

# 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.





# Code Compliance Certificate

Section 43(3), Building Act 1991

## Application

A CRAIG 14 ABUROC PLACE PARAPARAUMU	No. Issue date  Overseer	001118  BOB OLIVER
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## 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	\$179,000
Location	155 GUILDFORD DRIVE, PARAPARAUMU
Legal Description	LOT 9 DP 89035
Valuation No.	

This is a final Code Compliance Certificate issued in respect of all the building work under the above building consent.

This certificate is issued subject to the following conditions:

IT IS THE OWNERS RESPONSIBILITY TO CARRY OUT A REGULAR MAINTENANCE PROGRAM OF THE EXTERIOR OF THE DWELLING TO MEET THE TERMS AND CONDITIONS OF THE MANUFACTURES WARRANTY FOR DURABILITY OF THEIR PRODUCTS TO MEET THE BUILDING CODE. CLAUSES B2/AS1 [DURABILITY], AND E2/AS1 [EXTERNAL MOISTURE].

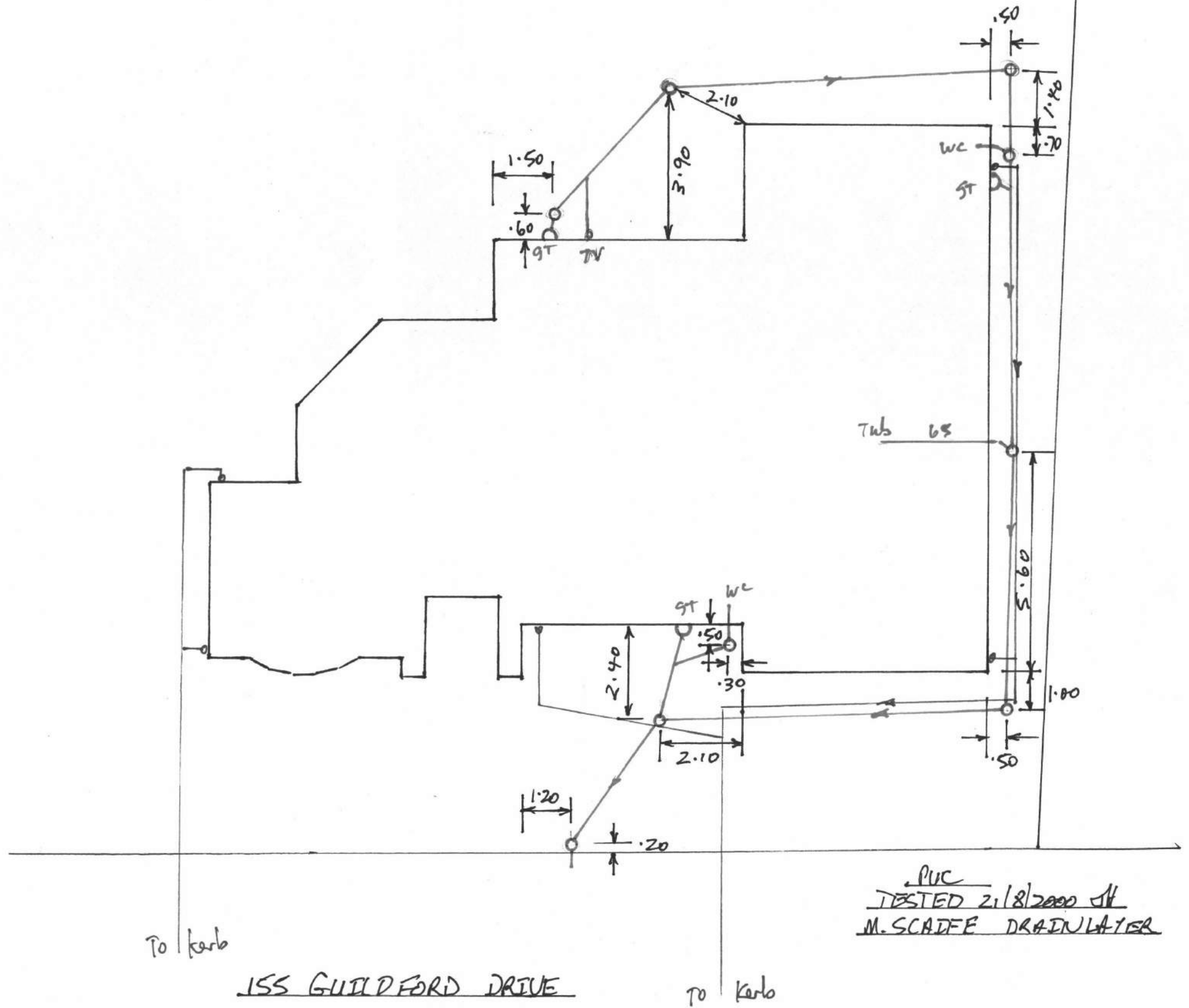
Signed for and on behalf of the Kapiti Coast District Council:

Name:

*V.R. Blaikie*

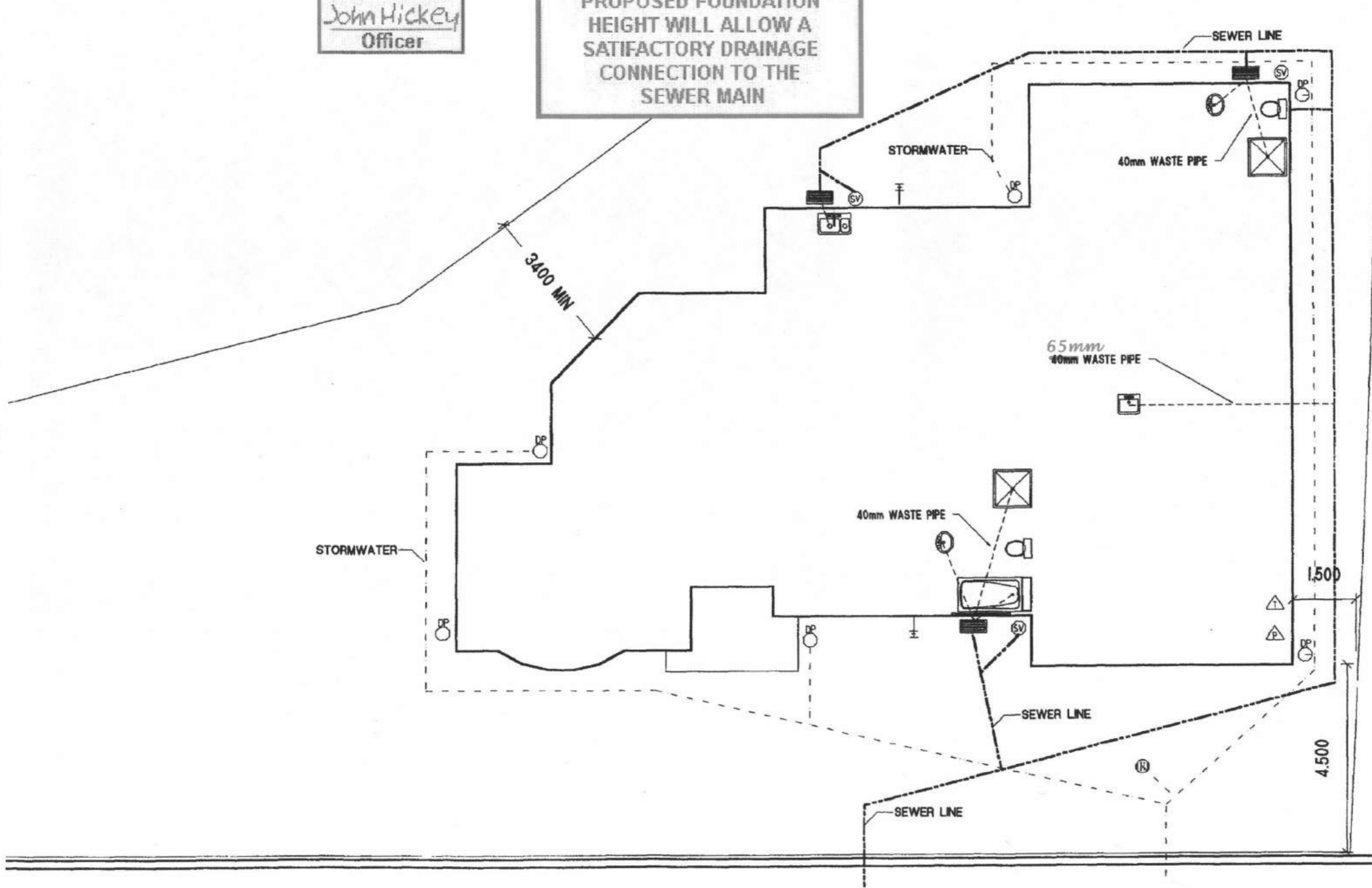
Date:

7.11.2000



APPROVED  
BY PLUMBING  
& DRAINAGE  
*John Hickey*  
Officer

BUILDER TO ENSURE THAT  
PROPOSED FOUNDATION  
HEIGHT WILL ALLOW A  
SATISFACTORY DRAINAGE  
CONNECTION TO THE  
SEWER MAIN



S E C H I C L E S

SPOUTING DOWNPIPE	WATER TOBY	GULLY TRAP	HOSETAP
INSPECTION POINT	SEWER VENT	POWER ENTRY	GAS ENTRY
INSPECTION BEND	SUMP POINT	PHONE ENTRY	

## Lot 9 Guildford Drive DESIGN NETWORK

DATE 7 JULY 2000  
SCALE 1:100  
PAGE #  
DATA PLAN SERVICES

KAPITI COAST DISTRICT COUNCIL

APPLICATION FOR SEWER CONNECTION AND PERMIT

The Borough Engineer  
Private Bag  
PARAPARAUMU

I, Craig (Full name)  
14 Aburoc Place (Postal Address)  
PLEASE PRINT

hereby apply for an ordinary connection to the Kapiti Borough Sewer from the premises owned by me at

(PROPERTY Address in full if different from above) 155 Guildford Dr.  
Lot 9 DP 89035

Fees Payable (on application)

Note: All dwelling units to pay full inspection fees.  
The connection fee to be divided equally between dwelling units situated on the same lot sharing a common lateral.

Inspection \$  
Connection \$  
Total \$ Subsidiary retic

..... Owners Signature ..... Date

THIS PART TO BE COMPLETED BY DRAINLAYER

I, Mark Scarle (full name)  
..... (address)

being a licensed Drainlayer apply for permission to connect the premises mentioned above to the Kapiti Borough Sewer.

N.B. Connection NOT permitted until permit obtained.

..... (Signature) ..... (License No.) ..... (Date)

OFFICE USE ONLY

Permit No. <u>001118</u>	Job Inspected <u>21/8/2000</u>	Building Register Entry
Date Issued <u>24/8/2000</u>	Connection Recorded	

APPLICATION FOR WATER SUPPLY AND CONNECTION PERMIT

Borough Engineer  
Vice Mayor  
RAPARAHUHI

*JA*

I, Craig (full name)

14 Aburoc Place (PLEASE PRINT) (Postal address)

hereby apply for an "ORDINARY" service to be laid from the Kapiti Borough Water Supply to the premises owned by me at:

(PROPERTY Address in full if different from above)

155 Guildford Dr

Lot 9 DP 89035

Fees Payable (on application)

Inspection \$  
Connection \$  
Total \$ subdivide rate

Note: All dwelling units to pay full inspection fees.

The connection fee to be divided equally between dwelling units situated on the same lot sharing a common lot

Owners Signature

Date

THIS PART TO BE COMPLETED BY PLUMBER

I, Mark Scarle (full name)  
of \_\_\_\_\_ (address)

being a Licensed Craftsman Plumber apply for permission to connect the above premises to the Kapiti Borough Water Supply. I agree to comply in every respect with the Kapiti Borough Water Supply By-Laws. Connection NOT permitted until permit obtained.

(Signature)

(Craftsman Licence No.)

(Date)

- |   |                                       |
|---|---------------------------------------|
| 1. Existing Water Supply .....                                    | To be retained/dismantled             |
| 2. Pressure: high/low   | "Header Tank"/Pressure Reducing Valve |
| 3. B/W Cylinder Type  | Exhaust Pipe/Pressure Relief Valve    |
| 4. Approximate age of Water piping .....                          | Copper/PVC/Alkathene .....            |
| 5. If premises have swimming pool/spa facility .....              | Filter plant Yes/No                   |
| 6. State precisely how it is proposed to make the new connection: |                                       |

New House

OFFICE USE ONLY

Permit No. <u>001118</u>	Job Inspected	Building Register Entry
Date Issued <u>27/8/2020</u>	Connection Recorded	

**ELITE WINDOWS & DOORS**  
P.O. BOX 1706, PARAPARAUMU BEACH  
TELEPHONE 04-902-6668, FAX 04 902-6669

6 November 2000

Kapiti Coast District Council  
Private Bag 601  
Paraparaumu

Attention: Building Department

Dear Sir

**Re.: Craig Property Guilford Drive.**

This is to confirm that the bathroom windows in the above property have been glazed with 6.38 stippolite bondlite safety glass.

Yours Faithfully



Rob Edlin.

Monday 10-30am (Don.)

245-0056

Form 9

# ADVICE OF COMPLETION OF BUILDING WORK

Section 43(1), Building Act 1991

To: Kapiti Coast District Council, Private Bag 601, Paraparaumu

[Cross each applicable box and attach relevant documents]

Under Building Consent No.: 001118

From [Owner]:

Name: Aaron Craig

Mailing Address: 34 Sunburst Court

Paraparaumu

Building Site Address: 155 Guilford Drive

You are hereby advised that:

- All
- Part only as specified in the attached particulars

of the building work under the above building consent is believed to have been completed to the extent required by that building consent.

You are requested to issue:

- A final
- An interim

code compliance certificate accordingly (except where a code compliance certificate has been issued by a building certifier as stated below).

The attached particulars include:

- Building certificates
- A code compliance certificate issued by a building certifier
- Producer statements

Signed for or for an on behalf of the owner:

Name: Aaron Craig

Position: Owner

Date: 8/11/2000

Business Hours Contact No.: 075-328925 - 2910449

# Electrical Certificate of Compliance

for prescribed electrical work that is carried out on electrical installations and involves the placing or positioning or the replacing or repositioning of conductors (including fittings attached to those conductors).

No. 1076852No. of attachments **CUSTOMER INFORMATION - PLEASE PRINT CLEARLY**Name of customer AARON COAKTelephone  Fax Address of installation ISS GUILDFORD DR PARAPARAUMUPostal address of customer (if not as above) **WORK DETAILS**

33 No. of lighting outlets  1 No. of ranges Please tick (✓) as appropriate where work includes:

29 No. of socket outlets  No. of water heaters  Mains  Main earth

Was any installation work carried out by the homeowner?  Yes  No  Switchboard  Electric lines

Description RUN MAINS CABLE AND LABEL MARKER DRIVE MAIN EARTH WIRE SWITCHBOARD / METER BOX READY TO GOEN RUN CABLES FROM OUTLETS TEST ALL EARTH COPPER PIPES AND METAL BENCH TEST ALL

Use sketch if necessary

**CERTIFICATION OF WORK**

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

**ELECTRICAL WORKER DETAILS**

Name BRAND TUGH

Registration no. E12842

Company B T ELECTRICAL

Signature [Signature]

Date 13/10/2000

**CERTIFICATION OF ELECTRIC LINES**

(to be completed where "Description of Work" includes "Electric Lines")

Name

Registration no.

Company

Signature

Date

**INSPECTION DETAILS** Electrical work requiring inspection by a registered electrical inspector

New mains  Switchboard  Earthing system  Installation work in hazardous areas

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

Name WALLY ITC Registration no. I 1362

Signature [Signature] Date 18.10.00

121 Diana Drive, Glenfield  
PO Box 40-130, Auckland 10  
NEW ZEALAND

Facsimile: (09) 444-9561  
Toll Free: (09) 444-6300  
Telephone: (09) 444-6440

**insulclad**<sup>®</sup>

## MATERIAL COMPONENTS GUARANTEE

Date of Issue: 10 October, 2000

Our Ref: I/491

Plaster Systems Ltd is an ISO 9002 registered Company and guarantees that the material components of the INSULCLAD system are manufactured to specification in accordance with an independently audited quality control system.

Plaster Systems Ltd guarantees for a period of 15 years (from date of completion) that the material components of the INSULCLAD system will perform and meet the relevant provisions of the New Zealand Building Code Clauses B1 Structure; B2 Durability; E2 External Moisture; E3 Internal Moisture and H1 Energy Efficiency. All the material components of the INSULCLAD system must have been prepared and installed in accordance with our written instructions and detail drawings and the work carried out by a licensed Insulclad Contractor. The system must have been properly maintained and subjected to no more than normal conditions of exposure.

Our products and systems are dependent upon the correct preparation and application of all the components in strict accordance with the relevant written instructions. On-site application is beyond our control and Plaster Systems Ltd cannot guarantee workmanship or the correct preparation and application of its INSULCLAD system. The licensed Contractor will on request provide a separate guarantee for their workmanship.

Plaster Systems Ltd will at its discretion, replace, repair or make a contribution to, any part of the INSULCLAD system where failure proves to be due to defective material components, provided notice is given in writing within the guarantee period.

Plaster Systems Ltd will not accept any responsibility for damage of any kind due to defective building structure, hydrostatic pressure, mechanical or physical abuse or any other abnormal cause.

**PLASTER SYSTEMS LTD will not honour this guarantee until all work has been fully paid.**

Guarantee Certificate issued to:  
Related to plaster work at:  
Date of Completion:  
Details of work:  
Contractor:

Aaron Craig Builder  
Lot 9 Gilford Drive, Paraparaumu  
22 September, 2000  
Insulclad Ultra System  
Tony Lincoln of Class Exteriors

For and On Behalf of  
**PLASTER SYSTEMS LIMITED**

Signed:   
**CONTRACTOR'S MANAGER**



# insulclad<sup>®</sup>

## WORKMANSHIP GUARANTEE

Date of Issue 10 October, 2000

Our Ref: I/491

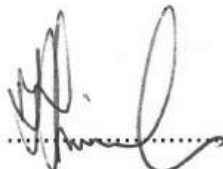
The licensed Insulclad Contractor certifies that this project has been completed with materials that meet Plaster Systems Ltd's specifications and that all work has been carried out in accordance with Plaster Systems Ltd's installation instructions.

The licensed Insulclad Contractor guarantees for a period of five years, that should any defect in the plastering system occur due to an application fault, the contractor will, at their discretion, replace, repair or make a contribution to the rectification of the defect. The system must have been properly maintained and subjected to no more than normal conditions of exposure.

The licensed Insulclad Contractor will not accept any responsibility for damage of any kind due to defective building structure, hydrostatic pressure, mechanical or physical abuse or any other abnormal cause.

The Insulclad System is dependent upon the correct specification of Plaster Systems Ltd's construction details, as provided in their current Data Sheet Manual. The licensed Insulclad Contractor will accept no responsibility for alternative construction details which are specified unless they have been agreed to in writing prior to their construction on-site.

Guarantee Certificate issued to:	Aaron Craig Builder
Related to plaster work at:	Lot 9 Gilford Drive, Paraparaumu
Date of Completion:	22 September, 2000
Details of work:	Insulclad Ultra System
Licensed Insulclad Contractors	Tony Lincoln of Class Exteriors

Signed:  .....

Date: 19/10/00 .....

