

SPECIFICATION-OF-INTENT

ISSUED FOR
DEVELOPMENT APPROVAL
COMPRISING OF
PROVISIONAL DEVELOPMENT PLAN CONSENT
PROVISIONAL BUILDING RULES CONSENT

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STRUCTURAL DESIGN

Maitland, South Australia

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DRAWING INDEX & DOCUMENT STATUS		
DRAWING NUMBER	TITLE	REV
1820/G01	GENERAL NOTES (1)	A
1820/G02	GENERAL NOTES (2)	A
1820/G02	GENERAL NOTES (3)	A
1820/S01	SITE PLAN	A
1820/S02	FOOTING PLAN	A
1820/S03	HOUSE STRENGTHENING	A
1820/S04	FRAMING PLAN	B
1820/S05	ELEVATIONS	A
1820/S06	SECTIONS	B

Example No - 1820

November 2005

for
PROPOSED CANOPY
GOLDEN GROVE

EXAMPLE

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GENERAL

1. The builder shall ensure that the process of construction is supervised by an appropriately qualified person.
2. The Building Code of Australia (BCA) is adopted as the primary reference specification for objective, function and performance.
3. The South Australian Housing Code (SAHC) is adopted as a specification of acceptable product and process unless noted otherwise.
4. The project specific specification-of-intent comprises of the documents listed on the cover sheet.
5. This project specification takes precedence over the BCA and the SAHC unless the BCA imposes higher levels of performance.
6. The scope of the SAHC is extended to the BCA class of the current building project subject to:
 - a) The SAHC shall not be used for the sizing of Structural members
7. All materials and workmanship shall be in accordance with the latest editions of the relevant Australian codes unless noted otherwise (uno).
8. The structural drawings shall be read in conjunction with these Construction Notes and associated drawings, and with such other written instructions as may be issued by the Engineer, during the course of construction.
9. All dimensions in millimetres(mm) unless noted otherwise.
10. The Contractor shall verify setting out dimensions shown on the drawings by measurement on site.
11. The structure has been designed to meet the requirements of the Code or Standard relevant to the facility in its in-service condition. During construction and prior to hand-over the Contractor shall, at all time, ensure that the structure is protected from over-stressing and instability due to any causes whatsoever.
12. Details of component parts of each structure are typical only. Where items are not detailed the contractor or fabricator shall use similar methods to those shown on the drawings.
13. The contractor shall provide all cleats and holes for fixing to steel, timber and other components as required by the engineering and architectural drawings whether or not shown.
14. All beams shall be fabricated and installed with natural camber up.
15. The quality characteristics of all materials and components used shall be verifiable against this specification upon request.

BASIS OF DESIGN

1. Structure Importance Level : 2 (Normal)
2. Design wind loading as noted on framing plans.
3. Design live loading : Roof = 0.25 kPa
4. A maximum allowable bearing pressure of 100kPa has been assumed.
5. Footings shall be placed centrally under walls and columns uno.
6. All variations from the design specification to be referred to the design engineer for approval before proceeding.

STRUCTURAL CONCRETE

1. Concrete quality shall be as tabulated, and verifiable

Concrete Element	Exposure Class'n	Class/Grade	Slump mm	Aggregate Size mm	Cement Type
Footing Piers & Pads	A2	N20	80	20	GP

STRUCTURAL STEELWORK

1. All shop and field welds shall be classification General-Purpose (GP) uno.
2. Continuous fillet weld (CFW) shall be the lesser of: – 3mm or the thickness of the thinner element joined.
3. Butt welds shall be complete penetration(CPBW) type.
4. Bolt designation: 4.6/S refer to commercial bolts grade 4.6, tightened using a standard wrench to a snug-tight condition.
5. All bolts shall be 4.6/S uno.
6. Bolts in slotted holes shall be "finger tight" and supplied with lock nuts.
7. Seal weld a 3mm plate to the ends of all hollow sections uno.
8. All damage to protective coatings as a result of transport, welding or other building operations shall be repaired in accordance with relevant codes as approved.
9. Welds to cold-formed sections shall be continuous fillet M.I.G. welds of a size equal to the thinnest section of the material joined, wire brushed and coated with zinc silicate paint.
10. Surface treatment and coating:

Element	Surface Treatment	Treatment or Coating
All steel fitments including Hold Down Bolts, Nuts & Washers, Cast-in steel items, external steelwork walkways & Hand-railing	. . Chemical Treatment Hot Dip Galvanising
All other steelwork	Grit blast to near white metal finish	Inorganic Zinc Silicate with average thickness 85 microns

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Proposed Canopy
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GOLDEN GROVE
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GENERAL NOTES (1)

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SIZE DRAWING NUMBER REVISION

A4 1820/G01 A

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STRUCTURAL TIMBER

1. Items not explicitly described are to be to the requirements of AS1720 and AS1684.2 and the TDA construction guide for Carports, Verandahs & Pergolas.
2. Vertical Nail lamination to increase breadth of members to AS1684.2 clause 2.3
3. Posts and Rafters shall not be spliced.
4. Roof Battens shall be continuous spanned, and spliced to AS1684.2 clause 7.2.20
5. Ridge boards spliced in accordance with AS1684.2 clause 7.2.12.2
6. Fascia beams spliced at post supports.
7. Structural form is a collar-tied roof truss, therefore collar ties required to all rafters, placed at 1/3 of the rise above fascia support.
8. Post anchorage:
 - a) Steel posts cast into concrete pier: embedment the lesser of full depth of pier less 100mm or 450mm embedment.
 - b) Timber posts: two Pryda PSQ600 post supports per post (Free Standing canopy)
 - c) Timber posts: one Pryda PSQ600 post support per post (attached canopy). Refer TDA guide Figure 3 for orientation.
 - d) Timber posts: one stirrup post support per post with knee braces to corners of canopy. Refer TDA guide page 4.

