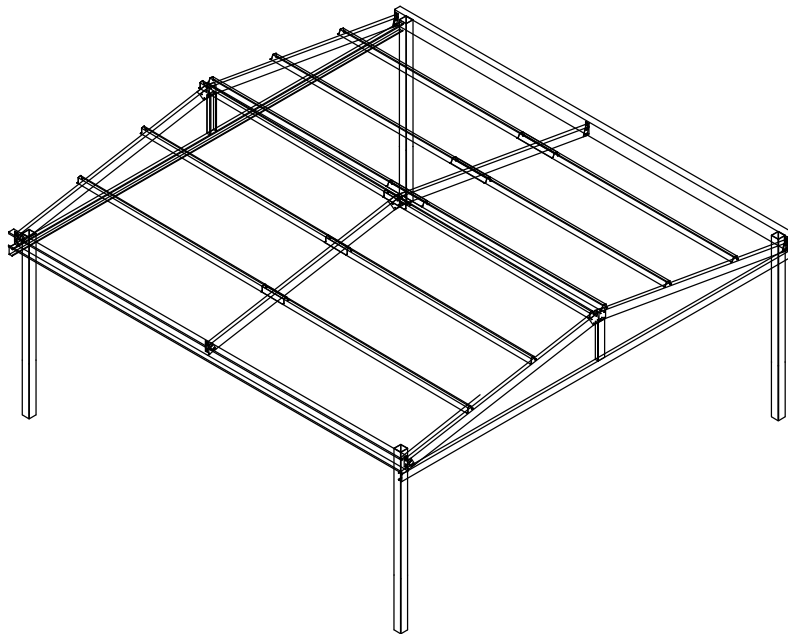




GABLE CARPORTS CONSTRUCTION GUIDE



CONSTRUCTION GUIDE FOR GABLE CARPORTS – FOR USE AS A GUIDE ONLY

Introduction

Congratulations on your purchase. We are sure your new carport will prove to be a great asset adding value to your property and giving you years of service with only minimal maintenance and represent excellent value for money.

NOTE: DISCLAIMER

This booklet and information contained herein are to be used as a guide only to construct your gable carport.

Due to the huge number of variations requested and the large range of carports available via the ShedTech Software System we cannot supply detailed information booklets to cover every situation, however this guide is designed to cover the most common types of carport and assembly of components in construction of a typical job. Whilst every effort has been made to ensure the accuracy of this information neither ShedTech nor its resellers, distributors or any other party will be responsible or accept any liability for any losses, damages or injuries arising from any errors or omissions contained herein.

IF YOU ARE AN OWNER BUILDER AND NEED ASSISTANCE - AT ALL TIMES CONTACT YOUR RESELLER FOR MORE INFORMATION AND HELP.

An adequate working knowledge of general building practices is necessary - otherwise you may be better off to hire builders or shed erectors to do this job!

Be aware you are responsible for complying with all workplace health and safety regulations on your site - for the safety of your family and other workers.

Generally the stages of building your job are - you will start with a slab and fix to the top of the finished slab or prepare and place footings with frame assembled and columns in the footing prior to pouring. Otherwise - assemble your frames on the slab or ground, stand frames, prop, fit eave purlins and apex purlins to tie framework together, square up frame, fix roof battens, , check frame for square again, add bracing, fix roof sheets, raingoods and flashings.

All basic construction methods are suggestions only as other ways of building are possible.

Never use a friction blade to cut the top face of colorbond or zincalume sheeting as this will spray burning particles on to the painted surface burning into the finish and causing potential rust spots and other product damage.

PREPARATION BEFORE STARTING

Read all information supplied - this includes your actual order documents, specific job elevations, engineering plans and drawings, council approval documents, architectural drawings and elevations, your specific slab layout drawing, your bill of materials of all items supplied and this construction guide.

Familiarise yourself with all components - check quantities of all materials as delivered on site to your Bill of Materials documents

Any shortages or damaged goods must be notified to your distributor within seven days of receipt of goods.

Read marking labels so you identify columns and rafters as end frames C1 / R1, internal frames C2 / R2, B1 bearers, columns etc

Check battens/ purlins and note different lengths for end and internal bays if applicable

Unpack - identify and layout all parts.

Identify brackets, various hardware items, fasteners and their applications

Check raingoods items - gutters, barge capping, ridge capping, gutter brackets, stop ends, drop nozzles and downpipes

Ensure work area is free from any unwanted materials or other debris

Check site or slab is level

Check and measure slab dimensions at each end for width and length and diagonals for square. **Refer Step 4.**

If working on footings set out and dig to size according to engineers plans. **Refer Step 4.**

If you are unsure of anything, seek advice from your distributor before starting.

MINIMUM BASIC TOOLS REQUIRED

Hand Tools

- Tape measure
- String / chalk line
- Spirit level
- Square
- Tin snips
- Caulking gun and silicone
- Pop rivet gun
- Spanners - ring spanners and or sockets are best - various sizes
- Score and snap knife
- Clamps
- Sheet bending tool
- Marking pen
- Safety glasses

Power Tools

- Hammer drill
- Screw gun with clutch - or a small drill if you don't have a screw gun
- Power saw or angle grinder with steel cutting capacity
- Extension leads
- Earth leakage power board with safety cut out

Drill bits

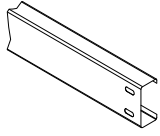
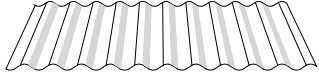
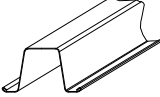
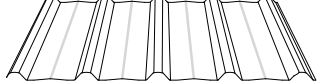
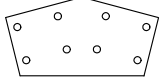
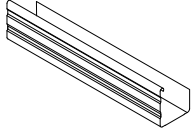
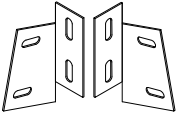
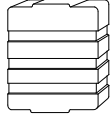
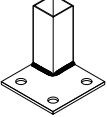
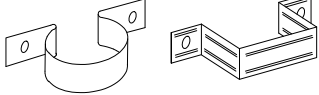
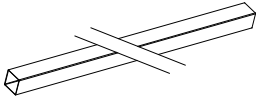
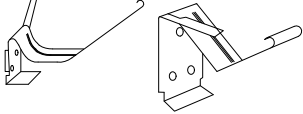
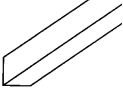
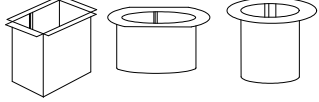

