Ref: NA230831

26 March 2024

Parkwood Modular Buildings Pty Ltd
Lot 6 Kangoo Road
SOMERSBY NSW 2250

Attn: Mr John McDougall

Dear John

Re Structural Inspection of Prefabrication Buildings
March 2024

We confirm that ACOR consultants Pty Ltd attended the fabrication premises on the 1st March 2024 for the purpose on inspecting the structural elements of pre-fabricated housing and buildings at various stages during construction.

At the time of our inspection, relevant structural elements were assessed and were found to comply with the structural design specifications and with the requirements of the Building Code of Australia.

Should you have any further queries don't hesitate to contact the undersigned.

Yours faithfully
ACOR Consultants Pty Ltd

sfieck

Syhra Fieck
Project Engineer - Structural
BE(Hons1) MIEAust

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ENGINEERS
MANAGERS
INFRASTRUCTURE PLANNERS
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A. GENERAL

A.1 THIS SET OF DRAWINGS IS TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS.

A.2 ALL SET OUT DIMENSIONS ARE TO BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS UNLESS SPECIFIC DIMENSIONS ARE GIVEN ON THE ENGINEERING DRAWINGS.

A.3 THESE DRAWINGS SHOULD NOT BE SCALED.

A.4 ALL MATERIALS AND WORKMANSHIP ARE TO BE OF THE HIGHEST STANDARD AND IN ACCORDANCE WITH ANY RELEVANT S.A.I. GLOBAL CODES RELATING TO THEIR APPLICATION. CERTIFICATES TO THIS EFFECT FROM A N.A.T.A. APPROVED TESTING LABORATORY SHALL BE FURNISHED ON REQUEST.

A.5 DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART OF THE STRUCTURE SHALL BE OVER STRESSED.

A.6 THE STRUCTURE HAS BEEN DESIGNED FOR THE FOLLOWING SUPERIMPOSED LIVE LOADINGS:

INTERNAL:	1.5 kPa
GARAGE:	3.0 kPa
BALCONY:	2.0 kPa

B. SITE CLASSIFICATION

B.1 A SITE CLASSIFICATION SHALL BE CARRIED OUT PURSUANT TO CLAUSE 2.1.1 OF AS2870-1996.

BY: EITHER LOCAL COUNCIL, QUALIFIED ENGINEER OR GEOTECHNICAL ENGINEER

B.2 THE DESIGN IS BASED ON EITHER SITE CLASSIFICATIONS, A, S, M OR H. IN ACCORDANCE WITH THE TABLES ON THE DRAWINGS

B.3 THE FOOTING SYSTEM SPECIFIED ON THESE DRAWINGS WILL MEET THE PERFORMANCE REQUIREMENTS SET OUT IN CLAUSE 1.3 OF AS2870-1996 (RESIDENTIAL SLABS AND FOOTINGS CODE). THE FOOTING SYSTEM IS INTENDED TO ACHIEVE ACCEPTABLE PROBABILITIES OF SERVICEABILITY AND SAFETY OF THE BUILDING DURING ITS DESIGN LIFE.

B.4 APPENDIX B OF AS2870-1996 PROVIDES INFORMATION AND GUIDANCE ON THE MAINTENANCE OF FOUNDATION & SITE CONDITIONS. SUBJECT TO ADOPTION OF THESE RECOMMENDATIONS THE BUILDING MAY EXPERIENCE MINOR DAMAGE BUT OF A SEVERITY NOT EXCEEDING THE LEVELS DEFINED IN APPENDIX C OF AS2870-1996.

B.5 IT IS THE OWNERS RESPONSIBILITY TO ENSURE THE SITE IS PROPERLY MAINTAINED.

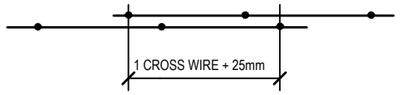
B.6 THE FOOTING DETAILS SHOWN ARE FOR THE SITE CLASSIFICATION STIPULATED. WHILST EVERY CARE HAS BEEN TAKEN TO VERIFY THAT THE INFORMATION SHOWN IS CORRECT, ACOR CONSULTANTS PTY LTD TAKES NO RESPONSIBILITY FOR VARIATIONS WHICH MAY OCCUR DUE TO VARIATIONS IN SITE CONDITIONS.

D. STEEL FIXER

D.1 ALL REINFORCING BAR AND FABRIC SHALL BE DESIGNATED AS SHOWN IN THE FOLLOWING TABLE AND SHALL COMPLY WITH THE APPROPRIATE CODES AS NOTED BELOW:

SYMBOL	TYPE
R	STRUCTURAL GRADE ROUND BARS TO AS4671-2001 (230MPa)
S	STRUCTURAL GRADE DEFORMED BARS TO AS4671-2001 (230MPa)
N	TEMPCORE DEFORMED BARS TO AS4671-2001 (500MPa)
RL/SL	FABRIC TO AS4671-2001 (500MPa)
TM	TRENCH MESH TO AS4671-2001 (500MPa)
NOTE:	THE NUMBER FOLLOWING THE SYMBOL IS THE BAR DIAMETER IN MILLIMETRES.

D.2 MINIMUM LAP TO FABRIC TO BE AS SHOWN IN THE DIAGRAM BELOW:



D.3 TRENCH MESH SHALL BE SPLICED WHERE NECESSARY BY A LAP OF 500mm. ALL CROSS WIRES TO TRENCH MESH SHALL BE CUT FLUSH WITH OUTER MAIN WIRES.

D.4 SPLICES IN REINFORCEMENT SHALL BE MADE IN ACCORDANCE WITH THE PROVISIONS OF TABLE 13.1.2.2.A OF AS3600-1994 OR IN ACCORDANCE WITH THE FOLLOWING TABLE:

BAR SIZE	N12	N16	N20	N24	N28	N32
SPLICE LENGTH	400	600	800	1200	1350	1650

D.5 REINFORCEMENT SHALL BE SUPPORTED AT 800mm MAXIMUM CENTRES TO MAINTAIN THE NOMINATED POSITION AND COVER UNLESS REDUCED SPACING IS SPECIFIED.

D.6 BAR CHAIRS SHOULD BE PLACED SUCH THAT REINFORCEMENT IS ALWAYS POSITIONED WITH SPECIFIED COVER.

D.7 WELDING OF REINFORCEMENT OTHER THAN TACK WELDING FOR PURPOSE OF MAINTAINING BARS IN CORRECT POSITION IS NOT PERMITTED UNLESS SPECIFICALLY NOMINATED ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.

E. CONCRETE

E.1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600 EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.

CONCRETE QUALITY:

ELEMENT	SLUMP	MAX. SIZE AGG.	CEMENT TYPE	AS3600 F'c	ADMIXTURE	MIN. CEMENT CONTENT PER M^3
PIERS	80	20	GP/GB	20MPa	NIL	250 Kg
SLAB	80	20	GP/GB	20MPa	NIL	250 Kg

E.2 DESIGN COVER TO THE REINFORCEMENT SHALL BE 40mm TO UNPROTECTED GROUND, 40mm TO EXTERNAL EXPOSURE; 30mm TO THE MEMBRANE IN CONTACT WITH THE GROUND AND 20mm TO THE INTERNAL SURFACE. THE SLAB FABRIC SHALL BE PLACED TOWARDS THE TOP OF THE SLAB WITHIN THE ZONE DEFINED BY THESE LIMITS.

E.3 ALL CONCRETE CONSTRUCTION TO BE COMPACTED WITH A MECHANICAL VIBRATOR.

E.4 THE CONCRETE SLAB SHALL BE CURED USING AN APPROVED COMMERCIAL CURING COMPOUND AND IN ACCORDANCE WITH CLAUSE 19.1.5 OF AS3600-1994. CURING OF THE CONCRETE SHALL START IMMEDIATELY AFTER FINISHING.

S. RESIDENTIAL STRUCTURAL STEEL WORK

S.1 ALL STRUCTURAL STEEL WORK SHALL COMPLY WITH AS 1111, AS 1112, AS 1163, AS 1554, AS 4100, AND THE A.C.S.E. STRUCTURAL STEEL FABRICATION AND ERECTION SPECIFICATIONS WHERE DEEMED APPROPRIATE BY THE CONTRACT DOCUMENTS.

