

# Approved Building Consent Documents

**Please Note: A copy of the stamped approved documents must be available on site for all inspections.**

## Inspection booking timeframes

Call received	before 3pm inspection will be done	after 3pm inspection will be done
Monday	Wednesday	Thursday
Tuesday	Thursday	Friday
Wednesday	Friday	Monday
Thursday	Monday	Tuesday
Friday	Tuesday	Wednesday

Building inspections and enquiries phone: 03 347 2839

**Please ensure all work for inspection is ready the day before. Incomplete work requiring re-inspection will incur an additional inspection fee.**



**Design & Draughting**

85 Lombard Street, PO Box 652, Palmerston North  
P. 06 353 0217.. E. office@emerge-arch.co.nz

**Proposed New Residence**

# **GH CHRISTCHURCH SOUTH LTD**

**Lot 719 - S/D of Lot 709 DP 562674**

**41 Oates Street, Rosemerryn  
Selwyn**



19 Holmes Hanover Lane, Halswell. P.O. Box 37163, Halswell, Christchurch  
E: evanb@generation.co.nz E: nadiab@generation.co.nz  
M: 021 840 088 M: 021 216 2198

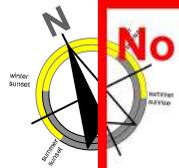
Layout ID	Layout Name
dwg 01	Site Plan
dwg 02	Floor Plan
dwg 03	Elevations
dwg 04	Foundation Plan
dwg 05	Wall Setout Plan
dwg 06	Door/Window Schedule
dwg 07	Roof Plan
dwg 08	Bracing Plan
dwg 09	Bracing Calculations
dwg 10	Drainage Plan
dwg 11	Cross Sections and Notes
dwg 12	Details R/bract/Floor
dwg 13	Details Brick
dwg 14	Details Roofing
dwg 15	Details Roofing
dwg 16	Wet area Details
dwg 17	Hot Water Supply
dwg 18	Landscaping Plan

Job no: EC842



SDC - Approved Building Consent Document - BC-220380 - Pg 3 of 30 - 1/04/2022 - bohmed

**No building until S224 issued**  
**25/03/2022 hillsI**



SPECIFIC PROJECT NOTES	
<i>LEGAL DESCRIPTION:</i>	
LOT	719
DP	S/D of Lot 709 DP 562674
SITE AREA	719.66 sqm
STREET #	41 Oates Street
<i>AREAS:</i>	
SITE AREA	719.66 sqm
AREA OVER CLADDING	206,21 sq m
AREA OVER FRAMING	196,85 sq m
SITE COVERAGE ACHIEVED	28,65 %
SITE COVERAGE ALLOWABLE	40,0 %
<i>ZONES:</i>	
WIND	A (High)
EARTHQUAKE	2
CORROSION	B
SNOW LOADING	N4
ENVIRONMENTAL ZONE	Living Z
GROUND CATEGORY	TC2

Site to be excavated as required to gain appropriate building platform height and compacted backfill placed to suit areas needing filling.

**NZBC F5 - CONSTRUCTION AND DEMOLITION HAZARD COMPLIANCE**  
Acceptable Solution F5/A5.1 states no site barrier requirement for domestic dwellings up to 2 storeys above ground unless specific hazards exist.

**GENERATION HOMES SITE SAFETY MANAGEMENT**  
All Generation Homes construction sites will provide a 2.0m high galvanneal security chainlink netting fencing with maximum grid size of 50 x 50mm with posts at 2m spacings to all open unfenced boundary lines, including existing fencing under 1.8m high, to restrict pedestrian access and unauthorised entry by children. A securable chainlink gate will be present for access of contractors, vehicles and staff ONLY. It is expected that Generation Homes construction sites will be in close proximity to other demolition and construction sites with similar security standards or to neighbouring properties. It is also expected that the site be kept clean of rubbish and minimal damage done to the existing ground to form any ponding areas. Where ponding takes place, water run-off and absorption into the earthworks/ground would be planned by building up the site as required.

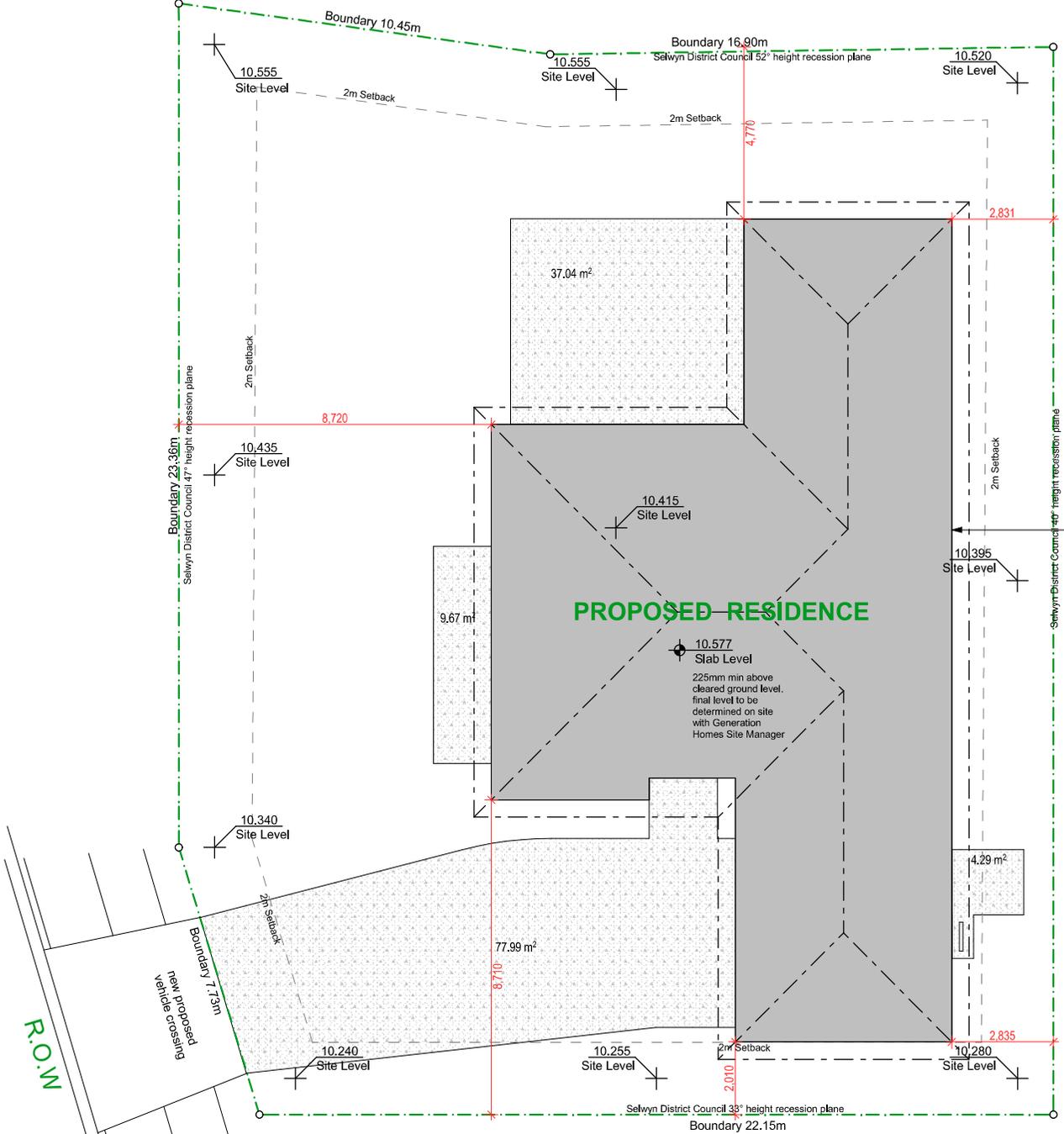
**CONSTRUCTION & DEMOLITIONS NOTE:**  
All construction hazards shall be managed by the main contractor "GH CHRISTCHURCH SOUTH LTD" with their Site safety System "CSM". (Complete Safety Management) This approved system consists of Site Safety Induction, Hazard Identification, Task Analysis then moves on to Isolate, Eliminate or Minimise it solutions. This management system is administered and audited independently from the maincontractor. There are no demolition works within this project.

**Stabilised construction entraceway**  
A stabilised construction entraceway should be built using crushed rock aggregate before construction vehicles enter the site to prevent tracking of dirt onto the road and into the stormwater network, Minimum 3m wide and 100mm deep.

**EROSION & SEDIMENT CONTROL:**  
Ensure Sediment control onsite by way of restricting run off of soil from bulking site. Ensure stockpiling of soil away from site falls or street and if needed block flow of sediment movement by sandbagging or similar action.

**Install private stormwater reticulation**  
Install private stormwater reticulation to enable clean stormwater to be discharged to the council stormwater network or soak holes.

**Temporary downpipes and surface drains**  
Temporary downpipes should be fitted as soon as the roof is installed and directed to the clean water system to further reduce nuisance.



10.000 Datum to be confirmed on Stormwater Grate site by Generation Homes Construction Manager

**SCALE 1:125**

RFI UPDATED ISSUE	30/03/2022
RFI UPDATED ISSUE	04/03/2022
BUILDING CONSENT ISSUE	10/02/2022
<b>Site Plan</b>	
GH CHRISTCHURCH SOUTH LTD	
Lot 719, Rosemerry, Selwyn	
GH CHRISTCHURCH SOUTH LTD	
DATE/FEB '22	SCALE: 1:125, 1:3 EC842 - dwg 01

SDC - Approved Building Consent Document - BC-220390 - Pg 4 of 30 - 1/04/2022 - bohmed

**BUILDING SPECIFICATION**

**WALL FRAMING:**  
All wall framing = 2,452m  
All ceiling heights = 2,410m  
Construction Drawings to specify stud size, spacing & treatment to comply with NZS3604.

**WALL CLADDINGS:**  
**Primary Cladding:**  
selected 70mm Brick over 60mm cavity  
**Feature Cladding:**  
James Hardie Linea weatherboard fixed to framing over 20mm cavity  
**Buildings Pre-Cladding:**  
4.5mm James Hardies HomeRAB board continuous around building envelope

**ROOFING**  
Metrotile Shake pressed metal tile roofing with Satin finish over 50 x 40 SG8 battens at c/c to suit tile profile

**SPOUTING/FACIA**  
continuous colorsteel spouting / fascia system

**JOINERY & GLAZING:**  
double glazed aluminium framed windows and exterior doors as scheduled with selected powdercoated finish .  
All glazing to be in accordance with NZS 4223 parts 3 & 4. Refer to Door and Window schedule for Obscure glazing and single glazed units

**ENTRY PORCH SOFFIT DESIGN:**  
Soffit above Entry shall be flat

**INTERIOR DOOR HEIGHTS:**  
All doors throughout shall be standard 2.0m doorways, or otherwise Selected doors as noted on plans as OH shall be 2.2m overheight doors.

**SERVICES NOTES**

**SMOKE ALARMS:**  
Electrical contractors are to ensure working smoke alarms are fitted within min 3.0m of any sleeping space

**DOWNLIGHTS:**  
- All downlights are to comply with Electrical Safety Regulations 2010 - CA80, CA135, IC or IC-F models only.  
- Insulation clearances to downlights are to comply with Pink Batts' recommendations.

**KITCHEN ISLAND:**  
- Provide double outlet under bench for dishwasher and wastemaster along with a single outlet in ceiling for rangehood

Refer to GH Electrical specification for standards allowance of powerpoints, lights & switches, etc

**CONSTRUCTION:**  
- Ensure any Meter box or Distribution board penetrations of Linings/claddings are kept clear of bracing elements.  
- Ensure also bottom plate penetrations for these services entry do not occur within bracing element locations.  
- Ensure bracing elements are kept min 40mm clear of garage door openings to allow fitting of aluminium jamb extrusions.

Ducted airconditioning by contractor, vent locations to be confirmed by contractors plan and reviewed on site

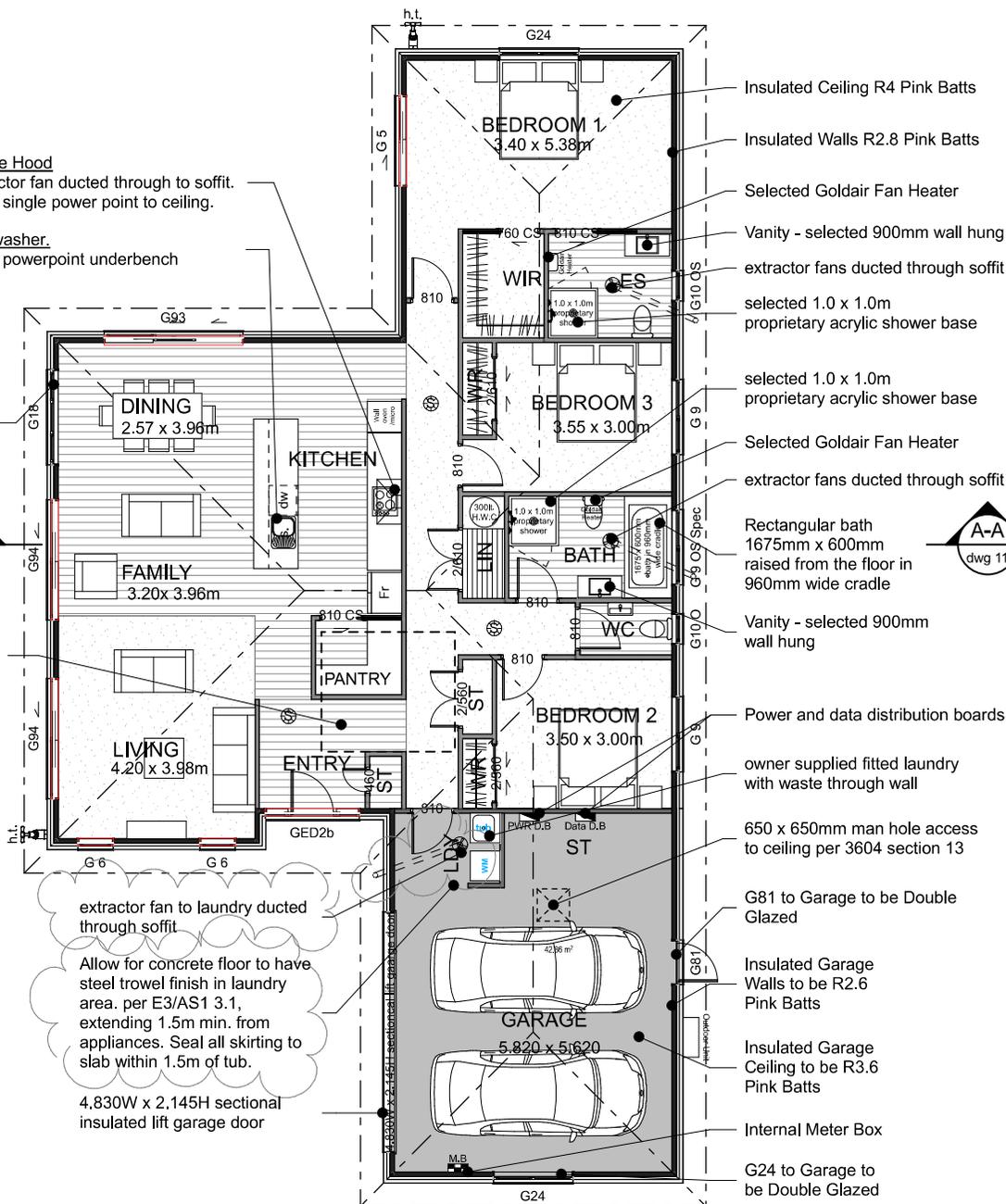
All Glazing to House only, to be Double Glazed Thermally Broken

Area of 2x heat pump trusses to accommodate 14kW ducted heat pump system, final location to be confirmed by Placemakers

All rooms to have artificial lighting to provide illumination of 20 lux min. at floor level, to comply with NZBC G8/AS1

**TILE SLIP RESISTANCE**  
All ceramic tiles to wet areas including entry to have a glazed profile finish to an average friction coefficient of 0.10 - 0.45 or an unglazed smooth finish to an average friction coefficient of 0.10 - 0.60 in accordance with TABLE 2 D1/AS1

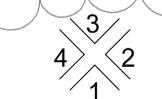
**Range Hood**  
Extractor fan ducted through to soffit. Allow single power point to ceiling.  
**Dishwasher.**  
Allow powerpoint underbench



**FLOOR PLAN LEGEND**

- 90 x 45 SG8 R2.8 Pink Batts
- Insulated exterior Wall with 140 x 35 ribbon board over top plate
- 90 x 45 SG8 Un-Insulated interior Wall with 190 x 35 ribbon board over top plate

- Carpet flooring  
Type as per client selection
- Neptune flooring  
Type as per client selection
- Garage flooring  
Type as per client selection



**ELEVATIONS REFERENCE**

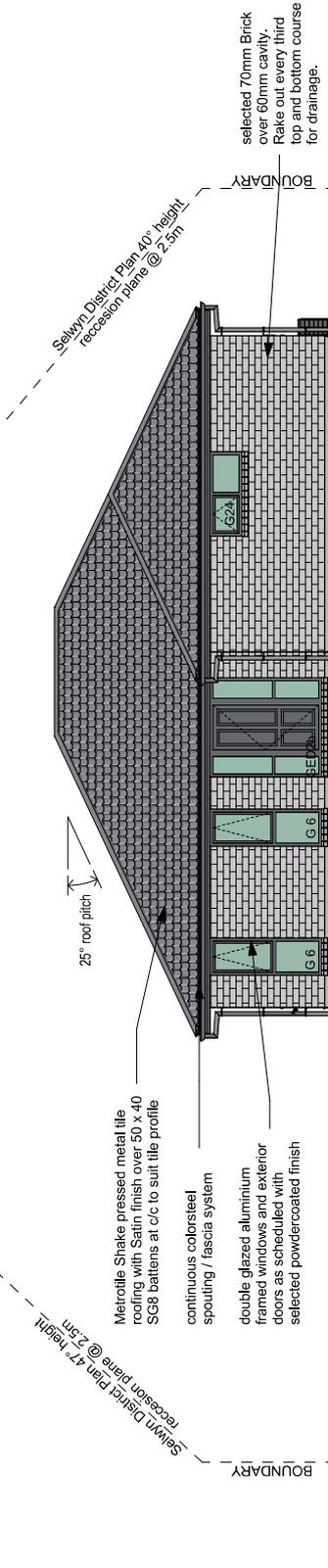
**FLOOR AREAS**  
Area over Cladding - 206.21 sq m  
Area over Framing - 196.85 sq m

**ELECTRICAL LEGEND**

- Internal Meter Board
- Power Distribution Board
- Data Distribution Board
- Smoke alarm
- Exterior hose tap
- Air Conditioning Outdoor Condensing unit
- Air Conditioning Indoor Air handling Unit
- ceiling extractor fan
- Selected Goldair Heater

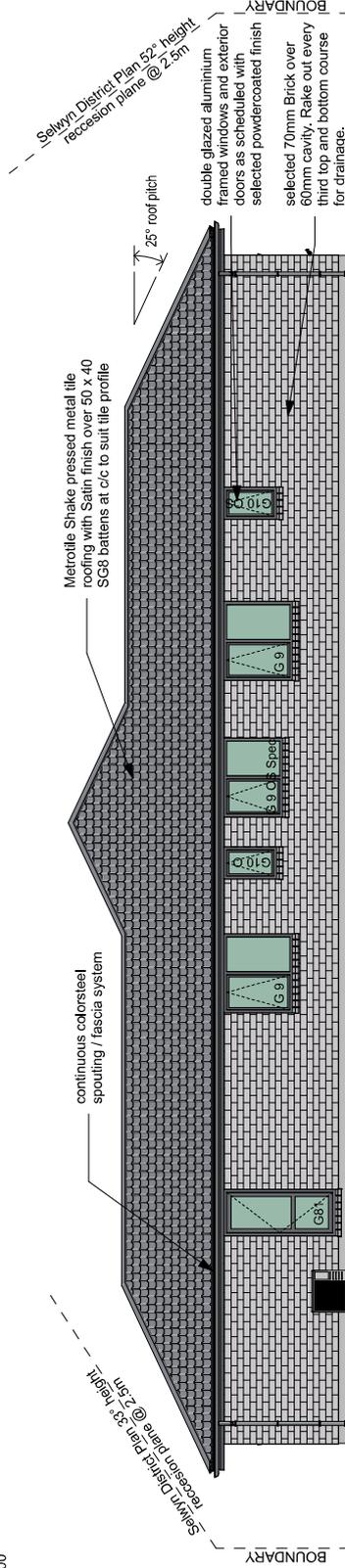
RFI UPDATED ISSUE 30/03/2022  
RFI UPDATED ISSUE 04/03/2022  
BUILDING CONSENT ISSUE 10/02/2022

Floor Plan	
GH CHRISTCHURCH SOUTH LTD	
Lot 719, Rosemerry, Selwyn	
GH CHRISTCHURCH SOUTH LTD	
DATE FEB '22	SCALE: 1:100
EC842	- dwg 02



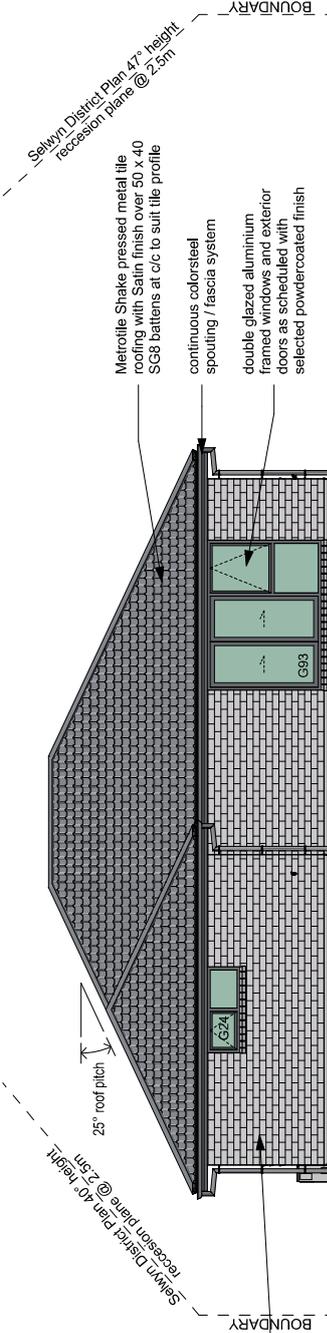
Elevation 1

scale 1:100



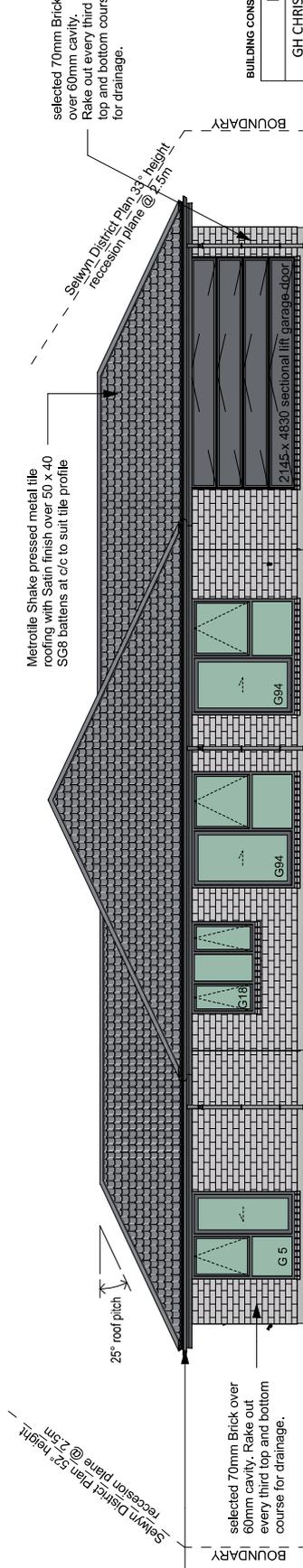
Elevation 2

scale 1:100



Elevation 3

scale 1:100



Elevation 4

scale 1:100

BUILDING ENVELOPE RISK MATRIX		
All Elevations (Worst Case)		
Risk Factor	Risk Severity	Risk Score
Wind zone (per NZS 3604)	High risk	1
Number of storeys	Low risk	0
Roof/wall intersection design	Low risk	0
Eaves width	Medium risk	1
Envelope complexity	Low risk	0
Deck design	Low risk	0
<b>Total Risk Score:</b>		<b>2</b>

