.

3. EXECUTION

- 3.1 **INSTALLING JAMES HARDIE PRODUCTS**
To be strictly in accordance with relevant James Hardie technical literature. Refer to the JAMES HARDIE DOCUMENTS clause. Retain current copies of all relevant James Hardie publications on site and ensure that all installers are familiar with requirement for preparation, fixing and finishing James Hardie cladding products and accessories.

James Hardie Villaboard®

- 3.2 **STORAGE**
Take delivery of sheets dry and undamaged in pallets and stack horizontally on a smooth, level surface. Protect edges and corners from damage and cover to keep dry until fixed.
- 3.3 **HANDLING**
Avoid distortion and contact with potentially damaging surfaces. Do not drag sheets across each other, or across other materials. Protect edges, corners and surface finish from damage.
- 3.4 **SUBSTRATE**
Do not commence work until the substrate is of the standard required by relevant James Hardie technical literature for the specified finish, plumb, level and in true alignment. Moisture content of timber framing to comply with NZS 3602 moisture content maximums, to minimise shrinkage and movement after sheets are fixed.
- 3.5 **FIRE RESISTANCE RATING JAMES HARDIE PRODUCTS**
Form fire resistance ratings using James Hardie fibre cement sheets, in accordance with James Hardie technical literature.
- 3.6 **ACOUSTIC RATING**
Fix sheets over plasterboard sheets.
- 3.7 **BRACING SYSTEM**
Fix sheets in accordance with relevant James Hardie technical literature and BRANZ appraisal certificate 229.

- 3.8 FIXING WITH BUTT JOINTS**
Cut sheet using the appropriate method for the specified finish. Prepare and fix square edged sheets in accordance with relevant James Hardie technical literature. Joint width: 1-2mm
- 3.9 FIXING WITH EXPRESSED JOINTS**
Prepare and fix square edged sheet in accordance with relevant James Hardie technical literature.
Joint backing: Black self adhesive polyethylene tape
- 3.10 FIXING WITH PVC JOINTERS**
Prepare and fix square edged sheet in accordance with relevant James Hardie technical literature. Include flexible sealant in wet areas.
- 3.11 FIXING WITH FLUSH JOINTED WALLS, PAINT OR WALLPAPER**
Prepare and fix recessed edge sheets in accordance with relevant James Hardie technical literature.
- 3.12 ADHESIVE FIXING WITH FLUSH JOINTED WALLS, PAINT OR WALLPAPER**
Prepare and fix recessed edge sheets in accordance with relevant James Hardie technical literature. Fix with screws and/or nails edges. Use a combination of adhesive and fasteners to intermediate studs.
- 3.13 FIXING WITH FLUSH JOINTED WALLS, HEAVY VINYL**
Prepare and fix recessed edge sheets in accordance with relevant James Hardie technical literature.
- 3.14 ADHESIVE FIXING WITH FLUSH JOINTED WALLS, HEAVY VINYL**
Prepare and fix recessed edge sheets in accordance with relevant James Hardie technical literature. Fix with screws and/or nails edges. Use a combination of adhesive and fasteners to intermediate studs.
- 3.15 FIXING WITH FLUSH JOINTED CEILINGS FOR PAINT**
Fix ceiling battens at 600mm centres maximum. (Do not fix sheets to the underside of roof trusses). Fix sheets in an offset pattern so that adjacent end joints do not coincide. Break the ceiling into bays not exceeding 9 metres x 6 metres and provide expansion joints at the perimeter of each bay. Provide expansion joints at the junction of large ceilings and narrow passages.
- 3.16 ADHESIVE FIXING WITH FLUSH JOINTED CEILINGS, PAINT**
Fix ceiling battens at 600mm centres maximum. (Do not fix sheets to the underside of roof trusses). Fix sheets in an offset pattern so that adjacent end joints do not coincide. Use a combination of adhesive and fasteners to intermediate battens. Break the ceiling into bays not exceeding 9 metres x 6 metres and provide expansion joints at the perimeter of each bay. Provide expansion joint at the junction of large ceilings and narrow passages.
- 3.17 FIXING IN CERAMIC TILED AREAS**
Prepare and fix sheets generally horizontally, in accordance with relevant James Hardie technical literature. Provide control joints around the perimeter of the sheets when using this method.
- 3.18 PROVIDE VERTICAL CONTROL JOINTS**
Provide vertical control joints at 7.2 metre centres maximum. Provide acoustic sealant in walls having an acoustic rating.
- 3.19 PROVIDE HORIZONTAL CONTROL JOINTS**
Provide horizontal control joints at the floor joist level of all upper-storey floors and at 4.8 metre centres maximum.
- 3.20 PROVIDE EXTERNAL CORNER ANGLE**
Provide PVC external corner angle to all external corners.
- 3.21 INTERNAL CORNERS**
Use recessed edge sheets for all non-tiled internal corners.
- 3.22 SILICONE JOINTS**
Provide polyethylene tape behind all joints that are to be finished with flexible sealant.
- 3.23 LEVELS OF FINISH**
To conform with the following levels of finish:
- | | |
|-----------------|--|
| Level 0 finish | Taping, stopping or finishing not required |
| Level 1 finish | Joints and corners taped and finished with bedding compound. Remove surplus compound. Tool marks and ridges are acceptable to a small degree. |
| Level 2 finish: | Joints and corners taped and finished with bedding compound. The finish to be smooth enough to accept ceramic tiles or textured coating without blemishes. |
| Level 3 finish: | Joints and corners taped and finished with bedding compound and a minimum of one separate coat of joint compound and finishing compound applied over all joints, angles, fastener heads and accessories. All joint compound and finishing compound to be finished free of tool marks and ridges. |
| Level 4 finish | Joints and corners taped and finished with bedding compound and a minimum of one separate coat of joint compound applied over all joints, angles, fastener heads and accessories. A thin skim coat of finishing compound to then be applied to the entire surface. The surface to be finished free of tool marks and ridges to achieve a smooth, true surface. |
| Level 5 finish | Water resistant skim coat finish over entire sheet and joint. |
- 3.24 JOINT FINISHING FOR PAINT OR WALLPAPER**
Fill recess with bedding compound and joint reinforcing tape. Apply a coat of bedding compound. Flush over fasteners with coat of bedding compound. Apply a coat of finishing compound. Lightly sand to achieve the required level of finish.

- 3.25 **JOINT FINISHING FOR HEAVY VINYL**
Fill recess with bedding compound and joint reinforcing tape. Apply a coat of bedding compound. Flush over fasteners with one coat of bedding compound. Lightly sand to achieve the required level of finish
Finish level: 2
- 3.26 **JOINT FINISHING FOR TILED AREAS**
Flush joints and corners with bedding compound to achieve a smooth finish. Flush over fasteners with 2 successive coats of bedding compound to achieve a smooth finish.
- James Hardie Hardiglaze®**
- 3.27 **STORAGE**
Take delivery of sheets dry and undamaged in pallets and stack horizontally on a smooth, level surface. Protect edges and corners from damage and cover to keep dry until fixed.
- 3.28 **HANDLING**
Avoid distortion and contact with potentially damaging surfaces. Do not drag sheets across each other, or across other materials. Protect edges, corners and surface finish from damage.
- 3.29 **SUBSTRATE**
Do not commence work until the substrate is of the standard required by relevant James Hardie technical literature for the specific finish; plumb, level and in true alignment. Moisture content of timber framing to comply with NZS 3602 moisture content maximums, to minimise shrinkage and movement after sheets are fixed.
- 3.30 **FIXING HARDIGLAZE®**
Cut, prepare and fix sheets in accordance with relevant James Hardie technical literature.
- 3.31 **HARDIGLAZE® WET AREA JOINTING**
Silicone sealant-fill all PVC jointers, external and internal corners and cap moulds, strictly in accordance with relevant James Hardie technical literature.
- 3.32 **HARDIGLAZE® FLASHING DETAILS TO BATH**
Form and seal strictly in accordance with relevant James Hardie technical literature.
- 3.33 **HARDIGLAZE® SHOWER DRIP EDGE DETAIL**
Form and seal strictly in accordance with relevant James Hardie technical literature.
- Sundry Items**
- 3.34 **CEILING ACCESS**
Trim out ceiling to form 600mm x 500mm square clear opening. Fit finished 40mm x 12mm timber facings to perimeter, set to support a lift-out panel of the ceiling material.
- 3.35 **FIX TRIM**
Scribe and fit facings to exterior joinery, architraves to interior joinery, skirtings to all walls and timber bead cornices as detailed and shown.
- 3.36 **CLEAN**
Clean all adjoining surfaces and fittings of spots, marks, dust and droppings.
- 3.37 **LEAVE**
Leave all work to the standard required by all following trades.

5501 JOINERY FITTINGS

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:

NZBC	D1/AS1	Access routes	4.0 Stairways
AS/NZS 1859		Reconstituted wood based panels	1859.2 medium density fibreboard (MDF)
NZS 3602		Timber and wood-based products for use in buildings	

2. PRODUCTS

2.1 MEDIUM DENSITY FIBREBOARD BACKING BOARD

Medium density fine wood fibreboard sheet to AS/NZS 1859.2. Thickness: 6mm

2.2 PRE-FINISHED MDF BACKING BOARD

Medium density fine wood fibreboard sheet to AS/NZS 1859.2. Thickness: 6mm

2.3 SOLID TIMBER ELEMENTS

Selection to NZS 3602.

2.4 STAIRCASE ELEMENTS

Timber selections to NZS 3602.

2.5 CARCASE

Melamine urea formaldehyde resin bonded medium density sheet to AS/NZS 1859.2.

2.6 PRE-FINISHED CARCASE

Melamine urea formaldehyde resin bonded, medium density sheet to AS/NZS 1859.2, veneered both sides, with decorative she impregnated with melamine resin.

2.7 CUPBOARD DOORS, PRE-FINISHED

Melamine urea formaldehyde resin bonded, medium density sheet to AS/NZS 1859.2, veneered both sides, with decorative she impregnated with melamine resin.

2.8 CUPBOARD DOORS, WOOD VENEER

Medium density wood fibreboard to AS/NZS 1859.2, veneered with selected species wood veneer.

2.9 DRAWER FRONTS

As for CUPBOARD DOORS.

2.10 SHELVING

As for PRE-FINISHED CARCASE, supported on adjustable shelf studs.

2.11 BENCHTOPS, CONSTRUCTION

As detailed on the drawings.

2.12 JOINERY FITTINGS, COMPONENTRY

Carcase connectors to be one piece steel straight deep cut thread, fibreboard screws with press fit plastic trim cap. Carcase fasteners to be knocked down type centric sphere zinc alloy connectors with connecting bolts, sleeves and dowels to suit each particular fastening location.

2.13 HINGES

As shown and described on the drawings.

2.14 HARDWARE

Drawer runners, catches, locks, stays, handles, metal and plastic connectors, shelf supports, support brackets, rails and sundry fittings, all as shown and described on the drawings.

3. EXECUTION

3.1 GENERALLY

Execution to include those methods, practices and processes contained in the current syllabus for the National Certificate in Carpentry and the National Certificate in Joinery (cabinetry, exterior joinery, stairs).

- 3.2 FABRICATION QUALITY**
Check site dimensions. Carry out machining within the practices required for the particular timber, wood product or pre-finished wood product being used. Machine drill and cut all holes and recesses and form all joints to the componentry manufacturer's requirements. All work to be accurate, square and true to line and face.
- 3.3 FABRICATE JOINERY FITTINGS**
Carry out jointing, dowelling and all other operations necessary for the proper assembly of the fittings as detailed with all fixing concealed unless otherwise detailed. Scribe fit adjustable shelves with 4 shelf pins and locate force fit pin holes at 50mm maximum centres in solid checks. Construct drawers as detailed, using proprietary metal section drawer runners. Fit drawers with 3mm clearance into the drawer space.
- Hang doors on concealed hinges.
- Use glue joints where provision for shrinkage is not required, with contact surfaces, glueing and pressure all applied to the glue manufacturer's requirements.
- Locate and drive connectors and connecting bolts to the bolt manufacturer's requirements.
- 3.4 INSTALL JOINERY FITTINGS**
Scribe fit on site - level, square, plumb and true to line and face.
- 3.5 FABRICATE TIMBER STAIRS**
To comply with NZBC acceptable solution D1/AS1, 4.0. closed type, unless detailed otherwise. Ex 50mm strings, with ex 50mm treads housed into ex 25mm risers. House and wedge treads and risers 15mm into strings, all glued, wedged and blocked. Form nosing overhangs of 25mm by splaying risers forward to finish flush with the front of the treads. Fabricate and install the handrails and balustrading as detailed, complete with all associated metal componentry and hardware.
- 3.6 WARDROBE AND COAT CUPBOARD**
Fit out with 300mm wide melamine faced board shelf, on ex 25mm scotia bead to back and ends. All exposed edges clashed to match. Fit the selected powder-coated aluminium coat rail to the front edge of the shelf.
- 3.7 STORAGE CUPBOARD**
Fit out with 5 full depth melamine faced board shelves on ex 25mm scotia beads along back and ends. All exposed edges clashed to match. Shelf heights as shown on the drawings.
- 3.8 LINEN CUPBOARD**
Fit out with 2 full depth 20mm x 70mm timber slat shelves on ex 25mm scotia bead along ends.
- 3.9 LEAVE**
Leave all work to the standard required by all following trades.