S.2 ABBREVIATIONS USED ARE AS FOLLOWS:

UB - UNIVERSAL BEAM
UC - UNIVERSAL COLUMN
PFC - PARALLEL FLANGE CHANNEL
EA - ROLLED STEEL EQUAL ANGLE
UA - ROLLED STEEL UNEQUAL ANGLE
RHS - RECTANGULAR HOLLOW SECTION
SHS - SQUARE HOLLOW SECTION
B.W. - BUTT WELD
F.W. - FILLET WELD

S.3 THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION IS THE BUILDER'S RESPONSIBILITY. ADEQUATE TEMPORARY BRACING SHALL BE PROVIDED WHERE NECESSARY AND AS DIRECTED BY THE SUPERVISING ENGINEERING.

S.4 ALL SHOP CONNECTIONS SHALL BE FULLY WELDED UNLESS NOTED OTHERWISE.

S.5 BOLT DESIGNATION:

4.6/S COMMERCIAL BOLTS OF GRADE 4.6 TO AS1111 SNUG TIGHTENED.

8.8/S HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS 1252 SNUG TIGHTENED.

S.6 UNLESS NOTED OTHERWISE ALL BOLTS SHALL BE M16 GRADE 8.8/S. NO CONNECTION SHALL HAVE LESS THAN 2 BOLTS. ALL BOLTS AND WASHERS SHALL BE GALVANISED.

S.7 UNLESS NOTED OTHERWISE ALL WELDS SHALL BE 6mm CONTINUOUS FILLET TYPE GP. BUTT WELDS, WHERE SPECIFIED, SHALL BE COMPLETE PENETRATION BUTT WELDS TO AS 1554. USE E4121.02.07 ELECTRODES FOR ALL WELDING UNLESS NOTED OTHERWISE.

S.8 UNLESS NOTED OTHERWISE ALL GUSSET AND CONNECTION PLATES TO BE 10mm.

S.9 THE BUILDER SHALL PROVIDE ALL CLEATS AND DRILL ALL HOLES NECESSARY FOR FIXING STEEL TO STEEL AND TIMBER TO STEEL WHETHER OR NOT DETAILED ON THE DRAWINGS.

S.10 ALL COLUMNS AND BEAMS SHOWN ON THE DRAWINGS FOR TIMBER FRAMED BUILDINGS SHALL BE LATERALLY RESTRAINED BY THE BUILDING FRAME AT EACH SUPPORT LOCATION THROUGH POSITIVE SCREW FIXING OF WALL STUDS TO THE COLUMNS AND EITHER JOISTS OR NOGGINGS TO THE BEAMS.

S.11 ALL COLUMNS AND BEAMS SHOWN ON THE DRAWINGS FOR FULL BRICK BUILDINGS SHALL BE LATERALLY RESTRAINED BY THE BRICKWORK AT EACH SUPPORT THROUGH POSITIVE FIXING OF WALL TIES TO THE COLUMNS AND EITHER JOISTS OR NOGGINGS TO THE BEAMS. NO ADDITIONAL RESTRAINT IS REQUIRED WHERE A BEAM DIRECTLY SUPPORTS A CONCRETE FLOOR SLAB.

S.12 SURFACE TREATMENT AND COATINGS SHALL BE AS SPECIFIED WITHIN THE TABLE BELOW:

ELEMENT	SURFACE CLEANING TO AS 1627 PART 4	COATINGS
ALL EXTERNAL STEELWORK	SUITABLE FOR GALVANISING	HOT DIPPED GALVANISED OR IN ACCORDANCE WITH AS2312
ALL INTERNAL STEELWORK	CLASS 1	R.O.Z.P. - 1 COAT

S.13 REFERENCE SHOULD BE MADE TO AS 2312 FOR GUIDANCE ON APPROPRIATE COATING SYSTEMS FOR ALL EXTERNAL APPLICATIONS. COATING OF EXTERNAL LINTELS SHALL BE IN ACCORDANCE WITH BCA96 CLAUSES 3.3.3.4 AND 3.4.4 OR AS3700 CLAUSE 3.4.3.
THE BUILDER MUST CLARIFY HIS CONTRACTUAL OBLIGATIONS IN THIS REGARD.

S.14 CONCRETE ENCASED STEEL WORK SHALL BE WRAPPED WITH 10 S.W.G. WIRE AT 100mm PITCH AND SHALL HAVE A MINIMUM CONCRETE COVER OF 150mm UNLESS NOTED OTHERWISE.

C. FOOTINGS

C.1 GENERAL
ALL PIERING IS TO CONFIRM TO THE FOLLOWING TABLES FOR SINGLE & TWO STORY BUILDINGS AND NOTES C2 & C3. WHERE CONDITIONS DIFFER TO WHAT IS DETAILED, THE STRUCTURAL ENGINEER IS TO BE NOTIFIED TO PROVIDE INSTRUCTIONS

C.2 PIER DEPTHS NOMINATED ARE MINIMUM REQUIREMENTS ONLY AND SHOULD BE INCREASED IF REQUIRED.

C.3 MINIMUM 3 PIERS PER EACH CHASSIS BEAM UNLESS APPROVED BY ENGINEER IN WRITING.

4m OVERALL WIDTH

BEARING STRATA	STANDARD CHASSIS
ALL PIERS	ALL PIERS
100KPa (SAND)	Ø450 AT 2.6m Ø600 AT 4m
150KPa (NATURAL CLAY/MATERIAL)	Ø450 AT 3.6m Ø600 AT 4m
250KPa (STIFF CLAY)	Ø450 AT 4m
400KPa+ (SHALE/ROCK)	Ø450 AT 4m

5m OVERALL WIDTH

BEARING STRATA	STANDARD CHASSIS
ALL PIERS	ALL PIERS
100KPa (SAND)	Ø450 AT 1.9m Ø600 AT 3.4m
150KPa (NATURAL CLAY/MATERIAL)	Ø450 AT 3m Ø600 AT 4m
250KPa (STIFF CLAY)	Ø450 AT 4m
400KPa+ (SHALE/ROCK)	Ø450 AT 4m

MIN PIER DEPTH (REFER TO S03)

DESCRIPTION	SITE CLASS	MIN PIER DEPTH 'D'
ROCK	A	400 OR LEVELLING PAD
STABLE	S	400
MODERATE REACTIVE	M	600
HIGHLY REACTIVE	H	1000 AT 2400 MINIMUM CTS.

FOR CONSTRUCTION

This drawing has been assigned an electronic code that signifies the drawing has been checked and approved by:

Issue	Description	Date	Drawn	Approved
2	REISSUED FOR CONSTRUCTION	30.04.19	BD	AH
1	ISSUED FOR CONSTRUCTION	11.07.17	AT	AH

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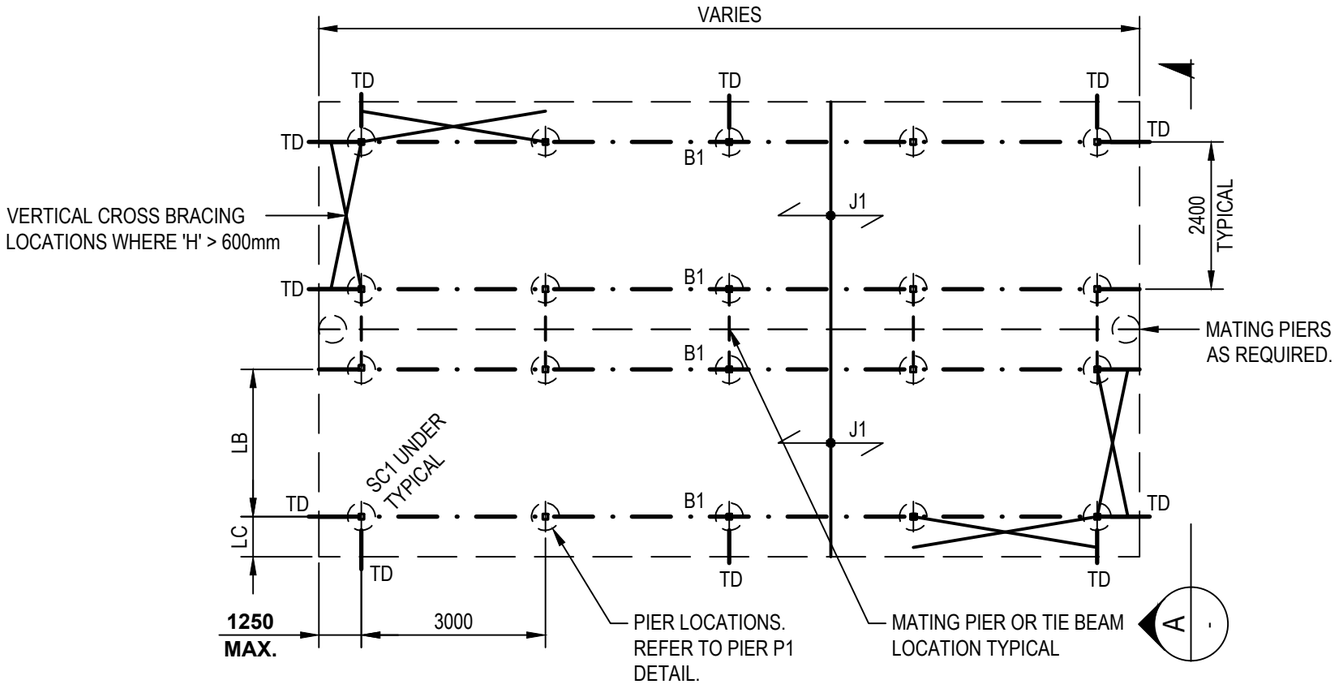
Project: PARKWOOD MODULAR BUILDINGS

