



ENVIRONMENTAL SERVICES

WANGANUI DISTRICT COUNCIL

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WANGANUI DISTRICT COUNCIL

04 APR 2003

APPLICATION for P.I.M/Building Consent

This application is for a: (tick the appropriate box)

- ☐ Project Information Memorandum - PIM (preliminary application for a Building Consent)
- ☒ Building Consent
- ☐ Alteration to Approved Plan

BC # 310446

(A) Owner

Name: Paul Laurence Red

Mailing Address: 416 No 3 Line Road, Wanganui

Phone: 3424899 Fax: _____

(B) Designer

Name: Roger Sheriff

Mailing Address: 13 Durham Road, Wanganui

Phone: 3442552 Fax: _____

(C) Builder

Name: Tony White

Mailing Address: 39 Kanni Street, Wanganui

Phone: 3441134 Fax: _____

(D) Craftsman Plumber Craig Goringe

(E) Registered Drainlayer Liverpool Street

CONTACT PERSON i.e. A B C D E (Circle one)

Project craft standing woodburn

Description of PROJECT and USE: Lounge and kitchen extension

Project Location

Street Address/Rural No: 416 No 3 Line Road, Wanganui

Durable Life of Project (i.e. 5, 15, 50+ years)

50+ years

Value of Project Work

(include all labour & materials)

\$ 13000 (Incl. GST)

Consent Fees to be paid by? Paul . L. Red

Code Compliance Certificate to be sent
to? Paul . L. Red

FLOOR AREA OF PROJECT

New Residential Dwellings or

New Commercial Only m²**LEGAL DESCRIPTION**

WDC Property No.

Valuation Roll No.

Lot(s) DP

Section Block

Survey District

Signed by (on behalf of) the applicant

Signature: _____

Owner, builder, plumber, designer, agent
(circle one)

Date: 04 / 04 / 2003**FEES APPLICABLE (office use only)**

Building Consent Application \$

Building Consent Issue \$

P.I.M. \$

Non-notified Appl. Fee \$

Prepaid Crossing \$

Prepaid Sewer Connection \$

Prepaid Water Connection \$

Stormwater Connection \$

BIA Levy \$

Additional Charges \$

Total Fees (Incl. G.S.T) \$

PTO

The information will be included in a Public Register of Consents issued which is available for public perusal under the Privacy Act 1993 section 54. This may result in receipt by the 'Owner' of trade advertising.

Project Details

The project involves the following

(tick each applicable box, if any, and attach two(2) copies of any relevant information)

- (1) ☒ Location in relation to legal boundaries and external dimensions of new, relocated or altered buildings
- (2) ☐ New provisions to be made for vehicular access and on-site parking, ie. a new crossing
- (3) ☐ Provisions to be made in building over or adjacent to any road or public place, ie. hoardings, signs
- (4) ☐ New provisions to be made for disposing of stormwater and wastewater
- (5) ☐ Precautions to be taken where building work is to take place over existing drains or sewers or in close proximity to wells or watermains
- (6) ☐ New connections to public utilities, ie. new drainage or water connections
- (7) ☐ Provisions to be made for any demolition work ie. the protection of the public, suppression of dust, disposal of debris, disconnection from public utilities and suppression of noise
- (8) ☐ Any cultural heritage significance of the building or building site, including whether it is on a marae

Project Documents (provided with this application)

- ☒ Plans and specifications
- (22) ☒ Producer Statements (ie. truss design, design review) - specify: Truss Design, Engineers Report
- (23) ☐ Other Documents - specify: New Metro Fleasanding Rie Specifications and fitting instructions.

Inspections

- (26) ☒ By Wanganui District Council
- (27) ☐ Other - specify (ie. Design Engineer):

Unit	For office use only				Inspections No.	Approved	
	Checks					Initials	Date
	Initials	Date	Initials	Date			
Administration	LC	7/4/03					
Planning						KL	7/4/03
Fire Design							
Building						BZ	8-4-03
Drainage							
Water							
Structural							
Plumbing/Drainage						OK	8-4-03
Roading							
Health							
Dangerous Goods							

Approved for issue of PIM/Building Consent

District Building Controller: *[Signature]* Date: 9 APR 2003

$12 \times 2 = 24 \times 700 = 17$
 fire 2
 Kitchen fittings 8 min
27
 sum 25 each.



TOTAL INSPECTION TIME REPORT

Building Consent Number BC3/0446

Total Estimated Inspection Time	165
Total Actual Inspection Time	0
Inspection Time Difference	165
At BC Issue	Time to be charged.
At Completion	Positive amount = time to be credited Negative amount = time to be charged

Signed for and on behalf of the Wanganui District Council

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Development Checksheet

Residential

Property Address: 416 No 3 Line						
Project: Lounge & Kitchen Extension				Site Area:		
	Operative Plan			Proposed Plan		
Rule	Required	Provided	O.K.	Required	Provided	O.K.
Coverage						
Maximum Height						
9m x 9m Triangle						
Front Boundary						
Side Boundary						
Side Boundary						
Rear Boundary						
Separation of Units						
Outdoor Living						
Storage						
Parking						
Access						
Dimensions/Easements						

Comments: No Planning Issues KLS 7/4/03

METRO INSTALLATION MANUAL

REFER TO THE OTHER SIDE OF THIS MANUAL FOR
OWNER'S OPERATION AND WARRANTY DETAILS

Important message to the installer	PAGE A
Assembling the Metro	
Assembly diagrams	PAGE B
Ash hearth, size, construction and fitting	PAGE C
Clearances	PAGE D
Wetbacks and Boilers	PAGE E
Reduced height pedestals	PAGE F
Flue installation	

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Consent No.

COVERS METRO
FREESTANDING MODELS:

Metro Rad
Metro Wee-Rad
Metro Pioneer
Metro X-treme
Metro Aspire
Metro Tiny-Traditional
Metro Pioneer Traditional
Metro X-treme Traditional
Metro Aspire Traditional
Metro Pioneer Rear Outlet

IMPORTANT MESSAGE TO THE INSTALLER

This Metro woodfire has been tested to and complies with AS2918:1990 and NZS7421:1990, when installed in accordance with this manual. Please ensure you are fully conversant with the relevant standard and the contents of this manual. Correct installation is critical to the safe operation and performance of this woodfire.

Please take particular note of the following:

- A minimum flue length of 3.6 metres of 150mm diameter flue pipe is required, although the Metro Tiny-Trad will also operate efficiently on a smaller diameter flue of 115mm (4½") minimum.
- The 150mm active flue must be fully encased from the ceiling to the underside of the flashing cone at the top of the flue system, (i.e. there must not be any 150mm flue exposed to the wind).
- All flue joints must be sealed and riveted; the bottom of the flue in particular MUST be fully sealed into the flue outlet of the Metro woodfire.
- In New Zealand, the Metro must be bolted through the hearth into the floor to comply with the seismic restraint provisions of NZS7421:1990.
- The Metro Pioneer, Metro Pioneer Rear Outlet, Metro X-treme and Metro Aspire models are coated in vitreous enamel. Take care during assembly and when lifting the woodfire that you do not damage this coating.

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ASSEMBLING THE METRO

All Metro woodfires are packed in a single heavy-duty cardboard box. The box is bolted to a wooden pallet. Having removed the packaging and located this manual, familiarise yourself with the illustrations on the opposite page, B, and proceed as detailed below. Note: the Metro carton shows the model Metro you are about to install, enabling you to select the appropriate model's assembly instructions.

FOR MODELS

- Metro X-treme
- Metro Pioneer
- Metro Aspire
- Metro Pioneer Rear Outlet

To minimise freight damage, the pedestal has not been attached but is packaged inside the firebox. Some assembly is required as illustrated in diagram 1 on the opposite page. Open the door of the Metro and remove the following:

- The pedestal packed in a cardboard tray
- The pedestal mounting plate
- The pedestal heat shield (X-treme and Aspire models only)
- Two side bricks in a cardboard wrapper
- Door handle and bolt bag.

The Metro's top baffle is fitted in position in the upper chamber of the firebox, as illustrated in diagram 2 on the opposite page. Leave this baffle in position. The Metro is now ready to assemble:-

- Remove the two securing bolts from the base of the firebox which secure the Metro to the wooden pallet, close and latch the door.
- Remove the "cook top" grill and lay the collapsed Metro carton on the floor behind the Metro. Place one hand into and securely grip the flue outlet, place your other hand under the front of the pallet base and gently tip the Metro backwards until it is resting on its back.
- Fully open the Metro's door, taking care that the door does not fall closed; take the four 6mm bolts from the bolt bag and insert them through holes provided in the firebox base. METRO X-TREME AND ASPIRE MODELS ONLY: Fit the pedestal heat shield over the four bolts as shown in diagram 1, with the open edge facing the front of the Metro (up).
- Position the pedestal with its front facing up over the four bolts and fit the nuts and washers supplied. Check to ensure the pedestal is correctly aligned and securely tighten the nuts.
- Close and latch the door. Gripping the flue outlet once more, gently raise the Metro until it is upright. Refit the "cook top" grill and attach the door handle to the door latch assembly by screwing it on clockwise.
- Open the door fully and fit the side bricks to each side of the firebox. Location lugs are fitted to the base and rear of the firebox to retain the side bricks in position - refer to diagram 2.

FOR MODELS

- Metro Rad
- Metro Pioneer Traditional
- Metro Wee-Rad
- Metro Aspire Traditional
- Metro Tiny Traditional
- Metro X-treme Traditional

These Metros are supplied virtually fully assembled. Packed inside the firebox you will find two bricks in a cardboard wrapper, a door handle and, in the Metro Rad and Metro Wee-Rad the air control wire handle.

Note: diagram 2 below illustrating the inside of the firebox applies to all model Metros. To complete assembly of the Metro Radiants/Traditionals proceed as follows:

- Remove the two securing bolts located at the base of each rear leg which secure the Metro to the wooden pallet, and carefully "walk" the Metro off the pallet.
- Open the door fully and fit the side bricks to each side of the firebox. Location lugs are fitted to the base and rear of the firebox to retain the side bricks in position, refer to diagram 2.
- Attach the door handle to the door latch assembly by screwing it on clockwise.
- **METRO RAD AND WEE-RAD ONLY:** Attach the air control wire handle by screwing it on clockwise.

ALL MODELS

Check to ensure the top baffle is in its correct position in the top chamber of the firebox; it should be resting on four support lugs (two on each side of the firebox). The baffle must be hard back against the rear of the firebox with the "promet extension" (white board) facing forward as illustrated in diagram 2.

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Diagram 2

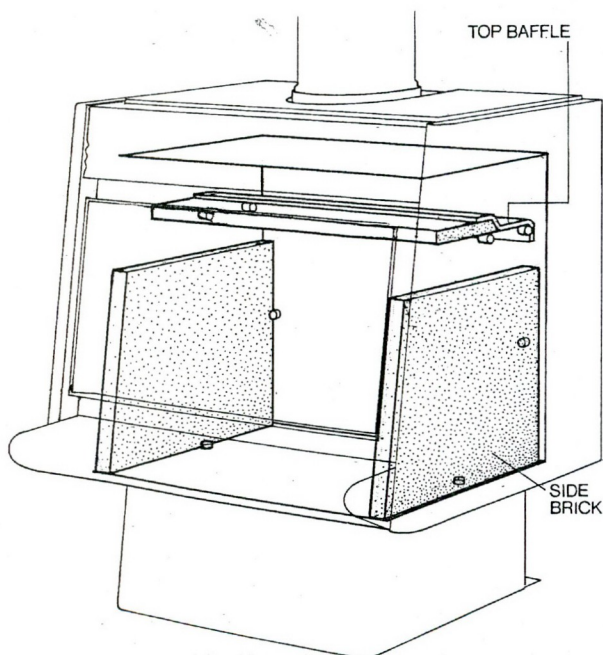
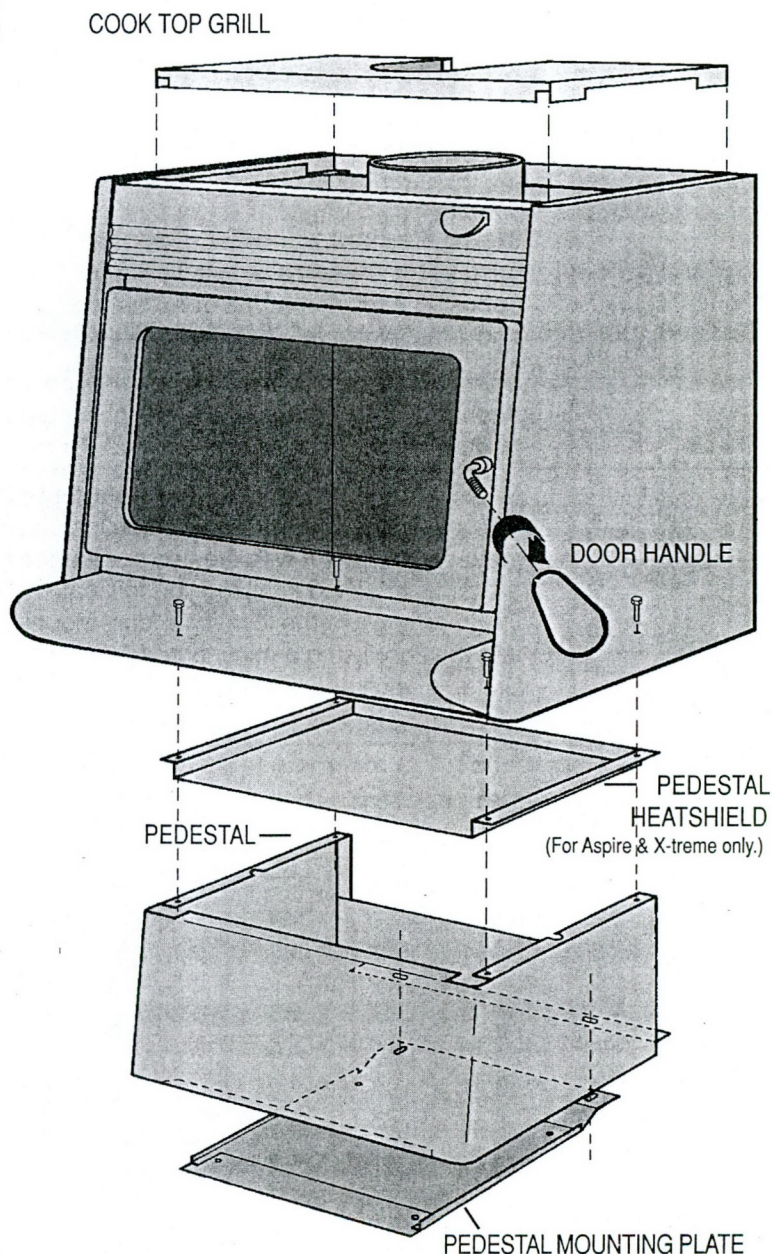