6201 TILING

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:

NZBC	D1/AS1	Access Routes	2.1 Slip resistance
AS 2358	Adhesives for ceramic tiles		
AS/NZS 3661	Slip resistance of pedestrian surfaces		3661.1 Requirements
AS 3740	Waterproofing of wet areas within residential buildings		
AS 3958	Ceramic tiles Part 1: Guide to the installation of ceramic tiles		
BS 5980	Adhesives for ceramic tiles		
BS 6431	Ceramic floor and wall tiles		
BRANZ publication: Good Tiling Practice			

1.2 QUALIFICATIONS

All work in this section to be carried out by competent tilers, experienced with the materials and techniques specified.

1.3 ADHESIVES COMPATIBILITY

All adhesives selected for use on proprietary substrates or waterproof membranes to have documented compatibility approval from the respective manufacturers.

1.4 SAMPLES

Submit samples of the tiles specified, sufficient to show the pattern and the range of colour finish.

1.5 SLIP RESISTANCE

The owner to confirm which tiled surfaces are "wet" and which are "dry" for testing and confirmation purposes.

To comply with NZBC acceptable solution D1/AS1, clause 2.1.

All floor tiles, when in place on a level access route, to have a mean coefficient of friction not less than 0.4 when tested in accordance with AS/3661.1, appendix A and B.

All floor tiles, when in place on a sloping access route, to have a coefficient of friction of not less than $0.4 \times 0.0125S$ (S = slope of surface expressed as a percentage).

2. PRODUCTS

2.1 WALL TILES

To BS 6431.

2.2 FLOOR TILES

To BS 6431.

2.3 RIGID SHEET UNDERLAYS

Refer to 3801 CARPENTRY.

2.4 SHEET WATERPROOFING MEMBRANE

Refer to 4401 MEMBRANE ROOFING.

2.5 LIQUID WATERPROOFING MEMBRANE

To AS 3740.

2.6 CEMENT BASED SCREED

Mix of 3:1 Portland cement, wash-mix sand, gauged with liquid polymer additive to the tile manufacturer's requirements.

2.7 TILE ADHESIVE

To AS 2358 and BS 5980.

2.8 GROUT

Cement based, compressible and to suit the particular location and use.

2.10 MOVEMENT CONTROL JOINT SEALANT

To BRANZ "Good Tiling Practice," section 8.0.

3. EXECUTION

3.1 HANDLING AND STORAGE

Handle tiles with care to avoid chipping, soiling and damage. Store on hard, level standings in non-traffic, non-work areas that are enclosed, clean and dry. Reject all damaged tiles.

3.2 SUBSTRATE

Ensure that all services and accessories are in place and located to suit the tile layout, with the substrate required for tiling work. Commencement of the work means the substrate and environment are accepted by the tile layer as satisfactory.

3.3 TEMPERATURE

Do not carry out tiling where the ambient temperature is below 5 degrees C, or onto a substrate with a temperature higher than 30 degrees C.

3.4 LAYOUT

Before commencing work, obtain approval for the proposed layout of tiles, expansion joints and other visual considerations of finished work.

3.5 GENERALLY

All surface preparation and tiling work to be in accordance with AS 3958, part 1, as modified by BRANZ "Good Tiling Practice".

- 3.6 NEW CONCRETE AND MASONRY WALLS PREPARATION**
Concrete walls to be air dried for 4 weeks before applying mortar or adhesive. Remove all contaminants affecting bonding or adhesion by steam cleaning. Surface to finish clean and dry, with a texture giving a complete key.
- 3.7 EXISTING WALL SURFACES PREPARATION**
Remove all paint and other finishes sufficiently to obtain a key and prepare in accordance with the adhesive manufacturer's requirements. Variation in background to be a maximum of + or - 4mm in 2 metres lineal.
- 3.8 EXISTING SHEET WALL LININGS PREPARATION**
Remove all contaminants that may affect bonding or adhesion. Surface to finish clean and dry with a texture providing a complete key, to the sheet manufacturer's requirements and with a maximum variation in the background plane of + or - 4mm in 2 metres. Remove all paint and other finishes from existing sheet linings. Surface to finish clean and dry with a texture providing a complete key.
- 3.9 CONCRETE FLOORS PREPARATION**
Completely remove from the surfaces all contaminants such as paints, oils, release and curing compounds. Remove all projective unevenness and loose material to leave a clean, dust and dirt-free surface.
Remove all existing finishes down to the concrete. If the exposed concrete finish is not suitable then scabble the surface to expose the coarse aggregate.
- 3.10 TIMBER FLOORS PREPARATION**
Confirm with the owner that the deflection of the timber floor is within the range of $1/360^{\text{th}}$ span. Completely remove from the surface all existing finishes, punch nail heads and sand to a smooth, clean, dust-free surface.
- 3.11 LAYING SHEET WATERPROOFING MEMBRANES**
Refer to 4401 MEMBRANE ROOFING.
- 3.12 LAYING CEMENT SCREED**
Apply a proprietary cement slurry bond coat over the whole of the floor to the tile manufacturer's requirements. Thoroughly mix and place a 40mm thick mortar bed over the bond coat and firmly tamp, screed and compact to the required level.
In waterproofed areas where the cement screed has been laid over the waterproofing membrane, the screed surface to be protected by a further waterproof coating before laying tiles.
- 3.13 APPLYING LIQUID WATERPROOFING MEMBRANES**
Apply the selected liquid waterproof membrane system to the membrane manufacturer's requirements and in accordance with AS 0.
- 3.14 TILE FIXING GENERALLY**
Apply adhesive, prepare and fix tiles by the method required by the adhesive manufacturer and tap them firmly into place.
- 3.15 TILE FIXING, CONCRETE, CEMENT-BASED ADHESIVE, THICK BED**
Apply and float thick bed cement-based adhesive to a maximum 6mm bed thickness to the tile manufacturer's requirements. Rib surface with a notched trowel, press the tile and beat it into place with 3mm joints, and to obtain adequate coverage of adhesive on the back of each tile.
- 3.16 TILE FIXING, CONCRETE, CEMENT-BASED ADHESIVE, THIN BED**
Apply and float thin bed cement-based adhesive to a minimum 3mm bed thickness to the tile manufacturer's requirements. Rib surface with a notched trowel, press the tile and beat it into place with 3mm joints, and to obtain adequate coverage of adhesive on the back of each tile.
- 3.17 TILE FIXING, RIGID SHEET LININGS**
Refer to 3801 CARPENTRY for the installation of rigid sheet linings.
Prime the surface after the curing of any waterproof membrane. Spread adhesive to a uniform minimum thickness of 3mm and rub it with a notched trowel to the tile manufacturer's requirements. Press the tile and beat it into place to obtain adequate coverage of adhesive on the back of each tile.
- 3.18 TILE FIXING, INTERIOR TIMBER FRAMED FLOORS**
Refer to 3801 CARPENTRY for the installation of rigid sheet underlays
After the curing of any waterproof membrane, prime the surface, spread adhesive to a uniform minimum thickness of 3mm and rub it with a notched trowel to the tile manufacturer's requirements. Press the tile and beat it into place to obtain adequate coverage of adhesive on the back of each tile.
- 3.19 GROUTING**
Remove spacers. Prepare joints, mix and apply proprietary grout and finish off to the grout manufacturer's requirements. Grout finish uniform in colour, smooth and without voids, pinholes or low spots.
- 3.20 MOVEMENT CONTROL JOINTS**
To be a minimum width of 6mm, carried through tile and bedding. Where substantial movement is anticipated, carry through the rigid sheet to the structure. Install joints over expansion joints in structure, at junctions between different backgrounds, where abutting other materials, at storey heights horizontally and 3.0 metres vertically, at internal corners and at junctions with floors or columns. Ensure joints are clean, formed, filled, and the sealant inserted, all to the sealant manufacturer's requirements.
- 3.21 CLEAN**
Upon completion of setting and grouting, thoroughly sponge and wash the tiles to leave completely clean and without blemish. Finally polish tiles with a clean dry cloth.
- 3.22 TAKE AWAY**
Take away from the site all unused materials.

6501 CARPETING

1. GENERAL

1.1 SAMPLES

Provide 300mm x 300mm minimum size samples of each carpet for the owner's approval of colour, design and quality. Provide samples of underlay and accessories offered.

1.2 QUALIFICATIONS

All work in this section to be by competent, experienced carpet layers, familiar with the materials and techniques specified.

2. PRODUCTS

2.1 NEEDED UNDERLAY

Slab felt of matted jute or other approved fibre.

2.2 FOAM UNDERLAY

Slab foam plastic.

2.3 RUBBER UNDERLAY

High resilience foam rubber slab, heavy crepe.

2.4 RUBBER UNDERLAY, DOUBLE DIRECT STICK

High resilience foam rubber slab, heavy crepe, kraft paper topped and hessian backed.

2.5 EDGE GRIPPER

Plywood batten with plated toothed metal strip on top, prenailed type for timber substrate and adhesive type for concrete

2.6 UNDERLAY JOINTING TAPE

Single-sided, self-adhesive cloth strip.

2.7 UNDERLAY FIXING TAPE

Double-sided, self-adhesive cloth strip.

2.8 HEAT-BOND TAPE

Double-stick method carpet tape.

2.9 TRIM AND FIXING BARS

Aluminium section of the type required by the manufacturer of the carpet being laid.

2.10 BINDER BARS

Anodised aluminium section with a fluted face.

2.11 CARPET-TO-CARPET BARS

Anodised aluminium section with fluted face. Fix with matching roundhead counter-sunk screws

2.12 ADHESIVE PRIMER

Compatible with and approved by the direct stick or double - direct stick adhesive manufacturer

2.13 ACRYLIC ADHESIVE

Water dispersed non-flammable acrylic based.

2.14 LATEX ADHESIVE

Water based non-flammable natural rubber latex based.

2.15 SOLVENT ADHESIVE

Sprayable contact adhesive polychloroprene based

2.16 ADHESIVE, DOUBLE DIRECT STICK

Underlay to substrate: water dispersed, non-flammable, acrylic based, pressure sensitive

2.17 CONTACT ADHESIVE

For carpet joins on underlay use trowel applied polychloroprene rubber

3. EXECUTION

3.1 COMPLY

Comply with the requirements of the carpet manufacturer including preparation of and procedures over the various substrates

- 3.2 SUBSTRATE**
Before starting work inspect the substrate to ensure it will allow work of the required standard and that all fittings and fixtures around which the carpet is to be scribed, are in place.
- 3.3 PROTECTION**
Protect adjoining work surfaces and finishes during installation and make good any damage to same.
- 3.4 TAPE**
Tape for binding and seaming to be the type and width required by the carpet manufacturer to suit the specified carpet and the standard of performance required.
- 3.5 LAYOUT**
Plan the carpet layout so that:
- seams run lengthways
- traffic runs along the seam
- light from windows is not across the seam
- pile faces away from the main natural light source.
- 3.6 TEMPERATURE**
Acclimatise carpet to a room temperature above 15 degrees centigrade through the whole of the installation.
- 3.7 STORAGE**
Keep carpet dry and protected from damage, sharp bending or folding.
- 3.8 PREPARE NEW TIMBER OR PARTICLE BOARD FLOOR**
To be level, sanded smooth and dry with all loose material and dust removed. For direct stick applications, seal the floor to the carpet manufacturer's requirements.
- 3.9 PREPARE EXISTING TIMBER OR PARTICLE BOARD FLOOR**
Remove all existing coverings including adhesives, waxes and paints. Check for soundness and nail down loose panels or boards. Sand smooth and remove all loose material and dust. For direct stick applications seal the floor to the carpet manufacturer's requirements.
- 3.10 PREPARE NEW CONCRETE FLOOR**
To be level, smooth, clean, cured and dried to a relative humidity not exceeding 65% and with all loose material and dust removed. For direct stick applications turn off drying aids for not less than 4 days, then test for relative humidity using an approved hygrometer. Take readings in all corners, along edges, and at various points over the whole area. Do not lay material until all readings show 65% relative humidity or less.
- 3.11 PREPARE EXISTING CONCRETE FLOOR**
Remove all existing coverings completely including adhesives and paints. Patch cracks and depressions with a compatible latex patching compound to the carpet manufacturer's requirements. Seal large areas of patching. Leave surface level, smooth and clean with all loose material and dust removed. Seal powdery surfaces for direct stick applications.
- 3.12 NEEDED UNDERLAY**
Fix grippers to the carpet manufacturer's requirements and lay underlay at right angles to the main carpet seams with no cross seams coinciding. Hand sew or staple along the entire length of all seams.
- 3.13 FOAM AND RUBBER UNDERLAY**
Fix grippers to the carpet manufacturer's requirements and lay underlay at right angles to the main carpet seams with no cross seams coinciding. Join with masking tape along the entire length of all seams. Spot tack with adhesive in larger areas or stick seams to the floor.
- 3.14 RUBBER UNDERLAY, DOUBLE DIRECT STICK**
Apply adhesive to the carpet manufacturer's requirements and lay underlay at right angles to the main carpet seams with no cross seams coinciding and with all joints and edges tightly butted and the underlay completely bonded to the substrate.
- 3.15 STAIR UNDERLAY**
Cut underlay into pads to cover the tread and riser and width of stair carpet less 50mm. Fix to the tread and riser to prevent movement and wrinkling.
- 3.16 SEAMING AND JOINING**
Carry out carpet seaming and jointing to ensure
- joints will not break down under traffic use or when stretched
- pattern matching and a consistent pile lay
- pile in seams lined up straight and flat and not caught down
- seams flat
- straight seams with diagonals and designs aligned