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CONNECTION SCHEDULE

JOINT	Canopy width less than 4.2m	Canopy width greater than 4.2m but less than 6m
Post/Fascia Beam	2 M10-4.6/S Bolts + Ø22.5 washers	2 M12-4.6/S Bolts + Ø22.5 washers
Fascia/Rafter	a) 5/ Ø2.8 Nails each side of rafter b) Joist Hanger to Rafter : 5/ Ø2.8 Nails each side of rafter and Joist Hanger to Fascia: 5/ Ø2.8 Nails each side of rafter	2 No. 14 Type 17 wood screws.
Rafter/Ridge	5/ Ø2.8 Nails each side of rafter and 32x0.8 steel Strap over ridge with 6/Ø2.8 flat head Nails each end.	2 No. 14 Type 17 wood screws. + 90x45 MGP10 Ridge Collar, with 1M10 bolt + Ø22.5 washers each end.
Collar-Tie/Rafter	2M10 bolts + Ø22.5 washers each end for canopy spans less than 3m, increase to 3M10 bolts for canopy spans greater than 3m.	3M10 bolts + Ø22.5 washers each end
Roof Batten/Rafter	1 No. 14 Type 17 Bugle Head Screw, 50mm penetration. (min. length 95mm)	

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ATTACHMENT OF CANOPY TO EXISTING STRUCTURE

1. Beams not to overhang connection brackets, unless beams and house structure designed to suit.
2. Canopy Dimension to be a whole number multiple of the rafter spacing.
3. Extenda Brackets: Brackets to be fastened to rafter directly above house wall framing, else rafter stiffening to be provided.
4. Long Pergola brackets: Brackets not to extend beyond house fascia more than 150mm.
5. Joist hangers: Fascia to rafter connection to be strengthened using Pryda Fascia support bracket.
6. Fabricated brackets as detailed to achieve full support of canopy at beam ends, and house corners.
7. Posts to be provided at hip corners unless noted otherwise.

CONNECTION BRACKETS

BRACKET TYPE	DESCRIPTION
Type-1	Long Pergola Brackets: (UFB or similar) (Ex. 50x5 FL G300 Steel, 4M10 bolts to house rafter, 4M10 bolts to canopy fascia)
Type-2	Fabricated bracket: (Ex. 50x50x2 SHS C450LO + 50x5 FL end plates bolted to fascia beam with 2M10 bolts.)

STRENGTHENING OF EXISTING STRUCTURE

1. Minimum house structure:
 - a) Rafters : 120x35 F5 not notched more than 40mm (Not greater than 600 c/c for tiled roof, not greater than 1200 c/c for sheet roof)
 - b) Hip Rafters 170x35 F5
 - c) Fascia : 190 x 19
2. Rafter Stiffener to all rafters supporting connection brackets. Minimum length of stiffener as specified or full length of rafter, which ever is the lesser. Timber stiffeners fixed to rafters with 2/ ø3.06 x 75 long nails at 150 centres. Rafter Backspan support connection to be strengthened with 1/30x0.8 steel strap AS1684.2-1999 Table 9.22, detail (b) unless bolted connection present.
3. Tie-downs to all rafters supporting connection brackets, exceptions as noted.
4. For openings upto 2.7m wide install Prydabeam PB1.6 z-section. Beam to extend to first stud each side of opening, fasten to manufacturers instructions. Install Type-4 tie-downs to each end of lintel, anchor point to be centre of 1.2m width of brickwork. Ensure 2.4m width of brickwork between adjacent openings. Each rafter to be attached to lintel using Type-1 tiedowns.
5. Multiple rafters maybe tied-down by the use of an over batten (35x70 F7), with Type-4 tie-downs spaced at no more than 2.4m centres, each anchored into 1.2m width of fullheight brickwork. Threaded end of tie-down to pass through batten no more than 50mm from side of rafter support. Each rafter to be strapped to over batten using Type-1 tie-downs.
6. Canopies not to be attached to light weight timber framed construction. Additional posts and piers to be provided adjacent to house.
7. Fascia plates to be bolted to house gable end walls only, using M10 dynabolts at 600 c/c, staggered vertically. Minimum of 2m rise of brick gable end above canopy fascia at location of house ridge, else tie fascia plate to bottom of wall using ø10 steel rods at 2.4m centres.