Drawing Title: STRUCTURAL SERVICES
TYPICAL DETAILS - NOTES SHEET
STANDARD CHASSIS

Drawn	Date	Scale A3	Q.A. Check	Date
AT	APRIL '17	N.T.S	AH	Q.A. DATE
Designed	Project No.		Dwg. No.	Issue
AH	WS170089		S01	2



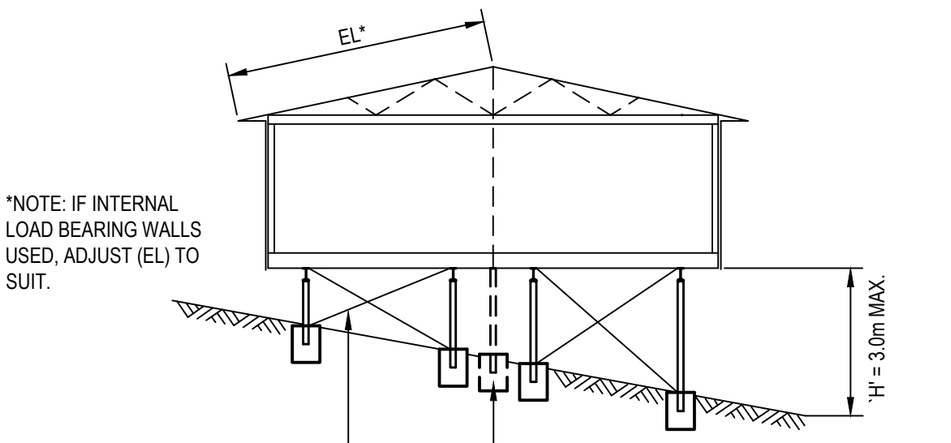
PIER LOCATION AND CHASSIS PLAN

TD - REFER TO TIEDOWN TYPICAL DETAILS

MEMBER SCHEDULE			
MARK	SIZE		REMARKS
B1	200UB18 OR 230 PFC		BEARER
MARK	HEIGHT 'H'	SIZE	CROSS BRACING
SC1	450 MIN.-600mm	90x90x2.0 DURAGAL SHS	N/A
SC1	601-2400mm	90x90x2.0 DURAGAL SHS	MINIMUM OF 150mm² STEEL CROSS SECTIONAL AREA
SC1	2400 - 3000	90x90x2.0 DURAGAL SHS	MINIMUM OF 300mm² STEEL CROSS SECTIONAL AREA

NOTE:
MAX CANTILEVER = BACKSPAN/2 OR 1.3M WHICH IS LESS

MAX CANTILEVER WHEN SUPPORTING BI FOLD OR SLIDING DOORS
= BACKSPAN/3 OR 1.0M WHICHEVER IS LESS



ELEVATION A -

FLOOR JOIST SCHEDULE (J1)			
SIZE	BACK SPAN (LB)	MAX. CANTILEVER (LC)	EFFECTIVE ROOF (EL)
190 x 45 MGP10 AT 450 CTS.	2400 CONTINUOUS	1200 1000 800	2400 3600 4800
190 x 35 MGP10 AT 450 CTS.	2400 CONTINUOUS	1100 800 600	1500 3600 4800
140 x 35 MGP10 AT 450 CTS.	2400 CONTINUOUS	800 600	1500 2400
STEEL C-SECTION IN ACCORDANCE WITH MANUFACTUERS SPECIFICATIONS			

REFER TO "UNDER-EAVE EXTENSIONS" DIAGRAMS.
NOTE: ROOFING MATERIAL IS SHEET METAL
ONLY (TOTAL ROOF = 40kg/m²)

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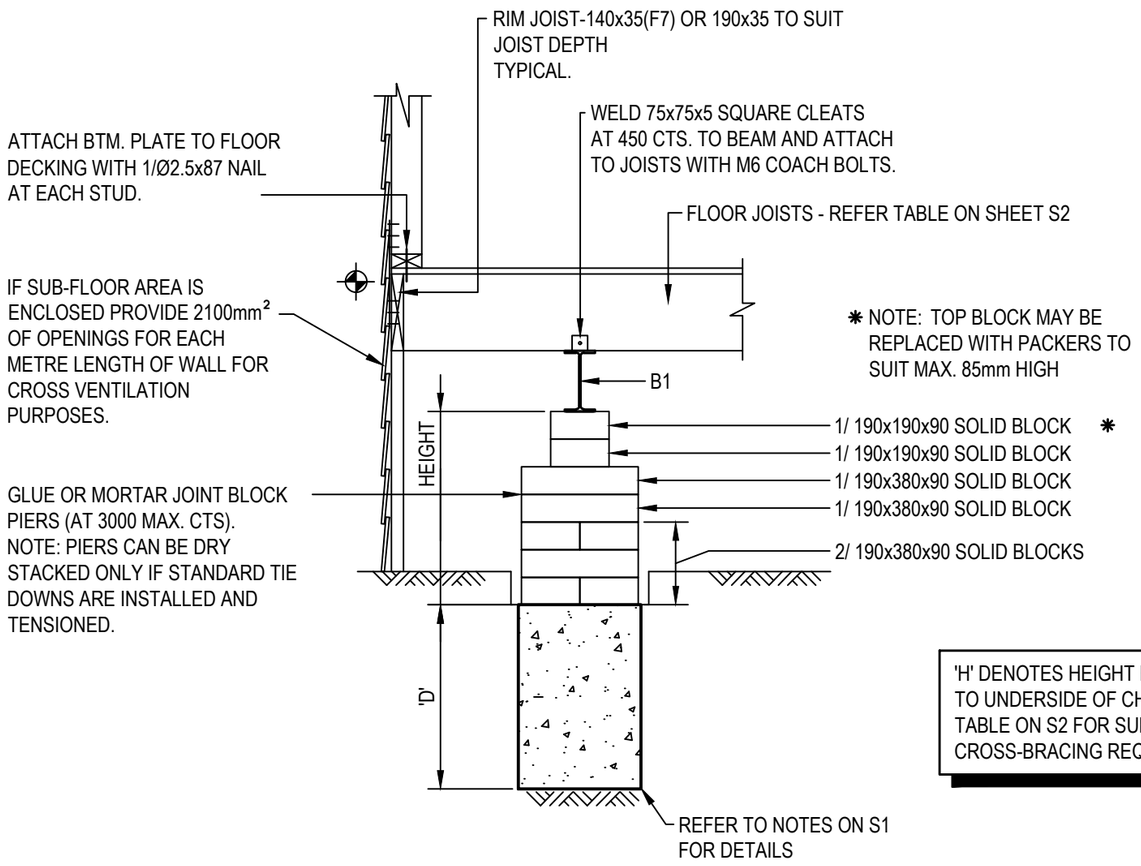
Project: PARKWOOD MODULAR BUILDINGS

