

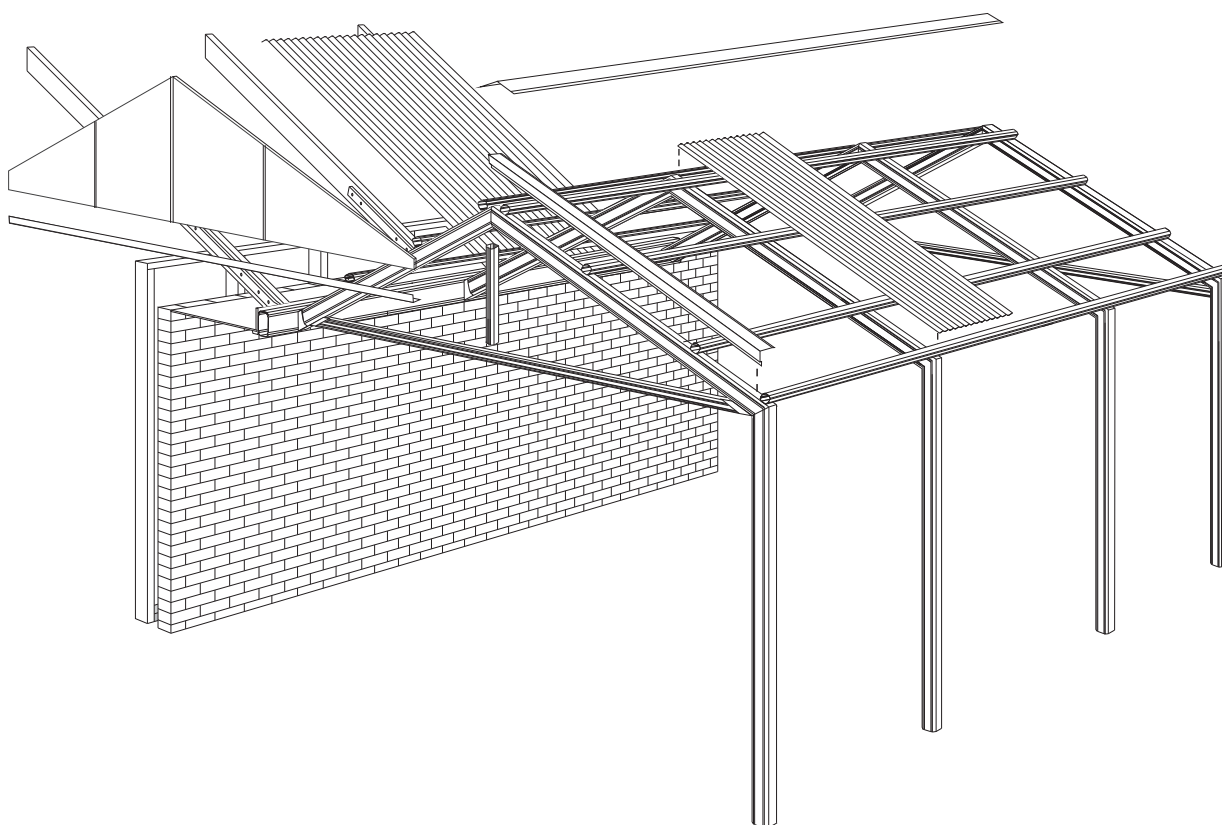
TRADITIONAL GABLE ATTACHED PATIO AND CARPORT

STRATCO OUTBACK® ASSEMBLY INSTRUCTIONS.

Your complete guide to building an ATTACHED Outback® TRADITIONAL GABLE PATIO or CARPORT

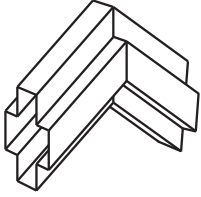
BEFORE YOU START

Carefully read these instructions. If you do not have all the necessary tools or information, contact Stratco for advice. Before starting lay out all components and check them against the delivery docket. The parts description identifies each key part, and the component location diagram indicates their fastening position.



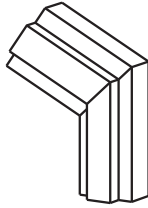
RIDGE KNUCKLE

Slots inside the gable rafters to form connection at the ridge.



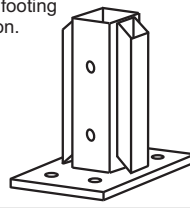
EAVES KNUCKLE

Slots inside gable rafter and column to form connection at eaves.