Diagram 1



ASH HEARTH SIZE, CONSTRUCTION & FITTING

Prior to construction or placement of the hearth it is necessary to ensure there is clear access for the flue system through the roof cavity directly above. It may be necessary to move the Metro's position slightly to avoid a roof truss etc. Due to the considerable weight of the Metro and the potential to damage panels through incorrect handling, any further moving of the appliance should involve two people each lifting under the side panels.

All freestanding Metros do not require an insulating hearth, as they are tested to, and comply with, the minimum "Ash hearth" requirements of AS2918:1990 and NZS7421:1990. These minimum hearth requirements are:

- An ash hearth adequate in size to give appropriate wall clearances and front hearth projections as detailed below and on the chart illustrated on the opposite page, D.

Note: these requirements differ slightly for New Zealand and Australia:

NZS7421:1990 - An ash hearth must extend 200mm horizontally in all directions directly below the door opening.

AS 2918:1990 - An ash hearth must extend 200mm horizontally to the rear and each side directly below the door opening, and 300mm forward of the door opening.

- A suitable ash hearth is any continuous non-combustible surface. This includes: -
 - Ceramic tiles with grouted joints fixed directly to timber flooring.
 - A sheet of toughened glass, panel steel or any other non-combustible material laid directly onto a wooden or other combustible floor.

Note: if being installed onto a concrete or non-combustible floor, no hearth is required.

Fitting the hearth - Once the hearth is constructed and laid in final position, you are ready to locate the position where the Metro will sit on the hearth. This procedure varies depending on the model:

Metro Radiants and Traditionals - Lift the Metro onto the hearth and using a tape measure ensure that the minimum wall clearances and front hearth projections as detailed in the chart on opposing page D are met or exceeded. Once the Metro's location on the hearth is established and if the installation is in New Zealand, seismic restraint is required.

Using masonry anchors if the hearth is on a concrete floor or coach bolts if a wooden floor, secure through the holes provided at the base, behind both rear legs. Note: the anchors must pass through the hearth and securely anchor the Metro to the floor.

Metro Pioneer, Metro Pioneer Rear Outlet, Metro X-treme and Metro Aspire - These models are supplied with a "pedestal mounting plate", refer to diagram 1 on page B. Place the mounting plate on the hearth with the two slots at the rear. A flue centre hole is marked on this plate and a chart is attached enabling you to locate the position of the Metro without placing the Metro onto the hearth. Once the location of this mounting plate is established, secure it through the hearth into the floor using a minimum of two of the four holes provided, diagonally opposite each other. Suitable anchors are as detailed for the Metro Radiants / Traditionals directly above.

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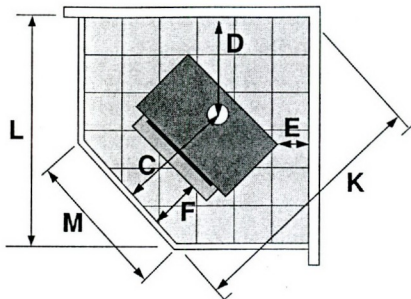
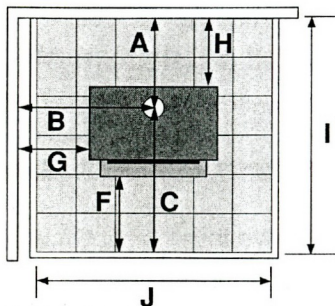
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CLEARANCE CHART

Metro woodfires are tested to, and comply with, NZS7421:1990 if installed as detailed in the chart below. To comply with AS2918:1990 use the clearance chart below but add 100mm to hearth projection measurements "C" and "F". Please also note:-

- Measurements listed below are the minimum required, stated in millimetres. Measurements are taken from the following reference points as illustrated:
 - From the nearest combustible wall or surface (A, B, D, E, G, H)
 - From the Metro's flue centre (A, B, C, D)
 - From the outermost point of the Metro's cabinet / construction (E, F, G, H)
 - To the edge of the ash hearth's non-combustible surface (C, F, I, J, K, L, M)
- The Metro Tiny-Trad, Metro Pioneer and Metro Pioneer Traditional have also been tested with optional "flueshield side extensions". When fitted into an alcove situation not projecting forward of the Metro with flueshield side extensions fitted, clearances "B" and "G" reduce by 80mm for the Pioneer and Pioneer Traditional and 100mm for the Tiny-Traditional.



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Installation Clearances mm

		A	B	C*	D	E	F*	G	H	I*	J	K*	L	M
TINY-TRAD	With Flueshield	225	445	480*	305	25	100*	200	75	705*	650	920*	660	650
	Without Flueshield	605	545		595	315		350	455	1085*		1320*	940	
PIONEER & PIONEER TRAD	With Flueshield	200	595	480*	400	85	100*	300	50	680*	825	1045*	950	660
	Without Flueshield	580	595		595	280		300	430	1060*		1320*	1145	
PIONEER REAR OUTLET		N/A	565	N/A	N/A	100	100*	270	60	690*	825	1070*	965	660
X-TREME & X-TREME TRAD	With Flueshield	230	575	525*	455	110	100*	240	80	755*	905	1165*	1065	740
	Without Flueshield	800	575		595	250		240	650	1325*		1365*	1205	
ASPIRE & ASPIRE TRAD	With Flueshield	230	575	525*	455	110	100*	240	80	755*	905	1165*	1065	740
	Without Flueshield	800	575		595	250		240	650	1325*		1365*	1205	
WEE RAD	With Flueshield**	200	555	480*	400	80	100*	250	50	680*	825	1045*	950	660
	Without Flueshield	580	555		600	280		250	430	1060*		1320*	1145	
RAD	With Flueshield**	230	575	525*	455	80	100*	200	80	755*	905	1165*	1065	740
	Without Flueshield	800	575		625	250		200	650	1325*		1365*	1205	

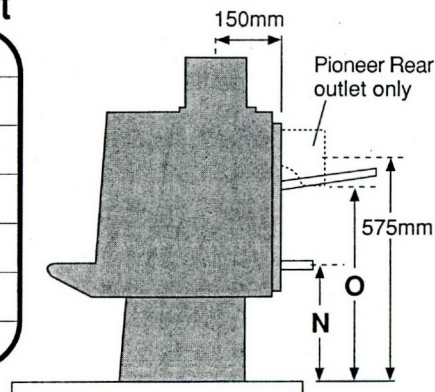
*To comply with AS2918:1990 add 100mm to hearth projection measurements C, F, I and K.

** Ensure the flueshield is fitted so that the lower flue is NOT directly exposed to the rear wall, refer to the instructions supplied with the flueshield.

Dimensions mm

	N	O	Width	Depth	Height
TINY TRAD	295	485	490	530	665
PIONEER & PIONEER TRAD	295	485	590	530	665
PIONEER REAR OUTLET	295	485	590	530	660
X-TREME & X-TREME TRAD	340	530	670	575	715
ASPIRE & ASPIRE TRAD	340	530	670	575	715
WEE RAD	295	485	607	530	665
RAD	353	543	750	575	745

Note: Both wetback connections are 150mm left of the flue centre, facing the Metro / wall.



WETBACKS & BOILERS

WETBACKS - All Metros except for the Tiny-Trad can be fitted with an optional 3kW or 4kW wetback, designed to give maximum output with minimal effect on the operation of the fire. The Tiny-Trad can be fitted with either a single or double side boiler as detailed in the section on Boilers further down this page. Only Pioneer's cast jacket wetback system as illustrated on page 2 (reverse side of this manual) should be fitted to a Metro; alternative wetbacks will void the Metro's emission approvals and may seriously affect the performance of the appliance and void the owner's warranty.

Both 3kW and 4kW wetback options are fitted to the inside rear of the firebox, with the connection pipe heights illustrated and detailed on the previous page "D". Please note:-

- Both wetback connections are 150mm left of the flue centre, facing the Metro / wall; the return pipe connection is directly above the inlet connection.
- Reduced height pedestals are available for certain models to reduce wetback connection heights. Refer "Reduced height pedestals" section on the following page "F".
- It is recommended the return pipe has a minimum rise of 1 in 12; performance will reduce as the distance to the storage cylinder increases.
- The wetback can only be connected to a vented system.

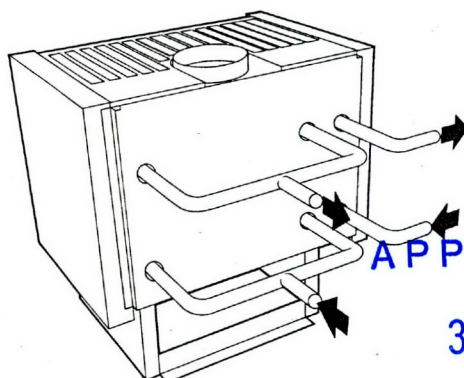
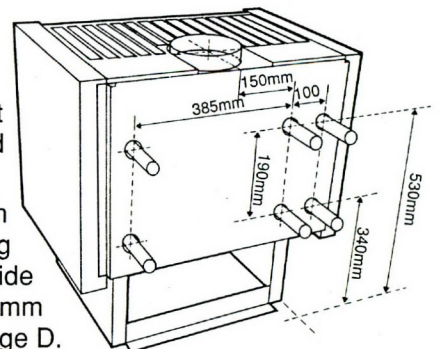
To fit the Wetback proceed as follows:

1. Remove the rear panel of the Metro by removing the four pozi drive screws. Remove the two pre-punched knockouts from this panel.
2. Two further knockouts will be visible on the inner rear heatshield; remove these also. Once these are removed 6mm nuts will be visible through the knockout holes.
3. Open the Metro's door and locate two bolts securing the pressed washers which are visible on the left hand side of the firebox for both inlet and outlet connection points.
4. A further three bolt heads will also be visible on the inside rear wall of the firebox; these are threaded into the 6mm thick firebox. Remove all three.
5. Using the tube of sealant supplied with the wetback, apply a liberal bead of sealant around both connection holes on the inside of the firebox. On the rear of the wetback casting apply the remaining contents of the tube equally around both connection pipes.
6. Fit the wetback into the firebox and carefully pass the connection pipes through the holes in the rear of the firebox. Securely attach the wetback using the three bolts previously removed from the rear face of the firebox, fitting them through the slots provided in the wetback's jacket.
7. The wetback is now ready for connection to the storage cylinder by a registered plumber.

BOILERS - Pioneer manufacture a 7kW boiler which is available for the larger model Metros, being the X-treme, Aspire and Metro Rad models only. The boiler is factory-fitted to the Metro and is not supplied as an "after sale" option.

The intended function of the boiler is as a heating source for hydronic heating systems with radiators being an ideal application. The Metro boiler is split into three separate heat exchangers, giving the option of running a split or manifolded system as detailed below.

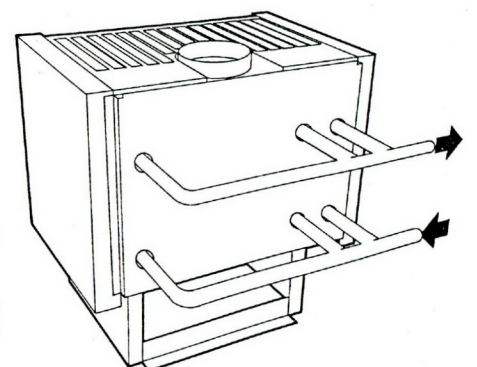
PARTIAL BOILERS - The Metro Tiny-Trad can be fitted with either one or two side Boilers, with the Tiny-Trad converting into a "chip heater" when both side boilers are fitted. The side boilers fit to either side of the firebox with pipe centres 150mm from the flue centre and pipe heights as detailed on page D.