TIE-DOWN TYPE	DESCRIPTION
Type-1	1/30x0.8 steelstrap over rafter, 1M10 bolt each end to added steelwork.
Type-2	1/30x0.8 steel strap looped around ø10 rod epoxy doweled to brickwork; minimum of 1.2m wide x 12 courses high of brickwork above anchor point. Strap fastened to rafter with 4/ø2.8 nails each end.
Type-3	Duragal angle 30x30x2.5 CA, 1M10 bolt top to rafter, bottom anchored above 2nd course of brickwork from bottom of wall, minimum of 1.2m wide x fullheight brickwork above anchor point free from openings.
Type-4	M10 threaded steel rod, welded to 40x40x2 SHS C350LO tube at lower end. Tube sealed each end with 5 PL end plates. Bottom anchored above 2nd course of brickwork from bottom of wall, minimum of 1.2m wide x fullheight brickwork above anchor point free from openings. Top bolted through bottom flange of added steel z-lintels, or through leg of angles, or through over batten as required.
Type-5	M10 threaded steel rod, with 50 x 5 FL x 75 long each end. End cleats welded with 25mm x 3 Continuous Fillet Weld(cfw). Top bolted through rafter 1M10 bolt, bottom anchored into concrete footing beam using 1M10 dynabolt, min. 38mm embedment. Anchor point to be 100mm clear of all concrete edges.

8. If inadequate brickwork to anchor tie-downs then substitute with Type-5 tiedowns brought down external face of brick work and anchored into footing beam. footing beam to be 600mm deep or greater. Footing Beam 300mm deep acceptable if 900mm height of brick present along the entire length of wall.

9. If neither adequate brickwork or footing beam to anchor into, then canopy is NOT to be attached to house, and additional posts and piers are to be provided.

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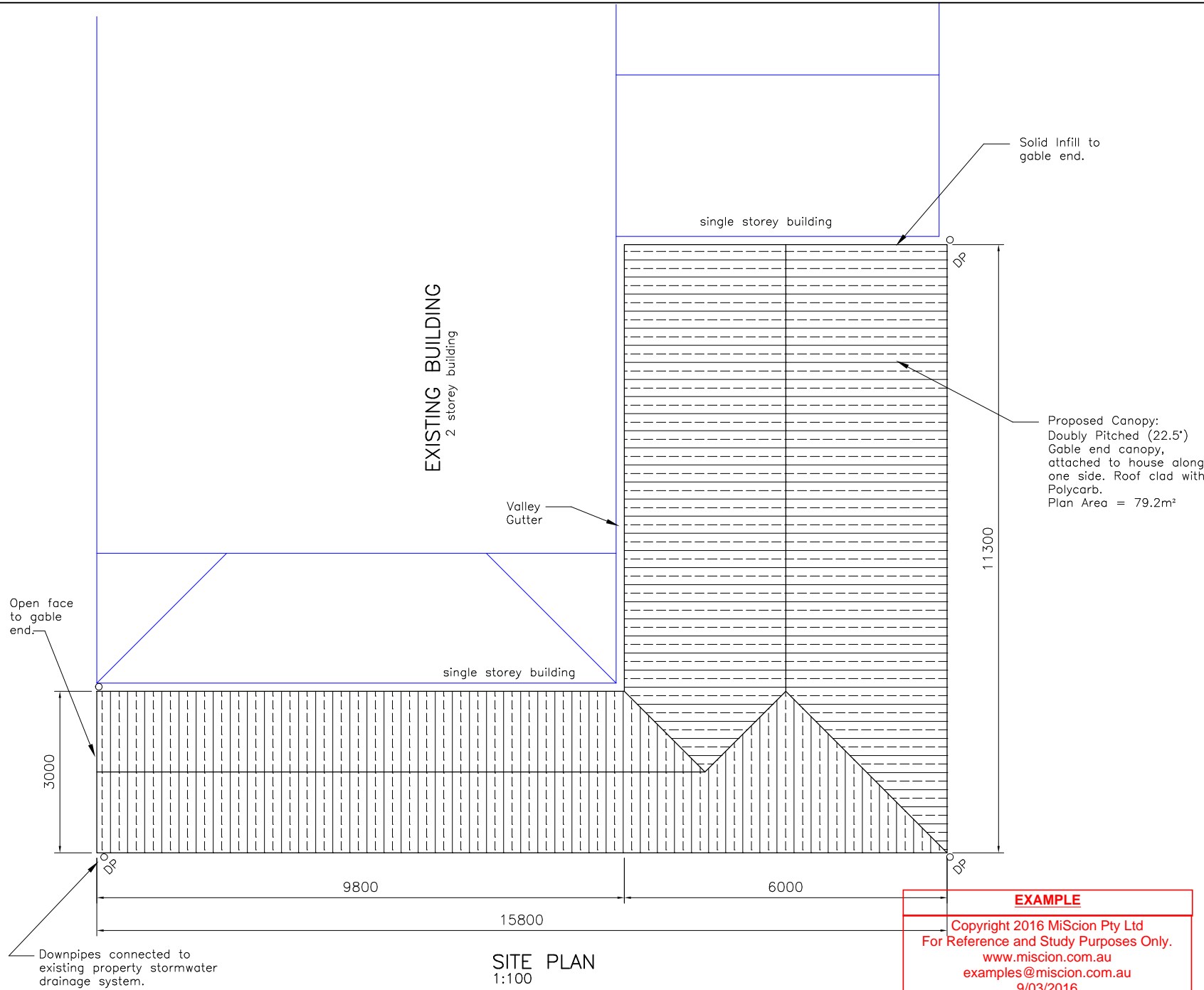
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Proposed Canopy
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GOLDEN GROVE
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GENERAL NOTES (3)

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All Site & House dimensions approximate only, to be confirmed on site by builder.