# PACIFIC COILCOATERS LIMITED WARRANTS

That COLORCOTE® ZR8 and ZRX pre-painted steel used in the manufacture of **RESIDENTIAL BUILDINGS** will perform as follows.

1	Resistance to flaking, peeling and excessive fade	2. Will not perforate as a result of corrosion					
	Roofing and Wall Cladding	Roofing			Wall Cladding		
	ENVIRONMENT	ZR8	ZRX	ZR8	ZRX	ZR8	ZRX
	Very Severe	N/R	15 yrs	N/R	15 yrs	N/R	15 yrs
	Severe	15 yrs	20 yrs	15 yrs	20 yrs	15 yrs	20 yrs
	Moderate	15 yrs	20 yrs	30 yrs	20 yrs	15 yrs	20 yrs

That COLORCOTE® ZR8 and ZRX pre-painted steel used in the manufacture of **RAINWATER ROOFING PRODUCTS** (Guttering, Fascia and Downpipes) will perform as follows.

1	Resistance to flaking, peeling and excessive fade.	2. Will not perforate as a result of corrosion					
	ENVIRONMENT	ZR8	ZRX	ZR8	ZRX		
	Very Severe	N/A	10 yrs	N/A	10 yrs		
	Severe	10 yrs	12 yrs	10 yrs	12 yrs		
	Moderate	10 yrs	12 yrs	10 yrs	12 yrs		

COLORCOTE® products will inevitably weather, chalk, and fade over a period of time as a result of normal wear and tear. The terms Very Severe, and Moderate are explained in and are to be interpreted by reference to the individual technical brochures for COLORCOTE® ZR8 and ZRX. The General Usage Guide are summarised on the attached document. Determination of coating performance will be as per test methods described in Australian Standards AS 1580.

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

- This warranty will not apply to weathering, chalking or fading over time as a result of normal wear and tear.
- If the COLORCOTE® ZR8 and ZRX product has not been selected, processed or maintained in accordance with the respective recommendations and accepted trade practice, this warranty will not apply.
- Defects caused by faulty design, method of manufacture of Residential Buildings are not covered by this warranty.
- Product must be produced from prime 1st grade materials.
- Garage doors are not covered by this warranty.
- We must be given the opportunity for inspection on site prior to any remedial action being offered or taken.
- Downgrade COLORCOTE® ZR8 or ZRX material is not covered by the warranty.
- Damage or corrosion resulting from the following is not covered by the warranty.
  - 1) Damage sustained during handling, storage, processing, roll forming or installation.
  - 2) Damage sustained after installation.
  - 3) Causes after the product has left our control.
  - 4) Failure to remove any debris leading to the accumulation of moisture remaining matter in gutters and downpipes.

Our liability under this warranty shall in all cases be limited to replacing or repairing the defective producer as specified above including labour. Any repaired or replaced product will be covered by this warranty only for the unexpired portion of the warranty on the original product. Pacific Coilcoaters Limited will not under any circumstances be liable for consequential loss or damage. All claims must be made promptly in writing and accompanied by the original warranty document.

This warranty does not in any way affect the rights of a Consumer Guarantees Act.

(i) This Warranty is issued by:	<b>DIMOND ROOFING</b>	as Roofing Manufacturer
and supplied to:	<b>AJ CRAIG ROOFING</b>	
And Warrants the following material:	<u>Diamond Shale and Fascia Flow</u>	
Roofing/ Cladding L/ No:	<u>WG 219512</u>	<u>Black</u>
Rainwater Products L/No:	<u>WG 219513</u>	<u>Black</u>
(ii) This roof is installed by:	<b>AJ CRAIG ROOFING</b>	
	<b>Aaron Craig</b>	and is Warranted for <b>3 YEARS</b>
by that installer against faulty workmanship or defects caused by poor installation. The installer does not warrant the roof against mechanical damage occurring after installation.		
(iii) This warrant is accepted by:	<u>A J Craig</u>	
Street:	<u>155 Guilford Drive</u>	Location
Town:	<u>Paraparaumu</u>	Moderate/Severe
(ia) Signed for Roofing manufacturer:	<b>pp DIMOND ROOFING</b>	Date:
(iia) Signed for installer:	<b>pp AJ CRAIG ROOFING</b>	Date: <u>28/10/2000</u>
(iia) Signed for Owner:	<b>pp</b>	Date:

COLORCOTE® is the registered Trademark of  
PACIFIC COIL COATERS LIMITED.





**PLUMBERS, GASFITTERS AND DRAINLAYERS BOARD**  
**GASFITTING CERTIFICATION CERTIFICATE**

(Pursuant to the Gas Act 1992)

NOT TRANSFERRABLE

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

RECEIVED  
 BY: *L. Lee*  
 7 NOV 2004

INSTALLATION ADDRESS 155 Guildford Drive  
(STREET NAME AND NUMBER)  
Paraparaumu

CATEGORY  D — DOMESTIC  
 C — COMMERCIAL  
 I — INDUSTRIAL  
 V — CNG  
 T — TEMPORARY

(TOWN, CITY SUBURB)  
 CONSUMER \_\_\_\_\_

TYPE  NEW NEW, ADDITION, ALTERATION  
 REPLACEMENT

Mr (TITLE)  A (INITIALS) Craig  
(SURNAME OR BUSINESS NAME)

GAS TYPE  NAT NAT, L.P.G., T.L.P., BIO

NAME OF GAS SUPPLIER Natural Gas Corporation

**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 INFO
						INPUT RATING
1	Hot Water G	Hall Cupboard	Rheem 341-170-41	Galve Twin SKIN	High level Grill Low level Grill	35m <sup>3</sup> /hr
1	Hobb	Kitchen	Tuscany 2TF4A-1			27m <sup>3</sup> /hr
1	Bayonet fitting (Lounge)					

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

TEST RESULTS	DATE	TEST PRESSURE k.P.a.	DURATION MINUTES	PRESSURE LOSS/GAIN k.P.a.	COMBUSTION TEST	VENTILATION TEST
		7-11-00	5kPa	10min		

TESTING PROCEDURES USED NZS5261. YES (tick)  NO (tick)  INSTALLATION WORKING PRESSURE \_\_\_\_\_

If during installation you fail to detect gas odour, this will be followed by \_\_\_\_\_

Order No. 15552  
 SIGNATURE OF CERTIFIER  
 QUALITY MANAGER  
 ADDRESS: ST  
 ON BEHALF OF COMPANY



155 Guildford Dr  
BC 00118

5 March 1997

**PIPER & PHILLIPS INDUSTRIES LTD**

**PRODUCER STATEMENT**

**Truss , Fitch , Ganglam Beams, Posistruts COMPONENT DESIGN**

This producer statement is issued by PIPER & PHILLIPS Industries Ltd to

**Name of Builder Kapiti Home Design**

with respect to the design of the following

Gang-Nail components Posistruts **Posistruts ,Trusses Fitch Beams** to be built at.

Job Address: **Lot 9 Guildford Dr Paraparaumu** on our drawings

**Job Reference: 39228**

As a Gang-Nail component fabricator accredited by Gang-Nail NZ Ltd,

our design is based on standard designs selected from

the Gang-Nail System Manual or Mi Tek 2100

Computer-Aided Design Program produced and certified by Gang-Nail NZ Ltd

which have been prepared in accordance with NZS3603 and NZS4203

of the approved documents issued by the Building Industry Authority

in compliance with Clauses B1 and B2 of the New Zealand Building Code.

Designers Name : **M Taylor**      Date : **16-08-02**

For and behalf of PIPER & PHILLIPS Industries Ltd

# Piper and Phillips Industries Ltd

178 Kapiti Road  
Paraparaumu  
Wellington  
New Zealand  
Telephone: (04) 298-8567  
Fax:

Name: KAPITI HOME DESIGN  
Address: LOT 9 GUILDFORD DVE  
PARAPARAUMU

Telephone: 298 4835

Job:

39228

File location: C:\MITEK\JOBS\39228

Scale: 1 : 100

Date: 16/08/2002

Drawn By:

R1

ET1

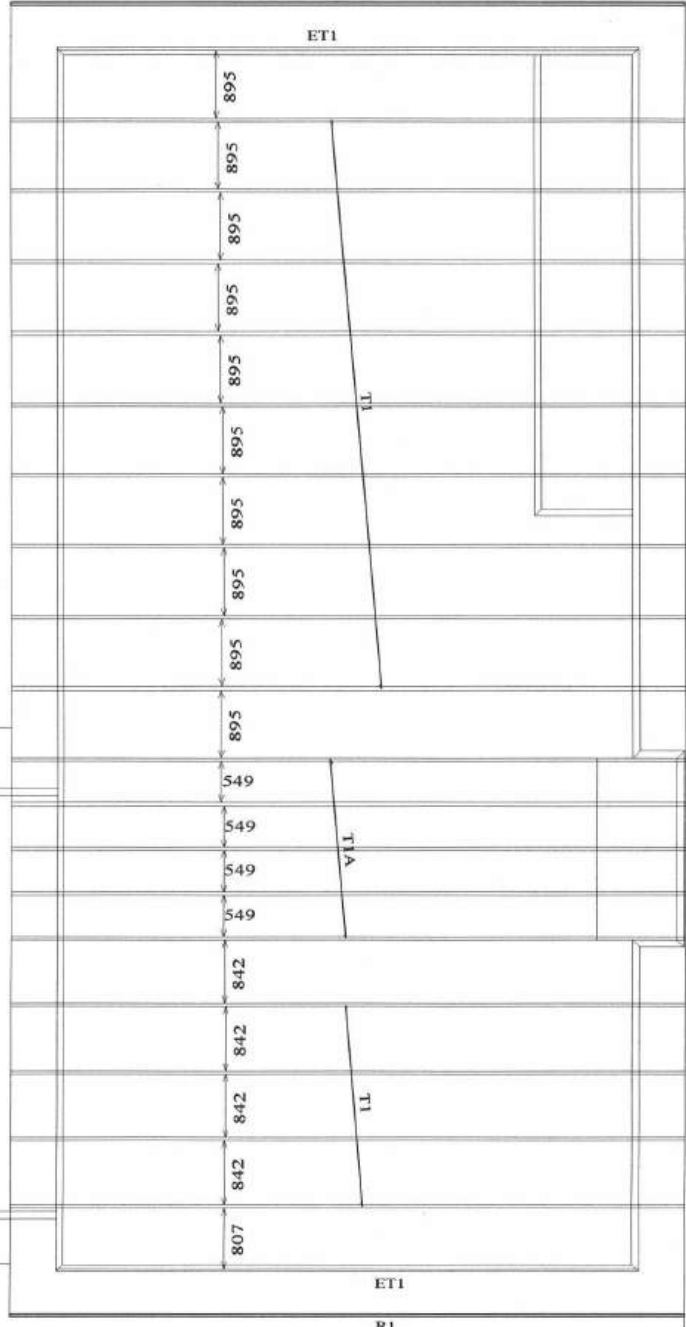
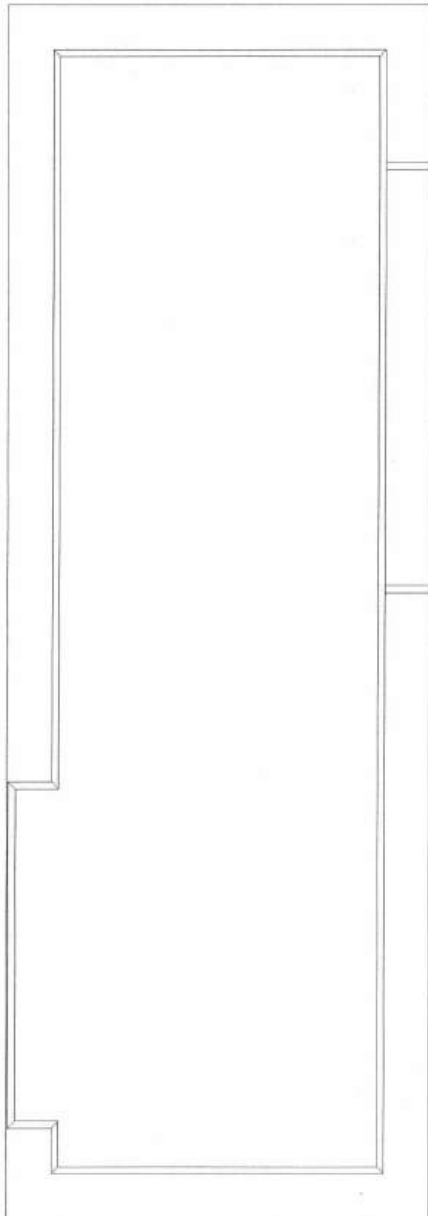
LL

VLL

LL

ET1

R1



## Job Details:

Wind Area:	High	Design Wind Speed:	44.0 m/s
TC Restraints:	900 mm	BC Restraints:	400 mm
Roof Material:	Galv Iron .5mm	Ceiling Material:	Standard
Roof Live Load:	0.250 kPa	Truss Centres:	900 mm
Roof Pitch:	5.00 deg		

**PRODUCER STATEMENT  
FRAMING COMPONENT DESIGN**

This producer statement is issued by PIPER & PHILLIPS Industries Ltd to

**Name of Builder: Kapiti Home Design** with respect to the design of the following

Gang-Nail components **Frames** to be built at

Job Address **Lot 9 Guildford Dr Paraparaumu** as shown on our drawings

**Job Reference Number: 39228**

As a Gang-Nail component fabricator accredited by Gang-Nail NZ Ltd,

our design is based on standard designs selected from

the Gang-Nail System Manual or MiTek 20/20 V4.3.

Computer-Aided Design Program produced and certified by Gang-Nail NZ Ltd

which have been prepared in accordance with NZS3603 and NZS4203

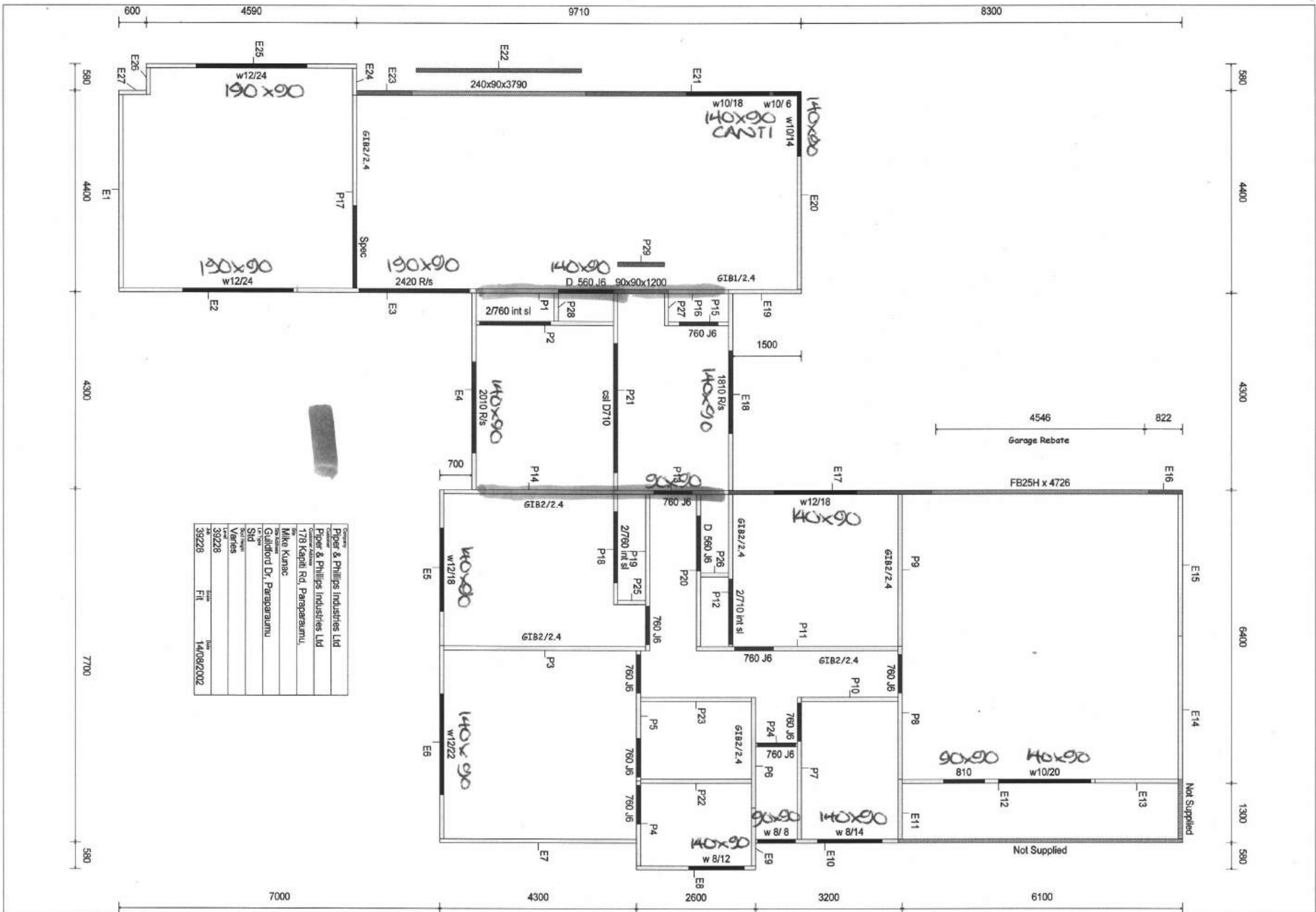
of the approved documents issued by the Building Industry Authority

in compliance with Clauses B1 and B2 of the New Zealand Building Code.

Designers Name: **T Knight**

Date : **14-08-02**

For and behalf of PIPER & PHILLIPS Industries Ltd



Client	Piper & Phillips Industries Ltd
Contractor	Piper & Phillips Industries Ltd
Customer Address	178 Kanthi Rd, Panaparamu.
Site	Mike Kuruc
Site Type	Guilford Dr, Panaparamu
Site No	
Scale	1:100
Date	14/09/2002
Drawn	39228
Checked	39228
Approved	Fit

# SITE CHECK SHEET

BC001118

Applicant : A CRAIG Phone:  
Site Address : 155 GUILDFORD DRIVE PARAPARAUM  
Legal Description : LOT 9 DP 89035  
Project : NEW DWELLING

**WORK CANNOT PROCEED PAST EACH STEP UNTIL THAT STEP HAS BEEN INSPECTED,  
APPROVED AND THIS FORM SIGNED BY THE RELEVANT INSPECTOR**

## FOUNDATIONS

Date: 16/8/2000 Officer: [Signature] Builder/Contractor/Owner: .....

Approved building consent documents on site: YES / NO

### SITING:

Front yard  Left hand side yard  Conforms with approved plan YES / NO  
Rear yard  Right hand side yard  If no, has new site plan been requested YES / NO

Minimum floor level  Footing size  Foundation wall reinforcing   
Pile hole size  Footing reinforcing  Foundation wall size   
Anchor pile size  Subfloor vents  Specific design YES/NO  
Pile hole spacing  Steps/stairs  If yes, has Engineer inspected YES/NO

Has a **Site Instruction** been issued? Yes/No Instruction No: .....

Is a reinspection required? Yes/No Proposed date of follow up inspection .....

Labels in place? Yes/No Producer Statement Yes/No/NA

### COMMENTS

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**PRE-SLAB**

**PLUMBING AND DRAINAGE**

Date: 18/8/2010 Officer: [Signature] Builder/Contractor/Owner: .....