**FOUNDATION PLAN LEGEND**

Re-entrant corner steel (2x HD12)  
1.2m long to all internal corners

80mm thick waffle floor slab outline

Exterior line of foundation

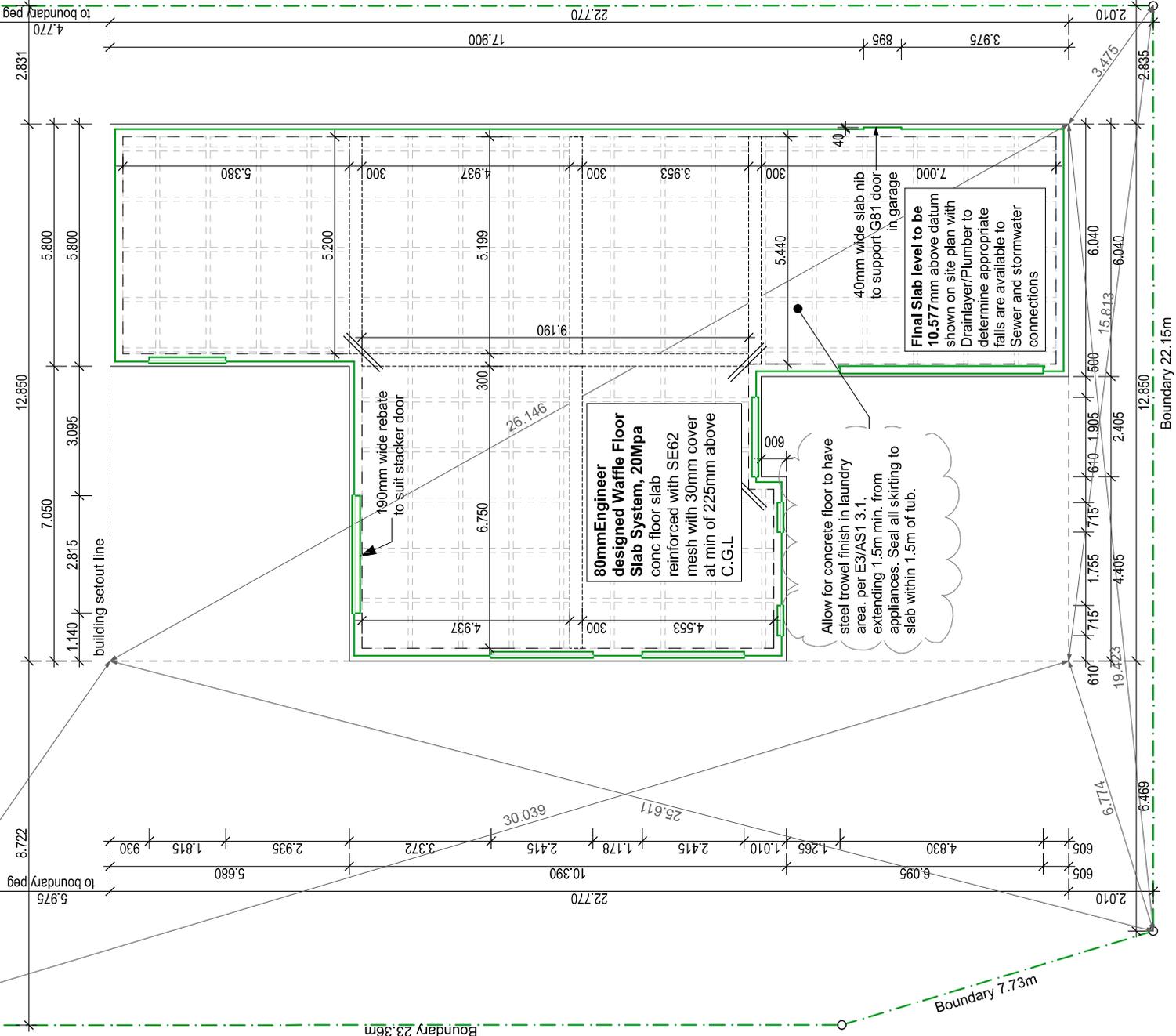
Internal line of foundations. (300W x 220D) as per engineers design

Engineer designed slab thickening beneath loadbearing walls as per engineer drawings

Full height joinery rebate / support step as per floor details and rebate note below

**Refer to the Engineers Specific Detail Drawings for details**

**See engineers dwgs and comments for set out of internal footings for positioning under loadbearing walls**



**GENERAL NOTE FOR BRICK:**  
OPENING DIMENSIONS ALWAYS REFERENCED TO OUTER EDGE OF FOUNDATION LINE. ALLOW 120mm REBATE TO FRAMING LINE

**DOOR/WINDOW REBATE NOTE - BRICK:**  
WHERE BRICK CLADDING IS PRESENT AROUND A FULL HEIGHT WINDOW/DOOR, THE FOUNDATION REBATE IS TO BE 150mm WIDE x 15mm DEEP. REBATES ARE TO BE CONSTRUCTED AS PER FLOOR DETAILS - DWG 12.

**WAFFLE DESIGN**  
READ IN CONJUNCTION WITH ENGINEER DESIGN DRAWINGS SPECIFICATION AND CALCULATIONS.

**SITE PREPARATION**  
REFER TO ATTACHED GEOTECHNICAL REPORT FOR SPECIFIC SITE PREPARATION DETAILS, BEARING DEPTH AND CAPACITY.

**PIPE PENETRATIONS IN FLOOR SLAB**  
WHERE PIPE PENETRATES VERTICALLY INTO THE SLAB, IT SHOULD BE SLEEVED OR WRAPPED WITH A COMPRESSIBLE MATERIAL (25mm MIN.) TO PROTECT IT FROM LATERAL MOVEMENT

**IMPORTANT**  
CHECK ALL DIMENSIONS AGAINST FLOOR PLAN, ANY DISCREPANCIES TO BE VERIFIED BY DESIGNER.

**SETOUT VERIFICATION**  
THE WAFFLE FLOOR AND FOUNDATION CONTRACTOR IS TO VERIFY ALL SETOUT AND SITE LOCATION DIMENSIONING WITH THE GENERATION HOMES SITE MANAGER PRIOR TO FINALISING FORMWORK AND CONCRETE POURING. THE WAFFLE FLOOR CONTRACTOR MUST ALSO VERIFY ALL SLAB EDGE REBATES AND DOOR SILL REBATES AGAINST THE WALL SETOUT PLAN - DWG 05.

**Final Slab level to be 10.577m** above datum shown on site plan with Drainlayer/Plumber to determine appropriate falls are available to Sewer and stormwater connections

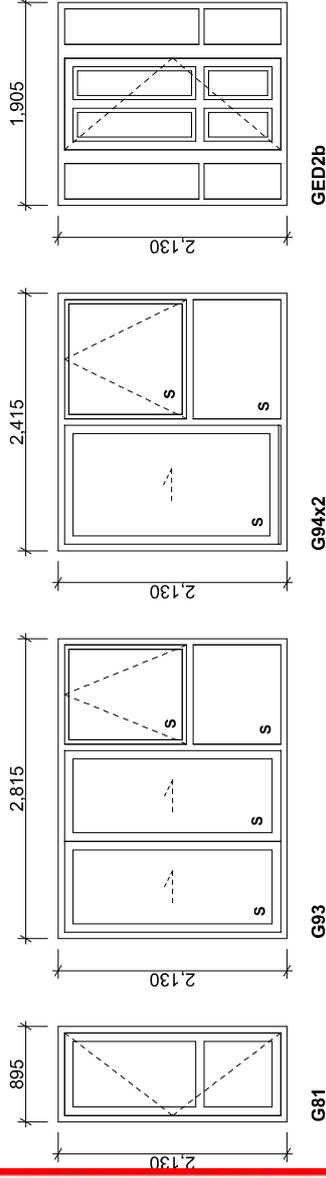
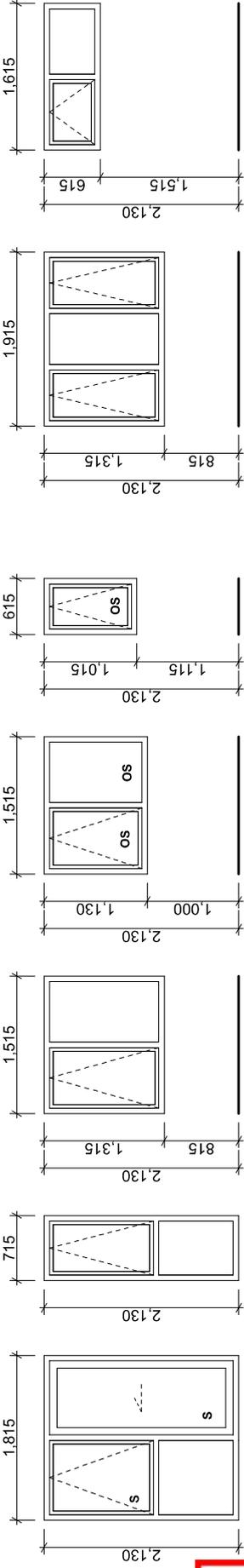
Allow for concrete floor to have steel trowel finish in laundry area. per E3/AS1 3.1, extending 1.5m min. from appliances. Seal all skirting to slab within 1.5m of tub.

**80mm Engineer designed Waffle Floor Slab System, 20Mpa**  
conc floor slab reinforced with SE62 mesh with 30mm cover at min of 225mm above C.G.L

30/03/2022  
REPLACED ISSUE  
04/03/2022  
BUILDING CONSENT ISSUE  
10/02/2022

**Foundation Plan**  
GH CHRISTCHURCH SOUTH LTD  
Lot 719, Rosemeyn, Selwyn  
GH CHRISTCHURCH SOUTH LTD  
DATE FEB 22 | SCALES: 1:100 | EC842 - dwg 04





Room name	Floor Area	Openable area	% ratio	Complies
Bedroom 1	18.3	3.4	19%	NZBC G4/AS1
Bedroom 2	10.65	0.86	8%	NZBC G4/AS1
Bedroom 3	10.5	0.86	8%	NZBC G4/AS1
Bathroom	6.76	0.86	13%	NZBC G4/AS1
Ensuite	5.25	0.62	12%	NZBC G4/AS1
Kitchen/Dining/Living	56	15.57	28%	NZBC G4/AS1

note floor to openable window ratio of no less than 5% NZBC G4 AS1 Natural ventilation

Room name	Floor Area	Glazed area	% ratio	Complies
Bedroom 1	18.3	4.89	27%	NZBC G7/AS1
Bedroom 2	10.65	1.99	19%	NZBC G7/AS1
Bedroom 3	10.5	1.99	19%	NZBC G7/AS1
Bathroom	6.76	1.99	29%	NZBC G7/AS1
Ensuite	5.25	0.62	12%	NZBC G7/AS1
Kitchen/Dining/Living	56	21.13	38%	NZBC G7/AS1

note floor to glazed window ratio of no less than 10% NZBC G7 AS1 Natural Light

note \* denotes room to have artificial light to provide a minimum illuminance of 20 lux

**DOOR & WINDOW NOTES:**

- NOTES:
- Joinery to be Fairview Architectural Linear Suite (AL35)
- All Glazing to House to be Double Glazed, Thermally Broken
- All Glazing to Garage to only be Double Glazed
- All joinery powder coated aluminium
- All glazing to NZS 4223 part 1; 2008 and part 3:2016
- All glazing to bathroom /WC to be selected obscure
- All Jambis clear finger jointed 18mm pine
- O - denotes window as drawn with obscure glass
- S - denotes window as drawn with safety glass
- DIMENSIONS SHOWN ARE TRIM SIZE

**NOTE:**  
**FULL HEIGHT WINDOWS/DOORS TO BE INSTALLED IN 15mm DEEP SILL REBATE IN FLOOR SLAB, EXCEPT FOR JOINERY LOCATED IN THE GARAGE AS NOTED ON FOUNDATION PLAN**

**CONFIRM ALL SIZES ON SITE PRIOR TO MANUFACTURE**

**PLEASE NOTE: ALL MEASUREMENTS REFER TO THE TIMBER FRAME TRIMMED OPENING SIZE**

NZBC H1/AS1 COMPLIANCE - SCHEDULE METHOD		SCHEDULE METHOD NZS4218 "NON SOLID CONSTRUCTION"	
WALL FACE	WALL AREA m <sup>2</sup>	GLAZING AREA m <sup>2</sup>	% GLAZING %
Elevation 3 (North)	31.69	7.13	22.50%
Elevation 1 (South)	31.69	9.04	28.53%
Elevation 2 (East)	41.39	6.95	16.79%
Elevation 4 (West)	41.39	17.01	41.10%
<b>SEW TOTALS</b>	<b>114.47</b>	<b>33</b>	<b>28.83%</b>

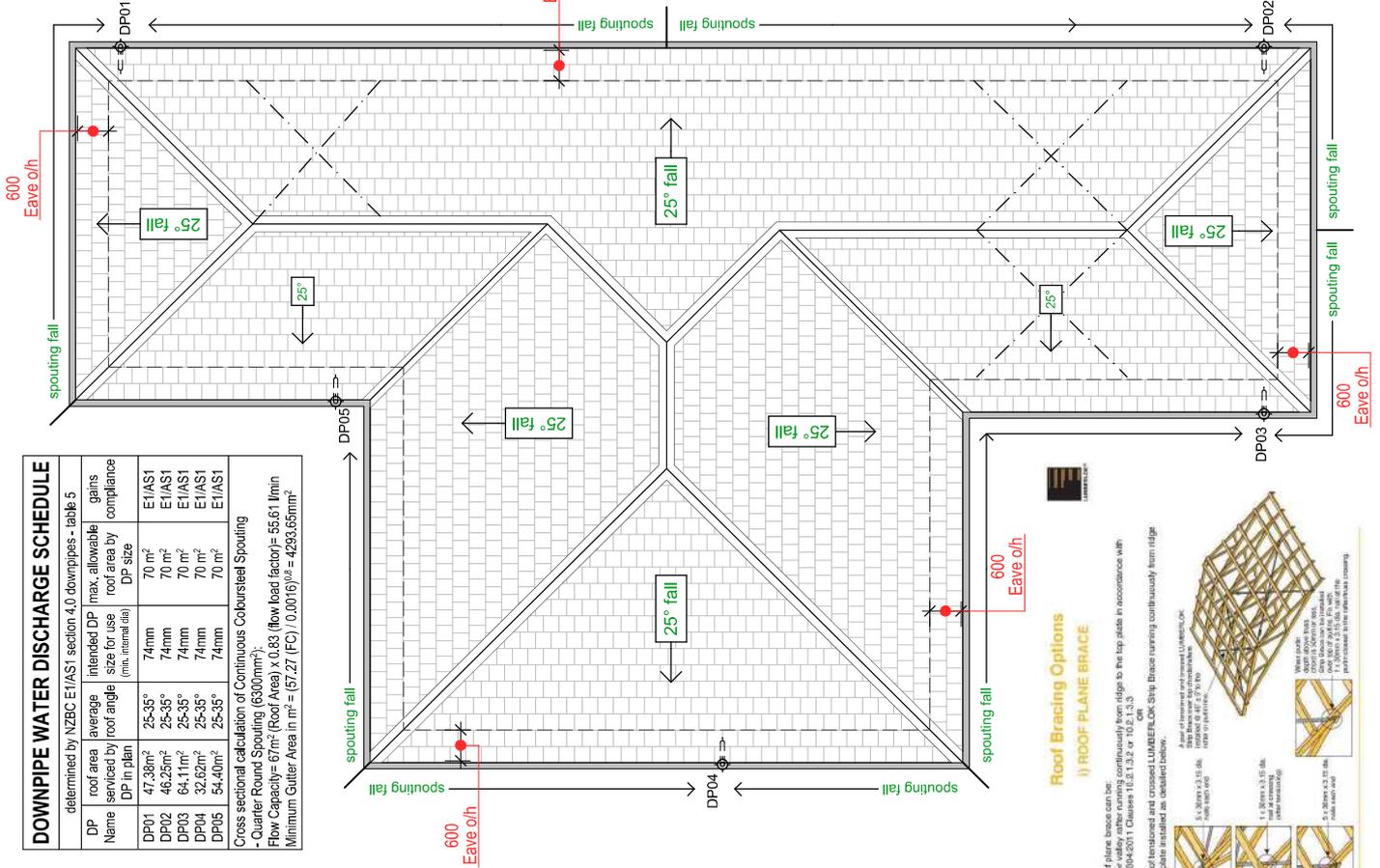
  

NZS4218 R-Values		R Values Provided	Compliance
Roof	R 3.3	R 3.6	NZBC H1/AS1
Wall	R 2.0	R 2.6	NZBC H1/AS1
Floor	R 1.3	R 2.41	NZBC H1/AS1
Glazing	R 0.26	R 0.26	NZBC H1/AS1
Skylights	R 0.31	R 0.31	NZBC H1/AS1

Note: - Total glazing areas for East, West and South facing walls are demonstrated above to be < 30 % allowing the use of the "Schedule Method" under H1/AS1 as means of compliance. Northern wall values shown above are for reference only and are not considered in the formula as is allowed in this method. Garage walls, glazing and openings are excluded from the formula

DOWNPIPE WATER DISCHARGE SCHEDULE				
determined by NZBC E1/AS1 section 4.0 downpipes - table 5				
DP Name	roof area serviced by DP in plan (m <sup>2</sup> , internal dist)	intended DP size for use (mm, internal dist)	max. allowable roof area by compliance DP size	gains E1/AS1
DP01	47.38m <sup>2</sup>	74mm	70 m <sup>2</sup>	E1/AS1
DP02	46.25m <sup>2</sup>	74mm	70 m <sup>2</sup>	E1/AS1
DP03	64.11m <sup>2</sup>	74mm	70 m <sup>2</sup>	E1/AS1
DP04	32.62m <sup>2</sup>	74mm	70 m <sup>2</sup>	E1/AS1
DP05	54.40m <sup>2</sup>	74mm	70 m <sup>2</sup>	E1/AS1

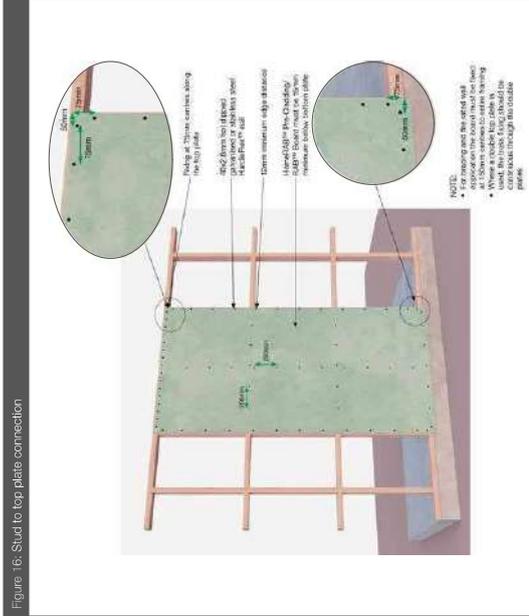
Cross sectional calculation of Continuous Colousteel Spouting  
 - Quarter Round Spouting (6300mm)<sup>2</sup>  
 Flow Capacity = 67m<sup>3</sup> (Roof Area) X 0.83 (flow load factor) = 55.61 l/min  
 Minimum Gutter Area in m<sup>2</sup> = (55.61 / (0.0016))<sup>0.5</sup> = 4283.65mm<sup>2</sup>



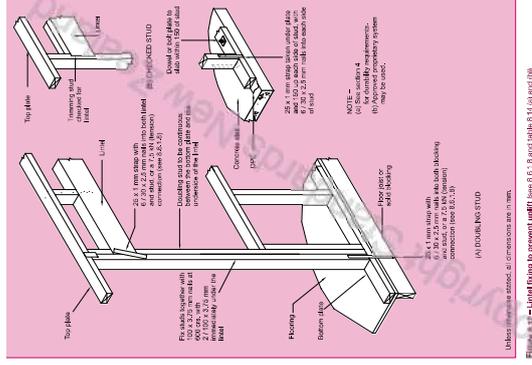
### LEGEND - ROOF PLAN

- Metrotile Shake pressed metal tile roofing with Satin finish over 50 x 40 SG8 battens at c/c to suit tile profile
- standard tile flashings to roof as indicated, as per standard/architectural details
- continuous colorsteel spouting / fascia system with direction of 1:100 fall shown
- ensure selected colorsteel spouting has minimum cross sectional area for compliance with NZBC E1/AS1
- diagonal galv. Steel roof strap brace - 1 per 50m<sup>2</sup> of roof

Figure 16. Stud to top plate connection



FLASHING COVER DIMENSIONS	
Wind Zone:	High
Roof Pitch:	6° / 10°
Situation type:	Metrotile Shake pressed metal tile roofing
Roofing type:	with Satin finish over 50 x 40 SG8 battens at c/c to suit tile profile
Ridge:	200 mm
Barge:	2 crests, finish in next trough
Apron:	2 crests, finish in next trough
Upstand:	200 mm
Roof Cladding Fixings - corrugate 0.4mm BMT	110mm
Fixing pattern is - Hit 1, miss 2, hit 1, miss 3...	
Fix with 12G x 35mm or 12G x 65mm with lead spreading washer.	
NOTE: Refer to product specification installation manual and specifications for fixing requirements.	
Purlin Fixing	SG8 70x45mm H1.2 purlins at 900mm crs. (max. span 900mm) fixed with 1 / 10g self drilling screw, 80mm long
Ensure purlins end span (bottom and top purlins) at 600mm and intermediate span at 900mm crs.	
The Batten Fixing	SG8 50x40mm H1.2 purlins at 370mm crs. (max. span 900mm) fixed with 2990 x 3.15 gun nails.
Ensure purlins end span (bottom and top purlins) at 600mm and intermediate span at 900mm crs.	
Gable Verge Construction	90 x 45 SG8 H1.2 outriggers on their edge @ 600mm c/c, backspanning to next truss. Fix to top cord of gable end truss and next truss using min. 2/90 x 3/15mm nails. With blocking at 900c/c to support purlins.
NZS 3604:2011 - Section 10 - Roof Framing	Table 10.18 Nailing schedule for power-driven nails
* Outrigger to rafter with 3 / 90 x 3.15 (end nailed).	
* Flying rafter to outrigger with 3 / 90 x 3.15.	
* Outrigger blocking to top plate with 4 / 90 x 3.15 (skewed).	
* Blocking between rafters, joists or truss chords 90 x 45mm with 2 / 90 x 3.15 (end nailed).	