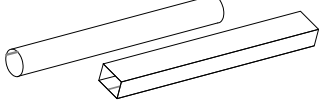

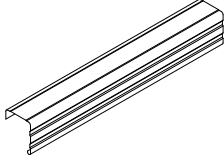
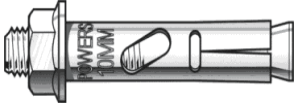


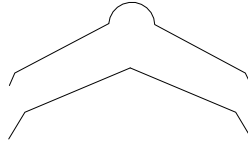
- Masonry drill bits as required - 8mm, 10, 12, 16 mm
- Driver bits - sizes 5/16" & 3/8" - for tek screws
- Driver bits for Phillips head fasteners - Bit Size No 2
- Steel drill bits - selection as required

Additionally

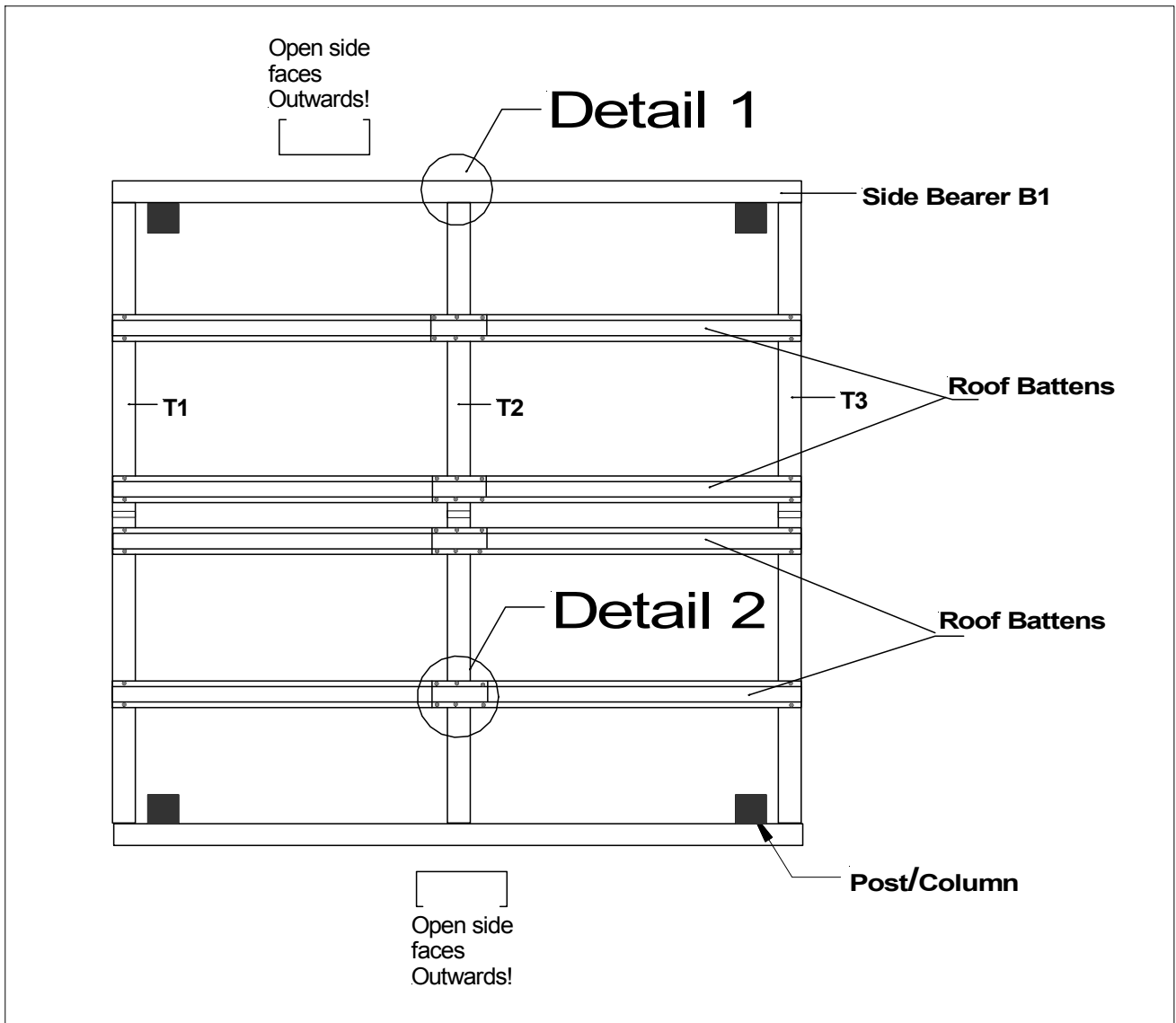
- 2 * strong step ladders - and or scaffold if necessary to provide safe working conditions to suit your job height
- Props to support framing during construction
- Bigger jobs may require specialised lifting equipment for safe working practices. This could include a crane on site. We recommend this work is undertaken only by experienced builders.

Typical Component list for Gable Carports

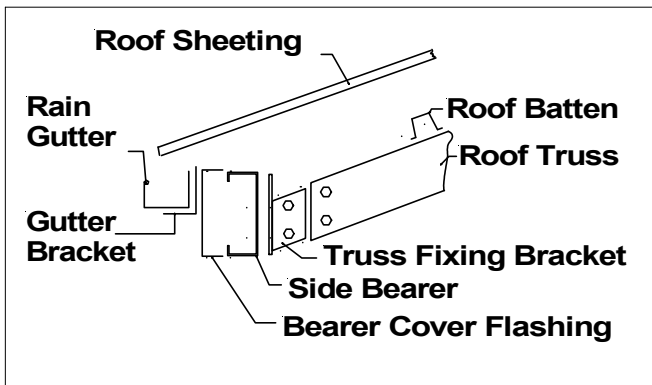
Drawings are for illustration purposes only, actual parts supplied may vary, drawings not to scale!