Wind Class: N2 (SAHC)

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 STRUCTURAL
 SITE PLAN

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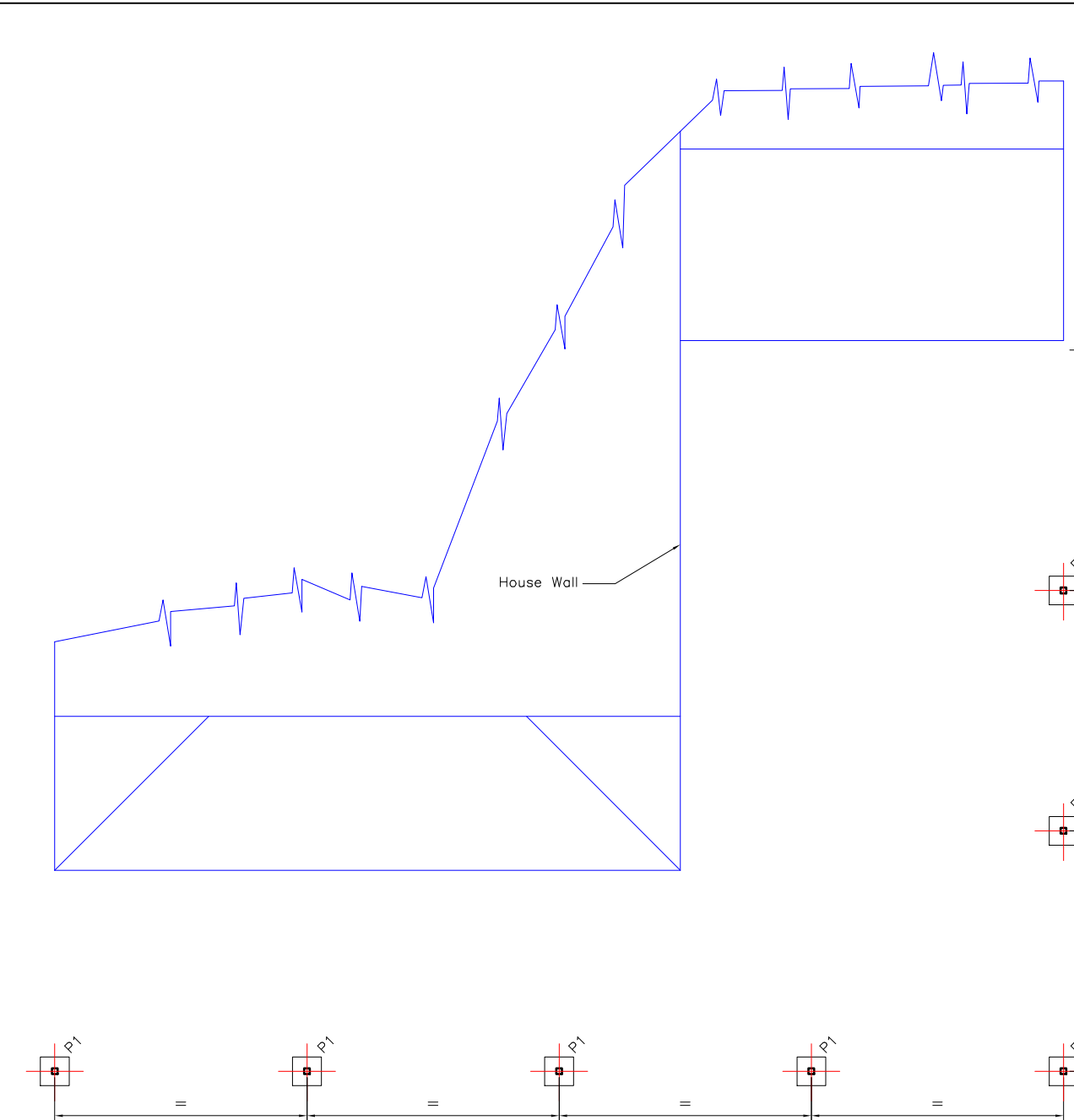
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SITE PLAN
 1:100

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CONCRETE FOOTING SCHEDULE
P1 : 450SQ x 600 DEEP

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SCHEDULE OF MATERIALS

MEMBER	MARK	SIZE	DWG
BRACKETS	BK1	Type-1 Refer G03	--
	BK2	Type-2 Refer G03	---
TIE-DOWNS	TD1	Type-1 : Refer G03	---
	TD2	Type-4 & Type-1 : Refer G03	---
	TD3	Type-3 : Refer G03	---
BEAM	B1	190x45 MGP10 Fasten with M10 Dynabolts at 600 c/c to brick wall. Refer G03. Also remove existing house gutter and fascia, and attach Beam to house rafters using Pryda fascia support brackets.	--
	B2	over batten : Refer G03	--