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REDUCED HEIGHT PEDESTALS

Two reduced height pedestal options are available for the Metro Pioneer, and Metro Pioneer Rear Outlet. By fitting a reduced height pedestal the hearth requirements change:-

- Metro reduced height pedestals require the Metro to be installed on an Insulating hearth.
- Reduced height pedestals increase the hearth projection, refer table below:-

85mm reduced height pedestal

This height reduction of 85mm is generally required when replacing a small potbelly stove fitted with a wetback, or flueing a Metro Rear Outlet into a masonry chimney. Minimum hearth projections detailed as "F" on the clearances chart (page D) increase to:

Height of Hearth (mm)	<u>0</u>	<u>10</u>	<u>20</u>	<u>30</u>	<u>40</u>	<u>50</u>	<u>60</u>	<u>70</u>	<u>75</u>	<u>80+</u>
Minimum projection "F" (mm)	337	319	298	280	262	244	223	199	187	100

70mm reduced height pedestal

This reduced height pedestal is available to enable the Metro Pioneer Rear Outlet's flue centre height to reduce to 505mm, which is required when replacing a Juno. If this 70mm reduced height pedestal is fitted to a Metro Pioneer, refer to and use the revised hearth projection details above, which apply to the 85mm reduced height pedestal.

If you intend to fit the 70mm reduced height pedestal to a Metro Pioneer Rear Outlet, minimum hearth projection "F" alters to:

Height of Hearth (mm)	<u>0</u>	<u>10</u>	<u>20</u>	<u>30</u>	<u>40+</u>
Minimum projection "F" (mm)	335	307	281	242	100

FLUE INSTALLATION

It is recommended that all Metro freestanding woodfires be installed with the energy efficient Metro ECO flue system which comes complete with detailed installation instructions. Any alternative flue system must be a minimum 3.6 metres in flue length and comply with NZS7421:1990 / AS2918:1990.

All Metros require a 150mm diameter flue, although the Metro Tiny-Trad has also been tested and will operate efficiently on either a 115mm 4(1/2"), 125mm (5") or 150mm (6") diameter flue. Please note:

- All joints in the flue must be sealed with Pioneer fire cement (or similar) and riveted.
- The base of the flue must be sealed into the outlet of the Metro's flue stub.
- Refer "Important message to installer on page A".

PIONEER FLUESHIELD- If the Metro requires a flueshield to be fitted to reduce wall clearances, only the Pioneer vented double flueshield is tested and approved to be fitted onto a Metro woodfire.

The Pioneer vented double flueshield is 1200mm in length, as it is only required to shield the first section of flue. Do not extend the flueshield beyond this point as this will result in the ceiling temperature exceeding the allowed maximum.

Two lower brackets are supplied with the Pioneer vented double flueshield; the "flat" lower bracket is intended for all models other than the Metro Rad and Metro Wee-Rad. These Metro Radiants utilise the folded lower bracket which fits inside the flue outlet. Full fitting instructions are included with the Pioneer vented double flueshield.

PIONEER

MANUFACTURING LIMITED

P.O. Box 11, Inglewood
New Zealand

Phone 06-7566 520

Fax 06-7566 540

Email info@woodfire.co.nz

Website www.woodfire.co.nz

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UNIVERSAL DOUBLE FLUESHIELD

This flueshield is a universal design with two alternative lower mounting brackets supplied enabling fitting to any brand wood burning fire . The highly reflective stainless steel inner shield and vented cavity between rear and inner shields ensures maximum shielding of walls directly behind the installed appliance. Due to the compact design of this shield , if minimum side clearances specified with your woodfire are necessary this may require the side depth of the flueshield to be extended with optional side extension panels , refer to your local retailer .

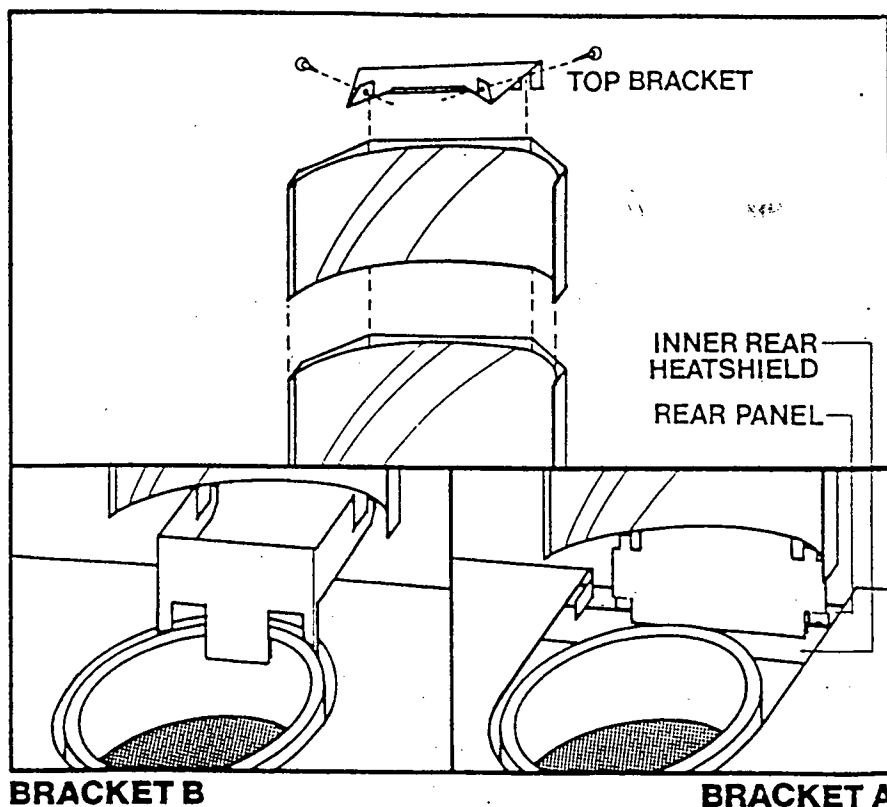
The black coating of the outer shield is a high temperature silicon resin paint and will not be effected by normal operation of the appliance , this outer shield may be resprayed with " Stovebright " high temperature paint to change the outer shield colour to match your flue / decor .

FITTING INSTRUCTIONS

1. Unpack the flueshield and detach the three brackets familiarising yourself with the illustration below .
2. Remove the plastic film from both the outer and inner face of the flueshield , a sharp knife or razor blade is required to clean up surplus plastic film . If you wish to repaint the outer shield another colour leave the plastic coating on the inner shield until painted to prevent overspray on the reflective stainless steel surface .
3. Fit the appropriate lower bracket to your woodfire and note :-

Bracket " A " If more than one rear panel is available to attach the bracket , use the panel which best enables the flueshield to stand vertically once the top bracket is fitted . If fitting to a Metro , attach to the inner rear heatshield directly behind the flue outlet (inside the top grill cut out) . The outer face of the flueshield locates into bracket " A " .

Bracket " B " fit directly into the flue outlet as shown prior to fitting the flue pipe . If the cabinet panels of the woodfire prevent the fitting of the bracket due to insufficient gap between panel work and the flue outlet , it will be necessary to cut off both outer legs of bracket " B " leaving the central tongue to locate inside the flue outlet . The flueshield locates into the bracket as illustrated



Note Once the flueshield is mounted in position onto either lower mounting bracket , check to ensure a large gap is not present between the top of the woodfire and the base of the flueshield , if your woodfire has a lift off top grill the flueshield should be raised sufficiently to remove the top grill only . Excess clearance may result in creating a hot spot on the rear wall directly behind the flue outlet but is easily remedied . To lower the flueshield cut two slots in the base of the flueshield enabling the flueshield to sit lower into the mounting bracket .

4. Fit the folded top bracket centrally at the top of the flueshield facing forward , the bracket locates onto the rear painted section of the flueshield .
5. Attach the top bracket to the flue pipe using rivets or self tapping screws .

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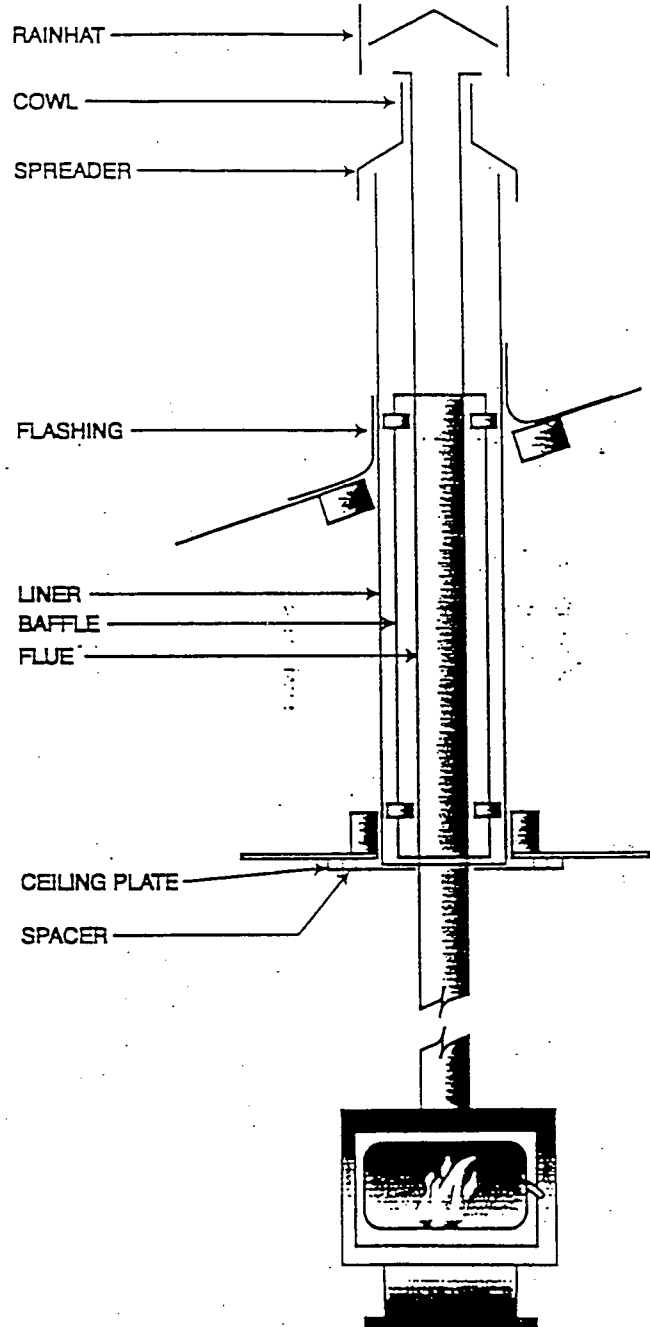


SOLID FUEL

FREESTANDING FLUE KIT INSTALLATION INSTRUCTIONS

These instructions are to be read in conjunction with the manufacture's instructions.

1. Position heater on hearth. Ensure clearances of the particular heater are correct.
2. Extend a plumb line from the centre of the flue spigot to the ceiling. Mark position on ceiling and roof.
3. Cut a hole in the ceiling 260mm square. Trim hole with nogs as required for securing outer casing and ceiling plate.
4. Position the liner through the roof until it is flush with the ceiling and fix securely.
5. Fix appropriate flashing around the liner to seal on the roofing material.
6. Assemble the flue sections ensuring all seams are in line, the assembly is straight and crimped ends are pointing downwards. Fix each joint with at least three pop rivets or self tapping screws.
7. Place ceiling plate (with folded edge upwards) over heater spigot and slide flue into position.
8. Flue pipe must extend above the liner by 200mm. Extra lengths of liner, baffle and pipe may be required to achieve the minimum clearance from the roof.
9. Place top spreader in place and tighten. Slide cowl over flue until it rests on the top spreader. Secure with pop rivets or self tapping screws.
10. Fit rainhat. Do not secure as it must be removed for cleaning.
11. Fix ceiling plate to ceiling with screws and spacers provided. Maintain an even gap all round.



NOTE:- If the flue is within 3 metres from the ridge, the liner must be at least 600mm above the ridge. If the distance is more than 3 metres the minimum height must be 900mm.

COMPLIES WITH AS/NZS 2918:2001

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3 / 0 4 4 6

Consent No.

DOCUMENT TRANSFER

TO:	Mr P Rodd 416 N°3 Line Wanganui	Date:	1/04/03
Attention:			
Subject:	House Alterations	Our Ref:	1343

MESSAGE:

Paul,

Herewith return of your drawings marked up with a steel beam size.

Also included is a copy of my calculations for the District Council.

Please note that page 4 of the calculations show detail sketches of the beam connections which may not be accurate - depends on

Ian B PEARSON

what is found up there.

Regards Ian Pearson.

Attachments:

- ☒ Drawings: Sheets 1 to 3
- ☒ Specifications: Sheets 1 to 3
- ☐ Reports/Letter:
- ☒ Calculations: Pages 1 to 4
- ☐ Computer Disk:

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3 / 04 / 06

Sent via:

- ☐ Post
- ☐ Our Messenger
- ☐ Your Messenger
- ☐ Courier
- ☐ Fax

Consent No.