<p>Framing 'C' section beams.</p> 	<p>Corrugated Iron Sheeting</p> 
<p>Roof sheeting batten.</p> 	<p>Trimdeck roof sheeting.</p> 
<p>Apex Plate.</p> 	<p>Slotted Facia Gutter.</p> 
<p>Bearer to Rafter Bracket, Left and Right.</p> 	<p>Gutter Stop End Facia Gutter.</p> 
<p>Post mounting Spigot</p> 	<p>Downpipe Brackets; Round & Square.</p> 
<p>Posts.</p> 	<p>Gutter Mounting Brackets; Quad & Facia, Concealed Type.</p> 
<p>Trim Angle.</p> 	<p>Downpipe Nozzles, Square, Universal & Round.</p> 
<p>Tek screw to fix Battens, Gable Sheeting & Trim Angle Fixing.</p> 	<p>Downpipes; Round & Square Type.</p> 
<p>Neo-washer roof screw.</p> 	<p>Barge Capping.</p> 
<p>Masonry Anchor.</p> 	<p>Side Bearer Flashing.</p> 
<p>Pop Rivet.</p> 	<p>Ridge Capping, Roll Top & 3-Break Type.</p> 

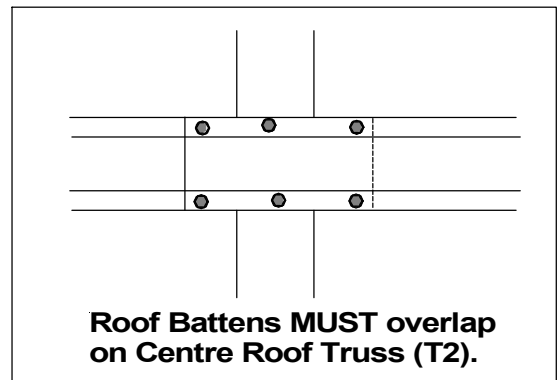
Typical Gable Carport Details



Detail 1



Detail 2



Gable Carports

STEP 1.

Read the information supplied - Then to start, please check over the materials and identify the bearers and the rafters, and all the other components. Lay out loosely by setting out the bearers and rafters on the slab / ground. Unpack hardware and any other boxes.

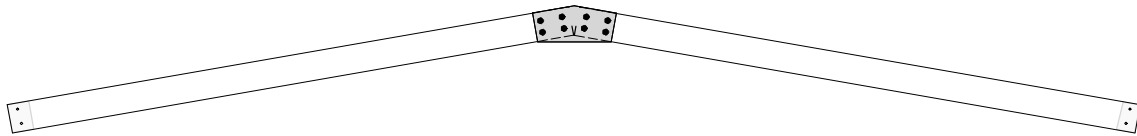
STEP 2.

Check post (column) connection - type and location as per your order.

STEP 3.

Truss Assembly - Assemble trusses by bolting apex plates to rafters. Take care to make them with the same pitch and check overall span dimensions. The end trusses will bolt up to the end holes on the bearer - punched 35 mm in from the ends.

Hint: Build and stack them on top of each other so you can be sure they are identical.



STEP 4.

Columns Set out

Mark out Footings – If the carport is to be erected into footings you will need to set up the site to ensure the footings are in the correct location so that the Carport will be built 'square'.

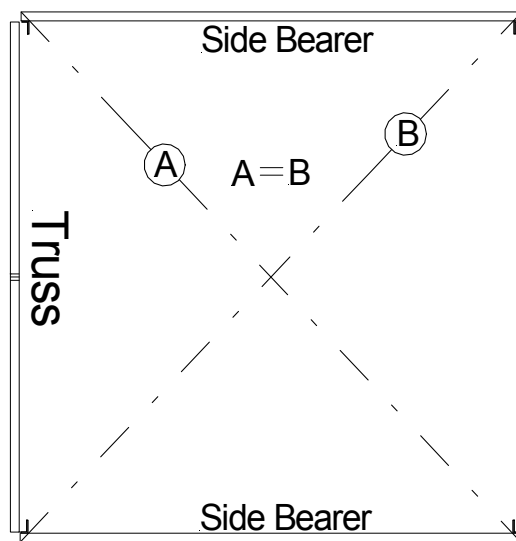
Simplest method: Layout your steel frame on the ground in position as it will be built. Place the side bearers on site in position to mark the sides of proposed structure.

Use assembled truss to set correct width between side bearers. Check diagonal measurements and adjust until they are equal meaning the job is square.

Note: Alternately, pegs and stringlines can be used to do this job in a similar way.

Set out your corners, measure to stringline and checking diagonals and adjust till square.

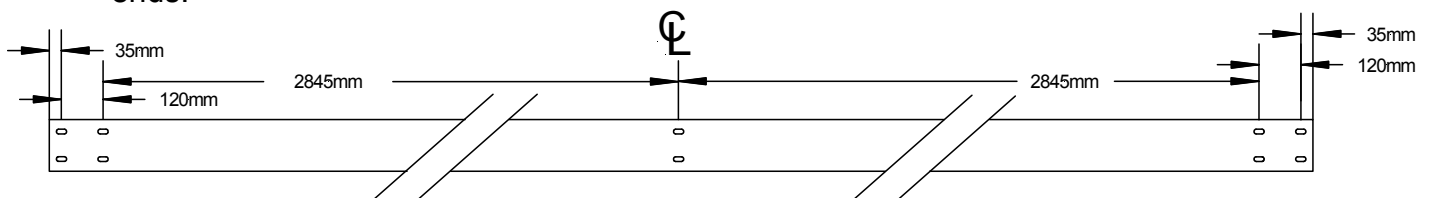
Mark each post location and dig footing holes to size in accordance with the engineering plans.



