

Code Compliance Certificate

Section 95, Building Act 2004

The Building

Street address of building: 7 GALEA GROVE
PALMERSTON NORTH
Legal description of land where building is located: LOT 53 DP 411222
Current, lawfully established, use: RESIDENTIAL DWELLING
Year first constructed: 2009

The Owner

Name of owner: JAPAC DEVELOPMENTS LTD
Contact person: PAUL HAYDOCK
Mailing address: C/O PS & JM HAYDOCK
509 ALBERT STREET
PALMERSTON NORTH 5301
Phone number: Landline: 06 356 1650
Mobile: 021 282 0800

Building Work

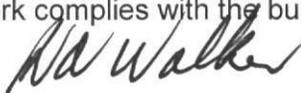
Building Consent Number: 18059
Project Description: ERECT SINGLE STOREY, 4 BEDROOM DWELLING WITH ATTACHED GARAGE.
Issued by: PALMERSTON NORTH CITY COUNCIL

Code Compliance

The building consent authority named below is satisfied, on reasonable grounds, that —

(a) the building work complies with the building consent;

Signature:



Name:

ROBBIE WALKER

Position:

PRINCIPAL / SENIOR BUILDING OFFICER

On behalf of:

PALMERSTON NORTH CITY COUNCIL

Date:

03 DECEMBER 2009

Application for Project Information Memorandum and/or Building Consent

Section 33 or Section 45, Building Act 2004.

The Building

Street address of building:

(for structures that do not have a street address, state the nearest street intersection and the distance and direction from the intersection.)

7 Galea Grove
Palm North

Legal description of land and where building is located:

(state legal description as at the date of application and, if the land is proposed to be subdivided, include details of relevant lot number and subdivision consent)

WA 53 DP 411222 ✓

Building name:

Location of building within site / block number:

(includes nearest street access)

Number of levels:

(include ground levels and any levels below ground)

Level/Unit number:

Area:

(total floor area; indicate area affected by the building work if less than the total area)

223 m²

Current, lawfully established, use:

(include number of occupants per level and use if more than 1)

New Dwelling.

Year first constructed:

(approximate date is acceptable eg: 1920's or 1960-1970)

The Owner (All contact details must be in New Zealand)

Name of owner:

(eg, Mr, Mrs, Miss, Dr if an individual)

Jayac Developments Ltd

Contact person:

(insert N/A if the applicant is an individual)

Paul Haydock

Mailing address:

509 Albert St

Palm North

Street address / registered office:

Phone numbers

Landline:

3561650

Mobile:

04 2820800

Daytime:

After hours:

3561656

Facsimile:

56

Email address:

Evidence of ownership is attached to this application:

Certificate of Title

Lease

Agreement for Sale and Purchase

Other document

107659

Agent (only required if application is being made on behalf of the owner)

Name of agent: _____

Contact person: _____

(insert N/A if the agent is an individual)

Street address / registered office: _____

Phone numbers

Landline: _____
Mobile: _____
Daytime: _____
After hours: _____
Facsimile: _____

Email address: _____

Relationship to owner:

(state details of the authorisation from the owner to make the application on the owner's behalf)

First point of contact for communication with the council / building consent authority:

Full name: _____

Mailing address: _____

Phone number(s): _____

Facsimile number(s): _____

Email address(es): _____

Invoice Details:

(by prior arrangement only)

Application

I request that you issue a:

Project Information Memorandum

Building Consent

For the building work described in this application (tick one or both as applicable)

Signature of the owner/agent on behalf of with the authority of the owner: _____



Date: _____

16/6/09

Council use only

PIM type: _____

Receipt number: _____

Building consent type: _____

Date received: _____

Payment Option:

Deposit Paid

Invoice

Invoice to: _____

Initialed by agent: _____

Full description of work

Description of the building work:

(provide sufficient description of building work to enable scope of work to be fully understood; continue on a separate page if necessary, or refer to an attached document setting out the description)

Erection of new 4 bedroom
residential dwelling
SINGLE STOREY A BEDROOM DWELLING ATT'D
GARAGE.

Will the building work result in a change of use of the building?

Yes

No

If Yes, provide details of the new use:

Intended life of the building if less than 50 years: _____

(number of years)

List building consents previously issued for this project (if any):

Estimated value of the building work on which the building levy will be calculated

(including goods \$ 320,000 and services tax):

(state estimated value as defined in section 7 of the Building Act 2004)

Project information memorandum (do not fill in this section if the application is for a building consent only)

The following matters are involved in the project:

(tick the matters relevant to the project)

- Subdivision
- Alterations to the land contours
- New or altered connections to public utilities
- New or altered locations and / or external dimensions of buildings
- New or altered access for vehicles
- Building work over or adjacent to any road or public place
- Disposal of stormwater and wastewater
- Building work over any existing drains or sewers or in close proximity to wells or water mains.
- Other matters known to the applicant that may require authorisations from the territorial authority: (specify)

Building consent (do not fill in this section if the application is for a project information memorandum only)

The following plans and specifications are attached to this application:

(all plans and specifications must meet the minimum requirements set out in the regulations or required by the building consent authority)

2 Sets Plans & Specs.

The building work will comply with the building code as follows:

(if you're not sure which clauses are applicable, talk to the BCA or your architect)

Clause (tick relevant clause number of building code)	Means of compliance required (refer to the relevant compliance document(s) or detail or alternative solution in the plans and specifications; if not applicable, put N/A)	Waiver/modification (state nature of waiver or modification of building code required; if not applicable, put N/A)
B1 Structure	B1 ASI	
B2 Durability	B2	
C1 Outbreak of fire		
C2 Means of escape	AS1	
C3 Spread of fire		
C4 Structural stability during fire		
D1 Access routes	D1 ASI	
D2 Mechanical installations for access		
E1 Surface water	E1 ASI	
E2 External moisture	E2 ASI & ALT SOLUTIONS.	
E3 Internal moisture	E3 - " - " -	
F1 Hazardous agents on site		
F2 Hazardous building materials	F2 ASI	

F3 Hazardous substances and processes		
F4 Safety from falling		
F5 Construction and demolition hazards		
F6 Lighting for emergency		
F7 Warning systems	F7 ASI	
F8 Signs		
G1 Personal hygiene	G1 ASI	
G2 Laundering	G2 ASI	
G3 Food preparation and prevention of contamination	G3 "	
G4 Ventilation	G4 "	
G5 Interior environment		
G6 Airborne and impact sound		
G7 Natural light	G7 ACS 3604	
G8 Artificial light		
G9 Electricity	G9 ASI	
G10 Piped services		
G11 Gas and energy source	G11 ASI	
G12 Water supplies	G12 ASI	
G13 Foul water	G13 ASI	
G14 Industrial liquid waste		
G15 Solid waste		
H1 Energy efficiency	H1 ASI	

Compliance schedule (do not fill in this section if the application is for a Project Information Memorandum only).

The following systems for the building are as follows: (please tick which applies)

- Automatic systems for fire suppression
- Automatic and manual emergency warning systems for fire or other dangers (other than a warning system for fire that is entirely within a household unit and serves only that unit)
- Fire doors - electromagnetic or automatic doors or windows (for example, ones that close on fire alarms activation)
- Emergency lighting systems
- Escape route pressurisation systems
- Riser mains for fire service use
- Automatic back-flow preventers connected to potable water supply
- Lifts, escalators, or travelators or other systems for moving people or goods within the building
- Mechanical ventilation or air conditioning systems
- Building maintenance units for providing access to the exterior and interior walls of buildings
- Laboratory fume cupboards
- Audio loops or other assistive listening systems
- Smoke control systems
- Emergency power systems for, or signs relating to, a system or feature specified in any clause 1-13
- Any or all of the following systems and features, so long as they form part of a building's means of escape from fire, and so long as those means also contain any or all of the systems and features specified in clauses 1-6 and 9-13:
- systems for communicating spoken information intended to facilitate evacuation; and
 - final exits (as defined by clause A2 of the Building Code); and
 - fire separations (as so defined); and
 - signs for communicating information intended to facilitate evacuation; and
 - smoke separation (as so defined)

The following systems will be altered, added to or removed in the course of the building work:

- Automatic systems for fire suppression
- Automatic and manual emergency warning systems for fire or other dangers (other than a warning system for fire that is entirely within a household unit and serves only that unit)
- Fire doors - electromagnetic or automatic doors or windows (for example, ones that close on fire alarms activation)
- Emergency lighting systems
- Escape route pressurisation systems
- Riser mains for fire service use
- Automatic back-flow preventers connected to potable water supply
- Lifts, escalators, or travelators or other systems for moving people or goods within the building
- Mechanical ventilation or air conditioning systems
- Building maintenance units for providing access to the exterior and interior walls of buildings
- Laboratory fume cupboards
- Audio loops or other assistive listening systems
- Smoke control systems
- Emergency power systems for, or signs relating to, a system or feature specified in any clause 1-13
- Any or all of the following systems and features, so long as they form part of a building's means of escape from fire, and so long as those means also contain any or all of the systems and features specified in clauses 1-6 and 9-13:
 - systems for communicating spoken information intended to facilitate evacuation; and
 - final exits (as defined by clause A2 of the Building Code); and
 - fire separations (as so defined); and
 - signs for communicating information intended to facilitate evacuation; and
 - smoke separation (as so defined).
- There are no specified systems in the building

Attachments

The following documents are attached to this application:

(Tick as applicable or put N/A if there are no attachments.)

- Plans and specifications (please list)

AS FOR BC.

- Project Information Memorandum
- Development Contribution Notice
- Certificate attached to Project Information Memorandum

Contacts:

Designer/Architect:

Business/Name: Graham Dllvel
 Address: _____
 Daytime: 35618000
 Mobile: _____
 After hours: _____
 Facsimile: _____
 Registration/Qualification: _____

Structural Engineer:

Business/Name: _____
 Address: _____
 Daytime: _____
 Mobile: _____
 After hours: _____
 Facsimile: _____
 Registration/Qualification: _____

Engineer (identify practice college):

Business/Name: _____
 Address: _____
 Daytime: _____
 Mobile: _____
 After hours: _____
 Facsimile: _____
 Registration/Qualification: _____

Plumber:

Business/Name: Bodestone Plumbing
 Address: _____
 Daytime: _____
 Mobile: _____
 After hours: _____
 Facsimile: _____
 Registration/Qualification: _____

Builder:

Business/Name: Japac Homes
 Address: _____
 Daytime: _____
 Mobile: 027 2820500
 After hours: _____
 Facsimile: _____
 Registration/Qualification: _____

Drain Layer:

Business/Name: Bodestone Plumbing
 Address: _____
 Daytime: _____
 Mobile: _____
 After hours: _____
 Facsimile: _____
 Registration/Qualification: _____

Head Contractor / Site Manager:

Business/Name: Paul Haycock
 Address: _____
 Daytime: _____
 Mobile: 027 2820500
 After hours: _____
 Facsimile: _____
 Registration/Qualification: _____

Other:

Business/Name: _____
 Address: _____
 Daytime: _____
 Mobile: _____
 After hours: _____
 Facsimile: _____
 Registration/Qualification: _____

Privacy Information

The information you have provided on this form is required so that your building consent application can be processed under the Building Act 2004. The Council collates statistics relating to issued building consents and has a statutory obligation to regularly forward these to Statistics New Zealand. The Council stores the information on a public register which must be supplied (as previously determined by the Ombudsman) to whomsoever requests the information.

Under the Privacy Act 1993 you have the right to see and correct personal information the Council holds about you.

JAPAC DEVELOPMENTS LIMITED.

PROPOSED HOUSE

7 GALEA GROVE (LOT 53)

PALMERSTON NORTH

MAY 2009

SHEET INDEX

- 1 - FLOOR PLAN
- 2 - ELEVATIONS
- 3 - BRACING AND LINTEL PLAN
- 4 - FOUNDATION PLAN
- 5 - CROSS SECTIONS
- 6 - DETAIL SHEET 1
- 7 - DETAIL SHEET 2
- 8 - DETAIL SHEET 3
- 9 - JOINERY SCHEDULE
- 10 - DRAINAGE PLAN
- 11 - ROOF TRUSS LAYOUT
- 12 - SLAB THICKENING PLAN
- 13 - LINTEL PLAN
- 14 - TRUSS FIXING & BRACING PLAN

P.A. APPROVED

P.N.C.C. APPROVED

HARDIES LINEA BOARDING OVER BUILDING WRAP. USE EXTERNAL CORNER SOAKERS & SCRIBERS TO JOINERY

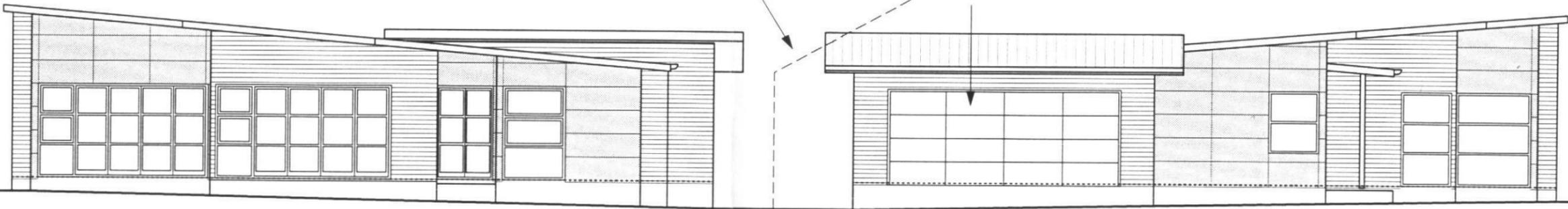
4.5mm HARDIFLEX SOFFITS

FINISHED GROUND LEVEL TO BE NOT LESS THAN 225mm BELOW FINISHED FLOOR LEVEL

NORTH

LINE OF BUILDING ENVELOPE

SECTIONAL SLIDEOVER GARAGE DOOR



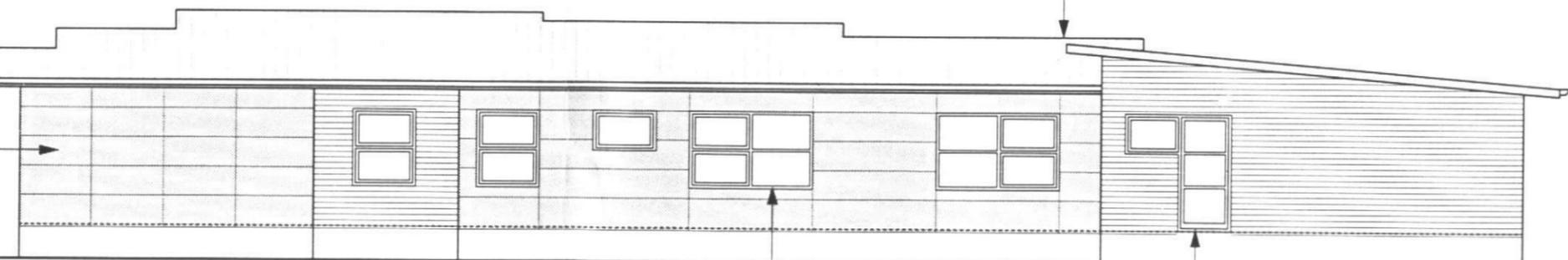
WEST

EAST

COLOURSTEEL SPOUTING OVER ex200x40 FASCIA

METALCRAFT MC700 ROOFING ON 75x50 PURLINS AT 900mm CRS

HARDIES TITAN BOARD OVER CLD STRUCTURAL CAVITY BATTENS REFER MANUFACTURERS DRAWINGS



SOUTH

ALUMINIUM JOINERY. FLASHINGS REQUIRED TO ALL UNITS

ALUMINIUM JOINERY - REFER SCHEDULE PAGE 10

ELEVATIONS

PROPOSED HOUSE, 7 GALEA GROVE (LOT 53), PALM. NORTH FOR JAPAC DEVELOPMENTS LIMITED

JUNE 2009

P.N.C.C. APPROVED

MEDIUM WIND ZONE

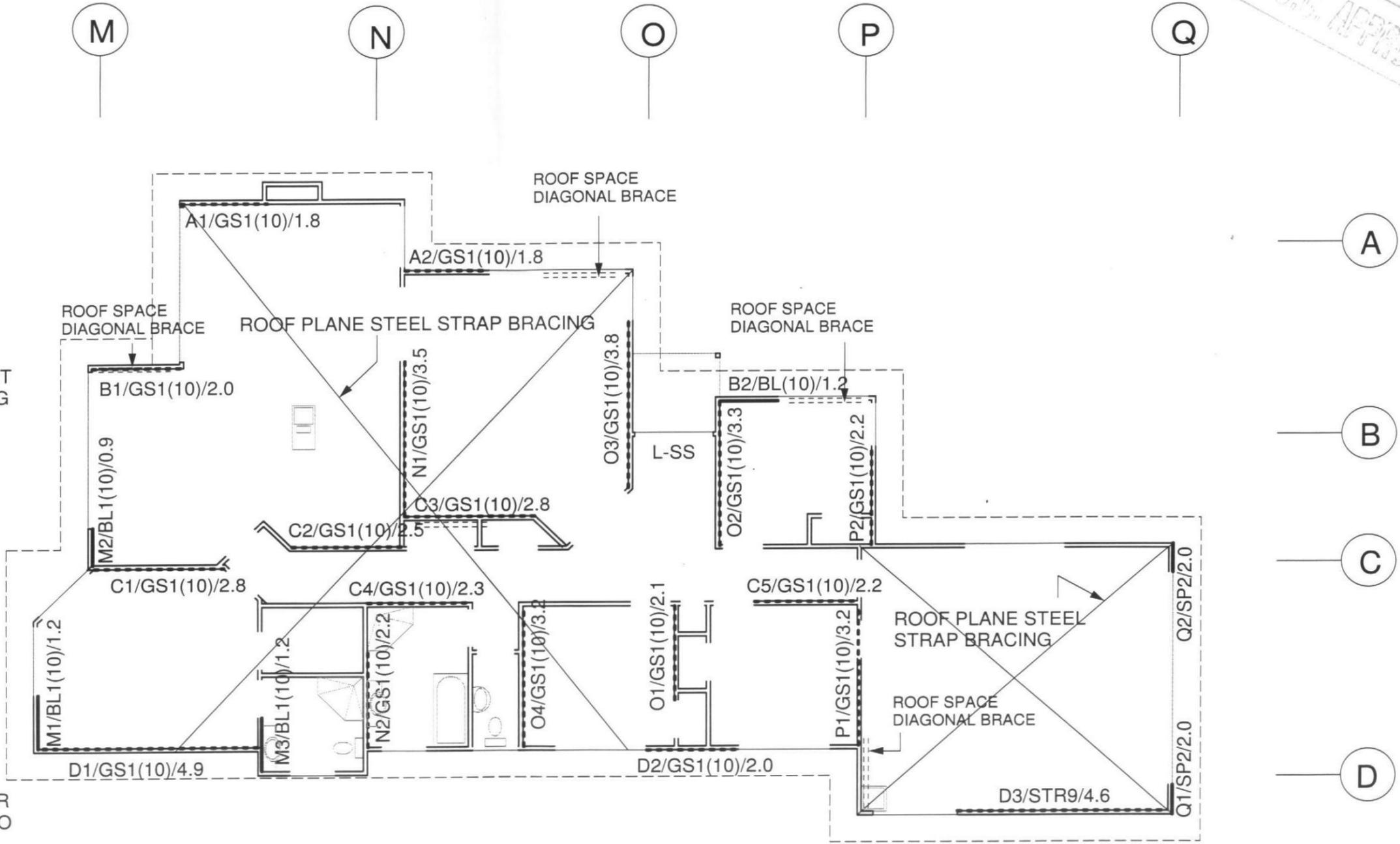
ALL BRACING TO BE CONTINUOUS FROM BOTTOM PLATE TO TOP PLATE

GARAGE WALL LINING TO BE STRANDBOARD. PNCC ACCEPTS STRANDBOARD AS AN ACCEPTABLE ALTERNATIVE TO GIB-BOARD FOR WALL BRACING PURPOSES.

STEEL ANGLE BRACES REQUIRE GIB BOARD WALL LININGS TO ACHIEVE BRACING UNITS QUOTED AND WILL NOT PROVIDE SUFFICIENT BRACING DURING PRELINE PERIOD OF CONSTRUCTION. CONTRACTOR WILL NEED TO MAKE PROVISION FOR ADDITIONAL TEMPORARY BRACING DURING THAT PERIOD.

IT IS ALSO RECOMMENDED THAT ALL FRAMES CAPABLE OF CONTAINING A STEEL ANGLE BRACE HAVE ONE, TO ENABLE THAT FRAME TO BE KEPT SQUARE WHILST STANDING AND PLUMBING FRAMES.

THE TRUSS MANUFACTURER MUST CONFIRM THE MINIMUM SIZE REQUIREMENT OF ALL BEAMS AND LINTELS SUPPORTING GIRDER TRUSS LOAD POINTS. NOTIFY DESIGNER, CONTRACTOR & WALL MANUFACTURER SHOULD ANY CHANGES BE EQUIRED TO BEAMS AND LINTEL SIZES SHOWN



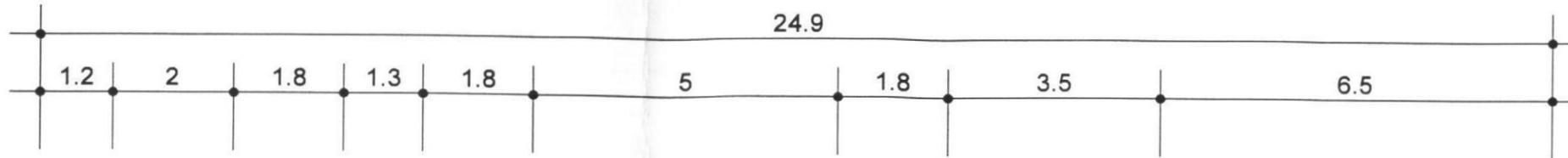
BRACING LEGEND

- GS1(10) 10mm GIB BOARD ONE SIDE
- GS2(10) 10mm GIB BOARD BOTH SIDES
- BL1(10) GIB BRACELINE ONE SIDE - HOLD DOWNS REQUIRED
- BLP GIB BRACELINE ONE SIDE WITH 7.5mm PLYWOOD ON THE OTHER - HOLD DOWNS REQUIRED
- BLG GIB BOARD ONE SIDE WITH BRACELINE ON THE OTHER - HOLD DOWNS REQUIRED
- STR9 STRANDBOARD WITH STEEL ANGLE BRACE
- SP2 7.5mm H3.2 PLYWOOD SHEET BRACING - HOLD DOWNS REQUIRED, NAILS AT 150mm CENTRES

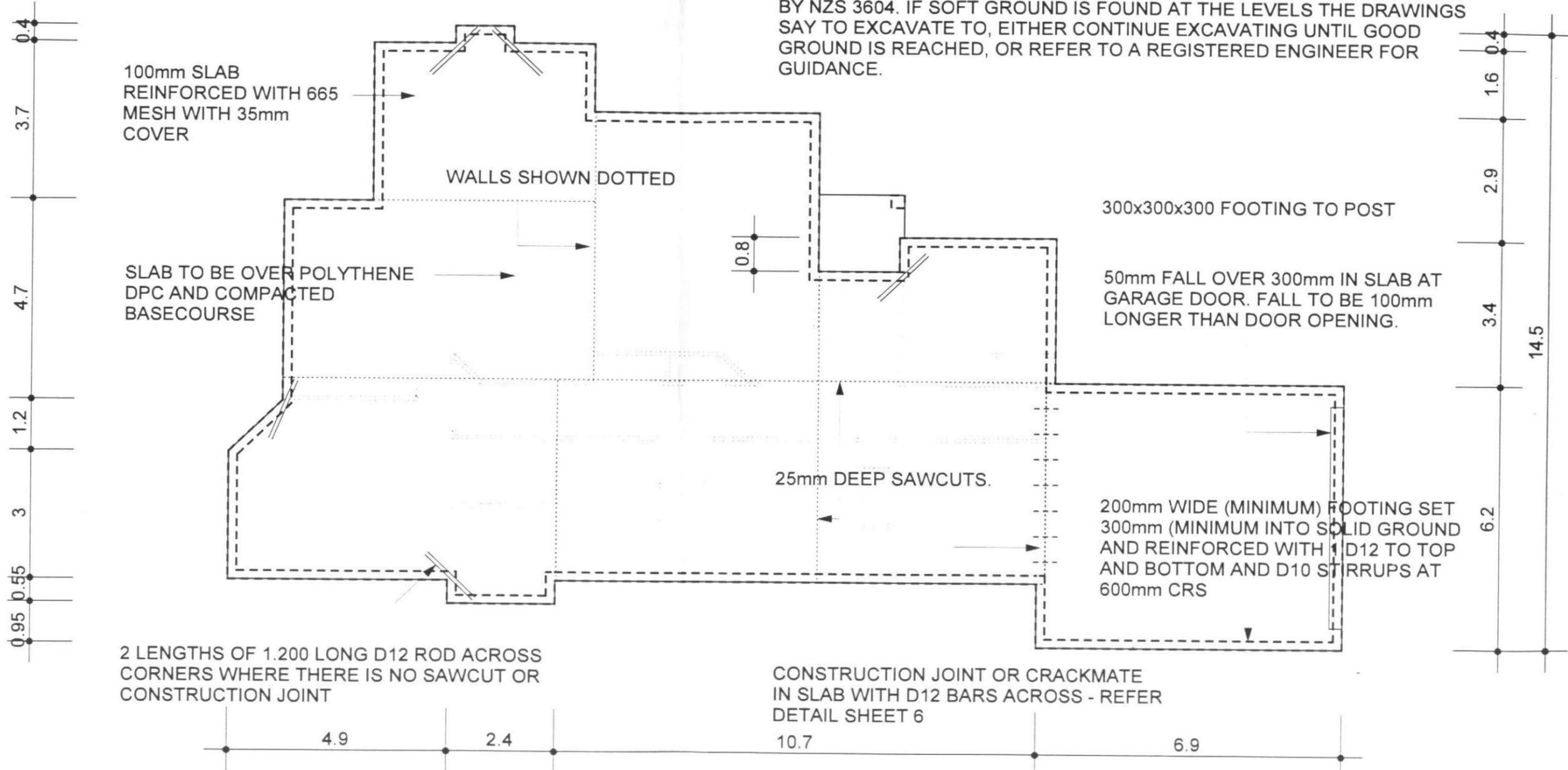
BRACING PLAN

FOUNDATION PLAN

P.M.C.C. APPROVED



NOTE: THIS FOUNDATION DESIGN ASSUMES "GOOD GROUND" AS DEFINED BY NZS 3604. IF SOFT GROUND IS FOUND AT THE LEVELS THE DRAWINGS SAY TO EXCAVATE TO, EITHER CONTINUE EXCAVATING UNTIL GOOD GROUND IS REACHED, OR REFER TO A REGISTERED ENGINEER FOR GUIDANCE.