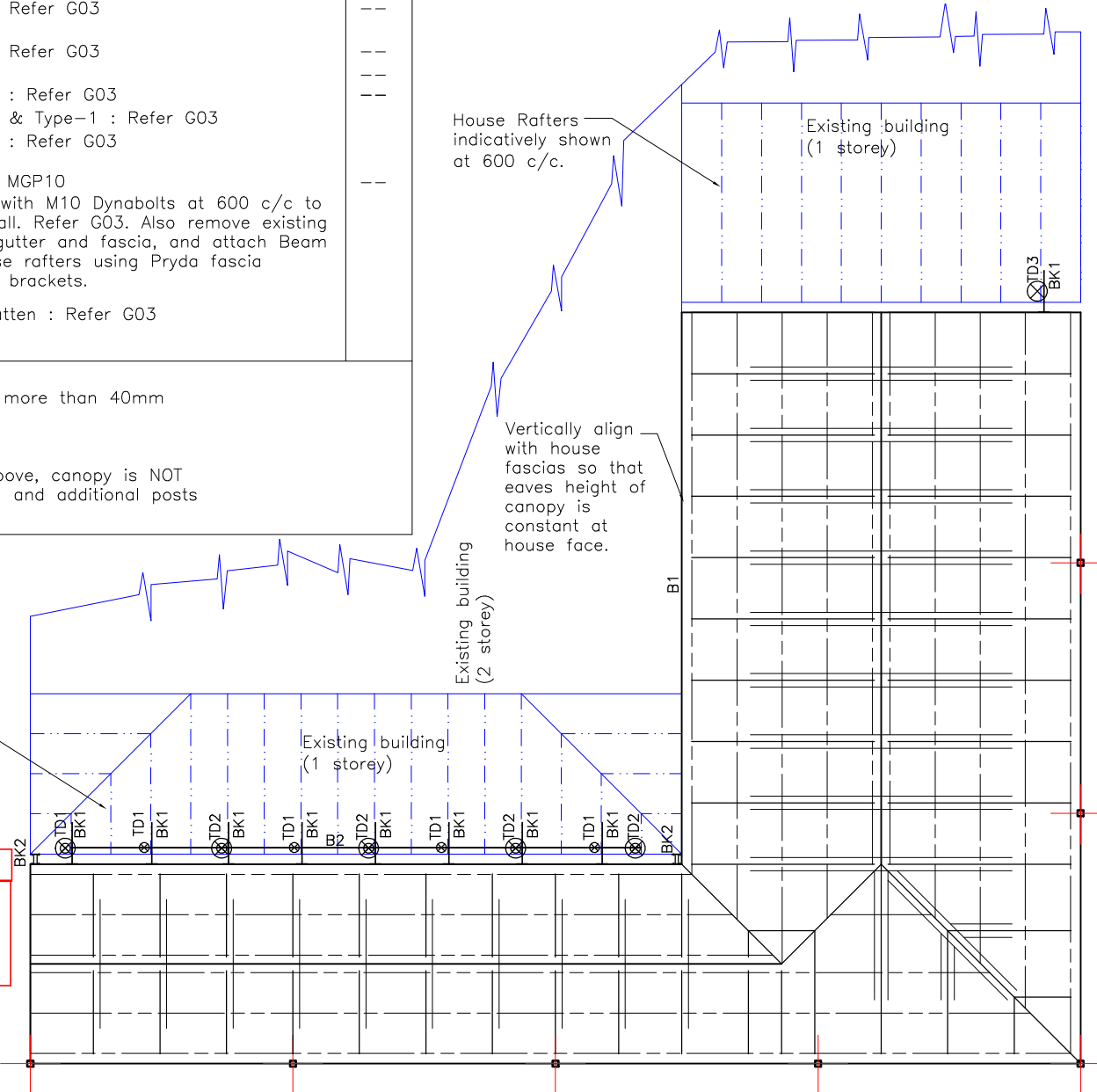
Minimum Sizes for House Frame:
 Rafters : 120 x 35 F5, not notched more than 40mm
 Hip Rafters : 170 x 35 F5
 Fascia : 190 x 19

If house frame not compliant with above, canopy is NOT to be attached to the roof structure, and additional posts and piers are to be provided.

House Rafters indicatively shown at 600 c/c.

Vertically align with house fascias so that eaves height of canopy is constant at house face.

House Rafters indicatively shown at 600 c/c.