Drawing Title: STRUCTURAL SERVICES
TYPICAL SUB-FLOOR PLAN AND DETAILS
SHEET 1

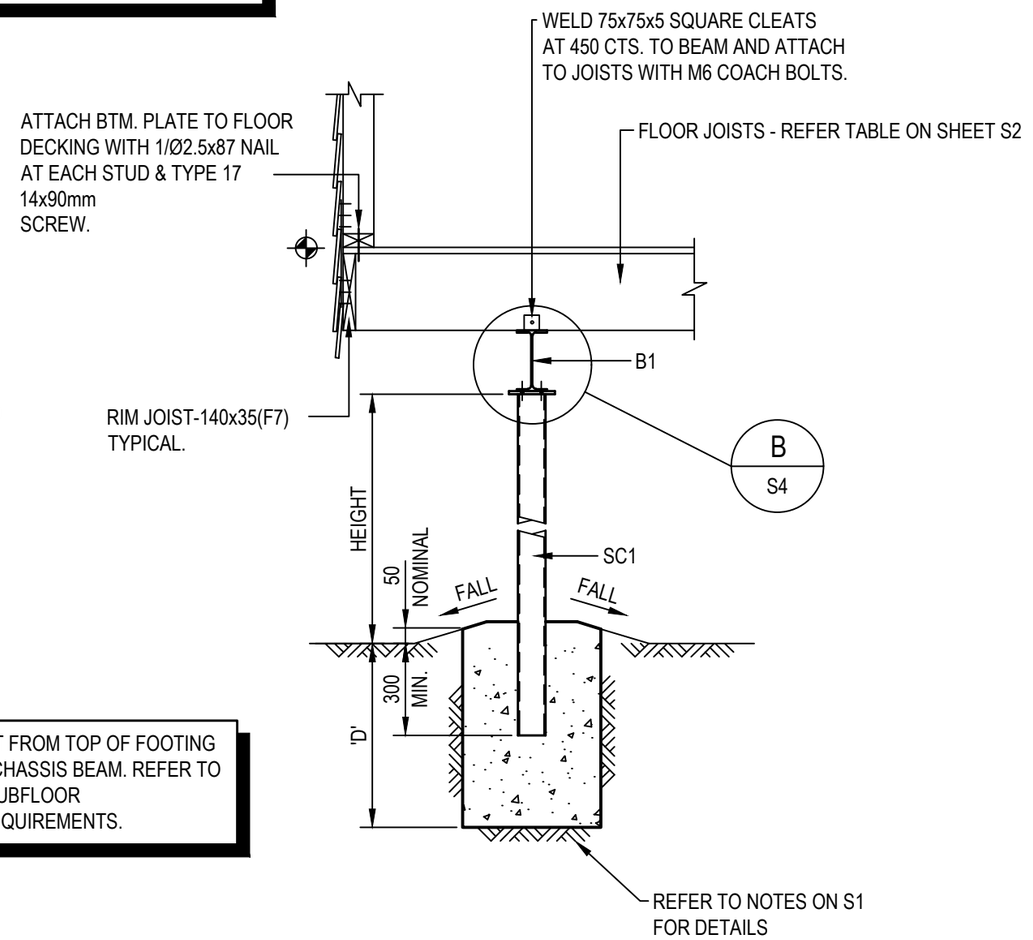
Drawn	Date	Scale	A3	Q.A. Check	Date
AT	APRIL '17	N.T.S		AH	Q.A. DATE
Designed	Project No.			Dwg. No.	Issue
AH	WS170089			S02	2

TYPICAL GALVANISED STEEL STRAP, USE 6 STAPLES OR 3/Ø2.5x87 NAILS AT EACH SIDE OF JOINT. STEEL STRAP REQUIRED AT EVERY STUD AND AT BOTH STUDS AT EACH END OF OPENINGS.



* NOTE: TOP BLOCK MAY BE REPLACED WITH PACKERS TO SUIT MAX. 85mm HIGH

'H' DENOTES HEIGHT FROM TOP OF FOOTING TO UNDERSIDE OF CHASSIS BEAM. REFER TO TABLE ON S2 FOR SUBFLOOR CROSS-BRACING REQUIREMENTS.



PIER P1 DETAIL WHERE HEIGHT < OR = 600mm

PAD FOOTING DETAIL

NOTE: WHERE BEDROCK ENCOUNTERED PROVIDE 50mm THICK LEVELING PAD

WHERE HEIGHT TO CHASIS BEAM IS 1000 FOR LESS THAN 25% OF ALL PIERS ON SITE, PIER HEIGHTS MAY BE INCREASED USING 2/190x390x90 BLOCKS. AN ADDITIONAL TIE DOWN SHOULD BE INSTALLED WHERE THIS OCCURS ON AN EXTERNAL ROW OF PIERS.

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1	ISSUED FOR CONSTRUCTION	11.07.17	AT	AH

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Project: PARKWOOD MODULAR BUILDINGS

Drawing Title: STRUCTURAL SERVICES
TYPICAL SUB-FLOOR PLAN AND DETAILS
SHEET 2

Drawn	Date	Scale	A3	Q.A. Check	Date
AT	APRIL '17	20		AH	Q.A. DATE

Designed	Project No.	Dwg. No.	Issue
AH	WS170089	S03	2

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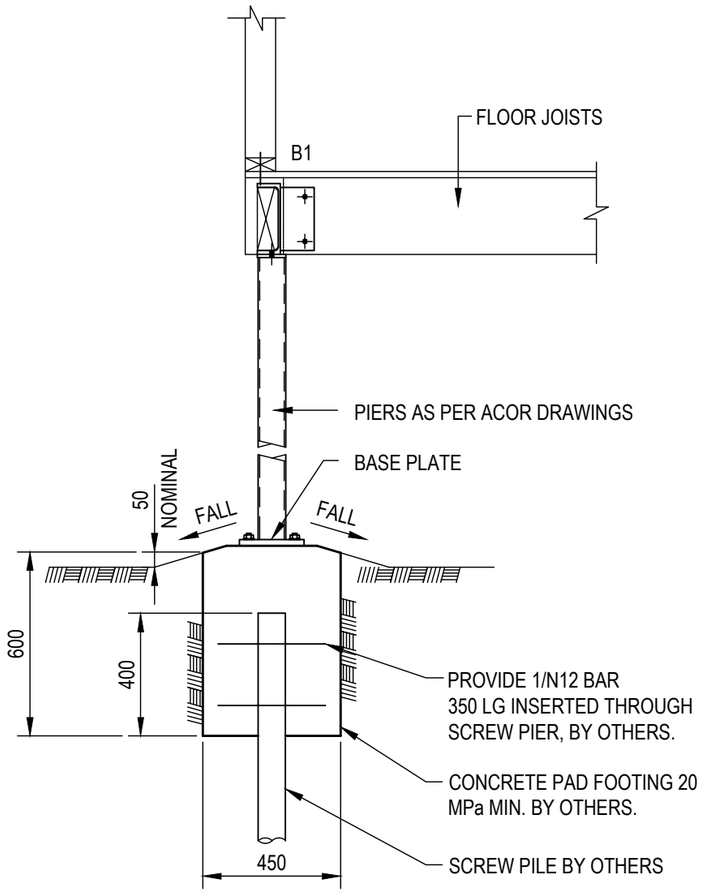

TYPICAL SCREW PIER DETAIL FOR PIER WITH PAD FOOTING

SCREW PILE LOADING SCHEDULE (SAFE WORKING LOADS)

DEAD LOAD	LIVE LOAD
20 kN	20 kN

NOTE:
CONTRACTER TO DESIGN PIERS FOR MAXIMUM 150 ECCENTRIC LOAD.