Layout Frame Members and check diagonals to ensure it is 'Square'

Note: For 75 * 75 posts the standard bearer punching at each end will be 35 mm, 120 mm - The column bolts up to the second punched hole IE Approx. 155mm from the ends.

For 100 * 100 posts the standard bearer punching at each end will be 38 mm, 138 mm - The column bolts up to the second punched hole IE Approx. 176mm from the ends.



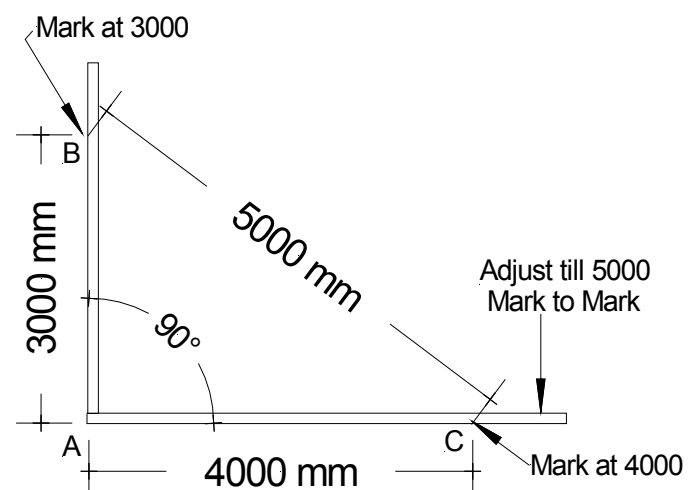
Typical 6000 Side Bearer punching lay out.

Basic Building 3:4:5 Procedure – For Setting out a Right Angle

Use the standard 3:4:5-procedure ratio to set out straight lines, create a right angle of 90 degrees and make the layout square.

Note: You could use stringlines or layout your steel C-section bearers to do this.

Place a peg in the first corner "A" - position a steel C-section at this point - running in the direction of the job.



Measure up 3000 mm from “A” and place Peg “B” (Or mark the steel with a felt pen)

Or run a string line from “A” to “B”

Measure out exactly 4000 mm roughly at a right angle to line “AB” - Mark this point on the other piece of steel or as Peg “C”

If using a string line run a line from Peg “A” to a Peg “C”

Measure from Point “B” to Point “C” - Adjust Peg “C” until the diagonal dimension from “B” to “C” is exactly 5000 mm. When this diagonal dimension is 5000 mm the layout is square and you have a right angle 90 degree corner at Point “A” with straight set out lines.

Note: Extend straight lines “AB” and “AC” as necessary for size of job.

Measure along these straight lines to set out the locations for your footing holes.

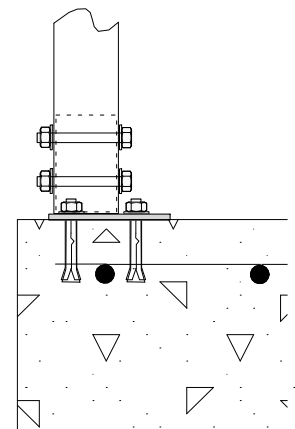
Mark locations for post footings, with another peg and spray paint the ground to mark the overall external size you need and then dig footing holes to engineer’s plans specification.

Using these fixed pegs and the same procedures you can now measure and check diagonals and create straight parallel lines and another 90 degree right angle to set out the other (IE opposite) side of your carport.

STEP 4 A.

Alternate on Slab Fixing - If the carport is fixing to an existing level slab or level pad footings - set out framing - determine post locations, check all is square, fix slab base brackets or spigot to slab with dyna bolts, fit posts over base brackets - or spigot - fix with 12 mm bolt through posts and brackets.

Or - if you have posts with welded base plates, you could erect the frame (as above) and then check diagonals for square - adjust as necessary - mark holes and drill slab to suit.

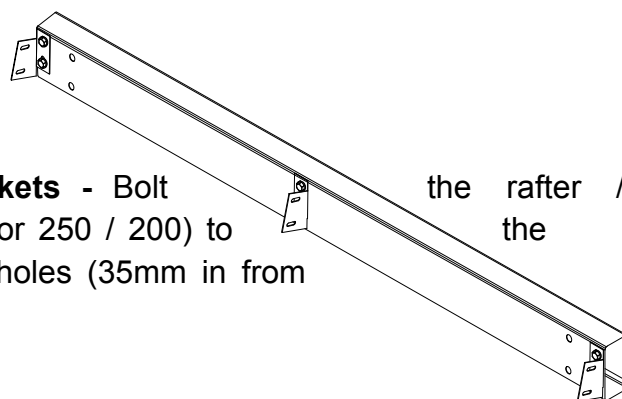


Spigot type Slab fixing.

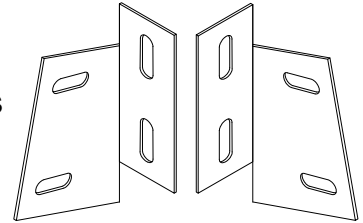
STEP 5.

Rafter/Truss connecting Brackets - Bolt connection brackets (200 / 150 or 250 / 200) to bearers. Use the punched end holes (35mm in from ends) for first and last trusses.

the rafter / truss
the side
beam-



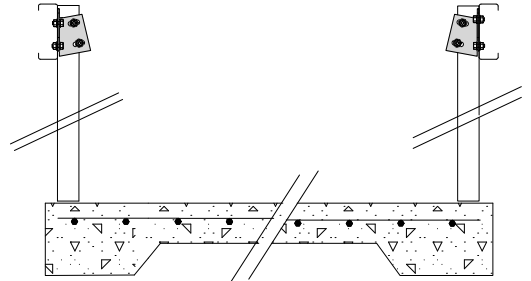
Note: These brackets come as left and right hand brackets folded to suit the roof pitch.



STEP 6.