- 3.17 **SEWING**
Latex seal raw edges to prevent pile loss. Stretch to even tension. Using 18 gauge thread sew to 20 stitches per 100mm. Latex tape all cross joints after sewing.
- 3.18 **TAPING**
Latex seal raw edges to prevent pile loss. Tape seams and cross seams to the carpet manufacturer's required systems. Ensure adhesive is at full strength before stretching the carpet.
- 3.19 **TAPING, HEAT BOND**
Protect carpet edges with a heat shield attachment on the iron. Heat the tape at a rate which ensures a complete melt without overheating, all to the carpet manufacturer's required system. Ensure the adhesive is at full strength before stretching the carpet.
- 3.20 **STRETCHING**
Install the carpet flat and taut so that movement does not cause rucking. Use a power stretcher to ensure maximum tension between walls, with knee kickers used only to assist. Apply force by correct pin adjustment to the carpet base only, to avoid damage to padding and underlay. Tension foam back carpet without stretching. Stretch woven carpet warp at least 1% and weft at least 0.2%. Stretch tufted carpet at least 1% in each direction.
- 3.21 **DIRECT STICK INSTALLATION**
Apply adhesive evenly over the entire substrate surface to the carpet manufacturer's requirements and lay the carpet with all edge selvages and joints tightly butted and all completely bonded to the floor surface. Roll the carpet with a clean 25kg roller and ensure complete contact with adhesive.
- 3.22 **DOUBLE DIRECT STICK INSTALLATION**
Refer to the EXECUTION requirements for RUBBER UNDERLAY, DOUBLE DIRECT STICK, then apply adhesive on the underlay to the carpet manufacturer's requirements and lay the carpet with all edges, selvages and joints tightly butted and all completely bonded to the underlay surface.
- 3.23 **FIT STAIR NOSINGS**
Fit stair nosings as detailed and to the nosing manufacturer's requirements.
- 3.24 **FIX TRIMS**
Fix binder bars, carpet to carpet bars, and trims to all junctions with other materials and to carpet edges, all to the carpet manufacturer's requirements. Ensure that all junctions with other materials are neatly formed, with bars and trims securely fastened to the substrate, 20mm from each end and at maximum 100mm centres.
- 3.25 **TAKE AWAY**
Take away from the site all plant and all materials not used, leaving finished floor clean and without blemish.
- 3.26 **CLEAN**
On completion thoroughly vacuum the finished carpet and arrange for inspection by the owner.

6701 PAINTING AND PAPERHANGING

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:
 Health and Safety in Employment Act 1992
 BRANZ Bulletin 314: Removing paint coatings from houses

1.2 QUALIFICATIONS

All work to be carried out by competent and experienced painters and paperhangers.

1.3 HEALTH AND SAFETY

Refer to the requirements of the Health and Safety in Employment Act 1992 and if elimination or isolation are not possible, the minimise the hazards in this work.

Refer to BRANZ Bulletin 314 "Removing paint coatings from houses" for the required procedures and precautions when:

1. Treating or removing lead based paint.
2. Burning off paint.
3. Sanding off paint.
4. Using solvent based paint removers.

2. PRODUCTS

2.1 PAINT

To the paint manufacturer's standards for exterior and/or interior primers, undercoats, sealers, stains, clear coatings, solvent-borne and water-borne paints.

2.2 GAP FILLERS

Gap fillers to be linseed oil, putty, plastic wood, wood filler or plastic filler, to suit and to match the surface being prepared.

3. EXECUTION

3.1 INSPECT

Inspect all surfaces to be painted and report to the owner any that will not, after the preparatory work laid down by the paint manufacturer, allow work of the required standard. Confirm that all areas have adequate lighting and are sufficiently free of other construction activities to enable painting and/or paperhanging work to proceed.

3.2 PROTECT

Cover up all adjoining surfaces and areas liable to damage or over-painting.

3.3 REMOVE HARDWARE

Remove hardware and door/window furniture and replace on completion. Do not paint over permanently attached hinges, or at hardware items which cannot be removed.

3.4 PRIMING AND SEALING

Ensure that all priming and sealing work necessary before or during construction is carried out when required.

3.5 ENVIRONMENTAL CONDITIONS

Carry out work within acceptable temperature and humidity limits, with timber dry, all to the requirements of the paint manufacturer.

3.6 SELECTIONS

Confirm all selections, colours and finishes for both paint and wallpaper with the owner, before commencing work.

3.7 LEAD, ASBESTOS

Lead-based paint and asbestos, if present, to be handled as set out in BRANZ Bulletin 314 "Removing paint coatings from house"

3.8 SHARP EDGES, CRACKS AND HOLES

Sharp edges, cracks and holes if present, to be repaired to the requirements of the paint manufacturer.

3.9 PREPARE SURFACES

Prepare surfaces to be coated by making good all damage and defects. Gap filler to be linseed oil putty, plastic wood, wood filler or plaster filler as appropriate to the surface and to the paint manufacturer's requirements.

3.10 PAINT APPLICATION

Apply paint by brush and/or roller to suit the location of the coating to the paint manufacturer's requirements. Do not spray on without express permission.

- 3.11 MANUFACTURER'S MANUALS**
Refer to the paint manufacturers' manuals and follow their preparation, sequence and application requirements applying to each system. All paint coats in any system to be supplied by the same manufacturer.
- 3.12 DEFECTIVE WORK**
Correct defective work immediately, with recoating to follow the systems requirements.
- 3.13 SCUFF BETWEEN COATS**
Scuff between all coats to remove any dust pick-up, protruding fibres and coarse particles.
- 3.14 FINISHED PAINT SURFACES**
All finished paint surfaces to show uniformity of gloss and colour, to have the correct thickness for each coat, and freedom from painting defects such as tackiness and conspicuous brush marks. Finished work to be clean and free of any disfigurement.
- 3.15 CONFIRM WALLPAPER**
Confirm that all rolls of each pattern are from the same batch.
- 3.16 WALLPAPER INSTALLATION**
Seal or size walls. All drops to be full-length, completely glued, pattern matched and hung vertically without bubbles or visible butt joints. Scribe cut paper 2mm onto surrounding trim.
- 3.17 CLEAN**
Clean all adjoining surfaces, glass and fittings of any paint contamination.
- 3.18 REPLACE**
Replace all hardware without damage to the hardware or the adjoining surfaces.
- 3.19 TAKE AWAY**
Take away from the site all unused painting materials and equipment.

7101 WATER

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:

NZBC	G12/AS1	Water supplies
NZS 4602		Low pressure copper thermal storage electric water heaters
NZS 4603		Installation of low pressure thermal storage electric water heaters with copper cylinders (open-vented systems)
NZS 4606		Storage water heaters Part 3: Specific requirements for water heaters with composite shells
NZS 4607		Installation of thermal storage electric water heaters: valve-vented systems
CSA B137-8		Polybutylene (PB) piping for hot and cold water distribution systems.
Plumbers, Gasfitters and Drainlayers Act 1976		

1.2 QUALIFICATIONS

All work covering water supply to be carried out by or under the direct supervision of a person registered under the Plumbers, Gasfitters and Drainlayers Act 1976.

2. PRODUCTS

2.1 WATER MAIN ALKATHENE

High density alkathene 32mm OD (minimum 25mm internal diameter) pipe to minimum 1200 kPa (170 psi) complete with rubber ring compression type fittings.

2.2 POLYBUTYLENE WATER PIPE

Polybutylene tubing to CSA B137-8 complete with fittings and accessories brand-matched

2.3 EXPOSED PIPES

Chrome plate on copper pipes, or white polybutylene or PVC, including back nuts.

2.4 GATE VALVES

De-zincified brass with screwed ends.

2.5 ELECTRIC HOT WATER CYLINDER, MAINS PRESSURE

A grade to NZS 4606, part 3, ceramic-coated steel thermal storage cylinder, insulated and complete with fittings required for installation by the manufacturer.

2.6 ELECTRIC BOILING CYLINDER, WALL MOUNTED

Proprietary wall-mounted boiling water heater in a pre-finished cabinet, complete with tap draw off.

2.7 GAS HOT WATER HEATER, STORAGE TYPE

Insulated cylinder with an integral gas burner and flue.

2.8 GAS HOT WATER HEATER, CONTINUOUS FLOW TYPE

Continuous flow unit with an integral gas burner and flue.

3. EXECUTION

3.1 ELECTROLYTIC ACTION

Avoid electrolytic action by eliminating contact or continuity of water between dissimilar metals

3.2 GENERALLY

Generally carry out the whole of this work and tests to NZBC acceptable solution G12/AS1.

3.3 EXCAVATE

Excavate for the water main to a firm, even trench base in straight runs. Allow to backfill

3.4 WATER MAIN

Lay a minimum of 450mm below ground level from the utility network operator's supply through a gate valve and meter to the building. Lay marker tape above main in backfill

3.5 COPPER WATER SUPPLY

Size the piping layout to eliminate loss of pressure at any point by simultaneous draw-off. Run pipes in straight runs, firmly fixed to falls, with long radius bends and jointed by brazing or with cross fittings, all to NZBC acceptable solution G12/AS1. Conceal piping, insulate all hot water pipework and pressure test before the wall linings are fixed

- 3.6 **POLYBUTYLENE WATER SUPPLY**
Size the piping layout to eliminate loss of pressure at any point by simultaneous draw-off. Run pipes complete with all fittings, jointed to the pipe manufacturer's specifications, all to NZBC acceptable solution G12/AS1. Conceal all pipework and pressure before the wall linings are fixed.
- 3.7 **ELECTRIC HOT WATER CYLINDERS AND BOILING CYLINDERS**
Install where shown complete with all the necessary fittings to the cylinder manufacturer's requirements and in accordance with NZBC acceptable solution G12/AS1 4.10. Low pressure, open-vented systems to NZS 4603. Valve-vented systems to NZS 4603.
- 3.8 **GAS HOT WATER HEATER, STORAGE TYPE**
Install where shown complete with all the necessary fittings to the cylinder manufacturer's requirements and in accordance with NZBC acceptable solution G12/AS1 4.10. Complete flue installation in accordance with the heater manufacturer's details and requirements.
- 3.9 **GAS HOT WATER HEATER, CONTINUOUS FLOW TYPE**
Install where shown complete with all the necessary fittings to the cylinder manufacturer's requirements and in accordance with NZBC acceptable solution G12/AS1 4.10. Complete flue installation in accordance with the heater manufacturer's details and requirements.
- 3.10 **FIRE HOSE REELS**
Install where shown, complete with all fittings to the hose reel manufacturer's requirements.
- 3.11 **PENETRATIONS**
At all penetrations through constructions provide and fit collars to match pipework.
- 3.12 **TAPS AND FAUCETS**
Install taps and faucets in accordance with the tap manufacturer's requirements. Flush out on completion. Check that washers or ceramic discs are operating correctly.
- 3.13 **LEAVE**
Leave all water services in proper working order. Pressure test to ensure no leakage and leave in proper working order.
- 3.14 **CLEAN**
Clean all tapsets and fittings. Remove all unused materials from the site.

7201 GAS

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:

NZBC	G10/AS1	Piped services (Gas)
NZS 5258		Gas distribution
NZS 5261		Installation of gas burning appliances and equipment
NZS 7646		Polyethylene pipes and fittings for gas reticulation

Electricity Regulations 1997

Gas Regulations 1993

Plumbers, Gasfitters and Drainlayers Act 1976

Documents listed above and cited in the clauses that follow are part of this specification. However, this specification takes precedence in the event of it being at variance with the cited document.

1.2 REGULATIONS

Comply with the Gas Regulations, Electricity Regulations and other network utility operator's requirements. Give notices for inspections and carry out tests as required.

1.3 GAS MAIN

Include for the cost of this service complete with excavation and backfilling.

1.4 QUALIFICATIONS

Work to be carried out by or under the direct supervision of a person registered under the Plumbers, Gasfitters and Drainlayers Act 1976.

1.5 AS-BUILT PLANS

Supply a 1:100 scale as-built plan of gas pipe runs, sizes, componentry and fittings at completion.

1.6 PIPE SIZES

Use pipe sizes which give a minimum pressure at any appliance inlet of 1.13 kPa for natural gas, when all appliances are in use, and with a maximum design pressure drop from meter outlet to any appliance of 80 Pa. All to NZS 5261.

1.7 PRESSURE TEST

Pressure test the system for leakage to NZS 5261 before pipework is concealed by linings.