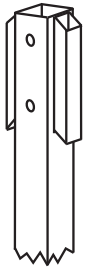
FOOTING PLATE

Slots inside column to form on concrete footing connection.



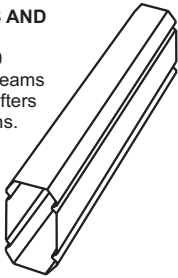
FOOTING KNUCKLE

Slots inside column to form an in ground footing connection.



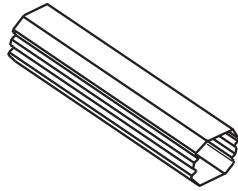
COLUMNS AND RAFTERS

Pre cut 120 Outback® beams make up rafters and columns.



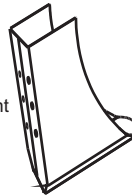
PURLINS

Purlins provide support for cladding.



RAFTER TO VALLEY BRACKET

This bracket fastens the rafter to the 150 attachment beam.



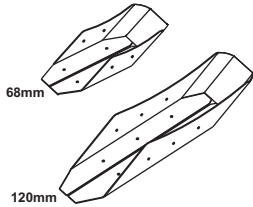
ALUMINIUM SPACERS

16mm Spacers are used to prevent the beam from crushing.



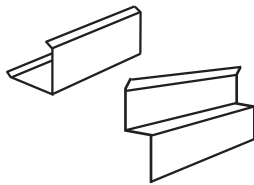
COLLAR TIE BRACKET

Fastens the header beam to the portal frame.



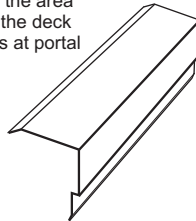
HEADER FLASHINGS

Run along header beam to neatly finish the base of infill panels.



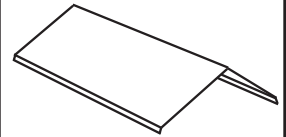
BARGE CAP

The barge cap covers the area where the deck finishes at portal frame.



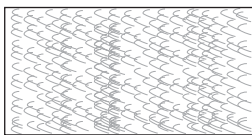
RIDGE CAP

This flashing covers the roof sheets at the gable ridge.



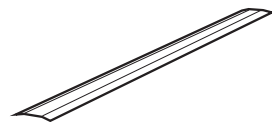
INFILL PANELS

Sufficient number of sheets are provided, from which the required infill panels can be cut.



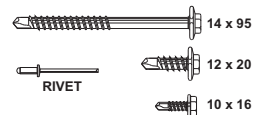
PANEL STRIPS

Decorative strips fixed to infill panels.



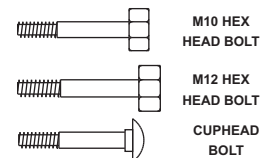
SCREWS AND RIVETS

Fastener types vary depending upon the connection, ensure correct fixings are used.



BOLTS

Fastener types vary depending upon the connection, ensure correct fixings are used.



FINIAL

Provides decoration at the apex of the end frame.