### LEGEND - BRACING PLAN

Connecting Framing Members (CFM)  
 - to provide continuous connection at top plate level allowing transfer of bracing capacity in tension and compression to exterior walls as required by NZS3604 8.7.3.4 (see adjacent tables and figures).  
 - Connections are shown only where connecting members meet exterior walls, other connections along the continuous line of connection shall be of the same kN capacity

6kN to 6kN Fixing Top Plate Connection diagram (NZS3604 or Alternative Mitek option).  
 Orientation of coloured fill depicts orientation of fixing plate on top of Ribbon plate.  
 refer to next page for NZS3604 and Alternative connection details.

6kN to 12kN Fixing Top Plate Connection diagram (NZS3604 or Alternative Mitek option).  
 Orientation of coloured fill depicts orientation of fixing plate on top of Ribbon plate.  
 refer to next page for NZS3604 and Alternative connection details.

12 to 12kN Fixing Top Plate Connection diagram (NZS3604 or Alternative Mitek option).  
 Orientation of coloured fill depicts orientation of fixing plate on top of Ribbon plate.  
 refer to next page for NZS3604 and Alternative connection details.

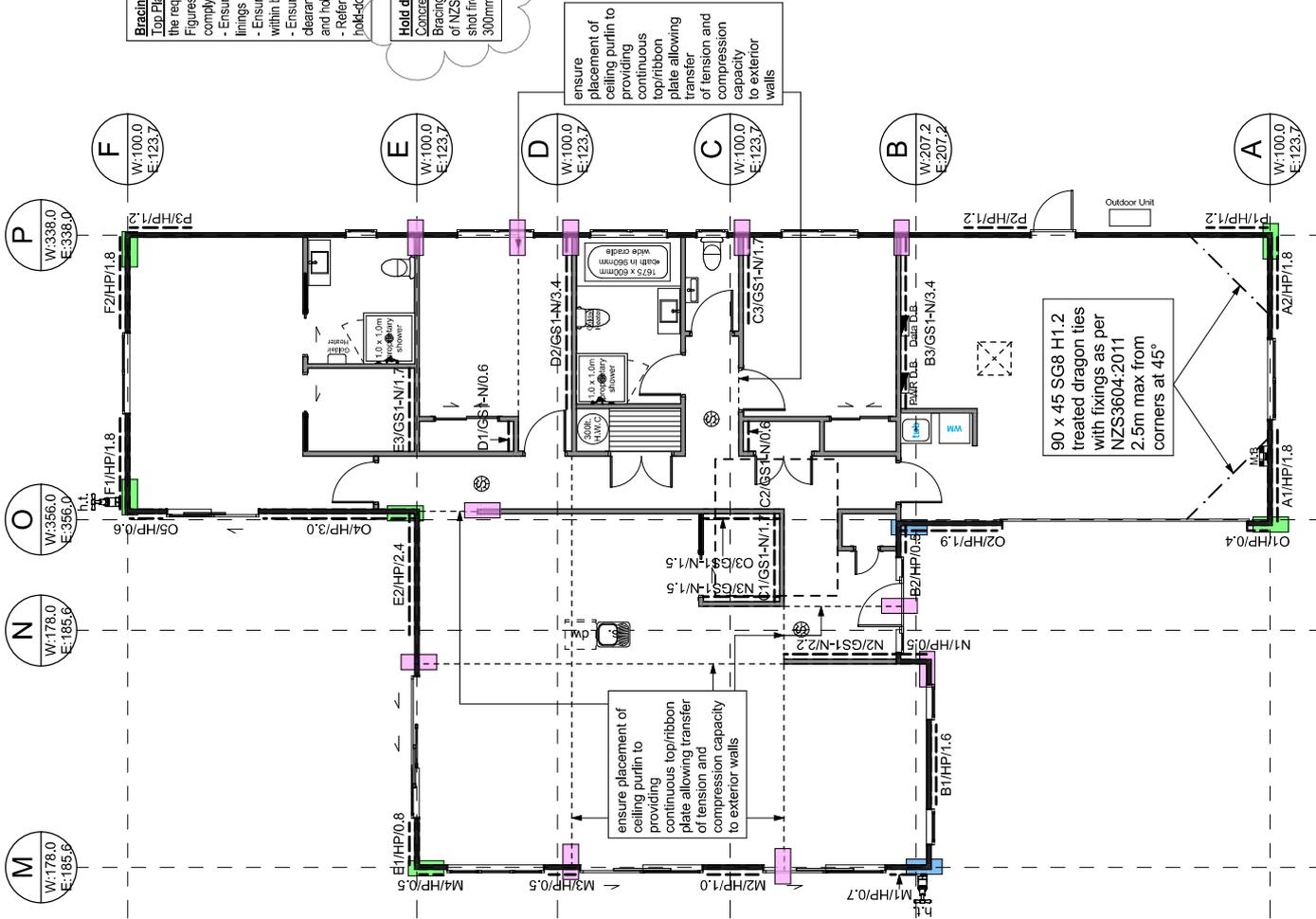
Dragon Ties: 90 x 45 SG8 H1.2 treated dragon ties with fixings as per NZS3604:2011 figure 8.1, spaced 2.5m max from corners at 45°

**Bracing Plan Notes:**  
 Top Plate connections and joints shall be constructed to comply with the requirements of NZS 3604 clauses 8.7.3.2 - 8.7.3.3 and 8.7.3.4 and Figures 8.14, 8.15 & 8.16. Alternative connections where required to comply with clause 8.7.3.4 are shown here.  
 - Ensure any meter box or distribution board penetrations of interior linings are kept clear of bracing elements.  
 - Ensure also bottom plate penetrations for services entry do not occur within bracing elements.  
 - Ensure also bracing elements are trimmed to openings to ensure clearance requirements of openings to allow fitting of tapes, fastenings and hold-downs.  
 - Refer to all specific product manufacturer specifications for fixing of hold-downs and sheet fixing requirements.

**Hold down fixings for brace walls without Handbrace fixing:**  
 Concrete floor Bottom plate connections and joints for Internal Wall Bracing Lines: In accordance with the requirements of NZS 3604:2011 for internal wall plate fixing or 75 x 3.8mm shot fired fasteners with 16mm discs spaced at 150mm and 300mm from end studs and 600mm centres thereafter.

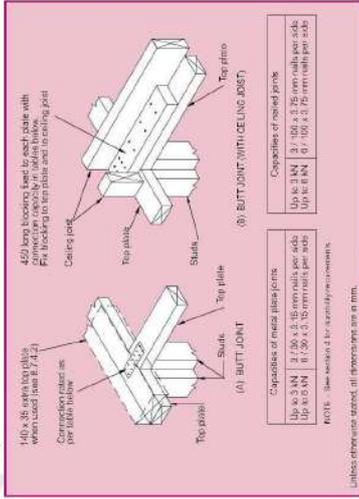
ensure placement of ceiling purlin to providing continuous top/ribbon plate allowing transfer of tension and or compression capacity to exterior walls

90 x 45 SG8 H1.2 treated dragon ties with fixings as per NZS3604:2011 2.5m max from corners at 45°

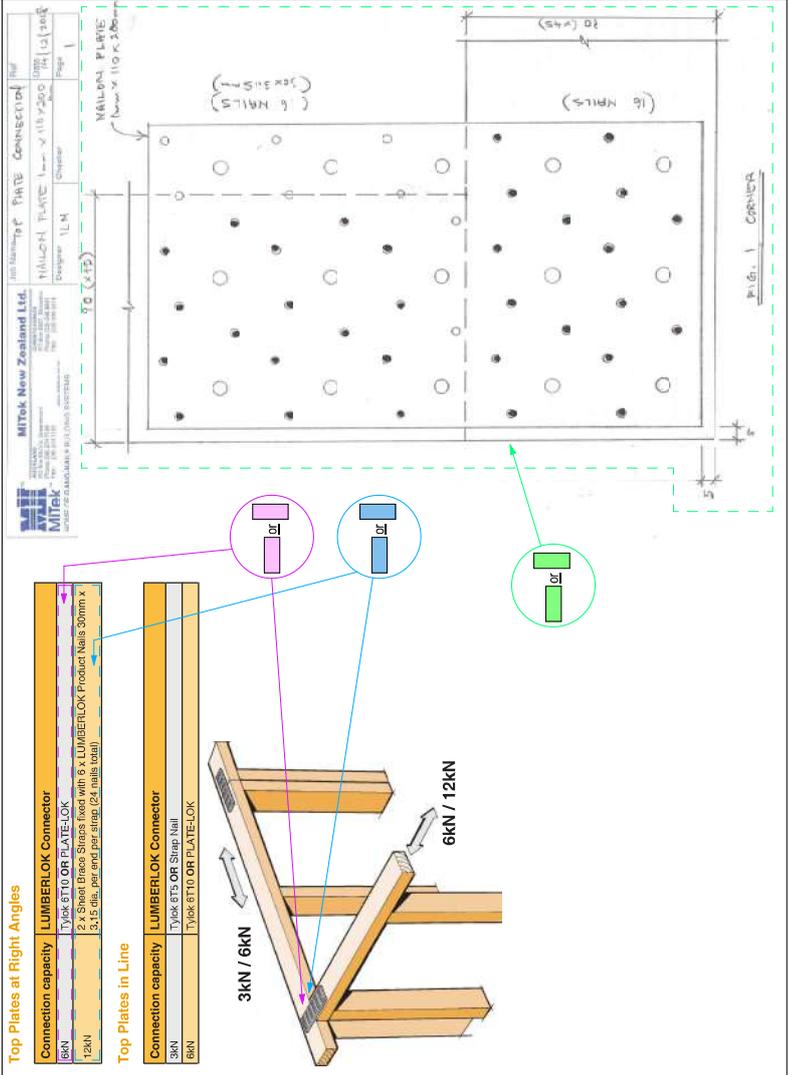


TOP PLATE CONNECTIONS AND JOINS, as indicated on Bracing Plan, as per NZS3604 Clause 8.7.3.2, 8.7.3.3 & 8.7.3.4

- 8.7.3.2** Joints in the top plate of a wall that does not contain any wall bracing elements (either in line or at wall intersections), shall be halved and nailed at the joints, see figure 8.14 (A), or be buttressed over blocking and nailed, see figure 8.14 (B), or be provided with an alternative fixing, having a capacity in tension or compression of 3 kN.
- 8.7.3.3** For single-storey buildings the connection in line of the top plate of a wall that contains one or more wall bracing elements shall be jointed according to the bracing capacity of the highest-rated individual wall bracing elements as follows:
  - (a) Bracing capacity not exceeding 100 bracing units: A 3 kN connection as shown in figure 8.15 or by an alternative fixing of 3 kN capacity tension and compression along the plate;
  - (b) Bracing capacity exceeding 100 bracing units: A 6 kN connection as shown in figure 8.15 or by an alternative fixing of 6 kN capacity tension and compression along the plate;
  - (c) Wall top plates to which ceiling diaphragms are attached: A 6 kN connection as shown in figure 8.15 or by an alternative fixing of 6 kN capacity in tension and compression along the plate.
- 8.7.3.4** Each wall that contains one or more wall bracing elements shall be connected at the top plate level, either directly, or through a framing member in the line of the wall, to external walls at right angles to it. Top plate fixings of the capacity in tension or compression along the line of the wall bracing element are given as follows:



ALTERNATE TOP PLATE CONNECTIONS AND JOINS, as indicated on Bracing Plan, as an Alternative to Corner and Join fixings as stated above:



BRACING CALCULATIONS

TABLE: Default

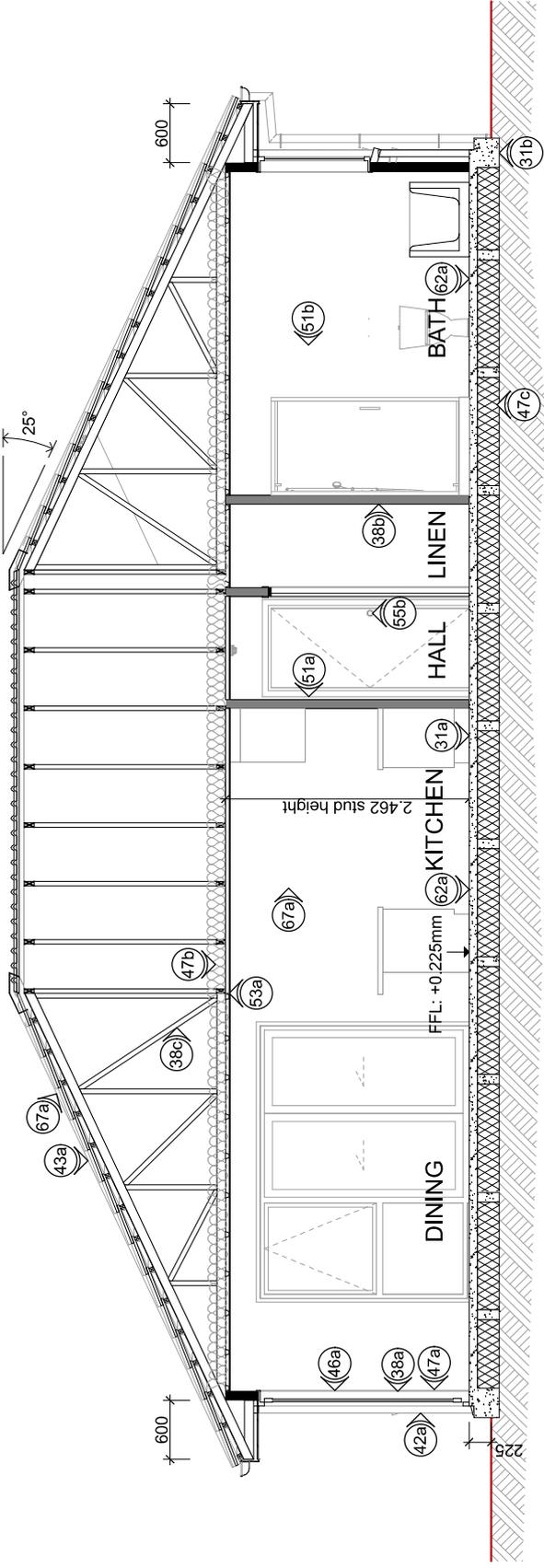
Location of Storey	Single Room in Roof Space	W BU	EQ BU/m	EQ Brace Type	Provided	W BU/m	EQ Length m	Height m	Angle	Achieved	
										W BU	EQ BU
Room in Roof Space	No	100.0	123.7	A-1	HP	133.0	104.0	1.8	2.4	239.4	187.2
	13.8m	100.0	123.7	A-2	HP	133.0	104.0	1.8	2.4	239.4	187.2
	23.7m	100.0	123.7	A-2	HP	133.0	104.0	1.8	2.4	239.4	187.2
Gross Floor Area (GFA) 206.21m <sup>2</sup>											
Floor Height to Apex	5m	207.2	207.2	B-1	HP	133.0	104.0	1.6	2.4	209.5	163.8
	3m	207.2	207.2	B-2	HP	85.0	91.0	0.5	2.4	45.0	48.2
	0 - 25°	207.2	207.2	B-3	GS1-N	70.0	60.0	3.4	2.4	237.3	203.4
Roof Pitch Hip											
Double Top Plate	Yes	100.0	123.7	C-1	GS1-N	70.0	60.0	1.7	2.4	122.2	104.7
	2kPa	100.0	123.7	C-2	GS1-N	50.0	55.0	0.6	2.4	30.0	33.0
	2kPa	100.0	123.7	C-3	GS1-N	70.0	60.0	1.7	2.4	119.0	102.0
Cladding Weights: - Subfloor Concrete Floor											
Wind Zone	High	100.0	123.7	D-1	GS1-N	50.0	55.0	0.6	2.4	30.0	33.0
	Earthquake Zone	100.0	123.7	D-2	GS1-N	70.0	60.0	3.4	2.4	238.0	204.0
	Soil Class	100.0	123.7	D-2	GS1-N	70.0	60.0	3.4	2.4	238.0	204.0
W along	828.8BU	100.0	123.7	E-1	HP	99.0	103.0	0.8	2.4	83.2	86.5
	60.0BU/m	100.0	123.7	E-2	HP	141.0	67.0	2.4	2.4	338.4	160.8
	1,423.8BU	100.0	123.7	E-3	GS1-N	70.0	60.0	1.7	2.4	115.5	99.0
W across	828.8BU	100.0	123.7	F-1	HP	133.0	104.0	1.8	2.4	238.4	186.4
	60.0BU/m	100.0	123.7	F-2	HP	133.0	104.0	1.8	2.4	238.4	186.4
	1,423.8BU	100.0	123.7	F-2	HP	133.0	104.0	1.8	2.4	238.4	186.4
EQ	7.2BU/m <sup>2</sup>	100.0	123.7	Total						2,523.6	1,985.7
	1,484.7BU	100.0	123.7	Total						828.6	1,484.7

Calculations based on NZS3604:2011

BRACING ACROSS

Required Line	W BU	EQ BU	Provided Brace Type	W BU/m	EQ BU/m	Length m	Height m	Angle	Achieved		
									W BU	EQ BU	
M	178.0	185.6	M-1	HP	99.0	103.0	0.7	2.4	70.3	73.1	
			M-2	HP	99.0	103.0	1.0	2.4	98.8	102.8	
			M-3	HP	85.0	91.0	0.5	2.4	44.4	47.5	
			M-4	HP	85.0	91.0	0.5	2.4	38.7	41.4	
N	178.0	185.6	N-1	HP	85.0	91.0	0.5	2.4	43.4	46.4	
			N-2	GS1-N	70.0	60.0	2.2	2.4	154.0	132.0	
			N-3	GS1-N	70.0	60.0	1.5	2.4	105.0	90.0	
O	356.0	356.0	O-1	HP	85.0	91.0	0.4	2.4	34.0	36.4	
			O-2	HP	133.0	104.0	1.9	2.4	252.0	197.1	
			O-3	GS1-N	70.0	60.0	1.5	2.4	105.0	90.0	
			O-4	HP	141.0	67.0	3.0	2.4	418.1	198.7	
			O-5	HP	99.0	103.0	0.6	2.4	62.4	64.9	
P	338.0	338.0	P-1	HP	133.0	104.0	1.2	2.4	159.6	124.8	
			P-2	HP	133.0	104.0	1.2	2.4	159.6	124.8	
			P-3	HP	133.0	104.0	1.2	2.4	159.6	124.8	
Total			Total							1,904.8	1,494.7
			Total							1,423.8	1,484.7

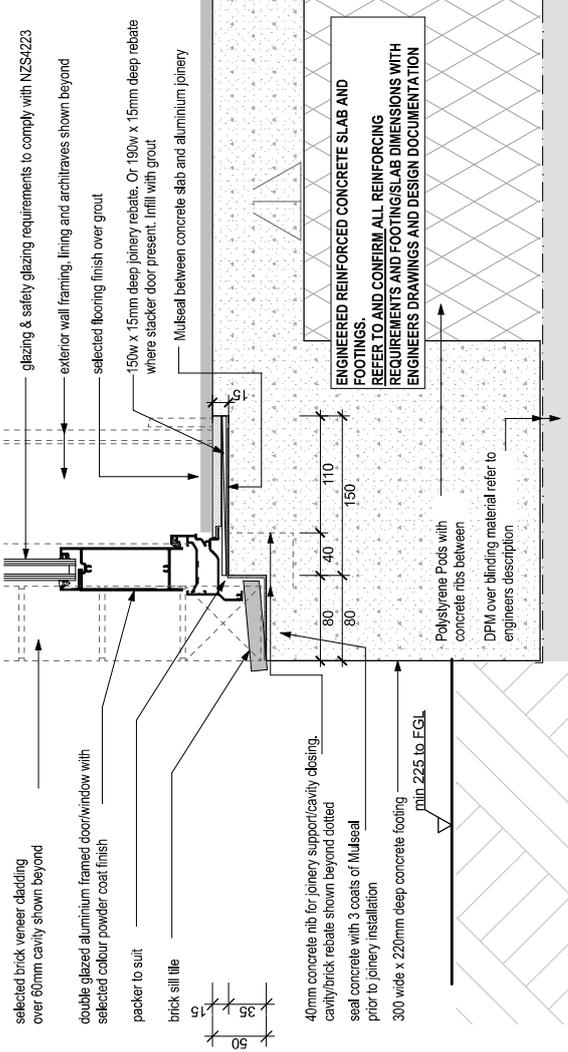




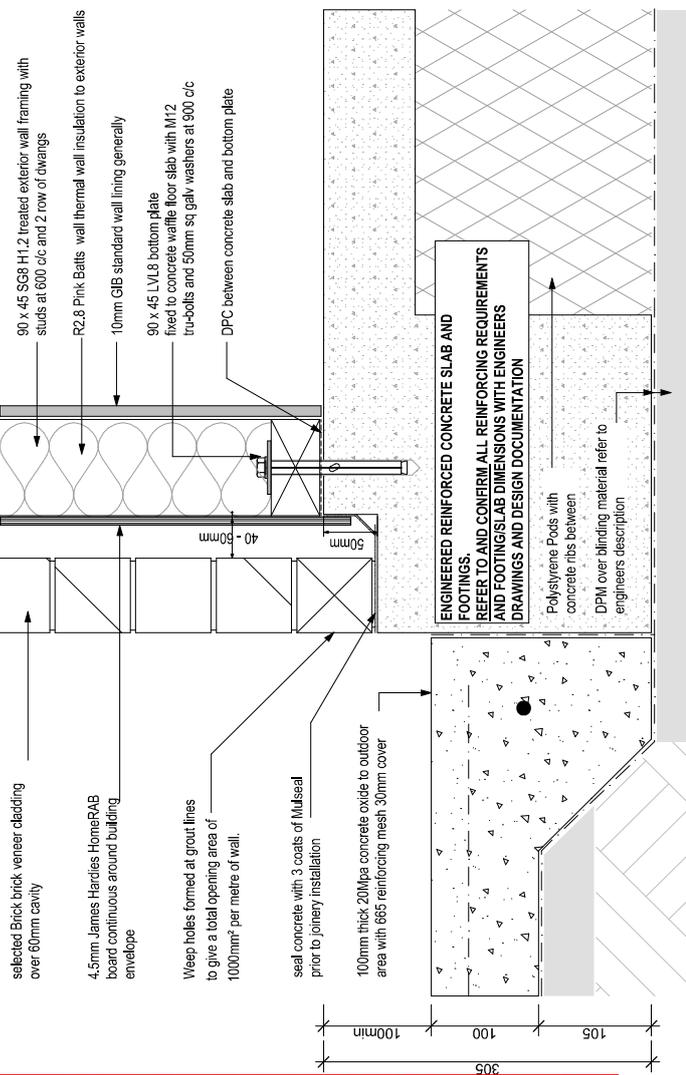
**CONSTRUCTION NOTES - LOT 719 DP SID of Lot 709 DP 562674 - GH CHRISTCHURCH SOUTH LTD**

- 2 SITE
  - 22 Preparation & Groundwork
  - 22a Building Platform - form a level platform allowing a minimum of 1m between any edge of the building and a slope, to comply with the engineers design.
- 23 Foundations
  - 23a Concrete footing size and strength per engineer design and to posts and buttresses
- 3 STRUCTURE
  - 31 Concrete
    - 31a **Engineered waffle concrete slab** with grade SE62 reinforcing mesh over 1100 x 1100 x 220mm deep Polystyrene PODS at 1.2m c/c as per Engineered design and specification  
*Refer to engineer design* for concrete strength requirements, size and placement of all reinforcing, additional footings, and construction details.  
*Refer to Architectural drawings & details* for size and placement of joinery rebates to slab edges
    - 31b **Concrete ring footing.**  
*Refer to Engineer's design* for concrete strength requirements, size and placement of all reinforcing, localised deepening of footings for exiting drains , and construction details.
  - 38 Timber
    - 38a 90 x 45 SG8 H1.2 exterior wall framing, studs at 600 c/c & 2 row of dwangs. Ensure 90 x 45 top plate and 140 x 35 ribbon board
    - 38b 90 x 45 SG8 H1.2 interior wall framing with studs at 600 c/c & 2 row of dwangs. Ensure 90 x 45 top plate and 190 x 35 ribbon board
    - 38c Pre-fabricated SG8 H1.2 treated trusses at 900 c/c as per truss design.
    - 38d Timber Beams as noted on Floor Plan and as detailed
    - 38e All bottom plates shall be LVL grade timber
- 4 ENCLOSURE
  - 42 Cladding
    - 42a **selected 70mm Brick over 60mm cavity** wall cladding over 4.5mm James Hardies HomeRAB board continuous around building envelope
    - 42b 4.5mm HardieSuffit™ lining with PVC jointers at sheet joints and blocking as required.
    - 42c James Hardie Linea weatherboard fixed to framing over 20mm cavity.