HOUSE FRAME STRENGTHENING & ATTACHMENT POINTS
1:100

SPECIFICATION-OF-INTENT

House Construction:
 Walls: Brick Veneer (2 storey)
 Roof: Eaves: no eaves overhang
 Stormwater Drainage:

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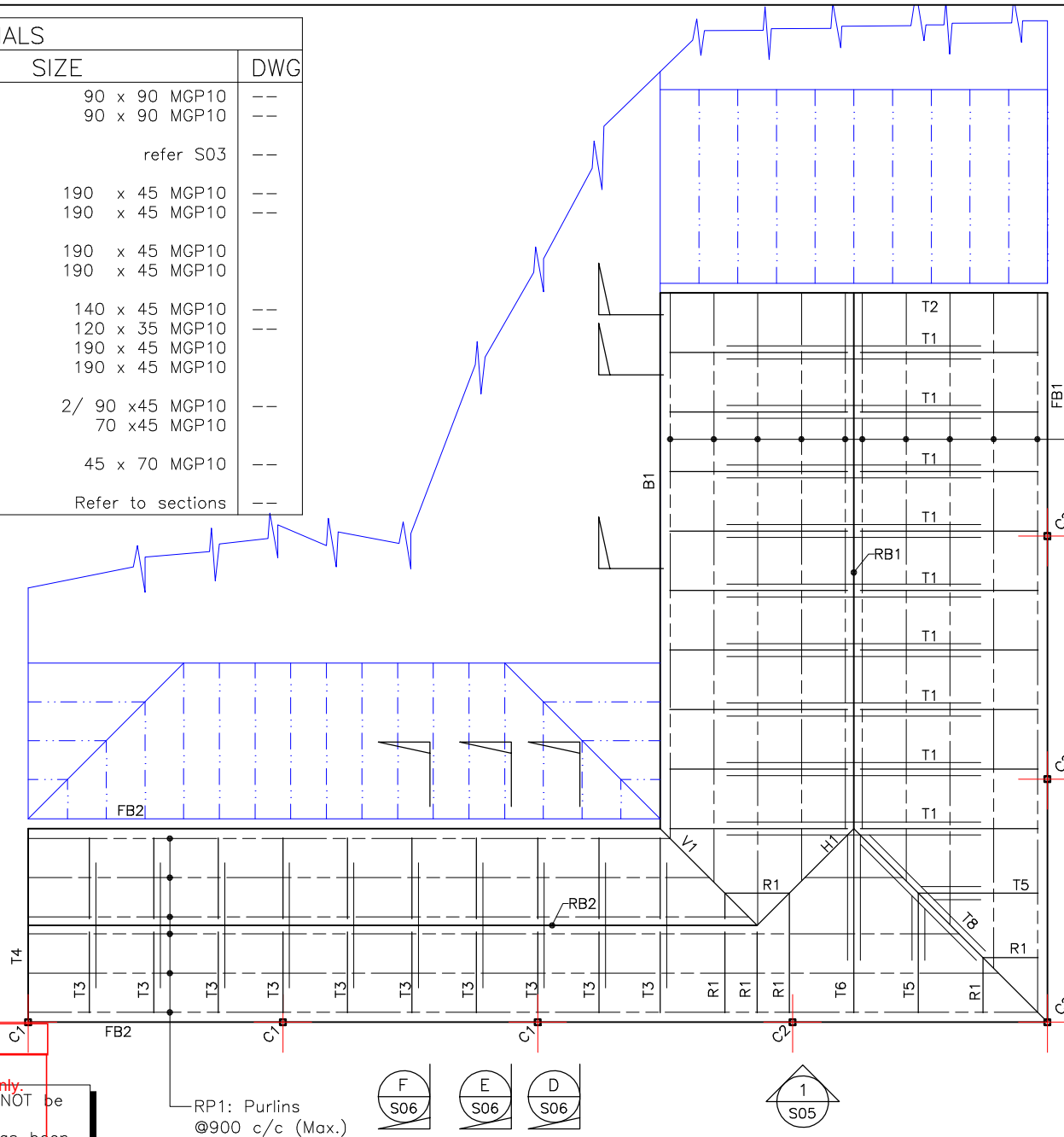
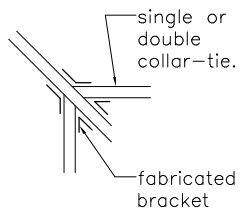
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WARNING: Each tie-down requires 1.2m width of full height(2.4m) brickwork. Refer Dwg G03.

SCHEDULE OF MATERIALS

MEMBER	MARK	SIZE	DWG
COLUMNS	C1	90 x 90 MGP10	---
	C2	90 x 90 MGP10	---
BEAMS	B1	refer S03	---
FASCIAS	FB1	190 x 45 MGP10	---
	FB2	190 x 45 MGP10	---
RIDGE BEAM	RB1	190 x 45 MGP10	---
	RB2	190 x 45 MGP10	---
RAFTERS	R1	140 x 45 MGP10	---
	R2	120 x 35 MGP10	---
	V1	190 x 45 MGP10	---
	H1	190 x 45 MGP10	---
COLLAR-TIE	CT1	2/ 90 x45 MGP10	---
	CT2	70 x45 MGP10	---
PURLINS	RP1	45 x 70 MGP10	---
TRUSSES	T1 - T8	Refer to sections	---

WHERE COLLAR-TIES INTERSECT USE STEEL BRACKETS FABRICATED FROM 70x5FL, WELD FLATBARS USING 3 CFW BOTH SIDES, AND FASTEN TO TIMBERS WITH M10 BOLTS, NUTS AND WASHERS.



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Note: T7,T9,T10 deleted and replaced by simple rafters.