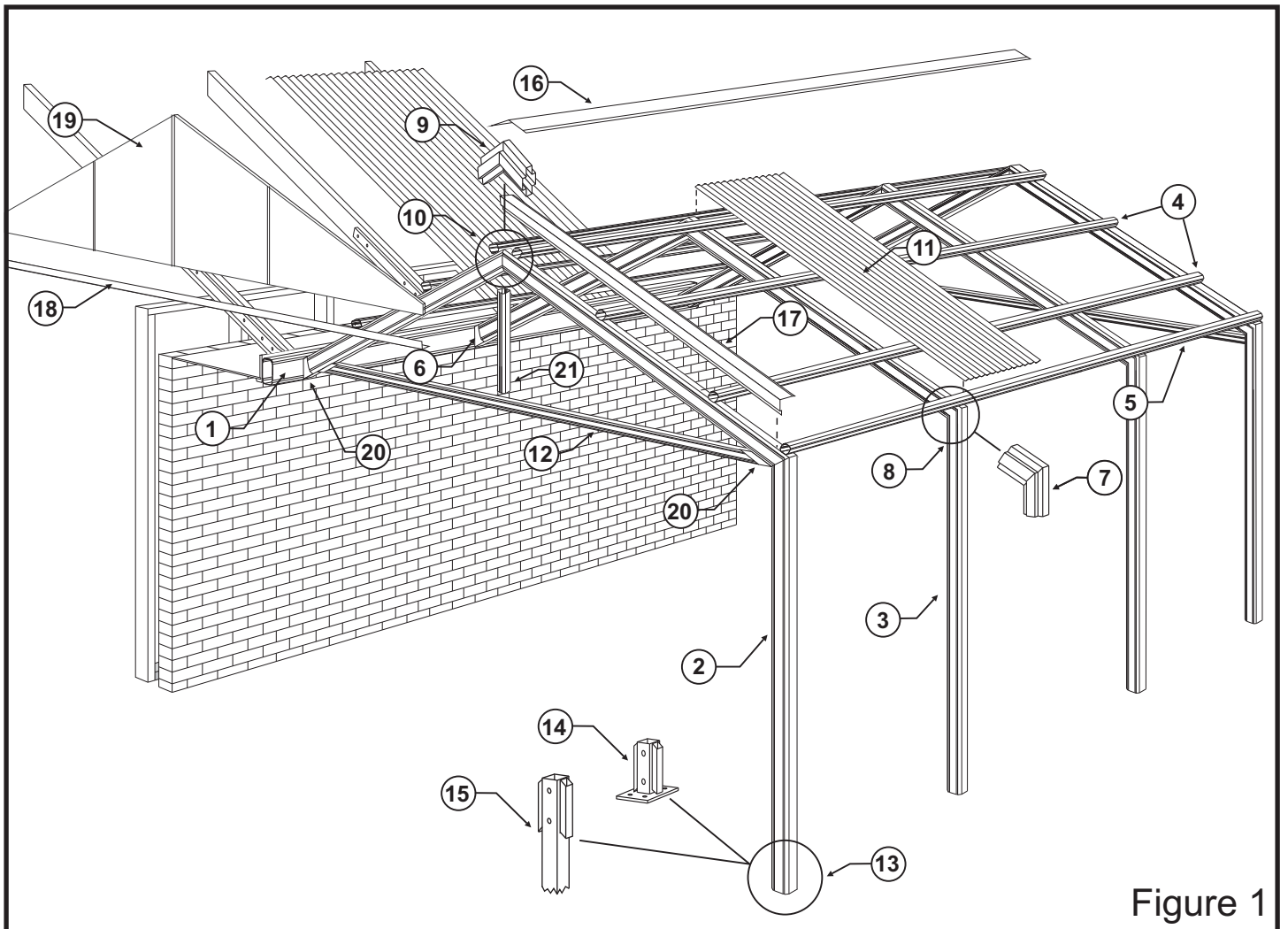


Figure 1

- | | | | |
|----------------------------|---|----------------------|----------------------|
| ① Attachment Beam | ⑦ Eaves Knuckle | ⑬ Footing Connection | ⑱ Header Flashing |
| ② End Portal Frame | ⑧ Eaves Connection | ⑭ Footing Plate | ⑲ Infill Panel |
| ③ Internal Portal Frame | ⑨ Ridge Knuckle | OR | ⑳ Collar Tie Bracket |
| ④ Purlins | ⑩ Ridge Connection | ⑮ Footing Knuckle | ㉑ End Strut |
| ⑤ Eaves Purlin | ⑪ Roof Cladding | ⑯ Ridge Capping | |
| ⑥ Rafter to Valley Bracket | ⑫ Header Beam
(forms part of infill frame) | ⑰ Barge cap | |

ADDITIONAL MATERIALS

These materials are needed to complete the job, but are not included in the basic kit price (they must be purchased as extra items and their quantities specified):

Rafter strengthening brackets and channels to suit 150 beam attachment

M12 bolts and nuts for fixing strengthening brackets to the rafter.

M12 bolts and nuts for fixing 150 attachment beam to strengthening brackets.

Any extra tie down or stiffening requirements for the house rafters.

Box gutter if necessary (measurements required).

OPTIONAL EXTRAS

These items are available at request:

Cover flashings (measurements required)

On concrete footing plate, in lieu of footing knuckle

Chemical anchors for on concrete footings

Concrete

Infill Panels

Panel Strips

Finial

1.0 INTRODUCTION

Please read these assembly instructions thoroughly before commencing the construction. Double check all dimensions, levels and bolting locations before cutting, screwing or bolting structural members. It is recommended that the persons erecting the structure have had some previous building experience because some modifications to the existing house structure are required.