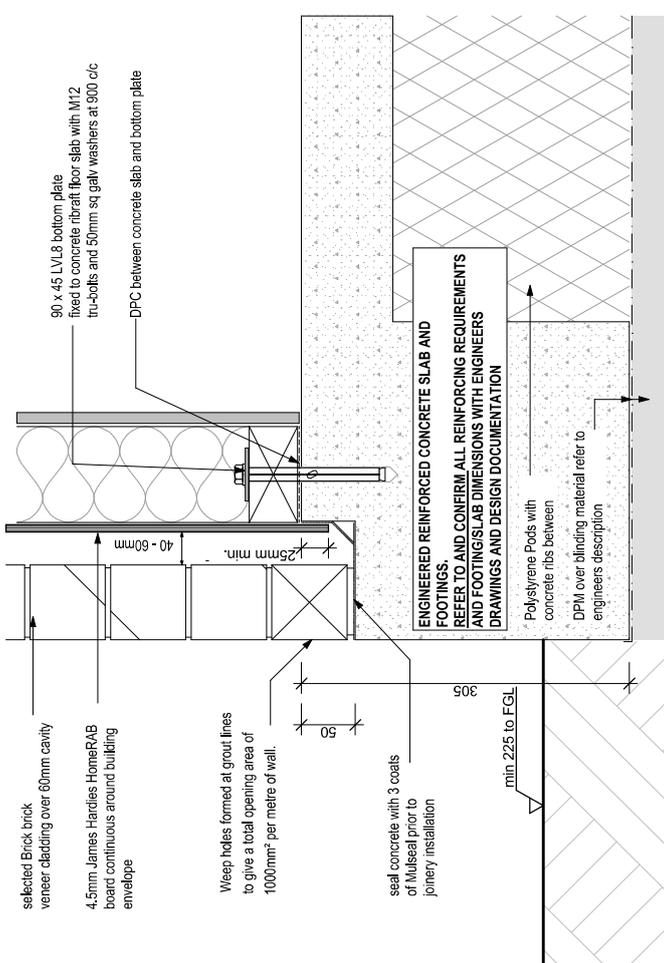
- 43 Roofing
  - 43a **Metrotile Snake pressed metal tile roofing with Satin finish over 50 x 40 SG8 battens at c/c to suit tile profile**  
with standard flashings as selected - over Thermakraft 215 roofing underlay  
Also with galv. strap brace to roof plane to comply with Mitiek manual.
  - 43b Continuous Colorsteel quarter Round Spouting with 180mm colorsteel fascia system and 80mmØ Round Colorsteel downpipes.
- 45 Doors, Windows
  - 45a double glazed aluminium framed windows and exterior doors as scheduled with selected powdercoated finish , architraves as detailed.
- 46 Glazing
  - 46a Double glazing with safety glazing as required to comply with NZS4223
- 47 Insulation
  - 47a R2.8 Pink Batts 90mm wall thermal insulation
  - 47b R4 Pink Batts 180mm ceiling thermal insulation
  - 47c R2.41 220mm polystyrene underfloor insulation system
- 5 INTERIOR
  - 51 Wall Linings
    - 51a 10mm standard GIB wall linings generally
    - 51b 10mm Aqualine GIB wall lining to wet areas
  - 52 Partitions & Doors
    - 52a All int. doors shall be ex150 x 30 pine FJP framed with architraves, door leaves to be hollowcore flush panel PQ MDF
  - 53 Ceilings
    - 53a 13mm GIB ceiling linings throughout over Rondo metal battens at 600 c/c direct fixed to truss bottom chord with GIB grabber screw fastenings. Level 4 stopped finish to ceilings with selected cornice finish
  - 55 Joinery Fixtures & Hardware
    - 55a Kitchen Joinery and all fixtures, hardware etc as per Generation Homes specific kitchen plans - confirm all measurements on site prior to any manufacturing
    - 55b Door hardware as selected by owner
    - 55c All bathroom, laundry, and other joinery that is supplied under contract to be constructed shall be confirmed in accordance with signed GH contract.
- 57 Furniture & Appliances
  - 57a Kitchen appliances as covered by GH contract shall be supplied and installed
- 6 FINISH
  - 62 Tiling
    - 62a Floor tile selection to Bathroom, Ensuite, Kitchen and Toilet and Entry as per clients selections: contractor to lay tiles
  - 65 Carpeting
    - 65a Selected carpet as per project specification and as per GH contract
  - 67 Painting, Decorating & Coating
    - 67a Paint and coatings as selected and specified in GH Contract
- 7 SERVICES
  - 71 Liquid
    - 71a Refer to drainage plan for water supply to all fixtures
  - 74 Drainage
    - 74a Refer to drainage plan for waste pipe size, selections and type
  - 77 Electrical
    - 77a Refer to electrical plan for requirements and notes
- 8 EXTERNAL
  - 82 Roads & Paving
    - 82a Concrete driveway formed as per indicated layout on site plan
  - 83 Landscaping
    - 83a Exterior paving & driveways, formed as indicated on Landscaping Plan



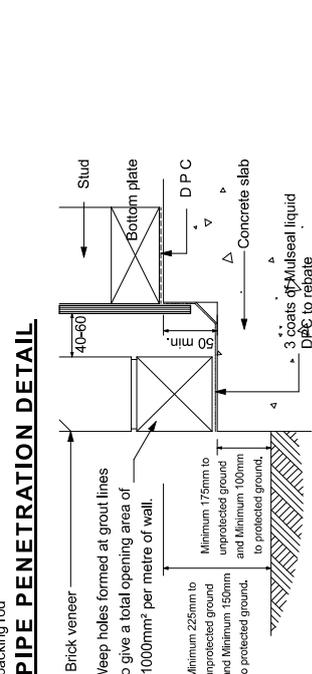
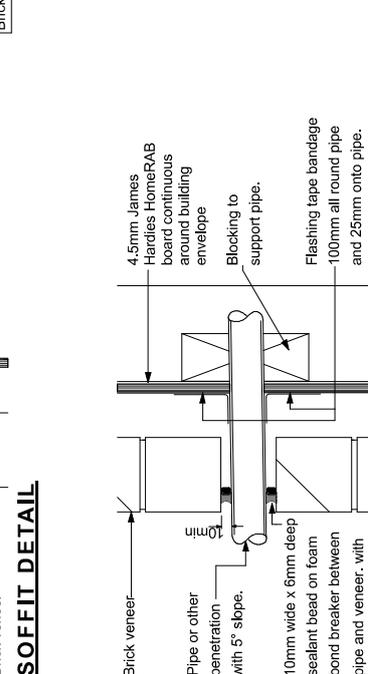
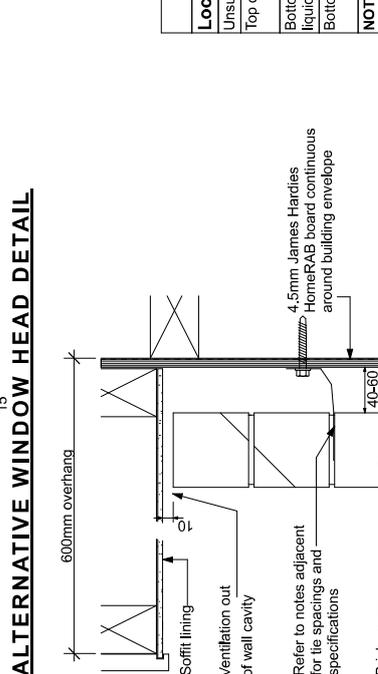
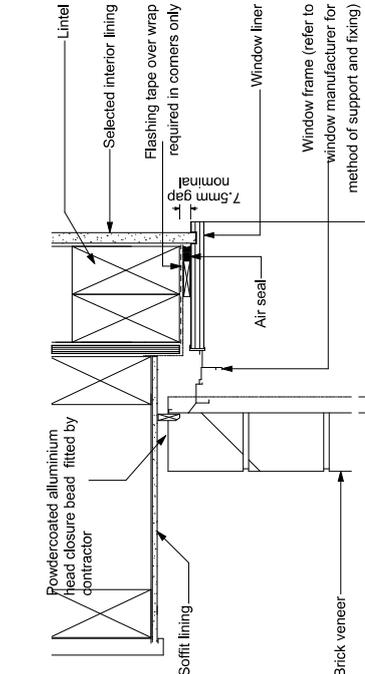
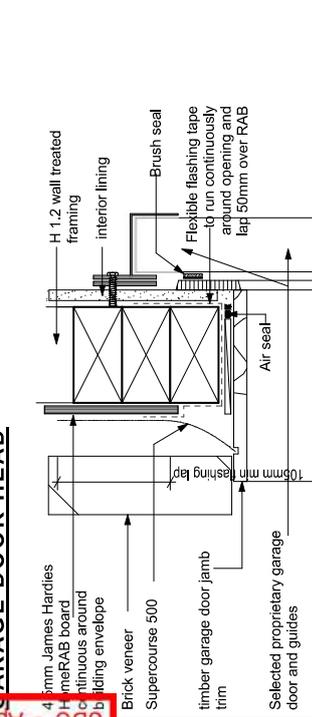
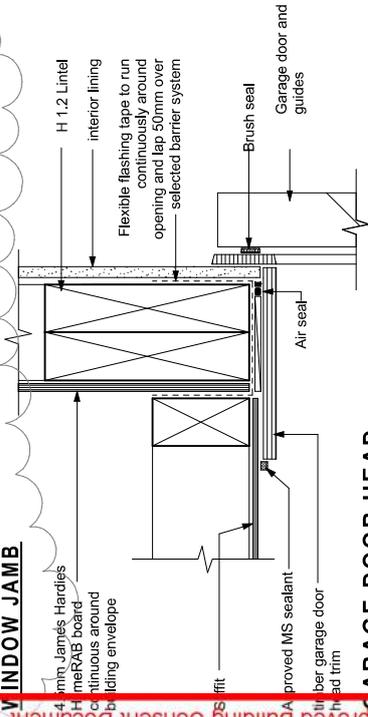
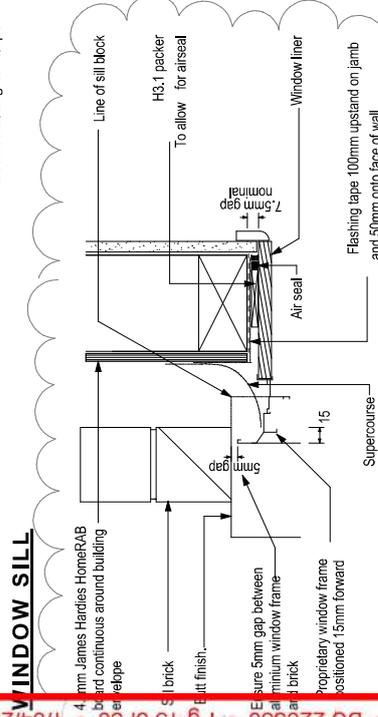
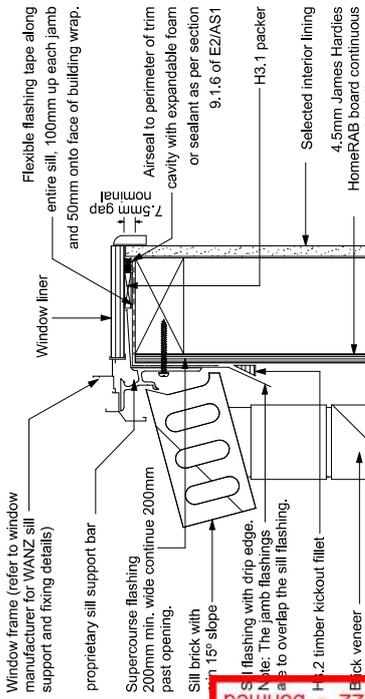
**DOOR SILL TO GROUND DETAIL**



**FOOTING TO GROUND DETAIL**



**FOOTING TO GROUND DETAIL**



**STANDARD BRICK CLADDING DETAILS NOTES:**

- 1) Specific materials for use. Refer to details for construction;
- Brick Veneer: selected 70mm Brick over 60mm cavity with 10mm selected colour mortar.
- Brick Ties: Galvanised Steel. To be spaced at max. 600mm horizontally and max. 400mm vertically. See table below for more info.
- Building Wrap: 4.5mm James Hardies HomerAB board continuous around building envelope.
- Cavity Zone: 40 - 60mm cavity between brick and framing.
- Flashing Tape: Super-Stick Building Tape.
- Soffit Lining: 4.5mm Hardiesoffit lining with PVC jointers at sheet joints and blocking as required.
- Wall Framing: 90 x 45 SG8 H1.2 exterior wall framing with studs at 600 c/c & 2 rows of dwangs.
- Window Liner: H3.1 FJP PQ window liner.

2) Refer to other construction details for roof construction and floor construction

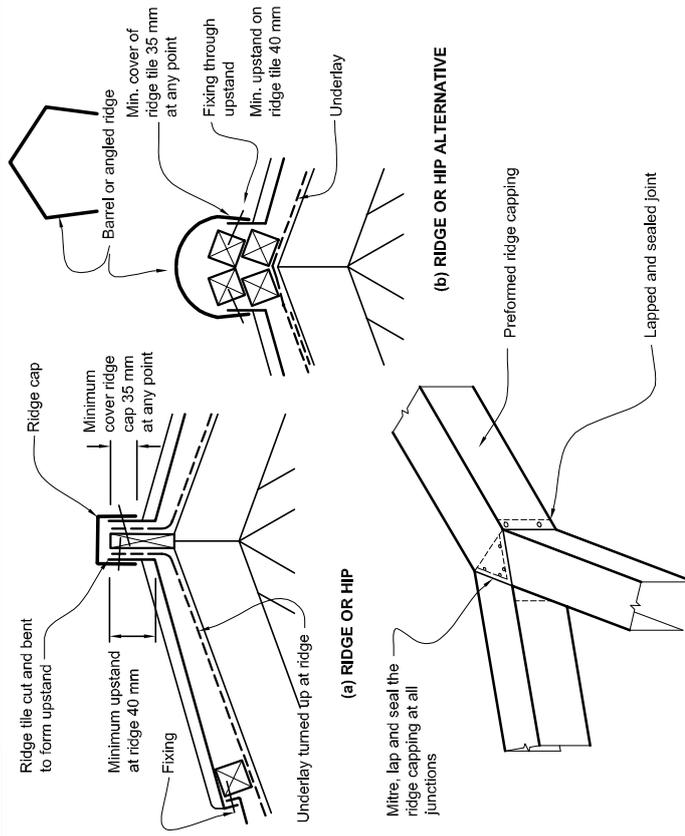
**\*\*ALL BRICK TIES AND BRICK LINTELS IN COASTAL ZONE "D" SHALL BE STAINLESS STEEL AS PER NZBC E2 AS1 TABLE 20 REQUIREMENTS**

INSTALLING BRICK TIES (as per NZBC clause E2 section 9.2)	
Location	Placement of ties
Unsupported panel sides and edges of openings	Within 300mm of panel side or edge
Top of veneer panels and top of panels under openings	Within 300mm or two courses (whichever is smaller) of top of veneer.
Bottom of veneer panel in masonry rebate sealed with liquid applied damp-proof course	Within 300mm or two courses (whichever is smaller) of bottom of veneer
Bottom of veneer panel supported on steel angle lintel	Within 300mm or two courses (whichever is smaller) of bottom of veneer

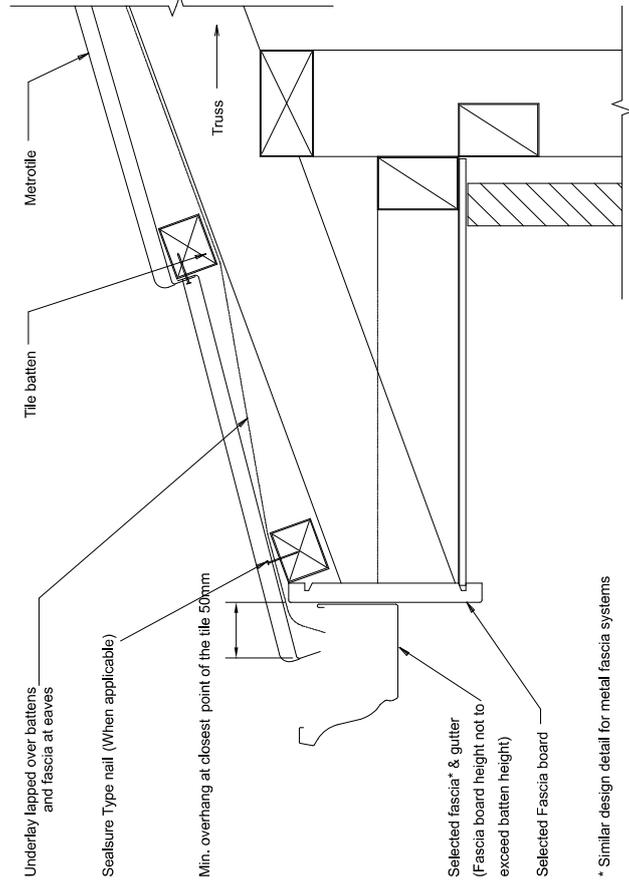
**NOTE:**  
Brick ties are to be screw fixed to wall framing using min. 12 gauge, 35mm long hex washer face, galv. screws

**Figure 34: Ridge or hip flashings for metal tile**

Paragraphs 8.3.3 and 8.3.8



NOTE: For alternative ridge profiles, ridge to hip capping must be performed to suit profile.



\* Similar design detail for metal fascia systems

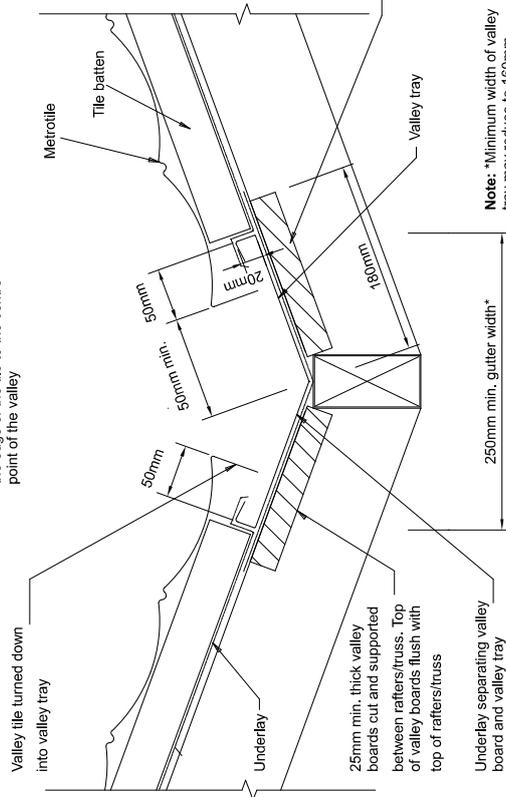
**TYPICAL FASCIA/LEAVE DETAIL**

**STANDARD ROOFING DETAILS**

**NOTES:**

- All details shown are standard details attained from the Metro Roofing technical information website.
- Specific materials for use. Refer to details for construction;
  - Insulation: R2.8 Pink Batts thermal wall insulation; R4 Pink Batts thermal ceiling insulation
  - Roofing: Metrotile Shake pressed metal tile roofing with Satin finish over 50 x 40 SG8 battens at c/c to suit tile profile
  - Roof Structure: 90 x 45 SG8 trusses at 900 c/c as per registered manufacturers design and specification
  - Roofing Underlay: **Thermakraft 215 roofing underlay**
  - Soffit Lining: 4.5mm Hardies Soffit lining with PVC jointers at sheet joints and blocking as required
  - Spouting & Fascia: Continuous colorsteel spouting / fascia system
  - Wall Framing: 90 x 45 SG8 H1.2 exterior wall framing with studs at 600 c/c & 2 row of dwangs.
  - 90 x 45 SG8 H1.2 interior wall framing with studs at 600 c/c & 2 row of dwangs
  - Valley Boards: All timber valley boards to be SG8 H3.1 treated
  - Valley Tray: Custom folded colorsteel valley flashing with colour to match roofing selection
- Refer to other drawings for typical/standard details for claddings and foundations.