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1	ISSUED FOR CONSTRUCTION	11.07.17	AT	AH

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Project: PARKWOOD MODULAR BUILDINGS

Drawing Title: STRUCTURAL SERVICES
TYPICAL DETAILS
SCREW PIER WITH PAD FOOTING

Drawn	Date	Scale A3	Q.A. Check	Date
AT	APRIL '17	20	AH	Q.A. DATE
Designed	Project No.		Dwg. No.	Issue
AH	WS170089		S03.02	2

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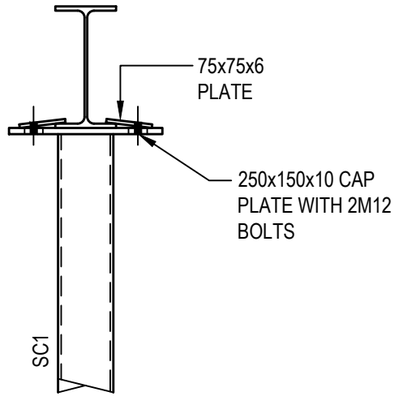
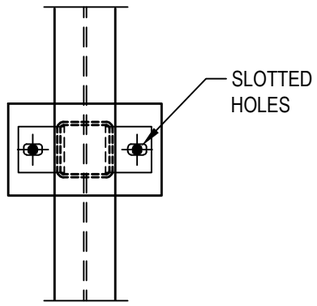
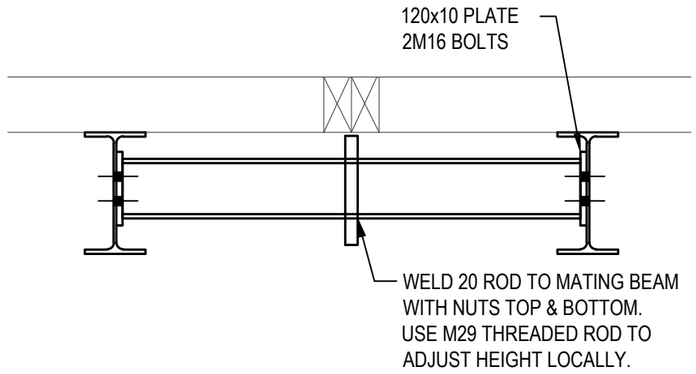
Apr 30, 2019 - 12:44pm



DETAIL B / S3



PLAN



MATING BEAM DETAIL

100UC FOR 200 CHASSIS
150UC FOR 250 CHASSIS

FOR CONSTRUCTION

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Issue	Description	Date	Drawn	Approved
2	REISSUED FOR CONSTRUCTION	30.04.19	BD	AH
1	ISSUED FOR CONSTRUCTION	11.07.17	AT	AH

0 1cm at full size 2cm 3cm 4cm 5cm

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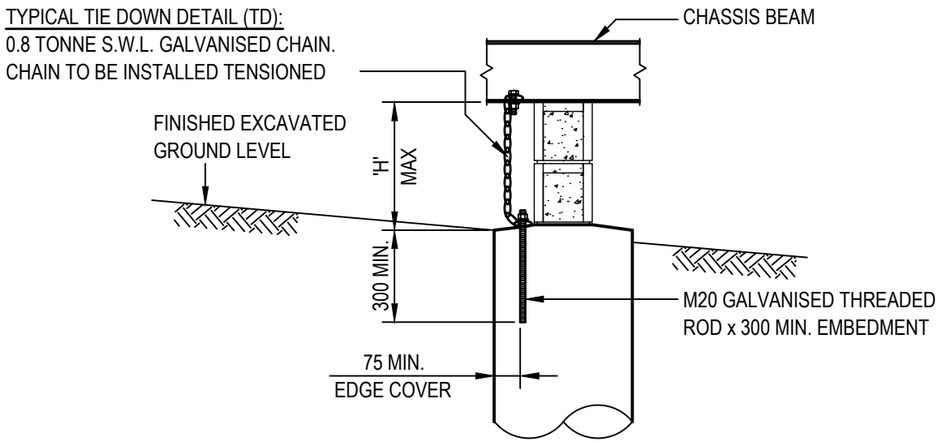
Project: PARKWOOD MODULAR BUILDINGS

Drawing Title: STRUCTURAL SERVICES
TYPICAL SUB-FLOOR PLAN AND DETAILS
SHEET 3

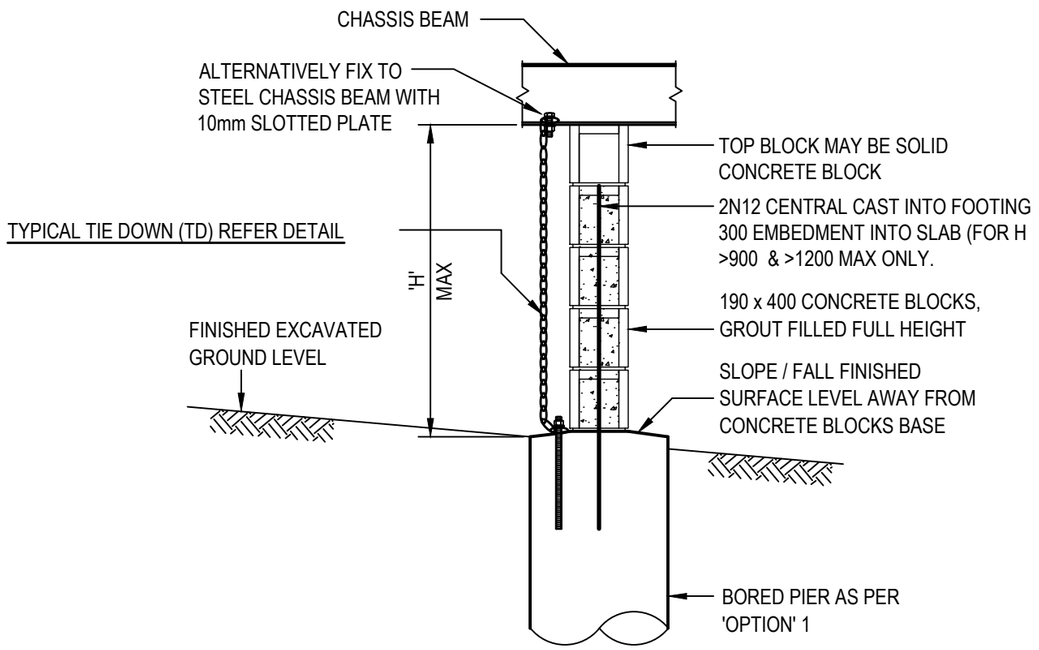
Drawn	Date	Scale	A3	Q.A. Check	Date
AT	APRIL '17	10		AH	Q.A. DATE

Designed	Project No.	Dwg. No.	Issue
AH	WS170089	S04	2



ANCHOR DETAIL

FOR 190 x 400 GROUT FILLED CONCRETE BLOCKS 'H' = 400 MAX.
FOR 400 x 400 SOLID CONCRETE BLOCKS 'H' = 900 MAX.



ALTERNATE PIER DETAIL

FOR 190 x 400 GROUT FILLED CONCRETE BLOCKS 'H' = 400 MAX.
FOR 400 x 400 SOLID CONCRETE BLOCKS 'H' = 900 MAX.
FOR 190 x 400 REINFORCED CORE FILLED CONCRETE BLOCKS 'H' = 1200 MAX.

ANCHOR DETAILS

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1	ISSUED FOR CONSTRUCTION	11.07.17	AT	AH

0 1cm at full size 5cm 10cm

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Project
PARKWOOD MODULAR BUILDINGS

Drawing Title
STRUCTURAL SERVICES
TYPICAL SUB-FLOOR ANCHOR DETAILS
SHEET 1

Drawn	Date	Scale A3	Q.A. Check	Date
AT	APRIL '17	1:20	AH	Q.A. DATE
Designed	Project No.		Dwg. No.	Issue
AH	WS170089		S05	2

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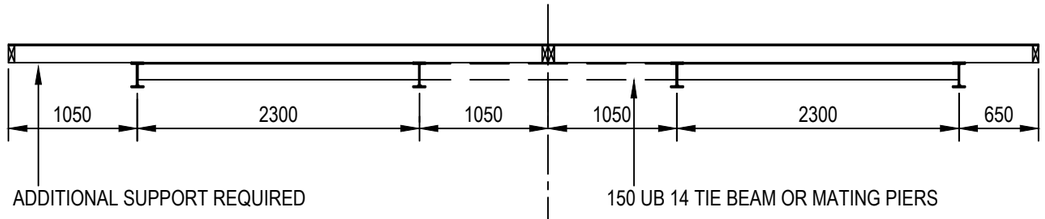
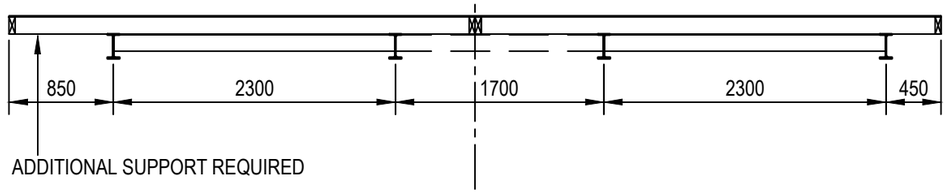


7200
(2@3.6m)



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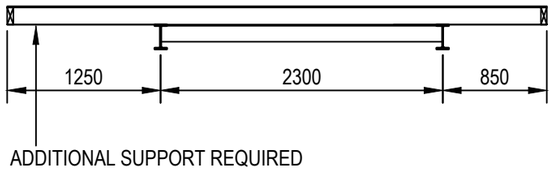