Side Bearer Fitting - Bolt posts to side bearers and stand in footing holes or onto the slab-, (props and temporary bracing will be required); the open side of the side bearer faces outward.

Note: If additional or intermediate posts are required in your job you will need to mark their location on the side bearer and site drill your bearer to suit before bolting them up.

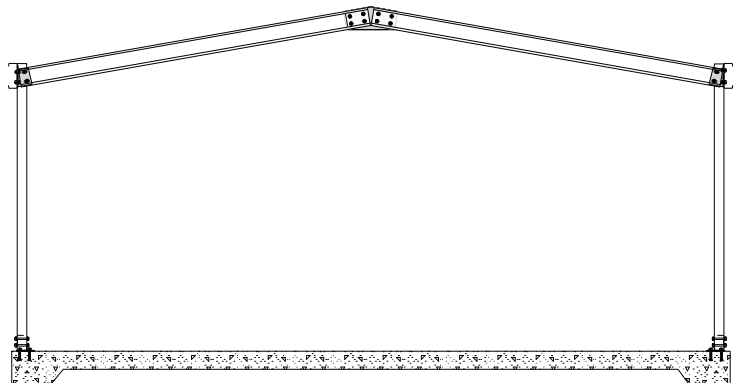


STEP 7.

End Trusses - Bolt the end trusses to the bearers to form the corner connections.

Note: The end trusses have the open side of the 'C' section facing outward.

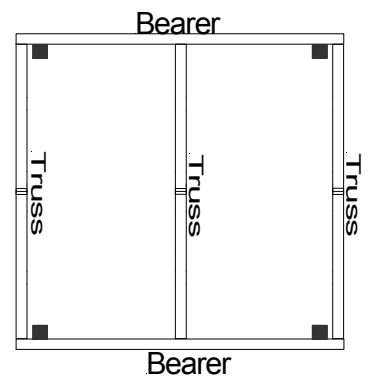
Example: The web is facing to the inside of the job.



Note: If the carport is longer and has more than one bearer beam to each side - butt join bearer lengths for each side using back-to-back angle connector brackets fixed to the holes punched 35 mm in from each end.

STEP 8.

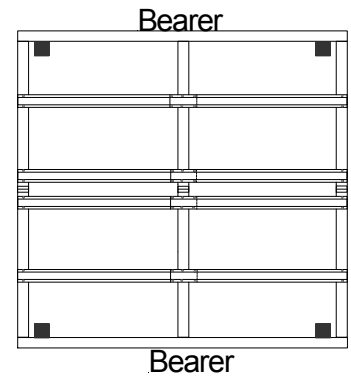
Intermediate Truss - bolt the remaining intermediate truss into place on the connection brackets.



STEP 9.

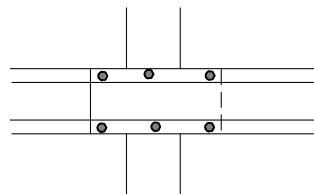
Roof Batten Fixing – the side bearer is the low-end roof batten.

Fixing First Batten - Fix the top apex battens with the centre of the batten down **125 mm** from the centre line at apex.



Numbers of Battens - Depending on the span, fix additional rows of battens equally on the truss. Fix with Tek 12 * 20 – 2 or 4 per connection depending on windload. Refer to engineers plan. (4 for Cyclonic windloads)

Note: Roof battens lap for internal truss. Fix all batten laps also at each end.



Roof Battens **MUST** overlap on Centre Roof Truss (T2).

additional strength at with 2 * Tek 12 * 20

STEP 10.

Check again - Measuring diagonals and adjust frame until diagonals are equal therefore making the frame square. **Refer step 4.**

STEP 11.

Strap Bracing - Fix strap bracing to roof per plans as/ if required.

STEP 12.

Knee Bracing - Fit knee braces as required / necessary to plans.

STEP 13.

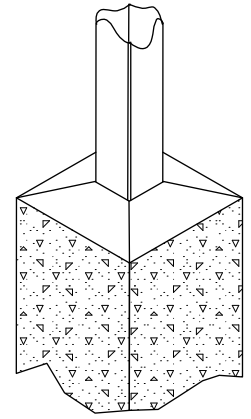
Check - If in footings, adjust post levels in holes to ensure job is level.

STEP 14.

Check - Plumb all posts and tighten all bolts. Prop job if / as necessary.

STEP 15.

Posts in footings – pour concrete into holes and allow 24 hours to set before fixing the roof. Always finish concrete on all footings sloping away from the post to ensure any ground surface water drains away from the posts.

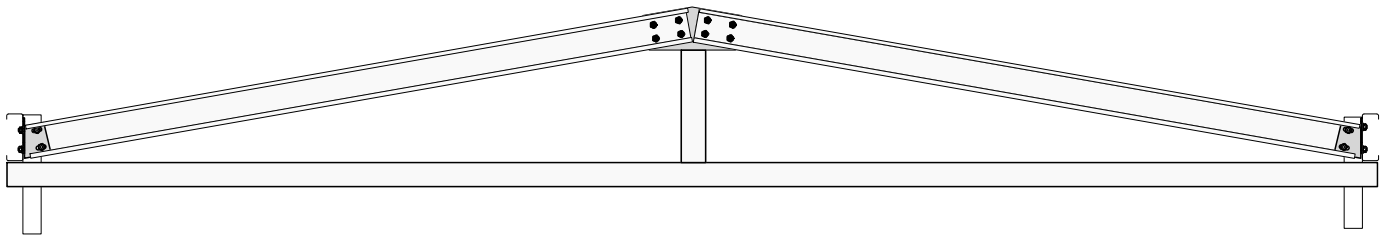


Posts on slab – fix posts to slab with masonry anchors provided.

Check - each post for plumb again before and during this stage.