2 LENGTHS OF 1.200 LONG D12 ROD ACROSS CORNERS WHERE THERE IS NO SAWCUT OR CONSTRUCTION JOINT

CONSTRUCTION JOINT OR CRACKMATE IN SLAB WITH D12 BARS ACROSS - REFER DETAIL SHEET 6

NOTE: ALL DIMENSIONS ARE TO FOUNDATION WALL FACE

WHERE SAWCUTS OR CONSTRUCTION JOINTS RUN PARALLEL WITH AND ALONGSIDE WALLS THEY ARE TO BE POSITIONED 10mm OUTSIDE THE LINE OF WALL FRAMING

STUDS TO ALL WALLS TO BE 90x45 AT 600mm CRS.
FOR MEDIUM WIND ZONE FIX LOAD BEARING STUDS
TO TOP PLATE WITH 2/100x3.75 SKEWED NAILS AND 1
WIRE DOG (OR 2.7 kN ALTERNATIVE FIXING)

CEILINGS TO BE EITHER 13mm GIB
ULTRALINE ON 75x40 BATTENS AT 600mm
MAX. CENTRES OR 10mm GIB ULTRALINE
AT 450mm MAX. CENTRES. ALL GIB TO BE
GLUE & SCREW FIXED

5 DEGREE ROOF PITCH.

P.V.C.B. APPROVED

75x50 PURLINS AT 900mm MAXIMUM CENTRES. FOR
MEDIUM WIND ZONES PURLIN FIXINGS TO EACH
ROOF PLANE PERIMETER, WITHIN 0.2 OF ROOF
PLANE WIDTH TO BE 2 100x3.75mm SKEWED NAILS
AND 1 WIRE DOG. ELSEWHERE PURLINS TO BE FIXED
WITH 2 100x3.75mm SKEWED NAILS OR 2 90x3.15
POWER DRIVEN NAILS

GANG NAIL ROOF TRUSSES
AT 900mm MAXIMUM CENTRES.
REFER TRUSS MANUFACTURERS
DRAWINGS.

ZINCALUM 1/4 ROUND SPOUTING

MC700 ROOFING, OVER PAPER
NETTING AND 75x50 PURLINS
AT 900mm MAX. CENTRES

HARDIES TITAN BOARD OVER
CLD STRUCTURAL CAVITY
BATTENS AND BUILDING WRAP

4.5mm HARDIFLEX
SOFFITS

ex75x40 CEILING BATTENS

TITAN SHEATHING

LINTELS ON DOUBLE STUD
SUPPORTS AS PER PLAN ON
SHEET 13

ex40mm RIBBON PLATES
ABOVE ALL WALLS

LIVING

DINING

BEDROOM 1

100mm SLAB REINFORCED WITH
665 MESH WITH 35mm COVER

10mm GIB WALL LININGS
(GENERALLY) GLUE &
SCREW FIXED

FINISHED FLOOR LEVEL TO BE
NOT LESS THAN 225mm
ABOVE FINISHED GROUND LEVEL

EXCAVATE TURF AND TOP-
SOIL FROM BELOW SLAB

0.25 MICRON POLYTHENE DPC
BELOW SLAB

PEA METAL OR COMPACTED
HARDFILL BELOW SLAB

SLAB THICKENING BELOW LOAD
BEARING INTERNAL WALLS TO 200mm
FOR 300mm WIDE. REIN WITH 2 D12 AND D10
STIRRUPS AT 600mm CENTRES.

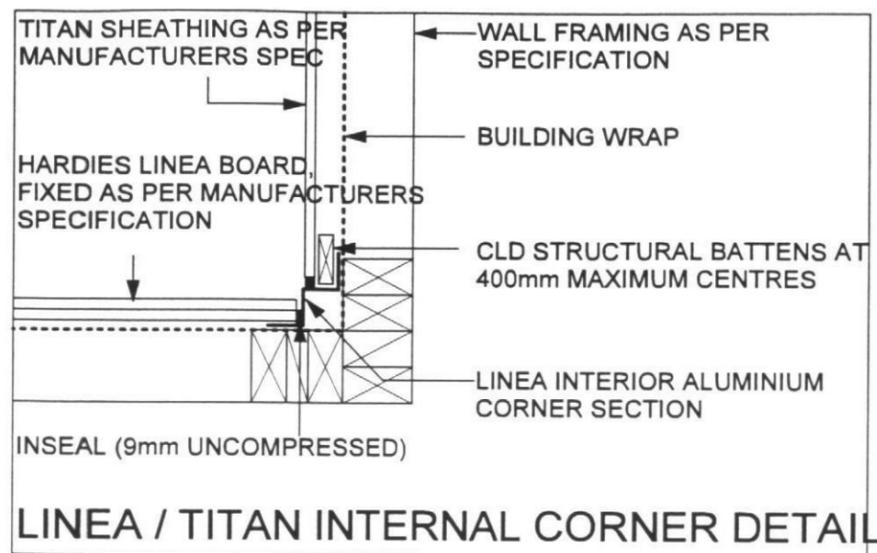
FIX BOTTOM PLATES TO EXTERIOR WALLS WITH LUMBERLOK
BOTTOM PLATE ANCHORS AND RAMSET 75mm PINS AT 900mm
MAX. CENTRES AND AT NOT MORE THAN 150mm FROM EACH END.
ALTERNATIVELY 150x12mm HILTI HSA STUD ANCHORS AT 900mm
MAX. CENTRES MAY BE USED. ALL HILTI STUD ANCHORS SHALL
HAVE 50x50x3mm SQUARE WASHERS.

FOR FOUNDATION WALLS UP TO MAXIMUM HEIGHT OF 600mm
PROVIDE 200mm WIDE (MINIMUM) FOOTING SET 300mm
(MINIMUM) INTO SOLID GROUND AND REINFORCED WITH 1 D12
TO TOP AND BOTTOM, AND WITH D10 STIRRUPS AT 600mm
CRS LAPPED 600 INTO SLAB.