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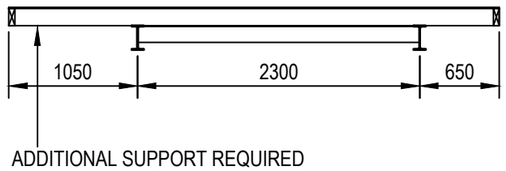
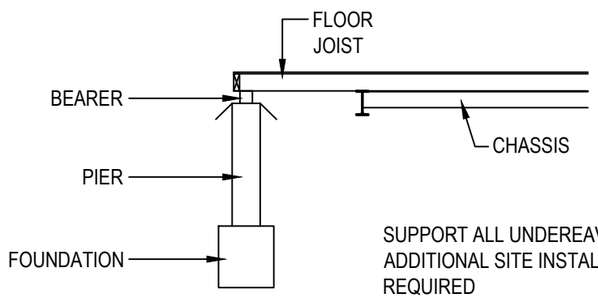


UNDER-EAVE EXTENSIONS

REFER TO SHEET S2 FOR JOIST SCHEDULE



SUPPORT ALL UNDEREAVE EXTENSIONS WITH AN ADDITIONAL SITE INSTALLED BEAM AND PIERS AS REQUIRED

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Issue	Description	Date	Drawn	Approved
2	REISSUED FOR CONSTRUCTION	30.04.19	BD	AH
1	ISSUED FOR CONSTRUCTION	11.07.17	AT	AH

0 1cm at full size 10cm 20cm

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FOR CONSTRUCTION

Project: PARKWOOD MODULAR BUILDINGS

Drawing Title: STRUCTURAL SERVICES
TYPICAL DETAILS - UNDER-EAVE EXTENSIONS

Drawn	Date	Scale A3	Q.A. Check	Date
AT	APRIL '17	1:50	AH	Q.A. DATE
Designed	Project No.		Dwg. No.	Issue
AH	WS170089		S06	2

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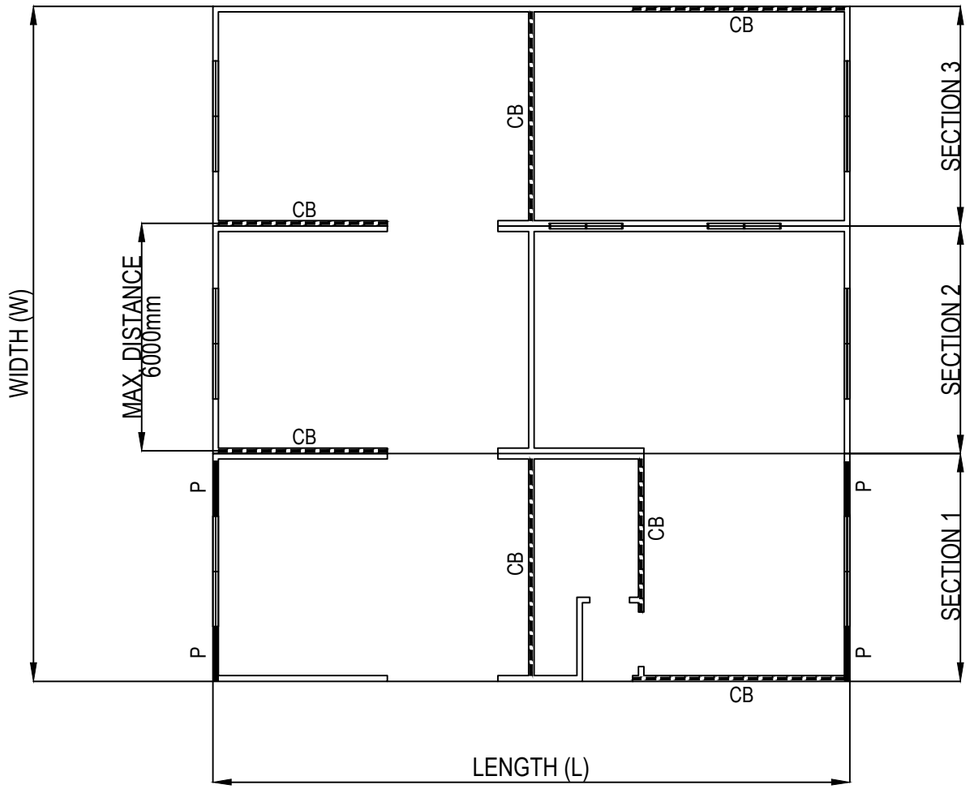
Apr 30, 2019 - 12:54pm



HOUSE WIDTH W (m)	WIND CLASSIFICATION N3 IN ULTIMATE STRESS SINGLE STOREY STANDARD HOUSE LENGTH L (m) WITH Max 15° ROOF PITCH											
	4		8		10		12		16		18	
	NUMBER OF TYPE B BRACING (6 kN PER BRACING)											
4	2 2	N.S. W.E.	4 2	N.S. W.E.	4 2	N.S. W.E.	5 2	N.S. W.E.	7 2	N.S. W.E.	8 2	N.S. W.E.
8	2 4	N.S. W.E.	4 4	N.S. W.E.	4 4	N.S. W.E.	5 4	N.S. W.E.	7 4	N.S. W.E.	8 4	N.S. W.E.
12	2 5	N.S. W.E.	4 5	N.S. W.E.	4 5	N.S. W.E.	5 5	N.S. W.E.	7 5	N.S. W.E.	8 5	N.S. W.E.

N

BRACING LEGEND:

P DENOTES PLYWOOD TYPE B BRACING. REFER TO BRACING DETAILS IN DRWG No. S8

CB LONG SIDE AND INTERNAL CROSS BRACING. REFER TO BRACING DETAILS IN DRWG No. S8

- MAXIMUM DISTANCE BETWEEN BRACING WALLS SHALL BE 6000.
- REFER TO TABLE ABOVE FOR BRACING REQUIREMENTS.

STRUCTURAL NOTES:

- TIMBER ROOF BATTENS TO BE FIXED TO RAFTERS WITH ONE BUILDEX No.14-10x75mm TYPE 17 SCREW OR, 2/87xØ2.5 NAILS AT EACH RAFTER
- ROOF SHEETING TO BE FIXED AS PER MANUFACTURERS' INSTRUCTIONS TO RESIST WIND PRESSURES OF 1.60kPa
- WINDOW, DOOR FRAMES AND GLAZING TO BE DESIGNED TO RESIST WIND PRESSURES OF 1.17kPa.
- IF ROOF PITCH IS LESS THAN 15° THEN ABOVE TABLE IS ADEQUATE. IF GREATER THAN 15° SEEK ADDITIONAL BRACING REQUIREMENTS FROM ENGINEER

FLOOR PLAN:

- FLOOR JOISTS TO BE TREATED PINE OR SIMILAR. DO NOT IN ANY WAY UNDERMINE, ENDANGER OR DESTABILISE ANY ADJACENT STRUCTURES (OR PARTS THEREOF)
- ENGINEER TO BE CONTACTED PRIOR TO ANY PROPPING, BRACING OR UNDERPINNING AS MAY BE REQUIRED.
- ALL FOOTINGS MUST BEAR FULLY ON FIRM NATURAL STRATA OF THE SAME TYPE HAVING AN ALLOWABLE BEARING CAPACITY OF 150kPa MINIMUM.