Note: Minimum 50mm between the edge of the tile to the centre point of the valley



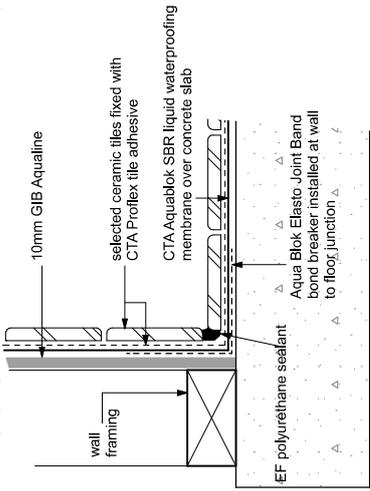
Note: \*Minimum width of valley tray may reduce to 100mm providing roof catchment area is 16m² or less

**TYPICAL VALLEY DETAIL**

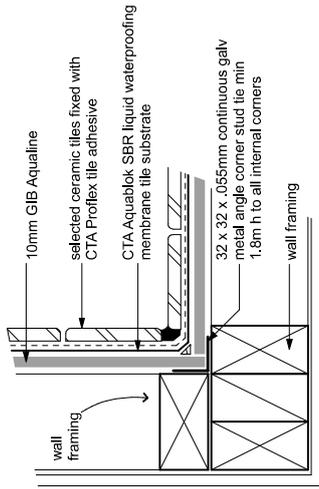


## WATERPLASH PREVENTATIVE CONSTRUCTION METHODS E3 AS1

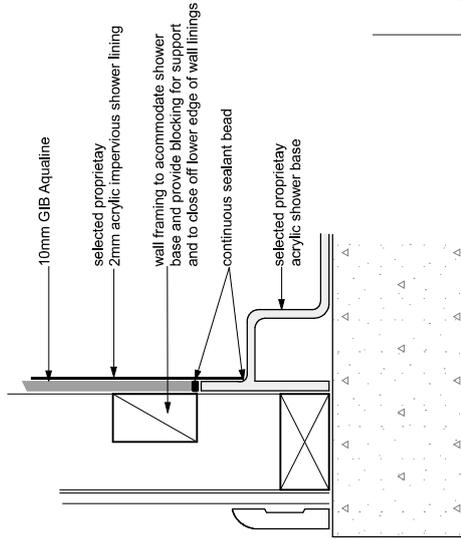
Figure 3: Baths, Basins, Tubs and Sinks, Joints against Wall Linings Paragraph 3.2.2



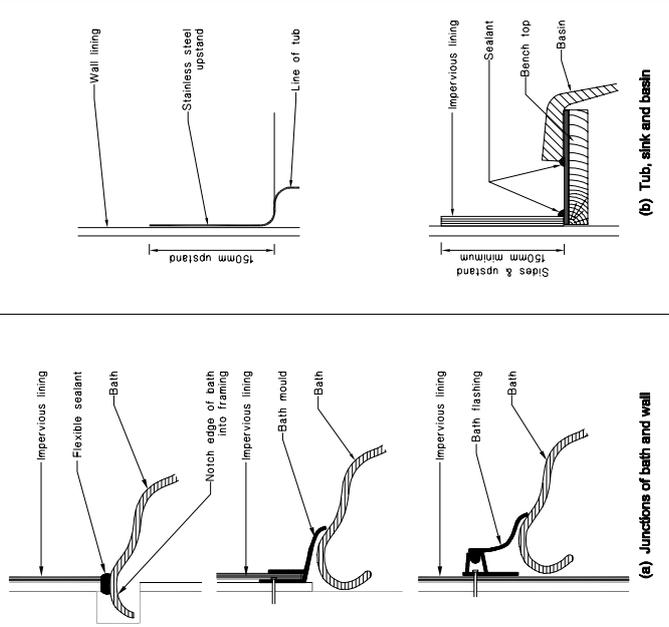
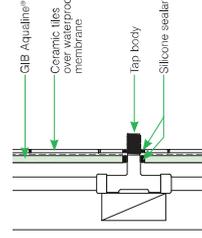
### TYPICAL HORIZONTAL / VERTICAL TILE AND WATER-PROOFING JUNCTION



### TYPICAL WATER-PROOFING INTERNAL CORNER DETAIL (PLAN VIEW)

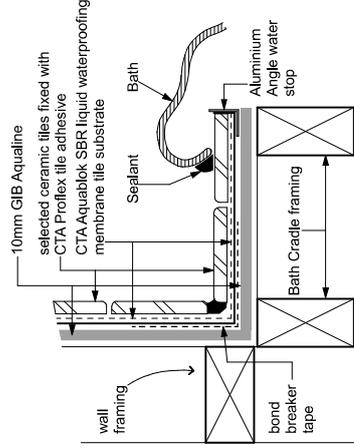


### TYPICAL SHOWERBASE DETAIL

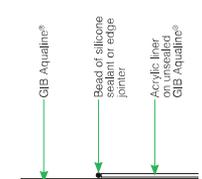


(a) Junctions of bath and wall

(b) Tub, sink and basin



### TYPICAL BATH/CRADLE DETAIL



### DETAIL AT SHOWER PENETRATIONS

### DETAIL AT TOP OF IMPERVIOUS LINER



# Aqua Blok

Aqua Blok is a waterborne flexible waterproof membrane designed for use under tiled finishes that is capable of accommodating expected structural movement.

#### SURFACE PREPARATION

All surfaces to be waterproofed must be firm, clean, dry, sound and smooth. All grease, oil, wax, curing compounds, dust, droppings, loose material, paint and any other contaminants must be removed. Fibrous cement sheathing, water resistant plasterboard, mastic ply and level 3 treated ply must be fixed in accordance with the manufacturer's installation directions. Concrete must be allowed to cure for 28 days and cement render and sand / cement screeds must be allowed to cure for 7 days prior to the application of Aqua Blok. Porous substrates must first be primed using an appropriate water based primer. Damp or moist substrates and dense non - porous substrates must be primed using 'Aqua Blok Epoxy Seal'.

Apply an appropriate neutral cure silicone as a bond breaker to the wall/joint, the wall/floor joints, and wherever there is a change in the direction of the substrate. All sheet joints and fixings must also be filled with neutral cure silicone before applying a coat of Aqua Blok over all sheet joints, extending 100mm either side of the joints.

#### Static crack treatment

For cracks less than 1mm, clean thoroughly before filling with an appropriate neutral cure silicone. Aqua Blok cannot span gaps. For dynamic cracks/expansion joints and control joints, contact the CTA Technical Department for further advice.

#### APPLICATION - Internal Wet Areas

Aqua Blok must be applied using a brush or roller. A minimum thickness of 1mm dried film thickness of Aqua Blok is required for optimum waterproofing properties. The surface onto which Aqua Blok is applied must be continuous. Aqua Blok cannot span gaps. A minimum of two coats of Aqua Blok is required.

#### Shower Recesses

Apply Aqua Blok to the internal vertical corners of the shower using a brush extending at least 100mm either side of the joint. Ensure the corner is well coated. This must extend past the height of the shower rose. It is important to coat around the lap protrusions in the wall. The wall/floor joint must be coated with Aqua Blok. The membrane must extend onto the floor at least 100mm and onto the wall 100mm. Aqua Blok must extend a minimum of 25mm above the height of the hob. The walls should then be coated. Once the wall/joint, junctions, wall/floor junctions, lap protrusions and walls are coated, then the shower floor must be coated. When coating the floor, the Aqua Blok must be dressed down into the floor waste a minimum of 50mm. The floor must be coated with the Aqua Blok ensuring a minimum dry film thickness of 1mm is achieved. Apply a final coat to ensure there are no imperfections in the membrane.

#### Walls of Wet Areas (excluding joints)

Aqua Blok must be applied at 0.5 litre per M<sup>2</sup> per coat. The minimum dry film thickness must be a minimum of 0.5mm.

#### Floors of Wet Areas

Apply Aqua Blok to the wall/floor joints and sheet flooring joints and fixings using a brush, extending at least 100mm either side of the joints. Once these areas are dry, the entire floor area can be coated. Sufficient Aqua Blok must be applied onto the surface to achieve a 1mm dried film thickness. Aqua Blok must be applied at 1 litre per M<sup>2</sup> per coat. Two coats are required.

#### Roofs

Aqua Blok is recommended as a waterproofing membrane for non-trafficable areas. Application is recommended as for 'Floors of Wet Areas'. There must be sufficient falls for effective drainage to eliminate ponding.

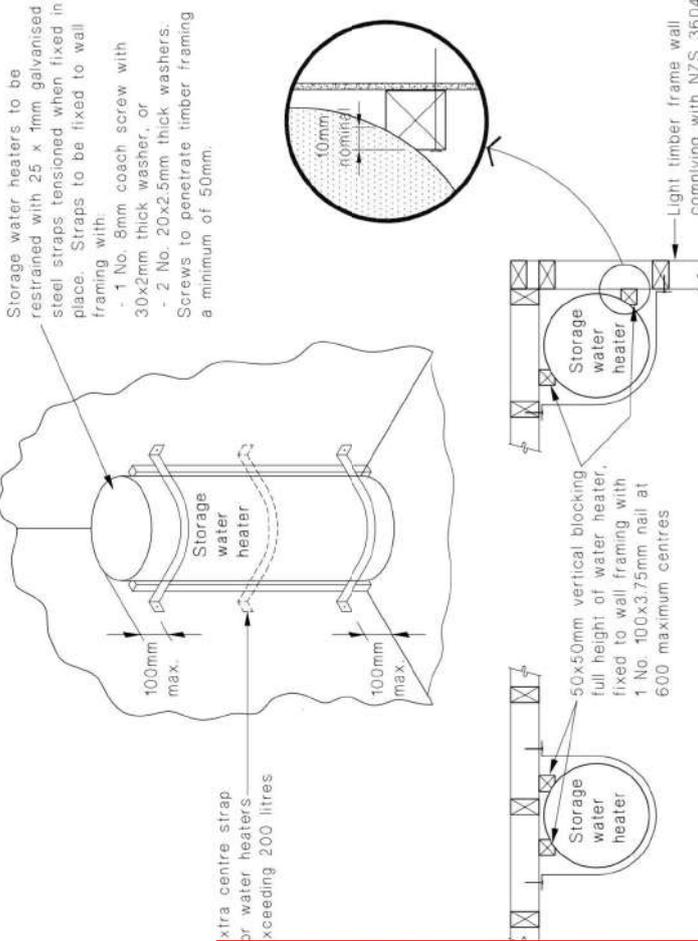
BUILDING CONSENT ISSUE

10/02/2022

#### Wet area Details

GH CHRISTCHURCH SOUTH LTD  
Lot 719, Rosemeymn, Selwyn

GH CHRISTCHURCH SOUTH LTD  
DATE FEB 22 | SCALES: 1:5 | EC842 - dwg 16



**TABLE 3.2**  
**MINIMUM THICKNESSES FOR THERMAL INSULATION TO PREVENT FREEZING OF WATER IN PIPES**

Pipe size	Thermal conductivity of insulating material, W/m.K				
	0.03	0.04	0.05	0.06	0.07
DN	Minimum thickness required, mm				
15	9	14	20	29	40
18	6	9	12	15	20
20	4	6	8	10	12
25	3	4	5	6	8
32	2	3	4	5	6

NOTE: The insulation thicknesses were calculated using the equations given in BS 5422 to just prevent freezing of water initially at 15°C if exposed to an ambient temperature of -5°C for a period of 8 h.

**3.12 WATER HEATER INSTALLATION**

**3.12.1 General**

This Clause sets out the requirements for the installation of water heaters their location, support, cold water service valves and the vent or drain lines. It does not apply to solar water heaters.

**3.12.2 Water heaters**

Water heaters shall be installed in accordance with the manufacturer's instructions and shall comply with the requirements of AS 1056.1 or NZS 4602, NZS 4603, NZS 4606.1, NZS 4607, AS 1361, AS 3142 or AS 4552(AG 102), as appropriate. Oil-fired water heaters shall comply with AS 1690.

**3.12.3 Selection of anode**

If a replacement anode is required, reference shall be made to the appropriate manufacturer.

**3.12.4 Working Pressure**

Water heaters shall be installed so that the maximum rated working pressure is not exceeded during normal operation. Reference shall be made to the heater label for the relevant information.

**3.12.5 Auxiliary controls**

Auxiliary controls shall be mounted in accordance with the manufacturer's instructions and shall be adjusted as required.

**3.4 WATER TEMPERATURE**

**3.4.1 Storage temperature**

Hot water shall be stored at a minimum of 60°C so as to inhibit the growth of legionella bacteria.

**3.4.2 Sanitary fixtures delivery temperature**

All new hot water installations shall, at the outlet of all sanitary fixtures, used primarily for personal hygiene purposes, deliver hot water not exceeding 50°C.

NOTE: Compliance with these temperature limits is not mandatory for kitchen sinks and laundry tubs which should be set at preferably 60°C.

**3.5 REFERENCED DOCUMENTS**

The documents referenced in this Section are listed in Section 1, Clause 1.2.

**3.6 LIMITATIONS ON THE USE OF PIPES AND FITTINGS**

**3.6.1 General**

Limitations on the use of pipes and fittings shall also comply with the manufacturer's installations specifications.

**3.6.3 Copper pipes**

The following limitations apply to the use of copper pipes and fittings (see AS 1432 or NZS 3501):

- (a) AS 1432 Type D shall only be used in the as-drawn condition except that local annealing, incidental to the making of joints, is permitted.
- (b) AS 1432 Type D shall not be bent nor shall it be used to form compression joints.
- (c) Bends in AS 1432 Types A, B and C shall be of uniform radii and free from wrinkling and flattening.
- (d) Where installed below the ground in corrosive situations, pipes shall be protected in accordance with Clause 2.12.

**3.6.7 Polybutylene (PB)**

The following limitations apply to the use of polybutylene pipes and fittings:

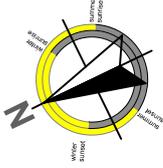
- (a) Pipes and fittings shall not be less than Class 16.
- (b) Pipes and fittings shall not be used within 1 m of the inlet to, or outlet from, a water heater.
- (c) Pipes and fittings shall not be used where subject to direct sunlight.
- (d) Pipes and fittings shall not be used in areas subject to contamination by petroleum products.
- (e) Pipes and fittings shall not be used in continuously circulating hot water loops operating above 60°C, or for branch lines within 1 m of such loops, unless specified by the manufacturer as being suitable for this application.
- (f) Pipes and fittings shall not be used for temperature pressure relief valve (TPR) drain lines.

(g) Pipes and fittings shall not be used downstream of an instantaneous water heater without a protection device to control maximum hot water temperature.

NOTE: Classes and temperature ratings for different working pressures are given in AS/NZS 2642.2.

**3.6.8 Polyethylene (PE)**

NOTE: Polyethylene pipes and fittings should not be used in hot water reticulation systems or within 1 m of the inlet to, or outlet from, a water heater. The inclusion of metallic isolating or control or safety valves within the nominated zone should not alter this requirement. Plastics valves or devices should not be permitted to be installed in the nominated zone.



SPECIFIC PROJECT NOTES	
LEGAL DESCRIPTION:	719 SID of Lot 709 DP 562674
LOT	719
DP	SID of Lot 709 DP 562674
SITE AREA	719,66 sq m
STREET #	41 Oates Street
AREAS:	
SITE AREA	719,66 sq m
AREA OVER CLADDING	206,21 sq m
AREA OVER FRAMING	196,85 sq m
SITE COVERAGE ACHIEVED	28,65 %
SITE COVERAGE ALLOWABLE	40,0 %

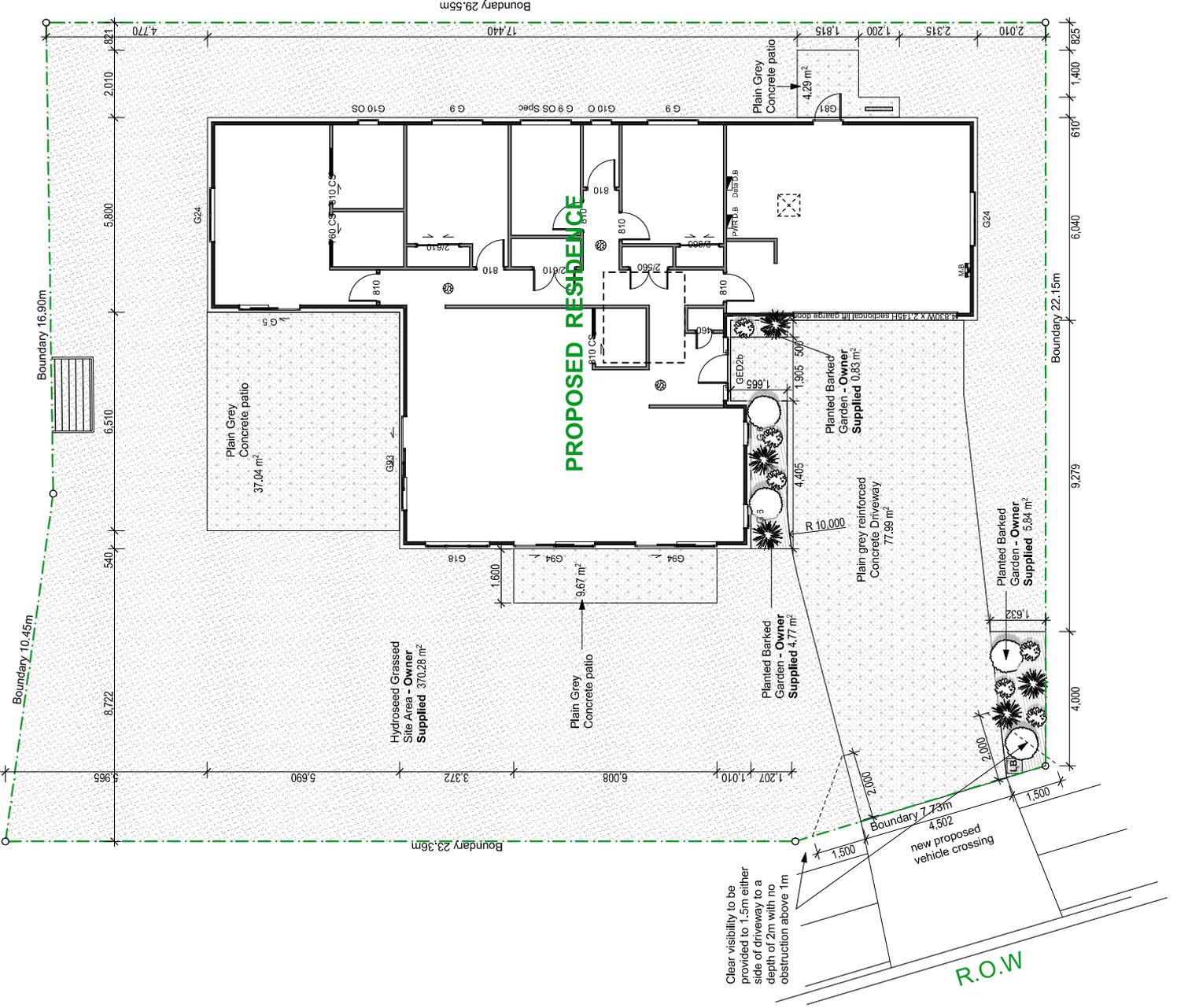
**PAVING FALLS**  
From paved areas with falls directed away from building

**PAVING SLIP RESISTANCE**  
All exterior plain concrete paved areas to have a broomed or wood float finish to an average friction coefficient of 0,65 - 0,85 and all exterior exposed aggregate finish to have an average friction coefficient of 0,45 - 0,50 in accordance with TABLE 2 of SANS 1040

**FENCING**  
All boundary fencing to be confirmed and completed by owners and comply with subdivision covenants and Local Territorial Authorities rules.

**LANDSCAPING LEGEND**

- Plain Grey Reinforced Concrete Driveway  
77,99 m<sup>2</sup> used
- Plain Grey Concrete Patio  
50,80 m<sup>2</sup> used
- Prepared and Hydroseeded Grassed Site Area  
**Owner Supplied** - 370,28 m<sup>2</sup> used
- Prepared and Planted Bark Garden area  
**Owner Supplied** - 11,4 m<sup>2</sup> used  
1 plant per m<sup>2</sup> std allowance with wooden garden edging as required
- Clotheshline - Folding frame type  
To be confirmed by Generation Homes
- Letter box - brick with numbers



1.0 GENERAL NOTES

- 1. The term 'The Engineer / SED' refers on these drawings, refers to the project-specific structural engineer that is responsible for the design.
2. The structural drawings shall be read in conjunction with the structural specification and the drawings / documentation of other disciplines (other project drawings). Any discrepancies shall be referred to the Engineer for resolution prior to the construction of work incorporating any discrepancies.
3. Substitution for or amendment of specified details or materials shall not be carried out without approval from the Engineer.
4. The standards listed on the structural drawings refer to their latest issue including amendments that are current at the time of preparing the drawings.

2.0 DESIGN CRITERIA

1. All residential construction work shall comply with the requirements of NZS 3604:2011, The New Zealand Building Code and approved documents and all other Acts, Regulations, Standards, Rules, Bylaws that are current at the time of construction. Please contact the Engineer for clarification of any issues or where a standard detail is not applicable.
2. The Engineer shall be responsible for identifying the location of all existing services, including underground, and considering site conditions before and during construction.
3. The Contractor / Builder shall ensure that all inspections listed on the inspection schedule are completed before proceeding with further work. Failure to ensure that the inspections have been completed may result in the need for additional testing (including destructive) at the contractor's / Builder's cost to establish compliance. Procerto Group may not be able to issue a SA for the work if inspections have not been completed.
4. The presence, location and details of ribs, upstands, recesses, pinnits, penetrations, inserts, leaves, chases, rebates, cast-in fixings, brackets, holes, flashings, damp-proofing, waterproofing, fire protection, corrosion protection, etc. are not necessarily shown on the structural drawings. Refer to the other project drawings or structural spec for these items.
5. The location, size and details of all penetrations, recesses, sleeves, holes, etc. in structural members, must be approved by the Engineer prior to construction commencing unless shown in the structural drawings. These items shall be cast-in, formed, or shop fabricated and shall not be cut or cored on site unless noted otherwise on the project drawings or approved by the Engineer.

3.0 SHOP DRAWING SUBMISSIONS

- 1. The Contractor shall produce shop drawings of all prefabricated / proprietary components for review by the Engineer prior to fabrication / construction.
2. Shop drawing review indicates only that the supplied interpretation of the design has been approved without the need for further modification, other than the corrections indicated on the drawings returned. This does not release the contractor of the responsibility for ensuring the shop drawings comply with the contract documents. Nor can it be construed as authorising departures from the contract documents.
3. The Contractor shall be responsible for the accuracy of all shop drawings and details. For submission requirements refer to the specification.

4.0 FOUNDATION NOTES

- 1. Foundations shall be located centrally below walls and columns UNO.
2. Prior to placing concrete, the Contractor shall request inspection of the prepared foundation trench / base by the Engineer to confirm that the base of the foundations is located within the assumed founding soils. Over excavation and backfilling with Engineering fill or site concrete may be necessary where soil below / fill is encountered.
3. No services shall be routed below foundations unless noted or detailed on the structural drawings. The Contractor shall notify the Engineer where the services conflict with the structural requirements.
4. After excavation has been inspected by the Engineer, foundation may need to be constructed on 50mm thick LOMPA concrete blinding / site concrete UNO. Note - slabs on grade do not require concrete blinding.
5. All footings shall be constructed and backfilled as soon as possible to avoid softening or drying out of the soil by exposure.