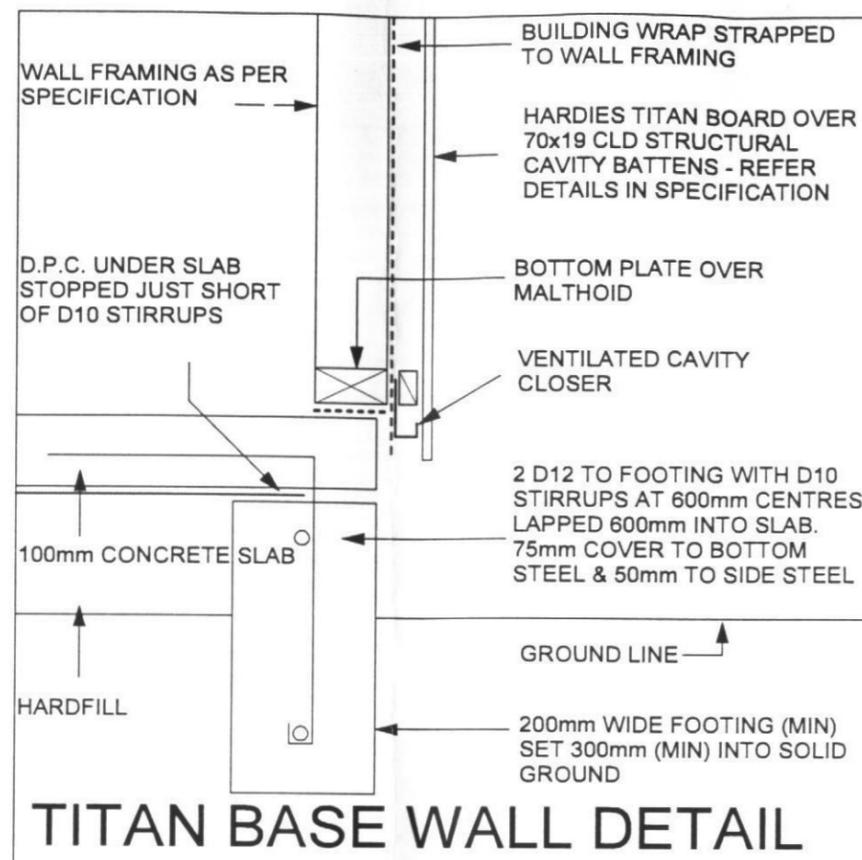
CROSS SECTION

PROPOSED HOUSE, 7 GALEA GROVE (LOT 53), PALM. NORTH
FOR JAPAC DEVELOPMENTS LIMITED

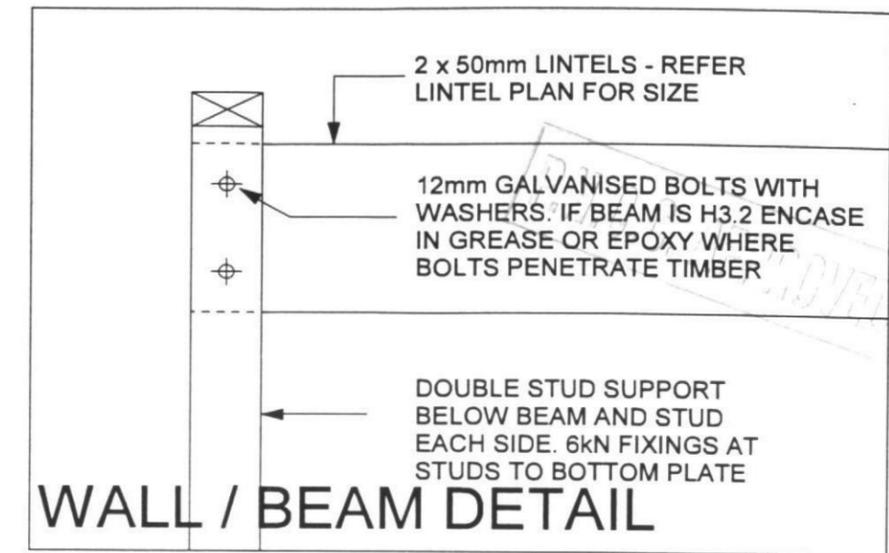
JUNE 2009



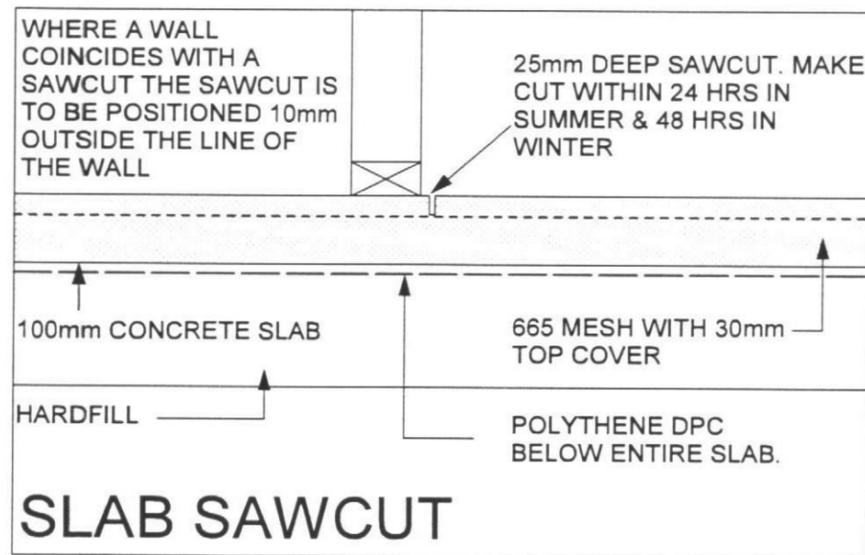
LINEA / TITAN INTERNAL CORNER DETAIL



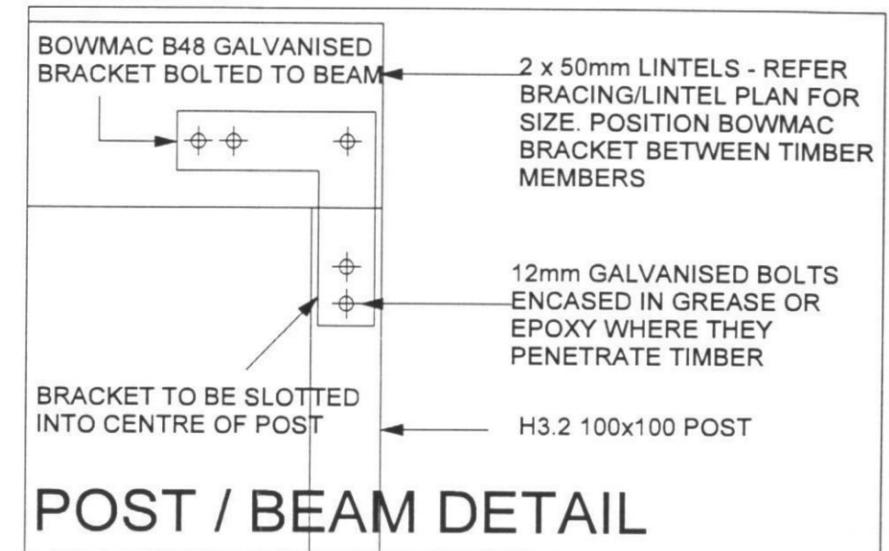
TITAN BASE WALL DETAIL



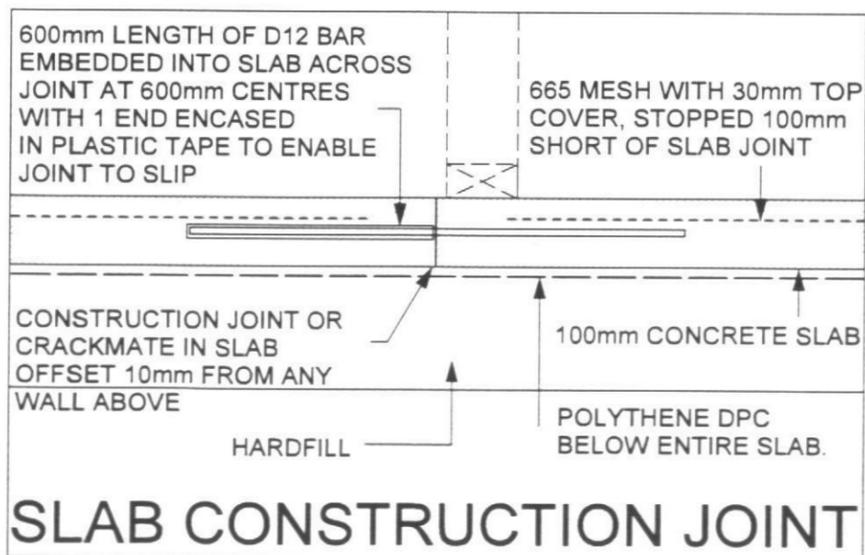
WALL / BEAM DETAIL



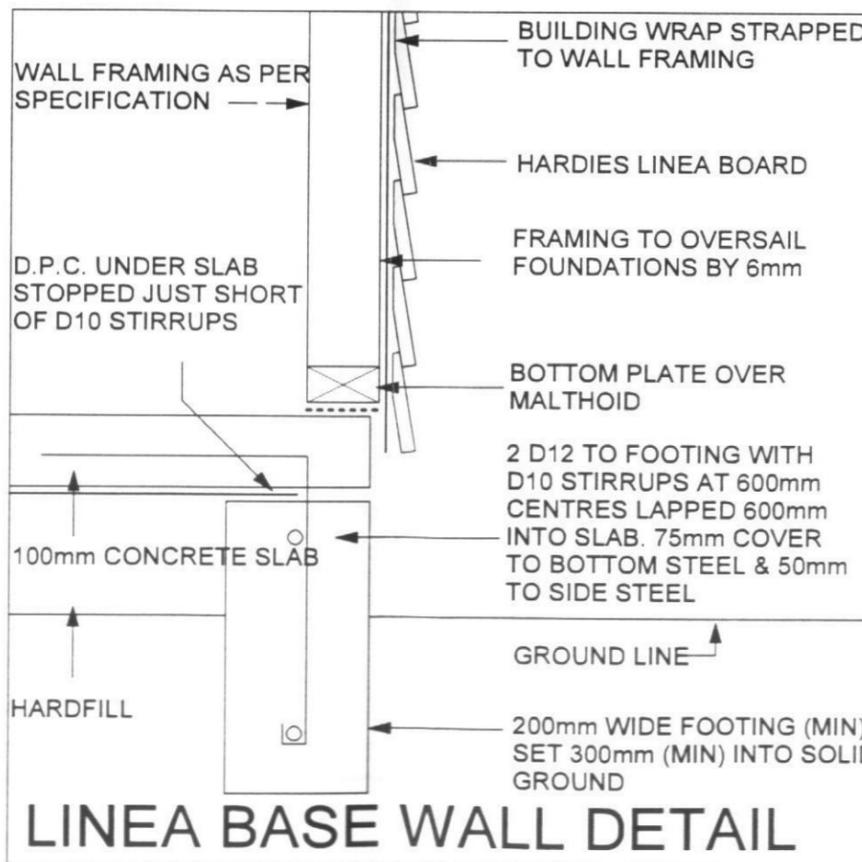
SLAB SAWCUT



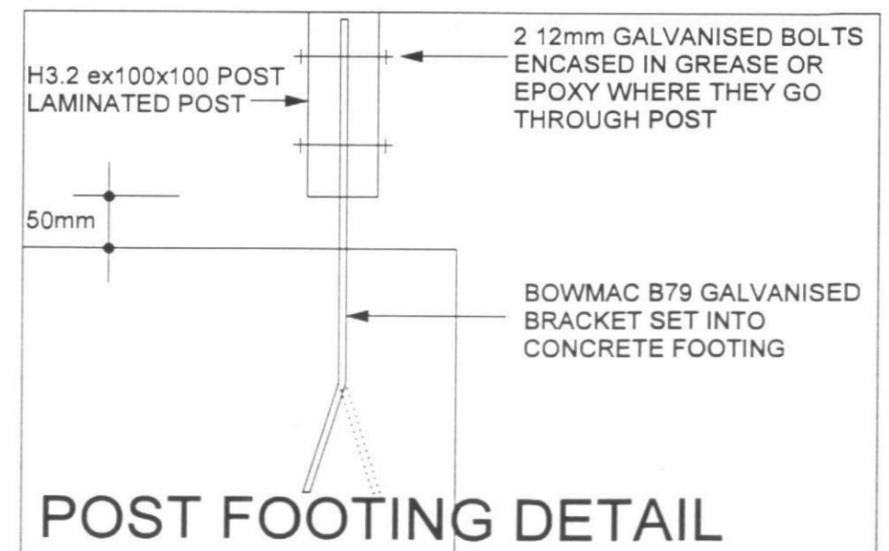
POST / BEAM DETAIL



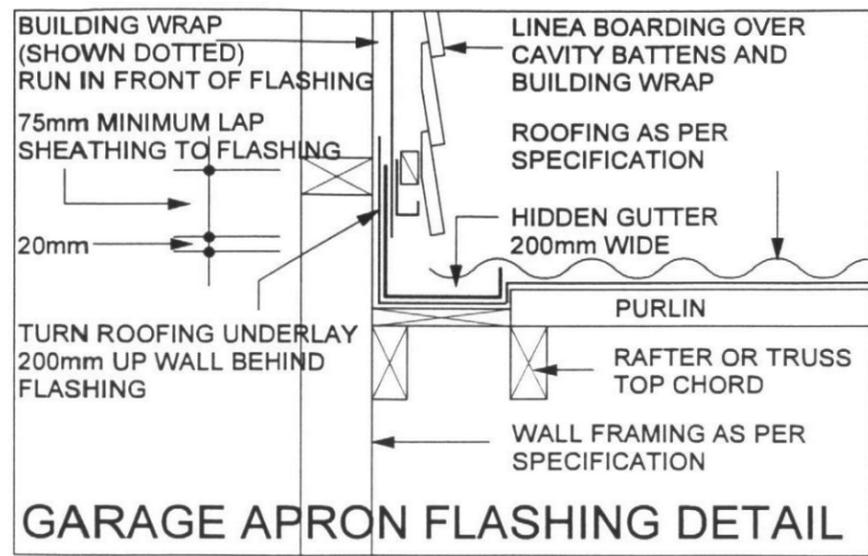
SLAB CONSTRUCTION JOINT



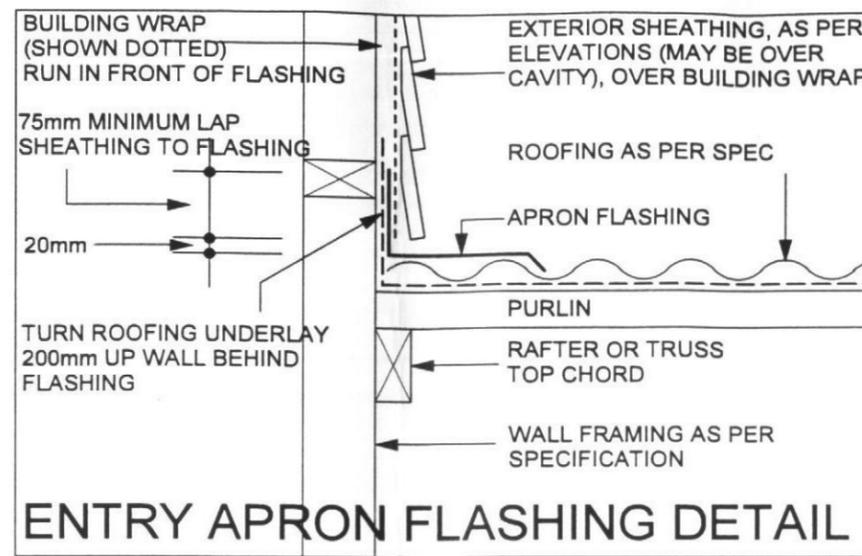
LINEA BASE WALL DETAIL



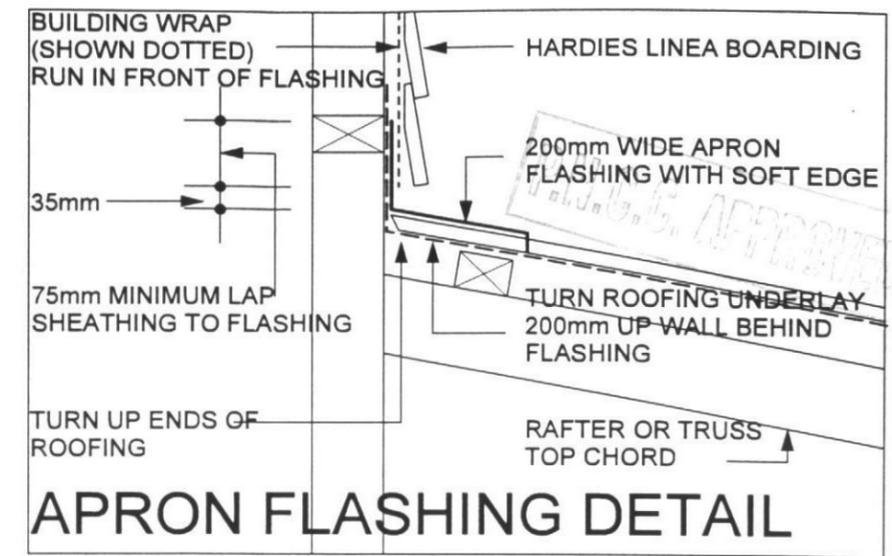
POST FOOTING DETAIL



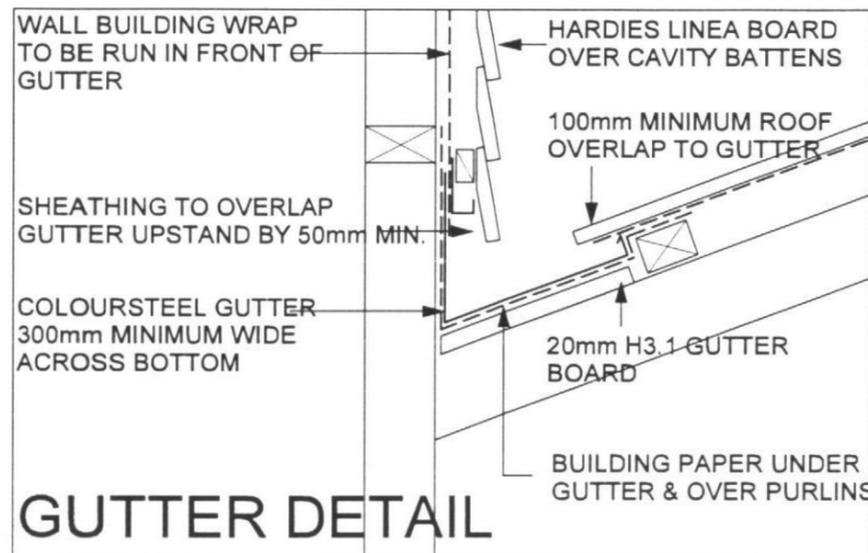
GARAGE APRON FLASHING DETAIL



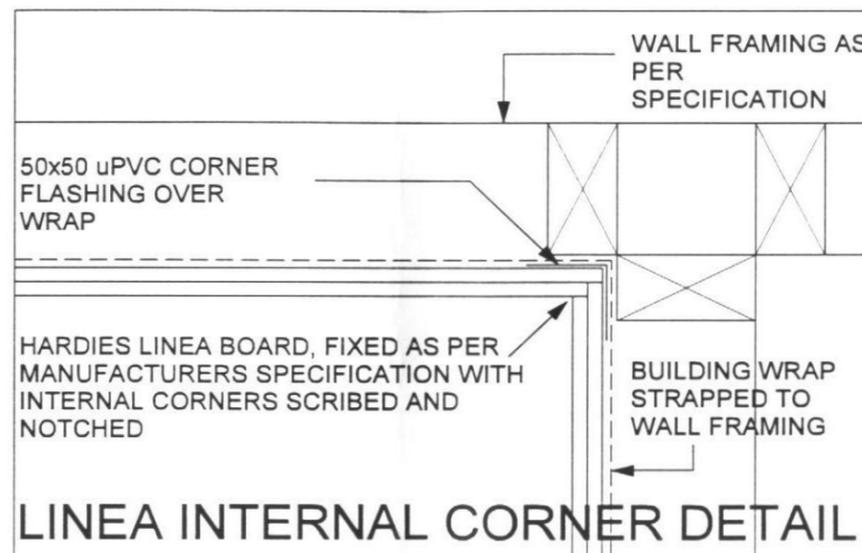
ENTRY APRON FLASHING DETAIL



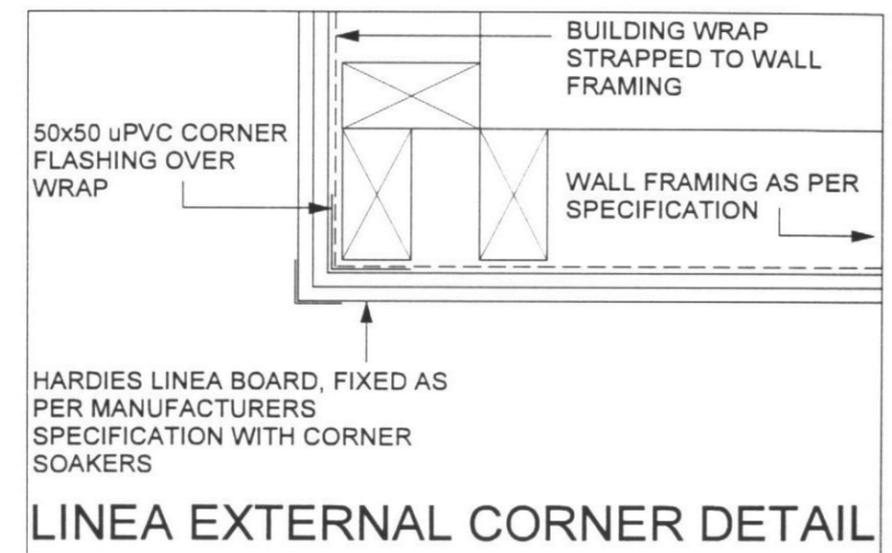
APRON FLASHING DETAIL



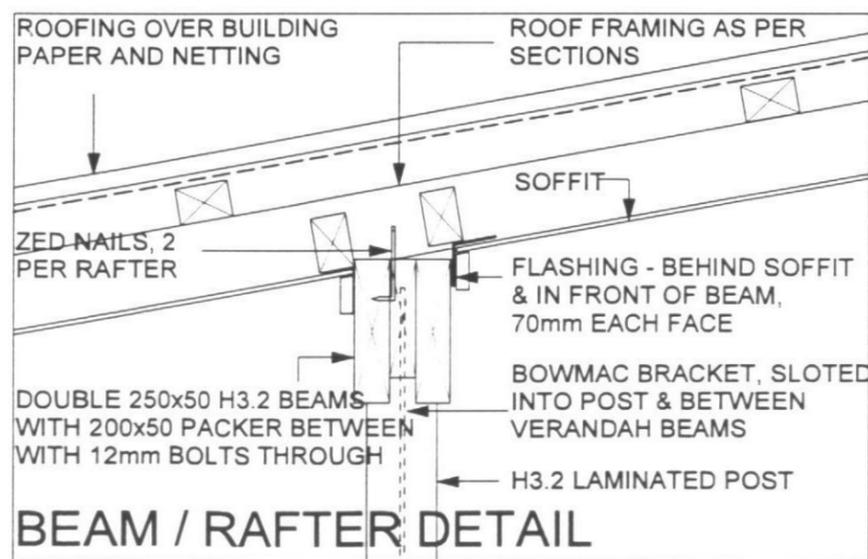
GUTTER DETAIL



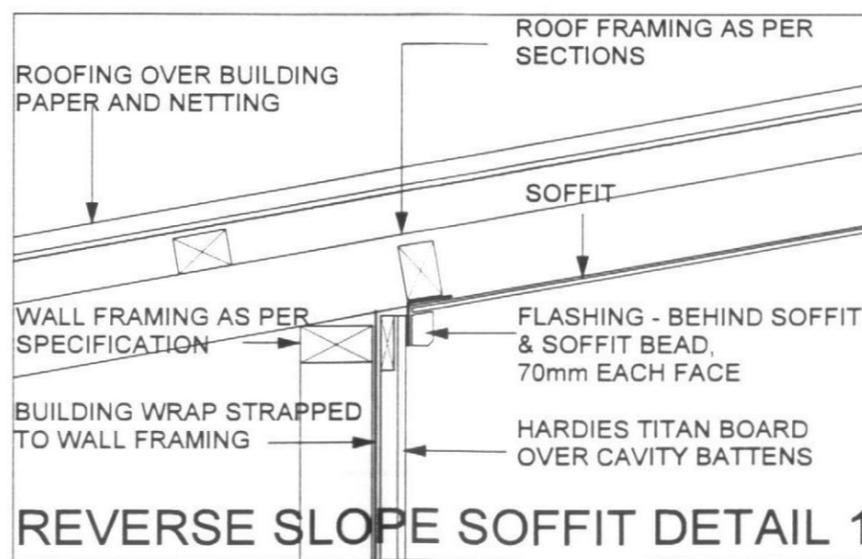
LINEA INTERNAL CORNER DETAIL



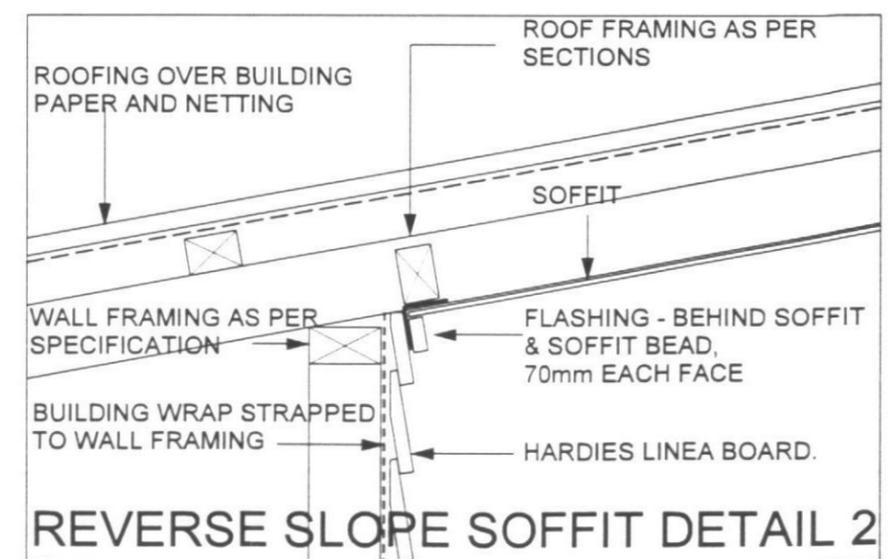
LINEA EXTERNAL CORNER DETAIL



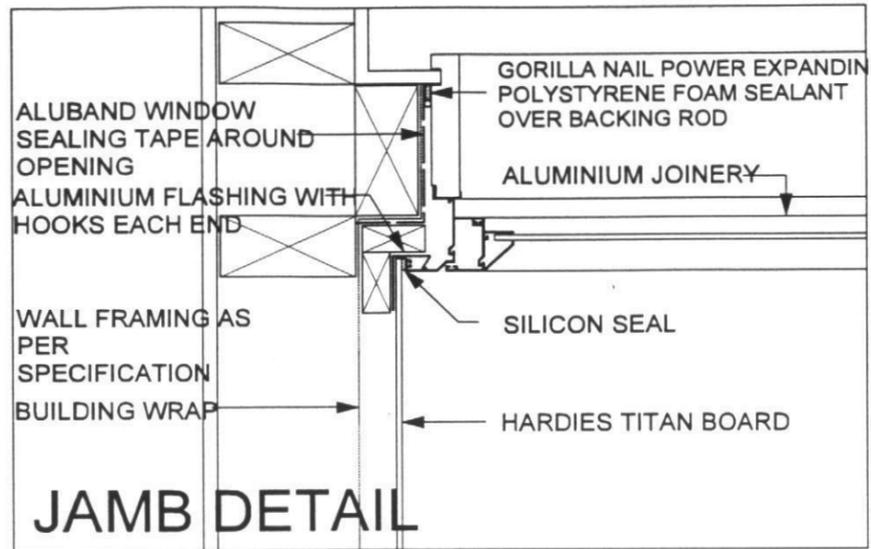
BEAM / RAFTER DETAIL



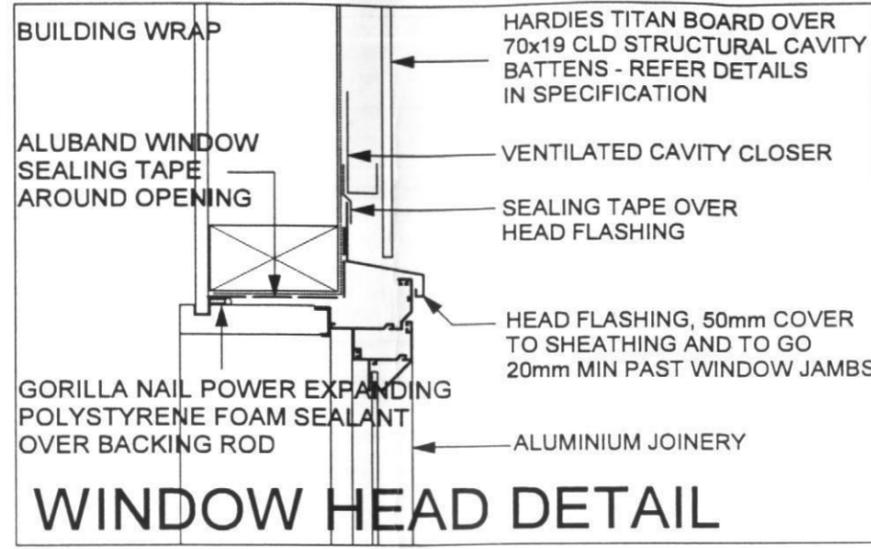
REVERSE SLOPE SOFFIT DETAIL 1



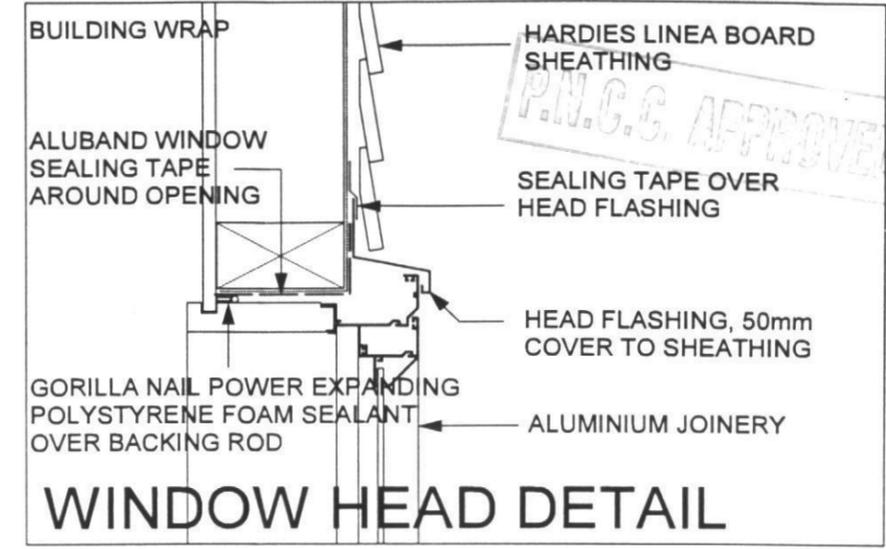
REVERSE SLOPE SOFFIT DETAIL 2



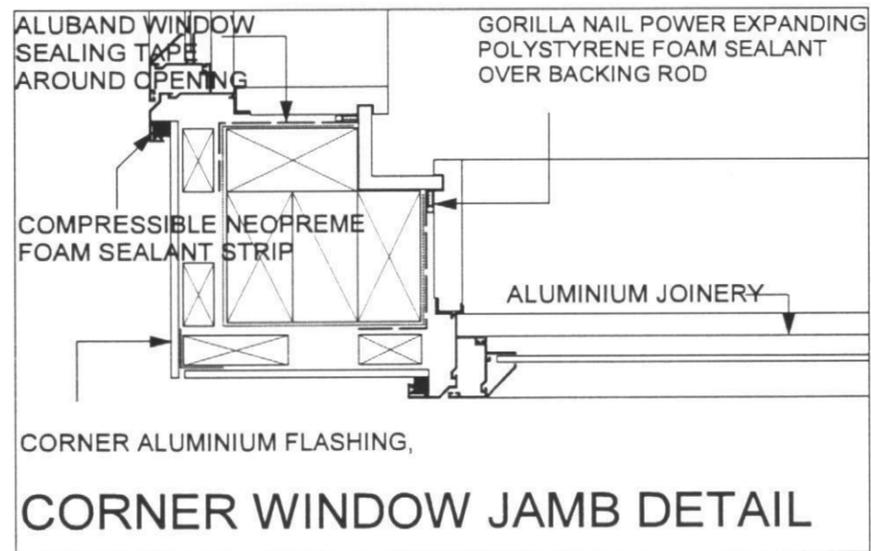
JAMB DETAIL



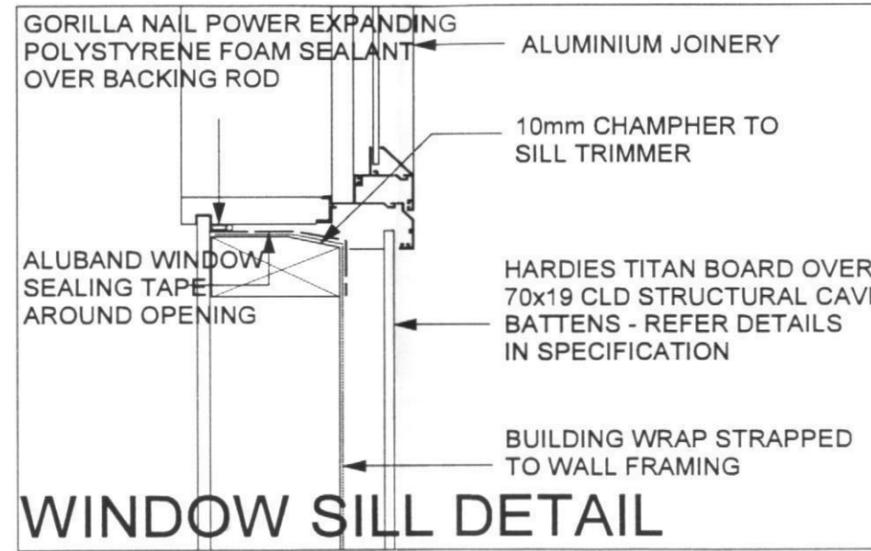
WINDOW HEAD DETAIL



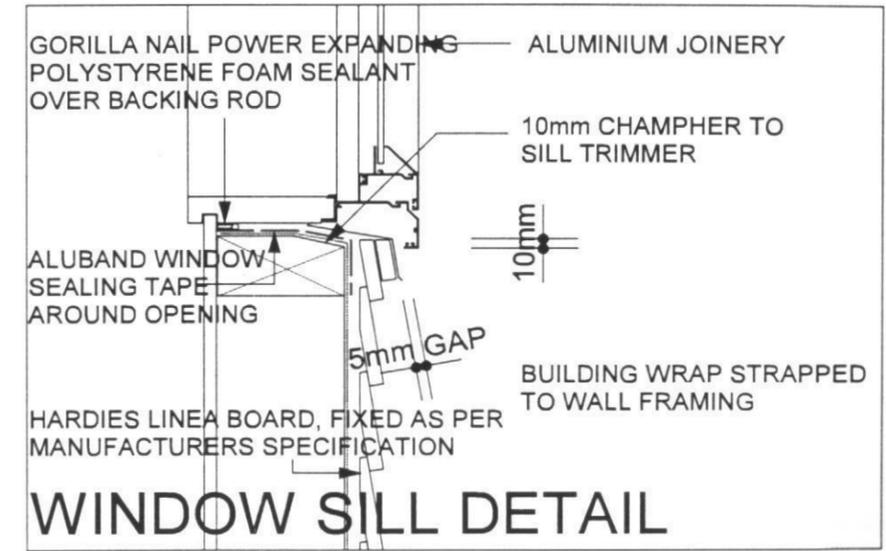
WINDOW HEAD DETAIL



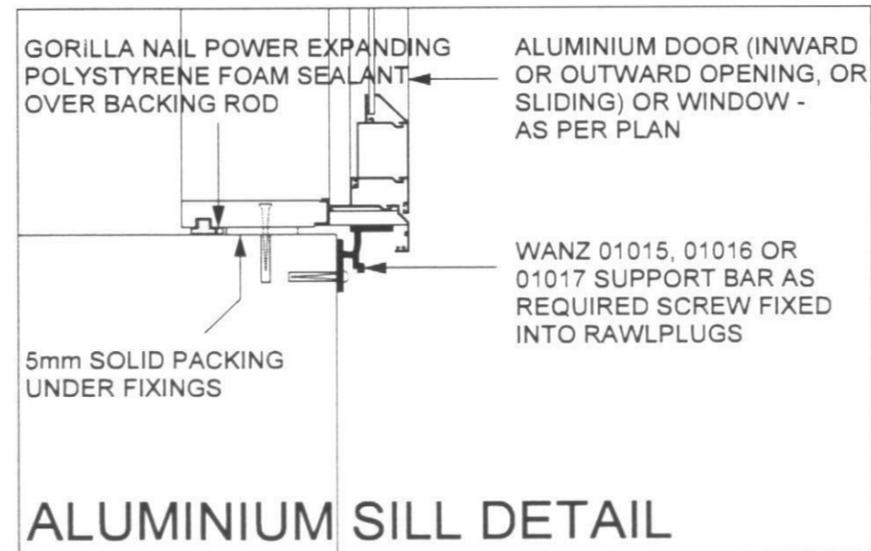
CORNER WINDOW JAMB DETAIL



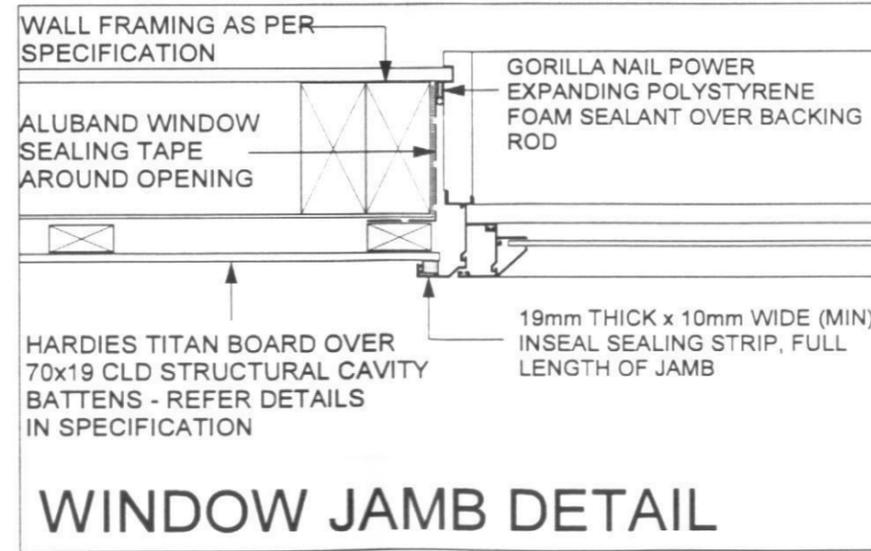
WINDOW SILL DETAIL



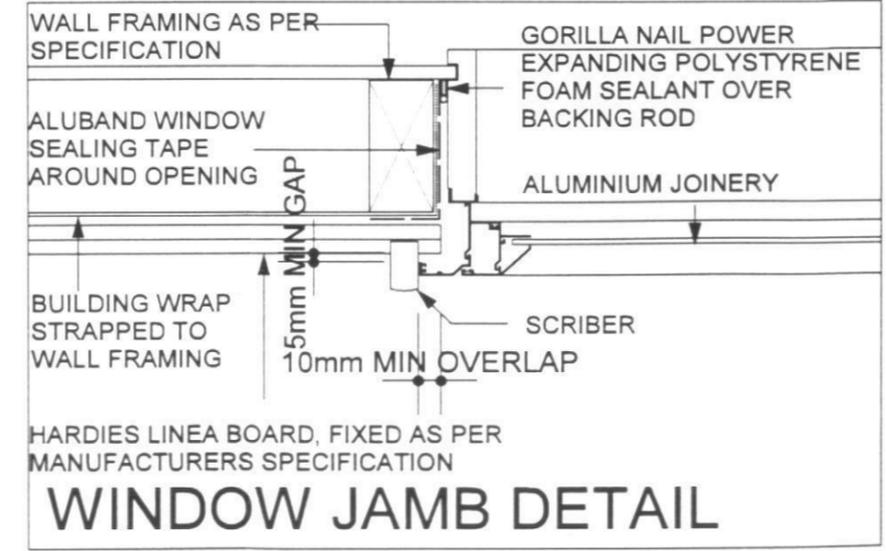
WINDOW SILL DETAIL



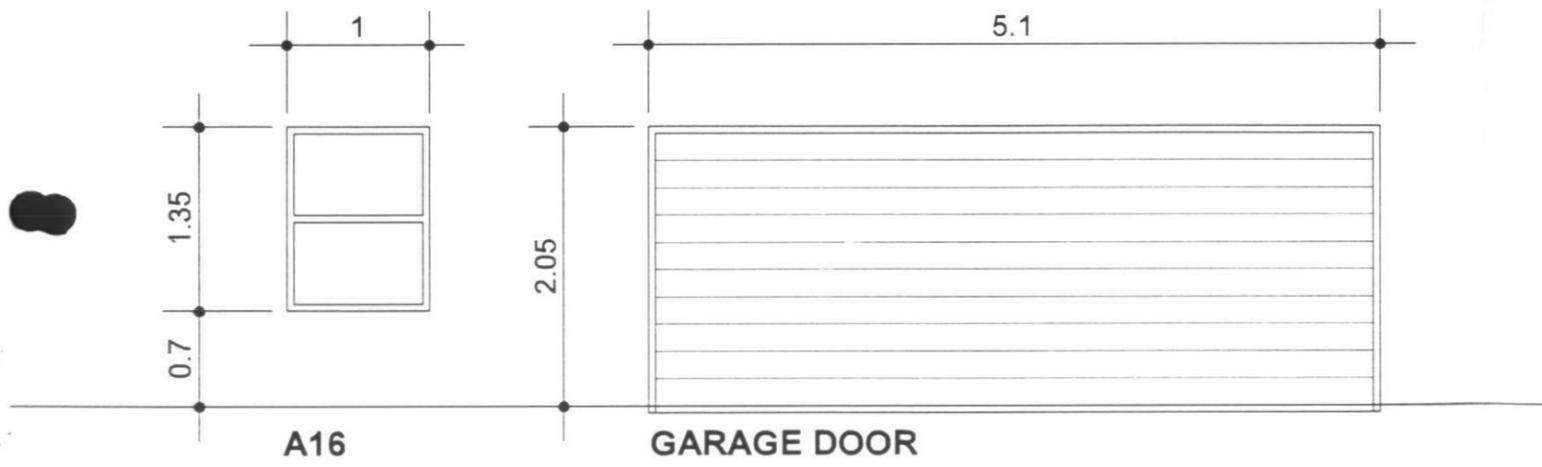
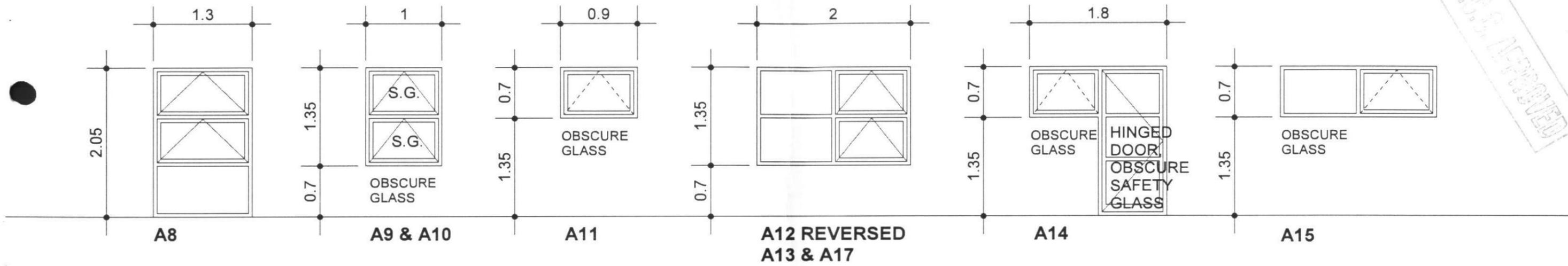
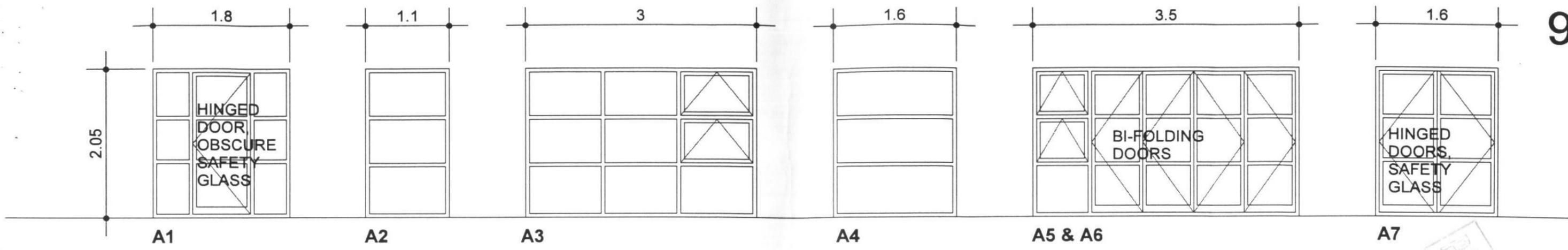
ALUMINIUM SILL DETAIL