1.8 FINAL INSPECTION AND TEST

Submit the work for inspection and test and prove to the satisfaction of the network utility operator that the installation complies with all Acts and Regulations and has been tested for leakage and proved to be sound.

1.9 CERTIFICATION CERTIFICATE

Provide a Gasfitting Certification Certificate as required by Regulation 24 of the Gas Regulations 1993.

2. PRODUCTS

2.1 COPPER PIPE

Complete with fittings to NZS 5261.

2.2 STEEL PIPE

Galvanised and wrapped or coated, complete with fittings to NZS 5261.

2.3 POLYETHYLENE PIPE

To NZS 7646 and complete with fittings to NZS 5261.

2.4 ISOLATING VALVES

Manual shut-off valves to NZS 5261.

2.5 METER

Primary meter to suit design load, supply pressure and pressure drop, supplied and installed by the network utility operator.

3. EXECUTION

3.1 GENERALLY

Carry out the whole of this work to the requirements of NZBC acceptable solution G10/AS1 and NZS 5261.

3.2 MAINS CONNECTION

Arrange for the network utility operator to extend their distribution system through the primary meter to connect to this installation all to NZS 5258.

- 3.3 **METER**
Check the location of the meter enclosure with the owner. Allow to install as detailed.
- 3.4 **PIPING**
Run the system, completely concealed, in the most suitable type of pipe for each part of the installation, bent, supported, jointed and complete with all fittings to NZS 5261. Confirm the type of pipe to be used and its location.
- 3.5 **GAS APPLIANCES**
Supply, fit and connect the following appliances to NZS 5261, complete with flues as required and all to the appliance manufacturer's requirements.
- 3.6 **GAS HOT WATER HEATER**
Connect the following gas hot water heater supplied and fitted under 7101 WATER, to NZS 5261 and the heater manufacturer's requirements.
- 3.7 **REPLACE**
Replace all damaged, cracked or marked elements.
- 3.8 **LEAVE**
Leave all appliances clean and in full working order and leave all work to the standard required for all following trades.
- 3.9 **REMOVE**
Remove all debris, unused materials and elements from the site.

7401 RAINWATER PLUMBING

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:

- NZS/AS 1397 Steel sheet and strip - hot-dipped, zinc-coated or aluminium/zinc-coated
 BRANZ Bulletin 304: Flashing design.
 BRANZ Bulletin 305: Domestic flashing installation.

2. PRODUCTS

UPVC

2.1 UPVC SPOUTING

Profile, jointing, brackets and fittings brand matched and complete to the spouting manufacturer's specifications

2.2 UPVC DOWNPIPES

Tubes, stand-off brackets and fittings brand matched and complete to the manufacturers specifications

Profiled Galvanised Steel

2.3 PROFILED GALVANISED SHEET STEEL

0.60mm sheet steel galvanised to NZS/AS 1397.

2.4 GALVANISED STEEL SPOUTING

Quarter-round 125mm.

2.5 GALVANISED STEEL DOWNPIPES

Formed into round tube, seam jointed and complete with stand-off brackets, galvanised screw fixed.

Rectangular Galvanised Steel

2.6 RECTANGULAR GALVANISED SHEET STEEL

0.60mm sheet steel galvanised to NZS/AS 1397.

2.7 GALVANISED STEEL SPOUTING

Profile, jointing, brackets and fittings brand matched and complete to the spouting manufacturer's specifications.

2.8 GALVANISED STEEL DOWNPIPES

Formed into round tube, seam jointed and complete with stand-off brackets, galvanised screw fixed

Rectangular Aluminium And Zinc Alloy Coated Steel

2.9 RECTANGULAR ALUMINIUM AND ZINC ALLOY COATED SHEET STEEL

0.60mm sheet steel coated to NZS/AS 1397.

2.10 ALUMINIUM AND ZINC ALLOY COATED STEEL SPOUTING

Profile, jointing, brackets and fittings brand-matched and complete to the spouting manufacturer's specifications

2.11 ALUMINIUM AND ZINC ALLOY COATED STEEL DOWNPIPES

Formed into round tube, seam jointed and complete with stand-off brackets, galvanised screw fixed

Rectangular Pre-painted Galvanised Steel

2.12 RECTANGULAR PRE-PAINTED GALVANISED SHEET STEEL

0.60mm sheet steel galvanised to NZS/AS 1397.

2.13 PRE-PAINTED GALVANISED STEEL SPOUTING

Profile, jointing, brackets and fittings brand matched and complete to the spouting manufacturer's specifications

2.14 PRE-PAINTED GALVANISED STEEL DOWNPIPES

Formed into round tube, seam jointed and complete with stand-off brackets, galvanised screw fixed

Rectangular Aluminium And Zinc Alloy Coated Pre-Painted Steel

2.15 RECTANGULAR ALUMINIUM AND ZINC ALLOY PRE-PAINTED SHEET STEEL

0.60mm sheet steel coated to NZS/AS 1397, pre-painted

- 2.16 ALUMINIUM AND ZINC ALLOY COATED PRE-PAINTED STEEL SPOUTING
Profile, jointing, brackets and fittings brand matched and complete to the spouting manufacturer's specifications.
- 2.17 ALUMINIUM AND ZINC ALLOY COATED PRE-PAINTED STEEL DOWNPIPES
Formed into round tube, seam jointed and complete with stand-off brackets, galvanised screw fixed.

Copper

- 2.18 COPPER SHEET
0.60mm (24g) copper sheet.
- 2.19 COPPER SPOUTING
Quarter-round 125mm.
- 2.20 COPPER DOWNPIPES
Formed into round tubes, seam jointed and complete with stand-off copper brackets, brass screw fixed.

General

- 2.21 RAINWATER HEADS, DROPPERS, OVERFLOWS
Fabricate and install as detailed.
- 2.22 FLASHINGS GENERALLY
0.6mm sheet steel galvanised to NZS/AS 1397, aluminium-zinc coated to NZS/AS 1397, 1.8mm (20kg/m²) copperised pure lead 0.5mm copper sheet and 0.7mm aluminium sheet, all to location, compatibility and design requirements of BRANZ Bulletin 304 "Flashing design."
- 2.23 DOMES
Wire mesh in round form with legs to clip inside the outlet opening to the downpipe
- 2.24 SPOUTING MESH
Flexible plastic mesh fitted into the spouting to the spouting mesh manufacturer's requirements

3. EXECUTION

- 3.1 ELECTROLYTIC ACTION
Avoid electrolytic action by eliminating contact or continuity of water between dissimilar metals.

Check compatibility of all metals used for rainwater goods, against the materials used for roofing and flashings. Notify any incompatibility to the owner and obtain written approval for amendments to selections and then submit to the territorial authority for their approval.

- 3.2 LIAISON
Ensure liaison with all associated installations to ensure material selections are compatible and all required flashing work is completed.

UPVC

- 3.3 FIT UPVC SPOUTING
Fit and screw fix brackets, set to falls to outlets. Solvent welded or rubber ring jointed spouting section to be complete with all fittings to the spouting manufacturer's requirements.
- 3.4 FIX UPVC DOWNPIPES
Screw fix stand-off brackets, set pipes plumb and clear of the wall, solvent welded. Discharge into stormwater bends

Galvanised Steel

- 3.5 FIT GALVANISED STEEL SPOUTING
Screw fix brackets, set to falls to outlets, with spouting joints silicone sealed and pop-riveted to the spouting manufacturer's requirements.
- 3.6 FIX GALVANISED STEEL DOWNPIPES
Screw fix stand off brackets, set pipes plumb and clear of the wall, with joints silicone sealed. Discharge into stormwater bends

Aluminium And Zinc Alloy Coated Steel

- 3.7 FIT ALUMINIUM AND ZINC ALLOY COATED STEEL SPOUTING
Screw fix brackets, set to falls to outlets, with spouting joints silicone sealed and pop-riveted to the spouting manufacturer's requirements

7402 SANITARY PLUMBING

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:

NZBC	G1/AS1	Personal hygiene
		2.0 Fixture construction and installation
		3.0 Location of sanitary fixtures
NZBC	G13/AS1	Foul water - sanitary plumbing
AS/NZS 3500	National plumbing code	
NZS 7641	Unplasticized PVC waste and ventilating pipe, fittings and accessories, 32mm, 40mm and 50mm	
Plumbers, Gasfitters and Drainlayers Act 1976		

1.2 QUALIFICATIONS

Work covering waste disposal and plumbing fittings to be carried out by or under the direct supervision of a person registered under the Plumbers, Gasfitters and Drainlayers Act 1976.

2. PRODUCTS

2.1 UPVC WASTE, SOIL AND VENT PIPES

UPVC pipe to NZS 7641 complete with fittings brand-matched to the pipe manufacturer's requirements.

2.3 EXPOSED PIPES

Chrome plate on copper pipes, or white polybutylene or PVC, including back nuts.

3. EXECUTION

3.1 GENERALLY

Carry out the whole of this work and tests to AS/NZS 3500 or NZBC acceptable solutions G1/AS1, 2.0, 3.0 and G13/AS1.

3.2 ELECTROLYTIC ACTION

Avoid electrolytic action by eliminating actual contact or continuity of water between dissimilar metals.

3.3 SANITARY FIXTURES

Fit and install all sanitary fittings and associated screens, elements and hardware, plumb, true to line and rigid, all to the fixture manufacturer's requirements. Standard chrome plated wastes and plastic plugs on chrome plated chains to be supplied with all basins, tubs and baths.

3.4 TRAPS, WASTE AND VENT PIPES

Connect waste outlets to traps and run waste pipes and back vents concealed, all sized and fixed to AS/NZS 3500 or NZBC acceptable solution G13/AS1. Discharge wastes into the drainage system stack, soil pipe, or gully trap as shown. Bird proof mesh to all roof vents and vermin proof mesh to all untrapped waste pipes.

3.5 PENETRATIONS

At all penetrations through constructions provide and fit collars to match pipework.

3.6 SUNDRY HARDWARE

Install all sundry hardware and fittings as selected.

3.7 TEST

Test all soil and waste disposal systems to ensure no leakage exists and leave all in working order.

3.8 CLEAN UP

Remove labels and clean all fittings. Remove all unused materials from the site.

- 3.8 **FIX ALUMINIUM AND ZINC ALLOY COATED STEEL DOWNPIPES**
Screw fix stand off brackets, set pipes plumb and clear of the wall, with joints silicone sealed. Discharge into stormwater bends.

Galvanised Steel, Pre-Painted

- 3.9 **FIT GALVANISED STEEL PRE-PAINTED SPOUTING**
Screw fix brackets, set to falls to outlets, with spouting joints silicone sealed and pop-riveted to the spouting manufacturer's requirements.
- 3.10 **FIX GALVANISED STEEL PRE-PAINTED DOWNPIPES**
Screw fix stand off brackets, set pipes plumb and clear of the wall, with joints silicone sealed. Discharge into stormwater bends.

Aluminium And Zinc Alloy Coated Steel Pre-Painted

- 3.11 **FIT ALUMINIUM AND ZINC ALLOY COATED STEEL PRE-PAINTED SPOUTING**
Screw fix brackets, set to falls to outlets, with spouting joints silicone sealed and pop-riveted to the spouting manufacturer's requirements.
- 3.12 **FIX ALUMINIUM AND ZINC ALLOY COATED STEEL PRE-PAINTED DOWNPIPES**
Screw fix stand off brackets, set pipes plumb and clear of the wall, with joints silicone sealed. Discharge into stormwater bends.

Copper

- 3.13 **FIT COPPER SPOUTING**
Screw fix spouting brackets to fall to outlets. Spouting joints silfos brazed.
- 3.14 **FIX COPPER DOWNPIPES**
Screw fix stand off brackets, set downpipes plumb and clear of wall, with joints silfos brazed. Discharge downpipes into stormwater bends.

General

- 3.15 **FLASHINGS**
Scribe fit, fold, lap, seam, or run solder as required by the metal, to flash all roof penetrations, roofing and exterior joinery to prevent weather penetration. Allow for 2 rows of rivets to all overlapping sheet joints. Install and fix flashings and flashing joint to the criteria stated in BRANZ Bulletins 304 "Flashing design" and 305 "Domestic flashing installation."
- 3.16 **INSTALL DOMES**
Install wire mesh domes at the top of all downpipes.
- 3.17 **INSTALL SPOUTING MESH**
Install mesh into spoutings, strictly in accordance with the mesh manufacturer's requirements.
- 3.18 **FLASH ROOF LIGHTS**
Flash to roofing to the manufacturer's specifications.
- 3.19 **LEAVE**
Leave all rainwater services in proper working order and all flashing work completed to keep the building weathertight.
- 3.20 **CLEAN UP**
Take away from the site all unused materials and elements.

7403 DRAINAGE

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:

NZBC	B1/AS1	Structure - general	6.0 Drains
NZBC	E1/AS1	Surface water	
NZBC	G13/AS2	Foul Water - drainage	
NZS 3108		Concrete production, ordinary grade	
NZS 3402		Steel bars for the reinforcement of concrete	
AS/NZS 3500		National plumbing and drainage code	
NZS 7643		Installation of Unplasticized PVC pipe systems	
NZS 7649		Unplasticized PVC sewer and drain pipe and fittings	
		Plumbers, Gasfitters and Drainlayers Act 1976	

1.2 AS-BUILT DRAWINGS

Supply a 1:100 scale as-built plan of drains and fittings to the territorial authority and to the owner on completion.