5.0 CONCRETE NOTES

- 10.0 CONCRETE NOTES
10.1 GENERAL
1. Refer to the structural specification for additional detailing and finishing requirements.
- Concrete supply and production requirements.
- Shop drawing submission requirements.
- Requirements for the support of construction work from other permanent works.
- Reinforcing bar spacing / centres (as required).
- Reinforcing bar diameter.
- Reinforcing bar diameter.
- Reinforcing grade and plain / deformed designation.
- HD - Grade 500E deformed reinforcing bars
- R - Grade 500E plain reinforcing bars
- Rb - Rebarbar reinforcing bars
- Number of reinforcing bars (as required)
2. Typical stirrup and tie reinforcement reference
3. Typical stirrup and tie reinforcement reference
4. Typical stirrup and tie reinforcement reference
5. Typical stirrup and tie reinforcement reference
6. Typical stirrup and tie reinforcement reference
7. Typical stirrup and tie reinforcement reference
8. Typical stirrup and tie reinforcement reference
9. Typical stirrup and tie reinforcement reference
10. Typical stirrup and tie reinforcement reference
11. Typical stirrup and tie reinforcement reference
12. Typical stirrup and tie reinforcement reference
13. Typical stirrup and tie reinforcement reference
14. Typical stirrup and tie reinforcement reference
15. Typical stirrup and tie reinforcement reference
16. Typical stirrup and tie reinforcement reference
17. Typical stirrup and tie reinforcement reference
18. Typical stirrup and tie reinforcement reference
19. Typical stirrup and tie reinforcement reference
20. Typical stirrup and tie reinforcement reference
21. Typical stirrup and tie reinforcement reference
22. Typical stirrup and tie reinforcement reference
23. Typical stirrup and tie reinforcement reference
24. Typical stirrup and tie reinforcement reference
25. Typical stirrup and tie reinforcement reference
26. Typical stirrup and tie reinforcement reference
27. Typical stirrup and tie reinforcement reference
28. Typical stirrup and tie reinforcement reference
29. Typical stirrup and tie reinforcement reference
30. Typical stirrup and tie reinforcement reference
31. Typical stirrup and tie reinforcement reference
32. Typical stirrup and tie reinforcement reference
33. Typical stirrup and tie reinforcement reference
34. Typical stirrup and tie reinforcement reference
35. Typical stirrup and tie reinforcement reference
36. Typical stirrup and tie reinforcement reference
37. Typical stirrup and tie reinforcement reference
38. Typical stirrup and tie reinforcement reference
39. Typical stirrup and tie reinforcement reference
40. Typical stirrup and tie reinforcement reference
41. Typical stirrup and tie reinforcement reference
42. Typical stirrup and tie reinforcement reference
43. Typical stirrup and tie reinforcement reference
44. Typical stirrup and tie reinforcement reference
45. Typical stirrup and tie reinforcement reference
46. Typical stirrup and tie reinforcement reference
47. Typical stirrup and tie reinforcement reference
48. Typical stirrup and tie reinforcement reference
49. Typical stirrup and tie reinforcement reference
50. Typical stirrup and tie reinforcement reference
51. Typical stirrup and tie reinforcement reference
52. Typical stirrup and tie reinforcement reference
53. Typical stirrup and tie reinforcement reference
54. Typical stirrup and tie reinforcement reference
55. Typical stirrup and tie reinforcement reference
56. Typical stirrup and tie reinforcement reference
57. Typical stirrup and tie reinforcement reference
58. Typical stirrup and tie reinforcement reference
59. Typical stirrup and tie reinforcement reference
60. Typical stirrup and tie reinforcement reference
61. Typical stirrup and tie reinforcement reference
62. Typical stirrup and tie reinforcement reference
63. Typical stirrup and tie reinforcement reference
64. Typical stirrup and tie reinforcement reference
65. Typical stirrup and tie reinforcement reference
66. Typical stirrup and tie reinforcement reference
67. Typical stirrup and tie reinforcement reference
68. Typical stirrup and tie reinforcement reference
69. Typical stirrup and tie reinforcement reference
70. Typical stirrup and tie reinforcement reference
71. Typical stirrup and tie reinforcement reference
72. Typical stirrup and tie reinforcement reference
73. Typical stirrup and tie reinforcement reference
74. Typical stirrup and tie reinforcement reference
75. Typical stirrup and tie reinforcement reference
76. Typical stirrup and tie reinforcement reference
77. Typical stirrup and tie reinforcement reference
78. Typical stirrup and tie reinforcement reference
79. Typical stirrup and tie reinforcement reference
80. Typical stirrup and tie reinforcement reference
81. Typical stirrup and tie reinforcement reference
82. Typical stirrup and tie reinforcement reference
83. Typical stirrup and tie reinforcement reference
84. Typical stirrup and tie reinforcement reference
85. Typical stirrup and tie reinforcement reference
86. Typical stirrup and tie reinforcement reference
87. Typical stirrup and tie reinforcement reference
88. Typical stirrup and tie reinforcement reference
89. Typical stirrup and tie reinforcement reference
90. Typical stirrup and tie reinforcement reference
91. Typical stirrup and tie reinforcement reference
92. Typical stirrup and tie reinforcement reference
93. Typical stirrup and tie reinforcement reference
94. Typical stirrup and tie reinforcement reference
95. Typical stirrup and tie reinforcement reference
96. Typical stirrup and tie reinforcement reference
97. Typical stirrup and tie reinforcement reference
98. Typical stirrup and tie reinforcement reference
99. Typical stirrup and tie reinforcement reference
100. Typical stirrup and tie reinforcement reference

6.0 CONCRETE GRADES, SUPPLY AND PRODUCTION

- 1. Concrete grades are specified as 28 day specified compressive strengths (as defined in NZS 3101). All concrete supply and production shall be in accordance with NZS 3101.
2. Concrete batch strength certificates may be requested by Procerto Group and the Contractor shall ensure that they are available. If concrete strength certificates are not available, the Contractor shall take core samples and have them tested at a certified facility at their own cost.
3. All concrete shall be 'special' concrete with a grade of 20MPa UNO on the structural drawings, except that site or blinding concrete may be a 'prescribed mix' concrete with a minimum grade of 10MPa.
10.3 CONSTRUCTION
1. In addition to the concrete notes drawings and the specification requirements, all concrete work described on the structural drawings shall be constructed in accordance with the requirements of NZS 3101 and NZS 3109 (including any referenced standards). Note that in some cases the requirements of the specification and structural drawings may exceed the minimum requirements for concrete construction documented in the NZS 3101 and NZS 3109 standards.
2. No concrete shall be placed until the Engineer has had the opportunity to observe that the drawings and specifications have been complied with.
3. All construction joints shall be type 'B' construction joints prepared in accordance with NZS 3101. Methods which avoid scabbing are preferred for intentionally roughening the concrete surface at construction joints.

7.0 CONCRETE SURFACE FINISHES

- 1. UNO on the structural drawings or shown on other project drawings, surface finishes shall be as follows (refer NZS 3114 for definitions):
i) formed foundation surfaces
ii) formed surfaces of beams, columns and walls
F1
F3
U3
U5
iii) unformed exterior slab finishes
10.4 CONCRETE COVER TO REINFORCEMENT FOR DURABILITY AND FIRE PROTECTION
1. UNO on the structural drawings, minimum concrete cover shall be as follows:
i) The minimum concrete cover for concrete cast directly on or against the ground shall be 75mm.
ii) The minimum concrete cover when a damp proof membrane is used between the ground and the concrete shall be 50mm (or formed) for cast against formwork or free surfaces (e.g. top surface of slab, etc) shall be as noted in table A.
Table A: Standard reinforcement covers.
Construction Type / Method: Exposed to earth or weather, Not exposed to earth or water
Cast in place: Min. 75 cover, Min. 50 cover

8.0 REINFORCING

- 1. For earthing details refer to Electrical Engineer's details and specification.
2. Note that, detailing of earthing or lightning protection to main structural reinforcement shall not be permitted without the approval of the Engineer.
3. The Contractor shall provide min. D20 additional bars to form earthing link, refer to Electrical Engineer's details.

9.0 TEMPORARY WORKS

1. Information specifically detailed on the structural drawings, all information shown on the structural drawings reflects details in their final form and location. The information presented reflects the design for permanent works only and does not include for any staging or construction measures or temporary works.
2. The Contractor shall be responsible for all temporary works, including those designs, programmes and methodology necessary for the construction and erection of such works.
3. The Contractor shall refer to the structural drawings and specification for any specific or general requirements.

10.0 STRUCTURAL MEMBER REFERENCES

Structural members are generally noted on the structural drawings using the following notation:
Strip foundations: U/G, BOLT, H.D. GALV, Horizontal, Hot dip galvanised
Steel beams: section designation
Steel columns: section designation
Masonry walls: structural thickness
Slabs on grade: structural thickness
TEMPORARY WORKS
1. Information specifically detailed on the structural drawings, all information shown on the structural drawings reflects details in their final form and location. The information presented reflects the design for permanent works only and does not include for any staging or construction measures or temporary works.
2. The Contractor shall be responsible for all temporary works, including those designs, programmes and methodology necessary for the construction and erection of such works.
3. The Contractor shall refer to the structural drawings and specification for any specific or general requirements.

11.0 FOUNDATION DESIGN

Foundation Design
Rosemeryn Lot 719
Oates Street
Project No. J000880
Scale 1:1
Designed VM, Drawn VM, Approved GRH, Date 2022.02.08

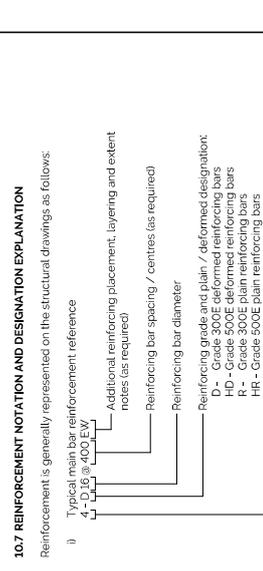
12.0 FOUNDATION DESIGN

Foundation Design
Rosemeryn Lot 719
Oates Street
Project No. J000880
Scale 1:1
Designed VM, Drawn VM, Approved GRH, Date 2022.02.08

10.6 REINFORCEMENT CLASS, MANUFACTURING PROCESS AND RESTRICTIONS

- 1. All reinforcement bars shall be Grade 500E or Grade 500E to AS/NZS 4671, except that welded wire mesh shall have a minimum grade of 465RPA UNO on the structural drawings.
2. All Grade 500 reinforcement bars shall be manufactured using the micro alloy MA process, unless specifically approved otherwise by the Engineer. Grade 500 MA reinforcement bars shall not be straightened or rebent without following a rebenting procedure approved by the Engineer.
3. If the use of Grade 500 reinforcement bars is approved by the Engineer they shall not be rebent after initial bending.
4. The replacement of reinforcement which has been detailed on the structural drawings with an equivalent strength welded wire mesh or with equivalent strength of reinforcement bars of a different grade shall not be permitted under any circumstances.

10.7 REINFORCEMENT NOTATION AND DESIGNATION EXPLANATION



10.8 PLACEMENT OF REINFORCEMENT

- 1. Reinforcement shall be clean and free from mud, loose rust / mill scale, concrete balance oil, etc. at the time concrete is placed.
2. All reinforcement shall be adequately secured against displacement at intersections using annealed iron wire ties with a diameter of greater than 125mm, or by approved clips.
3. Supports shall be used to maintain the correct position of reinforcement during the placement and compaction of concrete. The number of rigid supports shall not be less than:
i) slab reinforcing - two supports per square metre
ii) footing reinforcing - one line of support per metre length
4. Splicing of reinforcement, whether by lapping, welding or mechanical splice, shall only be carried out as shown on the structural drawings or as specifically approved by the Engineer.
5. Welded wire mesh and reinforcement in slabs on grade and in toppings shall be spliced as required, but not through slab joints.
6. All bars terminating at slab edge/beam end/top of pile cap or column shall be provided with a standard hook UNO.

**10.9 WELDING OF REINFORCEMENT**

- Welding of reinforcement (including tack welding) shall only be carried out with the express approval of the Engineer.
  - No welding of earthing or lightning protection to structural reinforcement shall be permitted without the approval of the Engineer.
  - Where the welding of reinforcement has been approved or is detailed on the structural drawings, the welding shall use approved qualified welding procedures and be carried out by suitably qualified welders. All details of the welding shall be in accordance with the requirements of AS/NZS 1554.3.
- The minimum weld size (throat thickness), finished weld width and weld length for different splices suitable for the splicing of stirrups and spirals (where detailed on the structural drawings) shall be as follows:

enforcing steel grade	Welding consumable		Minimum effective length of weld <sup>2</sup> (mm)
	MMAW AS/NZS 4865 AS/NZS 1684 AS/NZS 1684	FCW AS/NZS 32 AS/NZS 32 AS/NZS 32	
500, 300E	B-E43, B-E49	B-T43, B-T49	51, 52 & 53
500L/N/E	B-E43, B-G43, B-G49	B-T43, B-T49	34, 54, 84, 104, 94, 84
-	B-E49	B-T49	34, 54, 84
-	B-E55, B-E57, B-E59	B-T55, B-T57, B-T59	34, 54, 84
-	B-E62	B-T62	34, 54, 76

Legend for types of splices:  
 1 - lap  
 2 - end bearing  
 3 - other indirect butt splice.  
 S3 - double lap splice.  
 S4 - single lap splice.

Consumable classified by yield strength with similar tensile strength may also be used in lieu of those classified by tensile strength without additional qualification.  
 Min. effective weld lengths are described in terms of multiples of the size  $a_s$  of the smaller bar being joined.



Effective length

(a) Double lap splice

(b) Single indirect butt splice

(c) Double indirect butt splice

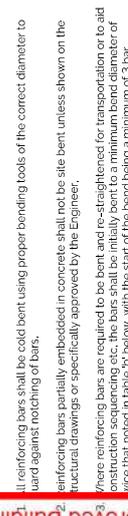
All welding of reinforcement shall be category SP welds. Welds shall not be located closer than 3 bar diameters from the start of a bend or any portion of a lap splice.

For direct butt splices, the size of smaller bar.

For indirect butt splices and lap splices, not less than 0.25 times the size of the smaller bar.

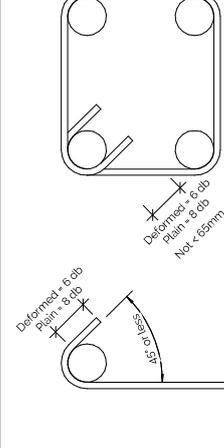
**10.10 BENDING OF REINFORCEMENT**

- Reinforcing bars shall be cold bent using similar bending tools of the correct diameter to ward against notching of bars.
  - Reinforcing bars partially embedded in concrete shall not be site bent, unless shown on the structural drawings or specifically approved by the Engineer.
  - Where reinforcing bars are required to be bent and re-straightened for transportation or to aid construction sequencing etc, the bars shall be initially bent to a minimum bend diameter of twice that noted in table 'B' below, with the start of the bend being a minimum of 3 bar diameters from the member face.
- Unless noted otherwise, on the structural drawings bend for all bars shall be as shown below and in Table C.



Standard 90° hook

Standard 180° (semi-circular) hook



**Table C: Standard reinforcement bending diameter.**

Concrete grade	Bar diameter $d_b$ (mm)	Minimum diameter of bend $d_b$ (mm)	Deformed bars
300	6-20	20, 36, 44	44, 64, 54
	24-40	54, 64, 84	84, 104, 94, 84

**10.11 REINFORCEMENT ANCHORAGE WITH STANDARD HOOKS**

- Unless noted otherwise on the structural drawings, the minimum anchorage length for hooks past the critical section (shown 'X') shall be as shown above and in Table D below.
- Bars with diameter greater than 32mm shall not be developed in tension by the use of standard hooks.
- Concrete strength shall not be greater than 70 MPa.

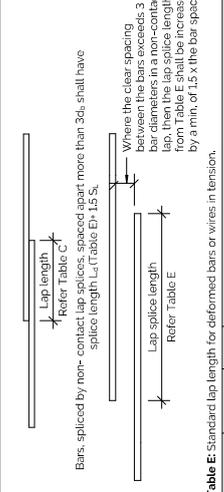
**Table D: Standard reinforcement anchorage.**

Concrete grade	Steel grade	Type	Deformed wire diameter (mm)								
			6	8	10	12	16	20	25	32	
300 MPa	300	H1	Min.	64	80	96	128	160	200	256	320
			Max.	103	137	171	205	274	342	427	547
500 MPa	500	H1	Min.	79	105	131	158	210	263	329	421
			Max.	117	151	185	229	304	389	491	611
25 MPa	300	H2	Min.	187	250	312	374	499	624	780	998
			Max.	274	365	456	547	729	910	1151	1471
20 MPa	500	H2	Min.	126	167	209	251	335	419	523	670
			Max.	191	254	317	380	501	622	792	1012

For closed stirrups or hooks spaced at  $6d_b$ , or less refer to Clause 8.6.10.3 NZS 3101:Part 1:2006.

**10.11 LAP SPICES OF PLAIN AND DEFORMED BARS AND WIRES IN TENSION**

- Unless noted otherwise on the structural drawings, plain or deformed bars or wires shall be lap spliced as required at the ends and sides of sheets as noted below. All welded wire mesh shall be lapped using contact laps with wires aligned between adjacent sheets.
- The development of plain bars and wire in tension rely on hooks. Refer Table C.



**Table E: Standard lap length for deformed bars or wires in tension.**

Concrete grade	Steel grade	Type	Deformed wire diameter (mm)							
			6	8	10	12	16	20	25	32
300	300	L1	214	285	356	427	570	712	890	1139
			164	219	274	329	438	548	688	876
500	500	L1	366	475	593	712	949	1187	1483	1899
			274	365	456	548	730	913	1141	1461
25 MPa	300	L1	234	312	390	468	624	780	975	1248
			180	240	300	360	480	600	750	960
500	500	L1	390	520	650	780	1040	1300	1625	2080
			300	400	500	600	800	1000	1250	1600
20 MPa	300	L1	262	349	436	523	698	872	1090	1395
			201	268	335	402	537	671	839	1073
500	500	L1	436	581	727	872	1163	1453	1817	2326
			335	447	559	671	894	1118	1398	1789

'L1' lap For top reinforcement where more than 300mm of fresh concrete is cast in the member below the bar

'L2' lap For all other situations

**Notes: Min. length = 300mm**

**10.12 LAP SPICES OF PLAIN AND DEFORMED BARS AND WIRES IN COMPRESSION**

- Unless noted otherwise on the structural drawings, plain or deformed bars or wires shall be lap spliced as required at the ends and sides of sheets as noted below. All welded wire mesh shall be lapped using contact laps with wires aligned between adjacent sheets.
- The minimum lap splice length for deformed bars shall be shown in Table F.
- The minimum lap splice length for plain bars and wire in compression shall be twice the value shown in Table F.

**Table F: Standard lap length for deformed bars or wires in compression.**

Concrete grade	Steel grade	Type	Deformed wire diameter (mm)							
			6	8	10	12	16	20	25	32
300 MPa	300	C1	72	96	120	145	193	241	302	386
			120	161	201	241	321	402	502	643
25 MPa	300	C1	79	106	132	158	211	264	330	422
			132	176	220	264	352	440	550	704
20 MPa	300	C1	89	118	148	177	236	295	369	472
			148	197	246	295	394	492	615	787

**Notes: Min. length = 200mm**

**10.13 LAP SPICES OF WELDED PLAIN AND DEFORMED WIRE FABRIC**

- Unless noted otherwise on the structural drawings, plain or deformed welded wire mesh shall be lap spliced as required at the ends and sides of sheets as noted below. All welded wire mesh shall be lapped using contact laps with wires aligned between adjacent sheets.
- The overlap measurement between outermost cross wires of each fabric sheet is equal to or greater than 50mm, not less than 150 or 150mm, whichever is greater. Refer to Table E for L<sub>1</sub>.
- When cross wires are ignored or no cross wires are present within lapped length, the splice length shall be determined as per Table E or 10.12.2 and shall be equal to or greater than 200mm.

**11.0 STEELWORK NOTES**

- All steel members are to be grade 300 or grade 350 steel to AS 1163, AS/NZS 3678 and AS/NZS 3679 or equivalent (refer to specification).
- All gusset plates, cleats & stiffeners shall be 10mm thick UNO & grade 250 steel to AS/NZS 3678 or equivalent, except where noted.

**11.1 MATERIALS**

- Straightness of members after fabrication & before erection UNO shall not deviate more than:
  - Members: 1/600
  - Other members: 1/600

**11.2 FABRICATION SHALL COMPLY WITH NZS 3404, AS MODIFIED BELOW**

- Length shall not deviate from the true length by:
  - Structs with end bearing: ±1.1mm
  - Other members up to 1.00m: ±0.0mm - 3mm
  - Other members over 1.00m: ±0.0mm - 5mm

**11.3 MEMBER LOCATION & DIMENSION SET-OUT**

- All columns, beams, braces & struts of UB, UC, CHC, RHS, SHS or other symmetrical form shall be located on grid or dimension centre lines UNO.
- All PFC shall have back face on grid or dimension centre line UNO.
- All EA & UA shall have centroid on grid or dimension centre line UNO.

**11.4 ERECTION**

- All erection work shall comply with NZS 3404, AS 4100 and SAA MA13.
- Plumbness of struts/columns shall be within L/1000 of true vertical.
- Steel beams shall be placed with natural hog/precamber upwards.
- Padded slings shall be used to handle all corrosion-protected steelwork.
- Non-sink grout shall be used to fill all spaces between concrete or masonry and steel bearing plates. Grout shall have a minimum compressive strength of 50MPa at 28 days, determined from the cylinders moulded, cured and tested in accordance with section 9 of NZS 3112: part 4 UNO.

**11.5 BOLTING**

- All holes shall be drilled & shall be 2mm larger than the bolt diameter for bolts under 30mm dia, 3mm larger for M30 bolts & larger UNO. Holes in baseplates may be 6mm larger than the bolt diameter UNO.
- All bolts shall have at least three threads projecting through both sides of nut.
- All bolts shall be M20-8.8/S UNO.
- All bolts, nuts & washers shall be hot dip galvanized by the Manufacturer to conform to AS 1214.
- Tightening procedure shall comply with NZS 3404. Bolting abbreviations are to NZS 3404 procedures.

**Table G: Standard bolting notations.**

Bolt No.	M	Strength grade	Thread in bearing plane	Tightening procedure	Faying face
10	12	4.6 Commercial	N or No symbol (threads included)	S (Snug tight)	No special requirement (Friction type joint)
16	20	Commercial	X (threads in bearing plane)	T (fully tight half or equivalent)	B (bearing type joint)
24	30	8.8 High strength			
36					

Examples are:  
 2-M30 8.8V/1B, 1-M16 4.6/S  
 2-M30 8.8V/1B, 6-M24 8.8V/1F

**11.6 BENDING OF FLAT OR PLATE**

- Bent flat or plate shall be bent around a round former of minimum radius of 2.5 x plate or flat thickness.



www.procerto.co.nz

Revision: S.0.02  
 Drawing Status: For Consent

Foundation Design  
 Rosemeryn Lot 719  
 Oates Street  
 JOO0880

Project No. JOO0880

Designed VM  
 Drawn VM  
 Approved GRH  
 Date 2022.02.08  
 Scale 1:1

Client: 2022.02.08

Revision A For Consent

Generation HOMES

mb ENGINEERING CONSULTANTS AND MASTER BUILDERS

BUILDING PROJECT CERTAINTY

procerto

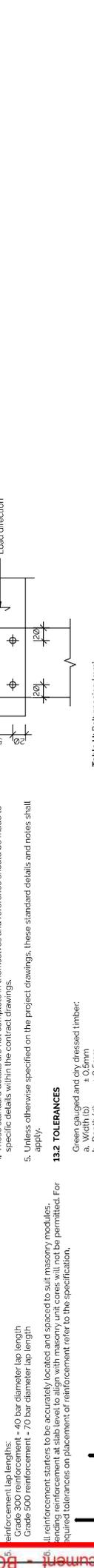
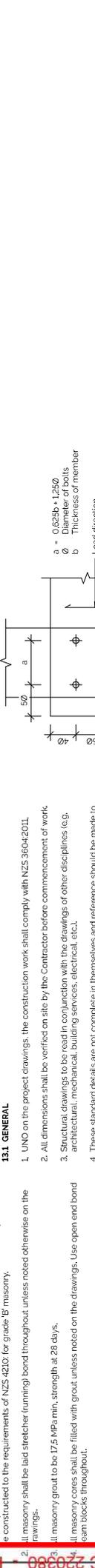
30/03/2022 15:52 From: C:\Users\VE\OneDrive\Group\Procerto\Generation Homes Christchurch South Ltd\Jobs\JOO0880 - Rosemeryn Lot 719 - DWG - RFL.rvt

Notes: Do not scale from the drawings. All dimensions to be confirmed on site. This drawing is the copyright and property of Procerto Group Ltd and must not be re-used, copied or used without authorisation.