WINDOW JAMB DETAIL



WINDOW JAMB DETAIL



ALL DIMENSIONS ARE NOMINAL ONLY & OVER JAMB LINERS.
 VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING MANUFACTURE
 ALL GLASS TO COMPLY WITH NZ REGULATIONS. S.G. INDICATES SAFETY GLASS.
 GLASS TO ALL DOORS SHALL BE NOT LESS THAN 5mm AND PANES GREATER THAN 0.5 SQ.M
 TO HINGED DOORS SHALL HAVE SAFETY GLASS
 ALL BATHROOM AND ENSUITE GLASS LESS THAN 1.500 FROM FLOOR TO BE SAFETY GLASS.
 ALL WINDOW SASHES TO BE AWNING HUNG OR CASEMENT AS SHOWN & HAVE 2 DOUBLE
 TONGUE CATCHES
 NOTE: WHERE ALLOWED BY THE REGULATIONS, LAMINATED GLASS IS AN ACCEPTABLE
 ALTERNATIVE TO SAFETY GLASS
 WHERE REQUIRED JOINERY TO COME SUPPLIED WITH SUPPORT BRACKETS.
 ALL UNITS TO BE DOUBLE GLAZED EXCEPT FOR UNITS A14 & A15

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EXTERIOR JOINERY SCHEDULE

NOTE: PLUMBING WASTES TO BE RUN TO AS/NZS 3500 MINIMUM FIXTURE WASTES TO BE AS FOLLOWS:
 W.C. AND BATHROOM GROUPING - 80mm AT 1:60 GRADIENT.
 BATH, TUB, SHOWER & SINK - 50mm AT 1:40 GRADIENT
 WASH BASIN - 40mm AT 1:20 GRADIENT.
 ALL WASTES UNDER SLAB THAT DISCHARGE INTO THE MAIN DRAIN ARE TO BE A MINIMUM OF 65mm DIAMETER AT 1 IN 40 GRADIENT.

NOTE TO DRAINAGE CONTRACTOR ON SITE:
 GENERALLY 90mm STORMWATER DRAINS TO HAVE A MINIMUM FALL OF 1 IN 80 AND DRAIN A MAXIMUM AREA OF 150 SQ.M.
 100mm DRAINS TO HAVE A MINIMUM FALL OF 1 IN 80 AND DRAIN A MAXIMUM AREA OF 225 SQ.M.
 WHERE THE AREA IS GREATER THAN THAT NOTED ABOVE OR THE FALL IS LESS REFER TO E1/AS1 ACCEPTABLE SOLUTIONS FIGURE 3 "SIZING OF SURFACE WATER DRAINS" AND ADJUST THE DRAIN SIZE OR FALL ACCORDINGLY

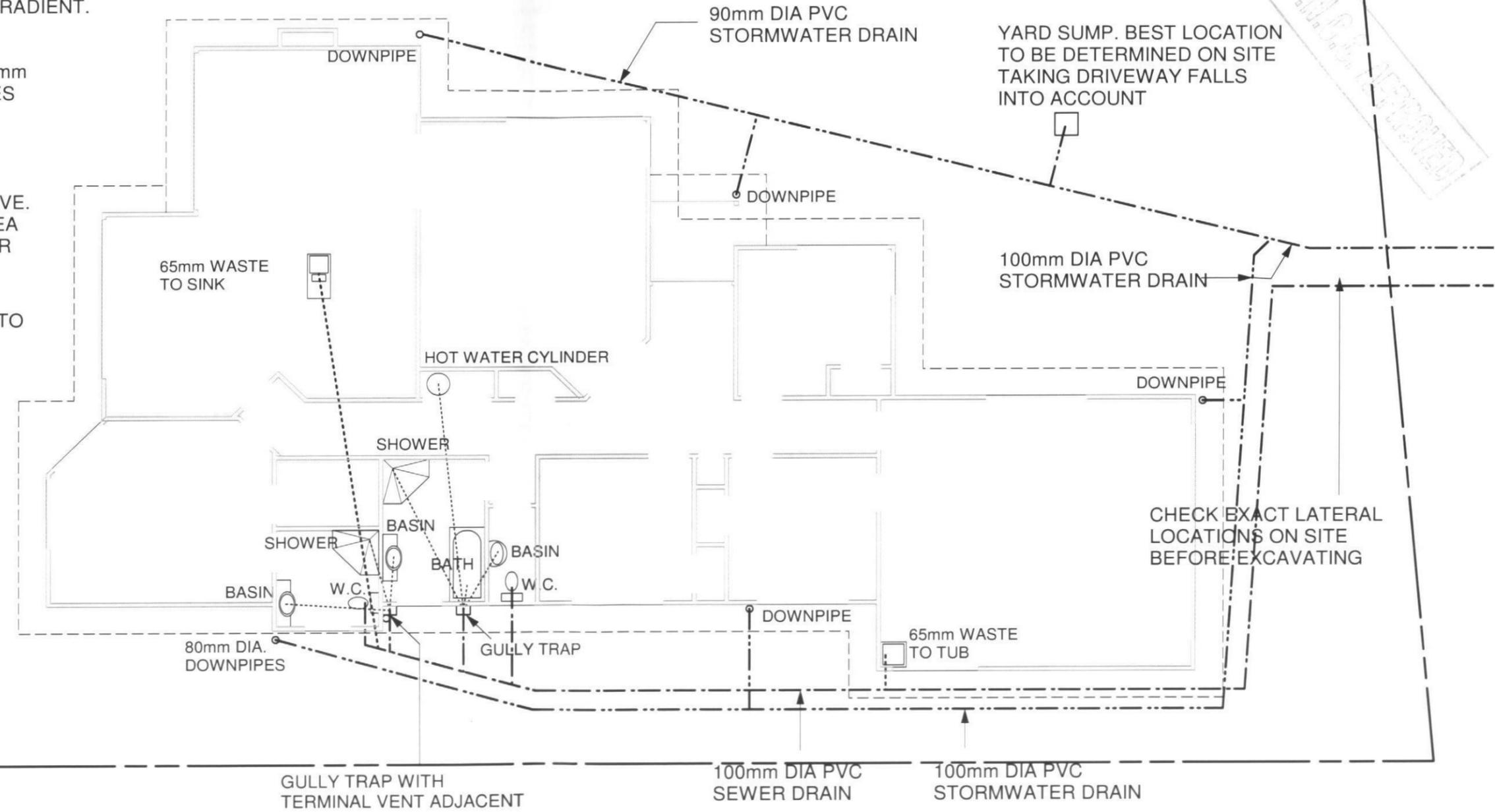
NOTE: ALL WATER PIPES TO BE POLYBUTYLENE. GENERALLY 20mm DIAMETER WITH 15mm BRANCHES TO INDIVIDUAL FITTINGS.

HOT WATER CYLINDER TO BE RETAINED WITH STEEL STRAP AND TO HAVE A TEMPERING VALVE. ALL DRAINS TO BE BEDDED IN PEA METAL OR APPROVED GRANULAR FILL

INSULATE HWC AND PIPEWORK TO COMPLY WITH INSULATION REQUIREMENTS OF H1

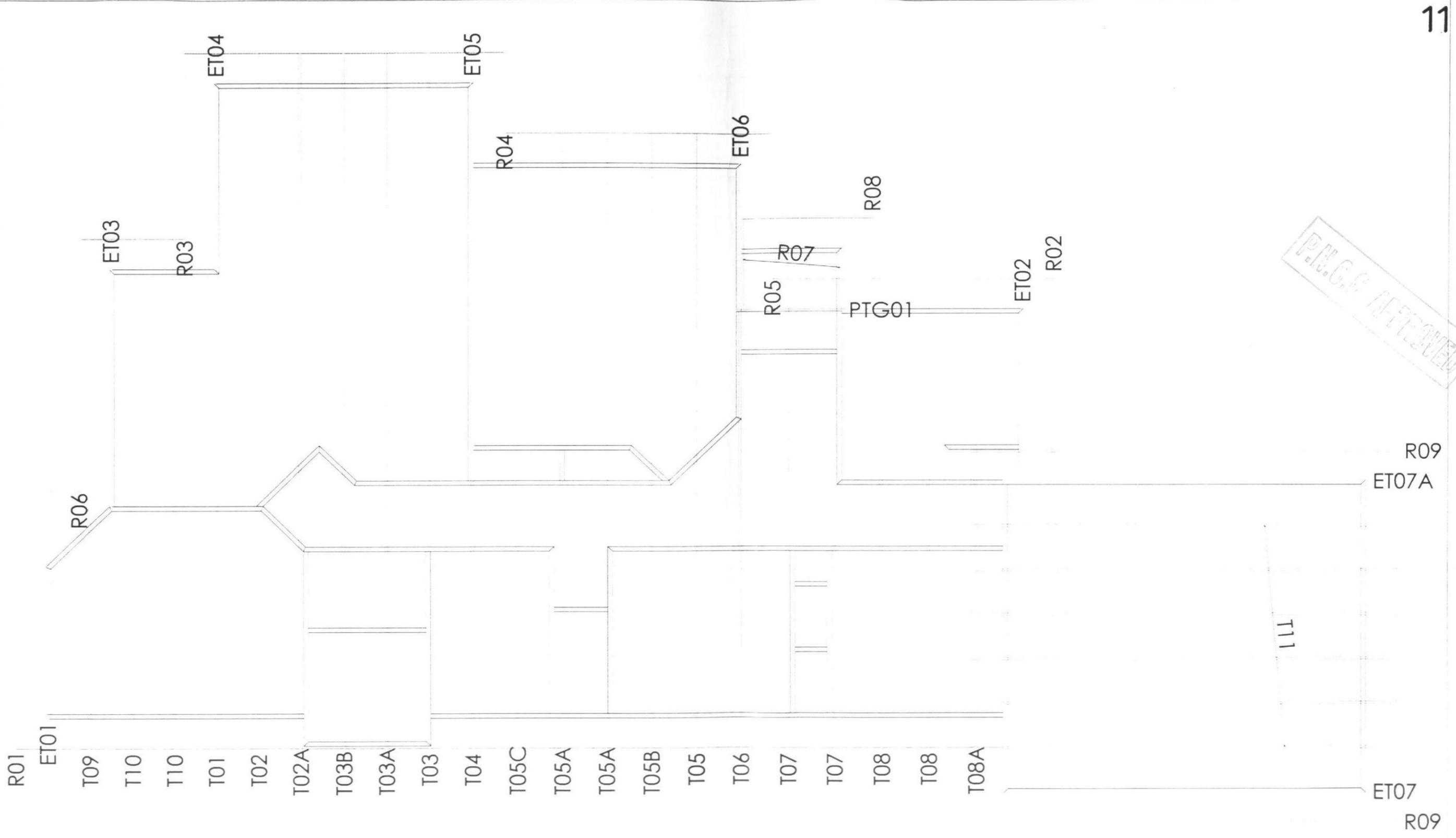
RECEIVED
 E/1 DEPT
 DATE 14/7/09
 18059

P.M.P. DEVELOPMENTS



DRAINAGE PLAN

PROPOSED HOUSE, 7 GALEA GROVE (LOT 53), PALM. NORTH
 FOR JAPAC DEVELOPMENTS LIMITED JUNE 2009



P.N.G. REVIEWED

MANAWATU BUILDING CENTRE
 Telephone: (06) 359 2474
 Fax: (06) 359 2473 EMAIL: trussman@tra.co.nz

Site Address
 Japac Developments Ltd.
 (Lot 53) 7 Galea Grove
 Palmerston North

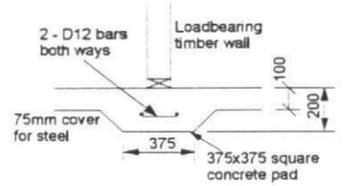
Sheet Title
**For Building Consent
 Buildable Truss Layout**
 Date: 15 Jun 2009 Drawn: Administrator
 Scale: N.T.S. System: MiTek 20/20

Job Details
 Roof Pitch : 5.0 Deg
 Roof Material : Light
 Ceiling Material : Standard
 Wind Zone : Medium
 Roof Snow Load : 0.000 kPa

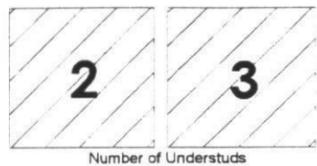
Truss Centres : 900 mm
 Roof Live Load : 0.250 kPa
 Floor Live Load : kPa
 Wind Speed : 37 m/s

PrimeCad v4.5.149
 Job Title: **MiTek** J90617
 Sheet: 1
 Revision Number

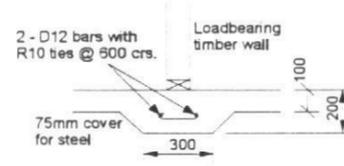
Slab Thickening Details



TYPE FP1 - 375x375mm Pad



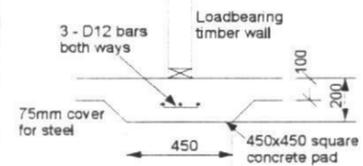
Number of Understuds



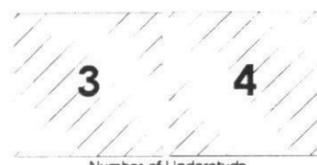
TYPE FS1 - 300mm Strip footing



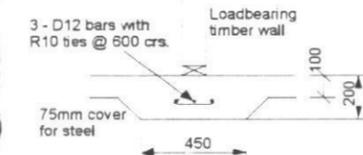
Number of Understuds



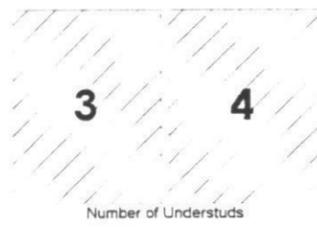
TYPE FP2 - 450x450mm Pad



Number of Understuds

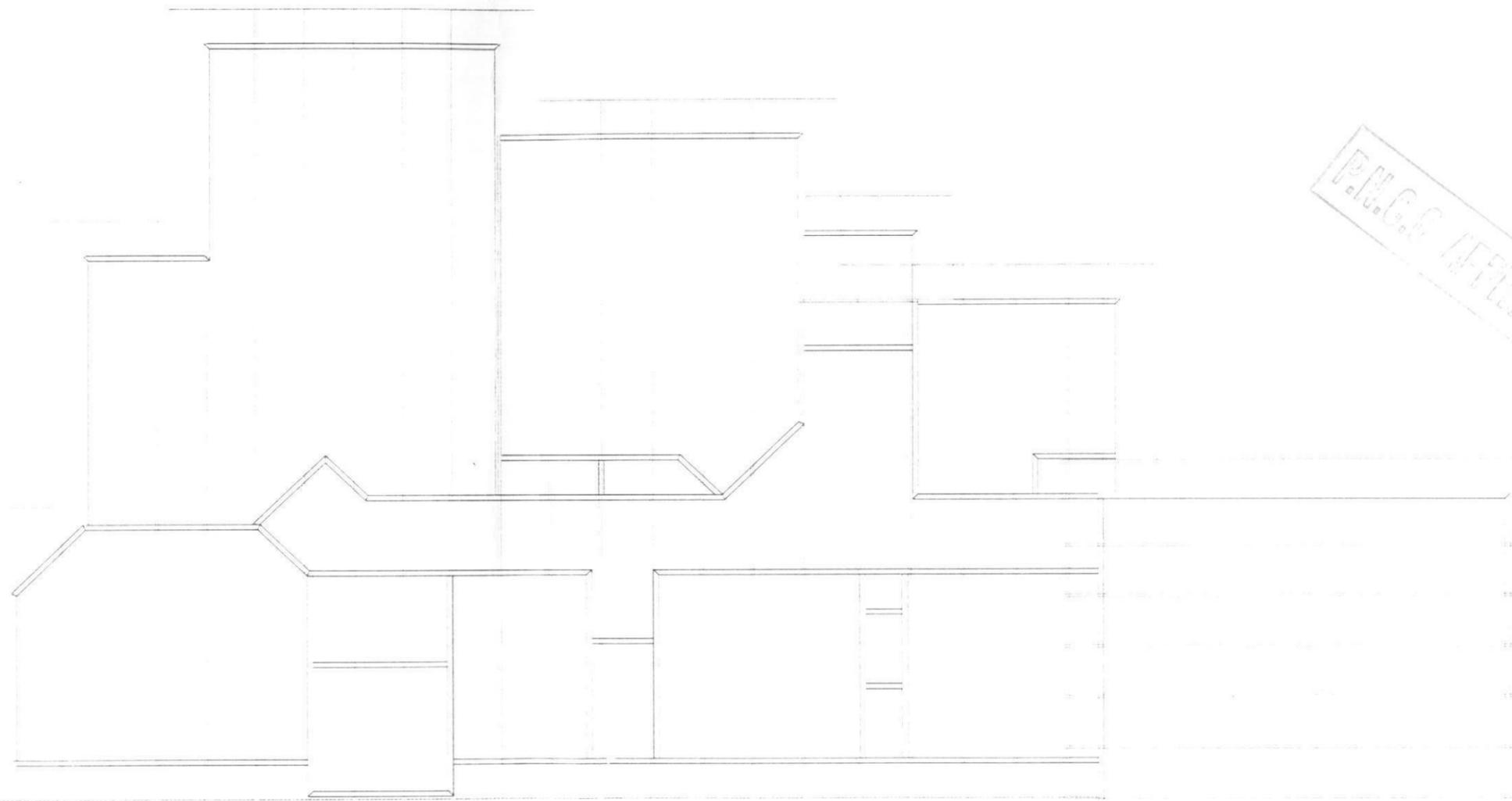


TYPE FS2 - 450mm Strip footing



Number of Understuds

NOTES:
 The numbers found within the hatched area is the number of studs required below each truss. Refer to: GANG-NAIL Internal Load Bearing on Concrete Floor Slabs brochure 12/2006



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NO SLAB THICKENING REQUIRED

MANAWATU BUILDING CENTRE
 Telephone: (06) 359 2474
 Fax: (06) 359 2473 EMAIL: trussman@xtra.co.nz

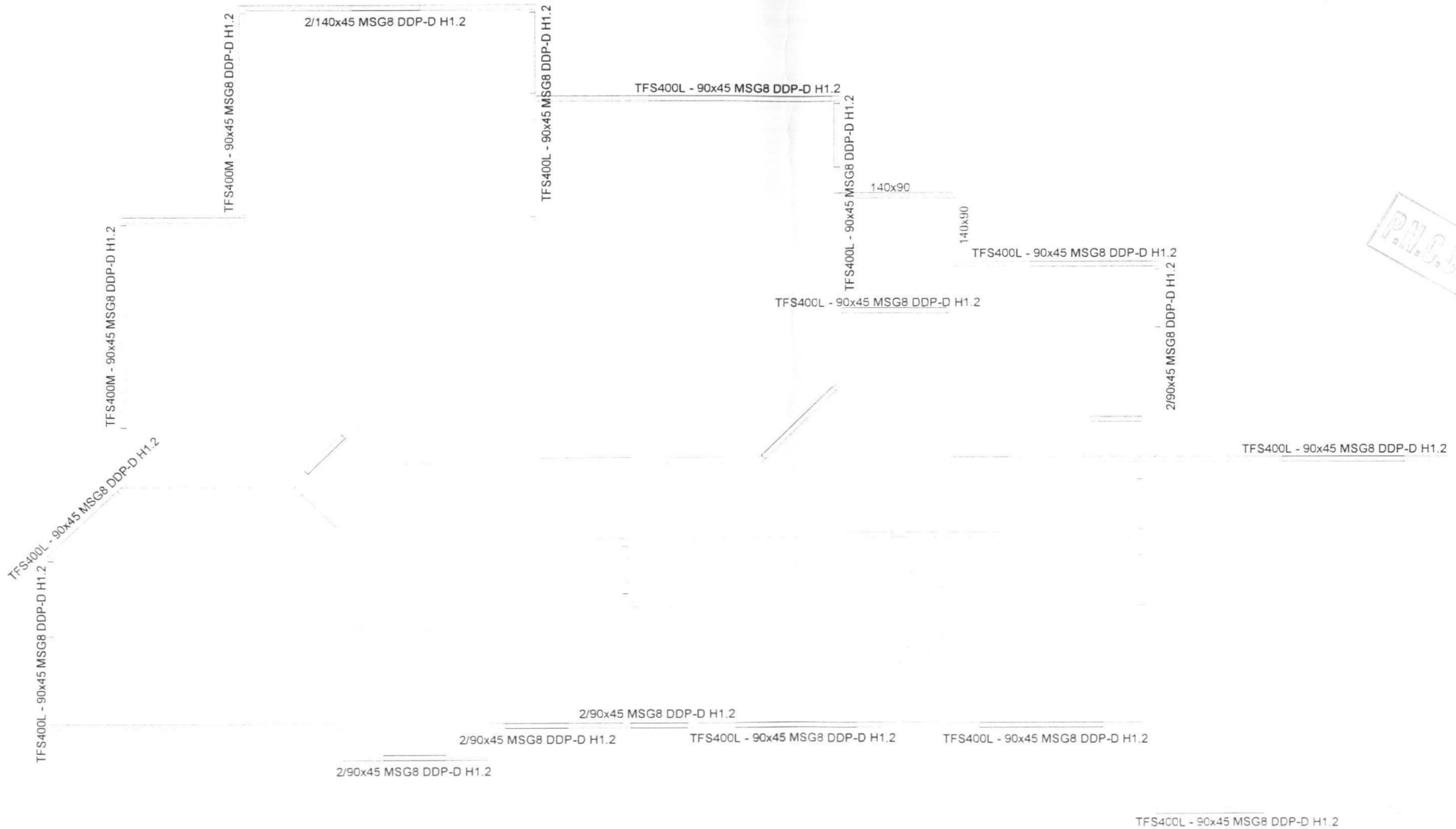
Site Address
 Japac Developments Ltd.
 (Lot 53) 7 Galea Grove
 Palmerston North