2.0 ATTACHING TO AN EXISTING STRUCTURE

The builder or council is to ensure the existing house/structure is of a suitable structural integrity and complies with all the relevant Australian Building codes and standards. For more information regarding the suitability of the house structure to accommodate the Stratco Attached Traditional Gable, consult a structural engineer or a building authority. It is the builders responsibility to ensure that the existing house roof structure is strengthened correctly.

Refer to section 2.1 if attaching Traditional Gable on it's side to a house, section 2.2 if attaching on it's end to a house or refer to both sections if attaching the gable on it's side and end.

2.1 ATTACHING ON SIDE TO HOUSE

A Stratco Traditional Gable attached on it's side to a house is attached to the existing eaves overhang at the fascia.

The first objective in the construction is to fix a structural side beam along the fascia or wall, to which the Gable Unit is attached.

Most existing houses have not been designed for the attachment of portal framed gables to their side, therefore additional strengthening of the house rafters must be performed.

In order to strengthen the existing house rafters, the roof tiles or roof sheets need to be lifted to expose the roof frame. Steel rafter brackets and channels are then bolted along the house rafters. Refer to section 2.1.1.

A 150 mm Outback® beam is bolted to the strengthening brackets at the fascia. Once the 150 attachment beam is secured to the house, the Gable Unit can be erected and fastened to the beam.

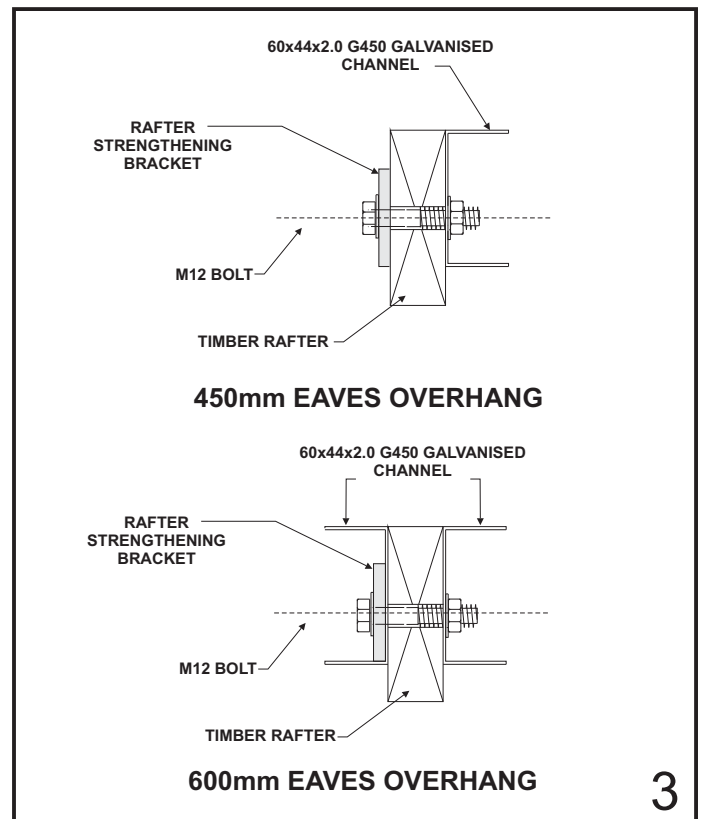
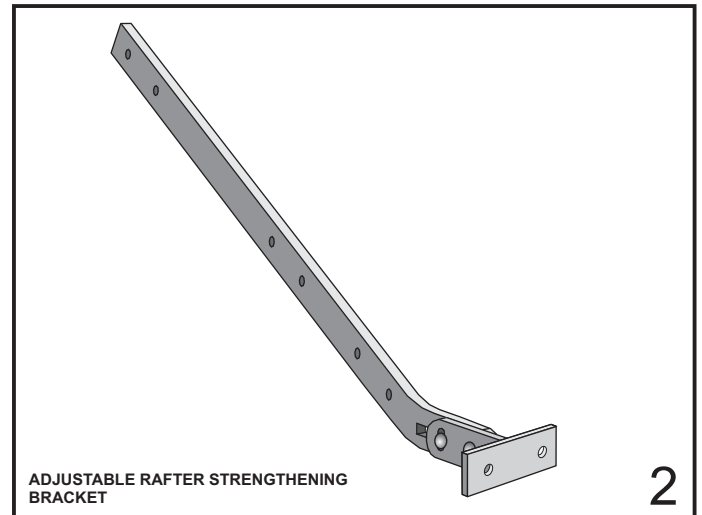
2.1.1 RAFTER STRENGTHENING

The first step is to determine the number of rafters which need to be strengthened and their location relative to the unit. You will have to lift some roof tiles or roof sheets to discover the rafter positions and spacings. The number of rafters which need to be strengthened is determined by the builder.