**UNDERSLAB PLUMBING**

Pipe sizes

Falls

Pipe protection

<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>

**UNDERSLAB DRAINAGE**

Pipe sizes

Falls

Pipe protection

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Has a **Site Instruction** been issued? Yes/No No Instruction No: .....

Is a reinspection required? Yes/No No Proposed date of follow up inspection: .....

Labels in place? Yes/No No Producer Statement Yes/No/NA .....

**COMMENTS**

Plan pre-slabs etc

**BUILDING**

Date: 21/8/2010 Officer: [Signature] Builder/Contractor/Owner: .....

Minimum floor level

DPC

Joints taped

Penetrations

Specific design

If yes, has Engineer inspected Yes / No

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Mesh

Mesh chairs

Slab thickening

Bottom plate fixings

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Has a **Site Instruction** been issued? Yes/No ..... Instruction No: .....

Is a reinspection required? Yes/No ..... Proposed date of follow up inspection: .....

**COMMENTS**


## SUBFLOOR

Date: ..... Officer: ..... Builder/Contractor/Owner: .....

Ord pile fixings  
Anchor pile bolts  
Brace pile bolts and washers  
Timber treatment  
Subfloor framing  
Subfloor beams/bearers

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Subfloor bracing  
Joists - size/spacing/fixing  
Cant. Joists - lth/size/spc  
Solid blocking - spacing  
Notching, holes etc  
Proprietary connections

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Has a **Site Instruction** been issued? Yes/No

Instruction No: .....

Is a reinspection required? Yes/No

Proposed date of follow up inspection.....

Labels in place? Yes/No

Producer Statement

Yes/No/NA

### COMMENTS

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## EXTERIOR CLADDING

Solid Plaster/Textured Finish

Date: ..... Officer: ..... Builder/Contractor/Owner: .....

Rigid backing  
Non rigid backing  
Building paper  
Battens (non rigid)  
Cavity (non rigid)  
Sheet set out (Hardies)

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Reinforcement  
Spacers  
Nailing (Hardies)  
Flashings  
Control joints

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Has a **Site Instruction** been issued? Yes/No

Instruction No: .....

Is a reinspection required? Yes/No

Proposed date of

### COMMENTS

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**PRELINE**

**PLUMBING AND DRAINAGE:**

Plumber: Mark Scarbe

Date: 6/9/2000 Officer: [Signature]

Builder/Contractor/Owner:

- Pressure test
- Visual leak check
- Pipe support/clips
- Pipe size
- Pipe material

<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>

- Joint strain
- Pipe insulation
- Stacks
- Wastes
- Supply tank

<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>

Has a **Site Instruction** been issued?

Yes/No

Instruction No:

Is a reinspection required?

Yes/No

Proposed date of follow up inspection

Preline Labels in place?  
Yes/No/NA

Yes/No

Producer Statement

**COMMENTS**

Tested 1500 LPA OK

**BUILDING**

Date: 6/9/2000 Officer: [Signature]

Builder/Contractor/Owner:

- Timber treatment
- Ceiling diaphragm
- Dragon ties
- Studs - size/spacing
- Wall insulation
- Posts - size/fixing
- Lintels/bms - size/fixings
- Ext joinery - labels
- Ceiling runners
- Wall bracing
- Mech ventilation
- Moisture Content Walls %

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

- Bracing straps
- Timber grade
- Wall dwangs
- Trimming studs
- Truss/rafter - fix/space
- Ceiling joists
- Plate fixings
- Ventilation
- Ceiling battens
- Check exterior claddings
- Ceiling %

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

**COMMENTS**

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**POSTLINE**

Date: 21/9/2000 Officer: R/K Builder/Contractor/Owner: .....

Sheets nailed as per your schedule  Insulation to walls

Has a **Site Instruction** been issued? Yes/No Instruction No: .....

Is a reinspection required? Yes/No Proposed date of follow up inspection: .....

Postline Label in place?  Yes/No

**COMMENTS**

.....  
.....  
.....  
.....  
.....  
.....

**DRAINS**

Drainlayer: M. Scayfe  
Date: 21/8/2000 Officer: [Signature] Builder/Contractor/Owner: .....

Drain depth	<input checked="" type="checkbox"/>	Gully traps	<input checked="" type="checkbox"/>
Subsoil drains	<input checked="" type="checkbox"/>	Granular bedding	<input checked="" type="checkbox"/>
Pipe material	<input checked="" type="checkbox"/>	Terminal vents	<input checked="" type="checkbox"/>
Disposal field	<input checked="" type="checkbox"/>	Even gradient/line	<input checked="" type="checkbox"/>
Drains under building	<input checked="" type="checkbox"/>	Soil stack	<input checked="" type="checkbox"/>
Connection to main	<input checked="" type="checkbox"/>	Manhole - haunching	<input checked="" type="checkbox"/>
Pipe supports	<input checked="" type="checkbox"/>	Inspection/bends	<input checked="" type="checkbox"/>
Manhole - structure	<input checked="" type="checkbox"/>	SW to kerb	<input checked="" type="checkbox"/>
Lamp holes	<input checked="" type="checkbox"/>	Sumps	<input checked="" type="checkbox"/>
Drain test	<input checked="" type="checkbox"/>		

Has a **Site Instruction** been issued? Yes/No Instruction No: .....

Is a reinspection required? Yes/No Proposed date of .....

**COMMENTS**

Drain test ok s/w ok.  
.....  
.....  
.....

## MISCELLANEOUS INSPECTIONS

Blockfill: .....

Date: ..... Officer: ..... Builder/Contractor/Owner: .....

Reinforcing	<input type="checkbox"/>	Cavities cleared	<input type="checkbox"/>
Engineers design	Yes/No		
If yes, has engineer checked	Yes/No		

Has a **Site Instruction** been issued?      Yes/No      Instruction No:  
 .....

Is a reinspection required?      Yes/No      Proposed date of  
 follow up inspection .....

Producer Statement      Yes/No/NA

**COMMENTS**  
 \_\_\_\_\_  
 \_\_\_\_\_

**Retaining Walls**

Siting	<input type="checkbox"/>	Subsoil drainage	<input type="checkbox"/>
Stretchers	<input type="checkbox"/>	Post Holes	<input type="checkbox"/>
Deadmen	<input type="checkbox"/>	Retaining components	<input type="checkbox"/>
Poles/posts	<input type="checkbox"/>	Tie bars	<input type="checkbox"/>
Footing	<input type="checkbox"/>	Headers	<input type="checkbox"/>
Engineers design/supervision	<input type="checkbox"/>		

Has a **Site Instruction** been issued?      Yes/No      Instruction No:  
 .....

Is a reinspection required?      Yes/No      Proposed date of  
 follow up inspection .....

Producer Statement      Yes/No/NA

**COMMENTS**  
 \_\_\_\_\_  
 \_\_\_\_\_

**Solid Fuel Heaters**

Chimney Check	<input type="checkbox"/>	Flue height	<input type="checkbox"/>
Seismic fixing	<input type="checkbox"/>	Hearth	<input type="checkbox"/>
Flue flashing	<input type="checkbox"/>	Clearances	<input type="checkbox"/>

**COMMENTS**  
 \_\_\_\_\_  
 \_\_\_\_\_



## COSTING SHEET

Application No: 001118

Date: \_\_\_\_\_

Site Address: 155 Guildford Drive

ADMIN = \$40 per hour  
 PLAN VETTING = \$60 per hour  
 INSPECTIONS = \$50  
 DIGITAL SCANNING = \$22.50

TECHNICAL CONSULTANTS = Cost + 10%

CLASSIFICATION	S	PLAN VETTING				TOT	CONSULTANT			TOT	INSPECTIONS					TOT	SET FEE	PIM	CC C	DIG SCAN	TOT
		PI	D	Bld	EH	S	DP	S	S	Site	PI	D	Bld	EH	S						
																Y/N					
1. Fire Places, Signs, Minor Plumbing and Drainage	0 - 1,500															30	Nil	Nil			
2. Sheds, Parapool Carports	1501 - 4,000															70	Nil	Nil			
3. Garages, Conservatories, Swim Pool, etc	4,001 - 10,000															100	50	30			
4. House Additions	4,001 - 10,000															120	50	30			
5. House Additions	10,000 - 40,000															150	50	30			
6. House Additions	40,001 - 70,000															200	100	30			
7. Dwellings	70,001-100,000															250	100	30			
8. Dwellings	100,001-150,000															320	100	30			
9. Dwellings	150,001-200,000	2		12		\$210	2			\$30	1	3	3	5	\$600	420	100	30		\$1,300	
10. Dwellings	200,001-250,000															520	100	30			
11. Dwellings	250,001-300,000															650	100	30			
12. Dwellings	300,000 +															700	100	30			
13. Commercial/Industrial	0-10,000															120	50	30			
14. Commercial/Industrial	10,001-50,000															200	50	30			
15. Commercial/Industrial	50,001-100,000															300	150	30			
16. Commercial/Industrial	100,001-150,000															400	150	30			
17. Commercial/Industrial	150,001-200,000															550	150	30			
18. Commercial/Industrial	200,001-250,000 +															750	150	30			

**CONSENT DATA INPUT REQUIREMENTS**

REQUIRED INSPECTIONS	STANDARD ADDENDA			
14	32	✓	21	✓
1	2		22	
17	3	↓	23	
7	4	↓	24	
16	5		25	
2	6	✓	26	
3	7		27	↓
18	8		28	↓
4	8A	✓	29	↓
8	9		30	
5	10		31	
10	11		33	
12	12	✓	34	
6	13	✓	35	
9	14	✓	36	
11	15	✓	37	
13	16		38	
15	17			
	18			
	19			
	20	✓		

STANDARD CONDITIONS
1
2
3

**NON STANDARD ADDENDA**

*Note and comply with wall basing enclosures.*

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## Addenda to Application

### Application

A CRAIG 14 ABUROC PLACE PARAPARAUMU	No.	001118
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### 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	\$179,000
Location	155 GUILDFORD DRIVE, PARAPARAUMU
Legal Description	LOT 9 DP 89035
Valuation No.	

Builder: J CRAIG


### General Requirements

- a) The District Inspector is to be given 24 hours' notice before carrying out the following inspections:
1. FOUNDATION INSPECTION
  2. PRE-SLAB INSPECTION, CONCRETE FLOOR
  3. INITIAL INSPECTION - PREVIOUSLY COMPLETED
  4. PRE-CONCRETE SLAB INSPECTION OF PLUMBING
  5. PRELINING INSPECTION, MOISTURE TEST, CHECK BRACING
  6. PRELINING INSPECTION OF PLUMBING
  7. POST-LINING INSPECTION, LININGS, FIXED AS PER BRACE DESIGN
  8. WATER TEST ON SEWER DRAINS
  9. FINAL INSPECTION BUILDING
  10. FINAL INSPECTION OF PLUMBING
  11. FINAL INSPECTION GULLIES, ETC
  12. FINAL INSPECTION STORMWATER
- b) To arrange for any of the above required inspections by the District Inspector, please contact the building inspectorate on (04) 298 5139 between the hours of 8.00am and 4.30pm.

1. L'APSE 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.
2. All foundations are to be to solid bearing minimum of 300mm
3. Work to comply with NZS3604-1990 or 1999 as indicated on approved plans.
4. Metal head flashings required over all exterior joinery.
5. Note and comply with endorsements on approved plans.
6. Both hot and cold water pipes are to be tested to 1500 KPA pressure.
7. Roof stormwater to be connected to existing water disposal system.
8. Copper water pipes for cold water not permitted. For exemptions contact Plumbing Inspector.
9. Owner/builder is to ensure that the proposed foundation height will allow a satisfactory drainage connection to the sewer main.
10. A tempering valve is to be installed on the hot water cylinder.
11. Minimum heights of finished concrete slab-on-ground floors above adjoining finished ground level to comply with Fig E 1 NZS 3604 1990.
12. Provide from your Contractor a warranty covering the roof and fascia gutter system, including product, design and installation.
13. Provide Texture Coating Warranty from your licensed coating applicator.
14. Note and comply with wall bracing endorsements.

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

OWNER/BUILDER/  
AUTHORISED PERSON

 Aaron Gray Date: 24/8/2000

## PROJECT INFORMATION MEMORANDUM

### Planning Requirements

Applicant : A CRAIG  
Mailing Address : 14 ABUROC PLACE  
PARAPARAUMU  
Site Address : 155 GUILDFORD DRIVE PARAPARAUM  
Legal Description : LOT 9 DP 89035  
Project : NEW DWELLING

Proposed Use :	RESIDENTIAL
Zone :	
Use permitted :	Permitted activity
Resource Consent granted :	None listed
Designations on property :	None listed
Easements :	None listed
Site subject to inundation :	Not known to be
Coastal building line restriction :	N/A
Relocatable zone :	N/A
Minimum floor level (50 year event) :	N/A
Recommended minimum :	
Floor level (100 year event) :	N/A
Yard and height requirements :	Comply
Tree/building preservation :	None listed

Other comments

\$388.50

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 LAND

Potential erosion :	X
Potential avulsion :	X
Potential subsidence :	X
Potential slippage :	X
Potential alluvion :	X
Potential inundation :	X
Presence of hazardous contaminants :	X

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 AND DRAINAGE

Sewer available / connected :	Available
Water available / connected :	Available
Site plan of existing services (if any) :	Not supplied
Location of sewer lateral :	Plan supplied
Location and size of water toby :	Plan supplied
Location of easments (if any) :	No easements
Location of public drains (if any) :	N/A
Stormwater disposal to :	Kerb

**KEY**

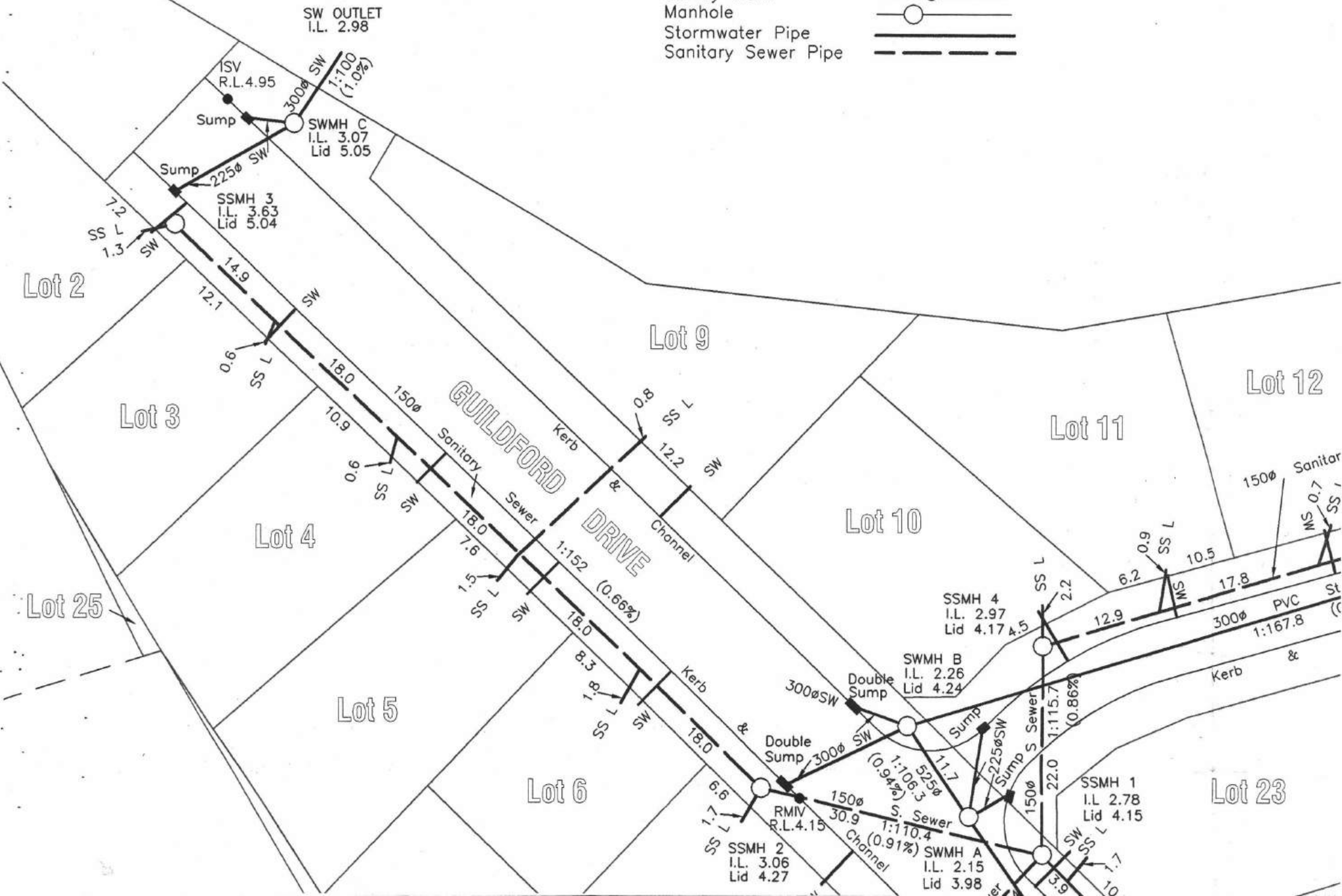
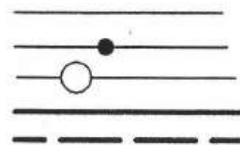
Boundary

Survey Mark

Manhole

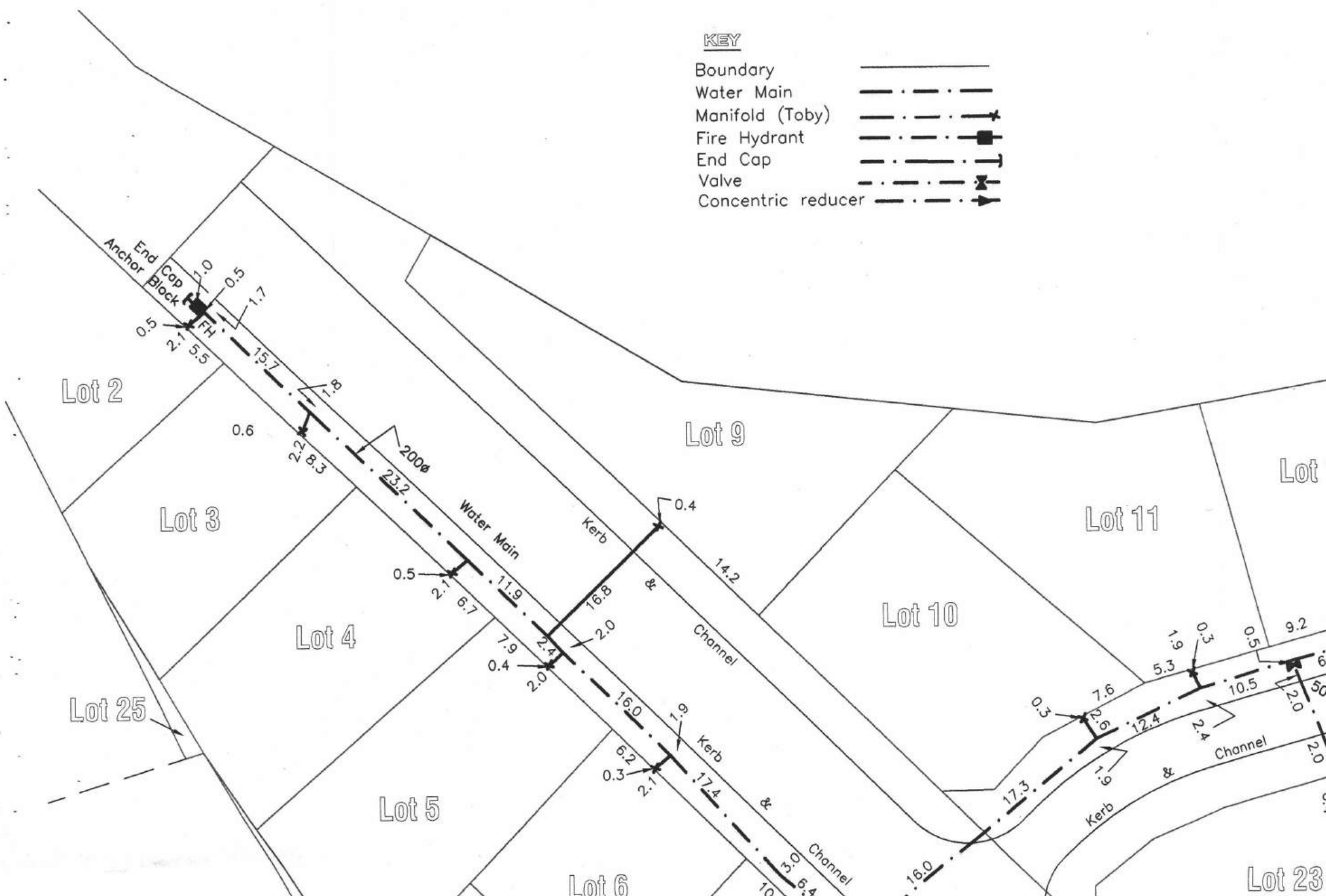
Stormwater Pipe

Sanitary Sewer Pipe



KEY

- Boundary
- Water Main
- Manifold (Toby) +
- Fire Hydrant ■
- End Cap └
- Valve +
- Concentric reducer ➤