Sheet Title
**For Building Consent
 Slab Thickening**
 Date 15 Jun. 2009 Drawn Administrator
 Scale N.T.S. System MiTek 20/20

Job Details
 Roof Pitch : 5.0 Deg
 Roof Material : Light
 Ceiling Material : Standard
 Wind Zone : Medium
 Roof Snow Load : 0.000 kPa

Truss Centres : 900 mm
 Roof Live Load : 0.250 kPa
 Floor Live Load : kPa
 Wind Speed : 37 m/s

PrimeCad v4.5.149
 Job Title
MiTek J90617
 Sheet
 2
 Revision Number



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1/315x90 GL12 GLU-D H3.2



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 EMAIL: trussman@xtra.co.nz

Site Address
 Japac Developments Ltd.
 (Lot 53) 7 Galea Grove
 Palmerston North

Sheet Title
**For Building Consent
 Lintel Schedule**

Date: 15 Jun. 2009
 Drawn: Administrator
 Scale: N.T.S.
 System: MiTek 20/20

Job Details
 Roof Pitch : 5.0 Deg
 Roof Material : Light
 Ceiling Material : Standard
 Wind Zone : Medium
 Roof Snow Load : 0.000 kPa

Truss Centres : 900 mm
 Roof Live Load : 0.250kPa
 Floor Live Load : kPa
 Wind Speed : 37 m/s

PrimeCad v4.5.149

MiTek Job Title
J90617
 Sheet
3
 Revision Number

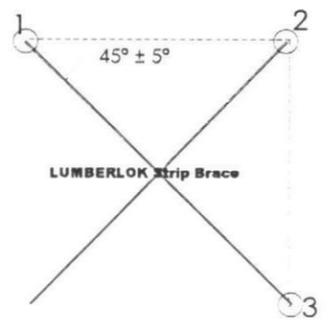
Truss Fixings

-  D - Pair of LUMBERLOK Wire Dogs
-  X - LUMBERLOK JH47x90 Joist Hanger
-  Z - LUMBERLOK JH47x120 Joist Hanger
-  P - LUMBERLOK JH47x190 Joist Hanger
-  E - LUMBERLOK JH95x165 Joist Hanger
-  O - Pair of LUMBERLOK CT200 Ceiling Ties
-  H - LUMBERLOK CT400 Cyclone Tie
-  B - LUMBERLOK CT600 Cyclone Tie
-  M - Pair of LUMBERLOK Multi Grips
-  NP - LUMBERLOK Nailon Plate
-  N - LUMBERLOK N21 Diagonal Cleat
-  W - Pair of LUMBERLOK CPC40 Cleats
-  K - LUMBERLOK TTP 16kN Truss to Top Plate set

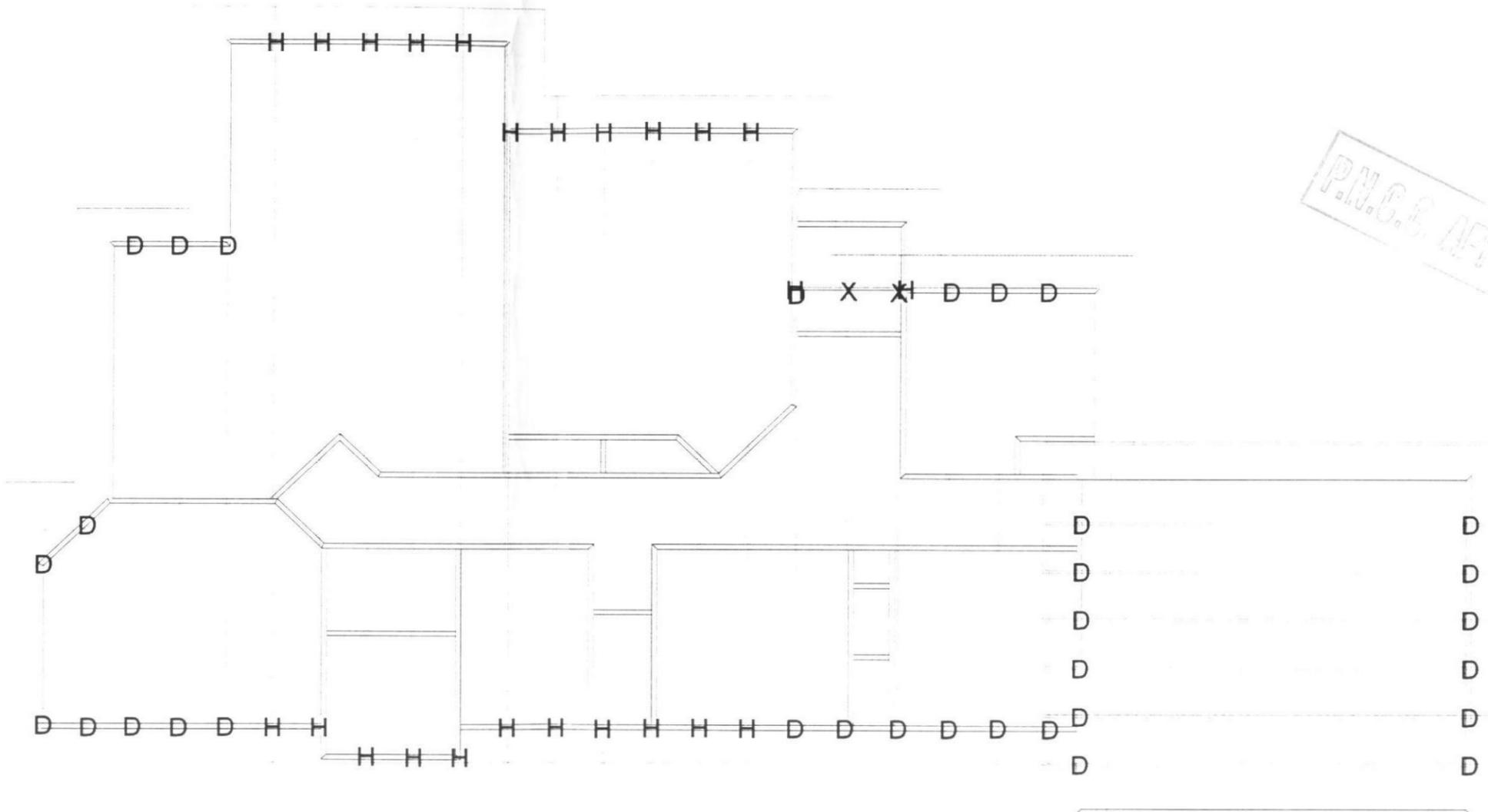
Roof Bracing

Refer to:
LUMBERLOK Roof Bracing Specifications
brochure 08/2006 for end fixing details.

The brace must be located such that it forms an angle of $45^\circ \pm 5^\circ$ to the wall



NOTES:
All other areas must have a minimum of a pair of 90mm skew nails for truss to top plate connections.
Refer to:
LUMBERLOK Timber Connectors Characteristic Loadings Data brochure 03/4



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 Palmerston North

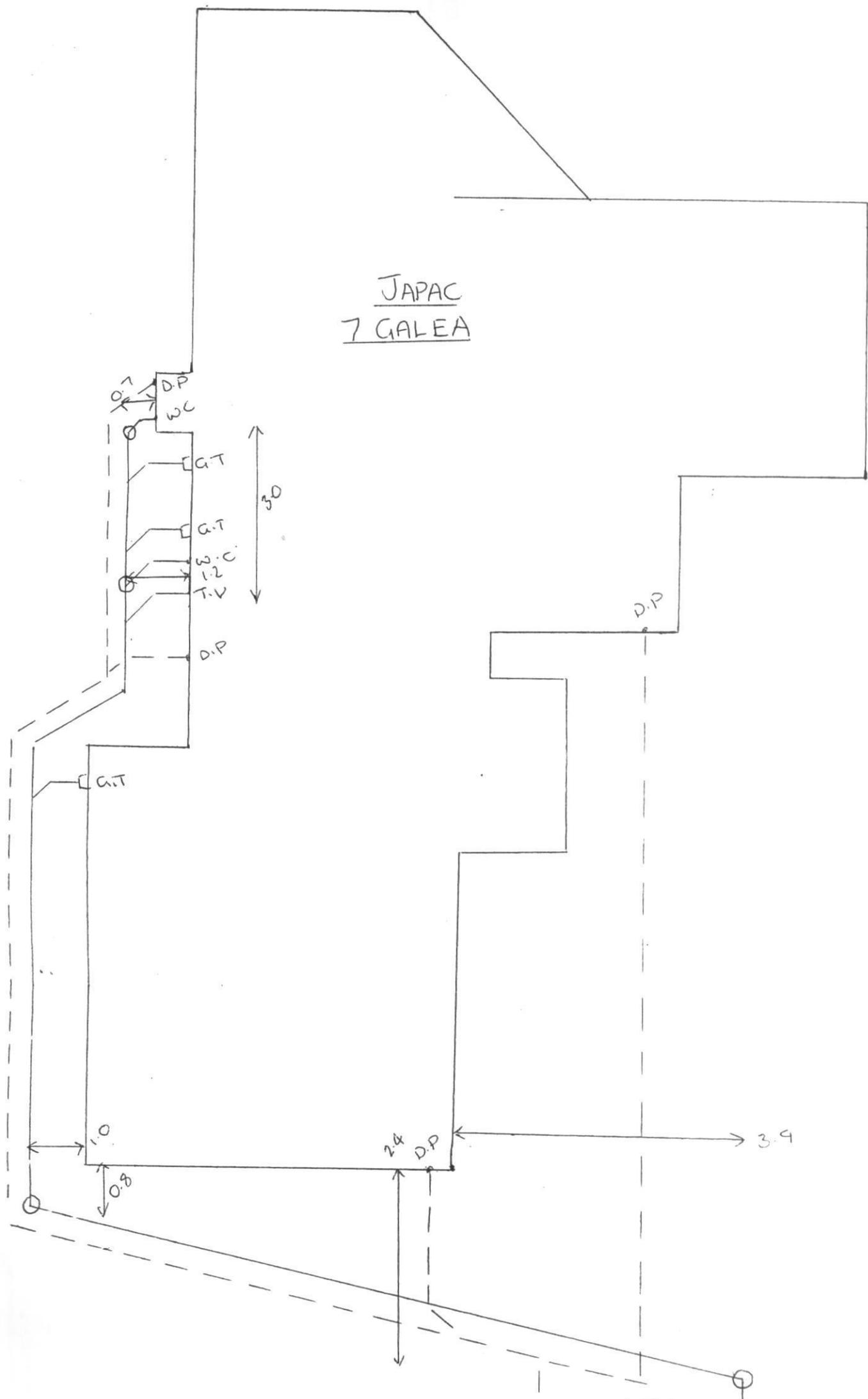
Sheet Title
**For Building Consent
 Truss Fixings & Roof Bracing**
 Date: 15 Jun, 2009 Drawn: Administrator
 Scale: N.T.S. System: MiTek 20/20

Job Details:
 Roof Pitch : 5.0 Deg
 Roof Material : Light
 Ceiling Material : Standard
 Wind Zone : Medium
 Roof Snow Load : 0.000 kPa

Truss Centres : 900 mm
 Roof Live Load : 0.250kPa
 Floor Live Load : kPa
 Wind Speed : 37 m/s

PrimeCad v4.5.149 Job Title
MiTek J90617
 Sheet 4
 Revision Number

JAPAC
7 GALEA



18059

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JAPAC DEVELOPMENTS LTD.

PROPOSED HOUSE

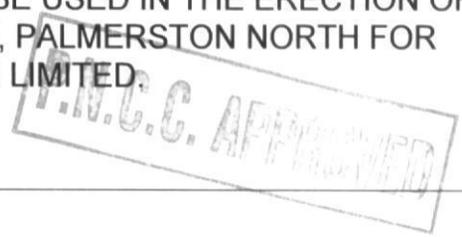
7 GALEA GROVE (LOT 53)

PALMERSTON NORTH

JUNE 2009

SPECIFICATION

OF WORK TO BE DONE AND MATERIALS TO BE USED IN THE ERECTION OF
A 4 BEDROOM HOUSE AT 7 GALEA GROVE, PALMERSTON NORTH FOR
JAPAC DEVELOPMENTS LIMITED.



1. PRELIMINARY

1.1 Scope of work

- 1) The scope of work in this contract consists of the erection of a 4 bedroom house with concrete slab floor, timber framed walls and roof, sheathed in Titan board and Linea boarding with coloursteel roof, complete with all joinery and interior linings, trim and services as shown on the drawings and as specified herein.
- 2) Carry out all work as shown or implied by the drawings and specification.

1.2 Documents

- 1) These documents are for obtaining a Building Consent and construction purposes only, and can not be relied on to provide a full description of all work or contractual clauses that may be required to form a contract between client and contractor.
- 2) Should there be any discrepancies between the plans and specifications refer to the designer for clarification. In the absence of that allow to carry out the work that results in the superior standard.

1.3 Permits, notices and charges

- 1) Obtain a building consent and pay all charges in connection with same.
- 2) File notices and arrange for all inspections as required by the Building Consent and local authority having jurisdiction over work.
- 3) Do not continue with any work until the required consents have been issued and/or inspections have been made and passed.
- 4) Any variations to the documents must be recorded and the Local Authority notified.

1.4 By-laws and regulations

- 1) All work performed under this contract shall comply with the New Zealand Building Act and all New Zealand Standards, including all subsequent and relevant regulations, by-laws standard specifications and Acceptable Solutions.
- 2) Nothing in the documents shall be interpreted to permit work forbidden by any of the above.

1.5 Materials

- 1) **Materials** and fittings shall be as specified and shown in the drawings. All materials shall be new and the best of their respective kinds. Where applicable they shall comply with the NZ. Standard Specification.
- 2) **Substitution** of materials specified shall only be at the direction of the employer. Order all materials and fittings, especially non-standard items, early to prevent delays in supply.

1.6 Workmanship

- 1) **Workmanship** shall be in accordance with the best trade practice and carried out by contractors with NZQA recognised and relevant trade qualifications, or by persons under the direct supervision of those contractors. Work shall be

accurately set out, structurally sound, true to line and face, and shall be neatly executed and finished. Make good to any work developing defects.

- 2) **Standard** For any product or system the manufacturers specification is to be read in conjunction with this specification. If there is any discrepancy between the documents, the manufacturers specification shall take precedence unless this specification makes specific reference to the fact that a change has been made.
- 3) **Inspect** Before starting new work, ensure all preparatory work has been satisfactorily completed. Sub contractors to report to contractor any preparatory work that has been unsatisfactorily completed. Failure to inspect, or the commencement of new work, shall be construed as acceptance of the preparatory work.
- 4) Should there be any discrepancies between the plans and specifications refer to the designer for clarification. In the absence of that allow to carry out the work that results in the superior standard.

1.7 Health and safety

- 1) Contractor to comply with the "Health and Safety Act".
- 2) Contractor to keep site clean and tidy at all times.
- 3) The employer must notify the contractor of any hazards or issues that may affect the safety of workmen on site.
- 4) Scaffolding shall comply with the Construction Regulations.

1.8 Setting out work

- 1) Verify all dimensions on site.
- 2) Should discrepancies exist, immediately notify the designer for clarification.
- 3) Confer with employer before commencing to determine finished floor height in relation to existing ground level. Note: that finished floor level for sheathed walls must be more than 225mm above unprotected finished ground level and 150mm above permanent paving. For masonry veneered walls the minimum heights must be 150mm and 100mm respectively.
- 4) **Where the drawings show the building close to or penetrating the building envelope the contractor must confirm the height difference between finished floor level and the ground line at the boundary. Should it be greater than that shown on the drawings immediately notify designer for clarification. Failure to notify designer could result in the building penetrating the envelope more than allowed and possibly having to be modified even after it is finished.**

1.9 Variations

- 1) All variations must be documented and copies supplied to both the Building Consent Authority and designer.

1.10 Clear away and cleaning

- 1) During construction sweep the works at regular intervals to keep clean.
 - 2) Upon completion clear away all plant and debris resulting from building and leave the site clear. Sweep the building inside and leave the works clean and tidy.
-

2. EXCAVATION

2.1 Preliminary

- 1) Refer to the preliminary section of this specification which shall be read in conjunction with this section of the work

2.2 Scope of work

- 1) Site clearance and fill, and the excavation and back filling of all trenches for footings, piles and services.

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2.3 Site clearance

- 1) Remove all vegetation, turf, logs, stumps and existing paving from below the works.

2.4 Excavation

- 1) **Generally** Excavate for all footings, foundations and services to the depths required and the widths necessary to permit construction. All excavations shall be kept free from water.
- 2) All foundation excavations are to be level and shall be stepped where the ground slopes.
- 3) **Unstable ground** The drawings and design assume good ground as defined by NZS 3604. If soft or unstable ground is found in the excavations at the depths allowed for on the drawings continue to excavate until solid ground is reached. Fill to proper level with site concrete below footings and hard fill elsewhere.
- 4) All foundation excavations are to be inspected and passed by the local authority before any concrete is poured.
- 5) It is strongly recommended that excavations be checked, passed and provided with 50mm concrete cover before steel work is placed in position.

2.5 Hard fill

- 1) Provide hard fill of clean well-graded river shingle, graded from 50mm down.
- 2) Compact in 150mm layers, using mechanical vibrator and sufficient water to aid compaction.
- 3) Finish with a 10 to 20mm sand blinding top layer.
- 4) Wherever fill is over 600mm deep, it needs to be thoroughly compacted (as specified above) and a compaction certificate, issued by a suitably qualified person, will need to be submitted to council.

2.6 General excavations

- 1) Excavate for all services as required, keeping excavations to minimum size practical. Keep all excavations free of water or fallen material. Provide and maintain all shoring, sheetings, planking and strutting, pumping or baling as required.

2.7 Back fill

- 1) Back fill using materials obtained from excavations. Thoroughly consolidate in layers not exceeding 150mm until existing ground level is reached.

3. CONCRETE

3.1 Preliminary

- 1) Refer to the preliminary section of this specification that shall be read in conjunction with this section of the work.

3.2 Scope of work

- 1) Supply and placement of all concrete to slabs and footings including damp proof course and reinforcing to same.

3.3 Formwork

- 1) Formwork is to be provided for all above ground concrete work. It shall be accurately constructed & securely braced so as to produce even faces and mortar tight joints.

3.4 Materials & workmanship

- 1) All work shall comply with the following NZ standards:
 - NZS 3101 Concrete structures standard
 - NZS 3109 Concrete construction
 - NZS 3124 Concrete construction for minor works
 - NZS 3402 Steel bars for the reinforcement of concrete
 - NZS 1693 Deformed bar reinforcing
 - NZS 2086 Ready mix concrete production
- 2) **DPC** Lay 0.25mm polythene damp proof course below all slabs and seal against all footings and penetrations. Lap 150mm minimum at joints using pressure sensitive polythene tape and repair any punctures.
- 3) **Reinforcing** Reinforce all foundations and slabs as shown on drawings. Take care to ensure that all reinforcing is correctly located and securely held in place using PVC chairs, so as not to be disturbed during placement of concrete. Ensure all bends are accurately made. Lay and tie all reinforcements at corners and intersections to ensure continuity.
- 4) **Mesh** Provide 665 mesh to floor slab, with 30mm top cover to concrete. Mesh to be fully supported on PVC chairs at 900mm centres each way.
- 5) **Concrete** Concrete shall be supplied by a certified ready-mixed concrete plant and shall conform to the required standards of NZSS 1900, chapter 9.3. Concrete shall have a minimum slump of 100mm and a crushing strength at 28 days of 17.5 MPa.

3.5 Placing and finishing of concrete

- 1) **Footings** As far as possible place all concrete to footings in one operation and thoroughly compact. Where required provide good key to any future pours by thoroughly roughening surface and cleaning off any loose or foreign matter.
- 2) **Finish** Finish slab to a dense, smooth finish with a power driven rotary steel float and free of any bumps, ridges, holes, honeycombing or any other irregularity or defect. Porches to be finished with a wooden float.
- 3) **Cutting** Sawcut slab into bays after initial set, 24 hours maximum in summer and 48 hours maximum in winter. Where sawcuts run adjacent to walls above they are to be set 10mm (minimum) clear of wall line.
- 4) **Build in** pipes, reinforcing, bolts & chases etc. as required during construction. Wherever possible take services under and not through foundations and footings.
- 6) **Garage door** Form 50mm fall over 300mm width on slab at garage door. Length of fall to be 100mm longer than door opening.

3.6 Protection and curing

- 1) Fresh concrete shall be protected against direct sunshine, premature drying, rain, frost, shock or any other detrimental factor until concrete is thoroughly hardened. After concrete has set sufficiently, properly cure by keeping surface and boxing continuously wet for at least seven days following placement.
-

4. CARPENTRY

4.1 Preliminary

- 1) Refer to the preliminary section of this specification which shall be read in conjunction with this section of the work.

4.2 Scope of work

- 1) The work consists of fixing of all framing, sheathing, joinery, hardware and finishing work specified below and shown on the drawings but not specified under other trades.

4.3 Regulations

- 1) All work shall comply with the following regulations:
- 2) All work shall comply with the following regulations:

NZS 3109	Concrete construction
NZS 3602	Timber & wood based products
NZS 3603	Code of practice for timber design
NZS 3604	Light Timber Frame Buildings
NZS 3631	NZ timber grading rules
NZS 4251	Part 1 1998. Solid plastering
NZS 4246	Energy efficiency – Installing insulation in residential buildings
NZS 4218:2004	Energy efficiency – Small building envelope.
E2 / AS1	External moisture – acceptable solutions.

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4.4 Finishing

- 1) Punch all nails in finishing work.
- 2) Fit all necessary beads & fillets etc. required for the proper completion of the works.

4.5 Damp proof course

- 1) Between all timber in contact with concrete work place 3-ply bitumen fabric DPC for full width of timber.

4.6 Framing timber

- 1) All timbers shall comply with the requirements of NZS 3602 and NZS3604 and the Timber Preservation Authority where appropriate.
- 2) For certain parts of the work species and grades of timber have been specified without alternative. Where no specific direction is given the species, grade, quality and preservative treatment shall be as specified in NZS 3602 for each situation.
- 3) The minimum standard of treatment in any situation shall be as follows:
- 4) H1.2 treated planer gauged MSG 8 - All wall, ceiling, soffit and roof framing.
- 5) H3.1 treated planer gauged No1 framing radiata pine - valley boards and cavity battens.
- 6) H3.2 treated planer gauged No1 framing radiata pine - Exterior timber, including posts inside brick or sheathed columns. Plywood bracing to exterior walls.
- 7) Timber of a higher grade or with a superior level of treatment may be used in any situation where a lesser grade or treatment is required.
- 8) Notwithstanding any of the above, all timber shall be suitable for its purpose and shall not have any defects likely to cause insufficient strength or durability.
- 9) Chemical free framing timber shall not be used.

4.7 Framing generally

- 1) Shall be as above and comply with NZS 3604. Shall be straight, true, rigid and securely jointed.
- 2) Use adequate size and number of nails, nail plates and bolts to produce good tight joints.
- 3) Note that the building is in a medium wind area. The contractor will need to take particular note of all the extra fixings required under 3604 for wind loadings.
- 4) Any galvanised bolts or brackets fixed to tanalised timber will need to be protected with resin paint or greased.

4.8 Wall framing

- 1) **Plates** shall be laid in long lengths, straight and true. Joints in length to top plate shall be made over supports, close butted and connected as per figures 8.14 & 8.15 of NZS 3604. Joints at corners and junctions to top plate shall be made over supports, close butted and connected with 6kN nail plates as per figure 8.16 of NZS 3604. Fix bottom plates to exterior walls with **Lumberlok Bottom Plate Anchors** and **Ramset 75mm pins** at 900mm max. centres and at not more than 150mm from each end. Alternatively 150x12mm Hilti HSA stud anchors at 900mm max. centres may be used. Interior walls may be fixed with 150x12mm Hilti HSA stud anchors at 900mm centres, or **75mm Ramset fixings** at 600mm max. centres, but using bolt fixings at the end of each wall section and each side of doorway openings. All interior walls containing a bracing element shall, in addition to any other fixings, be bolted to concrete slab with 150x12mm Hilti HSA stud anchors at each end of each wall bracing element. All Hilti stud anchors shall have 50x50x3mm square washers.
- 2) Where trusses span in excess of 12 metres a top plate packer as per detail 8.13 of NZS3604 must be provided where stud spacings exceed 480mm and the truss lands more than 150mm from any adjacent stud.
- 3) **Studs** shall be **90x45** at 600 maximum centres. All studs shall be in single lengths with three studs at corners and intersections. Use double studs at all openings with structural steel or timber lintels, with the inner stud cut short for the beam or lintel. At corners and intersections spike walls together at 600 centres through timber packing blocks. For openings with *Trifold* steel lintels use the number of trimmer studs as specified for particular situation. All studs to exterior walls shall be fixed to the top plate with not less than 2/90x3.33 nails and one wire dog. Where required provide hold straps to end studs of wall bracing elements.
- 4) **Dwangs** Provide 2 rows of dwangs with extra blocking to suit linings and fittings and as shown on the drawings.
- 5) **Lintels** and beams to be in accordance with NZS 3604 or as shown on the drawings. All timber or solid steel lintels to sit on jack studs. *Trifold* galvanised steel lintels to be as scheduled on drawings, with single, double or triple studs as indicated.
- 6) **Bracing** Shall comply with NZS 3604 and shall be sheet bracing or Pryda angle brace as shown on bracing plan. Sheet braces shall be fixed as per Sheet Bracing clause below and angle braces shall be fixed with 40mm x 2.8 galvanised flat head nails at three per plate and two per stud. Braces to be continuous from plate to plate.
- 7) **Ribbon plate** On top of all exterior and interior wall frames run ex150x40 and ex200x40 respectively, ribbon plate to line with ceiling battens.