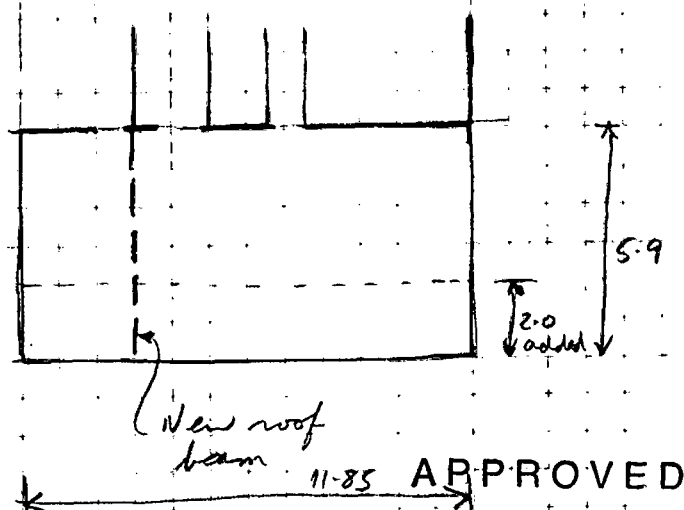
IAN B. PEARSON
CONSULTING STRUCTURAL ENGINEER

Ph (06) 347 6007, Fax (06) 347 6010
36 Ridgway St, PO Box 74, WANGANUI

Date 1/04/03 Job No 1343 Page No 1
Computed IBP Client P. Rood
Project Alterations to Residence
416 N°3 Lane Wanganui

Brief: Exterior wall of house is to be shifted outwards by 2.0 m.

Need a new roof beam over the kitchen to pick up existing roof framing and new trusses.



3/04/06

Roof beam span = 5.9 m Consent No.

Loading:

DL roof + brk w = 0.35 kPa

LL roof = 0.25 kPa

Wind load Terrain Cat 2 h = 3.5 m

$q_{sLS} = 0.53 \text{ kPa}$, $q_{wLS} = 0.82 \text{ kPa}$

Assume the new beam carries all the roof and ceiling loads along its length.

$$ULS: 1.2G + 1.6Q = (1.2 \times 0.35 + 1.6 \times 0.25) \frac{11.85}{2} = 4.86 \text{ kN/m}$$

$$\text{so } M^* = 4.86 \times \frac{6.0^2}{8} = \boxed{21.86 \text{ kN.m}}$$

$$\therefore V^* = 4.86 \times \frac{6.0}{2} = 14.6 \text{ kN.}$$

WIND LOADS

NZS 4203:1992 (Limit State design)

JOB TITLE : Paul Rodd 416 No 3 Line, Wanganui

Page : 2

House Alterations

Job No: 1343

Designed : I.B. Pearson

Checked :

Date: 1/04/2003

Determination of Site Wind Speeds

Site wind speed $V_{(z)} = V M_{Is} M_{(z,cat)} M_s M_t M_r$ (m/s).....(Eq 5.4.1)

Wind region (Enter I, II, III, IV, V, VI, VII from Fig 5.4.1)

Site Elevation: m

Building Cate: (Enter I, II, III, IV, or V Refer CL 2.3.1)

Basic Non-directional wind speed 46 m/s

Multipliers: Limit State $M_{Is} =$ Serviceability: 0.75 Ultimate: 0.93

CI 5.4.4 Terrain/height $M_{(z,cat)}$ Building height z: m
Terrain Cat transition zone length is: 500 m
Terrain Category (1 to 4 only):
Then $M_{(z,cat)} =$ 0.87

CI 5.4.5 Shielding: $M_s =$

CI 5.4.6.2 Hill shape $M_h =$
CI 5.4.6.3 Lee effect $M_L =$
CI 5.4.6.4 Channelling $M_c =$ (Note $M_c \geq 1.1$ for N, S, SE in Region V)
CI 5.4.6.1 Elevation $M_e =$ 1.00
(Note Sites above 500m $M_t = M_h * M_L * M_c * M_e$)
CI 5.4.6 Topographical $M_t =$ $M_t =$ largest of M_h, M_L, M_c

CI 5.4.7 Structure risk $M_r =$

$V_{(z)} =$ Serviceability: 29.84 m/s Ultimate: 37.00 m/s

$q_{(z)} = 0.6 V_{d(z)}^2 \times 10^{-3}$ (kPa) $q_{(z)SIs} =$ kPa $q_{(z)Uls} =$ kPa

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3 / 04 46

Consent No.

IAN B. PEARSON

CONSULTING STRUCTURAL ENGINEER

Ph (06) 347 6007, Fax (06) 347 6010
36 Ridgway St, PO Box 74, WANGANUI

Date

Job No Page No **3**

Computed

Client

Project

$$0.9G + W_u: \text{ roof slope } \approx 20^\circ \quad \eta_d = 0.25$$

$$\text{hence } C_{pe \text{ wind}} = -0.3 \text{ or } +0.2$$

$$C_{s \text{ dam}} = -0.16$$

$$\text{use } C_{pi} = \pm 0.3.$$

$$\text{hence } W^* = (0.9 \times 0.35 - (0.16 + 0.3) 0.82 \cos 20^\circ) \frac{11.85}{2} = -2.24 \text{ kN/m}$$

$$\text{so } M^* = -2.24 \times \frac{6.0^2}{8} = 10.1 \text{ kN.m}$$

$$V^* = -2.24 \times \frac{6.0}{2} = -6.7 \text{ kN.}$$

Consider a steel beam say 180UB18

MEMBER Beam supported laterally along
the top flange at 900 c/s (roof rafter).

$$180UB18 \text{ ULS} = 0.49 \quad \text{OK.}$$

For wind load with bottom flange laterally
supported at midspan only.

$$180UB18 \text{ ULS} = 0.43$$

$$\text{Check SLS } 1.0G + 0.0Q = \frac{0.35 \times 11.85}{\cos 20^\circ} \frac{1}{2} = 2.21 \text{ kN/m}$$

$$\text{so } \Delta = \frac{5}{384} \times \frac{2.21 \times 6.0^4 \times 10^9}{200 \times 1210 \times 10^4} = 15.4 \text{ mm}$$

1/389

OK

Increasing to a 180UB22

$$\Delta = 15.4 \times \frac{1210}{1530} = 12.2 \text{ mm}$$

1/490

OK

New roof
beam

180UB22.

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- 3 / 04 46

Consent No.

3A

MemDes Calculations @ 15:43 on 1/04/2003 by Ian Pearson

Project : P Rodd House alterations 416 No 3 Line
 Descriptn : Roof Beam 1.2G + 1.6Q

Section : 180UB18 Grade 300+

Major Axis Bending

Design Action $M_x^* = 22.0$ kNm

User provided value for $\alpha_m = 1.13$

$\alpha_s = 0.89$

$\alpha_m \alpha_s \geq 1.0$, => Segment Fully Restrained

$M_{bx} = M_{sx} = 50.24$ kNm

Major axis capacity Ratio = $M_x^* / \phi M_{bx}$
 = 0.49, ---- OK ----

Shear Calculations (Unstiffened Web)

Design Action $V_x^* = 15.0$ kN

Nominal Shear Yield capacity $V_w = 168.0$ kN

$\alpha_v = 5.19 \geq 1.0$ => full web shear capacity

$V_u = V_w = 168.0$ kN

Shear capacity ratio = $V_x^* / \phi V_u$
 = 0.10, ---- OK ----

SUMMARY

**** U.L.S. Capacity Check Passed, Load Cap. Ratio = 0.49 ---- OK ----

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Consent No.

MemDes Calculations @ 15:44 on 1/04/2003 by Ian Pearson

Project : P Rodd House alterations 416 No 3 Line
 Descriptn : Roof Beam 0.9G + Wu

Section : 180UB18 Grade 300+

Major Axis Bending

Design Action $M_x^* = 10.0$ kNm

User provided value for $\alpha_m = 1.13$.

$\alpha_s = 0.45$

$\alpha_m \alpha_s < 1.0$, => Segment NOT Fully Restrained

$M_{bx} = 1.13 * 0.45 * 50.2 = 25.6$

Major axis capacity Ratio = $M_x^* / \phi M_{bx}$
 = 0.43, ---- OK ----

Shear Calculations (Unstiffened Web)

Design Action $V_x^* = 7.0$ kN

Nominal Shear Yield capacity $V_w = 168.0$ kN

$\alpha_v = 5.19 \geq 1.0$ => full web shear capacity

$V_u = V_w = 168.0$ kN

Shear capacity ratio = $V_x^* / \phi V_u$
 = 0.05, ---- OK ----

===== SUMMARY =====

**** U.L.S. Capacity Check Passed, Load Cap. Ratio = 0.43 ---- OK ----

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IAN B. PEARSON

CONSULTING STRUCTURAL ENGINEER

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36 Ridgway St, PO Box 74, WANGANUI

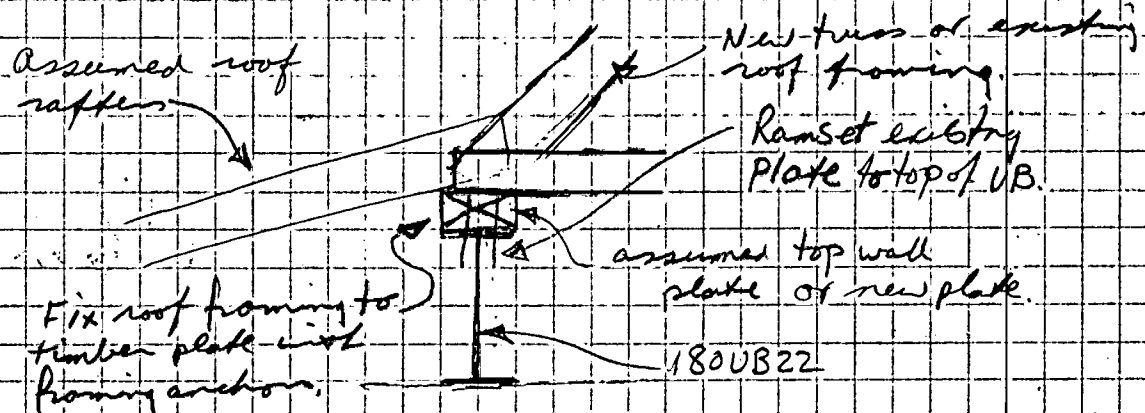
Date

Job No Page No 4

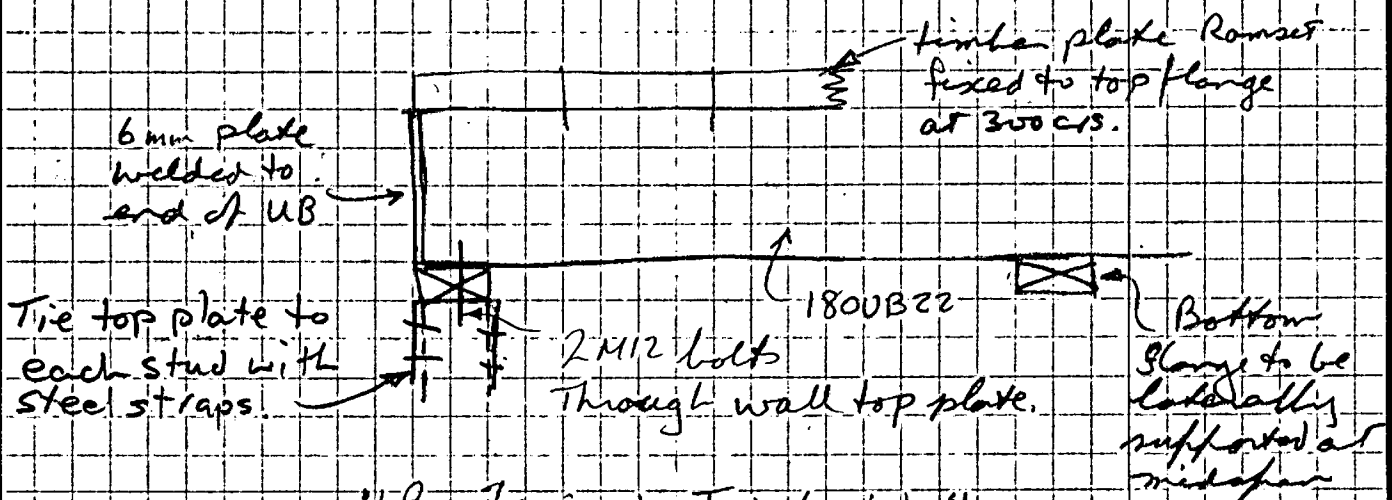
Computed

Client

Project



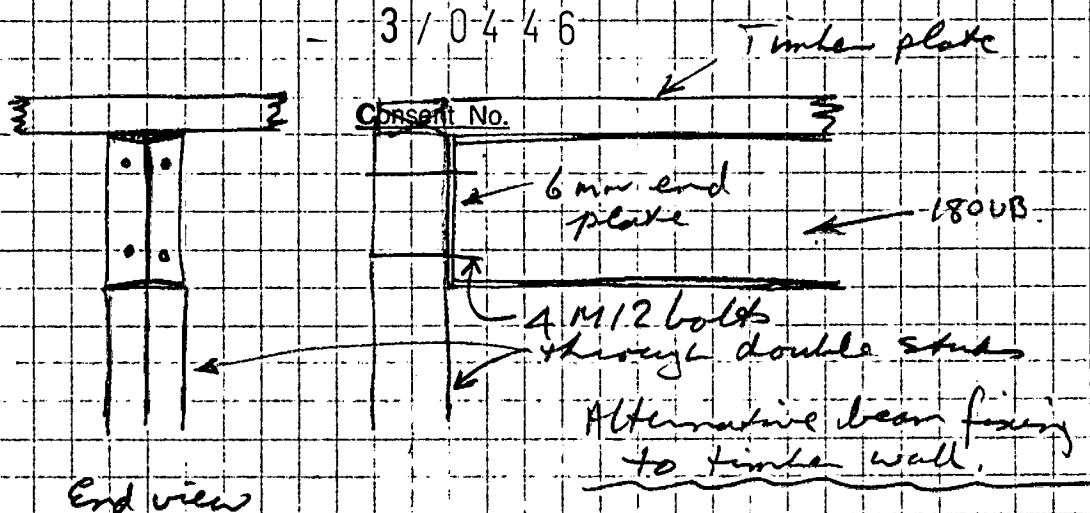
Section Thru Beam



UB Fixing to Timber Wall

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PreNail Construction Ltd

Producer Statement: Page

Job: P30303

Client: Mike 10
Phone:

Site: 416 No. 3 Line

Description: Road Addition

Phone:

MITek 2000 (tm) Roof Truss Design (Bulls 122)

MITek New Zealand Ltd

Printed: 13:34 48 04 Apr 2

PRODUCER STATEMENT
MITek 2000(tm) ROOF TRUSS DESIGN**Certification of MITek 2000(tm) Design Program**

The MITek 2000(tm) roof truss design program has been developed by Gang-Nail Group Ltd for the design of Gang-Nail timber roof trusses in New Zealand. The truss designs computed by this program are prepared using sound and widely accepted engineering principles, and in accordance with NZS 4203, NZS 3603 and NZS 3604 as verification methods and acceptable solutions of the approved documents issued by the Building Industry Authority to satisfy the requirements of Clause E1: Structure of the Building Regulations 1992. This computer design for the proposed building complies with the relevant provisions of the NZ Building Code. This is subject to all proprietary products meeting their performance specification requirements, the provision of adequate bracing, fixings and the correct input of design data carried out by suitably trained personnel.

Summary of MITek 2000(tm) Design Data and Output

The MITek 2000(tm) computer design output for this job titled and located at the site identified on the top of this page is based on the following parameters entered into the program. The owner must ensure that the following job details below are current and relevant to the project before fabrication and erection of the Gang-Nail trusses.

Job Details**Roof Truss**

Timber Group:

W00FM53

Roof

Pitch:
Ceiling

20.00 deg

Site Overhang:

800 mm

Wind

Material

Galv Iron 5mm

Material:

Standard

Area:

High (44.0 m/s)

Dead Load:

0.210 kPa

Dead Load

0.200 kPa

Pressure Coeff:

Cpe = varies; Cpi = -0.30, 0.20

Restraints:

900 mm centres

Restraints:

400 mm centres

Live Load:

Our = 0.250 kPa

Qo = 1.000 kN

These trusses must be fabricated and erected in accordance with the Gang-Nail manual. Proper erection bracing must be installed to hold the components true and plumb and in a safe condition until permanent bracing is fixed. All permanent bracing and fixing must be installed before any loads are applied. The specifications for timber shall be as shown on the output. The timber shall be standard gauged and treated to the requirements of NZMP 3640. Unless otherwise noted, this design assumes that the steel fixings and timber connectors are situated in a closed environment, as defined by NZS3604:1998 Section 4.

The computer design input has been carried out by:

Signed:

Date:

4-4-03

Name of Computer Operator:

Ross Bennett

Qualifications and Title:

Truss & Wallpanel Detailer (Gangnail NZ approved)

Company:

PreNail Construction Ltd

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ALTERATIONS TO RESIDENCE

416 No. 3 Line, Wanganui

DRAWING INDEX	
sheet 1.	SITE PLAN AND EXISTING FLOOR PLAN
sheet 2.	ALTERED FLOOR PLAN
sheet 3.	ELEVATIONS, SECTION A-A, WINDOW DETAILS
	SPECIFICATION

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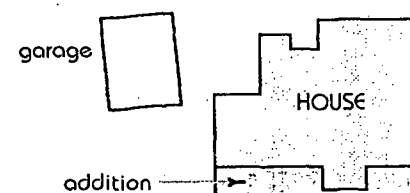
Consent No.

LOT 1.
D.P. 63487
CT 334/60
area 8000m2

boundary 63.61

boundary
139.380

boundary
99.120



driveway

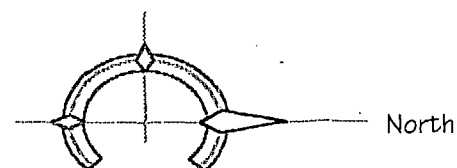
416
No.3. LINE

SITE PLAN

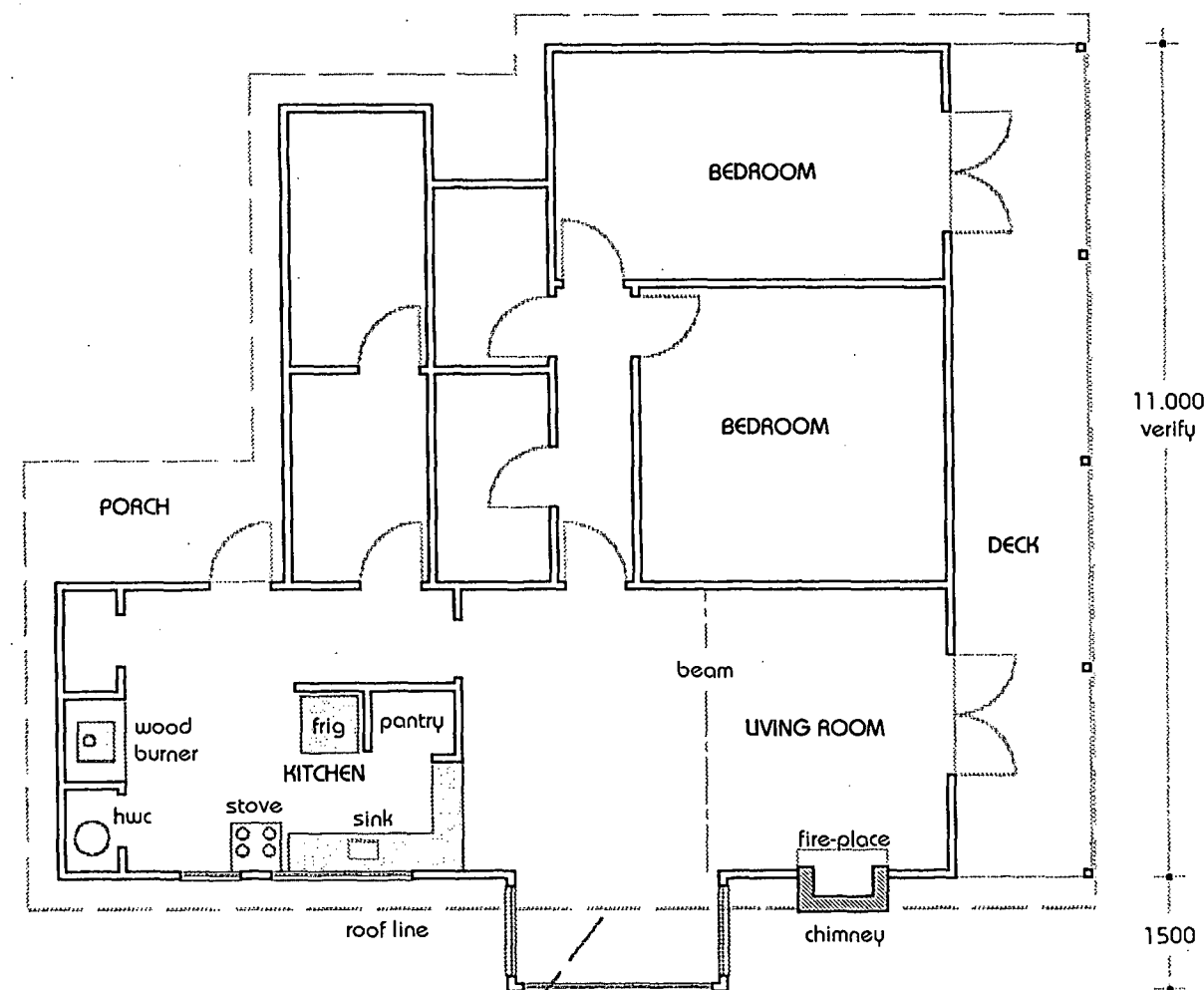
CAD-Rodd-1 scale 1 in 500

boundary
39.450

boundary
39.000



North



overhead telephone cable

EXISTING FLOOR PLAN

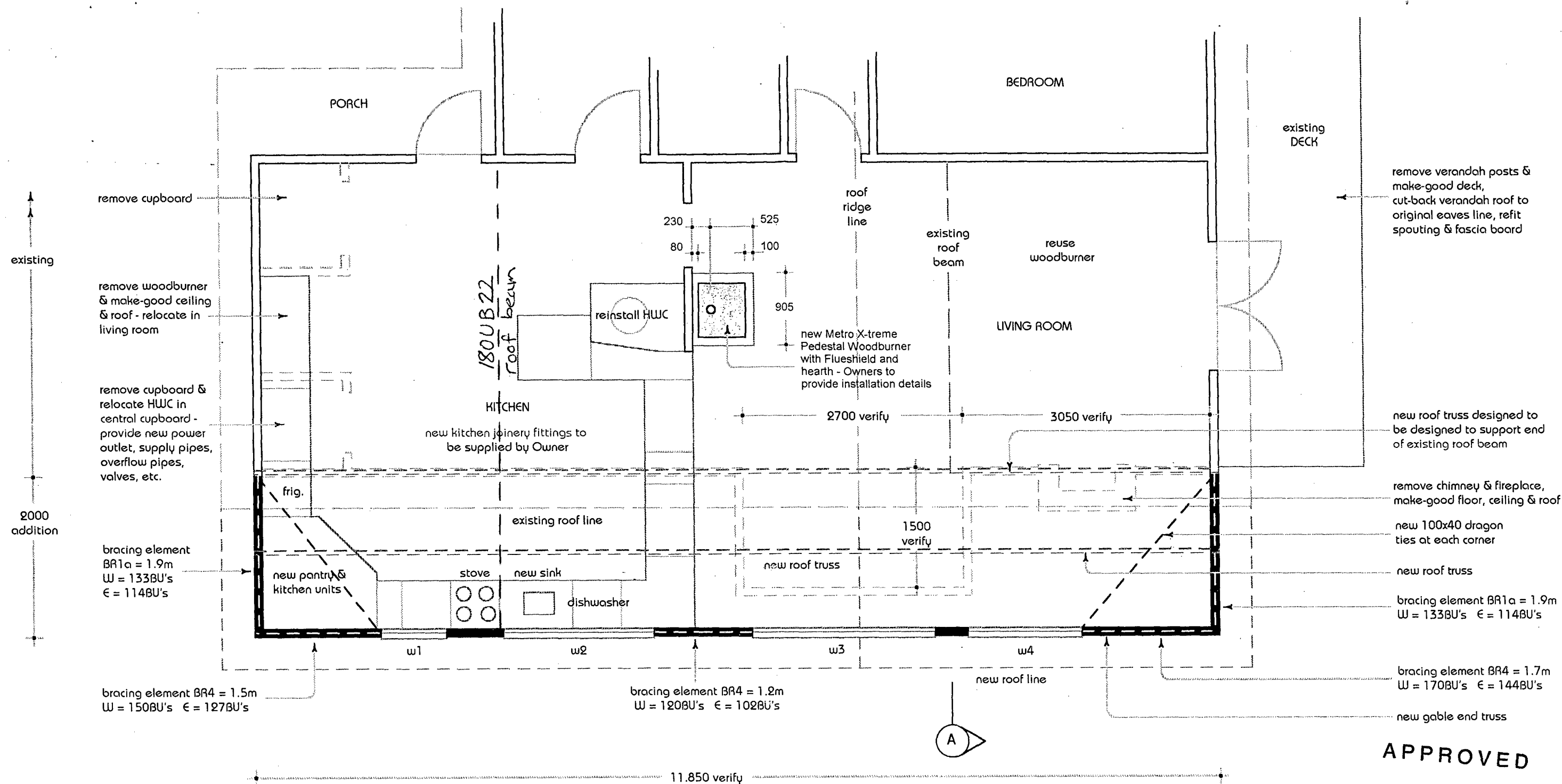
CAD-Rodd-1 scale 1 in 100

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APPROVED PLANS
TO BE KEPT ON SITE
THESE MUST BE AVAILABLE FOR
VIEWING AT ALL TIMES
No inspection will be made
without these documents. A further
inspection fee may be charged
if plans are unavailable.