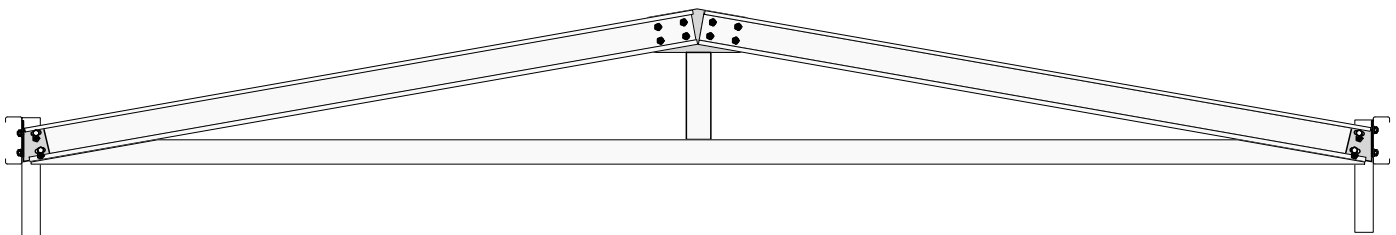
STEP 16.

Gable end sheeting - Fix Bottom chord to underside of bearers – use trim angle at each end.

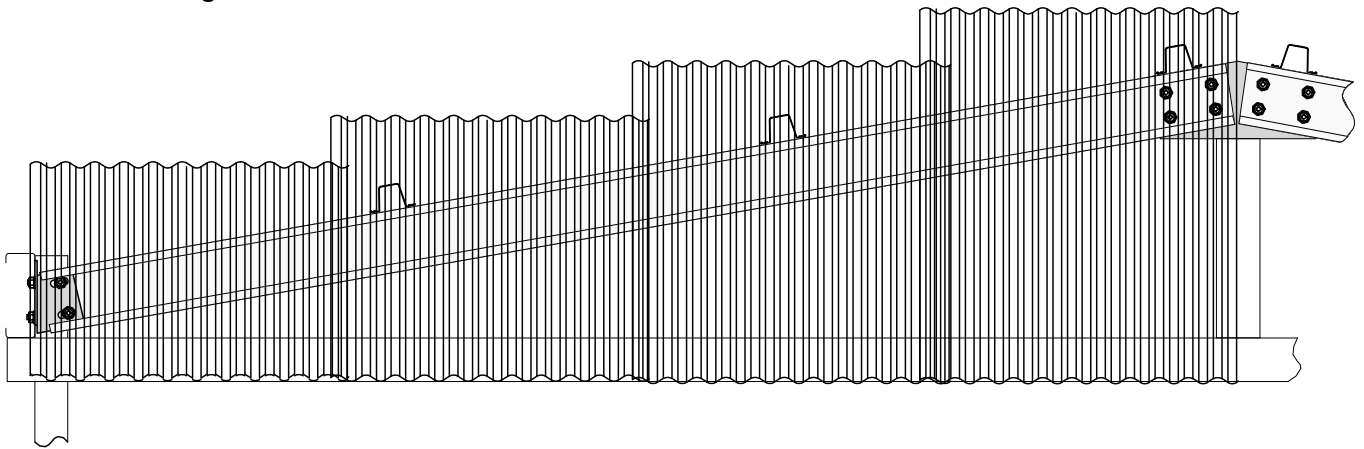


Fit king post vertical at centre of carport from bottom chord up to apex plate.

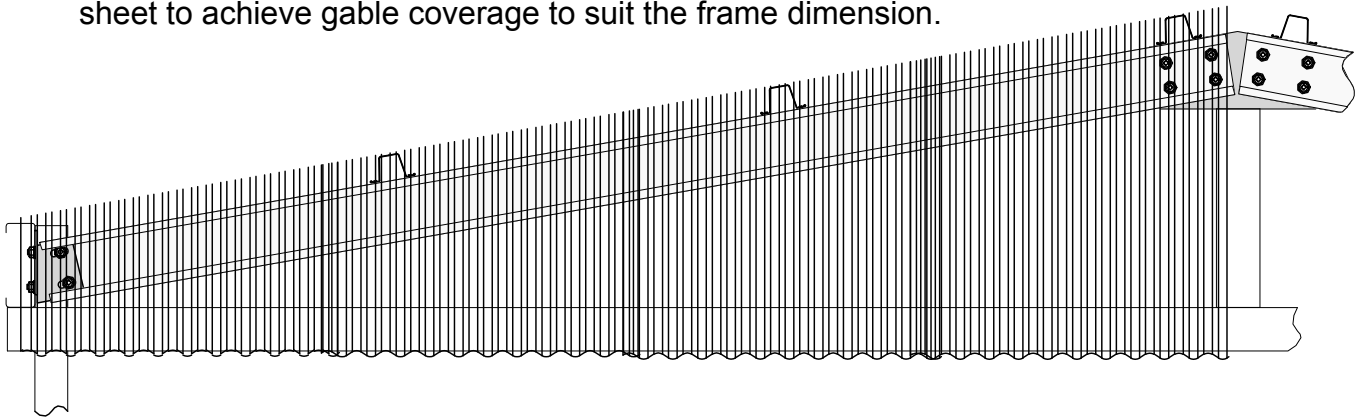
Note: If you want more clearance height at the gable end you can mitre cut the ends of the bottom chord to fit up onto the raked rafter above. The kingpost will also need to be shortened.



Place, measure and trim the top of the gable sheets to a raked line to suit the roof pitch, level with the top of the battens – starting with the shortest at one side and each longer one next till the centre.



Fix through sheet pans with Tek 10 * 16 to the top of rafter and to bottom chord. Due to varying job sizes, it may be necessary to shrink, stretch, lap or rip down the last sheet to achieve gable coverage to suit the frame dimension.

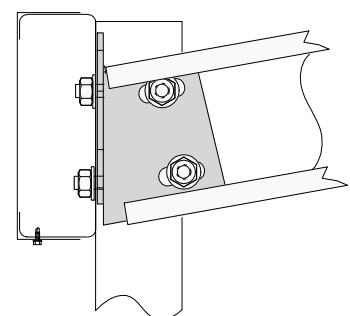


Repeat this for the other side of gable and other end of carport.

STEP 17.