4.9 Priming

- 1) Prime or oil all faces and laps of all exterior timber, except cedar weather boarding, and exterior timber joinery before fixing in position.

4.10 Posts and beams

- 1) Install exterior posts where shown on drawings.
- 2) At bottom use **Bowmac B79** galvanised bracket fixed to post with **2 12mm dia. bolts** and set in concrete footing as per foundation plan.
- 3) At top bolt verandah beams to posts with **Bowmac B38 or B48** galvanised brackets with 12mm dia. bolts.
- 4) Bolt beams to wall framing with **2x12mm dia.** bolts as per detail

4.11 Roof framing

- 1) Frame up roof using *Gangnail* roof trusses at 900 max. centres, complete with all special trusses for hips, gables and valleys, etc. Securely tie and brace trusses together using 100 x 50 runners and braces as required by NZS 3604 and as shown by truss manufacturer.
- 2) Roof trusses are to be manufactured and supplied by Manawatu ITM. The truss manufacturer is to design the roof truss layout and supply all necessary drawings (including required fixings) to the contractor and building consent authority.
- 3) To entry porch, provide double 140x45 beam bolted to timber wall framing at each end with 2 12mm dia bolts. Frame up 90x45 rafters above at 900mm maximum centres and securely nail to adjacent roof trusses. At beam fix rafters with 2 skew 100mm nails and 2 wire dogs. The wire dogs are to be concealed by fixing between the two beams (i.e. the rafters will need to be fixed to one beam before the second beam is fixed in place).
- 4) Over trusses fix 75 x 50 purlins at 900mm centres. Generally purlins to be fixed with not less than 2 skew 100x3.75mm hand driven nails or 2 90x3.15 power driven nails. To each roof plane perimeter within 0.2 of roof width, (as defined by NZS 3604 Figure 10.16) fix with 2 skew 100x3.75mm hand driven nails and 1 wire dog (Z nail).
- 5) Above trusses fix Pryda diagonal Speed brace or similar where indicated. If using tensioners correctly tension to maintain building strength and squareness.

4.12 Fascia and barge boards

- 1) To be ex25 *Hutloc* pre-primed fascia and barge board in long lengths, rebated on back for soffit lining.

4.13 Sheet Bracing

- 1) Gib bracing sheets shall be fixed in strict accordance with the manufacturers specification and details, some of which are included at the back of this specification.
- 2) Plywood bracing to be Ecoply H3 CCA treated 7mm thick all as per Carter Holt Harvey Ltd March 2008 publication "Structural plywood properties and applications manual". Fixings to be 40x2.8mm stainless steel or silicone bronze flat head angular grooved nails at 75mm spacings for braces SP4 & SP5D and 150mm for all others. All braces to have 6kN hold downs each end, except SP5D which shall have 2 each end. SP4 braces require 450mm maximum stud spacings.
- 3) Generally plywood to exterior walls shall be fixed directly to studs and have building wrap over as per rest of external walls.
- 4) For other sheet bracing systems, fixings shall be in strict accordance with manufacturers instructions.

4.14 Building paper, window flashings and drained cavity

- 1) Cover in all external walls, continuous from 40mm below bottom plate up to top plate or soffit level - whichever is the highest, with **Watergate absorbent** breathable wall wrap, by **Thermacraft Industries** or equal approved.

- 2) Protect the heads, sills and jambs of all window and door openings over wall wrap with Aluband 150mm bituminous self adhesive tape and moulded corner piece by Thermakraft Industries.
- 3) Refer to drawings for window flashing details. Head flashings are required to all exterior joinery, except where joinery head abuts a flat soffit. Stop-ends are required on all window head flashings installed in cavity construction with a minimum cross-fall of 15 degrees.
- 4) Sill flashings are required to have a fall, which can be provided by either packing or chamfering the sill. Note that the Linea sheathed walls do not have a cavity, therefore the sill trimmers will need to be chamfered as per E2/AS1 requirements.
- 5) To Titan walls create a drained cavity by fixing 70x19 CLD Structural cavity battens at 400mm maximum centres over building wrap fix and lining with studs. Run battens as per "Figure 3: Sheet fixing setout" of Hardies specification. Seal off top of cavity with horizontal blockings. Provide perforated and vermin proof proprietary PVC closer along bottom of cavity
- 6) After installation of exterior joinery, seal gap between joinery units and wall framing with Gorilla Nail Power expanding polystyrene foam.

4.15 Exterior sheathing

- 1) To be Linea board and Titan board as shown on the drawings.
- 2) Linea boarding to be fixed with scribes to joinery and exterior corner soakers.
- 3) Hardies Titan Board to be fixed in strict accordance with manufacturers specification (copy included at the back of this document) using 25x2.5 annular threaded fibre cement nails. Ensure that the Inseal strip run up behind the jamb facing of windows and doors completely seals any horizontal expressed joints.
- 4) The internal corner junction between Linea and Titan board is to be formed with an aluminium Linea internal corner section as per detail. The flat plane junction is to be formed with a folded coloursteel flashing.

4.16 Soffit lining

- 1) Line the underside of all eaves and porches with 4.75 mm *Hardiflex* fixed into rebate in back of fascia and PVC jointers, using 40 x 2.5 galvanised clouts.

4.17 Insulation

- 1) **Walls** Insulate all exterior walls, (except around garage) and interior walls around garage, with *R2.4 Batts* fitted tightly between framing.
- 2) **Ceilings** Insulate all ceilings, except to garage, with *R3.2 Batts* fitted tightly between ceiling joists.

4.18 Interior linings

- 1) **Walls:** To garage to be *Strandboard*. Around bath, showers, WC, vanities and tub to be *Gib Aqualine* and elsewhere to be 10mm *Gib-board*, except where *Gib Braceline* is shown on drawings.
- 2) Where *Strandboard* is used as a bracing element fix with 2.8x75mm gun nails or 3.15x75mm galv flat head nails. Where it is not used as a bracing element fix as per *Gib board* or with 2.5x50mm jolt head nails at 150mm centres
- 3) **Ceilings:** to be either 10mm or 13mm *Gib Ultraline* to all rooms and places including garage.

4.19 Ceiling battens

- 1) For 13mm *Ultraline* fix *ex75x40* ceiling battens to underside of trusses or joists and into side of ribbon plate to all rooms and places at 600 max. centres. For 10mm *Ultraline* fix battens as above but at 450mm maximum centres.
- 2) Pack or check battens as required below framing to get a true & even ceiling line.

4.20 Gibraltar board fixing

- 1) Fix all *Gib-board* with adhesive, 30 x 2.5 *Gib-board* clouts and 30mm x 6g gypsum screws according to manufacturer's instructions. Provide a galvanised iron metal angle to all external corners.
- 2) After all heavy hammering has been completed, stop all joints and nails with *Gib-board* bedding and finishing compounds. Use tape to all joints.
- 3) Finish ceilings to a first class paint quality and finish walls to wallpaper finish.

4.21 Cornice & skirting

- 1) Cornice to be 55mm *Gib cove* to all rooms and places.
- 2) Skirting to be 60 x 12 bullnose to all rooms and places.



4.22 Shower & bath

- 1) **Showers** Install proprietary shower unit including base, walls, screen and door.
- 2) **Bath** Install in timber cradle, slightly recessed into wall framing for flush finish of tiles onto bath.

4.23 Hardware

- 1) Install all door locks and latches, stops, towel rails, toilet roll holders and hooks etc. as required.

4.24 Wardrobes and cupboards

- 1) Install rails and shelves to wardrobes and cupboards as required.

4.25 Joinery

- 1) Fit exterior and interior joinery and fittings.
- 2) Aluminium joinery shall be fixed in accordance with E2/AS1 or as per the Altherm WANZ Window Installation System Builders Guide.
- 3) Build in frames plumb and accurately aligned, fixed through solid timber packers or proprietary metal fixings.
- 4) After installation of exterior joinery, seal gap between joinery units and wall framing with Gorilla Nail Power expanding polystyrene foam.

4.26 Garage door

- 1) **Door** to be Coloursteel sectional slide-over door in ex 200 x 25 tanalised frame. Form rebate in slab for garage door.
- 2) **Garage door opener** Install automatic opener to garage door. Provide unit with portable remote control and fixed remote control on garage wall where directed.

4.27 Smoke alarms

- 1) Provide smoke alarms within 3.000m of every bedroom door.
- 2) Smoke alarms shall comply with UL217, CAN/ULC S531, BS 5446 Part 1 or AS 3786. They shall have a 60 second (minimum) hush facility and an alarm test facility.

4.28 Clean up

- 3) At regular intervals during construction tidy site and sweep floors clear of all debris.
- 4) On completion clear all debris from building and site and leave clean and tidy.

5. JOINERY

5.1 Preliminary

- 1) Refer to the preliminary section of this specification that shall be read in conjunction with this section of the work.

5.2 Scope of work

- 1) The manufacture and supply of items customarily carried out in the joinery shop, but more specifically all exterior and interior timber joinery and joinery fittings. The fixing of such items is specified under 'Carpentry'.

5.3 Workmanship

- 1) The construction and assembly of all frames, doors, sashes, and fittings shall be appropriate to the nature of the job. Mortise and tenon, housings and doweling shall be used where practical, screws shall be used in preference to brads, and glue blocks used where required. All joints shall be accurately cut and fitted and all holes suitably stopped.
- 2) Verify all dimensions on site.

5.4 Exterior joinery

- 1) Refer Aluminium section of this specification.
- 2) **Garage door** specified under carpentry.

5.5 Interior doors

- 1) **Hinged doors** to be to sizes shown on drawings, paint quality hollow core doors hung in 25mm MUF *Customwood* slimline frames with 30 x 12 fin planted stops. Hang on 1 1/2 pair 90 x 75 loose pin bronze butt hinges.

5.6 Fittings

- 1) Install kitchen fittings, bathroom vanities and laundry cabinet.
-

6. ALUMINIUM JOINERY

6.1 Preliminary

- 1) Refer to the preliminary section of this specification that shall be read in conjunction with this section of the work.

6.2 Scope of work

- 1) Supply and installation of all exterior aluminium windows and doors, including glazing of the same.
- 2) Manufacturer will need to ascertain the wind loadings for the specific site, to ensure sections and glazing used exceed the minimum required standards.

6.3 Materials

- 1) All work and materials shall comply with the following regulations:
NZE 4211:2008 Specification of performance of windows
NZE 4223 Code of practice for glazing in buildings
- 2) All sections to be colour powder coated in accordance with standard specifications to a colour selected by employer from the standard range of colours
- 3) Jamb liners to be ex 25mm PQ slimline - confirm size with carpenter for clearance of sheathing, and cover to brick veneer.

6.4 Construction

- 1) Mitre all corners to frames and sashes and assemble using stainless steel screws.
- 2) Provide drainage holes as required and caulk all joints with a joint sealer to prevent leakage.
- 3) All units to have integral drip trays with drainage channel to exterior and come supplied with Alisoaker PVC corner and mullion soaker mouldings below all sill junctions to drain any leaked moisture to exterior.
- 4) Provide WANZ integral support bars as required to sills of all units.

6.5 Glazing

- 1) All units to be supplied to site, factory glazed with thickness of glass appropriate to sizes of panes, but in no case less than that specified in NZS 4223. All glass to be set in PVC gaskets and wedges.
- 2) Windows and doors to service rooms to have obscure glazing, to a pattern selected by employer.
- 3) All units, except to garage, to be double glazed.

6.6 Joinery units

- 1) **Windows** To be as shown on drawings. All sashes to be fitted with two friction stays and double tongue handles.
- 2) **Sliding doors** to run on ball bearing race wheels with nylon tyres and shall be weatherproofed with nylon pile strips to stop all air movement.
- 3) **Hinged doors** to be constructed from box section aluminium.
- 4) **Bi-folding doors** to be constructed from box section aluminium.
- 5) **Hardware** all door locks to be keyed alike.

6.7 Installation

- 1) Install all units in openings provided and secure to framework.
- 2) Provide all flashings necessary to render all units fully watertight.

7. METAL ROOFING

7.1 Preliminary

- 1) Refer to the preliminary section of this specification which shall be read in conjunction with this section of the work.

7.2 Scope of work

- 1) Providing and fixing of entire metal roofing, to render the whole roof watertight.
- 2) All work shall be in accordance with E2/AS1 and the NZ Metal Roofing Manufacturers Inc 2003 Publication Metal Roof and Wall Cladding Code Of Practice.

7.3 Materials

- 1) **Wire netting** - 50 x 1.0mm galvanised, 1.800m wide roll.
- 2) **Building paper** - *Duroid 1370mm Heavyweight.*
- 3) **Iron** - *Metalcraft MC700, G2 Coloursteel*
- 4) **Nails** - 75 x 3.15 *Weatherseal* galv. twisted nails coloured to match roofing.
- 5) **Flashings** - G2 Coloursteel with soft edging to ridge and hip flashings.

7.4 Underlay

- 1) Stretch wire netting over purlins and fix with galvanised staples at 300 crs.
- 2) Lay building paper over netting, running parallel with purlins and staple in place.
- 3) Provide 100mm minimum head lap, and where required 300mm minimum side laps.

7.5 Roofing

- 1) Roofing shall be laid in single lengths between high point and gutter, with 1.5 corrugations minimum side lap and fixed in accordance with manufacturers recommendations.
 - 2) Provide and fix all valleys, internal gutters, hips, ridges and flashings required to render the whole roof watertight. Neatly dress soft edge into troughs and solder or seal all joints in flashings etc.
 - 3) All roofing and flashings to be securely and neatly fixed with all nails in straight rows. Care must be taken to prevent dishing or denting of roof as any damaged areas will be rejected.
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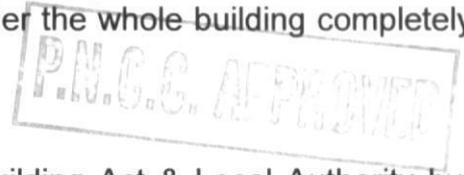
8. PLUMBING

8.1 Preliminary

- 1) Refer to the preliminary section of this specification which shall be read in conjunction with this section of the work.

8.2 Scope of work

- 1) The work consists of carrying out all plumbing work shown on the drawings and specified for the complete installation of the sanitary, waste and stormwater systems, water reticulation and flashings to render the whole building completely watertight.



8.3 Regulations

- 1) All work and materials shall comply with the Building Act & Local Authority by-laws.
- 2) In the event of workmanship, fittings or equipment being required by the Regulations or by-laws, but which are not specifically specified or shown on the drawings, the contractor must allow for the provision and fixing of all such items.

8.4 Materials and workmanship

- 1) All materials shall be new and the best of their respective kinds specified, and shall comply with NZ Standard Specifications governing their use and manufacture.
- 2) Copper piping to comply with NZS3501:1976.
- 3) Workmanship shall be in accordance with the Plumbing & Drainage Regulations and shall be carried out by competent tradesmen with qualifications as laid down in the Regulations.

8.5 Conceal pipe work and support

- 1) Conceal pipe work underground, under slabs, in ducts, or in wall or ceiling framing.
- 2) All pipes shall be adequately supported throughout their lengths both horizontal and vertical, so as to prevent sagging in any portion. Securely strap all pipe work to framing using purpose made heavy gauge straps of same material as pipe work being fixed.
- 3) Pipes passing through concrete to be wrapped in *Denso* tape.

8.6 Flashings

- 1) Flash generally in 0.55 BMT Coloursteel as necessary to render the building watertight.
- 2) All flashings shall accurately fit the work and shall be machine bent and in as long lengths as possible with all joints well lapped and sealed.
- 3) Galvanised flashings shall be used in preference to Zinalum when there is any chance of the flashings being in contact with cement based products.
- 4) Note: Roof flashings specified under "Roofing", however where any pipes or vents pass through roof, flashing around these is to be done by the plumber.
- 5) Supply and installation of aluminium flashings specified under "Aluminium Joinery"

8.7 Gas work

- 1) Supply gas fittings as separately scheduled.
- 2) Allow to install, supplying all necessary flues, vents, valves, pipes and meters etc. and carrying out all work in accordance with regulations.

8.8 Cold water supply

- 1) From Toby at street run 20mm PVC main to stop valve inside garage.
- 2) From there run 20mm Polybutelene main to hot water heater/cylinder and 20mm Polybutelene feeder with 15mm diameter Polybutelene branches to all fittings and hose taps, in most economical runs, and using easy bends in preference to elbows.
- 3) Terminate all runs in brass wingbacks securely screw fixed to timber framing.

8.9 Hot water supply

- 1) Hot water heater to be Infinity externally mounted gas unit.
- 2) From Infinity run first 1.5 metres in 20mm copper then run 20mm Polybutelene main with 15mm Polybutelene branches to all fittings, excluding hose taps and WCs, in most economical runs and using easy bends in preference to elbows.
- 3) Lag all hot water pipes.

8.10 Waste pipes

- 1) All wastes shall be of rigid PVC tubing incorporating *Dux* or similar PVC traps. Pipes shall be in straight lines and changes of direction shall be made with easy bends. Fix cleaning eyes at changes of direction and junctions if required by the Regulations.
- 2) Provide separate waste pipe adjacent to tub for washing machine, and connection below sink for dishwasher.

8.11 Waste pipes & back vents

- 3) All wastes shall be of rigid PVC tubing incorporating *Dux* or similar PVC traps. Pipes shall be in straight lines and changes of direction shall be made with easy bends. Fix cleaning eyes at changes of direction and junctions if required by the Regulations.
- 4) Back vent fittings as required in accordance with regulations, in PVC tubing.

8.12 Terminal vent

- 1) Erect 75mm dia. PVC terminal vent as required.
- 2) Vent shall be properly jointed, adequately supported and terminated 450mm above roof level with bird proof cowl.

8.13 Taps and fittings

- 1) Install the following taps and fittings

Infinity water heater	Kitchen sink and faucet.
Dishwasher stop taps.	Rangehood
Laundry tub.	2 WC suites.
3 wash basins and faucets.	Bath and taps.
2 showers including mixers and roses.	Hose taps.
Extract fans to bathroom and ensuite.	

8.14 Spouting & downpipes

1. Spouting to be ¼ round Coloursteel, complete with all downpipes as shown or required. Set spouting to falls to downpipes.
- 2) Downpipes to be 80mm diameter PVC securely clipped to building and discharged into stormwater drain

8.15 Completion

- 1) **Testing** On completion the whole of the plumbing work shall be tested and left in perfect working order.

Clean up Remove all surplus materials, clean all sanitary fittings and leave clean and tidy.

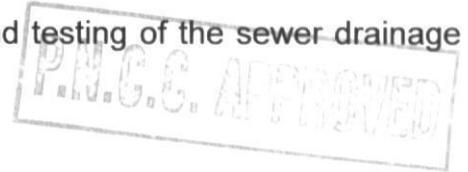
9. DRAINAGE

9.1 Preliminary

- 1) Refer to the preliminary section of this specification which shall be read in conjunction with this section of the work.

9.2 Scope of work

- 1) The work consists of the complete installation and testing of the sewer drainage and stormwater drainage systems.



9.3 Regulations and permits

- 1) **Regulations** All work and materials shall comply with the Drainage and Plumbing Regulations and all Local Authority by-laws.
- 2) In the event of workmanship, materials or equipment being required by the regulations or by-laws, but which are not specifically specified or shown on the drawings, the contractor must allow for the provision and fixing of all such items
- 3) **Fees, charges and notices** Employer to obtain consent and pay all fees in connection with the same. Drainlayer to give required notices to the appropriate authorities for inspecting and testing of the works.

9.4 Materials and workmanship

- 1) **Materials** Provide all materials and fittings necessary for the complete installation of the drainage system as specified and as required by the regulations. Pipes shall be rigid PVC.
- 2) **Workmanship** All work shall conform to the best trade practice and comply with Plumbing & Drainage Regulations and Local Authority by-laws.

9.5 Trenches

- 1) **Excavate** and back fill all trenches to comply with the Plumbing and Drainage Regulations and the 'Excavation' section of this specification.
- 2) **Drains** shall not be disturbed during back filling. Excavations shall be wide enough to allow sufficient working room without standing on the pipes. Hand trim the excavation to provide full and even bearing. Encase all drains in pea metal before backfilling.
- 3) **Co-operate** with electrician, plumber, gas worker and Telecom to include their services in trench from street to house.

9.6 Drains and fittings

- 1) **Drains** All drains shall be laid as straight as possible, with minimum number of joints and bends. Provide all bends and junctions etc. as required and shown on the drawings.
- 2) Drains shall generally be run at a gradient of 1 to 60, but in no case shall be less than 1 in 100 gradient. Stormwater drains shall comply with Figure 3 of E1/AS1 "Sizing of surface water drain"
- 3) **Gully traps** To be rigid PVC complete with grating. Set gully 75mm minimum above finished ground or paving level, whichever is the highest.
- 4) **Terminal vent** Provide connection for terminal vent where shown on drawings. Connection shall be below ground level. See "terminal vent" under "Plumbing" section.

9.7 Completion

- 1) **Testing** Drains shall not be covered until the whole system has been inspected, tested, and passed by the Local Authority Inspector.
- 2) The contractor shall make good at his own expense any defects revealed by the Inspector, and the drainage system shall be left in perfect working order.
- 3) **Clean up** On completion clean up the site, remove all surplus materials, and leave tidy.

10. ELECTRICAL

10.1 Preliminary

- 1) Refer to the preliminary section of this specification which shall be read in conjunction with this section of the work.

10.2 Scope of work

- 1) The work consists of the complete electrical installation as shown on the drawings and specified herein.

10.3 Regulations

- 1) All work shall comply with the Electrical Wiring Regulations and amendments, and the Local Authority by-laws and requirements.
- 2) In the event of workmanship, materials, fittings or equipment being required by the regulations or by-laws, but which are not specifically specified or shown on the drawings, the Contractor must allow for the provision and fixing of all such items.

10.4 Materials and workmanship

- 1) **Materials** used in the contract shall be first grade and shall conform to the relevant British or New Zealand Standard Specification.
- 2) **Workmanship** shall be carried out in a neat and workmanlike manner by registered tradesmen or supervised apprentices.
- 3) Visible appliances, fittings and accessories shall be securely and neatly fixed to a figured or standard dimension.
- 4) Before wiring commences liase with employer to exactly locate positions of all lights, fittings and appliances.
- 5) Where no specific direction is given, spacing is to conform to an architectural module or be a simple fraction of the room dimension.

10.5 Fees, charges and notices

- 1) The electrical subcontractor shall file all notices, obtain all necessary permits and approvals and pay all fees in connection with same.

10.6 Incoming underground main

- 1) Provide and lay underground electrical mains cable from a new street connection to house.
- 2) Cable shall have sufficient capacity for the complete electrical installation as specified plus 25%. Connect cable to meterboard.

10.7 Cables

- 1) All cable wiring shall be PVC cables and shall be concealed in framing. Clip to timber members as required by the regulations. Cut only sufficient timber away to permit bare entry of cables.
- 2) Run all circuits to all outlets as specified.
- 3) Cables to all points shall be of sufficient capacity to enable each power point to be used for its full rating without the use of circuit breakers or current limiters limiting the current to any point.

10.8 Earthing

- 1) Provide and fix earthing lead from the switchboard as per the Electrical Wiring Regulations.
- 2) Earthing wire must be concealed at point of entry into building.

10.9 Meterboard

- 1) Provide and fix white baked enamel meterboard with vision panel, 2.000m from finished ground to top of unit. Leave complete, ready for the supply company to install meters.

10.10 Switch panel

- 1) Provide and fix a *NZ Insulators Ltd. No.S160* or similar distribution board in garage.
- 2) Fix board at not more than 2.000m from floor to top of board.
- 3) Provide all necessary fuses, circuit breakers, switches etc., as required by the regulations and necessary for the proper control of the installation

10.11 Noggings

- 1) Confer with the main contractor to ensure that noggings are provided by him in the correct positions to enable electrical fittings to be located in exactly the positions required.

10.12 Light points

- 1) Provide light points as separately scheduled
- 2) Switches to be *PDL* series 600 mounted flush in PVC or metal boxes 1.100m above floor.
- 3) Recessed ceiling lights to comply with NZECP 54 to allow insulation to be fitted hard against fitting.