PLUMBING

reuse, extend or rerun existing hot & cold water pipes to new location of hot water cylinder & sink
extend existing sink waste pipe
install new taps & valves as appropriate & selected by owners

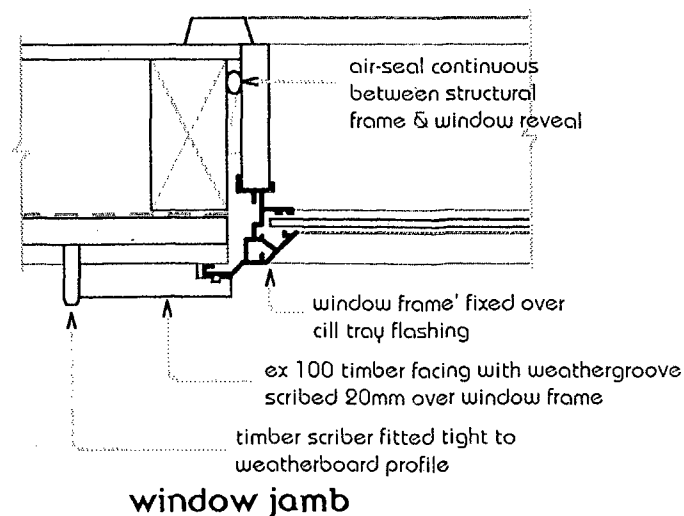
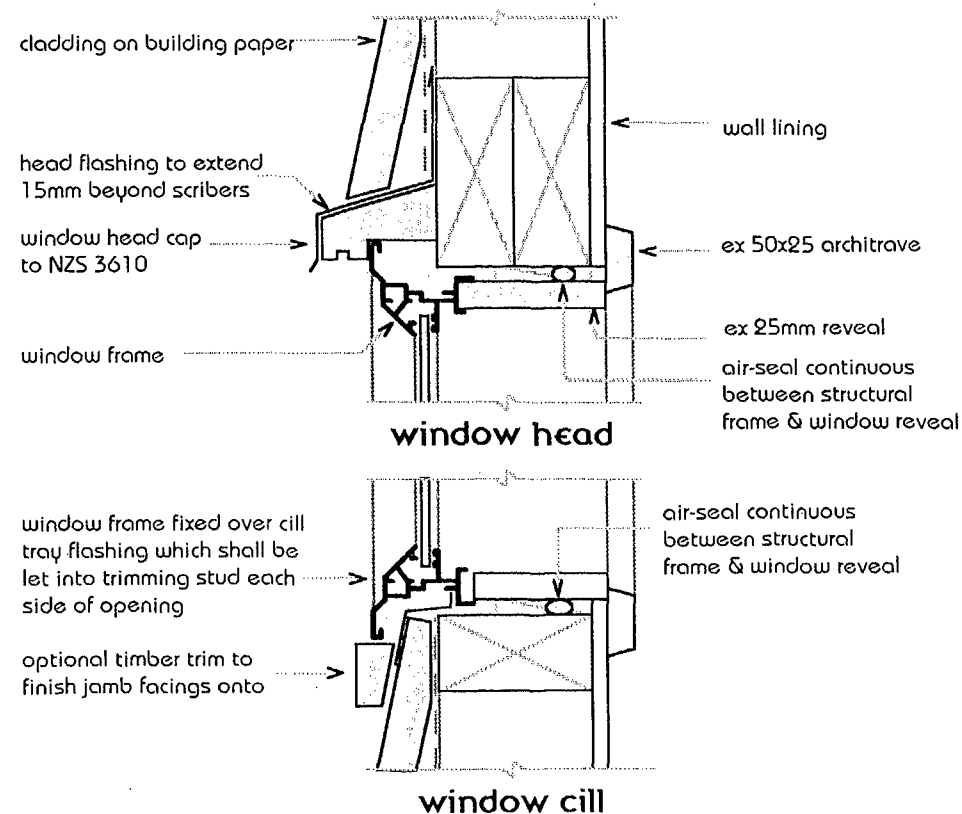
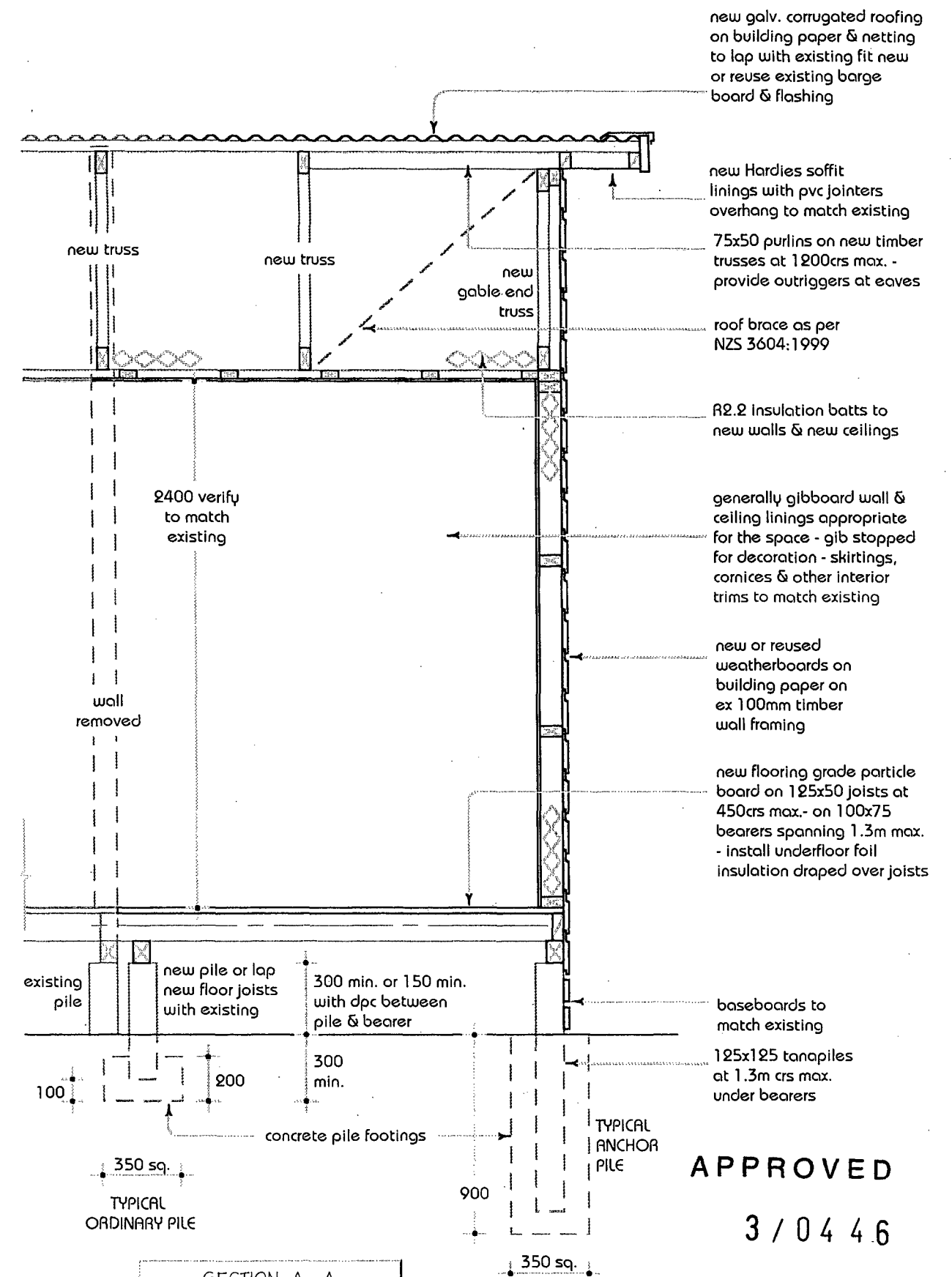
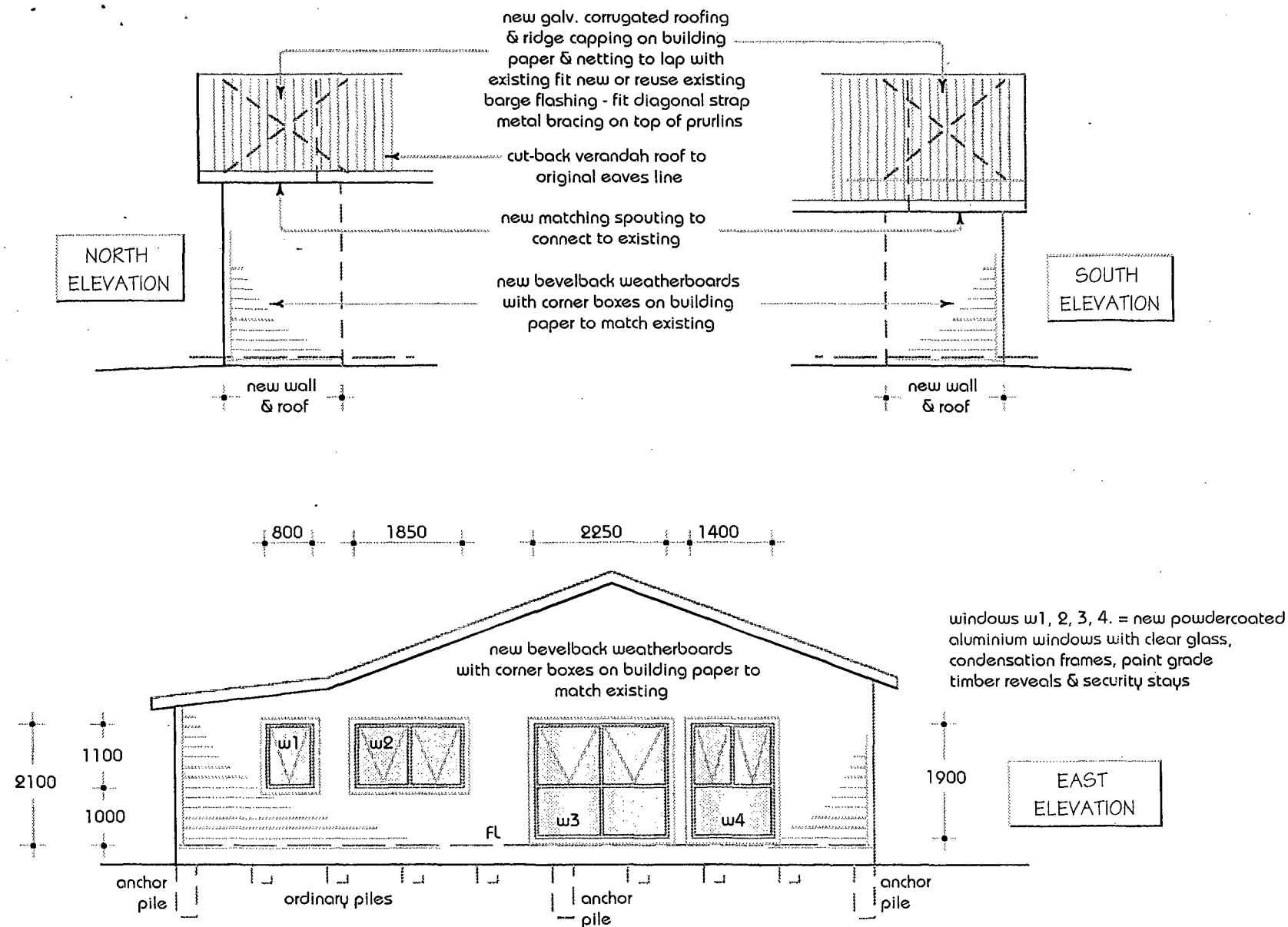
ELECTRICAL

rewire & connect relocated electric stove
provide new power outlets for dishwasher, frig. & as required by owners

GENERAL NOTES

- all walls to be ex 100mm thick with studs of 100x50, 100x75, 100x100 where applicable in accordance with NZS 3604:1999
- it is the contractor's responsibility to verify all existing site characteristics and dimensions on site
- all construction shall satisfy the requirements of NZS 3604:1999 and the District Council
- all materials shall be fixed in accordance with the relevant manufacturers specifications
- the documents have been prepared to show the general intent of the scope of work, the contractor may submit alternative methods of construction only after obtaining the prior approval of the

- walls to be removed
- walls to remain
- new walls



ALTERATIONS TO RESIDENCE at 416 No.3 LINE, WANGANUI

SHEET No.
10-2-03

3.

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3 / 04 46

Consent No.

ref: Road-SPECIFICATION

**SPECIFICATION for
ALTERATIONS TO RESIDENCE
416 No. 3. LINE, WANGANUI**

PRELIMINARIES

SCOPE OF WORK: - Consist of the supply of all materials, labour & sub-trades to carry-out the work described within this specification & shown on the accompanying drawings.

SITE INSPECTION: - It shall be the responsibility of the main contractors & their sub-contractors to visit the site and ascertain the nature & extent of the work before submitting their quotation / tender.

THE GENERAL CONDITIONS OF CONTRACT: - Shall be as outlined in the "New Zealand Standard Conditions of Contract" (NZS 3910:1987) apply.