Lot 2

Lot 3

Lot 4

Lot 25

Lot 5

Lot 6

Lot 9

Lot 10

Lot 11

Lot

Lot 23

## Project Information Memorandum

### Section 31, Building Act 1991

#### Application

A CRAIG	No.	001118
<del>14 ABUROO PLACE</del> 34 Sunburst Court	Issue date	23/08/00
PARAPARAUMU	Application date	8/08/00
	Overseer	BOB OLIVER

#### 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	\$179,000
Location	155 GUILDFORD DRIVE, PARAPARAUMU
Legal Description	LOT 9 DP 89035
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: 23 AUG 2000

## PROJECT INFORMATION MEMORANDUM

### Planning Requirements

Applicant : A CRAIG

Mailing Address : ~~14 ABUROO PLACE~~ 34 Sunburst Court  
PARAPARAUMU

Site Address : 155 GUILDFORD DRIVE PARAPARAUM

Legal Description : LOT 9 DP 89035

Project : NEW DWELLING

Proposed Use :	RESIDENTIAL
Zone :	
Use permitted :	Permitted activity
Resource Consent granted :	None listed
Designations on property :	None listed
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Potential subsidence :	X
Potential slippage :	X
Potential alluvion :	X
Potential inundation :	X
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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 :

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Location of sewer lateral :	Plan supplied
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Stormwater disposal to :	Kerb

**KEY**

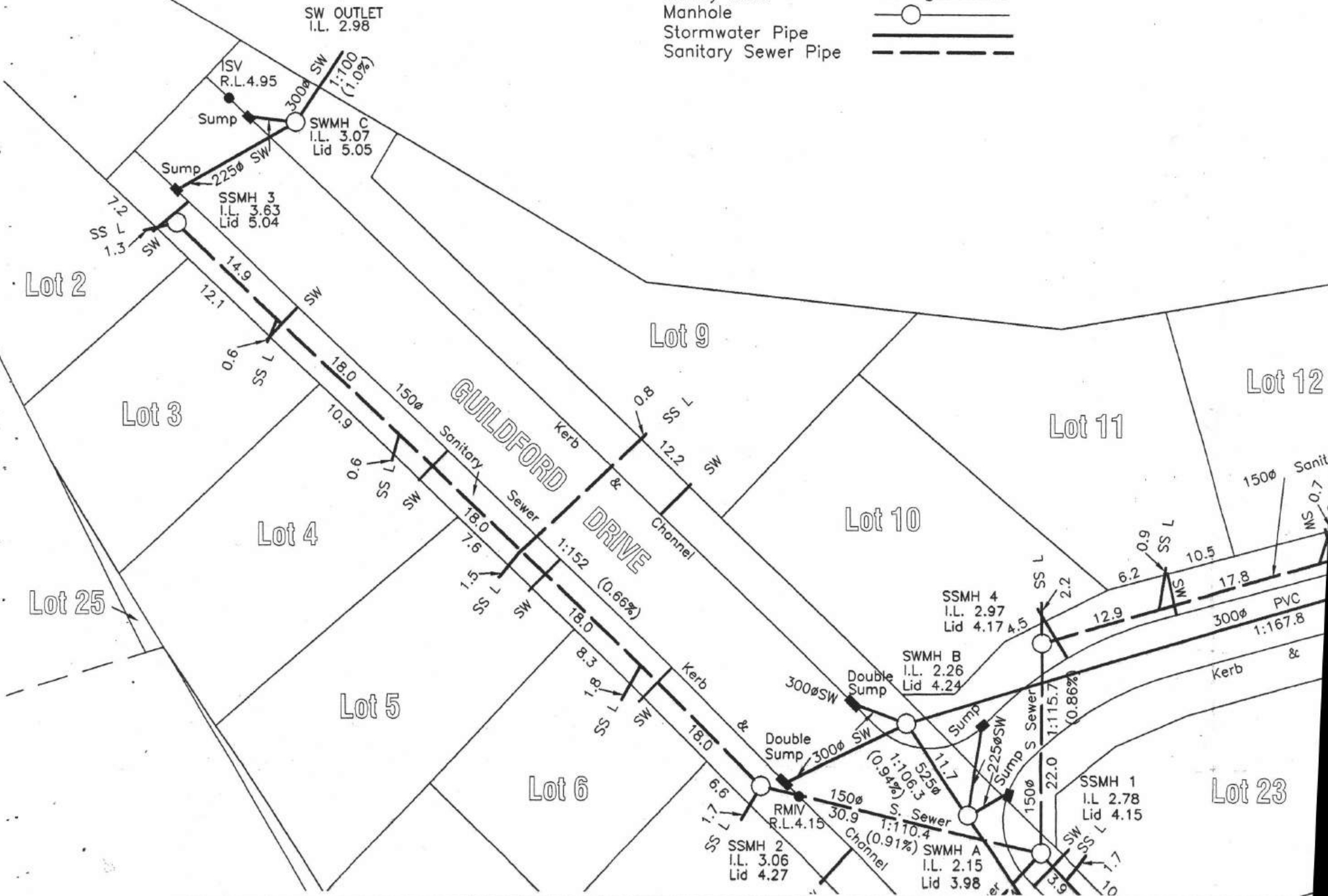
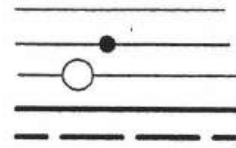
Boundary

Survey Mark

Manhole

Stormwater Pipe

Sanitary Sewer Pipe







**KAPITI COAST DISTRICT COUNCIL**

**VEHICLE CROSSINGS**

**GENERAL OBLIGATION**

It is the responsibility of every owner to provide vehicle access from the road carriageway to the property boundary for the purposes of off street parking or unloading. A refundable deposit of \$400 is required to be paid to Council prior to the construction of a vehicle crossing (or \$700 prior to a building consent being issued) which is held to ensure that all damage to roads, footpaths, grass berms, or other Council facilities are repaired satisfactorily.

**VEHICLE CROSSING LOCATION**

1. The position and size shall be to the requirements of Council and to the dimensions as shown overleaf (location on corner sites to be approved by the Environmental Inspector).
2. Vehicle crossing to be located clear of stormwater outlets, street sumps, service covers to drains and power or street lighting poles.

Should any of these interfere with the only possible crossing position, relocating them will be at cost to the owner.

Enquiries on vehicle crossing to be directed to the Environmental Inspector, telephone 298 5139 (or mobile 025 493 192).

**INSTALLATION OF CONCRETE VEHICLE CROSSINGS**

**A. COUNCIL APPROVED INSTALLERS**

Quotations can be requested from the following contractors who are recommended by Council and are familiar with Council's specifications for the installation of concrete vehicle crossings. The deposit will be refunded in full provided that all damage to roads, footpaths and berms are repaired satisfactorily.

Contractor	Address	Telephone or Fax No
Brents Contracting	P O Box 20, Waikanae	04 293 5007 or 025 422 425 (Brent) Fax 04 293 2269
Koastal Kerb	32 Ratanui Rd, Paraparaumu	06 364 3461 or 025 480 447 (Craig) 04 298 7926 or 021 436 037 (Ray)
C J Minchington Ltd	P O Box 1618, Paraparaumu Beach	04 297 3429 or 025 426 426 (Cyril)
John R Darby	1a Te Roto Drive, Paraparaumu	04 297 0791 or 025 401 541
Creteprint Paving Kapiti Ltd	P O Box 44, Paraparaumu	04 298 7694 (fax/ph) or 025 441 016

**B. OTHER INSTALLERS**

Other professional concrete places may install vehicle crossings to Council's specifications provided they request an inspection by the Environmental Inspector prior to construction of the crossing, to ensure compliance with specifications and reinforcing prior to pouring concrete.

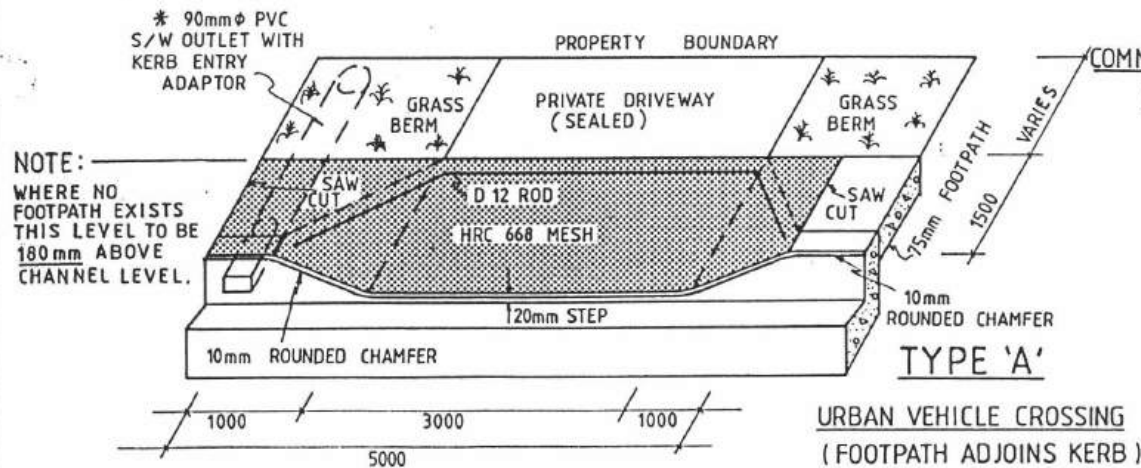
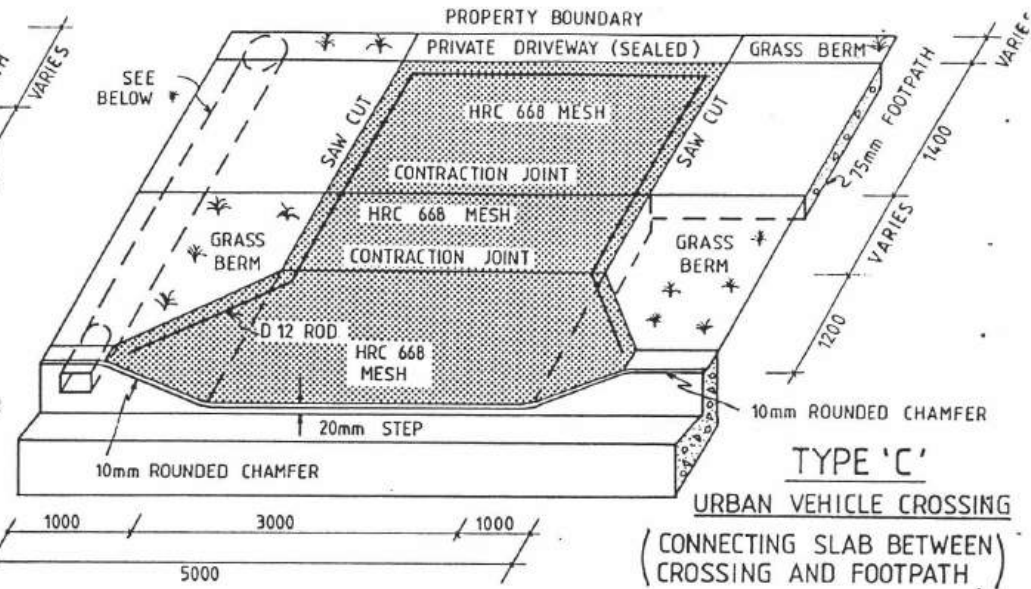
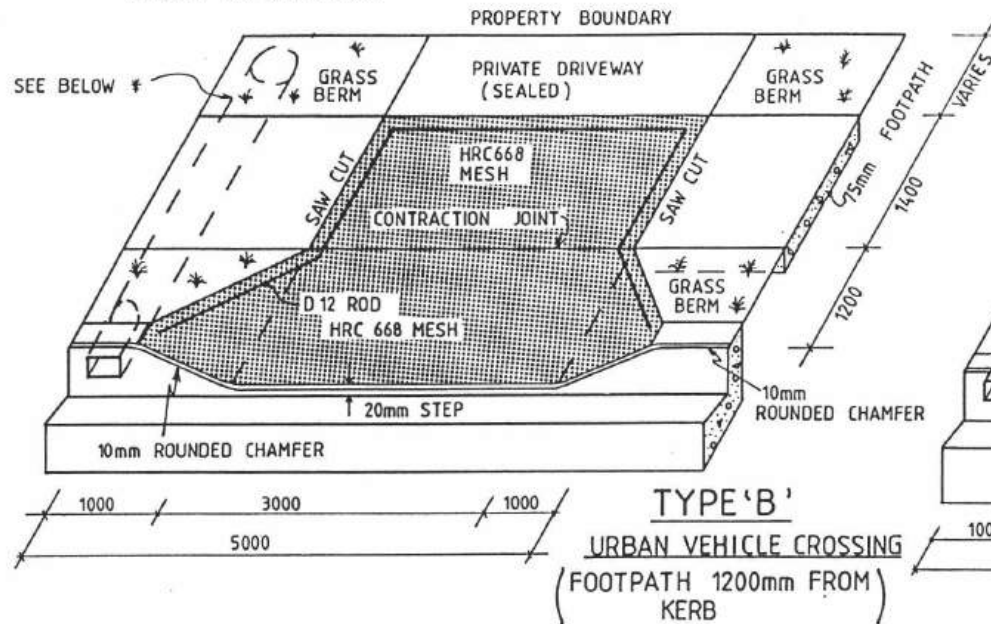
On completion, the deposit will be refunded less a \$50 inspection fee, provided that the vehicle crossing meets Council's specifications and all damage to roads, footpaths and berms are repaired satisfactorily.

**NOTES**

1. ALL CONCRETE TO BE 20MPa, 100mm THICK LAID ON EITHER 0.25mm POLYTHENE OR 25mm MINIMUM COMPACTED DEPTH OF BASECOURSE ON A WELL-COMPACTED SUB-BASE. ANY UNSUITABLE SUBGRADE SHALL BE REMOVED.

2. CONCRETE SURFACE FINISH SHALL BE STEEL FLOATED AND LIGHTLY BROOMED USING A SOFT BRISTLE BROOM.

3. WHERE NO FOOTPATH EXISTS, A VEHICLE CROSSING SIMILAR TO A TYPE "A" SHALL BE INSTALLED BUT WITH SPLAYED EDGES AS PER THE APRON OF A TYPE "B" CROSSING.



**TYPE 'D'**  
COMMERCIAL / INDUSTRIAL  
VEHICLE CROSSING

HEAVY DUTY COMMERCIAL / INDUSTRIAL VEHICLE CROSSINGS SHALL BE 150mm THICK WITH HRC 665 MESH CENTRALLY PLACED WITH A D12 PERIMETER ROD AS PER RESIDENTIAL STANDARD

**TYPE 'E'**  
SEALED ACCESS

WHERE NO KERB AND CHANNEL EXISTS, MINIMUM VEHICLE ENTRANCE IS A 3m WIDE CHIP-SEALED DRIVEWAY BETWEEN PROPERTY BOUNDARY AND EDGE OF ROAD SEAL

**TYPE 'F'**  
RURAL ACCESS

MINIMUM TWO LENGTHS OF 300mm Ø RRJ PIPE IN WATER TABLE

SCALE	DRAWN	GB	CHECKED
NTS	TRACED	MC	DATE JULY 90

## Addenda to Application

### Application

A CRAIG 14 ABUROC PLACE PARAPARAUMU	No.	001118
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### 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	\$179,000
Location	155 GUILDFORD DRIVE, PARAPARAUMU
Legal Description	LOT 9 DP 89035
Valuation No.	

Builder: J CRAIG

### General Requirements

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  6. PRELINING INSPECTION OF PLUMBING
  7. POST-LINING INSPECTION, LININGS, FIXED AS PER BRACE DESIGN
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13. Provide Texture Coating Warranty from your licensed coating applicator.
14. Note and comply with wall bracing endorsements.

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

**OWNER/BUILDER/  
AUTHORISED PERSON**

**Date:**

---

6<sup>th</sup> November 2000

Mr A Creig  
14 Aburoc Place  
PARAPARAUMU

Dear Sir

**BUILDING CONSENT 001118 – 155 GUILDFORD DRIVE, PARAPARAUMU**

The following items require completion or change to comply with the above building consent documents:

- ✓ 1. Hip roof tile only tacked in place. Complete nailing of hip tiles on north east side. Recheck all remaining hip tiles to roof.
- ✗ 2. Complete repairs to footpath where damage. Two corners to separate slabs have been damaged.