10.13 Socket outlets

- 1) Provide socket and fixed outlets as separately scheduled
- 2) Sockets to be *PDL* series 600 mounted flush in PVC or metal boxes, generally 1.100m above floor in kitchen and laundry and 300mm elsewhere.

10.14 Aerial

- 1) Provide *PDL* T.V. aerial sockets where directed.
- 2) Run cables to ceiling space.



10.15 Telephone

- 1) Supply and lay underground phone cables from street house.
- 2) Run phone cable in house to jackpoints to be installed where directed.
- 3) Terminate jackpoints with flush plates to match switch and socket outlets.

10.16 Completion

- 1) **Testing** On completion the whole of the electrical installation shall be tested and left in perfect working order.
- 2) Supply an "Electrical Certificate Of Compliance".
- 3) **Clean up** On completion clean up, remove all surplus materials, and leave tidy.

11. PAINTING

11.1 Preliminary

- 1) Refer to the preliminary section of this specification which shall be read in conjunction with this section of the work.

11.2 Scope of work

- 1) The work consists of the painting of surfaces as specified herein.

11.3 Materials and workmanship

- 1) All work to comply with AS/NZS 2311:2009 – Guide to the painting of buildings.
- 2) **Materials** shall be as specified and brought onto the job in their original sealed containers. All materials shall be evenly applied and primers well brushed into pores of wood and into all crevices and quirks.
- 3) **Workmanship** shall be best trade practice and shall be carried out by competent tradesmen.
- 4) No paint shall be applied unless preceding coats are thoroughly dry and in no case less than the time specified by the manufacturer.
- 5) Priming work shall be left no longer than four weeks before application of following coat.

11.4 Preparation of surfaces

- 1) **Prior** to commencement of painting, properly prepare surfaces to be painted.
- 2) Remove all rust, scale, dirt, oil etc. from all steel work.
- 3) Wash, dust, or otherwise clean down all surfaces including undercoats, remove imperfections by filling and sand papering and apply such sealers, neutralisers and other materials as are necessary to ensure a first class job.
- 4) Before commencing the painter must be satisfied that the surfaces to be painted, varnished or stained, have been satisfactorily finished to enable him to produce a first class job.
- 5) The minimum standard of preparation shall be that required by the paint manufacturers for each type of paint or stain.
- 6) **Remove** all window and door hardware, and electrical fittings and cover plates prior to painting, staining or varnishing and securely replace on completion.
- 7) Take care not to burr screw slots during removal or replacement.

11.5 Rub down

- 1) Rub down all coats of finishes with fine glass paper or steel wool to remove all raised grain to provide a smooth surface finish for following coat.

11.6 Stopping

- 1) Stop all nail holes, cracks and blemishes in work to be painted, varnished or stained, with linseed oil putty.
- 2) Tint all putty to match stained or varnished work.
- 3) Apply putty after application of priming or sealing coat.

11.7 Protection and cleaning

- 1) The painter shall be responsible for the proper protection of persons and property in the immediate vicinity of or liable to be affected by painting operations.
- 2) Provide all necessary coverings and guards, and display suitable warning notices. Before painting work commences all surfaces to be painted shall be brushed down and all floors swept clean.
- 3) Protect paint work from damage by dust, dirt or other disfigurements.

11.8 Exterior painting systems

1) All coatings to be applied according to Manufacturers written instructions.

2) **System 1 Enamel**

To garage door frame.

First coat - Priming

Second coat - *Resene Enamel Undercoat*.

Third coat - *Resene Supergloss Enamel*.

3) **System 2 Acrylic**

To soffits and Linea.

To soffits, Linea and Titan board.

Priming to Titan cut edges and sanded patches - *Dulux AcraPrime*.

First coat - *Dulux Semigloss Acrylic Latex*.

Second coat - *Dulux Semigloss Acrylic Latex*.

11.9 Interior painting systems

1) All coatings to be applied according to Manufacturers written instructions

2) **System 4 Enamel.**

To doors, window and door frames, skirtings, trim and bathroom and en-suite ceilings.

First coat - Priming

Second coat - *Resene Supergloss Enamel Undercoat*

Third coat - *Resene Supergloss Enamel Satin finish*

3) **System 5 Acrylic**

To walls, cornice and ceilings of all rooms and places except as noted above or to wallpapered walls.

First coat - *Taubmans acrylic undercoat*

Second coat - *Taubmans Living Proof Silk*

Third coat - *Taubmans Living Proof Silk*

4) **System 6 Varnish**

To Strandboard garage walls.

First coat - *Resene Poly-flat*

Second coat - *Resene Poly-satin*



11.10 Wallpaper

1) **Preparation** Ensure all surfaces are smooth, clean and free from grease, dust and flaky materials.

2) Size with 1 coat of *Polycell polysize*, generally to be applied by roller or brush. Allow to dry thoroughly before hanging paper.

3) **Hanging** Paste and hang all wallpaper as specified by manufacturers of each roll.

4) All papers to be butt jointed, and hung true & plumb. Patterns are to match.

5) At completion papers are to be left free from all defects and disfigurements

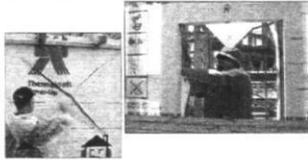
11.11 Completion

1) At completion remove all paint from glass & hardware.

2) Clean glass all hardware & floor. Leave job clean and ready for occupation.

THE SYSTEM • THE METHOD Installation Guide

- 1** Cut the building wrap/air barrier at 45° away from each corner (*left pic*), fold flaps tightly into the window or door opening and fix with staples on the back faces of the framing (*right pic*). Trim excess building wrap/air barrier to enable unimpeded access to the opening.

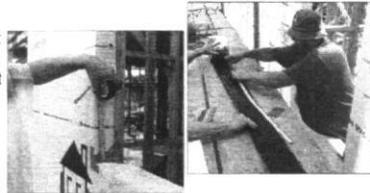


- 2** Fix the Thermakraft **ALUBAND** Corner Moulded Piece* (orange in colour) to the sill corners by way of staples or clouts to the two jambs as shown. The flexibility of the corner piece allows for a 5° chamfer (slope) on the timber sill where it is required for direct fix cladding. Now install the Thermakraft **ALUBAND**/ALUMINIUM Window Sealing Tape as in step 3. 150mm wide tape is used for 100mm wide window or door framing. 200mm wide tape is used for 140mm to 150mm wide reveals. With steel framed houses use Double Sided Tape to attach Thermakraft **ALUBAND** Corner Moulded Piece* to metal cladding.



Do not fix through the logo on the Thermakraft **ALUBAND** Corner Moulded Piece*

- 3** Measure 200mm up both jambs (*left pic*), add 400mm to the length of the window sill and cut the Thermakraft **ALUBAND**/ALUMINIUM Window Sealing Tape to suit that measurement (*right pic*).



- 4** Remove first the polyethylene protective film from the Thermakraft **ALUBAND**/ALUMINIUM Window Sealing Tape; align the back edge of the Thermakraft **ALUBAND**/ALUMINIUM Window Sealing Tape with the inside edge of sill.

Do not lay Thermakraft **ALUBAND**/ALUMINIUM Window Sealing Tape onto the interior surface of framing where it may interfere with wall linings.



- 5** Using the Thermakraft **ALUBAND** Tool, firmly press the Thermakraft **ALUBAND**/ALUMINIUM Window Sealing Tape onto the building wrap/air barrier to ensure good adhesion. Using the Thermakraft **ALUBAND** Tool, ensure that the tape is fitted tightly into the jamb to sill corners.



- 6** At the sill/jamb corners cut the Thermakraft **ALUBAND**/ALUMINIUM Window Sealing Tape from the external edge of the frame outwards. Fold flaps back onto the building wrap/air barrier and press tape firmly for good adhesion.

This Thermakraft **ALUBAND** Corner Moulded Piece* is nearly all covered except for the logo showing on the outer bottom edge.



E & O E

THE SYSTEM • THE METHOD Continued

- 7** Proceed to fix the Thermakraft **ALUBAND**/ALUMINIUM Window Sealing Tape to the top corners of the frame (200mm across lintel x 200mm down jamb). Remove first the backing film from the Thermakraft **ALUBAND**/ALUMINIUM Window Sealing Tape; align the back edge of the Thermakraft **ALUBAND**/ALUMINIUM Window Sealing Tape with inside edge of lintel. Using the Thermakraft **ALUBAND** Tool, ensure that the tape is fitted tightly into the corners. Cut the Thermakraft **ALUBAND**/ALUMINIUM Window Sealing Tape from the external edge of the frame outwards. Fold flaps back onto the building wrap/air barrier and press tape firmly for good adhesion.

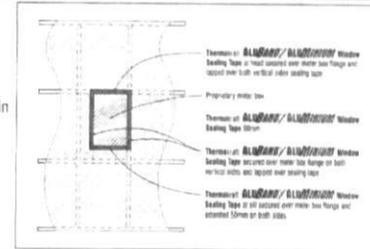


- 8** For the window or door lintel to jamb junction, apply a Butterfly using the 50mm wide x 100mm long Thermakraft **ALUBAND**/ALUMINIUM Window Sealing Tape, and fix at a 45° angle to the jamb with an overlap at the corner of 3mm (as per photo on right).

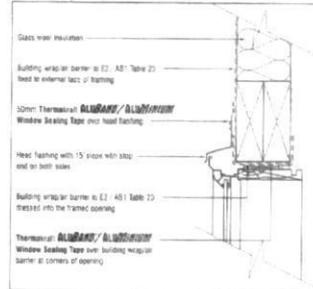
The Thermakraft **ALUBAND**/ALUMINIUM Window Sealing System is now complete (as per this photo alongside).



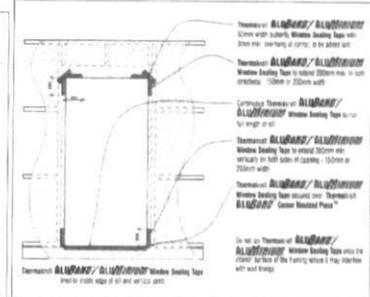
- 9** Meter boxes with built-in flanges, to be taped with 50mm Thermakraft **ALUBAND**/ALUMINIUM Window Sealing Tape along each flange to the building wrap/air barrier. Frame openings for meter boxes without built-in flanges to be treated as for window openings. Refer steps 1-8.



- 10** 50mm Thermakraft **ALUBAND**/ALUMINIUM Window Sealing Tape is used to seal the up stand of the window head flashing to the building wrap/air barrier. Refer to the cladding manufacturer's details.



- 11** Door frames are to be treated similarly to window openings. The sill may be either a timber or a concrete floor.



P.N.G.C. APPROVED

Table 8.14 - Lintel fixing (see 8.6.1.7)

Wind zone	Loaded dimension of lintel (m)	Uplift fixings not required	Uplift fixings required
		Use fixings from table 8.19	See 8.1.6.8 for fixings
		Maximum lintel span for fixings above (m)	
A Light roof			
Low	3	2.7	4.1
	4	2.3	3.6
	5	1.8	3.6
	6	1.7	3.4
Medium	3	1.3	4.1
	4	1.2	3.6
	5	1.2	3.6
High and Very High	6	1.1	3.4
	3	NA	3.7
	4	NA	3.2
	5	NA	2.7
6	NA	2.2	
B Heavy roof			
Low	3	3.4	*
	4	3.1	*
	5	2.9	*
	6	2.8	*
Medium	3	3.4	*
	4	3.1	*
	5	2.9	*
High	6	2.8	*
	3	2.2	3.4
	4	1.9	3.1
	5	1.4	2.9
Very High	6	1.2	2.8
	3	1.1	3.4
	4	1.0	3.1
	5	NA	2.9
6	NA	2.8	

NA Not applicable.
* Table 8.19 fixings are satisfactory.

NOTE - Fixings for lintel spans greater than those shown require specific engineering design.

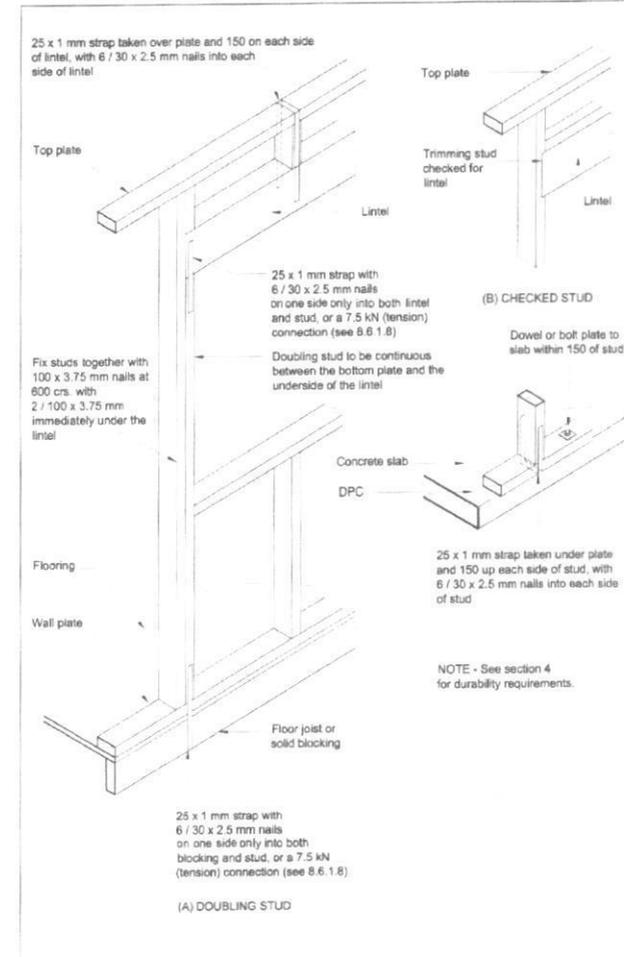


Figure 8.12 - Fixing of lintels to prevent uplift (see 8.6.1.8 and tables 8.14(A) and (B))

Table 8.18 - Fixing of top plate of wall to supporting members such as studs and lintels at 600 mm centres (see 8.7.6)

Loaded dimension of wall (m)	Light roof								Heavy roof			
	Truss spacing (mm)											
	900				1200				900			
	Wind zone				Wind zone				Wind zone			
	L	M	H	VH	L	M	H	VH	L	M	H	VH
	Fixing type (see below)											
3.0	B	B	B	C	B	B	B	C	A	A	B	B
3.5	B	B	B	C	B	B	B	C	A	A	B	B
4.0	B	B	C	C	B	B	C	C	A	A	B	C
4.5	B	B	C	C	B	B	C	C	A	A	B	C
5.0	B	B	C	D	B	B	C	D	A	A	B	C
5.5	B	B	C	D	B	B	C	D	A	A	B	C
6.0	B	B	C	D	B	B	C	D	A	B	B	C

Fixing type	Fixing to resist uplift	Capacity of alternative fixing (kN)
A	2/100 x 3.75 skewed nails	0.7
B	2/100 x 3.75 skewed nails + 1 wire dog	2.7
C	2/100 x 3.75 skewed nails + 2 wire dogs	4.7
D	2/100 x 3.75 skewed nails + 3 wire dogs	6.7

8.7.6 Connection of plates to studs

The fixing of top plates supporting roof trusses to wall studs or lintels shall be in accordance with table 8.18 (see figure 8.12).

8.8 Dwargs and walings

8.8.1

Dwargs, walings, and metal angle walings, where required by 8.5.4, shall be spaced at not more than 1350 mm centre-to-centre and shall be of not less than the following dimensions:

- (a) Dwargs: 50 mm x 50 mm or 75 mm x 40 mm;
- (b) Walings: 75 mm x 25 mm;
- (c) Metal angle walings: 22 mm x 22 mm x 1.2 mm angle.

8.8.2

Dwargs for the support of cladding or lining shall be flush with the face of studs.

8.8.3

Walings may be butt jointed on a stud anywhere along their length with the fixings required by table 8.19 on both sides of the butt joint.

CS.7.6

Each additional fixing required should be as close as possible to a truss.

CS.8.1

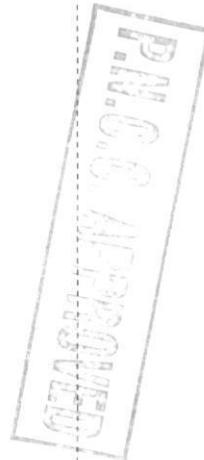
Dwargs may be staggered either side of a horizontal straight line by a centre-to-centre distance not exceeding 300 mm.

Table 8.19 - Nailing schedule for hand driven and power driven nails (see 8.8.6)

Joint	Hand driven nails		Power driven nails	
	Length (mm) x diameter (mm) and type	Number and location	Length (mm) x diameter (mm) and type	Number and location
Bottom plate to floor framing at:				
(a) External walls and internal wall bracing elements	100 x 3.75	2 at 600 mm centres	90 x 3.15	3 at 600 mm centres
(b) Internal walls (may be nailed to floor decking)	100 x 3.75	1 at 600 mm centres	90 x 3.15	1 at 600 mm centres
(c) Trimmer not exceeding 4.2 m long	100 x 3.75	4 (end nailed)	90 x 3.15	6 (end nailed)
Dwang to stud	75 x 3.15 or 100 x 3.75	2 (skewed) 2 (end nailed)	75 x 3.06 90 x 3.15	2 (skewed) 2 (end nailed)
Fishplate to straightened stud	60 x 2.8	4 each side of cut	60 x 2.8	4 (each side of cut)
Half joint in top plate	75 x 3.15	3	75 x 3.06	4
Lintel to trimming stud	75 x 3.15 or 100 x 3.75	4 (skewed) 2 (end nailed)	90 x 3.15	3 (end nailed)
Ribbon board to stud	100 x 3.75	2	90 x 3.15	3
Sill or header trimmer to trimming stud for:				
(a) Trimmer not exceeding 2.4 m long	100 x 3.75	2 (end nailed)	90 x 3.15	3 (end nailed)
(b) Trimmer not exceeding 3.6 m long	100 x 3.75	3 (end nailed)	90 x 3.15	5 (end nailed)
(c) Trimmers not exceeding 4.2 m long	100 x 3.75	4 (end nailed)	90 x 3.15	6 (end nailed)
Solid plaster batten to stud	60 x 2.8 (galv.)	500 mm centres	60 x 2.8 (galv.)	500 mm centres
Stud to plate	100 x 3.75 or 75 x 3.15	2 (end nailed) 4 (skewed)	75 x 3.06 90 x 3.15	4 (skew nailed) 3 (end nailed)
Top plate 150 mm x 40 mm to 100 mm x 50 mm and top plate to lintel	100 x 3.75	2 at 500 mm centres	90 x 3.3 90 x 3.15	3 at 500 mm 3 at 500 mm centres
Trimming studs at openings, blocking and studs at wall intersections	100 x 3.75	600 mm centres	90 x 3.3 90 x 3.15	600 mm centres
Trimming stud to doubled stud immediately under lintel	100 x 3.75	2	90 x 3.15	2
Waling to stud	60 x 2.8	2	60 x 2.8	2

NOTE -

- (1) Nail lengths and diameters are the minimum required.
- (2) Refer to 4.4 for required protective coatings for metal fasteners.

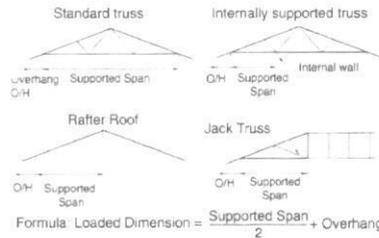


STUD TO TOP PLATE FIXING SCHEDULE
(ALTERNATIVE TO NZS 3604:1999 TABLE 8.18)

NOTE:

- All fixings are designed for vertical loads only. Dead loads include the roof weight and standard ceiling weight of 0.20kPa. Refer to table 8.19, NZS3604:1999 for nailing schedule to resist horizontal loads.
- These fixings assume the correct choice of rafter/truss to top plate connections have been made. Refer to the LUMBERLOK® Truss Fixing Chart.
- Gable end wall top plate/stud connections require only 2x90x3.33 nails driven vertically into stud through top plate.
- All Fixings assume top plate thickness of 45mm maximum.
- Wall framing arrangements under girder trusses are not covered in this schedule.

LOADED DIMENSION DEFINITION



SELECTION CHART FOR FIXING LOADS - TOP PLATE TO STUD

Loaded Dimension	Light Roof Wind Zone				Heavy Roof Wind Zone			
	L	M	H	VH	L	M	H	VH
1.5	A	A	B	B	A	A	B	B
2.0	A	B	B	C	A	A	B	B
2.5	A	B	C	C	A	A	B	C
3.0	B	B	C	D	A	A	B	C
3.5	B	B	C	D	A	A	B	C
4.0	B	C	D	D	A	A	C	D
4.5	B	C	D	D	A	B	C	D
5.0	B	C	D	D	A	B	C	D
5.5	B	C	D	D	A	B	C	D
6.0	B	C	D	D	A	B	C	D

- All studs at 600 crs.
- For studs at 400 crs decrease loaded dimension by 33%.
- All trusses at 900 crs.
- For trusses at 1200 crs increase loaded dimension by 33%.

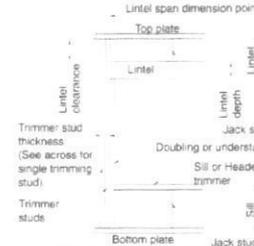
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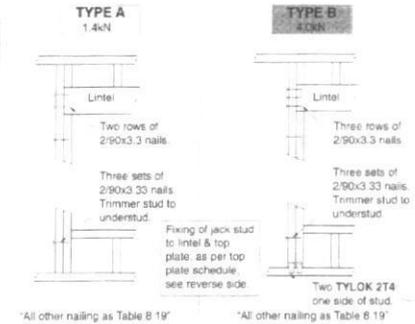
LINTEL FIXING SCHEDULE

(ALTERNATIVE TO NZS 3604:1999 TABLE 8.14 & FIGURE 8.12)

DEFINITIONS

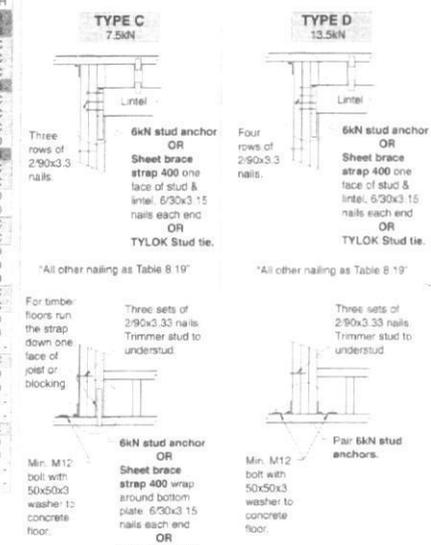


LINTEL FIXING TYPES



SELECTION CHART FOR LINTEL FIXING

Lintel Span Dimension	Loaded Side	Light Roof Wind Zone				Heavy Roof Wind Zone			
		L	M	H	VH	L	M	H	VH
1.5	2.0	A	A	B	B	A	A	B	B
	3.0	A	B	B	C	A	A	B	B
	4.0	A	B	C	C	A	A	B	C
	5.0	B	B	C	D	A	A	B	C
	6.0	B	B	C	D	A	A	B	C
2.0	2.0	A	B	B	C	A	A	B	B
	3.0	A	B	C	C	A	A	B	C
	4.0	B	B	C	D	A	A	B	C
	5.0	B	C	D	D	A	A	C	D
	6.0	B	C	D	D	A	B	C	D
2.4	2.0	A	B	C	C	A	A	B	B
	3.0	B	B	C	D	A	A	B	C
	4.0	B	C	D	D	A	A	C	D
	5.0	B	C	D	D	A	B	C	D
	6.0	B	C	D	D	A	B	C	D
3.0	2.0	A	B	C	C	A	A	B	B
	3.0	B	B	C	D	A	A	B	C
	4.0	B	C	D	D	A	B	C	D
	5.0	B	C	D	D	A	B	C	D
	6.0	B	C	D	D	A	B	C	D
3.6	2.0	B	B	C	C	A	A	B	B
	3.0	B	C	D	D	A	B	C	D
	4.0	B	C	D	D	A	B	C	D
	5.0	B	C	D	D	A	B	C	D
	6.0	B	C	D	D	A	B	C	D
4.2	2.0	B	B	C	C	A	A	B	B
	3.0	B	C	D	D	A	B	C	D
	4.0	B	C	D	D	A	B	C	D
	5.0	B	C	D	D	A	B	C	D
	6.0	B	C	D	D	A	B	C	D
4.8	2.0	B	C	D	D	A	A	C	C
	3.0	B	C	D	D	A	B	C	D
	4.0	B	C	D	D	A	B	C	D
	5.0	B	C	D	D	A	B	C	D
	6.0	B	C	D	D	A	B	C	D



NOTES

- Lintels accepting Girder trusses for ALL load cases use Fixing type C where contributory area = 10m²
- Fixing type D where contributory area = 20m²
- All cases outside this require specific design

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Table 10.14 – Nailing schedule for hand driven and power driven nails (see 10.5.1)

Joint	Hand driven nails		Power driven nails	
	Length (mm) x diameter (mm) and type	Number and location	Length (mm) x diameter (mm) and type	Number and location
Roof framing				
Rafter or jack rafter to ridge board or top plate (except skillion roofs) (see 10.2.1.3.7)	See table 10.2	See table 10.2	See table 10.2	See table 10.2
Truss to top plate of external wall	See tables 10.12 and 10.13	See tables 10.12 and 10.13	See tables 10.12 and 10.13	See tables 10.12 and 10.13
Truss to top plate of internal wall	100 x 3.75	2	90 x 3.15	2 4
Ceiling batten to parallel top plate of internal wall bracing element	75 x 3.15	2 at 400 mm centres	90 x 3.15	2 at 400 mm centres
Collar tie or cleat to rafter	75 x 3.15	4	75 x 3.06	4
Fitches to ridge board and roof members for each side on both joints	60 x 2.8	3	60 x 2.8	3
Hip rafter to top plate	See table 10.2	See table 10.2	See table 10.2	See table 10.2
Underpurlin strut to underpurlin or top plate or strutting beam	100 x 3.75 together with fixing types as set out in table 10.6	2	90 x 3.15 together with fixing types as set out in table 10.6	3
Strutting beam to top plate	100 x 3.75 together with fixing types as set out in table 10.7	2 (skewed)	90 x 3.15 together with fixing types as set out in table 10.7	2 (skewed)
Roof braces at each connection to a framing member:				
(a) 100 mm x 25 mm brace	75 x 3.15	3	75 x 3.15	3
(b) 75 mm x 50 mm brace runner	100 x 3.75	2	90 x 3.15	3
(c) 100 mm x 50 mm brace	100 x 3.75	3	90 x 3.15	5
(d) Steel strip brace	60 x 3.15	3		
(i) At ends	60 x 3.15	2		
(ii) Other cases				
(iii) To ends of braces				

NOTE –

- (1) Nail lengths and diameters are the minimum required.
 (2) Refer to 4.4 for required protective coatings for metal fasteners.