BUILDING CONSENTS: - Where applicable the Owners are responsible for obtaining any Building or Resource Management Consents, & are to pay any fees that are required. Where electrical work has been carried-out, the electrician is to issue a Certificate of Compliance to be held by the Owners.

INSURANCE: - The main contractor shall carry a Public Liability Insurance with a minimum cover of \$1,000,000.00 for works up to \$50,000.00 & \$2,000,000.00 for contracts above \$50,000.00. Unless agreed otherwise by interested parties. In addition a contractors All Risks Insurance to the full value of the contract & for the duration of the contract.

HEALTH & SAFETY IN EMPLOYMENT ACT 1992: - The main contractor:

- (a) acknowledges that he is familiar with the provisions of the Health & Safety in Employment Act 1992, its Regulations and Code of Practice; &
- (b) shall at all times during the contract when undertaking the work he has been engaged to do, comply with the statutory duties & obligations imposed on employers by the Health & Safety in Employment Act 1992, its Regulation & Code of Practice; &
- (c) shall comply with any direction or requirement by the Owners relating to the Implementation of the Health & Safety in Employment Act 1992, its Regulations & Code of Practice; and
- (d) shall ensure that the above conditions apply equally in respect of all sub-contractors employed by the contractor. Notwithstanding any contrary provisions in this contract failure to comply with the above provisions shall entitle the Owners to immediately terminate this contract.

The contractor shall not be entitled to any extra payment in respect of his compliance with the above clauses nor any extra payment or extension of time in respect of any period during which the whole or part of the works are suspended because of non-compliance with any Health & safety requirements.

At the commencement of construction, the main contractor shall meet with the Owners, request details of all known hazards on the site and shall draw these to the attention of all construction personnel.

During the course of the contract the contractor shall continue to identify in consultation with the Owners any new hazards which may develop.

DOCUMENT INTENT: - The documents show the general intent of the scope of work to be executed. If the Contractors wish to submit alternative construction proposals they may do so only with the prior approval of the Owners & where necessary the local District Council Building Authority.

SETTING-OUT & DIMENSIONS: - The Contractor shall be responsible for the accurate setting out of the complete works as shown on the drawings. It is advisable that the contractors do not take the shown site characteristics & dimensions as fact, but should verify on site all conditions for themselves.

COVER & PROTECT: - The contractor shall make suitable arrangements to cover & protect the construction against the elements for the duration of the construction period. All parts of the work liable to cause injury and for the prevention of accidents are to be protected to the best of the contractors ability for the duration of the contract or such period of time as may be deemed necessary. The contractor shall make-good at his own expense any damage caused by himself or any of his subcontractors to any paving, grassed areas, conductors, cables, sewers, service mains, or any other property belonging to the Owners or under the control of any relevant authorities & shall make-good any damage to at least its former condition & to the satisfaction of the Owners and any relevant authority.

PROTECTION OF PUBLIC SERVICES: - The Construction Act requires that every employer undertaking excavation work shall first ascertain as far as is practicable the location & nature of underground services likely to be affected by excavation.

ACCEPTABLE SOLUTIONS: - All work shall be equal to (or better than) 'Acceptable Solutions' given in NZBC Approved Documents; complying with the Building Act 1991 and Building Regulations.

MATERIALS AND WORKMANSHIP: - All materials & workmanship shall comply with the relevant requirements of the NZ Building Code, every appropriate NZ Standard Specification & the District Council Building and Services Bylaws - where no such relevant NZ Standard Specification is applicable the relevant British Standard shall apply. Materials throughout shall be of first class quality & the best of their respective kinds. All workmanship is to be carried out in accordance with the best trade practice by skilled & competent tradespersons, accurately set-out, structurally sound, neatly executed & finished. Whenever a manufacturer provides printed instructions as to the best manner in which to use a material, such printed instructions shall be deemed part of this specification.

Work that is (in the opinion of the Owners) not in accordance with the requirements of this specification & the accompanying drawings, together with any work that is defective, shall be liable for removal & replacement at the contractors expense.

GUARANTEES & WARRANTIES: - Where the contract fails to specify the terms of any guarantee or warranty that it requires in respect of any material it shall be a guarantee or warranty to the effect that if the material fails for the period specified - & if none is specified, then for a period of two years - after completion of the contract, to withstand without fault or sign of deterioration the elements & stresses & meet the purposes for which it is specified, the guarantor or warrantor shall forthwith on demand of the Owners, cause such fault or deterioration to be made good to the standard required by this contract & without cost to the owner.

SITE SECURITY: - The contractors shall erect temporary security & safety fences about the proposed construction works for:

- (i) the safety of the Owners, visitors & construction staff
- (ii) the protection of the works & contractors materials & equipment.

FIRE FIGHTING EQUIPMENT: - Provide fire fighting equipment as required by the Construction Act.

EFFECT OF PRELIMINARIES: - All clause in the Preliminaries Section apply to & are equally binding upon all trade sections & shall be read & included as part of such trade.

DEMOLITION

PROTECTION: - Carry out all demolition work in a manner such that no shock or damage is suffered by any adjoining sections of the work which are to remain intact.

Provide adequate scaffolding, temporary propping & screening to ensure the protection of all persons and support to structure during demolition.

DEMOLITION MATERIAL: - Take care when removing existing items & materials that may be re-used & adequately store & protect from damage. All salvageable materials not re-used in the new work are to be removed from the site after confirming with the Owners that they are not required.

EXCAVATION

REFERENCE SPECIFICATIONS: - The following shall be deemed to be part of this specification:

NZS3111	Methods of Test for Water and Aggregate for Concrete	NZS3604	Timber Framed Buildings
NZS4402	Methods of Testing Soils for Civil Engineering Purposes	NZS4431	Code of Practice for Earth Fill for Residential Development
NZS4403	Code of Practice for the Storage, Handling, and use of Explosives, The Water and Soil Conservation Act 1967		Construction Regulations 1961
			Construction Act 1959,

EXISTING SERVICES: - Before any excavations commence - check location of all existing underground services. If by any chance it is found that the new footings are to be located over any existing services, the contractor shall immediately notify the Owners. Exercise all necessary care around existing underground services & surrounding surfaces, make-good any damage caused to same.

EXCAVATIONS: - Excavate - for all pile footings to the extent & depths shown or as the District Council Inspector may direct. Keep free from water & loose material. The bottom of all excavations shall be solid, & shall be compacted if necessary before concrete is poured, to the approval of the District Council Inspectors. Any unsuitable foundation material shall be excavated & backfilled with compacted hardfill to the satisfaction of the District Council Inspector.

CONCRETE

REFERENCE SPECIFICATIONS: - The following shall be deemed to be part of this specification:

NZS3101	The Design of Concrete Structures	NZS3104	Concrete Production High Grade and Special Grade
NZS3108	Concrete Production - Ordinary Grade	NZS3109	Specification for Concrete Construction
NZS3111	Methods of Test for Water and Aggregate for Concrete	NZS3112	Methods of Test for Concrete
NZS3114	Concrete Surface Finishes	NZS3124	Concrete Construction for Minor Works
NZS3122	Portland Cement (ordinary, rapid hardening and modified)	NZS3121	Water and Aggregate for Concrete
NZS3604	Timber Framed Buildings		

CONCRETE MIX and TESTS: - Ordinary cement shall be used. Rapid hardening cement shall not be permitted. Fine aggregates shall consist of natural sand, sand prepared from stone or gravel, fully complying with NZ Standards. Coarse aggregates shall consist of gravel, crushed stone or crushed gravel, or other inert materials of similar characteristics, or combination thereof, having hard, strong, durable pieces free from adherent coatings, all complying with the NZ Standards. Only clean water from approved District Council supply shall be used for the making of concrete. Concrete strength at 28 days shall be 20MPa. If concrete test are required by the District Council Inspector during the contract, they shall be conducted in accordance with NZS 3109 (section 9.).

WEATHER CONDITIONS: - No concrete shall be placed under unfavourable weather conditions.

CONCRETE PLACING: - Concrete may be placed by the use of a concrete pump.

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3 / 0 4 4 6

Consent No.

CARPENTRY and JOINERY

REFERENCE SPECIFICATIONS: - The following shall be deemed to be part of this specification:

AS/NZS 1748	Mechanically Stress-graded Timber	AS/NZS 1859	Reconstituted Wood Based Panels
AS/NZS 1859.1.	Particle board	AS/NZS2589.1.	Gypsum Plasterboard
NZS632 -	The Kiln Drying of Timber	NZS841 -	Wood Screws
NZS3604:1999	Timber Frame Buildings	NZS3610 -	Profiles of Mouldings & Joinery
NZS 3616	Finger Jointed Timber	NZS3617	Profiles for Weatherboards, Fascias & Flooring
NZS3631	NZ National Timber Grading Rules	NZS/AS2908.2	Cellulose-cement Products - Flat sheets
NZS3602	Specifying Timber & Wood-based Products for use in Buildings		
NZMP3640	Min. Requirements of the NZ Timber Preservation Council Inc		
AS/NZS 2589	Gypsum Linings in Residential and Light commercial Construction - Application and Finishing		
BRANZ Bulletin	284 - sealed joints in external claddings	304 - flashing design	
	305 - domestic flashing installation	328 - selection & use of fasteners	

FABRICATION & ERECTION: - All work shall be carried out in accordance with the best trade practice, by competent craftsmen using equipment, materials & processes that are adequate for the purpose. At points of attachment & contact, all timbers shall be secured generally with not less than two nails driven well home and in accordance with NZS 3604:1999.

FIXINGS, NAILS & SCREWS: - Nails, bolts, brads, screws, etc., shall be in accordance with NZS 3604:1999 & as recommended by the product manufacturers. Screws used for the attachment of hardware shall be of appropriate material & pattern to match items selected. Supply & fit all Bowmac brackets as shown &/or as required with appropriate bolts & nails. Material / Finish to be in accordance with NZS 3604:1999.

TIMBER:

Seasoning: All timbers shall be seasoned either in the open air or by approved kiln processes. Timber for joinery & timber which is to be dressed shall be reduced to a moisture content of between 12% and 18% based on oven dry weight, such seasoning taking place before machining. Other timber shall be reduced to a moisture content of not more than 25% at the time that it is enclosed. Structural members such as beams, joists, rafters, purlins, etc., shall have a moisture content not exceeding 25% at the time of installation unless otherwise specified. Such structural timber members shall not be fully loaded before the timber has dried to a moisture content not exceeding 18%.

Finish: All timber surfaces exposed to view or to hand contact, unless otherwise specified, shall be dressed to a smooth surface consistent with the situation. In addition to above, all doors & interior trims, shall be sand-papered to a smooth even surface. Prime all backs, faces, edges, joints and abutting surfaces of all exterior finishing timber shall be primed or stained before erection unless stated otherwise.

Treatment: All non-heart timbers shall be treated in accordance with the requirements of the NZ Timber Preservation Council.
H1 = fully protected from weather
H3 = exposed to weather but no ground contact
H4 = in ground contact, or in fresh water
H5 = extreme decay hazard

Timber Grades: Framing to structural timber = No.1. Framing to non-structural timber = No.2.

FLOOR FRAMING: - Frame-up floor framing as shown on the drawings including all piles, bearers, joists, braces, blocking, etc., as shown & as necessary. Make-good existing where disturbed or damaged during demolition & construction.

WALL FRAMING: - Studs & dwangs generally shall be 100x50 with studs at centres in accordance with NZS 3604:1999 & dwangs at 800 cns. Provide additional nogging to suit wall linings, blocking to flashings, for the fixing of fittings, hardware & the like. All lintels shall be in accordance with NZS 3604:1999. Between all timber and concrete fix standard duroid dpc. Make-good existing where disturbed or damaged during demolition & construction.

ROOF FRAMING: - Generally frame-up all roofs as shown on the drawings. The drawings show the general intent of the roof framing. Allow for all sundry blocking, nogging, etc. as required.

The roof truss manufacturer shall provide roof framing design certificate & roof framing layout plans for the new trusses showing all roof trusses, truss types, eaves and barge outriggers, roof bracing etc., to the main contractor for inclusion in the documents for Building Consent Application.

Frame for eaves and barges as shown/or as required & where exposed to be of complying treated timber.

Trim roof framing for appliance flues, vents, pipes, penetrations etc.

Fit purlins as shown & to sizes shown & at spacings as recommended by the roofing manufacturer.

Make-good existing roof framing where disturbed or damaged during demolition & construction.

FASCIAS and BARGE BOARDS: - Fit ex 25mm timber fascia & barge boards where shown & as required in as straight & true lines as possible. Lengths to be as long as possible. Preprime fascia & barge boards as necessary before installation. Make-good existing where disturbed or damaged during demolition & construction.

FLOORING: - Fit 20mm flooring grade particle board to floors as shown. Sheets to be as large as possible & be set-out symmetrically. Provide additional nogging between joists at maximum of 1200cns & to all sheet edges. Fix flooring in accordance with manufacturers recommendations. Prepare as necessary & leave flooring in suitable condition to receive selected finish. Make-good existing where disturbed or damaged during demolition & construction.