1.3 QUALIFICATIONS

All work to be carried out by or under the direct supervision of a person registered under the Plumbers, Gasfitters and Drainlayers Act 1976.

2. PRODUCTS

2.1 CONCRETE

17.5 MPa ordinary grade to NZS 3108.

2.2 REINFORCEMENT

To NZS 3402 Grade 300 deformed bars.

2.3 UPVC PIPES

UPVC pipes bends, junctions, fittings and joints to NZS 7649.

2.5 PLASTIC PIPES

Plastic pipes for field drains perforated and coiled with filter fabric over.

2.6 GULLY TRAPS

To NZBC acceptable solution G13/AS2, 3.2, complete with grating.

2.7 SURFACE WATER SUMP GRATINGS

Cast iron frame with lift-up grating.

2.8 INSPECTION COVERS

Cast iron frame with screw-down cover.

2.9 DRAINAGE AND FILLING MATERIALS

Granular:	Clean gravel or crushed stone or a blend of these. Particle size from minimum 7mm to maximum 20mm.
Selected:	Fine grain soil or granular material suitable for bedding, excluding topsoil.
Ordinary:	Top soil or other excavated materials.

3. EXECUTION

3.1 EXCAVATE

Excavate for drains to a firm even base with correct gradients set in straight runs.

3.2 MANUFACTURER'S REQUIREMENTS

All installations to the pipe and fitting manufacturer's requirements.

3.3 GENERALLY

Carry out drainage work and tests to AS/NZS 3500 and NZS 7643, all as modified by NZBC acceptable solution B1/AS1, 6.0

3.4 LAY FOUL WATER DRAINS

Lay drains in straight runs to correct gradients, to discharge into the network utility operators sewer. Set all inspection fittings concrete base.

3.5 INSTALL GULLY TRAPS

Set on concrete brought up to protect the top of the fitting. Trowel off.

- 3.6 LAY STORMWATER DRAINS**
Confirm the required location of all downpipes and all finished ground levels before commencing pipework. Set downpipe bend in concrete brought up to protect the top of the fitting from damage. Trowel off and fit a cast iron grating. Lay drains in straight runs to correct gradients to discharge into the network utility operator's stormwater system.
- 3.7 LAY SUBSOIL DRAINS**
Lay perforated coil piping firmly in a granular bed in straight runs to correct gradients, discharging into a cesspit. Carry the granular bed up over the pipes without disturbing them, to a total depth of 300mm and cover with geotextile fabric; all to the pipe manufacturer's requirements.
- 3.8 INSTALL SURFACE WATER SUMP**
To NZBC acceptable solution E1/AS1, complete with ceramic half-siphon pipe and cast iron frame with a lift out grating.
- 3.9 INSTALL STORMWATER INSPECTION CHAMBERS**
To NZBC acceptable solution E1/AS1, with channels to form a cascade and with a 75mm fall across the chamber. Bench from channels at 45 degrees and plaster all the interior with 1:2 cement: sand mortar, trowelled smooth. Fit a cast iron cover and frame.
- 3.10 INSTALL FOUL WATER INSPECTION CHAMBERS**
To NZBC acceptable solution G13/AS2, with ceramic channels to form a cascade and with a 75mm fall across the chamber. Bench from channels at 45 degrees and plaster all the interior with 1:2 cement: sand mortar, trowelled smooth. Fit a cast iron cover and frame.
- 3.11 SOAKHOLES OR TRENCHES**
Dispose of stormwater on site as shown on the drawings, by soakage, to suit local geology and soil structure; all as directed by the territorial authority.
- 3.12 CONCRETE ENCASEMENT**
Concrete encase shallow drains and drains under driveways, on a 100mm deep 17.5 MPa concrete bed reinforced with three 10mm mild steel bars. Surround pipes with a polythene membrane to allow movement and encase in 100mm 17.5 MPa concrete.
- 3.13 FIELD TEST**
Field test drains for watertightness (UPVC to NZS 7643 section 11) to the satisfaction of the territorial authority inspector.
- 3.14 BACKFILL**
Backfill drain lines in 150mm layers, well tamped but without disturbing the drains. Finish off with 150mm of topsoil, slightly mounded above the finished ground line.

7701 ELECTRICAL

1. GENERAL

1.1 DOCUMENTS

Documents referred to in this section are:

NZBC	F6/AS1	Lighting for emergency
NZBC	F8/AS1	Signs
SAA/SNZ 77		Definition of year 2000 conformity requirements
AS/NZS 2293		Emergency evacuation lighting for buildings
NZS 3000		New Zealand wiring rules
AS/NZS 3008		Electrical installations - Selection of cables
NZS 6401		3008.1.2: Typical New Zealand installation conditions
Electricity Regulations 1997		PVC-insulated cables for electric power and lighting
New Zealand electrical codes of practice (ECP)		

1.2 COMPLY

Comply with the Electricity Regulations 1997, NZS 3000, AS/NZS 3008.1.2 and the New Zealand electrical codes of practice for listed and prescribed work and with the utility network operator's requirements. Apply for the service connection. Arrange for the required inspections of listed work. Pay all fees.

1.3 QUALIFICATIONS

All work to be carried out by or under the direct supervision of a holder of a practising certificate under the Electricity Regulations 1997.

1.4 CERTIFICATE OF COMPLIANCE

Supply a certificate of compliance to the owner, as required by the Electricity Regulations 1997, and in particular, clauses 16, 34 and 35. Allow the network utility operator to view before the meter installation, listed work inspection, polarity check and liveness of supply.

1.5 YEAR 2000 COMPLIANCE

All hardware and software for the complete electrical installation to be "year 2000 compliant" as defined in, and in accordance with SAA/SNZ MP77.

2. PRODUCTS

2.1 MAINS UNDERGROUND, SINGLE PHASE

Tough plastic sheathed neutral screened cable to NZS 6401 and AS/NZS 3008.1.2, with a minimum rating of 60 amps per phase.

2.2 CABLES

Tough plastic sheathed copper conductors to NZS 6401 and in accordance with AS/NZS 3008.1.2. Minimum sizes are indicated below. Increase these as necessary due to method of installation, cable length or load.

Lighting circuits	1.5mm ² on 16 amp MCB's	
Power circuits (domestic)	1.5mm ² on 16amp MCB's	
Power circuits (domestic - insulated construction)		2.5mm ² on 16amp MCB's
Power circuits (commercial)	2.5mm ² on 20amp MCB's	

2.3 METER BOX

Rust protected metal case (glass panel door), all powder coated and complete with meter mounting, main switch and fuse.

2.4 DISTRIBUTION BOARD

Complete with neutral and earth busbars, MCB's and 60 amp main switch, complete with removable insulated panel and 20% spare space. Include 2 spare MCB's labelled as "spare." All protective devices to be 6kA MCB's of the appropriate rating.

2.5 WALL BOXES

Standard size in plastic, with 2 or more gang size in metal, all screw fixed.

2.6 SWITCH UNITS

16 amp, 230 volt flush polycarbonate units. For number of switches per unit, dimmer units, neon (indicator or toggle) units. Local units and 2-way units refer to the electrical drawings.

2.7 HOT WATER SYSTEM SWITCH

One way 20 amp switch complete with clamp for flexible PVC conduit.

2.8 SWITCHED SOCKET UNITS

10 amp, 230 volt flush polycarbonate 3 pin combined switch units.

- 2.9 **SHAVER AND EARTH LEAKAGE PROTECTED SOCKET OUTLETS**
Earth leakage protected 110/230 volt multiple plug configuration and residual current protected socket outlets, tripping at 30 mA
- 2.10 **CEILING ROSES**
White plastic mounting base with screwed cover and to be terminal type.
- 2.11 **BATTEN HOLDERS**
Standard white plastic bayonet cap, with cap angled where wall mounted, and brass liners.
- 2.12 **BELL SYSTEM**
Supply a bell transformer as part of the distribution board.
- 2.13 **TV AERIAL**
Aerial, co-axial cable and outlets, suitable for both VHF and UHF reception.
- 2.14 **GARAGE DOOR CONTROLLERS**
Refer to 4503 COMPOSITE DOORS, WINDOWS AND ROOFLIGHTS.
- 2.15 **SELECTIONS**
Confirm all selections with the owner in writing before ordering.
3. **EXECUTION**
- 3.1 **MAINS**
Lay underground mains to the network utility operator's requirements. Excavate trench, install marker tape and backfill.
- 3.2 **METER BOX**
Fit to the meter box manufacturer's requirements and the network utility operator's requirements, level and plumb where shown on the plan. Recess into the external wall, flash to weatherproof.
- 3.3 **DISTRIBUTION BOARD**
Fit to the board manufacturer's requirements, level and plumb where shown on the plan. Recess into the wall. All labelling to be complete and include a warning notice if light dimmers are used in the installation.
- 3.4 **CABLING**
Install with a maximum of 8 light outlet units or 4 switched socket units on any circuit. Separate circuits for all electric heating appliances. All cabling to be run concealed. No TPS cable to be laid directly in concrete and all holes in timber framing for the passage of cables to be at the centre line of the timber member.
- 3.5 **SWITCH AND SOCKET UNITS**
Fit all single and double switch units and socket units level and plumb where shown on the drawings. Install at the following heights (to the centre of the unit) unless shown otherwise on the electrical drawings.
Switch Units : 1000mm
Socket Units : 150mm above work benches
400mm elsewhere
Mount switches vertically and socket units horizontally. Label all switch units which control electrical equipment by engraving on the rocker switch.
- 3.6 **LIGHT FITTINGS**
Install selected light fittings in the locations and heights shown on the drawings and in accordance with the fitting manufacturer's requirements.
- 3.7 **EMERGENCY AND EXIT LIGHT FITTINGS**
Install selected fittings in the locations and heights shown on the drawings and in accordance with NZBC acceptable solutions F6/AS1 and F8/AS1, AS/NZS 2293, including test facilities.
- 3.8 **ELECTRIC HOT WATER SYSTEM**
Wire as a separate circuit through a wall-mounted isolating switch, with the cable from switch to element encased in flexible PVC conduit, clamp fixed at each end. Hot water cylinders, thermostats and 3000 watt element supplied and fitted under 7101 WATE
- 3.9 **WIRE FOR PLUMBING FITTINGS**
Wire for all fittings to the Electricity Regulations 1997 and to the fitting manufacturer's requirements.
- 3.10 **TELEPHONE WIRING**
Wire for the telephone outlets shown on the electrical drawings.
- 3.11 **TELEPHONE DRAW WIRES**
Supply draw wires for the telephone outlets shown on the drawings.

- 3.12 **TV AERIAL**
Fit aerial, run cabling concealed below the roof and fit outlets where shown on the electrical drawings. The system to be suitable for high quality reception of all VHF and UHF channels - Sky TV installation practices minimum.
- 3.13 **WALL HEATERS**
Install to the heater manufacturer's requirements, fitted neatly and without damage to surrounding finishes.
- 3.14 **CENTRAL VACUUM UNIT**
Install central unit, ducting and outlets to the system manufacturer's requirements, with room outlets fitted neatly and without damaging surrounding finishes.
- 3.15 **SECURITY SYSTEM**
Install to the system manufacturer's requirements, with control panel, detectors and associated equipment fitted neatly and without damage to surrounding finishes.
- 3.16 **MANUAL FIRE ALARM SYSTEM**
Install to the system manufacturer's requirements, with outlets fitted neatly and without damage to surrounding finishes.
- 3.17 **SMOKE DETECTORS**
Install detectors to the detector manufacturer's requirements, fitted neatly and without damage to the surrounding finish.
- 3.18 **ELECTRIC POWERED FITTINGS AND EQUIPMENT**
Install and wire all selected fittings and equipment to the Electricity Regulations 1997 and the individual fittings and equipment manufacturer's requirements. Refer to the drawings for required layouts and locations for equipment.
- 3.19 **ELECTRIC POWER FOR SITEWORKS**
Provide circuits and connections for site installations, including 12 volt path lighting and electronic irrigation systems. Refer to drawings for required connection points. High current capacity wiring to be used for all 12 volt system wiring.
- 3.20 **EARTHING PROTECTION**
Provide a plastic toby box or UPVC tube to contain and protect the earth pin. Fix the connecting earth wiring closely and secure against wall surfaces.
- 3.21 **LABELLING**
Provide and install a printed label under each controller, switch and circuit breaker on all distribution boards. List the rating of each circuit.
- 3.22 **COMPLETION**
Leave all work operating correctly, with all equipment clean and all light bulbs and tubes operational.



Building Consent

Section 35, Building Act 1991

Application

J ADAMS	No.	001690
C/- ENVIROPLUS LTD	Issue date	12/12/00
PO BOX 223	Application date	5/12/00
OTAKI	Overseer	STEPHEN STRADLING

Project

Description	New Construction Being Stage 1 of an intended 1 Stage NEW DWELLING
Intended Life	Indefinite, but not less than 50 years
Intended Use	RESIDENTIAL
Estimated Value	\$215,000
Location	56 KAKARIKI GROVE, WAIKANAE
Legal Description	LOT 8 DP 67900
Valuation No.	