Note: It is the builders responsibility to ensure the existing rafters and fascia are adequately reinforced and strengthened to accommodate any additional attached structure. The reinforcing method must be approved by the appropriate council or engineer.

Use an adjustable rafter strengthening bracket and one channel for eaves overhangs up to 450 mm. Use an adjustable rafter strengthening bracket and two channels for eaves overhangs over 450 mm and up to and including 600 mm, as shown in figure 3.

The adjustable rafter strengthening bracket is shown in figure 2. Please note that this bracket may not be suitable for applications where the front face of the house gutter is higher than 120 mm. In these cases please contact Stratco for alternative solutions.

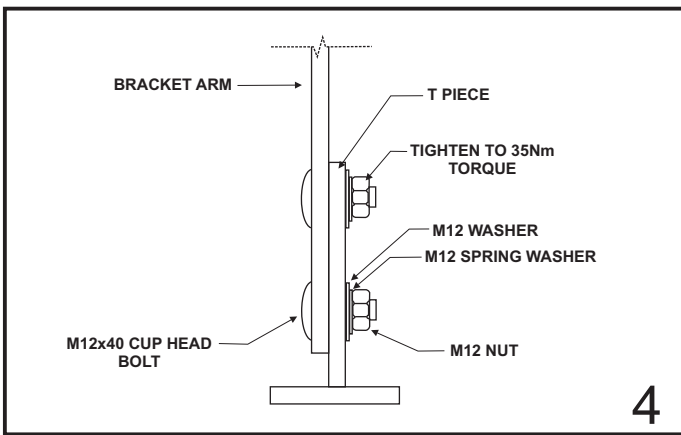


Fixing Rafter Strengthening Brackets and Channels

The adjustable rafter strengthening bracket allows for an adjustment of pitch in the range of 15 to 30 degrees. The distance the bracket extends past the fascia is also adjustable to allow for standard gutters or box gutters with a width of up to 200mm.

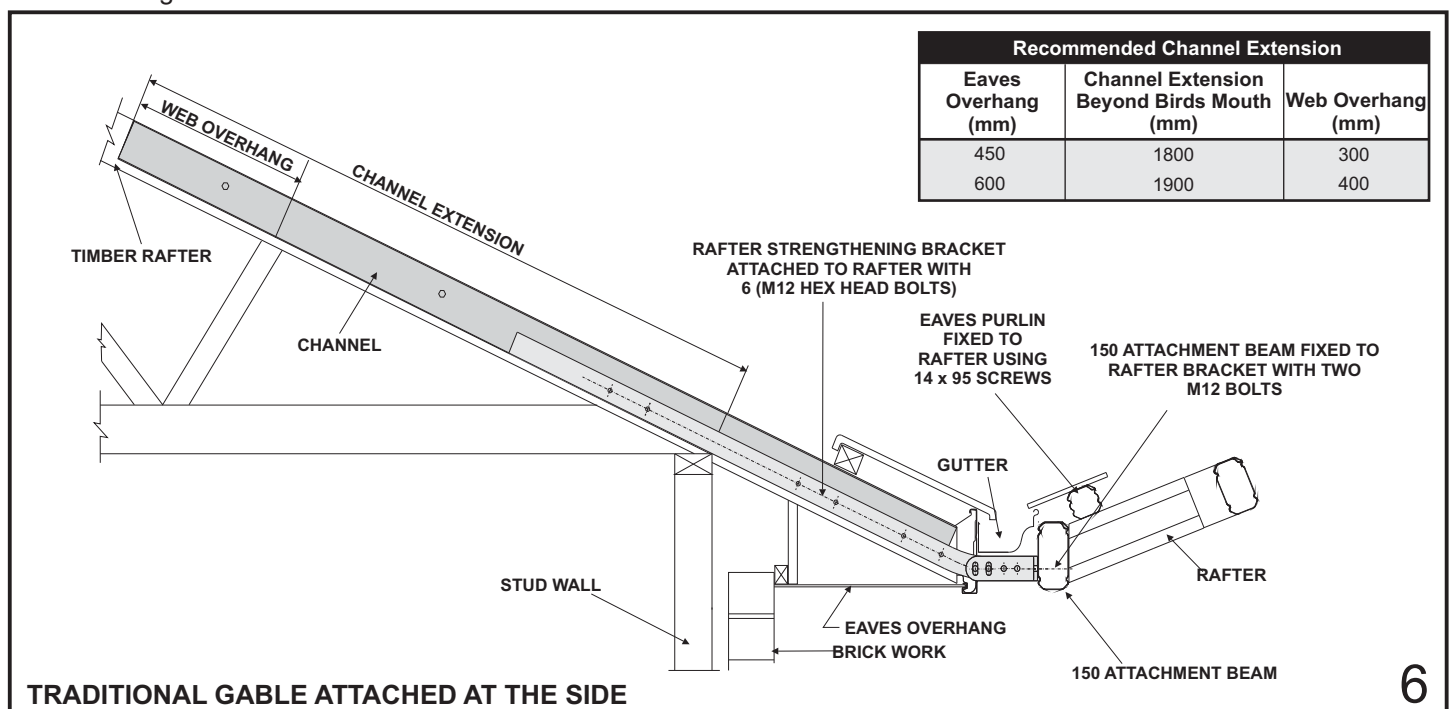
In conjunction with rafter strengthening brackets, channels are fixed to the side of the house rafter (Figure 3). The bottom end of the channel will be located at the base of the house rafter. Holes should be marked and pre-drilled in the channels to suit the location of existing holes in the bracket. The channel will extend beyond the bracket so additional holes are to be drilled in the channel at approximately 500mm centres.