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STRUCTURAL FRAMING PLAN

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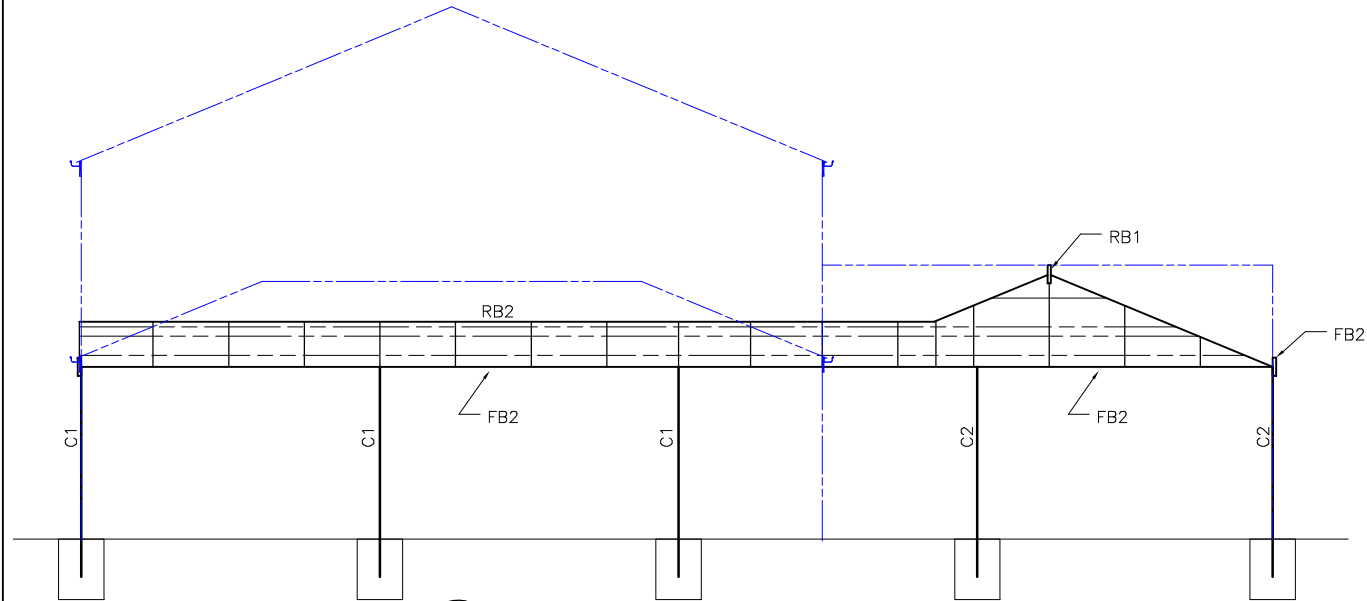
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FRAMING PLAN
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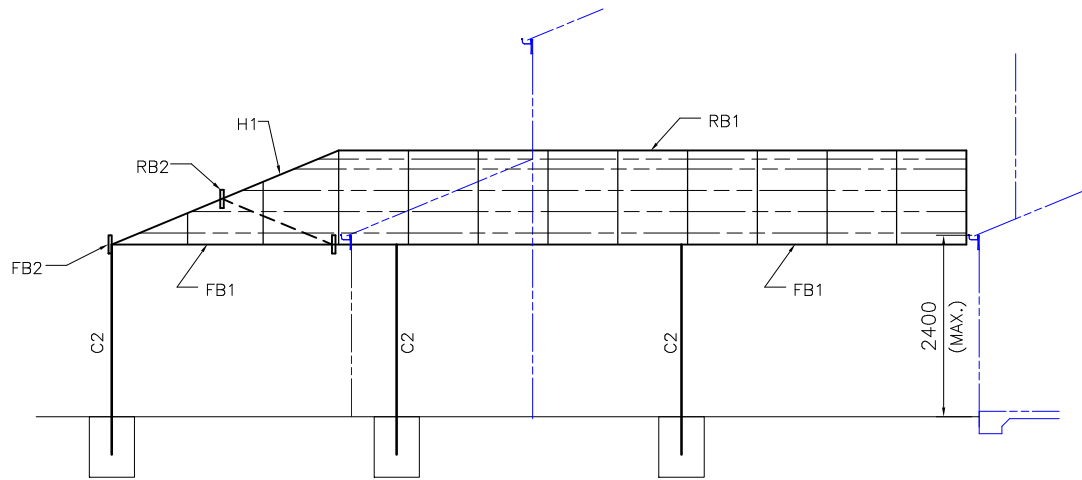
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WARNING: Roof Cladding Shall NOT be attached to the structure unless strengthening S03 has been installed. Also refer to S03 for attachment points.