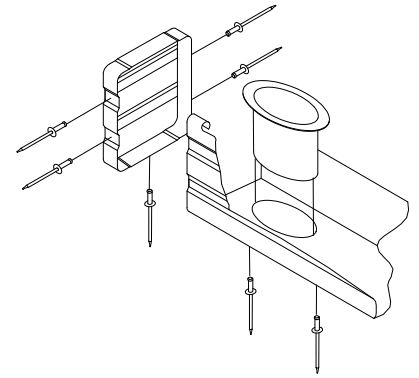
Gutter Fitting - Fit the beam cover flashing to outside of side bearers. The gutter brackets will be fixed to this flashing.

Cut gutter length to suit, (allow for gable end sheeting at both ends in calculating overall length - before cutting!)

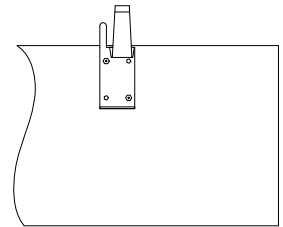


Secure Side Bearer flashing from underside with Tek Screws.

Fit end stops with pop rivets, Line the gutter up with the column and cut the dropper into the bottom of the gutter for the downpipe at this point.

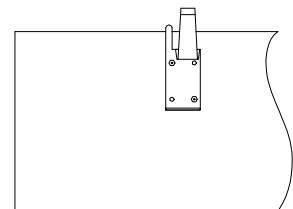


Fix first bracket at top of flashing with 2 * pop rivets approx 200 mm in from end of flashing – this will be the high end - end without the dropper.



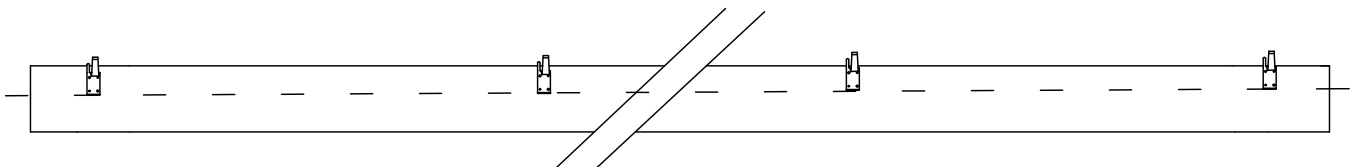
High-end bracket in line with top of Side Bearer Flashing.

Fix last bracket with 2 * pop rivets approximately 200 mm in from the other end and 20 mm down from top of flashing – this will be the low end – end with dropper for downpipe. This will create a 20 mm fall on the gutter.



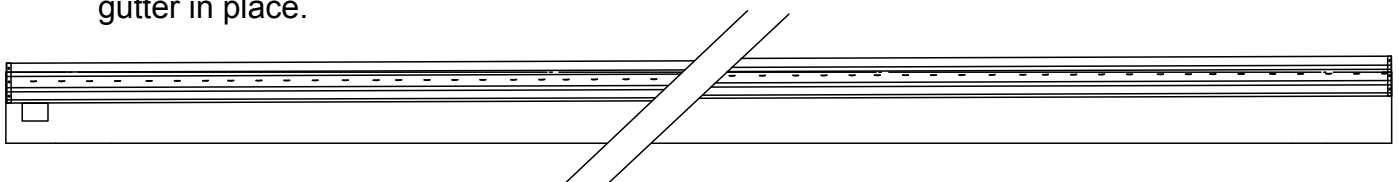
Low-end bracket 20 mm down from top of Side Bearer Flashing.

Use a string line to ping a chalk line on the flashing to fix remaining brackets to this line at evenly spaced intervals of a maximum of 1200 mm centres.



Use a string or chalk line to mark the line between the low and high brackets and fix other brackets to this line.

Now you can roll the gutter into the brackets. Bend the top tag down to lock the gutter in place.

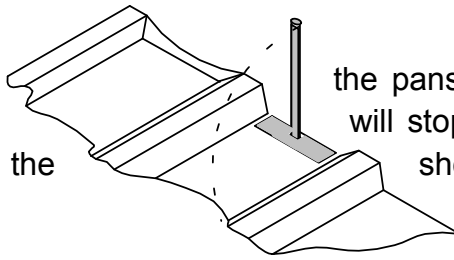


Fix a rivet up in the base of the bracket to stop the gutter pulling out of the bracket. Silicone the joins at the stop ends, dropper and rivets in bottom of brackets.

Fit the other side gutter in the same way.

STEP 18.

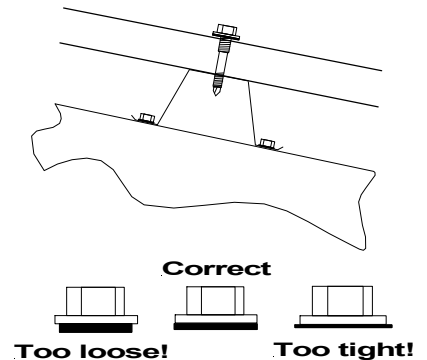
Roof Fixing - Bend up the pans of the roof sheets at the apex before fitting. This will stop wind driven rain blowing over the top end of the sheets.



the pans of the roof sheets at the apex before fitting. This will stop wind driven rain blowing over the top end of the sheets.

Fix the first sheet in line with the end truss. Allow approximately 50 mm of roof sheet overhanging past the bearer to run into the gutter at the low end. The sheets will be down 50 mm at the apex centre line.

Take care to place each sheet square to the frame – avoid any sheet creep. Fix the sheets with Tek screws (Tek 12 * 45 Neo for Trimdeck – Tek 12 * 35 for Corro) through the ribs into the battens.