Initially the bracket T piece shall be fixed to the bracket arm with two M12 cup head bolts (hand tighten only), a spring washer is to be located between the standard M12 washer and nut (Figure 4). Mark the position of the bracket on the fascia and notch a rectangular hole in the fascia allowing the bracket to be fed through the front of the fascia. The hole may need to be enlarged slightly if the M12 cup head bolts interfere with the fascia.



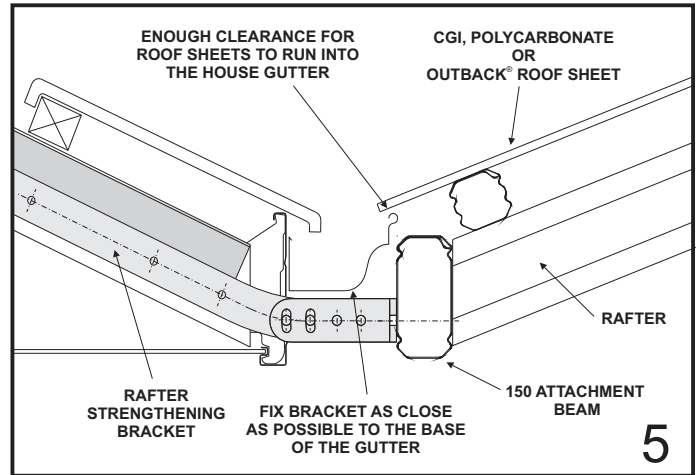
Insert the bracket through the fascia and fix with the channel(s) to the house rafter using M12 hex head bolts through the existing holes in the bracket and further up the channel(s) (Figure 6). Adjust the T piece so it is horizontal and has the appropriate extension past the fascia to allow for fixing of the attachment beam. T piece connection bolts are to be tightened to a minimum 35Nm torque.

The 150 attachment beam becomes the base for the attachment of the Traditional Gable unit. Figure 6 shows a unit attached at the side. Figure 7 shows a unit attached at the rear.



Fix the bracket as close to the base of the gutter as possible (recommended distance 10mm from lowest end of gutter), as shown in figure 5.