Charges

The Council's charges paid on uplifting this Building Consent, in accordance with the attached details are:

	\$	1,272.50
Building Research Levy	\$	215.00
Building Industry Authority Levy	\$	139.75
Total	\$	1,627.25

PAID

This building consent is a consent under the Building Act 1991 to undertake building work in accordance with the attached plans and specifications so as to comply with the provisions of the building code. It is not a consent under the Resource Management Act and does not affect any duty or responsibility under any other Act nor permit any breach of any other Act.

This building consent is issued subject to the conditions specified in the attached page(s) headed Conditions of Building Consent 001690.

Signed for and on behalf of the Council:

Name: 

Date: 12.12.00

RESTRICTIONS ON IMPLEMENTING BUILDING CONSENT

Section 35 (1A), Building Act 1991

Certificate issued by Kapiti Coast District Council Building work authorised by Building Consent No. **001690** in respect of building work at:

Street address: **56 Kakariki Grove** **Waikanae**

Legal Description: **Lot 8 – DP 67900**

Also required to have the following authorisation under the Resource Management Act 1991:

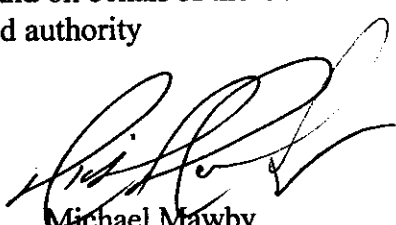
- **The development impact fees are to be paid before any work is commenced on site**

Until that authorised has been obtained

No building work to which the above building consent relates may be undertaken.

Failure to observe the restrictions of this certificate may result in enforcement proceedings under the Resource Management Act 1991.

Signed for and on behalf of the Council:
By delegated authority


Name: **Michael Mawby**
Position: **Building Control Officer** Date: **5 December, 2000**

1. Approval of this building consent is subject to compliance with a certificate issued pursuant to Section 35(1A) of the Building Act 1991.

1. LAPSE AND CANCELLATION OF BUILDING CONSENT. A building consent shall lapse and be of no effect if the building work concerned has not been commenced within 6 calendar months after the date of issue. Or within such further period as the territorial authority allows.

I have read the foregoing requirements, and the Owner/Builder/Authorised Person hereby agrees to comply with them.

**OWNER/BUILDER/
AUTHORISED PERSON**

Date: _____

Building Certificate Number:

10007

(Section 56, Building Act 1991)

Issued By: Stephen Paul Stradling

Currently approved and registered as a building certifier in respect of the provisions of the Building Code listed in my scope of approval, with no general limitations.

To Kapiti Coast District Council

Building Consent Number:

Project Information Memorandum Number:

1563

Resource Consent Number:

<u>Project</u>		<u>Project Location</u>	
Project Type:	New Building	Owner:	John Adams
Intended Use:	Dwelling	Street Address:	56 Kakariki Grove
Lifespan:	Specified as 50 Years		Waikanae
Being Stage	1 of an Intended 1 Stages.	Legal Lot #	8
		Legal DP	67906

This Certificate does not apply to Electrical Wiring or Gas Fitting:

This is to certify that:

I have been engaged to inspect specified building work in relation to provisions of the building code.

The "Scope of Engagement" involves:

Certification of plans and specifications

On site inspection at all stages of construction

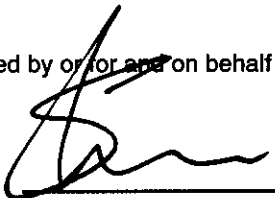
I am satisfied on reasonable grounds that:

The proposed building work would comply with the listed provisions of the building code if properly completed in accordance with the listed plans and specifications.

Specific exclusions (which are documented by Producer Statement and/or specific design):

1. FB 25H Fitch beam garage door lintel from Gangnail Tables.
2. 300x100 Cantilevered lintel in kitchen from Gangnail Tables.
3. Concrete foundations & Block Retaining Walls designed by MM Developments.

Signed by or for and on behalf of the building certifier



S. P. Stradling

Wednesday, 29 November 2000

To "Reactivate"

NO 2000

TO: (has been on hold)

P. Lee.



Enviropus Ltd.

PERSONS INTERESTED IN OR
CONSENT APPLICATION

To be completed by the applicant (please use block capitals):

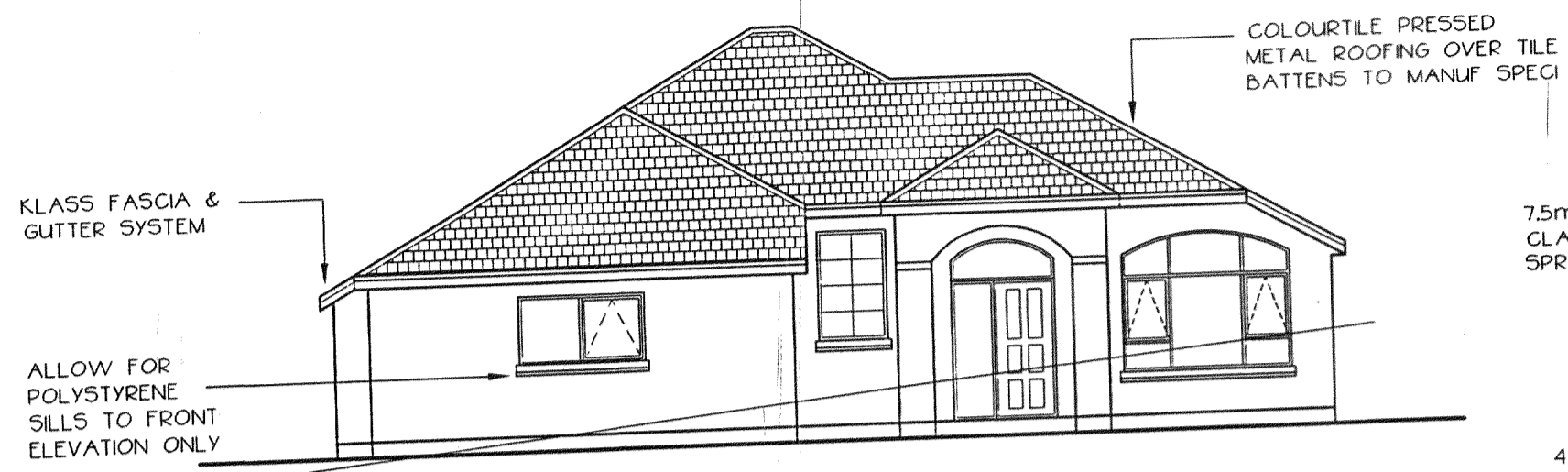
2000

Name of Applicant:	JOHN ADAMS 1850
Description of Proposal:	BUILDING TO BE 12500 FROM
Address/legal description of Property:	LOT 8 KAKARIKI GROVE WAIKANE

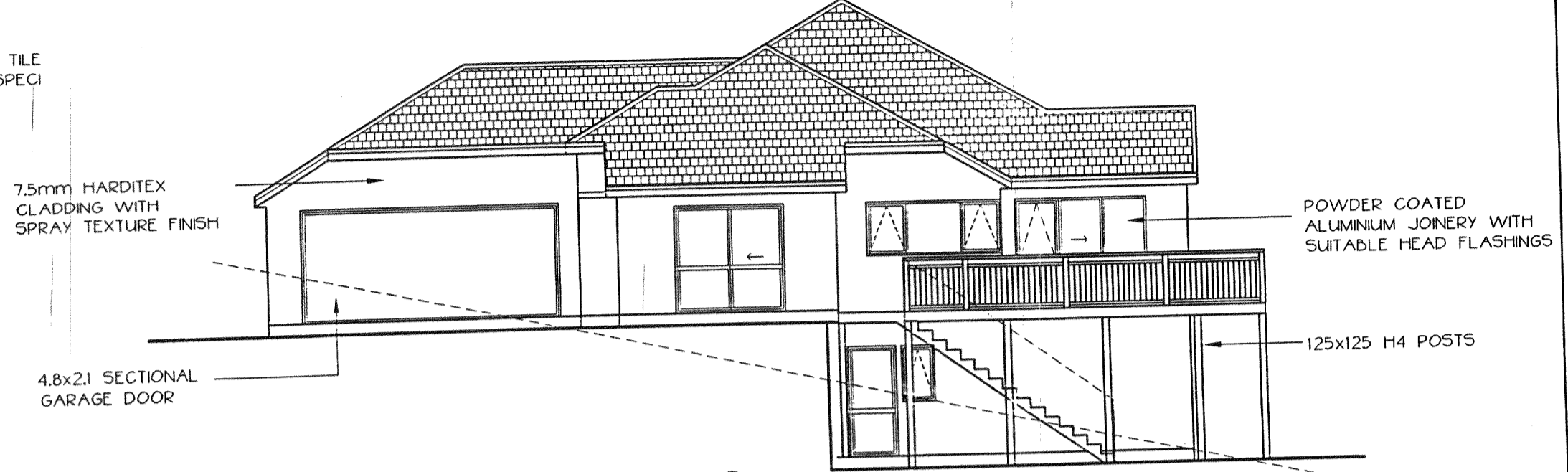
BA
bcu
L
by

To be completed by interested person/persons (please use block capitals):

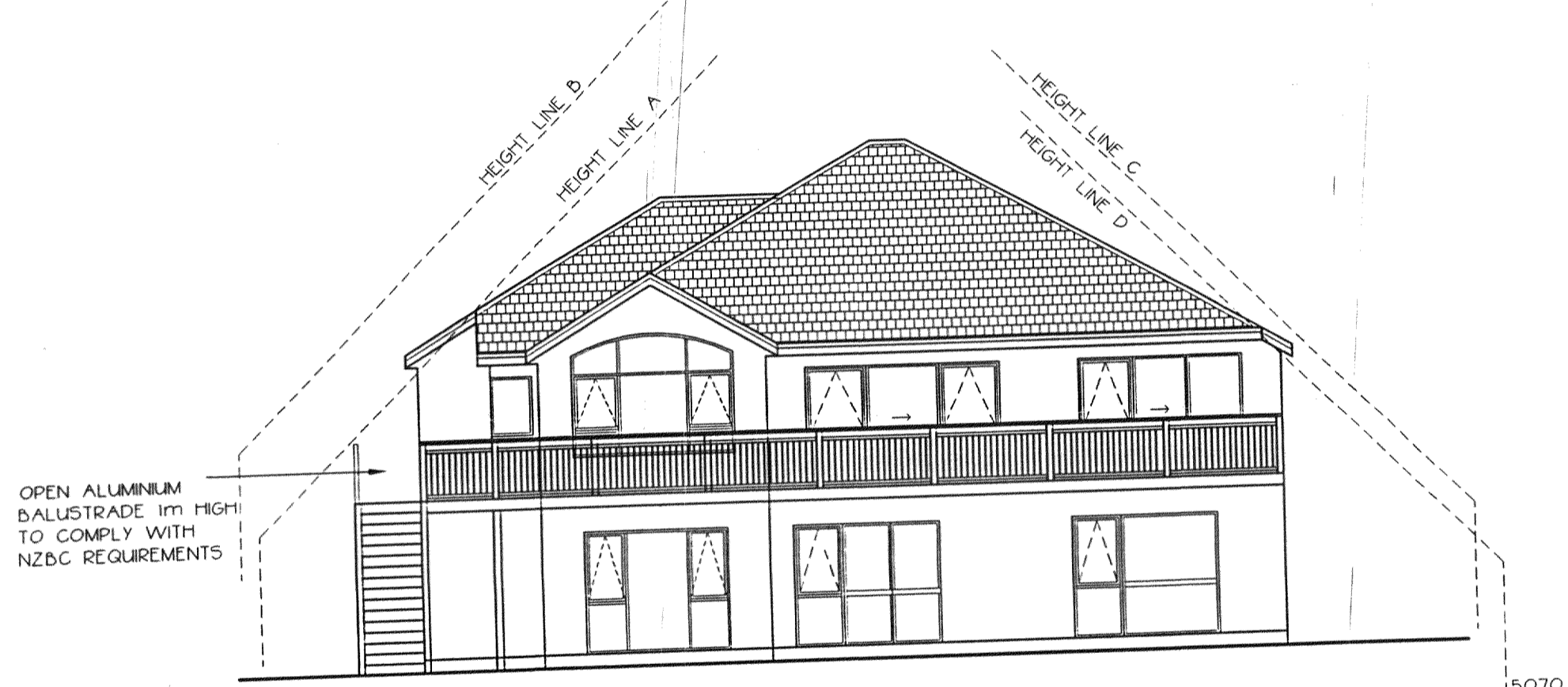
Name:	R. G. HARRIS
Address:	58 KAKARIKI GVE
Postal Address: (if different from above)	/
Phone No:	2937617
Date:	17/11/00.
	Tick Appropriate Box
I/We disapprove of the proposal	<input type="checkbox"/>
I/We approve of the proposal without conditions	<input checked="" type="checkbox"/>
I/We approve of the proposal with the following suggested conditions	<input type="checkbox"/>
* Council may impose the above suggested conditions if they are considered reasonable and practical.	
NOTE Please view and sign the site plan submitted with the application.	
Signature: <i>R. Harris</i>	