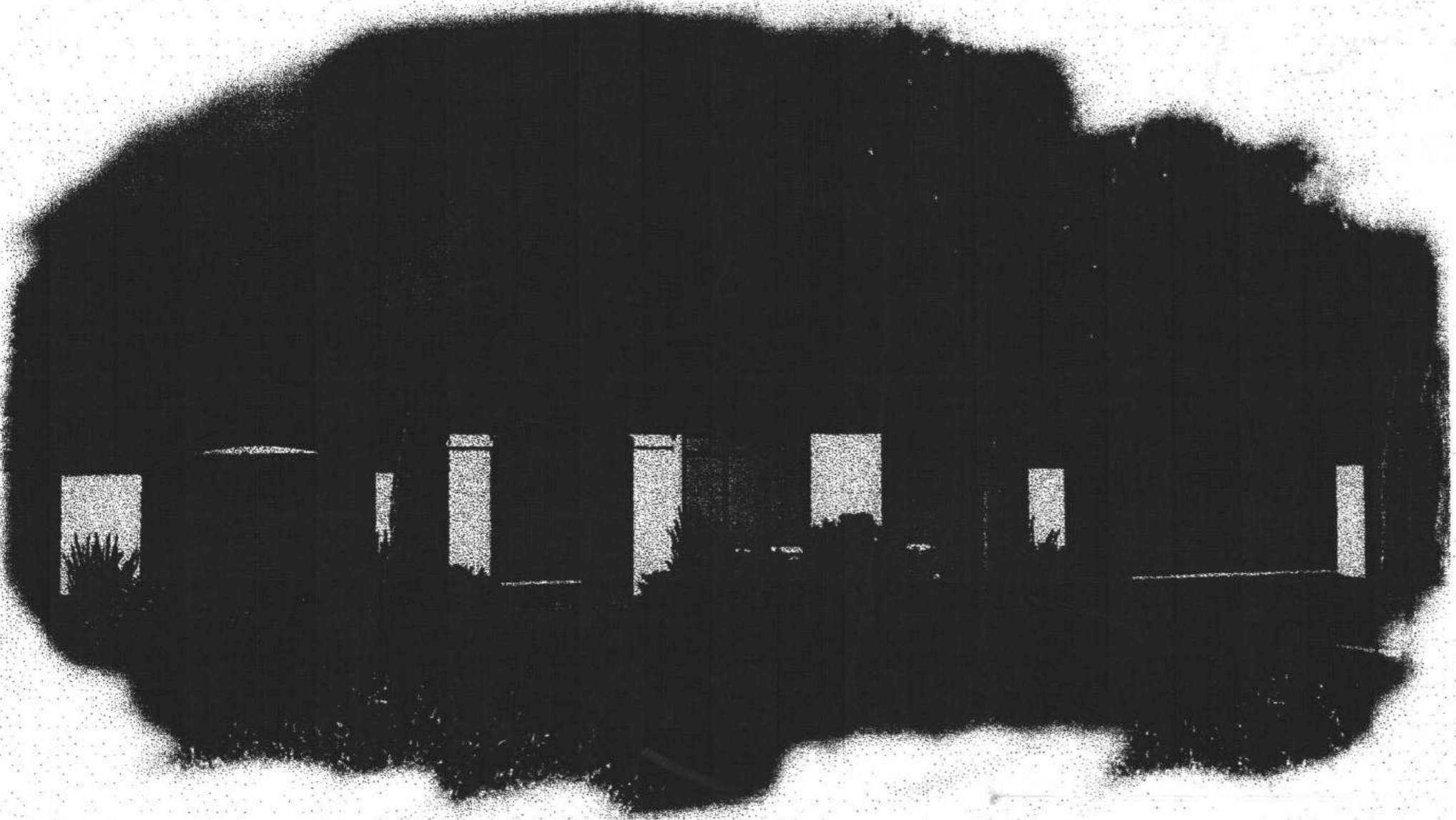
When the above work is complete, please arrange for re-inspection. ✓

Yours faithfully



Don Blaikie  
BUILDING CONTROL OFFICER

15



APPROVED  
BY PLUMBING  
& DRAINAGE  
*John Hickey*  
Officer

APPROVED  
BY BUILDING  
*P. Wilkinson*  
23/8/00  
Officer

**CAUTION**  
plans have been digitally  
reproduced and may not  
be to scale.

# PROPOSED DWELLING LOT.9. GUILDFORD PARK

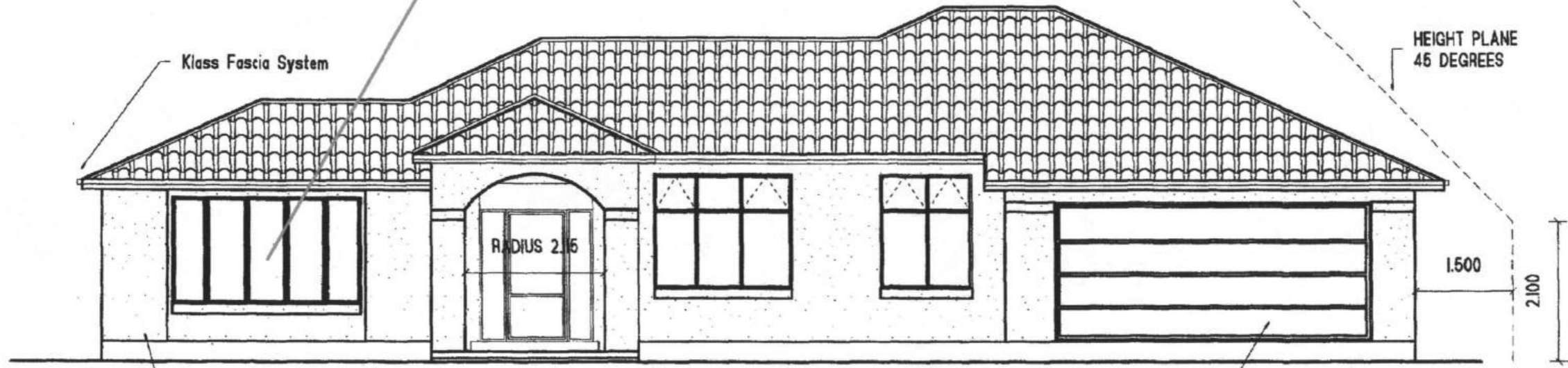
**Design Network Kapiti**  
ARCHITECTURE

301 Kapiti Road  
PO Box 1616  
Paraparaumu Beach  
New Zealand

Tel: 04 902 5505  
Fax: 04 902 5504  
Email: [kapiti@deenet.co.nz](mailto:kapiti@deenet.co.nz)

APPROVED  
BY PLUMBING  
& DRAINAGE  
*John Hickey*  
Officer

faceted glass to NZS.4223.Pt.3.



40mm Polystyrene Wall Cladding  
2 Coat Insulclad Plaster System  
Check Manufacturer Instructions

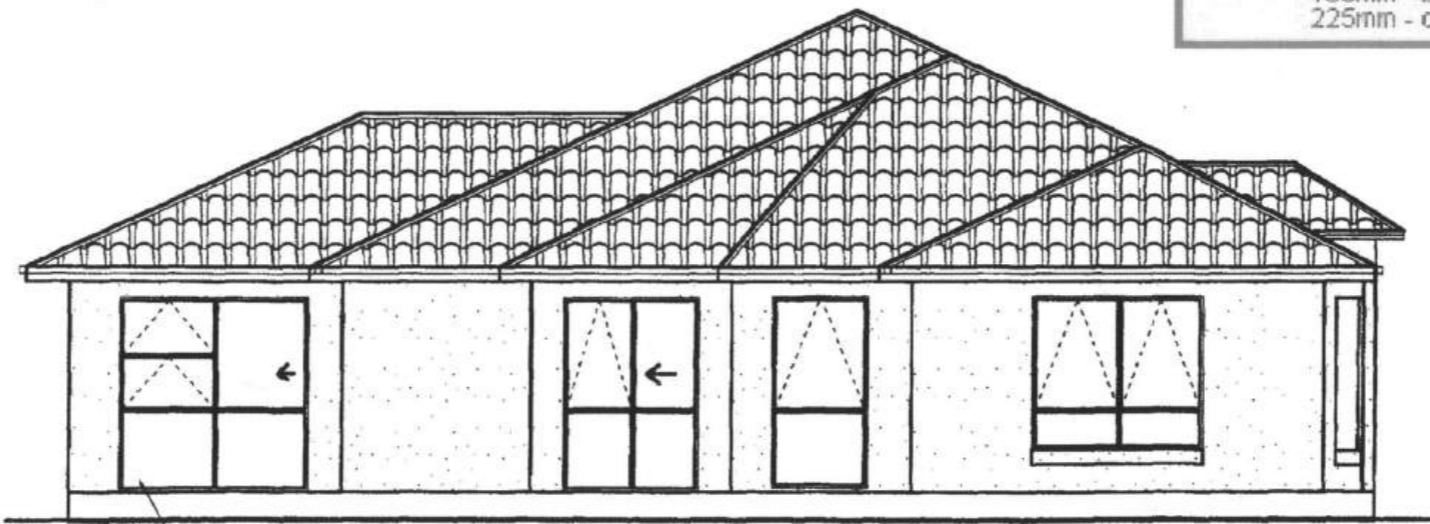
*licensed applicator only.  
supply copy of warranty to council.  
(reinforce planton mouldings also.)*

ELEVATION 1

MINIMUM FINISHED FLOOR LEVEL ABOVE :	
PROTECTED GROUND :	
	100mm - brick veneer
	150mm - other claddings
UNPROTECTED GROUND :	
	150mm - brick veneer
	225mm - other claddings

APPROVED  
BY PLANNING  
*AC Hawkins*  
Officer

11/08/00



Aluminium Window Joinery  
To NZS Standards

ELEVATION 2

APPROVED  
BY BUILDING  
*P. Wilkinson*  
22/8/00  
Officer

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NOTE: CHECK ALL HEIGHT PLANES WITH LOCAL COUNCIL PRIOR TO COMMENCING FOUNDATION WORKS ONSITE

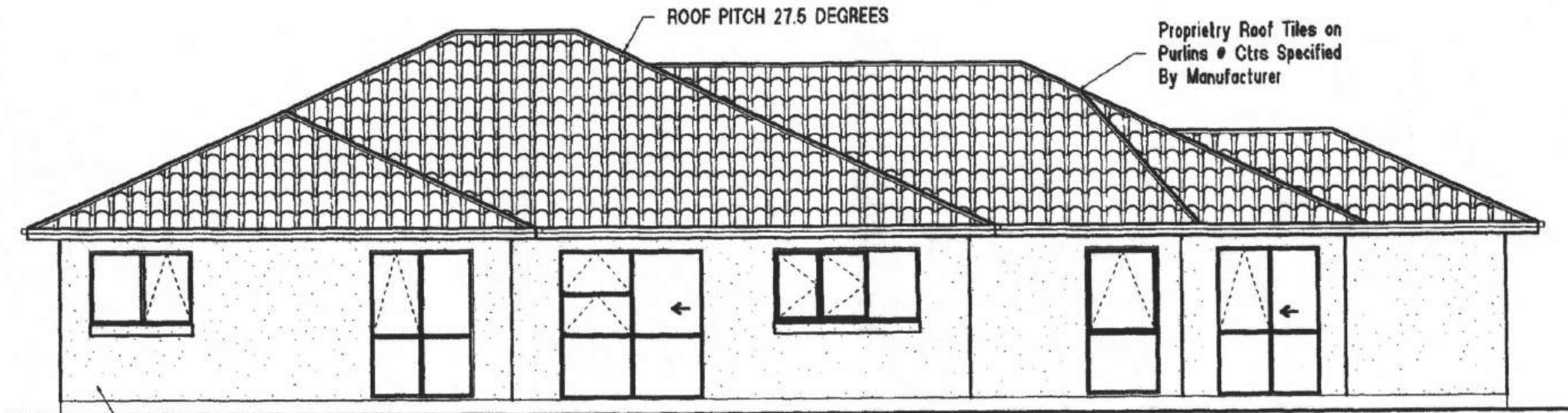


ELEVATION KEY

Lot 9 Guildford Drive  
DESIGN NETWORK

DATE 7 JULY 2000  
SCALE 1:75  
PAGE #  
DATA PLAN SERVICES

Roofing material to be installed to manufacturers requirements, in particular, fixing and min pitch reference also Table 1 of E2 NZ Building Code).

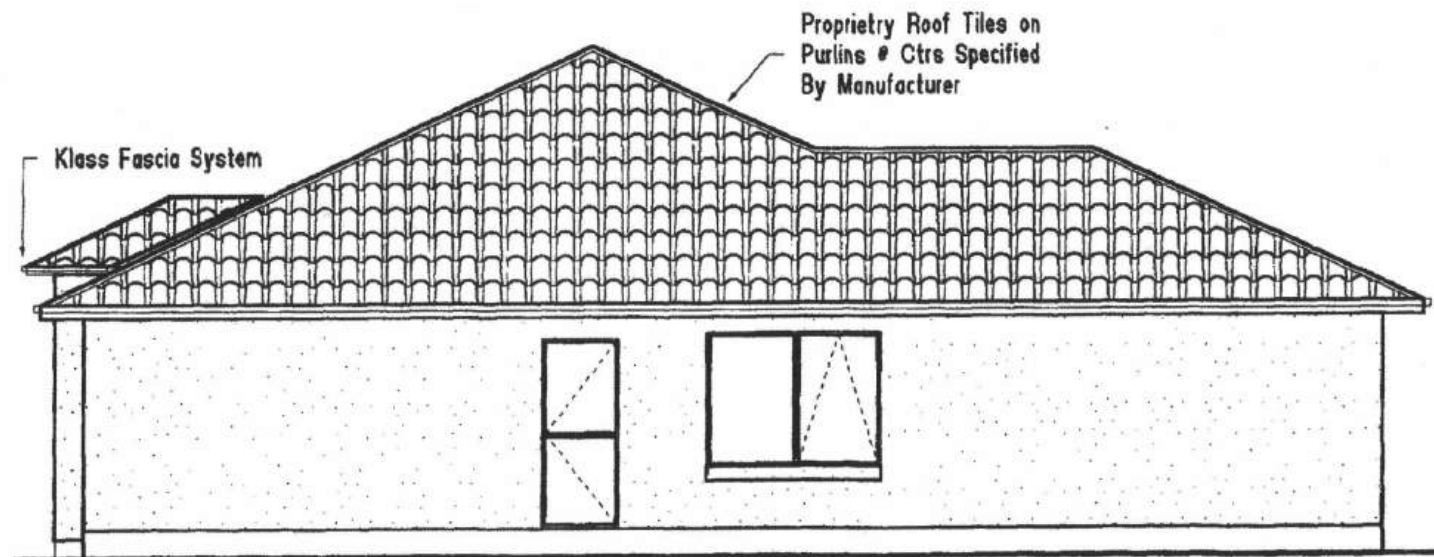


40mm Polystyrene Wall Cladding  
2 Coat Insulclad Plaster System  
Check Manufacturer Instructions

ELEVATION 3

Claddings to be installed to manufacturers requirements in particular fixing and ground clearance.

APPROVED  
BY PLUMBING  
& DRAINAGE  
*John Hickey*  
Officer



ELEVATION 4

APPROVED  
BY BUILDING  
*P. Wilkinson*  
Officer

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NOTE: CHECK ALL HEIGHT PLANES WITH LOCAL COUNCIL PRIOR TO COMMENCING FOUNDATION WORKS ONSITE

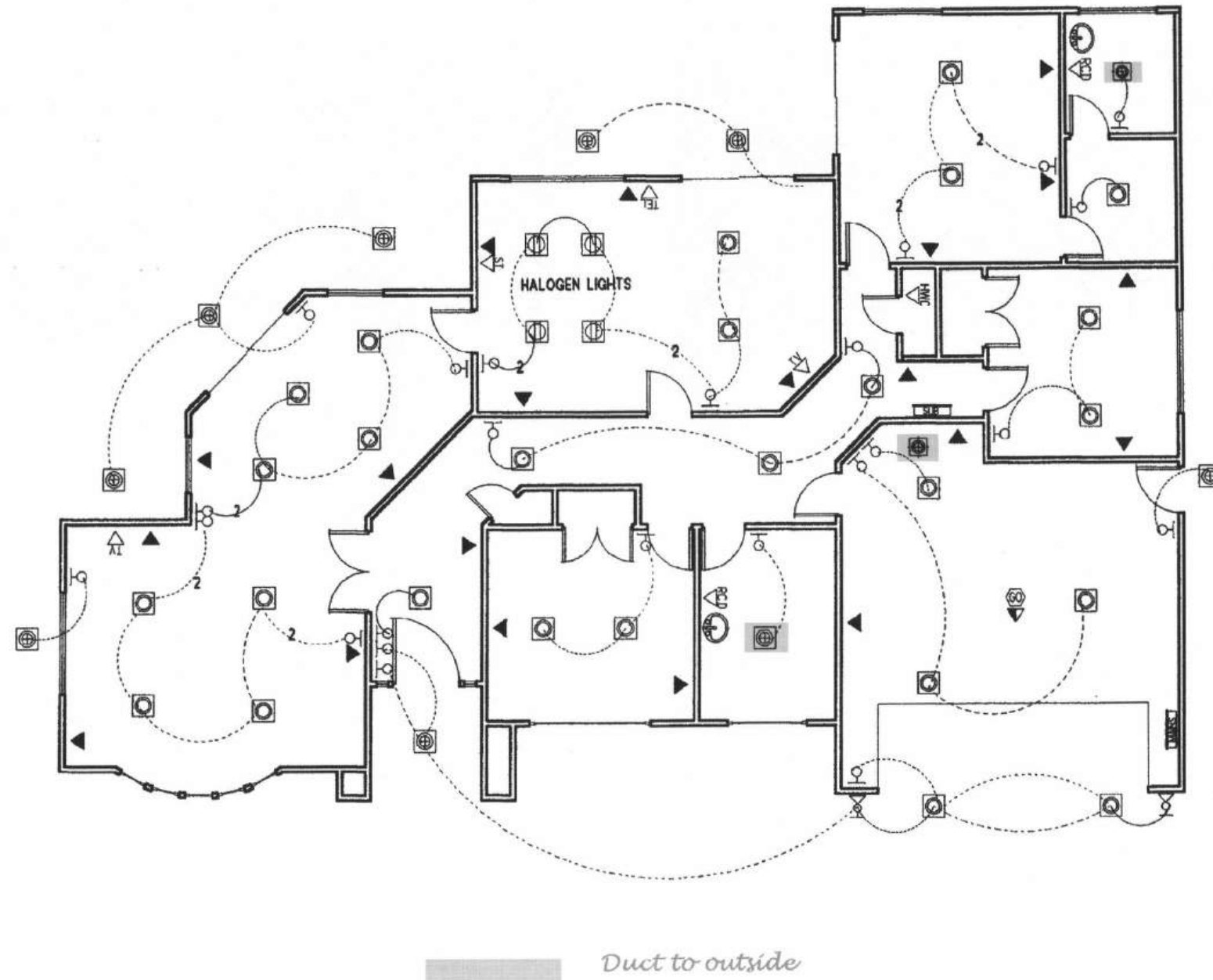


ELEVATION KEY

Lot 9 Guildford Drive  
DESIGN NETWORK

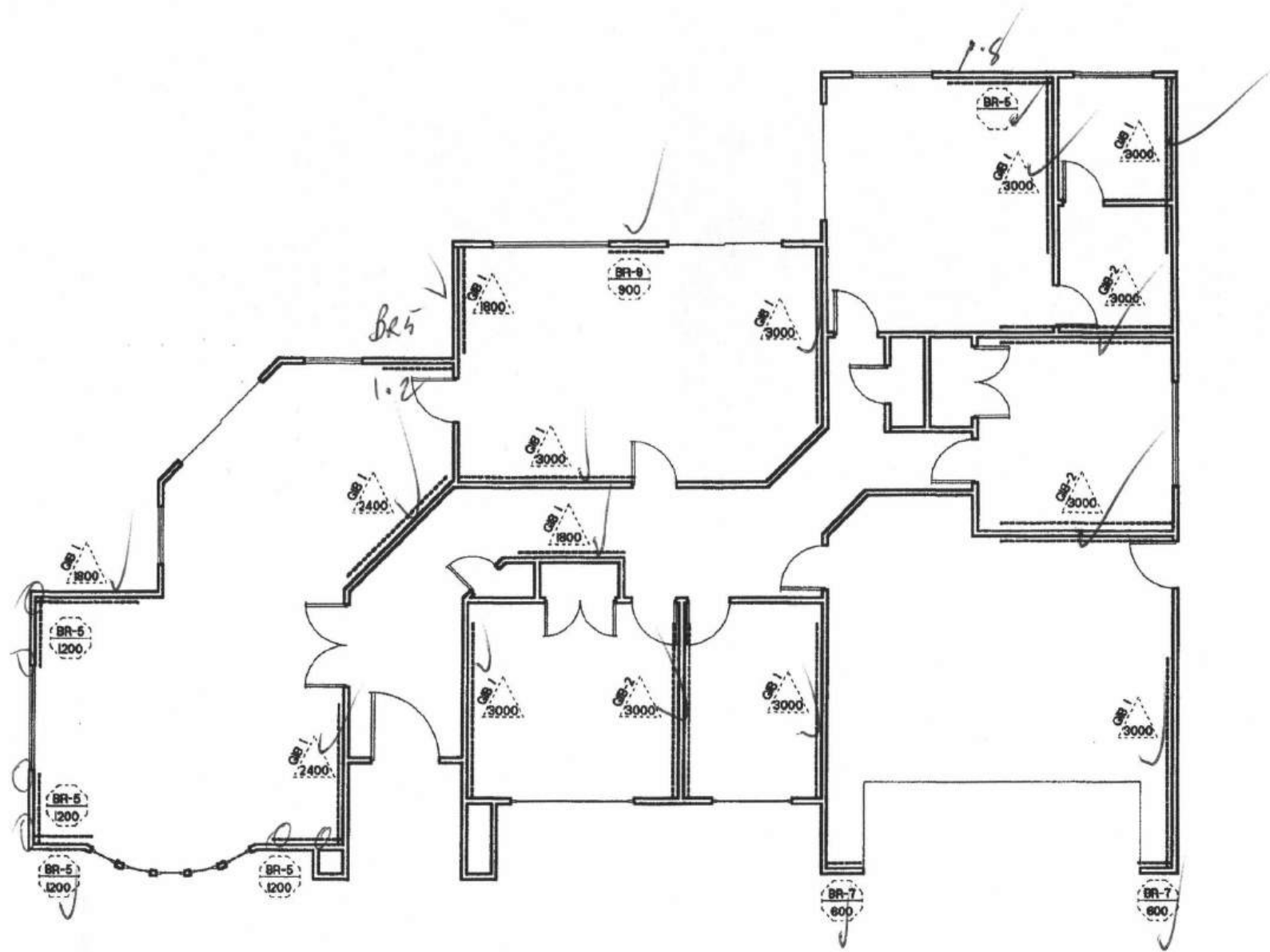
DATE 7 JULY 2000  
SCALE 1:150  
PAGE #  
DATA PLAN SERVICES