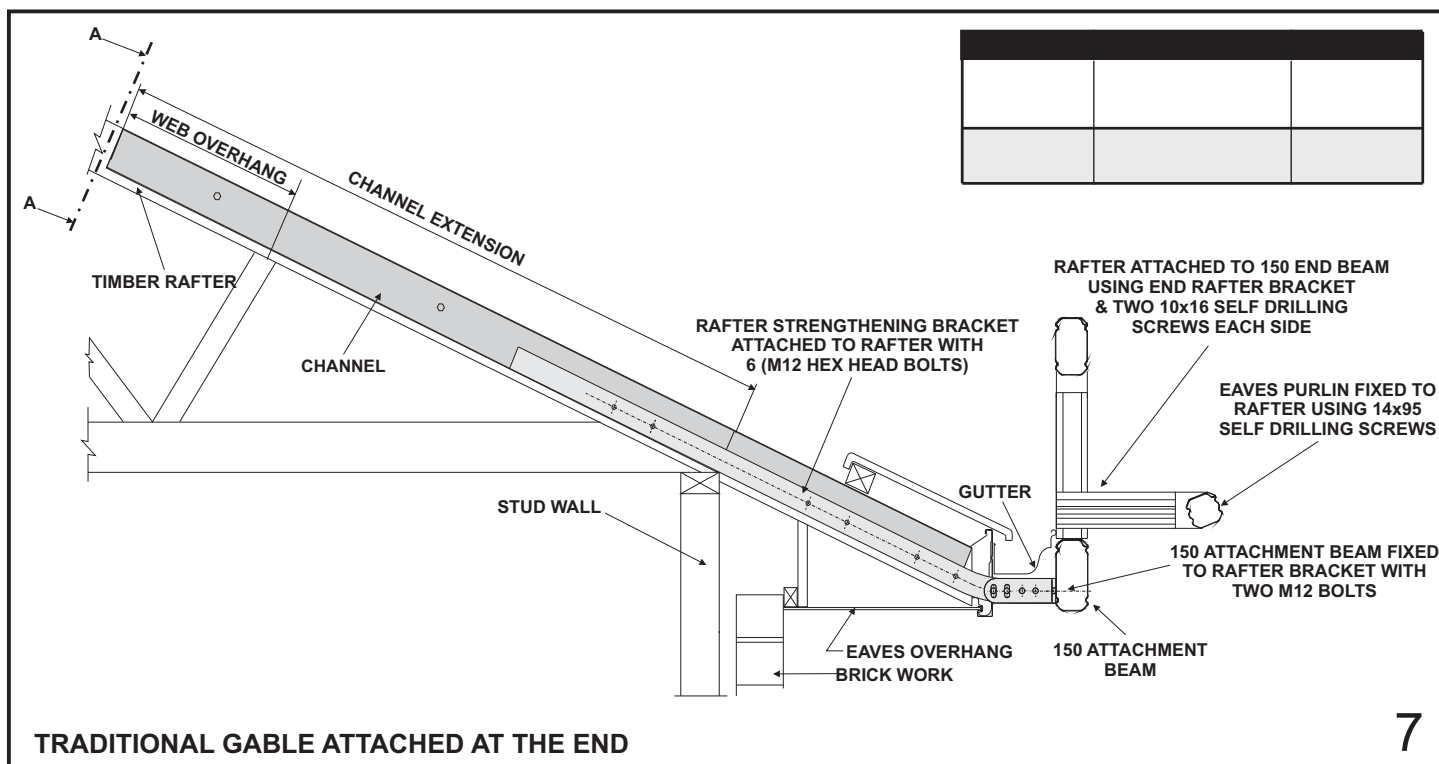
The 150 attachment beam is to be fixed to the end plate to ensure the carport roof sheets drain into the existing house gutter (Figure 5).



Fixing the 150 Attachment Beam in Place

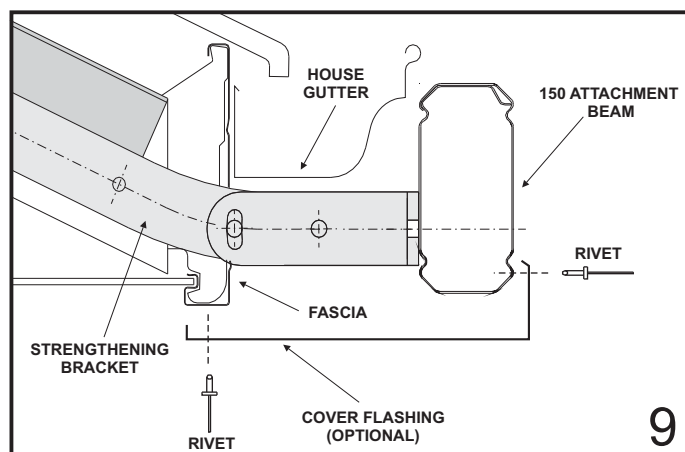
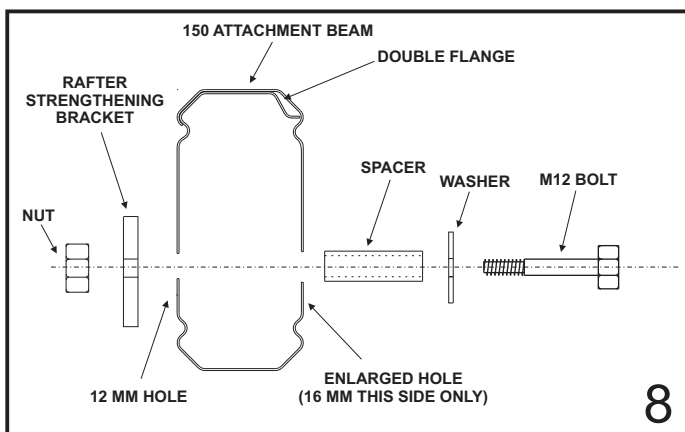
After fixing all the brackets and channels, the 150 attachment beam is fixed in place.