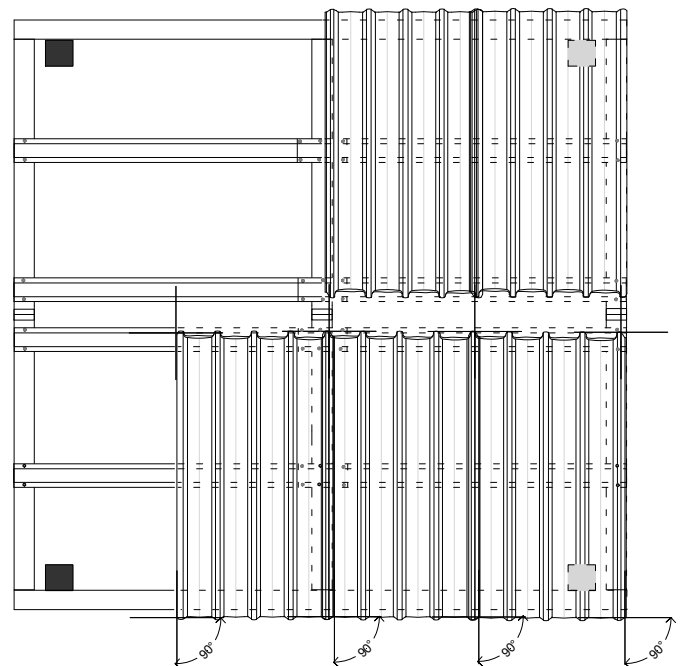


Note – Do not install the top row of roof sheet screws at this time. These will be installed in **STEP 20** as they will secure the **Ridge Capping**.

Continue to lay and fix the rest of the roof sheets in the same way. Keep checking to keep the sheeting square to the frame. Finish screwing off the roof. Fit the other half of the roof in the same way.

Tip - Use a string line fixed 50 mm down from the apex to maintain the top edge line of sheeting whilst laying roof.

Use a string line to ping a chalk line on the sheeting to keep all roof screws in line and fixing into the centre of the batten below.

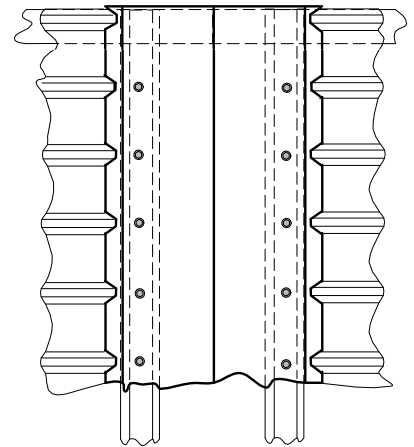
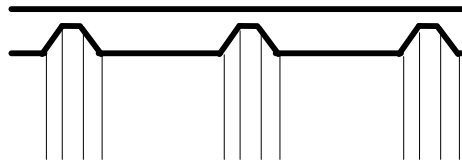


NOTE: Sheet Coverage - Due to varying job sizes it may be necessary to shrink, stretch or lap or rip down the last sheet to achieve roof coverage to suit the frame dimension. Do not cut the sheeting with a friction blade especially from the top as this will spray hot elements onto the sheeting burning into the painted finish and creating potential future rust spots.

Sheeting should be cut with a nibbler, snips or score and snap. Abrasive wheel cutters should not be used.

STEP 19

Ridge Cap – scribe in ridge cap to suit ribs on roofing and fix with Tek 12 * 45 through ridge cap and rib of roof sheet into the top row of battens.

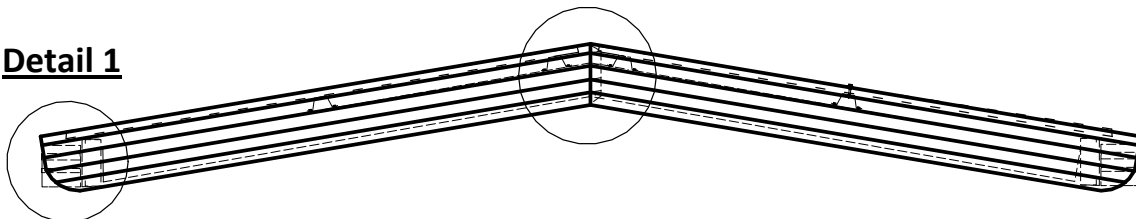


STEP 20.

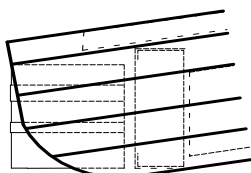
Barge Capping - Plumb cut and tuck mitre at apex. Cut down overall length to suit – covering the gutter end stops. Fix to roof sheet ribs on top.

Detail 2 & 3

Detail 1



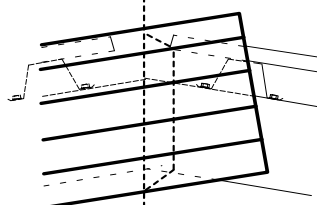
Detail 1



Trim Barge capping to make radius.

Detail 2

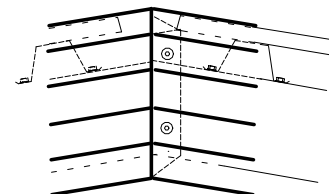
Mark and cut to suit roof pitch angle.



Leave a "tongue" to slip under other.

Detail 3

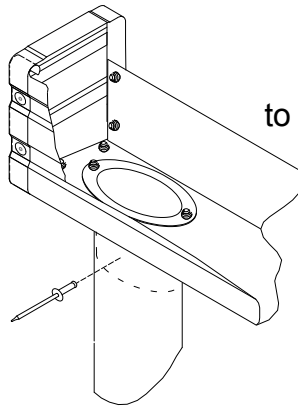
Mark and cut other side Barge Capping to suit roof pitch angle.



Fix join with Pop Rivets .

STEP 21.

Downpipes - Fit downpipes bottom of downpipe to the



to droppers with pop rivets. Fix column.

STEP 22.

Clean Up - All swarf, (iron filings) rivet shanks or debris must be swept off the roof and then hosed clean to flush them from sitting in the guttering. This is to prevent the rubbish from potentially causing rust spots.

Maintenance - Clean gutters regularly or as necessary of any tree debris, leaves and mulch or dirt as this can block rain water flow, cause flooding and can also rot and cause rust in the guttering.

You should now have finished the job – well done! Your carport is now ready to give you many years of service.

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