<ul style="list-style-type: none"> <li>⊙ EXTERIOR LIGHT</li> <li>⊕ CEILING FAN/LIGHT</li> <li>⊙ FLUSH LIGHT</li> <li>⊕ STD CEILING LIGHT</li> </ul>	<ul style="list-style-type: none"> <li>▬ SPOTLIGHT BAR</li> <li>Ⓧ EARTHING ROD</li> <li>Ⓜ MAINS METER</li> <li>Ⓜ SUBMAIN METER</li> </ul>	<ul style="list-style-type: none"> <li>▽ SINGLE POWER PT</li> <li>▽ DOUBLE POWER PT</li> <li>⊗ WALL LIGHT</li> <li>Ⓜ SHAVER POINT</li> </ul>	<ul style="list-style-type: none"> <li>⊕ LIGHT SWITCH</li> <li>⊕ 2-WAY SWITCH</li> <li>Ⓜ SMOKE ALARM</li> <li>Ⓜ SECURITY ALARM</li> </ul>	<ul style="list-style-type: none"> <li>TV TELEVISION PT</li> <li>DW DISHWASHER PT</li> <li>WM WASTEMASTER</li> <li>HWC HWC PT</li> </ul>	<ul style="list-style-type: none"> <li>TEL TELEPHONE JACK</li> <li>ST STOVE POWER PT</li> <li>GO GARAGE DOOR OPENER</li> <li>HEATED TOWER RAIL</li> </ul>	<p><b>Lot 9 Guildford Drive</b></p> <p><b>DESIGN NETWORK</b></p>	<p>DATE 7 JULY 2000</p> <p>SCALE 1:100</p> <p>PAGE #</p> <p>DATA PLAN SERVICES</p>
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# BRACE PLAN



APPROVED  
BY BUILDING  
  
\_\_\_\_\_  
Officer

	STD GIB LENGTH 2400		BRACELINE LENGTH 1800		PLYWOOD LENGTH 1200		OTHER TYPE LENGTH
	HARDITEX LENGTH 1200		HARDIFLEX LENGTH 2400				

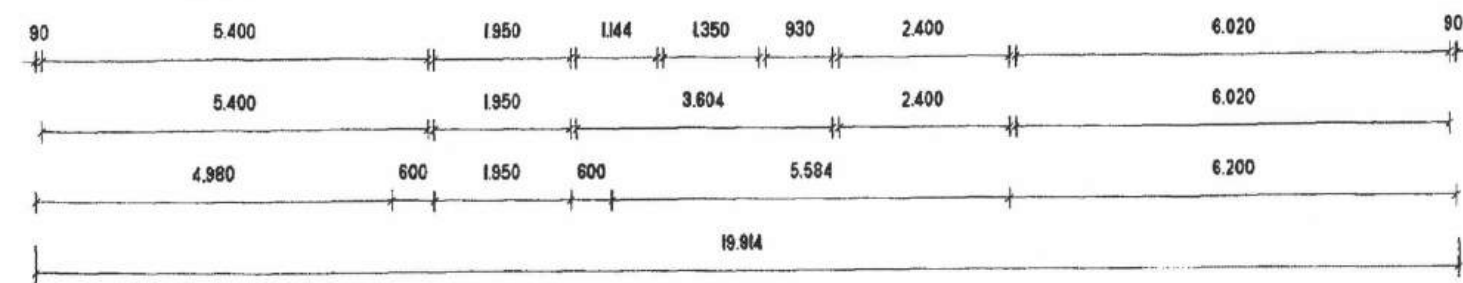
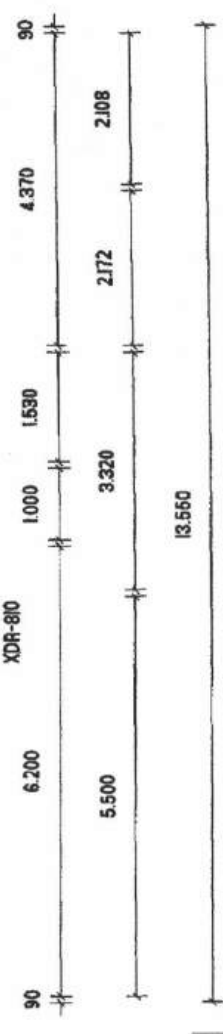
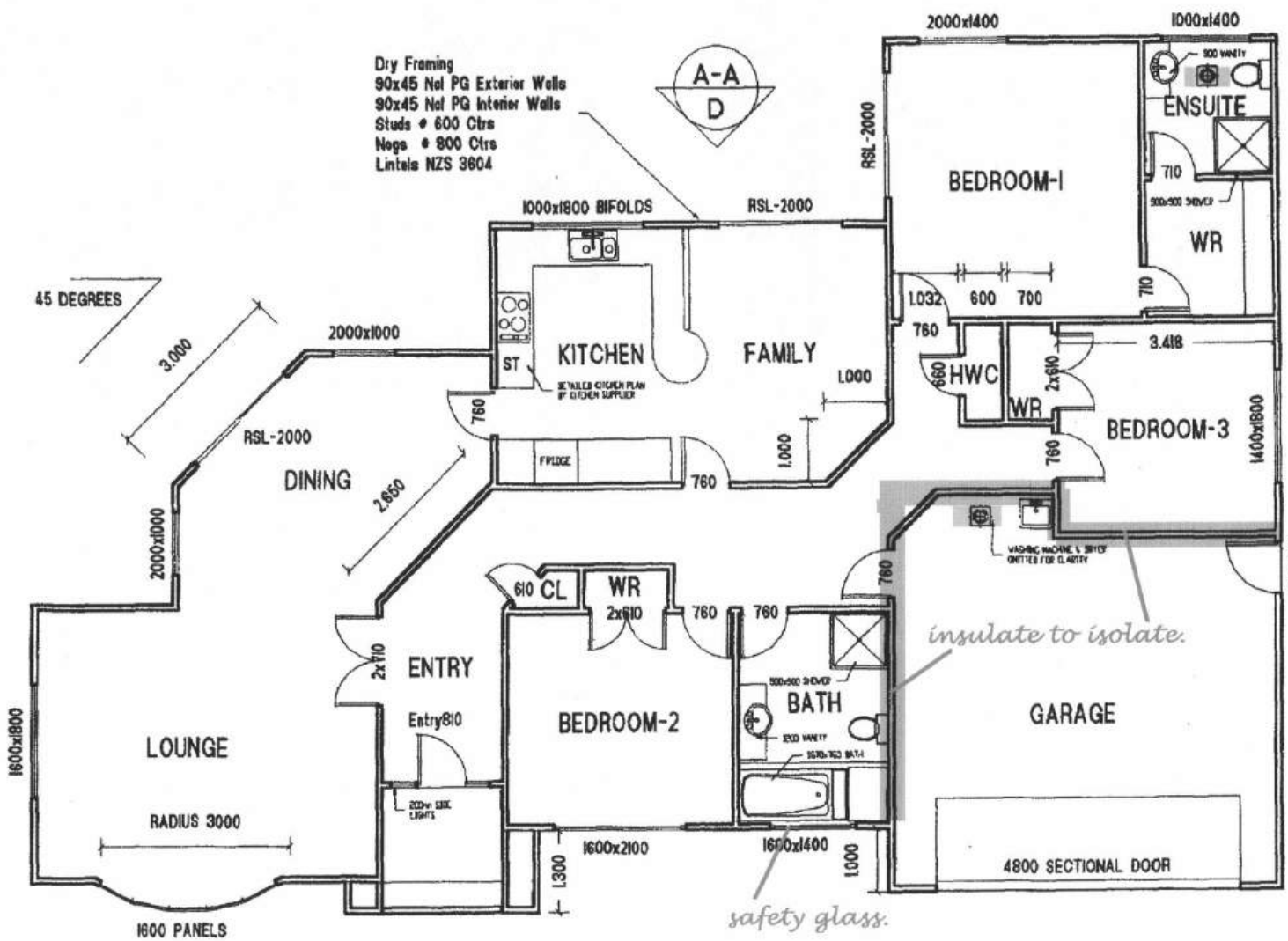
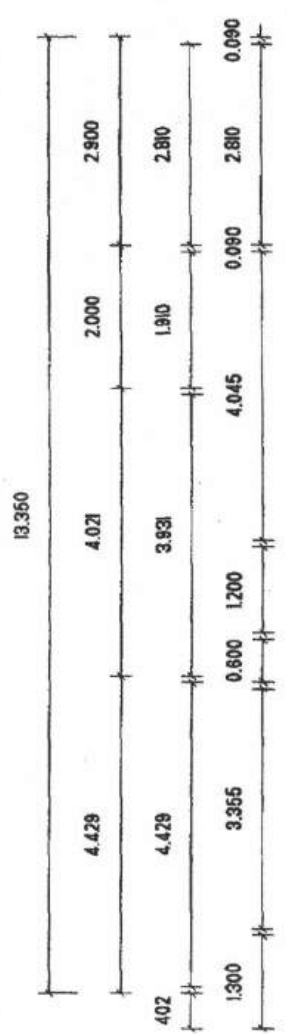
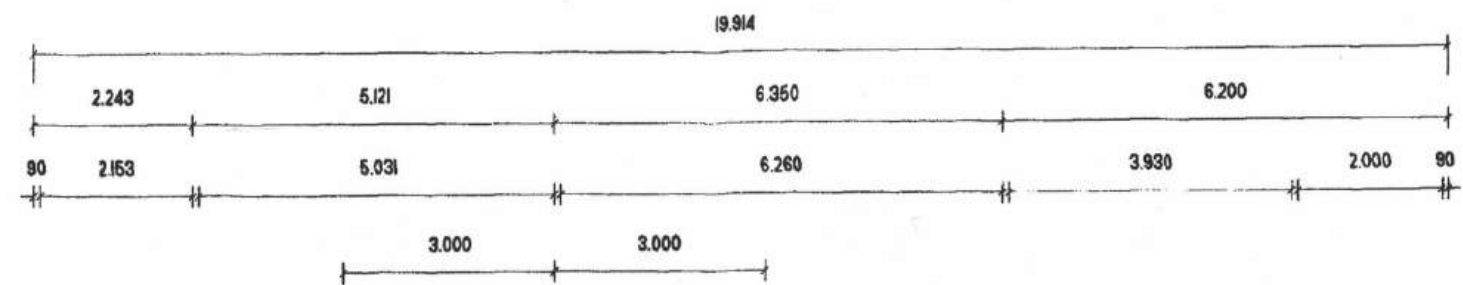
WALL BRACING TO COMPLY WITH  
NZS 3604 SECTION 5 AND FIXED  
TO MANUFACTURER INSTRUCTIONS

## Lot 9 Guildford Drive DESIGN NETWORK

DATE 7 JULY 2000  
SCALE 1:100  
PAGE #  
DATA PLAN SERVICES

APPROVED  
BY BUILDING  
P. Wilkinson  
23/8/00  
Officer

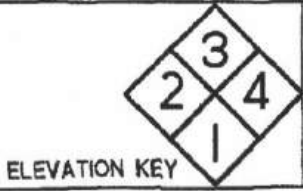
FLOOR PLAN



APPROVED  
BY PLUMBING  
& DRAINAGE  
John Hickey  
Officer

All habitable/service rooms to have 5% of their floor area as opening windows or approved alternative, to achieve ventilation requirements.

DIMENSIONED PLANS OVER SCALED PLANS  
ALL CONSTRUCTION WORKS TO COMPLY  
WITH NZS 3604 AND IN ACCORDANCE  
WITH LOCAL COUNCIL BYLAWS



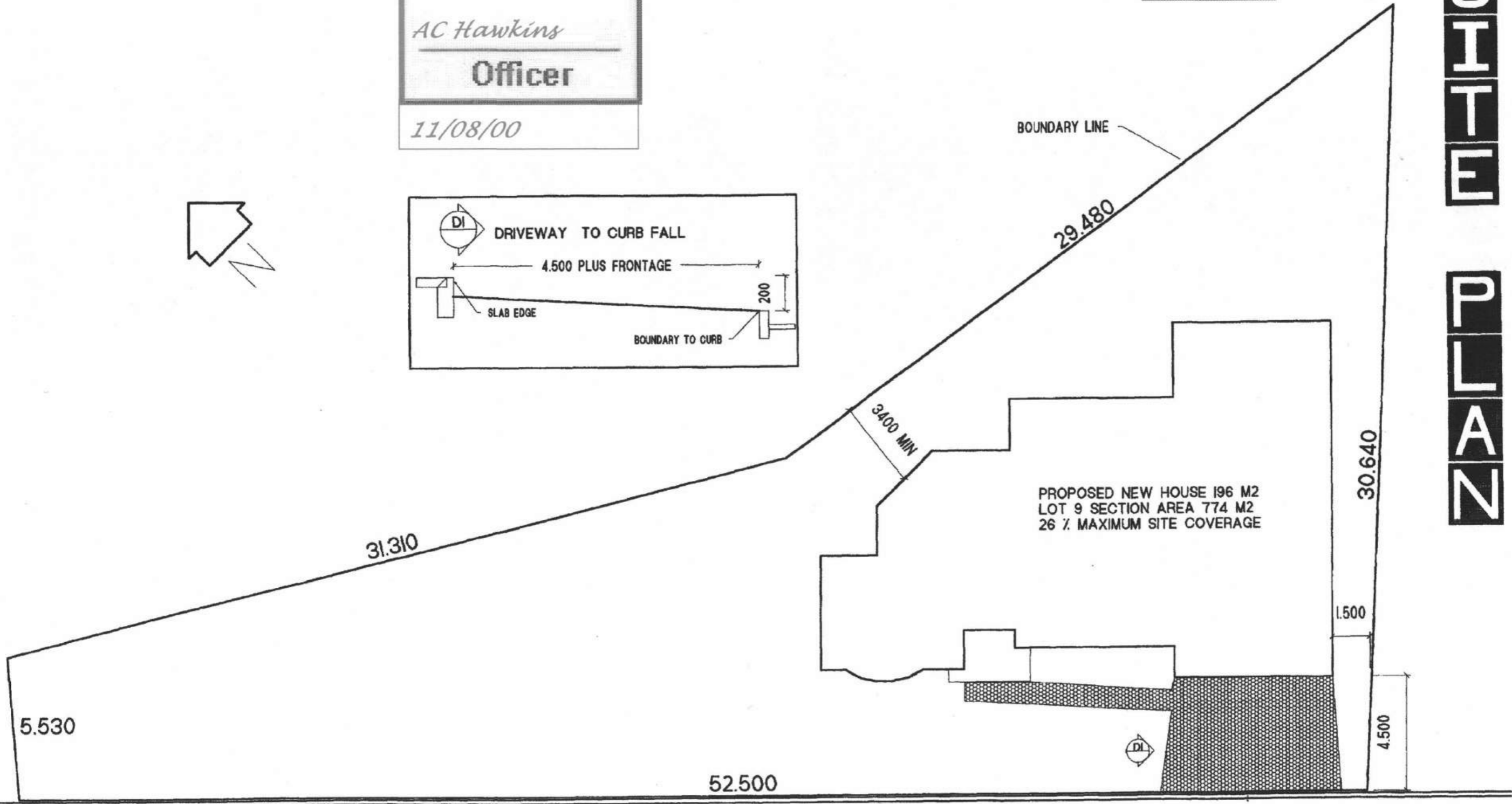
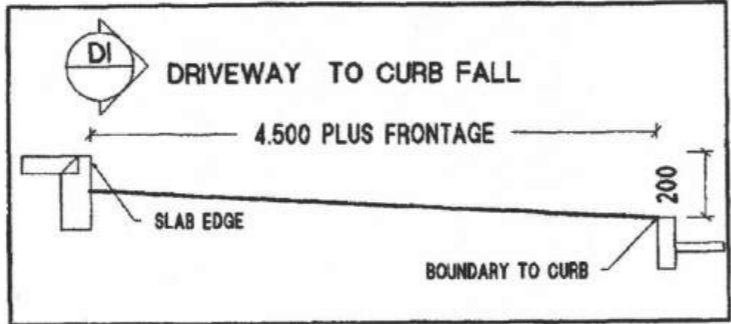
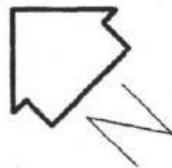
Lot 9 Guildford Drive  
DESIGN NETWORK

DATE 7 JULY 2000  
SCALE 1:100  
PAGE #  
DATA PLAN SERVICES

**APPROVED  
BY PLANNING**  
*AC Hawkins*  
**Officer**  
11/08/00

**APPROVED  
BY BUILDING**  
*P. Wilkinson*  
**Officer**

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PROPOSED NEW HOUSE 196 M2  
LOT 9 SECTION AREA 774 M2  
26 % MAXIMUM SITE COVERAGE