FOR CONSTRUCTION

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1	ISSUED FOR CONSTRUCTION	11.07.17	AT	AH

0 1cm at full size 4cm 10cm

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Project: PARKWOOD MODULAR BUILDINGS

Drawing Title: STRUCTURAL SERVICES
TYPICAL DETAILS - BRACING PLAN

Drawn	Date	Scale	A3	Q.A. Check	Date
AT	APRIL '17	1:100		AH	Q.A. DATE
Designed	Project No.			Dwg. No.	Issue
AH	WS170089			S07	2

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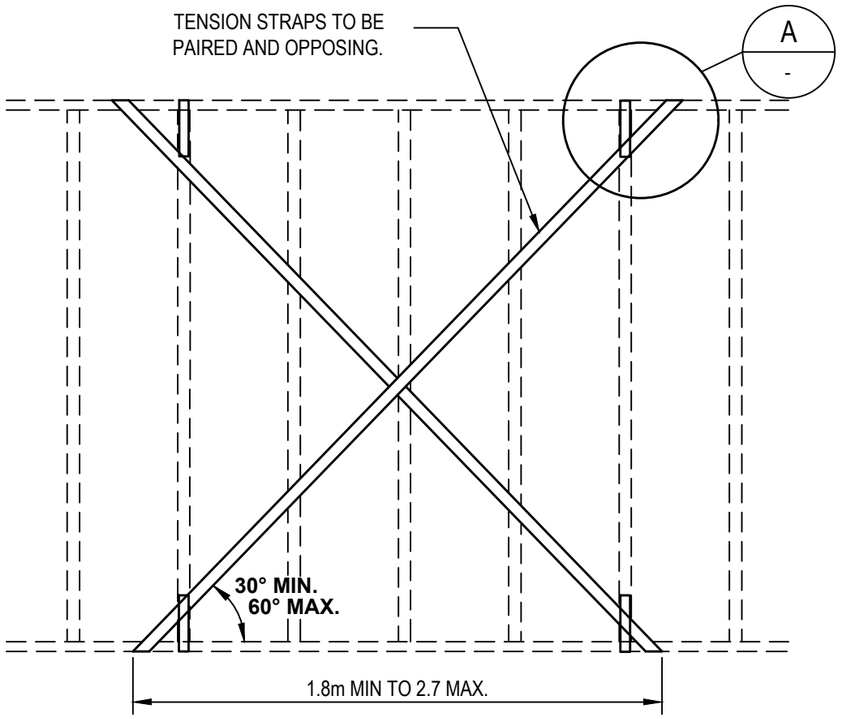
Apr 30, 2019 - 12:52pm

TYPE B - STRAP BRACING (SB) SPECIFICS

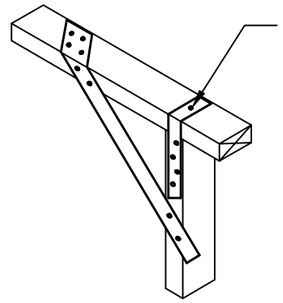
TYPE OF DIAGONAL BRACE	MATERIAL & SIZE	NAILING REQUIREMENTS		SPECIAL REQUIREMENTS
		TO EACH STUD	TO EACH PLATE	
TENSION STRAP	GALVANIZED FLAT METAL TENSION STRAP NOM SIZE 30 x 0.8mm & MIN. SECTION OF 24mm^2	2/30 x 3.15mmØ GALV. FLATHEAD NAILS.	4/30 x 2.8mm Ø GALV. FLATHEAD NAILS.	STRAPS MUST BE PROPERLY TENSIONED AND STRAP MUST RETURN OVER TOP PLATE & UNDER BOTTOM PLATE. THE STUD NEAREST TO EACH END OF EACH DIAGONAL STRAP SHALL BE FIXED TO THE PLATES WITH STRAPS OR FRAMING ANCHORS 4/30 x 2.8mmØ NAILS AT EACH END.

NOTE

REFER TO PLATE FIXING TABLE FOR TOP AND BOTTOM PLATE FIXING DETAILS.



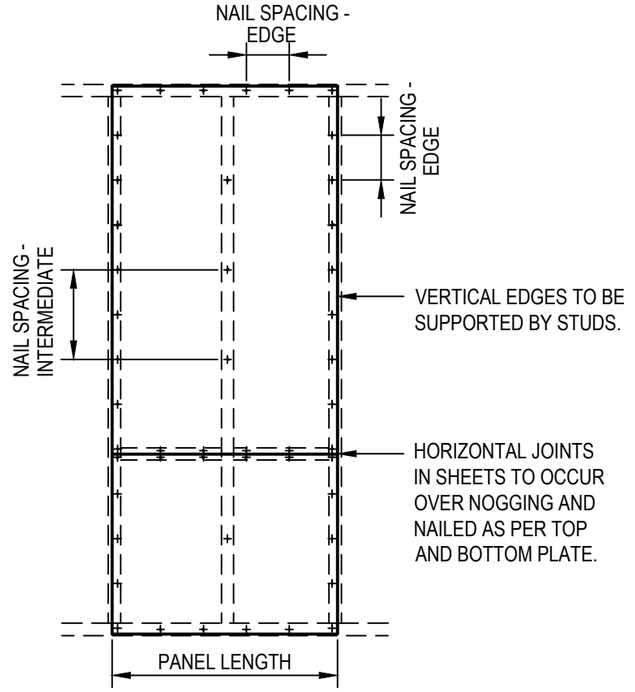
TYPE B TENSION STRAP



DETAIL A -

TYPE B - SHEET BRACING (PB) SPECIFICS

PRODUCT	AUSTRALIAN STANDARD	TYPE/ GRADE	MINIMUM THICKNESS (mm) FOR STUD SPACING (mm).		PANEL LENGTH (mm)	NAIL SIZE (mm)	NAIL SPACING (mm)		SPECIAL REQUIREMENTS
			450	600			EDGE	INTERMEDIATE	
PLYWOOD	AS 2269	F8 F11 F14 F27	7 6 4 4	9 7 6 4.5	900 / 1200	30x2.8mm Ø GALV.	50 TO PLATES AND 150 TO EDGE STUDS	300	NO NOGGING REQ'D EXCEPT AT SHEET ENDS. NAILS SHALL BE 7mm FROM ALL EDGES.
HARDBOARD (MASONITE)	AS 2458	G.P.	6.4	6.4	900 / 1200	30x2.8mm Ø GALV.	50 TO PLATES AND 150 TO EDGE STUDS	300	NAILS TO BE 10mm FROM VERTICAL EDGES AND 20mm FROM HORIZONTAL EDGES. NO NOGGING REQ'D EXCEPT AT SHEET ENDS.



TYPE B - SHEET BRACING NOTES

1. PANEL LENGTHS GREATER THAN THOSE LISTED ABOVE CAN BE CONSIDERED AS A NUMBER OF BRACING UNITS DIRECTLY PROPORTIONED TO THEIR INSTALLED LENGTH, I.E. A 1200mm PANEL OF PLYWOOD EQUALS 1200/900 = 1.33 BRACING UNITS.
2. NAILS SHOULD BE DRIVEN JUST BELOW THE SURFACE OF THE SHEET USING THE HAMMER FACE ONLY. NAILS MUST NOT BE PUNCHED.
3. PB* INDICATES - FULL AVAILABLE LENGTH.
4. REFER TO PLATE FIXING TABLE FOR TOP AND BOTTOM PLATE FIXING DETAILS.

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Project: PARKWOOD MODULAR BUILDINGS

Drawing Title: STRUCTURAL SERVICES TYPICAL BRACING DETAILS SHEET 1

Drawn	Date	Scale A3	Q.A. Check	Date
AT	APRIL '17	N.T.S	AH	Q.A. DATE
Designed	Project No.		Dwg. No.	Issue
AH	WS170089		S08	2

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Apr 30, 2019 - 12:55pm

PLATE FIXING TABLE

BRACING TYPE	PLATE	FIXING DETAILS
TYPE A	BOTTOM PLATE TO JOISTS	2/75mm NAILS AT 600mm CENTRES ALONG JOIST FOR PLATES TO 38mm THICK AND 2/90mm NAILS AT 600mm CENTRES ALONG JOIST FOR PLATE TO 50mm THICK.
	BOTTOM PLATE TO SLAB	1/75mm MASONRY NAIL AT MAXIMUM 1200mm CENTRES FOR 38mm THICK PLATES. 1/90mm MASONRY NAIL AT MAXIMUM 1200mm CENTRES FOR 50mm THICK PLATES.
TYPE B	BOTTOM PLATE TO JOISTS	1/M10 BOLT OR 1/30 x 0.8 GALVANISED METAL STRAP AT MAXIMUM 1200mm CENTRES ALONG JOIST OR TO EVERY SECOND JOIST. STRAP TO HAVE 3/30 x 2.8mm DIA. NAILS EACH END.
	BOTTOM PLATE TO SLAB	1/M10 BOLT OR CAST IN GALVANISED METAL BOTTOM PLATE CONNECTOR AT EACH END OR BRACING UNIT AND AT 1200mm MAXIMUM CENTRES.
ALL TYPE A or B	TOP PLATE TO CEILING OR ROOF FRAMING	JOISTS, BATTENS OR RAFTERS SHALL BE FIXED TO TOP PLATES WITH 2/75mm NAILS AT EACH CROSSING AT MAXIMUM OF 1200mm CENTRES ALONG THE TOP PLATE. TRUSSES CAN BE FIXED TO TOP PLATE USING BLOCKING OR PROPRIETARY CONNECTORS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

GENERAL NOTES:

1. FIXING SHOULD COMMENCE AS CLOSE AS POSSIBLE TO THE ENDS OF EACH BRACING UNIT.
2. WALL TOP PLATES MUST BE DESIGNED TO PROVIDE LATERAL LOAD TRANSFER WHILE ALLOWING TRUSS TO SETTLE UNDER DEAD LOAD.