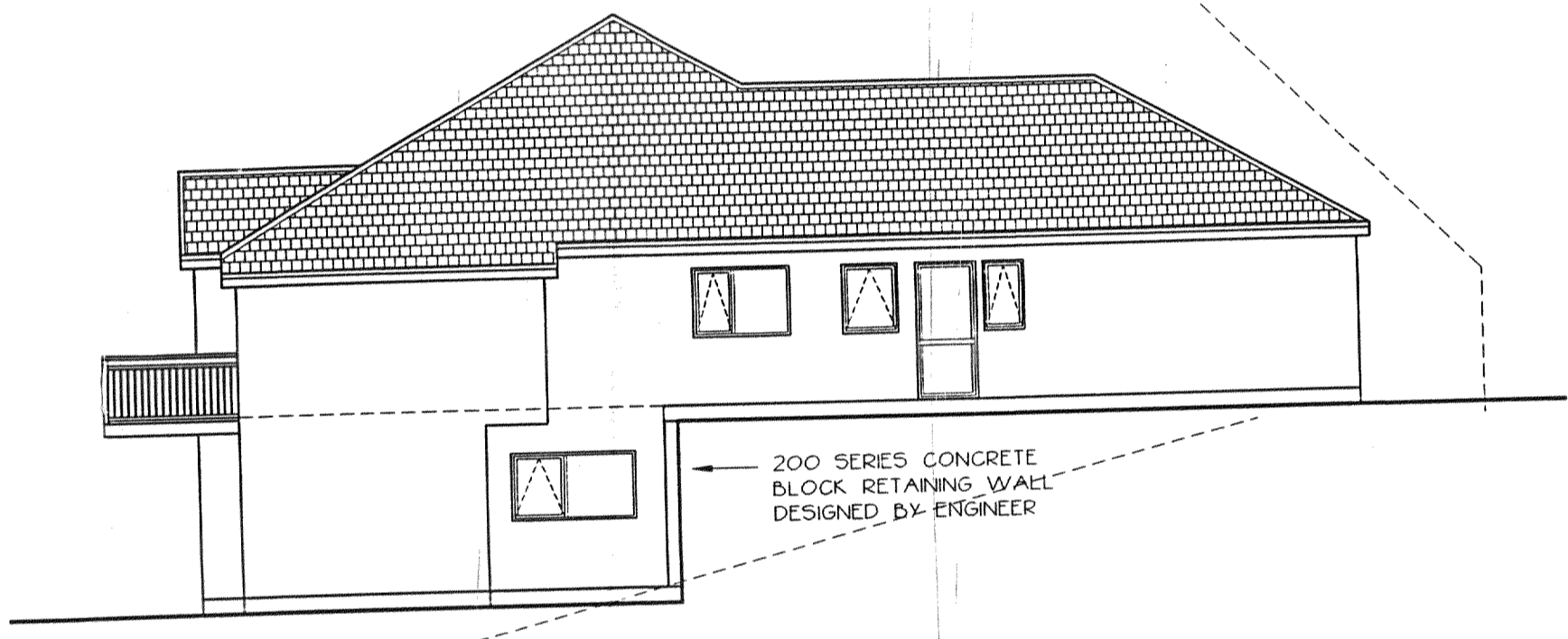
ELEVATION 1
SCALE 1:100



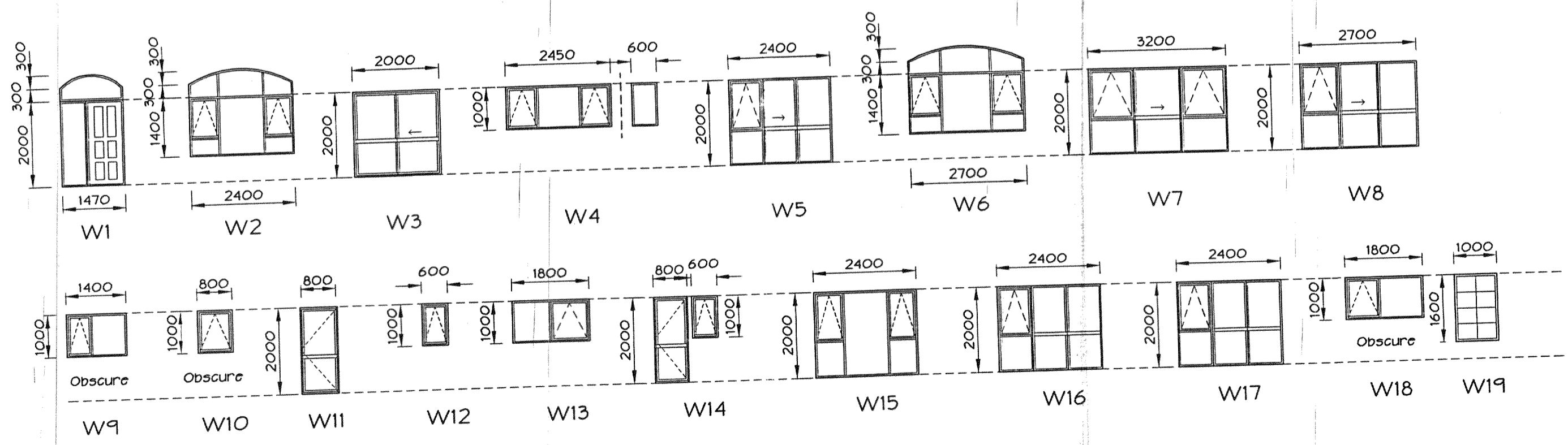
ELEVATION 2
SCALE 1:100



ELEVATION 3
SCALE 1:100



ELEVATION 4
SCALE 1:100



WINDOW SCHEDULE
Scale 1:100

PROJECT: **PROPOSED RESIDENCE FOR J ADAMS
LOT 8 KAKARIKI GROVE, WAIKANA E**

Design Network Kapiti

REVISIONS:

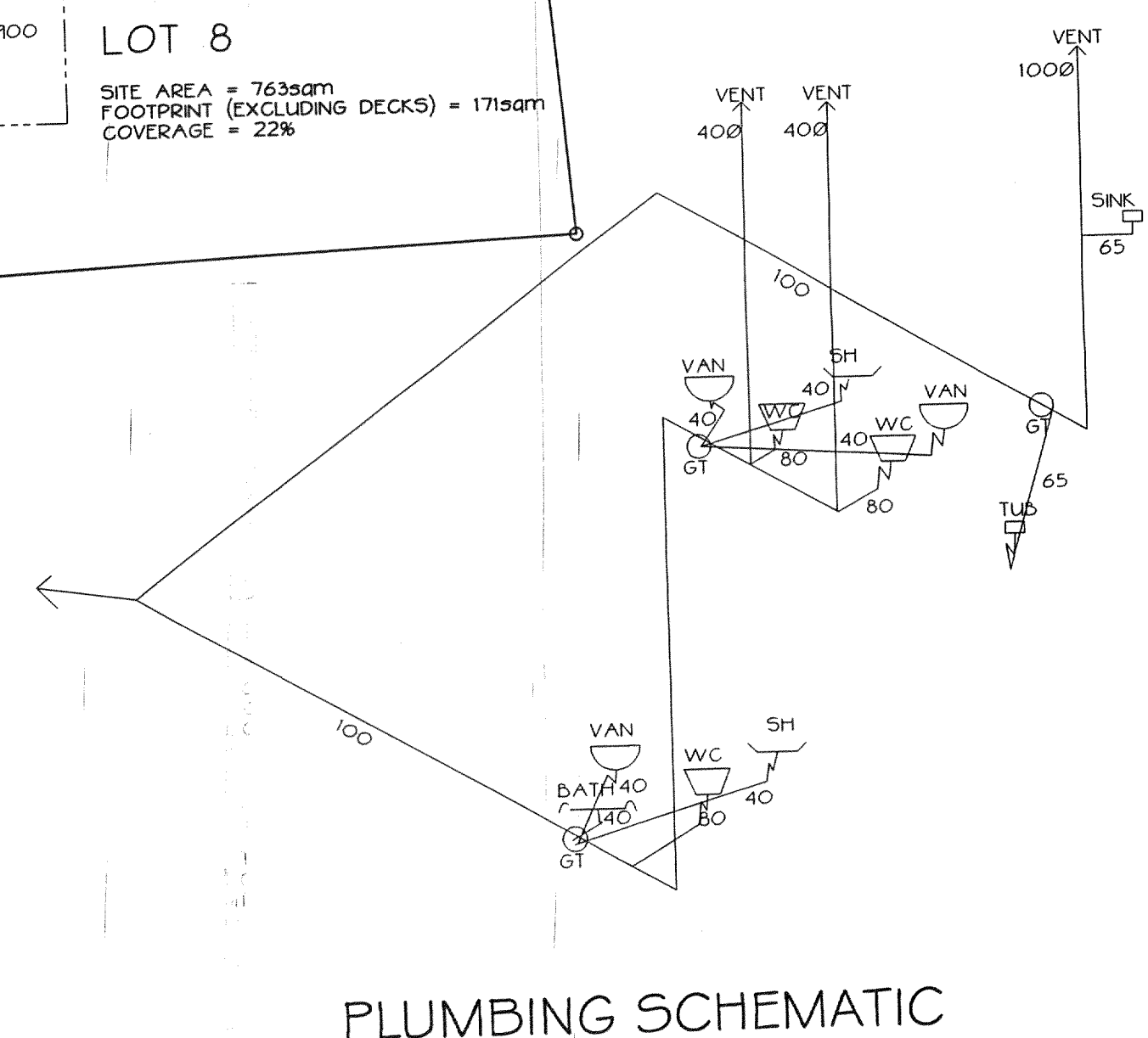
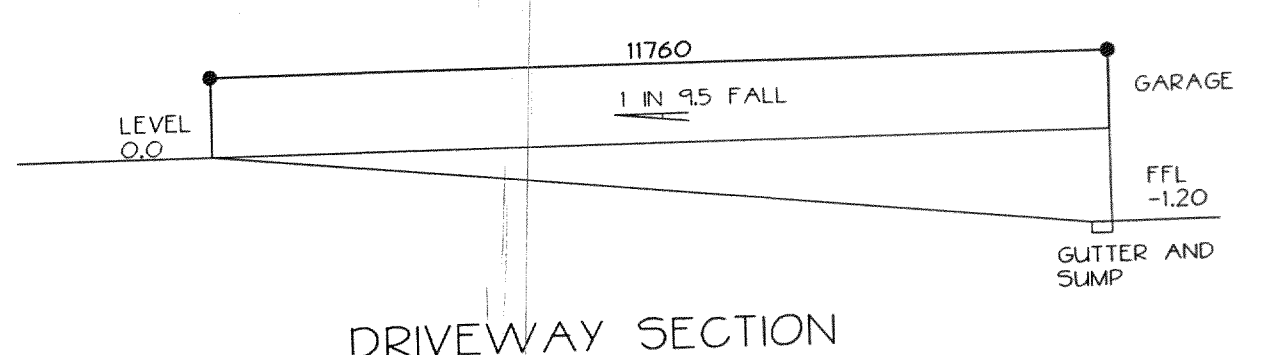
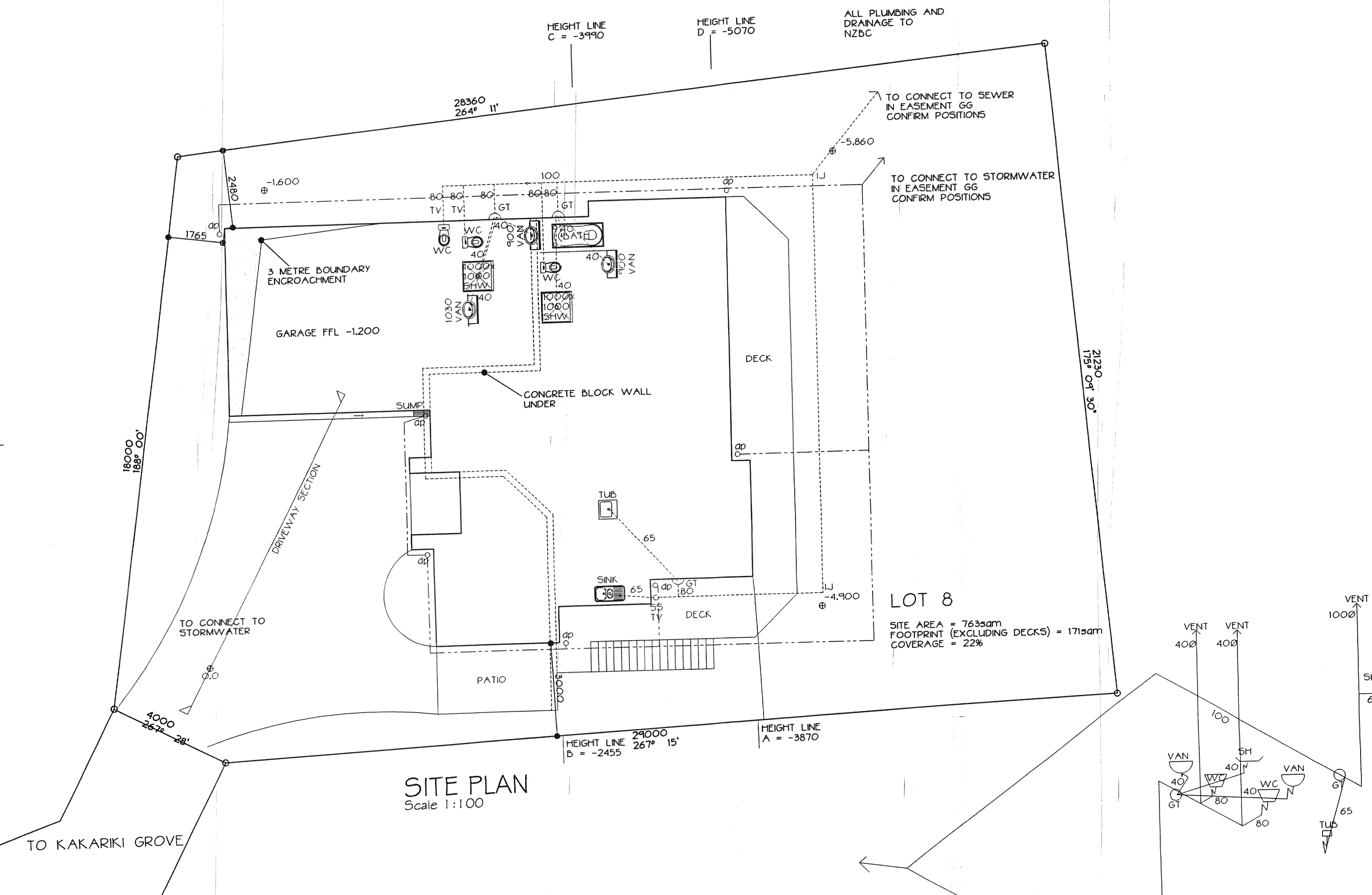
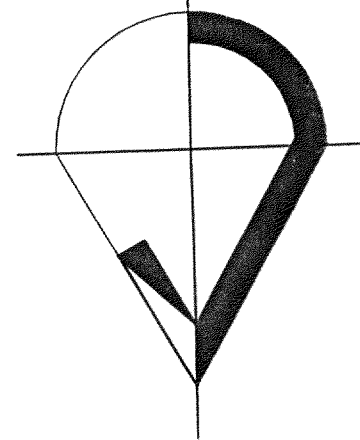
301 Kapiti Road
PO Box 1616
Paraparaumu Beach
New Zealand
Tel: 04 902 5505
Fax: 04 902 5504
Email: kapiti@desnet.co.nz

CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCING WORK. DO NOT SCALE DRAWINGS. THESE DRAWINGS ARE COPYRIGHT. DRAWINGS TO BE READ IN CONJUNCTION WITH STRUCTURAL ENGINEERS DRAWINGS.

DATE:	OCTOBER 2000
DESIGNED:	M STEVENS
DRAWN:	R.G & B.F
CAD REF:	2059
SCALE:	AS SHOWN

JOB/SHEET No:
2059/5
(A2 original) OF 8

North



PROJECT: **PROPOSED RESIDENCE FOR J ADAMS
LOT 8 KAKARIKI GROVE, WAIKANAЕ**

Design Network Kapiti

REVISIONS:

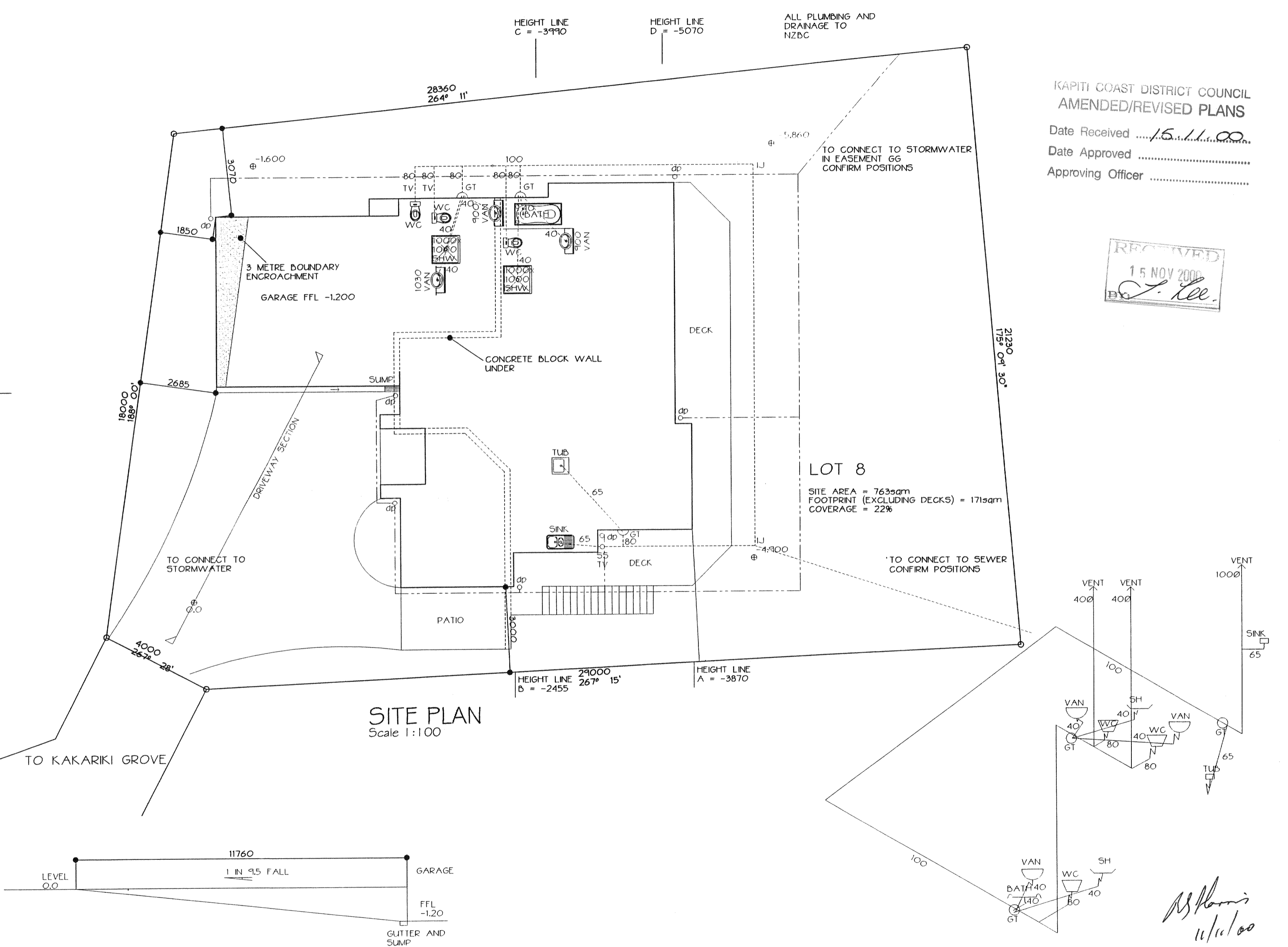
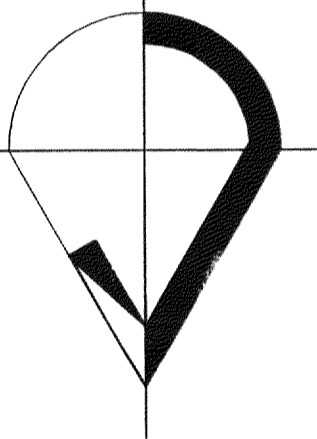
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(A2 original) OF 8

North

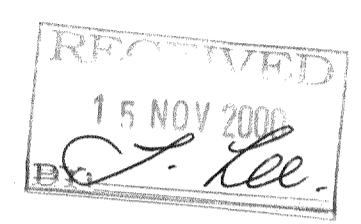


SITE PLAN
Scale 1:100

DRIVEWAY SECTION

PLUMBING SCHEMATIC

KAPITI COAST DISTRICT COUNCIL
 AMENDED/REVISED PLANS
 Date Received15.11.00.....
 Date Approved
 Approving Officer



PROJECT: **PROPOSED RESIDENCE FOR J ADAMS
 LOT 8 KAKARIKI GROVE, WAIKANA E**

Design Network Kapiti

REVISIONS:

301 Kapiti Road
 PO Box 1616
 Paraparaumu Beach
 New Zealand
 Tel: 04 902 5505
 Fax: 04 902 5504
 Email: kapiti@desnet.co.nz

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 WITH STRUCTURAL ENGINEERS
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DESIGNED:	M STEVENS
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CAD REF:	2059
SCALE:	AS SHOWN

JOB/SHEET No:
2059/1
 (A2 original) OF 8.

R. Harris
 11/11/00



Project Information Memorandum

Section 31, Building Act 1991

Application

J ADAMS	No.	001563
C/- ENVIROPLUS LTD	Issue date	28/11/00
PO BOX 223	Application date	24/11/00
OTAKI	Overseer	STEPHEN STRADLING

Project

Description	New Construction Being Stage 1 of an intended 1 Stage NEW DWELLING (PIM ONLY)
Intended Life	Indefinite, but not less than 50 years
Intended Use	RESIDENTIAL
Estimated Value	\$0
Location	56 KAKARIKI GROVE, WAIKANAE
Legal Description	LOT 8 DP 67906
Valuation No.	

This project information memorandum is confirmation that the proposed building work may be undertaken, subject to the provisions of the Building Act 1991, and any requirements of the building consent.

This project information memorandum includes:

- Information identifying relevant special features of the land concerned
- Details of relevant utility systems
- Details of authorisations which have been granted

Signed for and on behalf of the Council:

Name: 

Date: 28 NOV 2000



PROJECT INFORMATION MEMORANDUM Planning Requirements

APPLICANT: Adams

MAILING ADDRESS: _____

SITE ADDRESS: 56 Kakiriki Grove

LOT NO: 8 DP: 67906

PROJECT: New Building Alteration
 Removal/Demolition Relocated Building
 (approx. age _____ years)

INTENDED USE: Dwelling

ZONING: DISTRICT PLAN: Residential

USE PERMITTED: Permitted activity

RESOURCE CONSENT GRANTED: None listed

DESIGNATIONS ON PROPERTY: None listed

EASEMENTS: ROW

SITE SUBJECT TO INUNDATION: Not known to be

COASTAL BUILDING LINE RESTRICTION: N/A

RELOCATABLE ZONE: N/A

MINIMUM FLOOR LEVEL: (50 year event) 1 Metres above mean sea level

RECOMMENDED MINIMUM: 1

FLOOR LEVEL: (100 year event) 1 Metres above mean sea level

YARD & HEIGHT REQUIREMENTS: Comply (with adjoining owner's consent)

TREE/BUILDING PRESERVATION: None listed

OTHER COMMENTS: Development Impact Fees of \$1048.50 to be paid prior to issue of the Building Consent

Note: Minimum floor levels must use Mean Sea Level Wellington Datum 1953. Certification that the floor level complies with the minimum floor level will be required from a Registered Surveyor prior to foundation inspection.

SPECIAL FEATURES OF THE ABOVE LAND

Information is attached identifying the following special features of the land concerned that are known to Council:

- Potential Erosion
- Potential Avulsion
- Potential Subsidence
- Potential Slippage
- Potential Alluvion
- Potential Inundation
- Presence of Hazardous Contaminants

Other feature(s) or characteristic(s) likely to be relevant to the design or construction of the proposed buildings and not apparent from the District Scheme or District Plan:

(Plumbing & Drainage)

SEWER AVAILABLE/CONNECTED available

WATER AVAILABLE/CONNECTED available

SITE PLAN OF EXISTING SERVICES (IF ANY) none

LOCATION OF SEWER LATERAL shown

LOCATION AND SIZE OF WATER TAP 20mm shown

LOCATION OF EASEMENTS (IF ANY) See Planners Comments

LOCATION OF PUBLIC DRAINS (IF ANY) none shown

STORMWATER DISPOSAL TO CHANNEL

DRAIN

ON SITE

ADDITIONAL COMMENTS

10

7

B-T 03
T-M 34
M-K 08

ON BOX
B-T 00
T-K 06
ON BOX
B-T 00
T-K 06

B-T 01
T-M 0
M-K 0

B-T 03
T-M 31
M-K 11

B-T 03
T-M 33
M-K 09

11

9

5

50 DE
23

B-T 03
T-M 32
M-K 10
121

34

31

25 GN

97

144

136

100

160

95

50 PVC CLASS 103
25 ON
50 TEE
150 PVC CLASS 'D'

150 DE
CAP

150 SDEN

Boundary
Handout
11/14

B-T 00
T-M 29
M-K 16
ON RBY 64

100
B-T 01
T-M 30
M-K 14

12

13

To be shown

50 PVC CLASS