Table 10.14 – Nailing schedule for hand driven and power driven nails (continued) (see 10.5.1)

Joint	Hand driven nails		Power driven nails	
	Length (mm) x diameter (mm) and type	Number and location	Length (mm) x diameter (mm) and type	Number and location
Roof framing (continued)				
Blocking between rafters, joists or truss chords, 100 mm x 50 mm	100 x 3.75	2 (end nailed)	90 x 3.15	2 (end nailed)
Outrigger to gable top plate (as for equivalent purlins)	See table 10.9	See table 10.9	See table 10.9	See table 10.9
Outrigger to rafter	100 x 3.75 or 75 x 3.15	2 (end nailed) 4 (skewed)	90 x 3.15	3 (end nailed)
Flying rafter to outrigger	100 x 3.75	2	90 x 3.15	3
Outrigger blocking to top plate	100 x 3.75	4 (skewed)	90 x 3.15	4 (skewed)
Purlin or batten directly to rafter or top chord	See table 10.9	See table 10.9	See table 10.9	See table 10.9
Roof sarking				
Board sarking to rafters or top chords:	2 1/2 x finished thickness			
(a) Boards not exceeding 75 mm wide		1		
(b) Boards exceeding 75 mm wide		2		
Sheet material for sheet sarking to:	30 x 2.5 FH			
(a) Rafters or top chords at sheet edges		150 mm centres		
(b) Intermediate supports		300 mm centres		
Purlins or battens through sarking to rafter or top chord	See table 10.11	See table 10.11	See table 10.11	See table 10.11

NOTE –

- (1) Nail lengths and diameters are the minimum required.
 (2) Refer to 4.4 for required protective coatings for metal fasteners.

P.N.C.S. APPROVED

Table 10.12 – Fixing types of roof trusses at supports (see 10.2.2.6.1)

Truss spacing (mm)	Fixing type											
	Light roofs								Heavy roofs			
	900				1200				900			
Wind zone	L	M	H	VH	L	M	H	VH	L	M	H	VH
Loaded dimension of support (m)												
3.0	C	C	C	D	C	B	C	D	A	A	C	C
3.5	C	C	C	D	C	C	D	E	A	A	C	C
4.0	C	C	C	D	C	C	D	E	A	C	C	C
4.5	C	C	D	E	C	C	D	F	A	C	C	D
5.0	C	C	D	E	C	C	E	F	A	C	C	D
5.5	C	C	D	E	C	C	E	F	A	C	C	D
6.0	C	C	D	F	C	D	E	F	A	C	C	D

Table 10.13 – Key to fixing types and capacity for rafters, roof trusses, underpurlins, ridge beams and strutting beams (see 10.2.2.6.1)

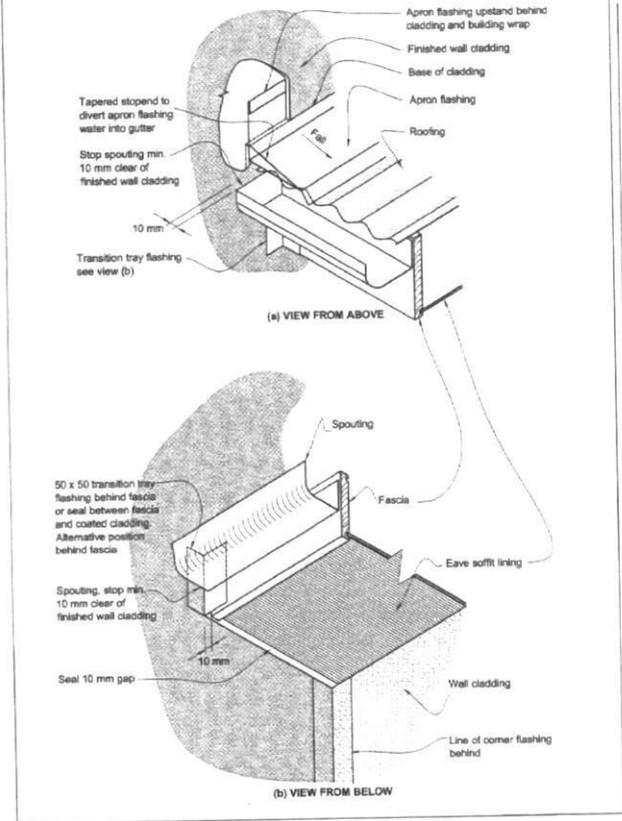
Fixing type	Fixing to resist uplift	Alternative fixing capacity (kN)
A	2/100 x 3.75 skewed nails	0.7
B	2/100 x 3.75 skewed nails + 1 wire dog	2.7
C	2/100 x 3.75 skewed nails + 2 wire dogs	4.7
D	2/100 x 3.75 skewed nails + 3 wire dogs	6.7
E	2/100 x 3.75 skewed nails + 4 wire dogs	8.7
F	2/100 x 3.75 skewed nails + U strap of 27 mm x 1.2 mm 10/30 x 3.15 nails at each end	16.0

Table 7: Metal flashings – general dimensions					
Paragraphs 4.6, 4.6.1.1 a), 4.6.1.2 b), 4.6.1.3 a), b), 4.6.1.4, 4.6.1.5 b), 4.6.1.7 a), b), 5.1 a), c), d), 5.4 c), 7.4.4, 8.3.8, 9.1, 10.4, 9.1, 10.5, 9.1, 10.6 and 9.4.5.3 b) Figures 7, 9, 10, 36, 41-48, 54, 55, 61, 92, 97 and 101					
Type	Description	All ¹⁾	Situation 1 ²⁾ minimum mm	Situation 2 ³⁾ minimum mm	Figure reference (as example)
Aprons: general	Transverse flashing over roofing		130 ⁴⁾	200 ⁴⁾	Figure 7 (X values)
	Parallel flashing over roofing	Two crests, finish in next trough – Paragraph 4.6.1.1 b)			Figure 48 (Y values)
Ridges/hips	Transverse flashing over roofing		Refer Aprons: general		Figure 45 (X values)
Changes in roof pitches	Upper lap under roofing	250 mm min.			Figure 44 (X values)
	Transverse flashing over roofing		Refer Aprons: general		
Barges	Overlap to barge board		50 ⁴⁾	70 ⁴⁾	Figure 47 (Z values)
	Overlaps to cladding		50 ⁴⁾	70 ⁴⁾	Figure 10 (Z values)
Cappings	Slope to top parapet	5°			
	Housing – balustrade ⁵⁾	5°			
Roof or deck to wall	Overlaps to roofing		Refer Aprons: general		Figure 7 (X or Y values)
	Lap under cladding above	75 mm min.			
Windows	Clearance below cladding	35 mm min.			
	Total upstand	110 mm min.			
	Window flange clearance for direct fixed claddings	5 mm			Figure 81
	Cover to window flange	10 mm ⁶⁾			
Sills	Sill flashing slope ⁶⁾	5°			
	Head flashing slope	15°			
Heads	Lap under cladding above	35 mm min.			
	Anti-capillary gap to cladding	5 mm			
	Total upstand	40 mm min.			
	Corner flashings ⁷⁾	50 mm x 50 mm minimum			Figure 79
Inter-storey junctions	Junction flashing: slope	15°			Figure 70
	Lap over cladding below ⁸⁾	35 mm min. ⁸⁾			
	Lap under cladding above	35 mm min.			
	Clearance under cladding	5 mm			
	Total upstand	40 mm min.			

Amend 2
Jul 2002Amend 2
Jul 2005

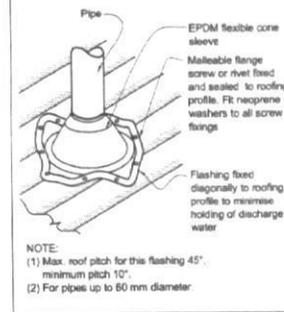
Figure 8: Gutter/wall junction
Paragraphs 8.1, 8.2 and 8.3.9

NOTE: (1) The upstand at the lower edge of the apron flashing may be performed to a larger size and then trimmed on site to suit.
(2) The transition flashing bridges gap at the end of the fascia to protect the soffit framing. View (b) indicates position of transition flashing in relation to soffit, when viewed from below.
(3) Building wrap omitted for clarity.



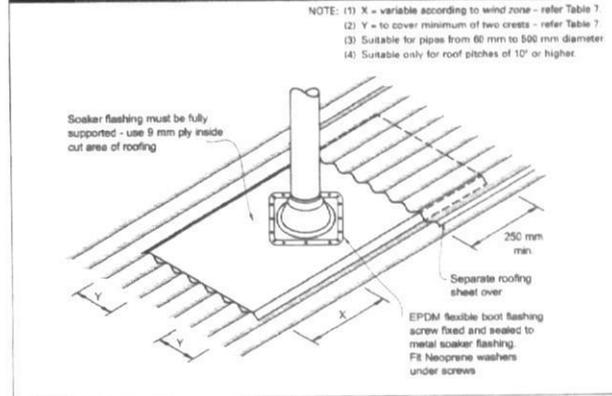
Amend 2 Jul 2005

Figure 53: Flashing for small pipes
Paragraphs 8.3.10, 8.4.17 a), 9.6.8.5 and 9.6.9.5



Amend 2 Jul 2005

Figure 54: Soaker flashing for pipe penetrations
Paragraphs 8.3.10 and 8.4.17 b)



Amend 2 Jul 2005

Amend 2 Jul 2005

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9.1.8.5 Wall framing behind cavities

Where stud spacings are greater than 450 mm, an intermediate means of restraining the building wrap and insulation from bulging into the drained cavity shall be installed. Acceptable means of achieving this are by using:

- a) 75 mm galvanized mesh,
- b) Polypropylene tape at 300 mm centres,
- c) Galvanized wire at 300 mm centres fixed to diaphragms over the building wrap, or
- d) Vertical cavity battens at 300 mm centres.

Wire or mesh shall be galvanized in accordance with AS/NZS 4534.

Diaphragms shall be at a minimum of 800 mm centres, except when rigid sheathing is fixed to the framing prior to fixing cavity battens.

9.1.9 Penetrations

9.1.9.1 Penetrations through cavities

Window penetrations through cavities shall meet the requirements of Paragraph 9.2 to Paragraph 9.9.

9.1.9.2 Other cavity penetrations

Where penetrations of the wall cladding are wider than the cavity batten spacing, allowance shall be made for air flow between adjacent cavities by leaving a minimum gap of 10 mm between the bottom of the vertical cavity batten and the flashing to the opening.

9.1.9.3 Pipes and service penetrations

Pipes and service penetrations shall be made weathertight by using flashings and, where necessary, sealant complying with:

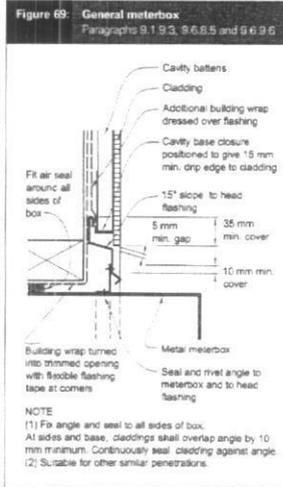
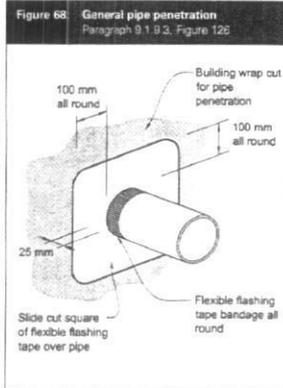
- a) Type F, Class 20LM or 25LM of ISO 11600, or
- b) low modulus Type II, Class A of Federal Specification TT-S-00230C.

Details specific to particular claddings are given in Paragraph 9.2 to Paragraph 9.9.

Acceptable methods of flashing pipes and a meterbox are shown in Figure 68 and Figure 69.

COMMENT:

Where possible, meterboxes should be located in sheltered areas of the building, such as a porch, or be installed behind a weatherproof glazed panel.



Walls

Walls – Timber Frame – Horizontal Fixing

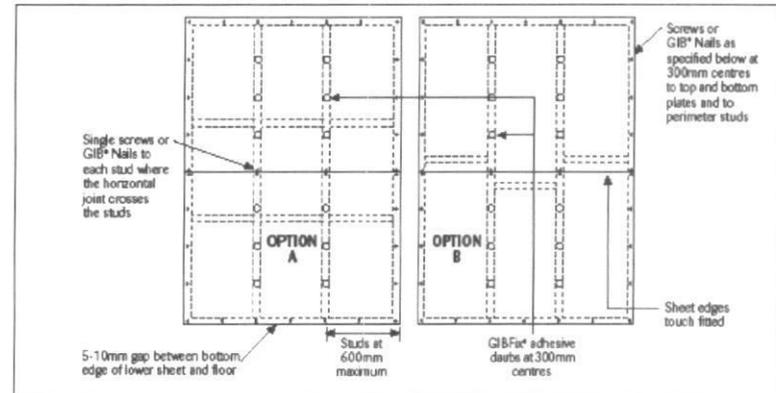
GIB® Standard plasterboard, GIB UltraLine®, GIB Toughline®, GIB Aqualine® and GIB Wideline® If bracing, noise control, fire rating or tiling considerations exist consult the relevant section in this publication for appropriate information.

Wall Framing

Framing dimensions must comply with the requirements of NZS 3604:1999

- The moisture content of timber framing shall be 18% or less at the time of lining
- Studs shall be spaced at 600mm centres maximum for both 10mm and 13mm GIB® plasterboard
- Nogs to be evenly spaced with a maximum spacing of 1350mm. Nogs may be staggered 150mm maximum either side of a horizontal line
- Nogs not required behind horizontal joint except in shower situations or specific fire or noise control systems
- 1350 wide sheets (GIB Wideline®) are available for fixing horizontally where stud height is between 2400 and 2700mm

Fastening the Linings - Horizontal Fixing only



- Fasteners**
- 10mm GIB® plasterboard - minimum 25mm x 6g GIB® Grabber® High Thread Drywall screws or 30mm x 2.8mm GIB® Nails.
 - 13mm GIB® plasterboard - minimum 32mm x 6g GIB® Grabber® High Thread Drywall screws or 30mm x 2.8mm GIB® Nails.
- Fasteners Centres**
- 300mm centres to top and bottom plates and to perimeter studs.
 - Single screws or GIB® Nails to each stud where the horizontal joint crosses the studs.
 - Place fasteners 12mm from sheet edges.
 - Daubs of GIBFix® adhesive at 300mm centres to intermediate studs.
 - Do not place adhesive at sheet edges or under fasteners. Sheet edges at door or window openings can be adhesive fixed unless forming part of the perimeter of a bracing element.
- Lining**
- Lay the sheets horizontally leaving a 5-10mm gap at the floor line to allow for movement of the framing members.
 - Sheets to be touch fitted. Use taper edge/square edge board wherever possible as this makes it easier for subsequent trades.
- Jointing**
- Jointing shall be carried out in accordance with the instructions on page 79 of this publication.

Walls - Timber Frame - Vertical Fixing

GIB® Standard plasterboard, GIB Ultralite®, GIB Aqualine® and GIB Toughline®

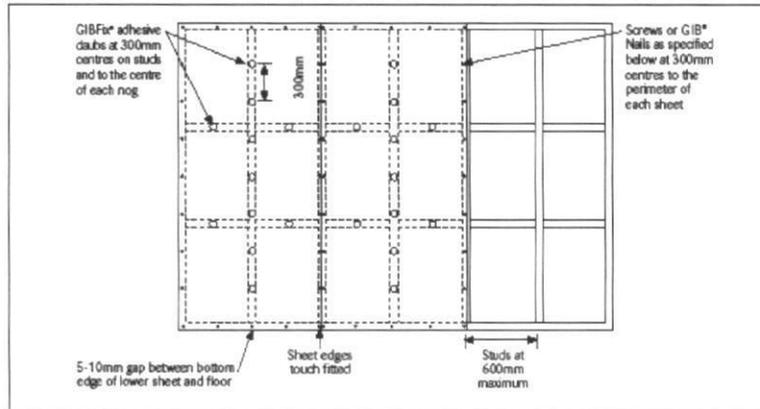
If bracing, noise control, fire rating or tiling considerations exist consult the relevant section in this publication for appropriate information.

Wall Framing

Framing dimensions must comply with the requirements of NZS 3604:1999

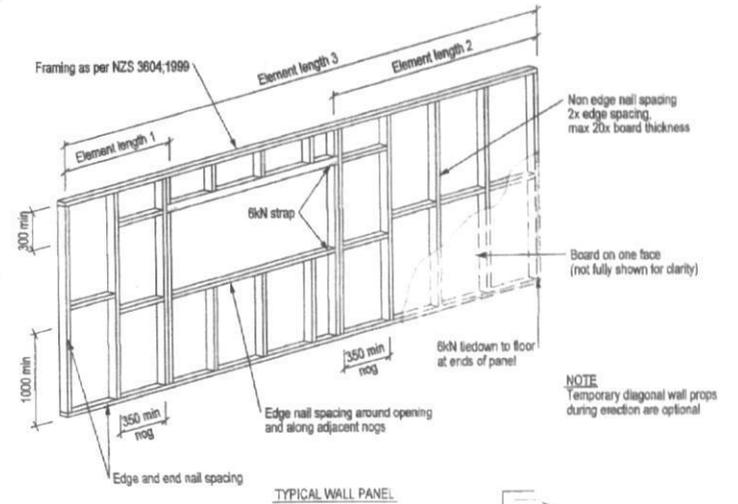
- The moisture content of timber framing shall be 18% or less at the time of lining
- Studs shall be spaced at 600mm centres maximum for both 10mm and 13mm GIB® plasterboard
- Nogs to be evenly spaced with a maximum spacing of 1350mm. Nogs may be staggered 150mm maximum either side of a horizontal line

Fastening the Linings - Vertical Fixing



- Fasteners**
- 10mm GIB® plasterboard - 25mm x 6g GIB® Grabber® High Thread Drywall screws or 30mm x 2.8mm GIB® Nails.
 - 13mm GIB® plasterboard - 32mm x 6g GIB® Grabber® High Thread Drywall screws or 30mm x 2.8mm GIB® Nails.
- Fasteners Centres**
- 300mm centres around the sheet perimeter.
 - Place fasteners 12mm from sheet edges.
 - Daubs of GIBFix® adhesive at 300mm centres to intermediate studs and to the centre of each nog.
 - Do not place adhesive at sheet edges or under fasteners. Sheet edges at door or window openings can be adhesive fixed unless forming part of the perimeter of a bracing element.
- Lining**
- Lay the sheets vertically leaving a 5-10mm gap at the floor line to allow for movement of the framing members.
 - Sheets to be touch fitted.
- Jointing**
- jointing shall be carried out in accordance with the instructions on page 79 of this publication.

32



NOTE
Temporary diagonal wall props during erection are optional

Type	Minimum length(mm)	Thickness (mm)	Nail spacing(mm)	BU/m Wind	BU/m Equake
TRI-12	600	12	150	100	100
TRI 15	600	15	150	100	100
STR 9	600	9	150	100	100
STR 12	600	12	150	100	100



		R.F. GALE & Associates Ltd 14 Apitahi St. ORAKEL, AUCKLAND PH/FAX: (09) 521 0364 email: gale@iconz.co.nz		JOB TITLE BOARD SHEETING BRACE VALUES		NOTES The Contractor must check all dimensions on site before commencing any work	
DRAWING TITLE KEY DIAGRAM				DRAWN BY Pamela Eades		SCALE OF A3 N T S	
DATE DRAWN 09/12/00		REV BY R G		DATE 19/05/03		CHECKED BY 00 058	
				REVISED BY A		DATE / REV No. C 01	

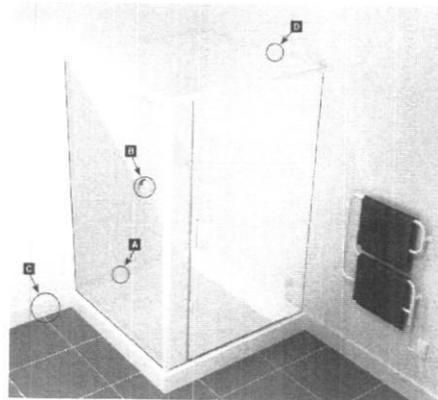
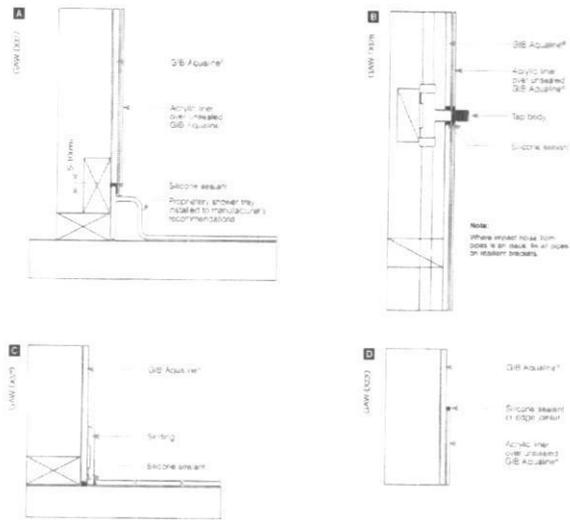
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GIB AQUALINE® WET AREA SYSTEMS – TYPICAL DETAILS



Shower – Acrylic Liner and Base

MARCH 2007



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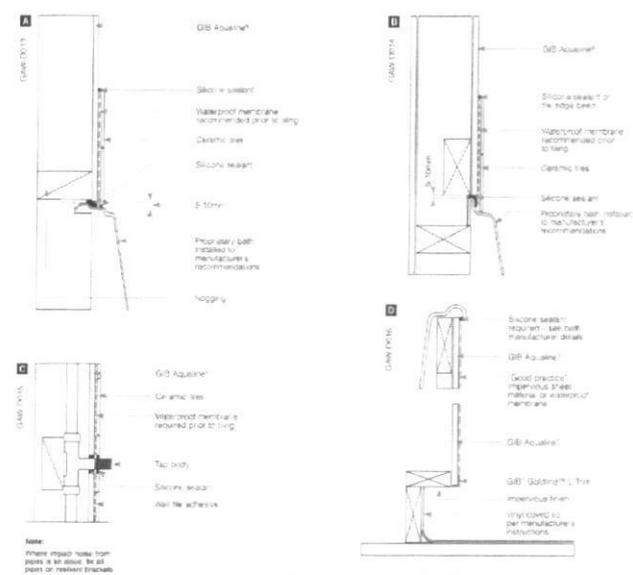
21

GIB AQUALINE® WET AREA SYSTEMS – TYPICAL DETAILS

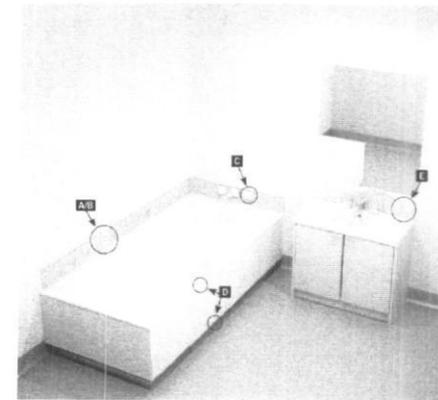


Bath – Tiled Upstand

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Note: Where shower holes from pipes & all other in all pipes or recessed brackets.



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22