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ELEVATION 1
S04
1:100
(House in background not shown)



ELEVATION 2
S04
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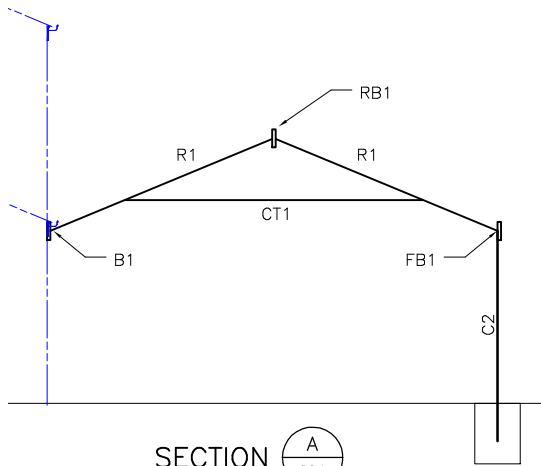
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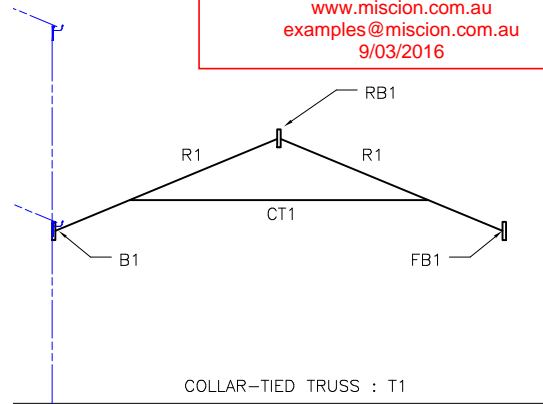
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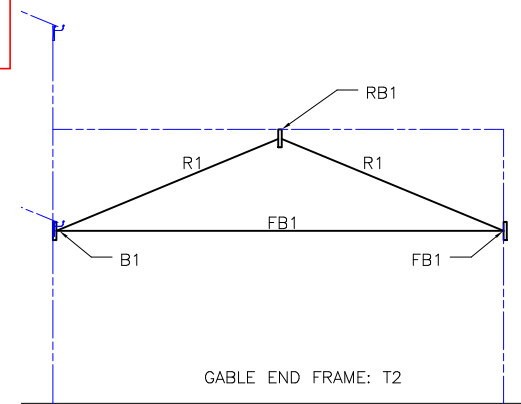
SECTION **A**
 S04
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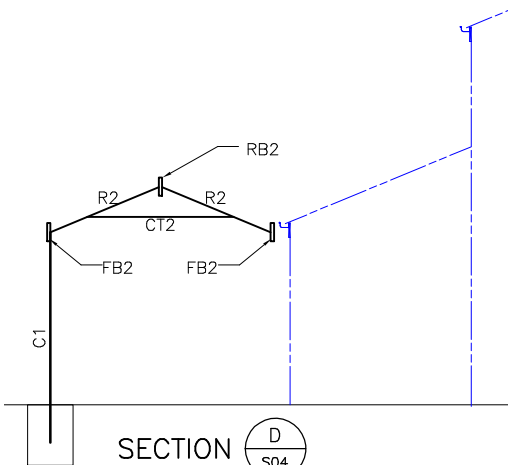
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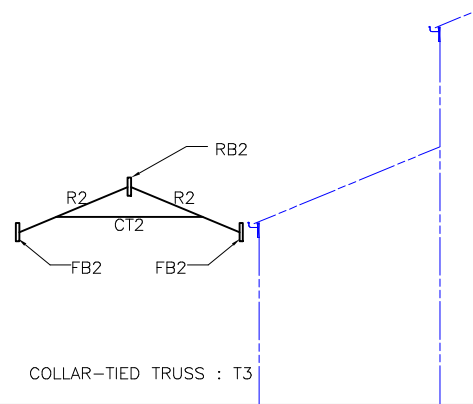
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 S04
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GABLE END FRAME: T2



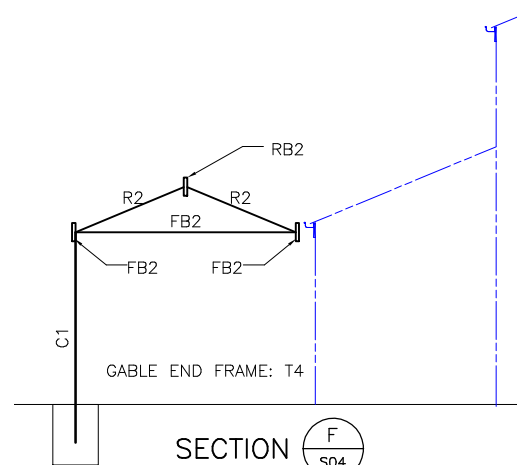
SECTION **D**
 S04
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SECTION **E**
 S04
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(House in background not shown)



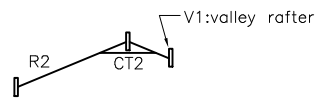
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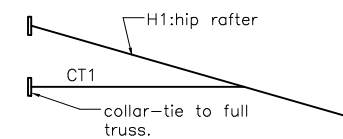
GABLE END FRAME: T4

COLLAR-TIED ROOF TRUSSES

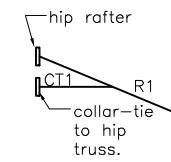
all collar-ties located at 1/3rd the height of the common or full truss or 1/3rd the height of the smallest leg of the truss, or as required to connect into common or hip truss collar-ties. Collar-ties required to all rafters where there is adequate space to achieve a fit. Member sizes as specified for full truss for a given span.



T9: Truncated Truss



T8: Hip Truss



Jack Trusses

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Proposed Canopy

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 GOLDEN GROVE

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 SECTIONS

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