- 11.7 WELDING SHALL COMPLY WITH AS/NZS 1554.1**
- Minimum weld size shall be:
    - For 12mm plate & under: 5mm continuous fillet UNO.
    - For 15mm plate & over: 6mm continuous fillet UNO.
  - All fillet welds to be SP to AS/NZS 1554.1 UNO. All butt welds to be SP to AS/NZS 1554.1 UNO.
  - Welding to all sections less than 40mm thick shall be with electrodes E48XX to AS 1553 UNO.
  - Welding to all sections greater than 40mm thick shall be with electrodes E48XXLH to AS 1553 UNO.
  - For work exposed to the weather, seal welds shall be made whether shown on the drawings or not, unless specifically not required.
- PRECASTERED STEEL BEAMS** - Refer to Procerto details for precaster requirements.
- 11.8 FIRE PROTECTION** - Refer to specification for steelwork fire rating requirements.
- 11.9 PAINTING**
- Steelwork to be primed unless noted on the drawings.
  - Steelwork embedded in concrete must not be painted.
  - For finishing paint systems to steelwork refer to specification.
- 11.10 NON-STRUCTURAL STEELWORK (METAL WORK)**
- Non-structural steelwork is typically not shown on the structural drawings. For metal work to support architectural finishes, washings, lining plates etc. refer to architectural drawings.
- 11.11 FIXING OF TIMBER TO STEELWORK**
- Provide holes for fixing timberwork to steelwork as required. The details of fixing requirements are shown in the drawings. Refer to the drawings for the details of the fixings. For metal work to support architectural finishes, washings, lining plates etc. refer to architectural drawings.
- 12 CONCRETE MASONRY NOTES**
- 12.1 GENERAL**
- Masonry units shall be manufactured in accordance with AS/NZS 4455. All masonry walls shall be constructed to the requirements of NZS 3604 for grade 'B' masonry.
  - If masonry shall be laid stretcher (furring) bond throughout unless noted otherwise on the drawings.
  - All masonry grout to be 17.5 MPa min. strength at 28 days.
  - All masonry cores shall be filled with grout unless noted on the drawings. Use open end bond team blocks throughout.
  - Reinforcement Lap lengths:
    - Grade 300 reinforcement - 40 bar diameter lap length
    - Grade 500 reinforcement - 70 bar diameter lap length
  - If reinforcement starters to be accurately located and spaced to suit masonry modules, sending reinforcement at slab level to align with masonry unit cores will not be permitted. For required tolerances on placement of reinforcement refer to the specification.

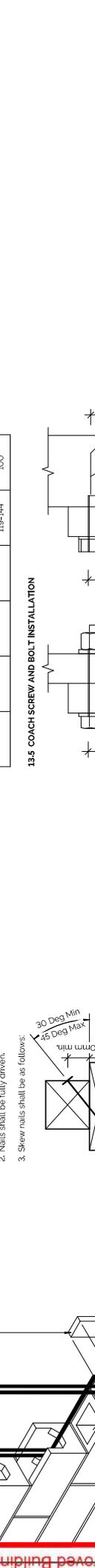


- 12.2 PENETRATIONS**
- Allow for making all necessary penetrations and embedment of all necessary conduits and fixings in masonry walls.
  - Penetrations shall generally be formed in walls rather than cut after.
- 13.0 TIMBER NOTES**
- 13.1 GENERAL**
- UNO on the project drawings. the construction work shall comply with NZS 3604:2011.
  - All dimensions shall be verified on site by the Contractor before commencement of work.
  - Structural drawings to be read in conjunction with the drawings of other disciplines (e.g. architectural, mechanical, building services, electrical, etc).
  - These standard details are not complete in themselves and reference should be made to specific details within the contract drawings.
  - Unless otherwise specified on the project drawings, these standard details and notes shall apply.
- 13.2 TOLERANCES**
- Width (b) ±0.5mm
  - Depth (d) ±0.5mm
  - Length (L) ±1.5mm per 1000mm when length is a critical factor
  - Box (L/80°) x 1/2 mm
  - Crook (L/80°) x 1/2 mm
  - Twist L/1300 x b/mm per mm width of face of timber as per NZS 3631
  - Cup as per NZS 3631
- 13.3 PENETRATION OF NAILS AND SCREWS**
- All nails shall be flathead type UNO.
  - Nails shall be fully driven.
  - Skew nails shall be as follows:
    - 30 Deg Min
    - 15 Deg Max
    - 300mm min



**Table H: Bolt spacing (mm).**

Spacing (b)	Spacing (a)	Spacing (b)	Spacing (a)
47	45	47	47
69-144	60	69	66
		80	94-144
		119-144	100



- 13.5 COACH SCREW AND BOLT INSTALLATION**
- Dimensions show extent of pre-drilled holes:
- Hole diameter (bolt diameter + 2mm)
  - Root diameter of thread
  - Length of thread
  - Length of thread
  - Length of thread
  - 2 x root diameter

**Table J: Washers to suit bolt size.**

Max. bolt Ø	Min. washer size
8	25 x 25 x 1.5
12	50 x 50 x 3
20	65 x 65 x 5
± 20	75 x 75 x 8

**13.6 WASHERS**

- Provide mild steel washers between bolt head and nut and contact surface as per Table J.

**13.7 EDGE DISTANCES FOR NAILS, SCREWS AND BOLTS**

- Minimum spacing of nails - no pre-boring:
- Minimum spacing of nails and screws - pre-bored to 0.80 (all timber):
- Minimum spacing of bolts - loaded parallel to grain (all timber):
- Minimum spacing of bolts - loaded perpendicular to grain (all timber):

**Table H: Bolt spacing (mm).**

**13.5 COACH SCREW AND BOLT INSTALLATION**

Dimensions show extent of pre-drilled holes:

- Hole diameter (bolt diameter + 2mm)
- Root diameter of thread
- Length of thread
- Length of thread
- Length of thread
- 2 x root diameter

**13.6 WASHERS**

Max. bolt Ø	Min. washer size
8	25 x 25 x 1.5
12	50 x 50 x 3
20	65 x 65 x 5
± 20	75 x 75 x 8

**13.7 EDGE DISTANCES FOR NAILS, SCREWS AND BOLTS**

- Minimum spacing of nails - no pre-boring:
- Minimum spacing of nails and screws - pre-bored to 0.80 (all timber):
- Minimum spacing of bolts - loaded parallel to grain (all timber):
- Minimum spacing of bolts - loaded perpendicular to grain (all timber):

**Table H: Bolt spacing (mm).**

**13.5 COACH SCREW AND BOLT INSTALLATION**

Dimensions show extent of pre-drilled holes:

- Hole diameter (bolt diameter + 2mm)
- Root diameter of thread
- Length of thread
- Length of thread
- Length of thread
- 2 x root diameter

**13.6 WASHERS**

Max. bolt Ø	Min. washer size
8	25 x 25 x 1.5
12	50 x 50 x 3
20	65 x 65 x 5
± 20	75 x 75 x 8

**13.7 EDGE DISTANCES FOR NAILS, SCREWS AND BOLTS**

- Minimum spacing of nails - no pre-boring:
- Minimum spacing of nails and screws - pre-bored to 0.80 (all timber):
- Minimum spacing of bolts - loaded parallel to grain (all timber):
- Minimum spacing of bolts - loaded perpendicular to grain (all timber):

**Table H: Bolt spacing (mm).**

**13.5 COACH SCREW AND BOLT INSTALLATION**

Dimensions show extent of pre-drilled holes:

- Hole diameter (bolt diameter + 2mm)
- Root diameter of thread
- Length of thread
- Length of thread
- Length of thread
- 2 x root diameter

**13.6 WASHERS**

Max. bolt Ø	Min. washer size
8	25 x 25 x 1.5
12	50 x 50 x 3
20	65 x 65 x 5
± 20	75 x 75 x 8

**13.7 EDGE DISTANCES FOR NAILS, SCREWS AND BOLTS**

- Minimum spacing of nails - no pre-boring:
- Minimum spacing of nails and screws - pre-bored to 0.80 (all timber):
- Minimum spacing of bolts - loaded parallel to grain (all timber):
- Minimum spacing of bolts - loaded perpendicular to grain (all timber):

**Table H: Bolt spacing (mm).**

**13.5 COACH SCREW AND BOLT INSTALLATION**

Dimensions show extent of pre-drilled holes:

- Hole diameter (bolt diameter + 2mm)
- Root diameter of thread
- Length of thread
- Length of thread
- Length of thread
- 2 x root diameter

**13.6 WASHERS**

Max. bolt Ø	Min. washer size
8	25 x 25 x 1.5
12	50 x 50 x 3
20	65 x 65 x 5
± 20	75 x 75 x 8

**13.7 EDGE DISTANCES FOR NAILS, SCREWS AND BOLTS**

- Minimum spacing of nails - no pre-boring:
- Minimum spacing of nails and screws - pre-bored to 0.80 (all timber):
- Minimum spacing of bolts - loaded parallel to grain (all timber):
- Minimum spacing of bolts - loaded perpendicular to grain (all timber):

**Table H: Bolt spacing (mm).**

**13.5 COACH SCREW AND BOLT INSTALLATION**

Dimensions show extent of pre-drilled holes:

- Hole diameter (bolt diameter + 2mm)
- Root diameter of thread
- Length of thread
- Length of thread
- Length of thread
- 2 x root diameter

**13.6 WASHERS**

Max. bolt Ø	Min. washer size
8	25 x 25 x 1.5
12	50 x 50 x 3
20	65 x 65 x 5
± 20	75 x 75 x 8

**13.7 EDGE DISTANCES FOR NAILS, SCREWS AND BOLTS**

- Minimum spacing of nails - no pre-boring:
- Minimum spacing of nails and screws - pre-bored to 0.80 (all timber):
- Minimum spacing of bolts - loaded parallel to grain (all timber):
- Minimum spacing of bolts - loaded perpendicular to grain (all timber):

**Table H: Bolt spacing (mm).**

**13.5 COACH SCREW AND BOLT INSTALLATION**

Dimensions show extent of pre-drilled holes:

- Hole diameter (bolt diameter + 2mm)
- Root diameter of thread
- Length of thread
- Length of thread
- Length of thread
- 2 x root diameter

**13.6 WASHERS**

Max. bolt Ø	Min. washer size
8	25 x 25 x 1.5
12	50 x 50 x 3
20	65 x 65 x 5
± 20	75 x 75 x 8

**13.7 EDGE DISTANCES FOR NAILS, SCREWS AND BOLTS**

- Minimum spacing of nails - no pre-boring:
- Minimum spacing of nails and screws - pre-bored to 0.80 (all timber):
- Minimum spacing of bolts - loaded parallel to grain (all timber):
- Minimum spacing of bolts - loaded perpendicular to grain (all timber):

**Table H: Bolt spacing (mm).**

**13.5 COACH SCREW AND BOLT INSTALLATION**

Dimensions show extent of pre-drilled holes:

- Hole diameter (bolt diameter + 2mm)
- Root diameter of thread
- Length of thread
- Length of thread
- Length of thread
- 2 x root diameter

**13.6 WASHERS**

Max. bolt Ø	Min. washer size
8	25 x 25 x 1.5
12	50 x 50 x 3
20	65 x 65 x 5
± 20	75 x 75 x 8

**13.7 EDGE DISTANCES FOR NAILS, SCREWS AND BOLTS**

- Minimum spacing of nails - no pre-boring:
- Minimum spacing of nails and screws - pre-bored to 0.80 (all timber):
- Minimum spacing of bolts - loaded parallel to grain (all timber):
- Minimum spacing of bolts - loaded perpendicular to grain (all timber):

**Table H: Bolt spacing (mm).**

**13.5 COACH SCREW AND BOLT INSTALLATION**

Dimensions show extent of pre-drilled holes:

- Hole diameter (bolt diameter + 2mm)
- Root diameter of thread
- Length of thread
- Length of thread
- Length of thread
- 2 x root diameter

**13.6 WASHERS**

Max. bolt Ø	Min. washer size
8	25 x 25 x 1.5
12	50 x 50 x 3
20	65 x 65 x 5
± 20	75 x 75 x 8

**13.7 EDGE DISTANCES FOR NAILS, SCREWS AND BOLTS**

- Minimum spacing of nails - no pre-boring:
- Minimum spacing of nails and screws - pre-bored to 0.80 (all timber):
- Minimum spacing of bolts - loaded parallel to grain (all timber):
- Minimum spacing of bolts - loaded perpendicular to grain (all timber):

**Table H: Bolt spacing (mm).**

**13.5 COACH SCREW AND BOLT INSTALLATION**

Dimensions show extent of pre-drilled holes:

- Hole diameter (bolt diameter + 2mm)
- Root diameter of thread
- Length of thread
- Length of thread
- Length of thread
- 2 x root diameter

**13.6 WASHERS**

Max. bolt Ø	Min. washer size
8	25 x 25 x 1.5
12	50 x 50 x 3
20	65 x 65 x 5
± 20	75 x 75 x 8

**13.7 EDGE DISTANCES FOR NAILS, SCREWS AND BOLTS**

- Minimum spacing of nails - no pre-boring:
- Minimum spacing of nails and screws - pre-bored to 0.80 (all timber):
- Minimum spacing of bolts - loaded parallel to grain (all timber):
- Minimum spacing of bolts - loaded perpendicular to grain (all timber):

**Table H: Bolt spacing (mm).**

**13.5 COACH SCREW AND BOLT INSTALLATION**

Dimensions show extent of pre-drilled holes:

- Hole diameter (bolt diameter + 2mm)
- Root diameter of thread
- Length of thread
- Length of thread
- Length of thread
- 2 x root diameter

**13.6 WASHERS**

Max. bolt Ø	Min. washer size
8	25 x 25 x 1.5
12	50 x 50 x 3
20	65 x 65 x 5
± 20	75 x 75 x 8

**13.7 EDGE DISTANCES FOR NAILS, SCREWS AND BOLTS**

- Minimum spacing of nails - no pre-boring:
- Minimum spacing of nails and screws - pre-bored to 0.80 (all timber):
- Minimum spacing of bolts - loaded parallel to grain (all timber):
- Minimum spacing of bolts - loaded perpendicular to grain (all timber):

**Table H: Bolt spacing (mm).**

**13.5 COACH SCREW AND BOLT INSTALLATION**

Dimensions show extent of pre-drilled holes:

- Hole diameter (bolt diameter + 2mm)
- Root diameter of thread
- Length of thread
- Length of thread
- Length of thread
- 2 x root diameter

**13.6 WASHERS**

Max. bolt Ø	Min. washer size
8	25 x 25 x 1.5
12	50 x 50 x 3
20	65 x 65 x 5
± 20	75 x 75 x 8

**13.7 EDGE DISTANCES FOR NAILS, SCREWS AND BOLTS**

- Minimum spacing of nails - no pre-boring:
- Minimum spacing of nails and screws - pre-bored to 0.80 (all timber):
- Minimum spacing of bolts - loaded parallel to grain (all timber):
- Minimum spacing of bolts - loaded perpendicular to grain (all timber):

**Table H: Bolt spacing (mm).**

**13.5 COACH SCREW AND BOLT INSTALLATION**

Dimensions show extent of pre-drilled holes:

- Hole diameter (bolt diameter + 2mm)
- Root diameter of thread
- Length of thread
- Length of thread
- Length of thread
- 2 x root diameter

**13.6 WASHERS**

Max. bolt Ø	Min. washer size
8	25 x 25 x 1.5
12	50 x 50 x 3
20	65 x 65 x 5
± 20	75 x 75 x 8

**13.7 EDGE DISTANCES FOR NAILS, SCREWS AND BOLTS**

- Minimum spacing of nails - no pre-boring:
- Minimum spacing of nails and screws - pre-bored to 0.80 (all timber):
- Minimum spacing of bolts - loaded parallel to grain (all timber):
- Minimum spacing of bolts - loaded perpendicular to grain (all timber):

**Table H: Bolt spacing (mm).**

**13.5 COACH SCREW AND BOLT INSTALLATION**

Dimensions show extent of pre-drilled holes:

- Hole diameter (bolt diameter + 2mm)
- Root diameter of thread
- Length of thread
- Length of thread
- Length of thread
- 2 x root diameter

**13.6 WASHERS**

Max. bolt Ø	Min. washer size
8	25 x 25 x 1.5
12	50 x 50 x 3
20	65 x 65 x 5
± 20	75 x 75 x 8

**13.7 EDGE DISTANCES FOR NAILS, SCREWS AND BOLTS**

- Minimum spacing of nails - no pre-boring:
- Minimum spacing of nails and screws - pre-bored to 0.80 (all timber):
- Minimum spacing of bolts - loaded parallel to grain (all timber):
- Minimum spacing of bolts - loaded perpendicular to grain (all timber):

**Table H: Bolt spacing (mm).**

**13.5 COACH SCREW AND BOLT INSTALLATION**

Dimensions show extent of pre-drilled holes:

- Hole diameter (bolt diameter + 2mm)
- Root diameter of thread
- Length of thread
- Length of thread
- Length of thread
- 2 x root diameter

**13.6 WASHERS**

Max. bolt Ø	Min. washer size
8	25 x 25 x 1.5
12	50 x 50 x 3
20	65 x 65 x 5
± 20	75 x 75 x 8

**13.7 EDGE DISTANCES FOR NAILS, SCREWS AND BOLTS**

- Minimum spacing of nails - no pre-boring:
- Minimum spacing of nails and screws - pre-bored to 0.80 (all timber):
- Minimum spacing of bolts - loaded parallel to grain (all timber):
- Minimum spacing of bolts - loaded perpendicular to grain (all timber):

**Table H: Bolt spacing (mm).**

**13.5 COACH SCREW AND BOLT INSTALLATION**

Dimensions show extent of pre-drilled holes:

- Hole diameter (bolt diameter + 2mm)
- Root diameter of thread
- Length of thread
- Length of thread
- Length of thread
- 2 x root diameter

**13.6 WASHERS**

Max. bolt Ø	Min. washer size
8	25 x 25 x 1.5
12	50 x 50 x 3
20	65 x 65 x 5
± 20	75 x 75 x 8

**13.7 EDGE DISTANCES FOR NAILS, SCREWS AND BOLTS**

- Minimum spacing of nails - no pre-boring:
- Minimum spacing of nails and screws - pre-bored to 0.80 (all timber):
- Minimum spacing of bolts - loaded parallel to grain (all timber):
- Minimum spacing of bolts - loaded perpendicular to grain (all timber):

**Table H: Bolt spacing (mm).**

**13.5 COACH SCREW AND BOLT INSTALLATION**

Dimensions show extent of pre-drilled holes:

- Hole diameter (bolt diameter + 2mm)
- Root diameter of thread
- Length of thread
- Length of thread
- Length of thread
- 2 x root diameter

**13.6 WASHERS**

Max. bolt Ø	Min. washer size
8	25 x 25 x 1.5
12	50 x 50 x 3
20	65 x 65 x 5
± 20	75 x 75 x 8

**13.7 EDGE DISTANCES FOR NAILS, SCREWS AND BOLTS**

- Minimum spacing of nails - no pre-boring:
- Minimum spacing of nails and screws - pre-bored to 0.80 (all timber):
- Minimum spacing of bolts - loaded parallel to grain (all timber):
- Minimum spacing of bolts - loaded perpendicular to grain (all timber):

**Table H: Bolt spacing (mm).**

**13.5 COACH SCREW AND BOLT INSTALLATION**

Dimensions show extent of pre-drilled holes:

- Hole diameter (bolt diameter + 2mm)
- Root diameter of thread
- Length of thread
- Length of thread
- Length of thread
- 2 x root diameter

**13.6 WASHERS**

Max. bolt Ø	Min. washer size
8	25 x 25 x 1.5
12	50 x 50 x 3
20	65 x 65 x 5
± 20	75 x 75 x 8

**13.7 EDGE DISTANCES FOR NAILS, SCREWS AND BOLTS**

- Minimum spacing of nails - no pre-boring:
- Minimum spacing of nails and screws - pre-bored to 0.80 (all timber):
- Minimum spacing of bolts - loaded parallel to grain (all timber):
- Minimum spacing of bolts - loaded perpendicular to grain (all timber):

**Table H: Bolt spacing (mm).**

**13.5 COACH SCREW AND BOLT INSTALLATION**

Dimensions show extent of pre-drilled holes:

- Hole diameter (bolt diameter + 2mm)
- Root diameter of thread
- Length of thread
- Length of thread
- Length of thread
- 2 x root diameter

**13.6 WASHERS**

Max. bolt Ø	Min. washer size
8	25 x 25 x 1.5
12	50 x 50 x 3
20	65 x 65 x 5
± 20	75 x 75 x 8

**13.7 EDGE DISTANCES FOR NAILS, SCREWS AND BOLTS**

- Minimum spacing of nails - no pre-boring:
- Minimum spacing of nails and screws - pre-bored to 0.80 (all timber):
- Minimum spacing of bolts - loaded parallel to grain (all timber):
- Minimum spacing of bolts - loaded perpendicular to grain (all timber):

**Table H: Bolt spacing (mm).**

**13.5 COACH SCREW AND BOLT INSTALLATION**

Dimensions show extent of pre-drilled holes:

- Hole diameter (bolt diameter + 2mm)
- Root diameter of thread
- Length of thread
- Length of thread
- Length of thread
- 2 x root diameter

**13.6 WASHERS**

Max. bolt Ø	Min. washer size
8	25 x 25 x 1.5
12	50 x 50 x 3
20	65 x 65 x 5
± 20	75 x 75 x 8

**13.7 EDGE DISTANCES FOR NAILS, SCREWS AND BOLTS**

- Minimum spacing of nails - no pre-boring:
- Minimum spacing of nails and screws - pre-bored to 0.80 (all timber):
- Minimum spacing of bolts - loaded parallel to grain (all timber):
- Minimum spacing of bolts - loaded perpendicular to grain (all timber):

**Table H: Bolt spacing (mm).**

**13.5 COACH SCREW AND BOLT INSTALLATION**

Dimensions show extent of pre-drilled holes:

- Hole diameter (bolt diameter + 2mm)
- Root diameter of thread
- Length of thread
- Length of thread
- Length of thread
- 2 x root diameter

**13.6 WASHERS**

Max. bolt Ø	Min. washer size
8	25 x 25 x 1.5
12	50 x 50 x 3
20	65 x 65 x 5
± 20	75 x 75 x 8