SUB FLOOR BRACING:

ALL BRACING SHALL BE FIXED TO THE FLOOR OR FOOTING BELOW AND THE FLOOR ABOVE TO ENABLE THE TRANSFER OF THE FULL DESIGN STRENGTH OF THE BRACING SYSTEM.
BRACING IN THE SUB-FLOOR SHALL BE EVENLY DISTRIBUTED. THE MAXIMUM DISTANCE BETWEEN BRACING SETS, STUMPS, PIERS, WALLS OR POSTS, ETC. UNDER A PLATFORM STRIP OR SHEET TIMBER FLOOR SYSTEM SHALL BE 1400mm PROVIDED THE MINIMUM WIDTH OF THE FLOOR IS 6000mm.

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Project
PARKWOOD MODULAR BUILDINGS

Drawing Title
STRUCTURAL SERVICES
TYPICAL BRACING DETAILS
SHEET 2

Drawn	Date	Scale A3	Q.A. Check	Date
AT	APRIL '17	N.T.S	AH	Q.A. DATE
Designed	Project No.		Dwg. No.	Issue
AH	WS170089		S09	2

Apr 30, 2019 - 12:56pm
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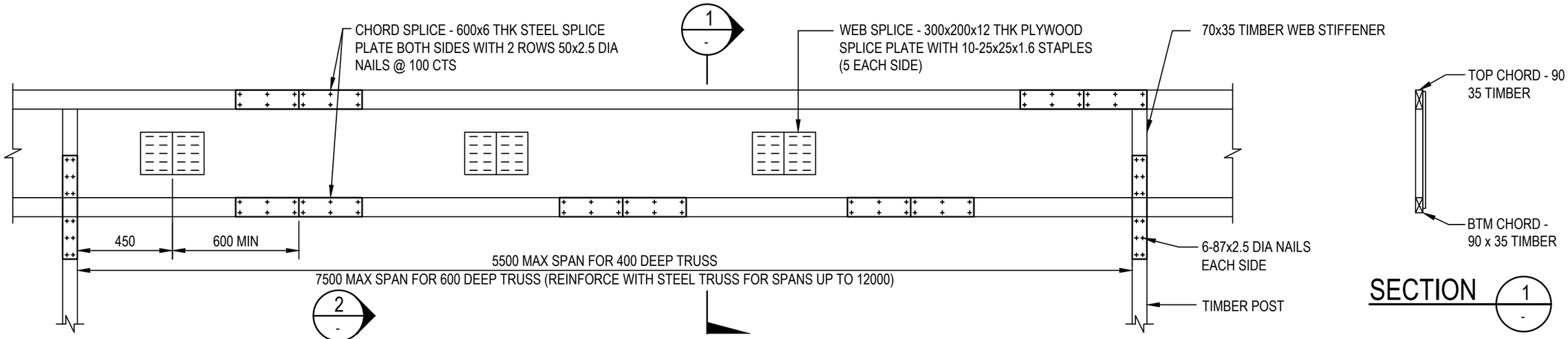
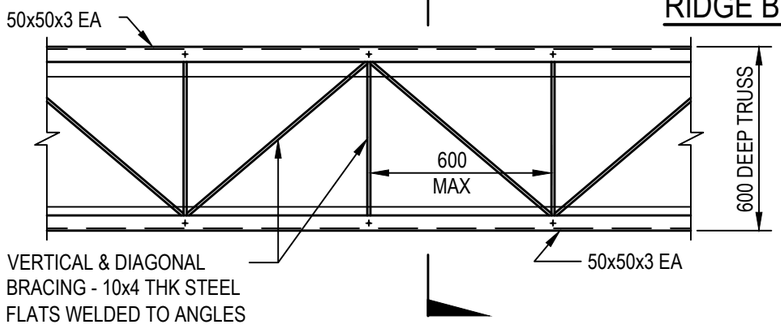


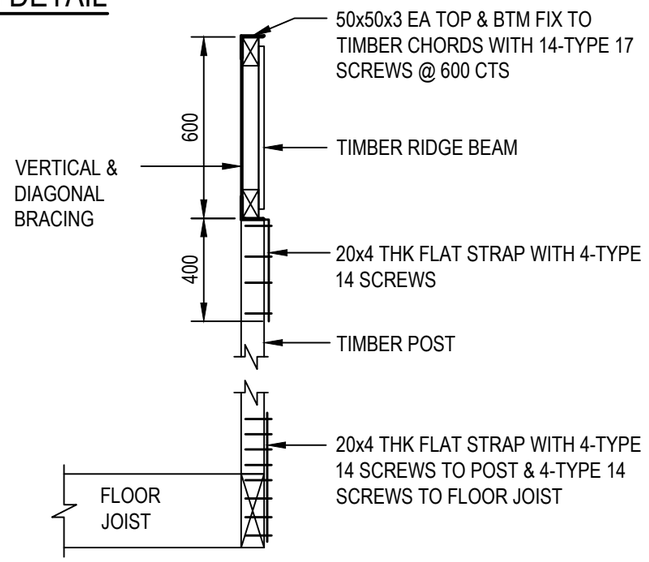
RIDGE BEAM CONNECTION DETAIL

SECTION 1 -

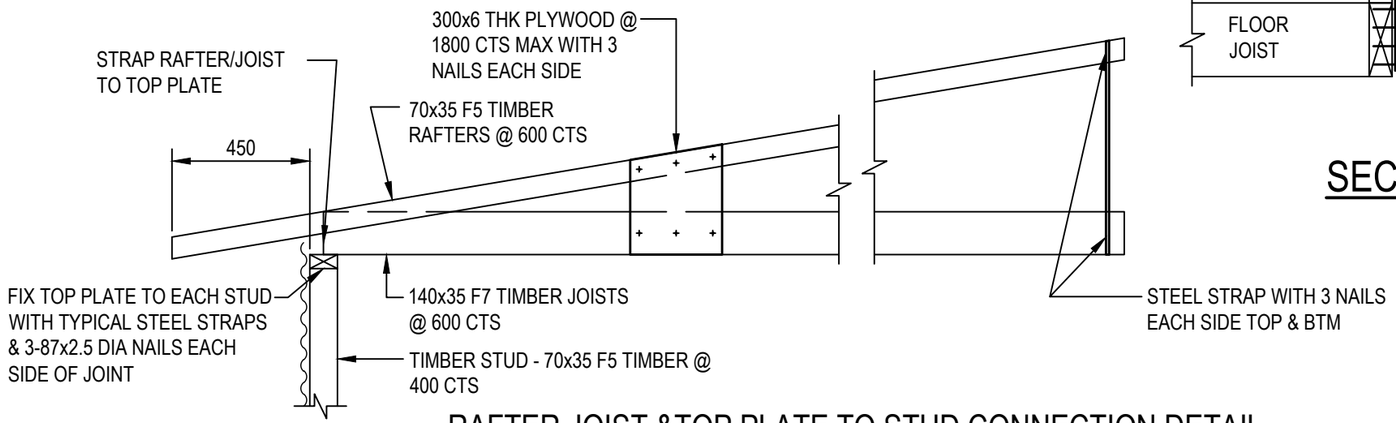
NOTE: ALL STRAPS TO BE 350 MPa YEILD STRENGTH AND 18mm² CROSS-SECTIONAL AREA MINIMUM



STEEL TRUSS REINFORCEMENT TO RIDGE BEAM DETAIL



SECTION 2 -



RAFTER JOIST &TOP PLATE TO STUD CONNECTION DETAIL

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Project: PARKWOOD MODULAR BUILDINGS

Drawing Title: STRUCTURAL SERVICES
TYPICAL ROOF DETAILS
SHEET 1

Drawn	Date	Scale A3	Q.A. Check	Date
AT	APRIL '17	N.T.S	AH	Q.A. DATE
Designed	Project No.		Dwg. No.	Issue
AH	WS170089		S10	2

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Apr 30, 2019 - 1:25 pm