FLASHINGS & SEALANTS: - Provide appropriate suitable flashings &/or sealants to roof, windows, walls & wherever necessary to render building completely watertight. Make-good existing where disturbed or damaged during demolition & construction.

WALL CLADDINGS: - Refer to drawings for selected wall cladding materials. Provide additional dwangs & nogging to all sheet edges & as required by the manufacturer. Claddings to be fixed in accordance with the manufactures technical specifications. Make-good existing claddings where disturbed or damaged during demolition & construction.

FOUNDATION CLADDING: - Provide foundation baseboards cladding as shown on the drawings - frame for as required.

SOFFIT LININGS: - Refer to notes on drawings. Frame for & fix soffit linings in accordance with the manufacturers recommendations. Fit scotica trim at wall junctions.

PAPERS, FOILS & INSULATION: - Fit approved under-floor perforated foil insulation under all new timber floors - drape over joists. Fix in accordance with manufacturers recommendations.

Fit approved Antiblaze building paper or equal approved behind new exterior wall claddings. Lap building paper 100mm minimum. Fix in accordance with manufacturers recommendations.

To new exterior walls fit R1.8 approved wall insulation batts. To new ceilings fit R2.4 approved ceiling insulation batts

Make-good existing where disturbed or damaged during demolition and construction.

EXTERIOR TRIMS: - Supply & fit exterior timber trims as shown on the drawings & as necessary to match existing. All weatherboard corner boxes & facings to have weathergrooves on back faces & fitted with scribes all pre-primed before installation. Make-good existing where disturbed or damaged during demolition & construction.

GIBBOARD WALL and CEILING LININGS: - Wall Linings generally to be 10mm Standard Gibboard & Braceline Gibboard - refer to floor plan for wall bracing elements & details.

Ceiling Linings generally shall be Ultraline Gibboard to or to match existing.

Fit wall & ceiling linings to walls and battens in accordance with the details of & manufacturers recommendations. Make-good existing wall & ceiling linings where disturbed or damaged during demolition & construction.

Gib stop wall & ceilings linings in suitable condition to receive selected finish.

INTERIOR TRIMS: - Skirtings, cornices, architraves & sundry trims shall be to match existing & in as long a lengths as possible. Make-good existing where disturbed or damaged during demolition & construction.

KITCHEN JOINERY FITTINGS: - Will be as selected by the Owners.

SERVICES: - Allow to neatly trim & finish about all service pipes, flues, cables, conduits, etc., to the satisfaction of the Owners.

SUBCONTRACTS: - Allow to cooperate with all subcontractors & allow to provide all necessary holes, dwangs, nogs, blocking,, etc., as they may require.

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METAL WINDOWS

Consent No.

SCOPE OF WORK: - Includes the supply & delivery to the site of all aluminium windows units complete with all treated timber reveals, hardware, glass & necessary flashings & sealants - all as shown on the drawings.

REFERENCE SPECIFICATIONS: - The following shall be deemed to form part of this specification:

NZS 4211:1976 -	Performance of Windows.	NZS 4223 -	CoP for Glazing in Buildings
NZBC-F2/AS1 -	Hazardous Building Materials - 1.0 - Glazing	AS/NZS 2208 -	Safety Glazing Materials in Buildings
NZS 3604 -	Timber Framed Buildings		
AS 3715 -	Metal Finishing - Thermoset Powder Coatings for Architectural Applications		Window Association of NZ: Aluminium Window Handbook
	Specification for Powder Coatings on Architectural Aluminium Products		Installation Code for Aluminium Joinery Products
	BRANZ Bulletin 349 - Finishes for Aluminium		

FINISH: - All new aluminium windows shall be of selected powdercoated finish

WINDOW SIZES and FENESTRATION: - Refer to drawings for window sizes & fenestration. The window manufacture is responsible for final site measuring of windows.

GLAZING BEADS: - All glass shall be glazed with security beads as far as practicable

REVEALS: All reveals to be ex 25mm treated timber to match existing window frames
WINDOW FRAMES: - All window frames shall have condensation channels properly draining to the exterior of the building

SASHES: - All awning sashes shall be fitted with heavy-duty awning stays & sash restrictors & two double-tongue heavy-duty wedge fasteners unless stated otherwise.

FLASHINGS: - All windows doors shall be fitted with matching powdercoated flashings

GLASS: - All glazing shall comply with the above appropriate standard & shall be clear glass.

GUARANTEE: - The metal window subcontractor is to provide a written guarantee for 5 years for the whole of the installation which shall be deemed to cover:- corrosion (other than normal oxidation), excessive movement, leakage through frame or glazing, colour fading or bleaching

ROOFING - SPOUTINGS

SCOPE OF WORK: - Consists of the following - modifying the existing roofs to accept the connection of new roofs plus the supply & fixing of all new roofing, building paper, netting, spoutings, flashings, etc., to render the building completely weatherproof .

REFERENCE SPECIFICATIONS: - The following shall be deemed to form part of this specification:		
NZBC E2/AS1	External Moisture - 1.0 - roofs	NZS 3602 - Timber and Wood Based Products for use in Buildings
NZS 3403 -	Hot-dipped Galvanised Corrugated Steel Sheet for Building Purposes	NZS 3604 - Timber Framed Buildings
NZS 4222 -	Materials for the Thermal Insulation of Buildings	NZMP 3640 - Min. Requirements of the NZ Timber Preservation Council Inc
AS 1397 -	Steel Sheet & Strip-hot-dipped, Zinc coated or Aluminium/Zinc coated	NZ Metal Roofing & Cladding Manufacturers Association Inc:
	Profiled Metal Roofing Design & Installation Handbook	
BRANZ Bulletin	284 - sealed joints in external claddings	305 - domestic flashing installation
	304 - flashing design	328 - selection & use of fasteners

ROOFING: - Supply and fit 0.45 galv. corrugated roofing to roofs as shown on the drawings, complete with roof netting & Flamestop or equal building paper underlay, & all necessary flashings. Fix all roofing in accordance with the manufacturers recommendations. Lap sheets away from prevailing weather. Ensure a good weatherproof junction is constructed between the existing & new roofing materials.

SPOUTINGS: - Supply fit new spoutings to match existing & connect to existing.

DOWNPIPES: - South side downpipe to be reused. Alter north side downpipe to suit where verandah roof removed.

PLUMBING

REFERENCE SPECIFICATIONS: - The following shall be deemed to be part of this specification:			
NZBC G1/AS1	Personal Hygiene	NZBC G1/AS1 - 2.0.	Fixture Construction and Installation
NZBC G1/AS1 - 3.0.	Location of Sanitary Fixtures	NZBC G13/AS1	Foul Water - Sanitary Plumbing
AS/NZS 3500	National Plumbing and Drainage Code	AS/NZS 3500.2.	Sanitary Plumbing and Drainage
AS/NZS 3500.2.2.	Acceptable Solutions	AS/NZS 3500.3.3.	Acceptable Solutions
AS 2642	Polybutylene Pipe Fittings	AS 2642.2.	Polybutylene Pipe for Hot and Cold Water Applications
NZS 4602	Low Pressure Copper Thermal Storage Electric Water Heaters		
NZS 4606.3.	Specific Requirements for Water Heaters with Composite Shells		
NZS 4607	Installation of Thermal storage Electric Water Heaters (valve vented systems)		
NZS 7643	Installation of Unplasticized PVC Pipe Systems	NZS 7649	Unplasticized PVC Sewer & Drain Pipe and Fittings
	Plumbers, Gas Fitters & Drainlayers Act 1976		Acceptable Solutions of NZBC particularly G12 and G13.
AS/NZS 1260 or AS 1254	PVC Pipes and Fittings for Drain, Waste and Vent Applications		
AS 2642.3	Mechanical Jointing Fittings for use with Polybutylene Pipes for Hot and Cold Water Applications		
NZS 4603	Installation of Low Pressure Thermal Storage Electric Water Heaters with Copper Cylinders (open-vented systems)		

TRADESPERSONS: - All work shall be carried-out by registered plumbers and drainlayers.

RESPONSIBILITY: - It shall be this subcontractors responsibility to ensure that their tender price includes all items in these documents & any other work that may be required to obtain a District Council Building Consent approval.

NOTICES & FEES: - The Main Contractor is responsible for giving all notices & paying all fees legally demandable, & all connection fees payable by & to the District council in association with this trade.

PIPEWORK: - All pipework unless stated otherwise is to be run concealed. Where pipework is suspended from, fixed to, or run through structural work, particular care shall be taken to ensure that all necessary chases, holes & fixings are provided. Secure pipework to structure in strict accordance with the manufacturers specifications for the material used, using approved purpose made straps, clips or hangers. Run all pipework including wastes in straight runs with even gradients & easy bends. Avoid elbows & any pipework which may result in air-locks.

JOINTING of PIPEWORK: -Braze all joints in copper pipes with 'Sifos'. Joints in steel piping shall be threaded. Ensure that all joints between dissimilar materials are carried-out in such a way as to prevent electrolysis.

WASTE and VENT PIPES: - Waste & vent pipes shall be PVC to the sizes in accordance with the relevant standards. All waste & vent pipes shall be complete with bends, fittings & saddles & have cleaning eyes at all changes of direction.

TAPS: - Supply & install new taps as selected by the Owners

COLD WATER: - From the existing supply run 15mm Polybutylene branch pipes to new location of hot water cylinder & new sink.

HOT WATER: - From the existing sanitary fittings & the new sink supplied with hot water, extend pipes to new location of hot water cylinder

WASTE PIPES: - Extend existing sink waste pipe to new sink

ELECTRICAL & PHONE

REFERENCE SPECIFICATIONS: - The following shall be deemed to be part of this specification:		
NZS 3000 -	Electrical Regulations - Building Structures & Premises	NZS 3008 - Electrical Installations - Selection of Cables
AS/NZS 3008.1.2	Typical NZ Installation Conditions	NZS 6401 - PVC Insulated Cables for Electric Power & Lighting
	Electrical Regulations 1997	NZ Electrical Codes of Practice (ECP)

CABLING: - All cabling to be run concealed as far as practicable. All holes in timber framing to be in the centre of the timber member.

FITTINGS: - All new light switches, power points, light points, etc. shall be of heavy-duty construction & of type appropriate for the situation. All light switches shall be mounted 1200mm above floor level unless shown otherwise. All power points shall be mounted 300mm above floor level & above benches. Light fittings shall be selected & as required by the Owners.

TELEPHONES: - Arrange to re-route existing overhead supply cable. Provide new telephone outlets as required by the Owners.

WORKMANSHIP: - The whole of the new & altered electrical reticulation shall be carried out strictly in accordance with the Local Power Authority Bylaws & above standards & regulations. The electrical subcontractor is to obtain all necessary permits from the local Power supply Authority & arrange for all inspections. Supply a Certificate of Compliance.

SCOPE OF WORK: - Supply, install and reticulate the electrical as required by the Owners.

PAINTING and DECORATING

REFERENCE SPECIFICATIONS: - The following shall be deemed to form part of this specification:	
NZS 51	Ready Mixed Paints for Undercoats and Finishing Coats, for Use on Exterior Woodwork
NZS 1056	Ready Mixed Paints for Priming Coats for Use on Exterior Woodwork (excluding Totara)
NZS 2236	Recommendations for the Painting of Buildings
NZS 7701	Water Repellent Solutions for Wood

MATERIALS: - All materials used shall be first class & applied strictly in accordance with the Manufacturers directions & recommendations. All paint systems shall be appropriate for the situation and applied in strict accordance with the manufacturers specifications by skilled decorators.

PREPARATION OF SURFACES: - Notwithstanding provisions in other sections of this specification, it shall be the responsibility of the painter to ensure that all surfaces, including the surfaces of all successive undercoats, are in a suitable condition to enable a first class finish to be obtained. To that end he shall wash, dust or otherwise clean down all surfaces including undercoats, remove imperfections by filling, sandpapering & the like & apply such sealers, neutralisers or other materials as are necessary in accordance with sound trade practice subject to the provision as to adherence to any one manufactureres paint system. All removable hardware shall be removed before painting commences.

FILLING COMPOUNDS: - The painter shall fill all nail holes & make-good other similar imperfections using filling compounds which are appropriate for the use concerned.

SCOPE OF WORK:
All painting & decorating will be by Owner or arranged by Owner

FLOOR COVERINGS

SCOPE OF WORK: - Will be arranged separately by the Owners

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Consent No.

----- END OF SPECIFICATION -----



CODE COMPLIANCE CERTIFICATE NUMBER BC3/0446

Section 43(3), Building Act 1991

Mr PL Rod
416 No 3 Line
R D 12
Wanganui 5021

**Building Consent
No:** BC3/0446

Issue Date: 14/10/2005

<i>Project Location</i>	<i>Assessment Number/Legal Description</i>
416 No 3 Line WANGANUI 5001	LOT 1 DP 63487 0.8000 Ha
<i>Type of Work</i>	<i>Description of Work</i>
SingDetRes	Addition to dwelling and install a freestanding Metro X-treme solid fuel heater
<i>Intended Life</i>	<i>Estimated Value</i>
50 years	\$25000.00

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

Signed for and on behalf of the Wanganui District Council:

A J Jamieson
Team Leader Building Services
Environmental Services Business Unit

Date: 14 October 2005