**13.7 EDGE DISTANCES FOR NAILS, SCREWS AND BOLTS**

- Minimum spacing of nails - no pre-boring:
- Minimum spacing of nails and screws - pre-bored to 0.80 (all timber):
- Minimum spacing of bolts - loaded parallel to grain (all timber):
- Minimum spacing of bolts - loaded perpendicular to grain (all timber):

**Table H: Bolt spacing (mm).**

**13.5 COACH SCREW AND BOLT INSTALLATION**

Dimensions show extent of pre-drilled holes:

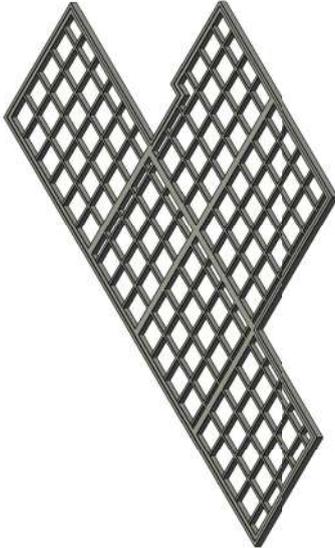
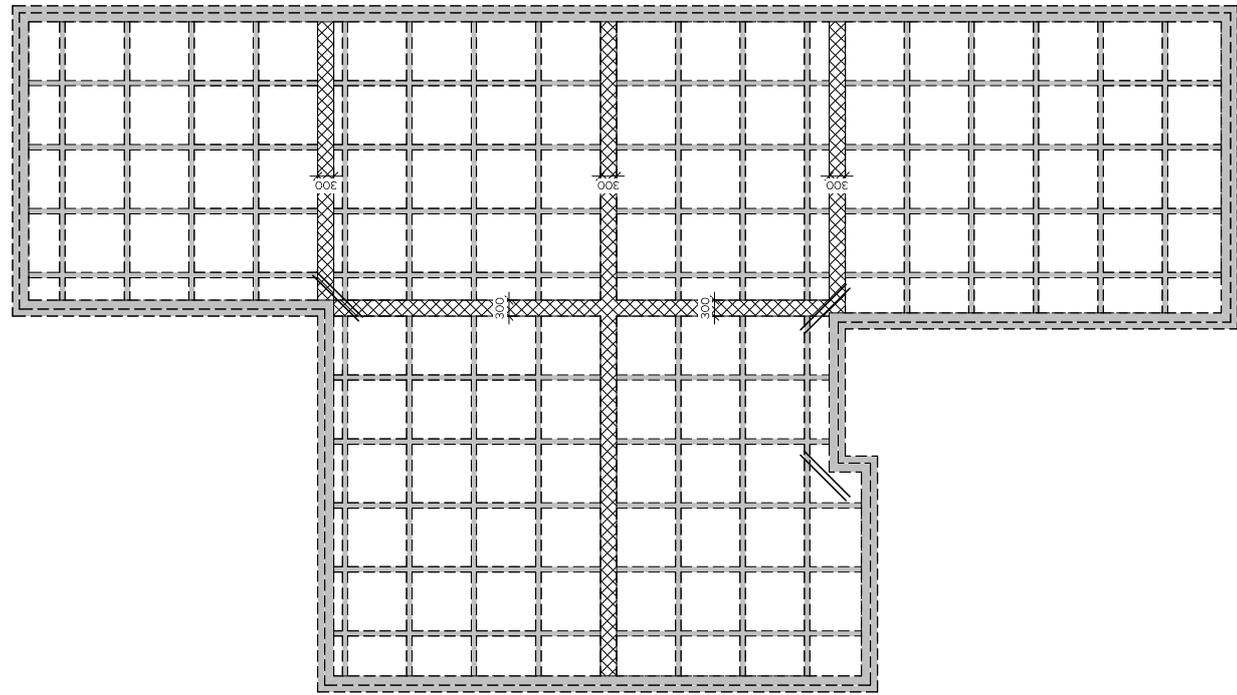
- Hole diameter (bolt diameter + 2mm)
- Root diameter of thread
- Length of thread
- Length of thread
- Length of thread
- 2 x root diameter

**13.6 WASHERS**

Max. bolt Ø	Min. washer size
8	25 x 25 x 1.5
12	50 x 50 x 3
20	65 x 65 x 5
± 20	75 x 75 x 8

**13.7 EDGE DISTANCES FOR NAILS, SCREWS AND BOL**

300mm  
150mm  
100mm  
50mm  
0  
10mm  
20mm  
30mm  
40mm  
50mm  
60mm  
70mm  
80mm  
90mm  
100mm  
110mm  
120mm  
130mm  
140mm  
150mm  
160mm  
170mm  
180mm  
190mm  
200mm  
210mm  
220mm  
230mm  
240mm  
250mm  
260mm  
270mm  
280mm  
290mm  
300mm



**GENERAL NOTES**

- All details not specifically described on these drawings shall comply with the Fifth Edition Technical Manual dated January 2020. Contact the Engineering Services for further details.
- All repetitions shall be carried out in accordance with the Fifth Edition Technical Manual dated January 2020.
- Where underfloor or instab heating is to be installed the floor slab shall be increased to 130mm thick, unless noted otherwise.
- Do not use polystyrene spacers as bar chairs.
- Reinforcement shall be installed in accordance with the Engineer for further details.
- Hardfill (AF40) must be compacted in layers of 150mm maximum thickness (Min. 100mm). If the depth of the hardfill exceeds 600mm, MDD of hardfill should be sought.

**CONCRETE POUR NOTES**

- Foundation and slab to be poured in a single pour to provide a 28 day strength of 20MPa.
- The mix shall incorporate Dramix® 3D 80/60BG fibres closed at a minimum of 10kg/m<sup>3</sup>.

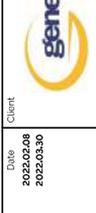
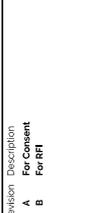
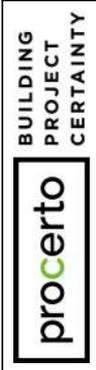
**CURING AND PROTECTION NOTES**

- Take care to protect and cure all concrete adequately and in accordance with NZS 3109.
- Apply a curing compound to all concrete floor slabs immediately on completion of the surface finishing or cure by ponding.



Drawing Register		
No.	Drawing Title	Revision
S.0.01	Structural Notes	A
S.0.02	Structural Notes	A
S.0.03	Structural Notes	A
S.1.01	Structural Slab Plan	B
S.5.01	Slab Structural Details	A

PROJECT SPECIFIC INFORMATION	
Geotechnical report provided by:	Procerto Group Ltd
Geotechnical report date issued:	1 February 2022
Foundation build recommendation:	Excavate to 500mm BECL
Inspection required by:	Christchurch City Council and Procerto Group Ltd



Client

Date  
2022.02.08  
2022.03.30

Project Title  
**Foundation Design**  
Rosemeryn Lot 719  
Oates Street  
Project No.  
J000880

Designed VM  
Drawn VM  
Approved GRH  
Date 2022.03.30  
Scale As indicated

Drawing Title  
**Structural Slab Plan**  
Drawing Status  
**For Consent**

Sheet No.  
**S.1.01**  
Revision  
**Rev B**

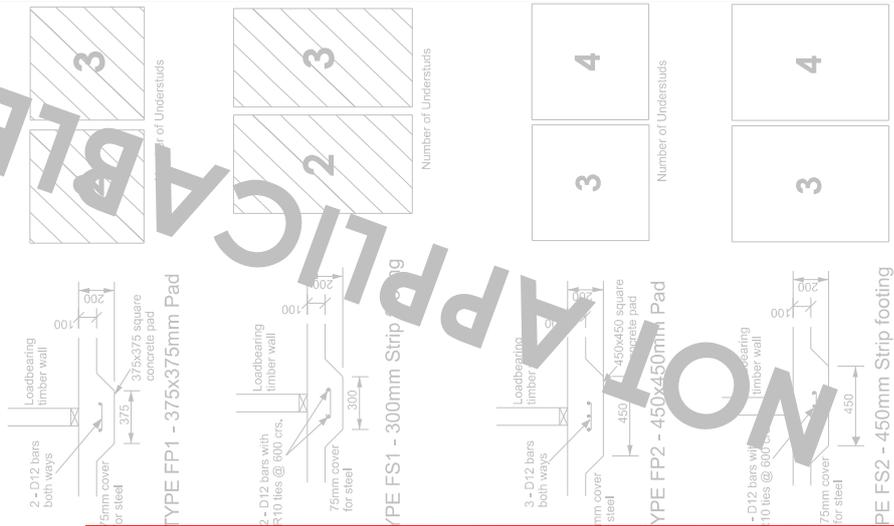
Waftle Slab Plan  
1:100

www.procerto.co.nz



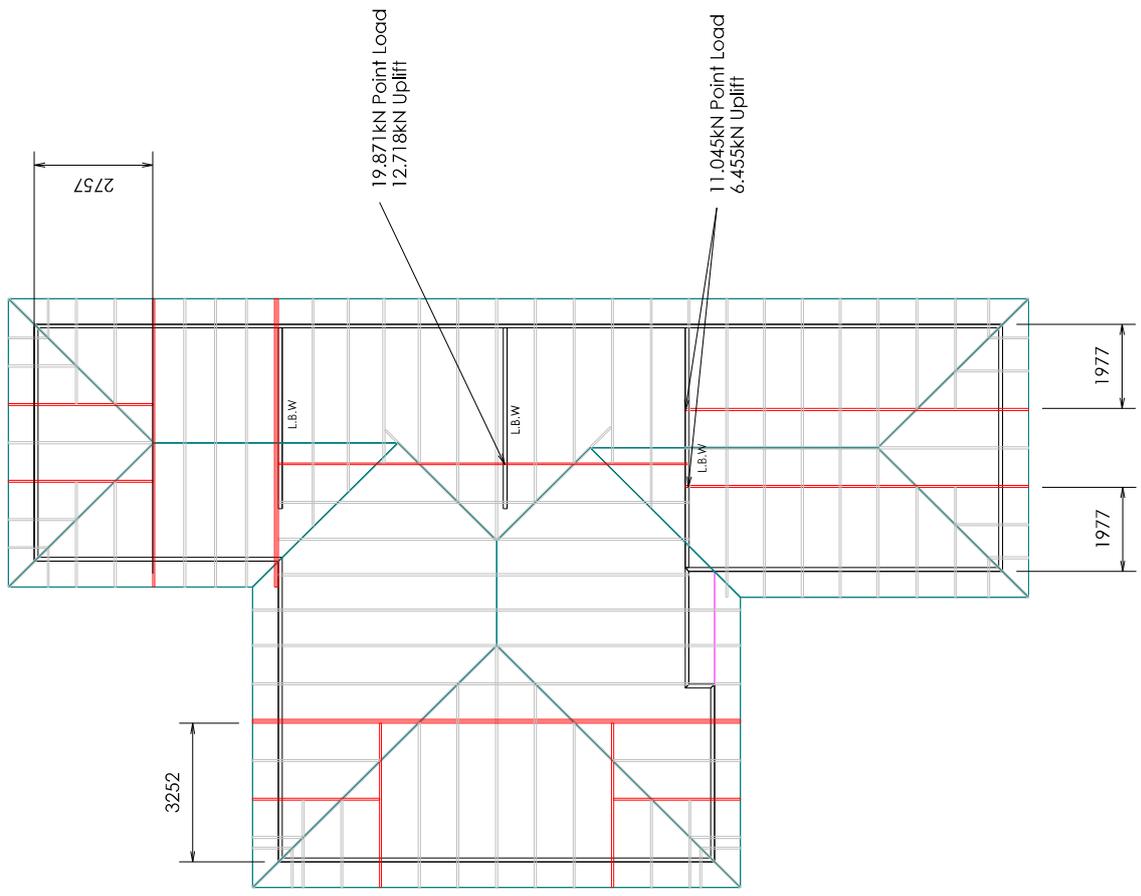


# Slab Thickening Details



**NOTES:**  
 All point loads exceeding 8.0kN are indicated.  
 All walls shown to be considered load bearing.  
 Refer to Rib-raff floor design for slab thickening.

Layout is null and void if trusses not supplied by PlaceMakers



	Site Address : Lot 719 Oates Street, Rosemerryn Lincoln Lincoln	Sheet Title : <b>For Building Consent                  Slab Thickening</b>	Job Details: Roof Pitch : 25.000 Deg Roof Material : MetroTile Shake Ceiling Material : Rondo screwed to BC Wind Zone : High Roof Snow Load : 0.490 kPa	Truss Centres : 900 mm Roof Live Load : 0.250kPa Floor Live Load : kPa Wind Speed : 44.0 m/s	Job Title : 212856 Sheet : 2 Revision Number :
		Date : 23 Aug, 2021 Scale : 1:125	Drawn : Mikaere Britton-Bruce System : Mitek 2020	PrimeCAD v4.7.346	

# Lintel Fixing Details

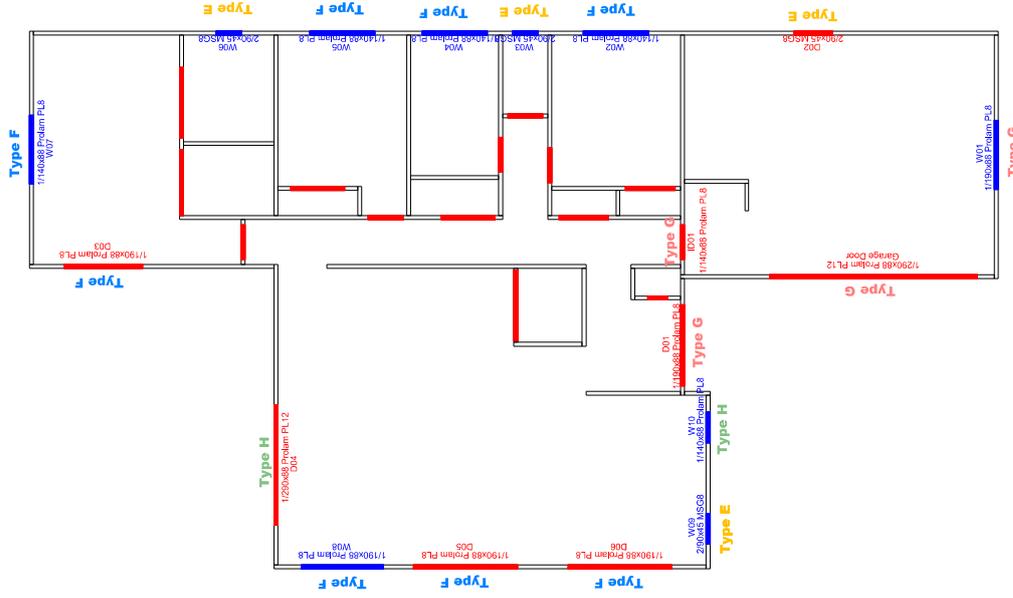
TYPE E 1.4kN
TYPE F 4.0kN
TYPE G 7.5kN
TYPE H 13.5kN

### NOTES:

Refer to:  
 Lintel Fixing Schedule 01/2018  
 pages 73 & 74, Structural Fixings  
 On-site Guide for Building Code  
 Compliance 2018 Edition

(Alternative to NZS 3604:2011  
 Table 8.14 & Figure 8.12)

Layout is null and void if trusses not supplied by PlaceMakers



Site Address :  
 Lot 719  
 Oates Street, Rosemerryn  
 Lincoln  
 Lincoln

Street Title :  
**For Building Consent  
 Lintel Fixing**  
 Date : 23 Aug, 2021  
 Scale : 1:125  
 Drawn : Mikaere Britton-Bruce  
 System : MITek 2020

Job Details:  
 Roof Pitch : 25,000 Deg  
 Roof Material : MetroTile Shake  
 Ceiling Material : Rondo screwed to BC  
 Wind Zone : High  
 Roof Snow Load : 0.490 kPa

Truss Centres : 900 mm  
 Roof Live Load : 0.250kPa  
 Floor Live Load : kPa  
 Wind Speed : 44.0 m/s

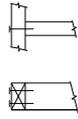
PrimeCard v4.7.346

Job Title :  
**212856**  
 Sheet :  
**3**  
 Revision Number :

# Stud to top plate fixing details

Type A is minimum fixing required unless specified otherwise

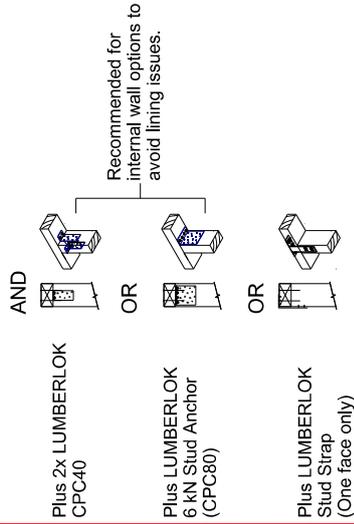
**FIXING TYPE A**  
0.7kN



2/90x3.33 plain steel wire nails driven vertically into stud.

**FIXING TYPE B**  
4.7kN

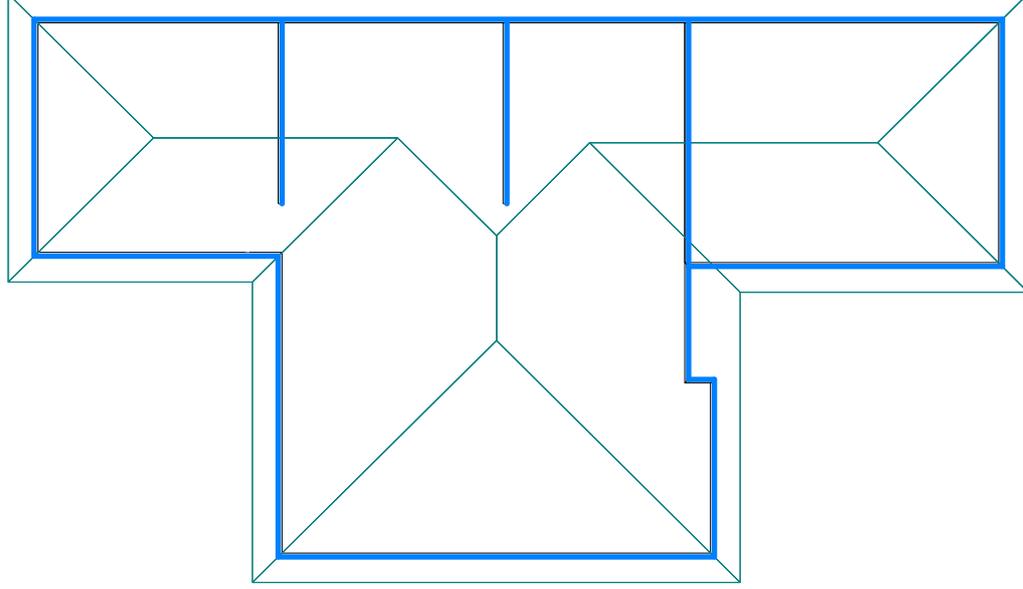
2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.



## NOTES:

- Refer to: LUMBERLOK Wall Fixing Chart - Stud to Top Plate Fixing Schedule 09/2011
- Alternative to NZS3604:2011 Table 8.18)

Layout is null and void if trusses not supplied by PlaceMakers



Site Address:  
Lot 719  
Oates Street, Rosemerryn  
Lincoln  
Lincoln

Sheet Title:  
**For Building Consent  
Stud To Top Plate Fixing**  
Date: 23 Aug,2021 Drawn: Mikaere Britton-Bruce  
Scale: 1:125 System: MITek 2020

Job Details:  
Roof Pitch : 25.000 Deg  
Roof Material : MetroTile Shake  
Ceiling Material : Rondo screwed to BC  
Wind Zone : High  
Roof Snow Load : 0.490 kPa

Truss Centres : 900 mm  
Roof Live Load : 0.250kPa  
Floor Live Load : kPa  
Wind Speed : 44.0 m/s

PrimeCard v4.7.346  
Job Title :  
**212856**  
Sheet :  
**4**  
Revision Number :



# Truss Fixings

- 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
- G - LUMBERLOK TTP 9kN Truss to Top Plate set

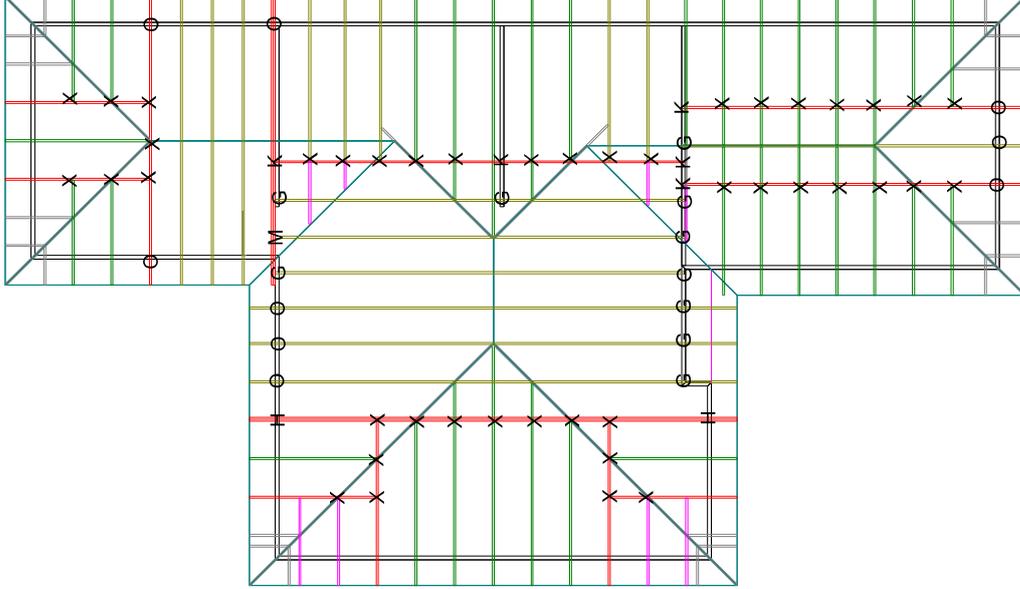


## NOTES:

All other areas must have at the minimum 2 / 90x3,15mm skew nails + 2 wire dogs (4.7kN) for truss to top plate connections.

Refer to:  
LUMBERLOK Timber Connectors Characteristic Loadings Data brochure 03/4

Layout is null and void if trusses not supplied by PlaceMakers



Site Address:  
Lot 719  
Oates Street, Rosemerryn  
Lincoln  
Lincoln



Sheet Title:  
**For Building Consent  
Truss Fixings**

Date: 23 Aug, 2021  
Scale: 1:125  
Drawn: Mikaere Britton-Bruce  
System: MITek 2020

Job Details:  
Roof Pitch : 25.000 Deg  
Roof Material : Metro Tile Shake  
Ceiling Material : Rondo screwed to BC  
Wind Zone : High  
Roof Snow Load : 0.490 kPa

Truss Centres : 900 mm  
Roof Live Load : 0.250kPa  
Floor Live Load : kPa  
Wind Speed : 44.0 m/s

PrimeCat v4.7.346

Job Title :  
**212856**  
Sheet :  
**5**  
Revision Number :