LOT 9 GUILDFORD DRIVE

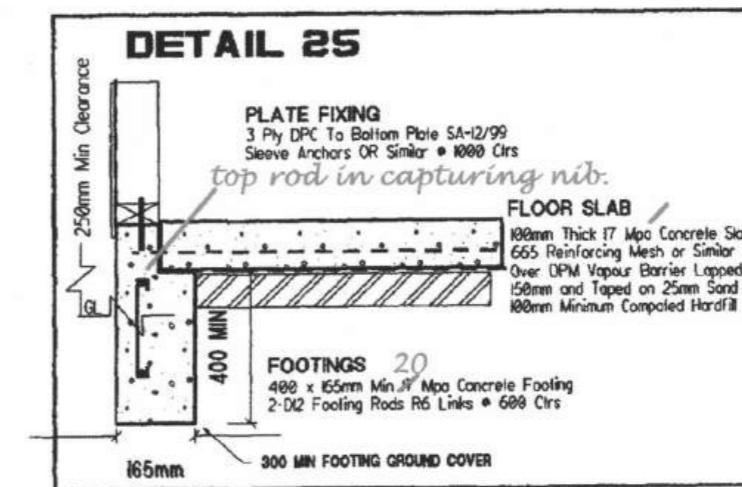
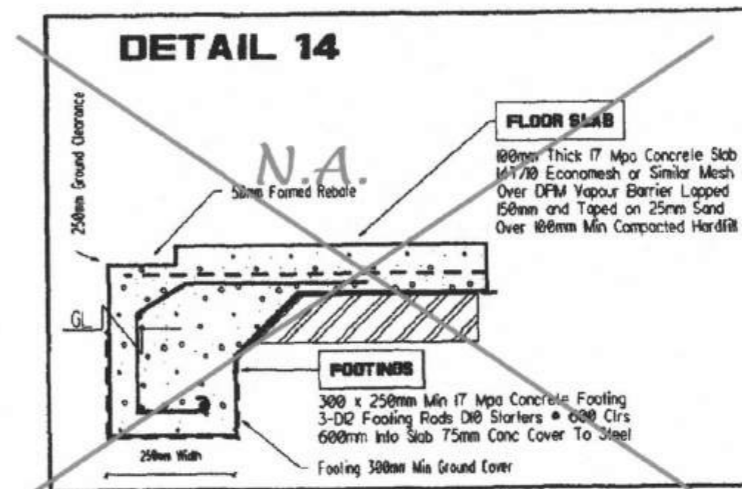
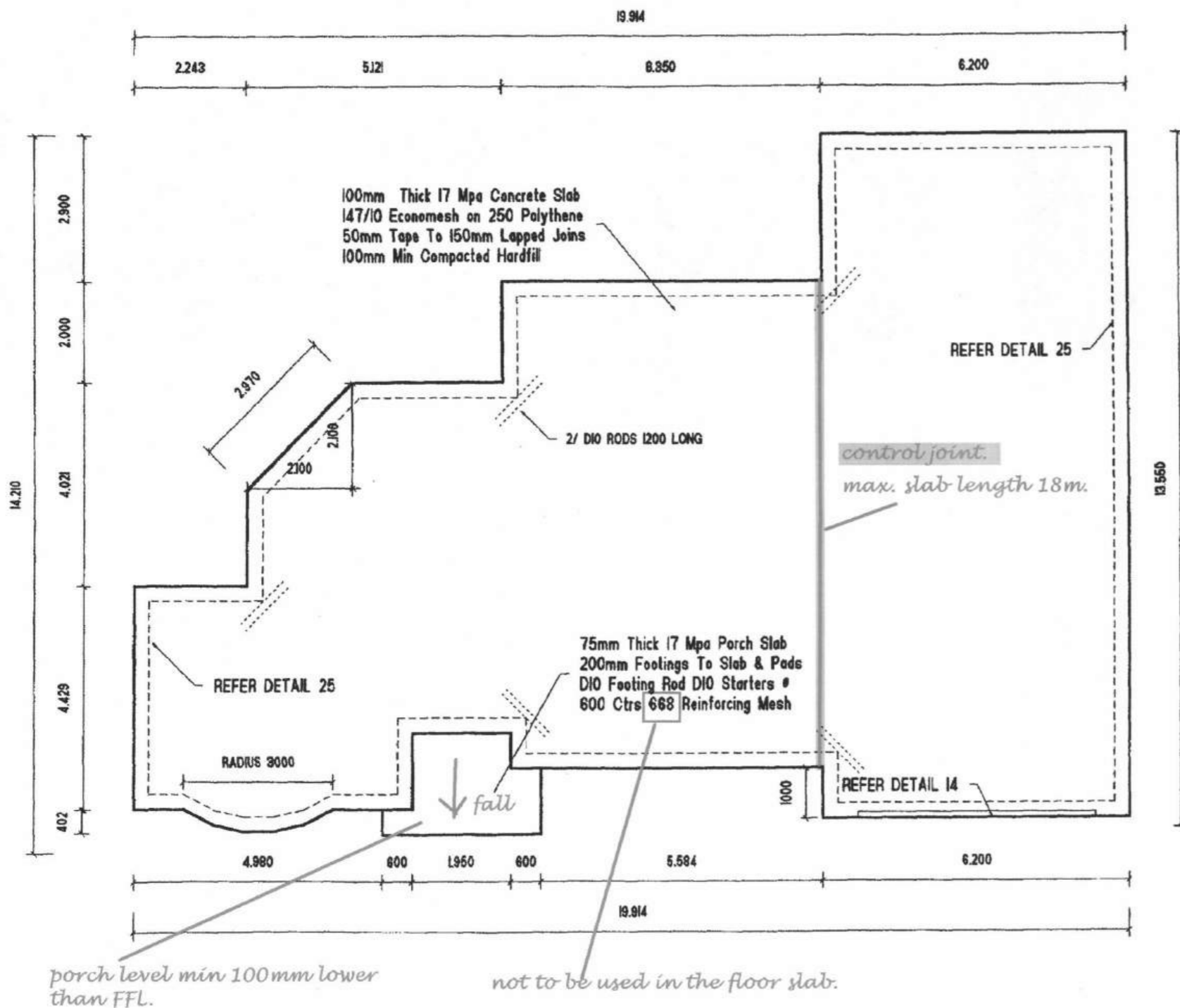
- ⊕ SUMP
- ⊙ WATER TOBY
- ⊙ SH SOAK HOLE
- ⊙ MH MANHOLE COVER

DIMENSIONED PLANS OVER SCALED PLANS  
CHECK BOUNDARY DIMENSIONS ONSITE  
PRIOR TO CONSTRUCTION WORKS

**Lot 9 Guildford Drive  
DESIGN NETWORK**

DATE 7 JULY 2000  
SCALE 1:150  
PAGE #  
DATA PLAN SERVICES

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APPROVED  
BY BUILDING  
P. Wilkinson  
Officer

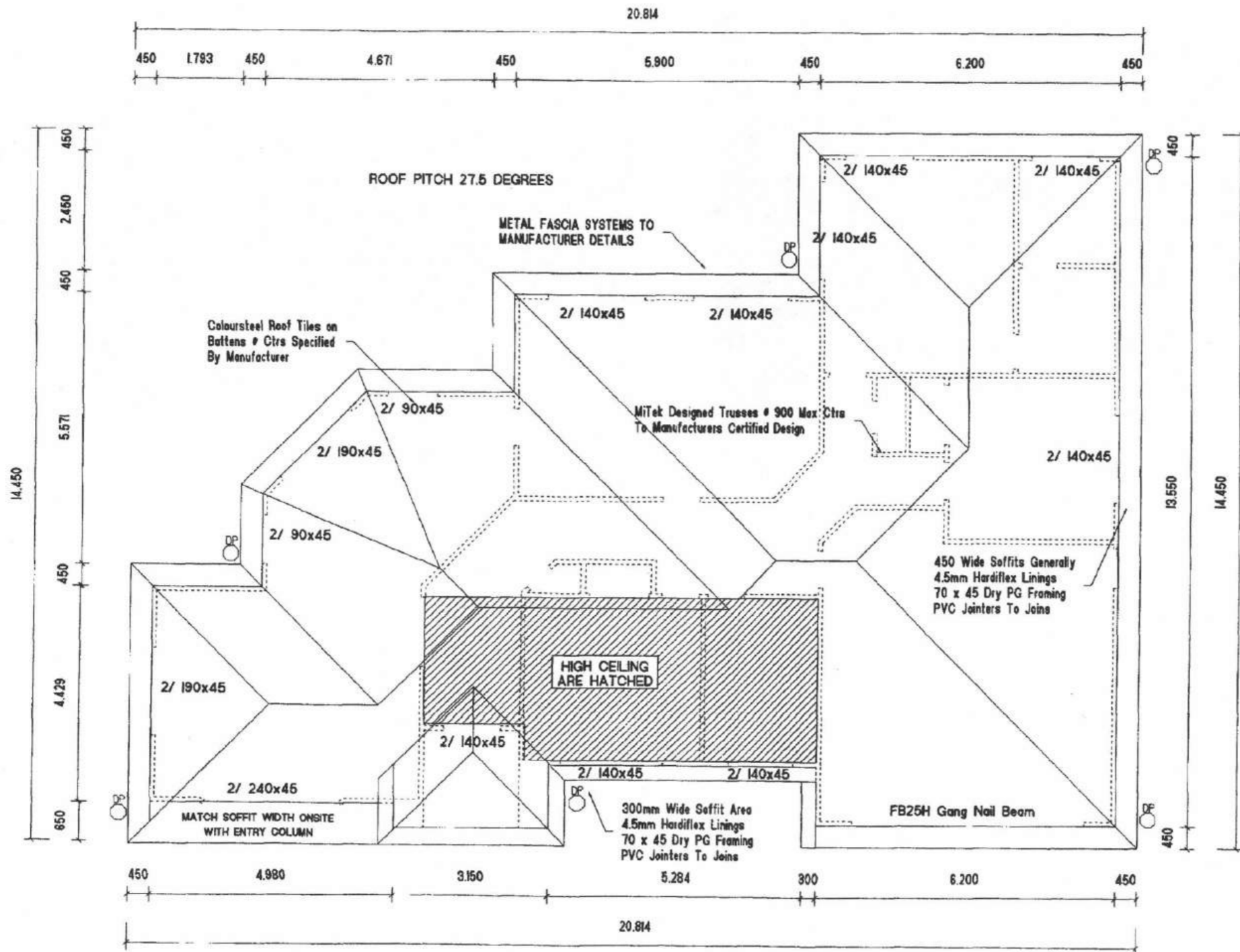
DIMENSIONED PLANS OVER SCALED PLANS  
ALL CONSTRUCTION WORKS TO COMPLY  
WITH NZS 3804 AND IN ACCORDANCE  
WITH LOCAL COUNCIL BYLAWS

NOTE: DETAILS MAY VARY FROM LOCAL  
CONSTRUCTION PRACTICES AND ARE  
INTENDED AS A GUIDELINE ONLY

**Lot 9 Guildford Drive  
DESIGN NETWORK**

DATE 7 JULY 2000  
SCALE 1:100  
PAGE #  
DATA PLAN SERVICES

ROOF PLAN



DIMENSIONED PLANS OVER SCALED PLANS  
 ALL CONSTRUCTION WORKS TO COMPLY  
 WITH NZS 3604 AND IN ACCORDANCE  
 WITH LOCAL COUNCIL BYLAWS



**Lot 9 Guildford Drive  
 DESIGN NETWORK**

DATE 7 JULY 2000  
 SCALE 1:100  
 PAGE #  
 DATA PLAN SERVICES

**Gib® Wall Bracing Calculation Sheet A** single storey V1.2A

**Job Details**

Name	AARON CRAIG.	
Street and Number	155 GUILDFORD DRIVE.	
Lot and DP Number	LOT9	
City/Town/District	PARAP'	
Designer and date	KCDC. PLAN VETTING.	23-Aug-00

**Building Specification**

Location of Storey	single	▼	<i>not applicable (single storey building)</i> <i>not applicable (slab)</i>  <i>Use roof length including eaves</i> <i>Use roof length including eaves</i>
Floor Loading	2 kPa	▼	
Foundation Type	slab	▼	
Building Height to Apex (m)	6	▼	
Roof Height above Eaves (m)	3	▼	
Stud Height (m)	2.4	▼	
Cladding Weight (top or single)	light	▼	
Cladding Weight (lower)	light	▼	
Cladding Weight (subfloor)	light	▼	
Roof Weight	light	▼	
Roof Pitch (degrees)	25-45	▼	
Room in Roof Space	no	▼	
Building Length (m)	19.91		
Building Width (m)	13.55		
Gross Building Plan Area (m2)	196		

**Building Location**

<b>Wind Zone</b>	<b>High</b>		<b>Earthquake Zone</b>
Region	R2	▼	A
Terrain	Inland	▼	
Exposure	Sheltered	▼	
Topography	Moderate	▼	

**Bracing Units required for Wind**

per m	subfloor	walls
W along	n/a	78 BUs/m
W across	n/a	78 BUs/m
Totals	subfloor	walls
W along	n/a	1057 BUs
W across	n/a	1553 BUs

**Bracing Units required for Earthquake**

per m2	subfloor	walls
E	n/a	4.0 BUs/m2
Totals	subfloor	walls
E along	n/a	784 BUs
E across	n/a	784 BUs

**Gib® Wall Bracing Calculation Sheet B**

single storey

V1.2A

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	
<b>A</b>	enter	1	Gib®	BR5	▼	2	2.4	230	170
		2		none	▼		2.4		
		3		none	▼		2.4		
<i>line totals</i>		4		none	▼		2.4		
W	230	5		none	▼		2.4		
EQ	170	6		none	▼		2.4		
<b>B</b>	enter	1	Gib®	BR9	▼	0.9	2.4	99	86
		2	Gib®	Gib2b	▼	3	2.4	240	210
		3	Gib®	BR5	▼	1.2	2.4	138	102
<i>line totals</i>		4		none	▼		2.4		
W	477	5		none	▼		2.4		
EQ	398	6		none	▼		2.4		
<b>C</b>	enter	1	Gib®	Gib1b	▼	3	2.4	225	150
		2	Gib®	Gib2b	▼	3	2.4	240	210
		3		none	▼		2.4		
<i>line totals</i>		4		none	▼		2.4		
W	465	5		none	▼		2.4		
EQ	360	6		none	▼		2.4		
<b>D</b>	enter	1	Gib®	Gib1a	▼	1.8	2.4	99	90
		2	Gib®	Gib1a	▼	1.8	2.4	99	90
		3		none	▼		2.4		
<i>line totals</i>		4		none	▼		2.4		
W	198	5		none	▼		2.4		
EQ	180	6		none	▼		2.4		
<b>E</b>	enter	1	Gib®	BR4	▼	0.9	2.4	90	77
		2	Gib®	BR5	▼	1.2	2.4	138	102
		3	Gib®	BR9	▼	0.6	2.4	66	57
<i>line totals</i>		4	Gib®	BR9	▼	0.6	2.4	66	57
W	360	5		none	▼		2.4		
EQ	293	6		none	▼		2.4		

							Wind	Earthq.
<b>Totals Achieved</b>							1730	1400
							OK	OK
<b>Totals Required (from Sheet A)</b>							1057	784

**Gib® Wall Bracing Calculation Sheet B**

single storey

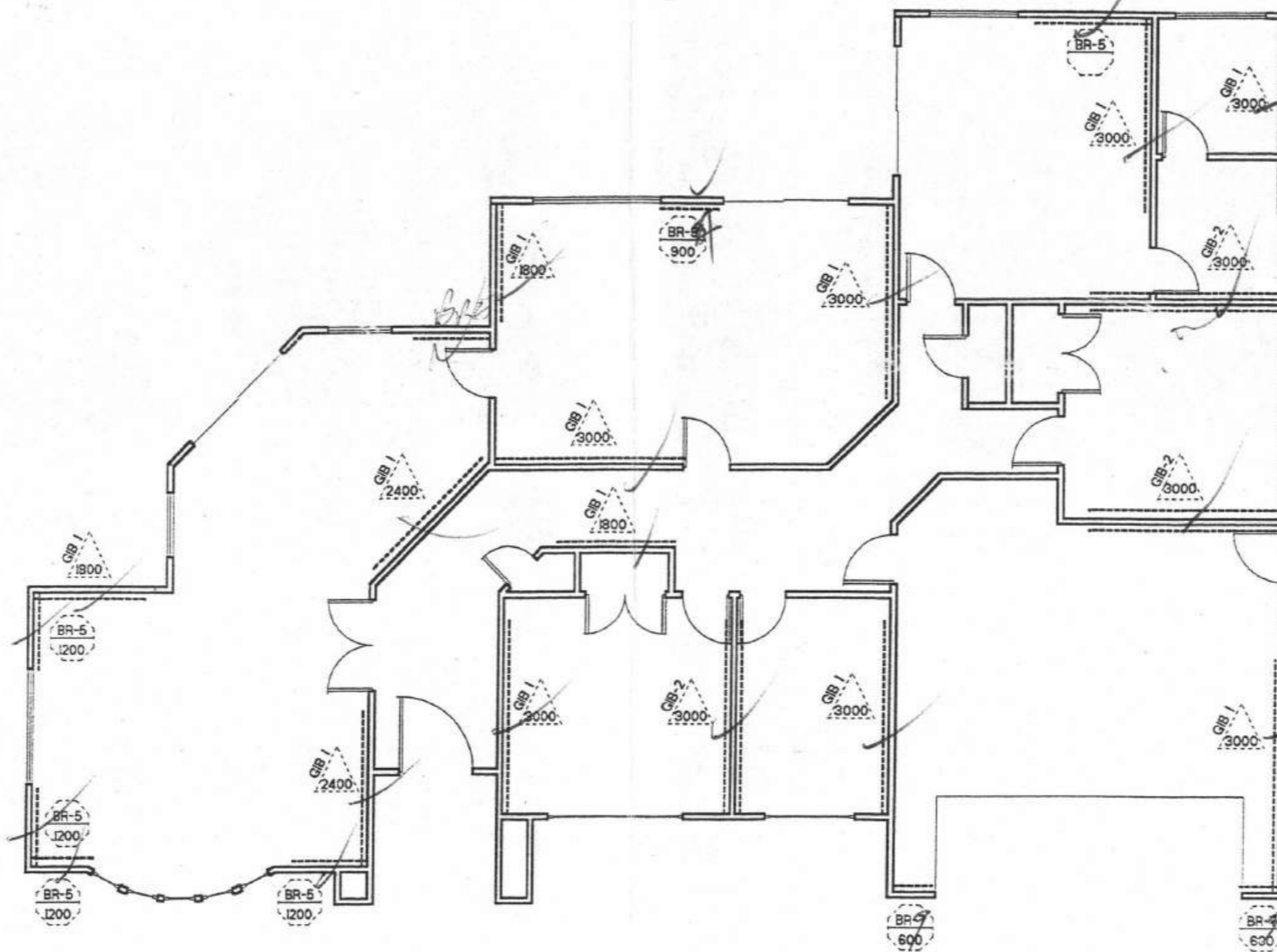
V1.2A

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	
<b>M</b>	enter	1	Gib®	BR5	1.2	2.4	138	102	
		2	Gib®	BR5	1.2	2.4	138	102	
		3		none		2.4			
<i>line totals</i>		4		none		2.4			
W	276	5		none		2.4			
EQ	204	6		none		2.4			
<b>N</b>	enter	1	Gib®	Gib1b	2.4	2.4	180	120	
		2	Gib®	Gib1a	1.8	2.4	99	90	
		3	Gib®	Gib1b	3	2.4	225	150	
<i>line totals</i>		4		none		2.4			
W	504	5		none		2.4			
EQ	360	6		none		2.4			
<b>O</b>	enter	1	Gib®	Gib2b	3	3	192	168	
		2		none		2.4			
		3		none		2.4			
<i>line totals</i>		4		none		2.4			
W	192	5		none		2.4			
EQ	168	6		none		2.4			
<b>P</b>	enter	1	Gib®	Gib1b	3	2.4	225	150	
		2	Gib®	Gib1b	3	2.4	225	150	
		3		none		2.4			
<i>line totals</i>		4		none		2.4			
W	450	5		none		2.4			
EQ	300	6		none		2.4			
<b>Q</b>	enter	1	Gib®	Gib1b	3	2.4	225	150	
		2	Gib®	Gib1b	3	2.4	225	150	
		3	Gib®	Gib1b	3	2.4	225	150	
<i>line totals</i>		4		none		2.4			
W	675	5		none		2.4			
EQ	450	6		none		2.4			
							Wind	Earthq.	
<b>Totals Achieved</b>							2097	1482	
							OK	OK	
<b>Totals Required (from Sheet A)</b>							1553	784	



Lot 9, Guildford Drive

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ED  
17 AUG 2000  
BY:

KAPITI COAST DISTRICT COUNCIL  
AMENDED/REVISED PLANS

Date Received .....  
Date Approved .....  
Approving Officer .....

*Bracing Calc's & Schedule  
not supplied by applicant  
See GIB bracing sheets attached  
to verify compliance.*

	STD GIB LENGTH 2400		BR-1 BRACELINE LENGTH 1800		PLY PLYWOOD LENGTH 1200
	HT-1 HARDITEX LENGTH 1200		HF-10 HARDIFLEX LENGTH 2400		OTHER TYPE LENGTH 1200

WALL BRACING TO COMPLY WITH  
NZS 3604 SECTION 5 AND FIXED  
TO MANUFACTURER INSTRUCTIONS

**PLACEMAKERS PLANS  
DPS LTD**

DATE 25 JULY 2000  
SCALE 1:100  
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DATA PLAN SERVICES

*W*

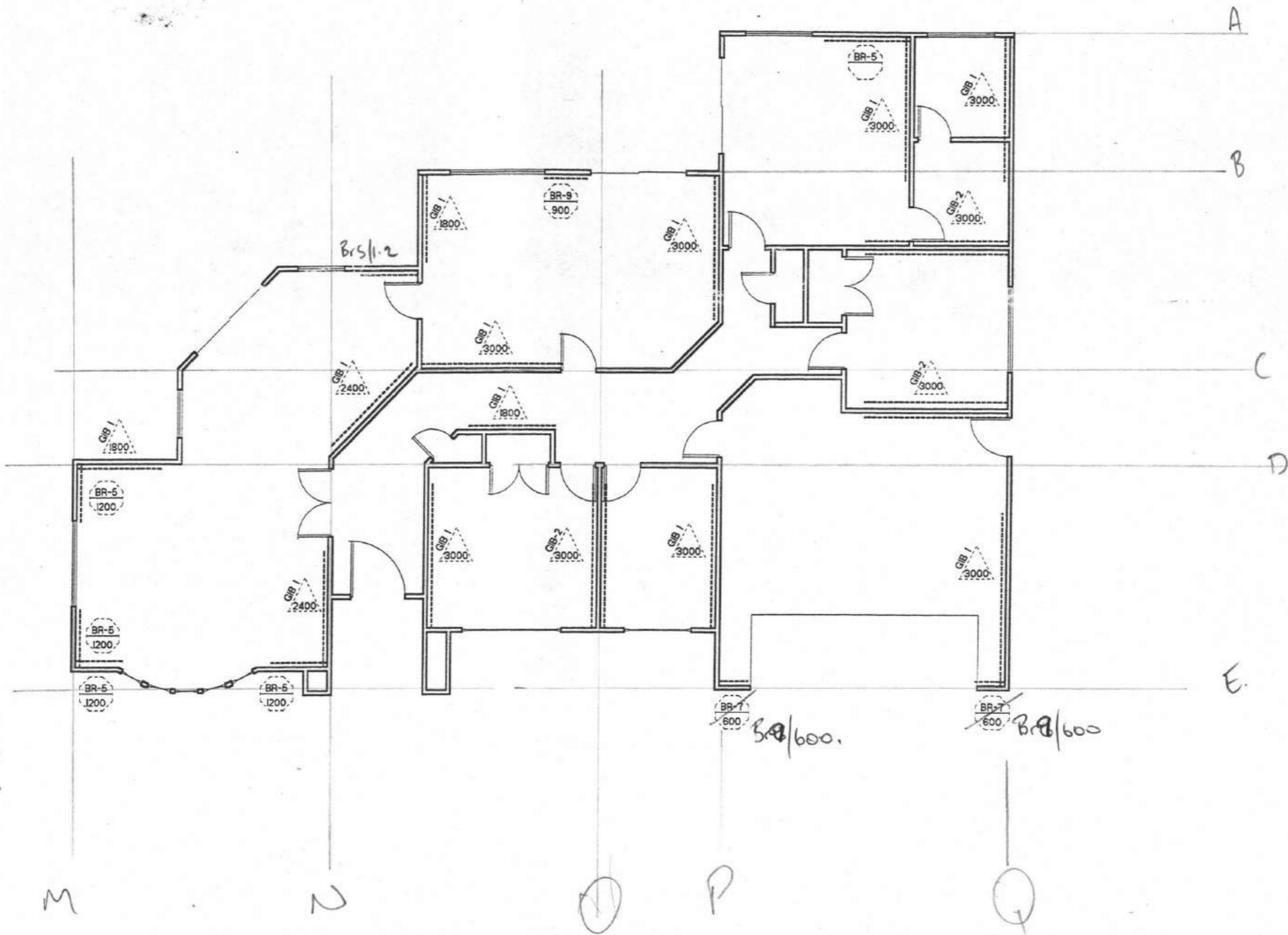
17.8.

Lot 9, Guildford Drive

Bob  
Bracing as  
required from  
Wednesday.  
  
D2

RECEIVED  
17 AUG 2000  
BY:

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



BRACE  
PLAN

2400	STD GIB LENGTH	1800	BRACELINE LENGTH	1200	PLYWOOD LENGTH	WALL BRACING TO COMPLY WITH NZS 3604 SECTION 5 AND FIXED TO MANUFACTURER INSTRUCTIONS
1200	HARDITEX LENGTH	2400	HARDIFLEX LENGTH		OTHER TYPE LENGTH	

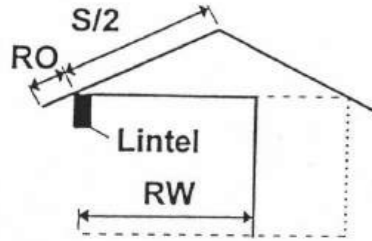
**PLACEMAKERS PLANS**  
**DPS LTD**

DATE 25 JULY 2000  
SCALE 1:100  
PAGE # Ten  
DATA PLAN SERVICES



Job Title: A. CRAIG HOUSE. LOT 9 GUILDFORD DR Date: 7.8.2000  
 Lintel Description: GARAGE DOOR LINTEL By: DESIGN NETWORK

**Single or Upper Storey Lintel**



1. Enter the following dimensions:  
 Roof Dimension **S** 6m Overhang **RO** 0.6m  
 Room Width **RW** 6.2m
2. Circle the material and enter the clear span of the lintel:  
 Timber / Glulam / Steel Span **L** 4.9 m

3. Circle the applicable loads then multiply them by the geometry factors obtained from Tables 1 to 3 of Part 3 to give the loads GT, ST, QT and WT applied to the lintel.

Self Weight - G Roof: Light | Heavy 0.4 | 0.9 × **RG** 3.8 = **GT** 1.52

Snow - S Snow: None | 0.5 kPa | 1 kPa 0.0 | 0.5 | 1.0 × **RG**     = **ST** —

Live - Q Live: Maintenance 0.25 × **RG** 3.8 = **QT** 0.95

Wind - W Wind: Low | Med | High | V. High 0.53 | 0.71 | 1.0 | 1.5 × { **W1** -0.65 + **W2** -4.05 } = **WT** 4.7

4. Circle the material duration factor on the left and multiply it by the gravity load (GT) from step 3 to calculate the Service Load (SL).

Timber | Glulam | Steel 2.0 | 1.5 | 1.0 × **GT** 1.52 = **SL** 1.52

5. Circle the material duration factors on the left then use them and the loads from step 3 to calculate loads U1 to U4 and the Ultimate Load (UL).

Timber | Glulam | Steel 1.67 | 1.67 | 1.0 × 1.4 × **GT** 1.52 = **U1** 2.13

1.25 | 1.25 | 1.0 × { 1.2 × **GT** 1.52 + 1.6 × **QT** 0.95 } = **U2** 3.35

1.25 | 1.25 | 1.0 × { 1.2 × **GT** 1.52 + 1.2 × **ST** — } = **U3** 1.82

0.6 × **GT** 1.52 + **WT** 4.7 = **U4** 5.62

Ultimate Load (UL) = Greatest value from boxes U1 to U4 = **UL** 5.62

Job Title: \_\_\_\_\_ Date: \_\_\_\_\_  
 Lintel Description: \_\_\_\_\_ By: \_\_\_\_\_

6. Select a lintel from Part 4 which has resistance values SR and UR which are greater than those given in boxes SL and UL respectively. Enter the section and its resistance:

**Section** 200 UB 25 **SR** 7.67 **UR** 17.65

7. Circle the roof weight factor and use it to calculate the uplift Reaction Force (RF) for the lintel. If RF is greater than 8.0 kN, additional fixings are required for the lintel.

Light | Heavy 0.54 | 0.72 + 0.49 × **L** 4.9 } × **U4** 5.62 = **RF** 10.67

SUITABLE CLEATS REQ'D EACH END.

**PROPOSED DWELLING  
LOT 9 GUILDFORD DRIVE,  
PARAPARAUMU.**

**NEW RESIDENCE**

**SPECIFICATION**

 **DESIGN NETWORK**

---

301 Kapiti Road, Paraparaumu ▲ P.O. Box 1616, Paraparaumu Beach  
Telephone: (04) 298 2129 ▲ Fax: (04) 298 2192 ▲ Email: [desnet@kapiti.co.nz](mailto:desnet@kapiti.co.nz)

**NEW RESIDENCE  
LOT 9 GUILDFORD DRIVE,  
PARAPARAUMU.**

**INDEX**

1201:-	Preliminaries and General
2201:-	Preparation and Ground Work
3101:-	Concrete
3801:-	Carpentry
4201:-	Cladding
4201H:-	James Hardie Cladding
4301:-	Roofing
4502:-	Aluminum Windows and Doors
5101:-	Lining
5101H:-	James Hardie Linings
5501:-	Joinery Fittings
6201:-	Tiling
6501:-	Carpeting
6601:-	Painting and Paperhanging
7101:-	Water
7201:-	Gas
7401:-	Rainwater Plumbing
7402:-	Sanitary Plumbing
7403:-	Drainage
7701:-	Electrical

 **DESIGN NETWORK**

301 Kapiti Road, Paraparaumu ▲ P.O. Box 1616, Paraparaumu Beach  
Telephone: (04) 298 2129 ▲ Fax: (04) 298 2192 ▲ Email: [desnet@kapiti.co.nz](mailto:desnet@kapiti.co.nz)

## 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 no.  
 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 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 all 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 publications.

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 ducted 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 all 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 not 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 all 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 and 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 other 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. Report 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.

- 3.7 **SHORING AND UNDERPINNING**  
Carry out shoring and underpinning shown on the drawings and as necessary to prevent subsidence of adjoining public or private property and to ensure the safety of the public and site personnel. Maintain protection throughout the progress of the works, or until foundations and subgrade structures have been completed and the stability of adjoining public and private property secured.
- 3.8 **GENERAL EXCAVATION**  
Trim ground to required profiles, batters, falls and levels. Remove all loose material. Protect all cut faces from collapse. Keep all excavations free from water.
- 3.9 **ROCK EXCAVATION**  
If rock is found at any level above the underside of the structural foundations, or above required base levels for site service trenches, immediately notify the owner. Obtain written instructions from the owner on the proposed approach to rock excavation, or consequent alterations to subgrade construction. Confirm any changes with the territorial authority.
- 3.10 **EXCAVATION FOR FOUNDATIONS**  
Foundation excavations to be taken to depths shown. Keep trenches plumb and straight, bottoms level and solid, stepped as detailed and clean and free of water.
- 3.11 **INADEQUATE BEARING**  
If bearing is inadequate then excavate further and backfill with material as follows:  
  
Below slabs on grade: Hardfill  
Below footings: 10MPa concrete  
Service trenches: Hardfill  
  
If excavation exceeds the required depths, backfill and compact to the correct level with material as listed.
- 3.12 **GRANULAR BASE FOR SLABS**  
To conform with NZS 3604 section 7.5.3. Consolidate with a vibrating roller. Blind the surface with coarse sand or sand/cement and roll ready to receive a dampproof membrane.
- 3.13 **GENERAL BACKFILLING**  
Obtain written confirmation from the owner before using any excavated material. Compact approved backfilling in 150mm layers with the last 200mm in clean topsoil, lightly compacted and neatly finished off.
- 3.14 **RETAINING WALLS**  
Backfill behind retaining walls with free draining granular material and compact in 200mm layers. Ensure any tanking membranes, drain coil and dampproofing are not punctured.
- 3.15 **SURPLUS MATERIAL**  
Remove all surplus and excavated material from the site.

## 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 the 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 for 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 a 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, finished 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.

## 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 **DAMPPROOF 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 interior 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 joins 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.

## 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 FASCIA 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:

	<u>EMC</u>
- Framing at enclosure	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 joints 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 tinted 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.

- 2.11 **SCREWS FOR TIMBER**  
For timber framing, countersunk Phillips-head stainless steel screws.
- 2.12 **SCREWS FOR VILLABOARD® SOFFIT LININGS**  
Villadrive® wood screws, 6 gauge x 30mm and 6 gauge x 25mm for steel.
- 2.13 **FASTENINGS FOR SOFFIT LININGS**  
Fastfix white nylon fasteners.
- 2.14 **HARDIFLEX®, HARDITEX™, HARDIBACKER® NAILS GALVANISED**  
Galvanised 40mm x 2.8mm flathead minimum head diameter 6.8mm. Refer to relevant James Hardie technical literature.
- 2.15 **HARDIFLEX®, HARDITEX™, HARDIBACKER® NAILS STAINLESS STEEL**  
316 stainless steel 40mm x 2.8mm flathead minimum head diameter 6.8mm. Refer to relevant James Hardie technical literature.
- 2.16 **JAMES HARDIE WEATHERBOARD NAILS GALVANISED**  
Galvanised 50mm x 2.8mm and for single vertical applications 40mm x 2.8mm flathead minimum head diameter 6.8mm. Refer to relevant James Hardie technical literature.
- 2.17 **JAMES HARDIE WEATHERBOARD NAILS STAINLESS STEEL**  
316 stainless steel 50mm and for single vertical applications 40mm x 2.8mm flathead minimum head diameter 6.8mm. Refer to relevant James Hardie technical literature.
- 2.18 **SOFFIT JOINTERS, CAPPING MOULDS, SCOTIA MOULDS**  
Extruded PVC. Refer to relevant James Hardie technical literature.
- 2.19 **JAMES HARDIE WEATHERBOARD PVC ACCESSORIES**  
Extruded PVC. Refer to relevant James Hardie technical literature.
- 2.20 **JAMES HARDIE WEATHERBOARD ALUMINIUM ACCESSORIES**  
Etch-primed aluminium. Refer to relevant James Hardie technical literature.
- 2.21 **PANEL JOINTERS**  
Extruded PVC to suit the selected panel texture. Refer to relevant James Hardie technical literature.
- 2.22 **SEALING STRIPS**  
Butynol rubber and/or compressible sealing strips. Refer to relevant James Hardie technical literature.
- 2.23 **HARDIBACKER® BOARD SECTIONS**  
PVC base mould, control joint mould, spacer angles and horizontal flashings. Refer to relevant James Hardie technical literature.
- 2.24 **SEALANT**  
Silicone or polyurethane sealant. Refer to relevant James Hardie technical literature.
- 2.25 **TIMBER FASCIAS AND BARGE BOARDS**  
Dressing grade to NZS 3631 and H3 treated to NZMP 3640. Finger-jointed timber to AS/NZS 1491.
- 3. EXECUTION**
- 3.1 **MOISTURE CONTENT**  
Maximum allowable equilibrium moisture content (EMC) of framing at enclosure 24%.
- 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 PAPERS**  
Fix breather type building paper to NZS 4214, as detailed. Refer also to relevant James Hardie technical literature.
- 3.4 **STORING JAMES HARDIE PRODUCTS**  
Take delivery of sheets dry and undamaged in pallets and stack vertically or lay horizontally on a smooth level surface. Protect edges and corners from damage and cover to keep dry until fixed.
- 3.5 **HANDLING JAMES HARDIE PRODUCTS**  
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.

- 3.6 **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 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.
- 3.7 **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 joints mitred.
- 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 and 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, flashings 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 fixings 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

Tapar 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 place.

#### 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 and 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 only.

#### 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 the 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:

	<u>EMC</u>
- 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 make good 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 for 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 the 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 bead cornices 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/m<sup>2</sup> zinc coating).

- 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 requirements 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 at 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 at 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 joints 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 vinyl, 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 one 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 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.
- 3.30 **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 sheet 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 sheet 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 fixings concealed unless otherwise detailed. Scribe fit adjustable shelves with 4 shelf pins and locate force fit pin holes at 50mm maximum centres in solid cheeks. 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/NZS 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 40 degrees C.

#### 3.4 LAYOUT

Before commencing work, obtain approval for the proposed layout of tiles, expansion joints and other visual considerations of the 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 projections, 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 3740.
- 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 rib it with a notched trowel to the tile manufacturer's requirements. Press the tile and beat it into place to obtain adequate coverage by 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 rib it with a notched trowel to the tile manufacturer's requirements. Press the tile and beat it into place to obtain adequate coverage by 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 to 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 and 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 and 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 pile 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 edges, selvages and joins 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 joins 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, then 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 any 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 houses."

#### 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 site 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 toby box 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 all 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, and jointed to the pipe manufacturer's specifications, all to NZBC acceptable solution G12/AS1. Conceal all pipework and pressure test 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 4607.
- 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.

#### 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/m<sup>2</sup>) 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 joints 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 on a 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 bends 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
		3008.1.2: Typical New Zealand installation conditions
NZS 6401		PVC-insulated cables for electric power and lighting
Electricity Regulations 1997		
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 livening 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 <sup>2</sup> on 16 amp MCB's	
Power circuits (domestic)	1.5mm <sup>2</sup> on 16amp MCB's	
Power circuits (domestic - insulated construction)		2.5mm <sup>2</sup> on 16amp MCB's
Power circuits (commercial)	2.5mm <sup>2</sup> 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, locator 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 WATER.
- 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 the 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 securely 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.