Prop up the 150 attachment beam in position with the double flange on top, the beam will need to be located at a height on the bracket which allows clearance between the gable roof sheets and the gutter. Fix to the end plates of the rafter bracket using two M12 bolts, with the bolt head on the 150 attachment beam side. Insert spacers to prevent the beam from crushing, and bolt in position, using nuts and washers.



Note: Do not over tighten bolts as this can lead to a visible indentation due to the high gloss nature of the material. Refer to figure 8 for fixing spacers.

To insert spacers drill 11 mm holes through the 150 attachment beam. Then drill 16 mm holes on the outside face only ie, this time do not drill all the way through. This will allow the spacer to slide in from the outside and stop at the other side as shown in figure 8.



Note: It is the builders responsibility to ensure the existing rafters and fascia are adequately reinforced and strengthened to accommodate any additional attached structure. The reinforcing method must be approved by the appropriate council or engineer.

2.2 ATTACHING ON END TO HOUSE

If fixing a Traditional Gable on its end to an attachment beam (Figure 7), elevated to the existing house gutter height, the attachment beam is to be as close as possible (within 5mm) to the outside face of the gutter (Figure 18). The 150 attachment beam is fixed to rafter strengthening brackets as detailed in section 2.1.1.

3.0 MARKING OUT CARPORT POSITION

3.1 IN GROUND FOOTING

Place stakes at the carport column locations using the appropriate column positions from the drawings supplied.

Internal portal frames are spaced evenly along the length. Refer to drawings for frame centre spacings.

Note: These column locations are critical, as the roof sheet lengths are governed by these dimensions.

Tie string lines between the stakes to ensure the footings are in line. Check the dimensions and diagonals for squareness.

Dig holes to the required size as stipulated by your Council Application Form. Place bricks in the bottom of the holes to give a solid base onto which the footing knuckles can be positioned. Do not concrete footing knuckles in place at this stage.

Note: A slight fall should be allowed for toward one end of the unit at which the downpipes will be located.

3.2 ON CONCRETE FOOTING

If bolting columns onto existing concrete slab check to ensure concrete dimensions allow for anchor edge distance and anchor depth. Stratco does not take any responsibility for concrete failure. The erector/owner is responsible for ensuring that the slab is capable of supporting the structure.

Mark the position of the columns from the drawings supplied. Internal portal frames are spaced evenly along the length. Refer to drawings for spacing dimensions.

Note: These column locations are critical, as the roof sheet lengths are governed by these dimensions.

Check the marks with a string line to ensure the footings are in line. Check the dimensions and diagonals for squareness.

Mark the position of the holes through the existing holes in the base plate. Remove the base plate and drill into concrete using the values given in Table 1.

Note: Do not drill completely through slab as chemical anchors require a solid base to bear against. It is recommended the minimum slab depth is 1.25 times the anchor hole depth.

Use chemical anchors (for size refer to Table 1) together with the appropriate anchor capsules and install according to the manufacturers recommendations. Leave the Stud Bolt undisturbed for the minimum time specified by the manufacturer for the resin to cure. Curing times are dependent on the concrete temperature at the time of installation.

Note: Footing plates are not fixed until portal frames have been assembled.

CARPORT	CHEMICAL ANCHOR SIZE (mm)	HOLE DIAMETER (mm)	HOLE DEPTH (mm)
GENERAL	M10x130	12	95
CARPORTS \geq 5000mm WIDE IN W41 WIND SPEEDS OR HIGHER	M12x160	14	115

TABLE 1

4.0 PORTAL FRAME ASSEMBLY

Place the knuckle connections inside the portal frame members, using a hammer to tap in position (a block of timber should be used whenever hammering to avoid damaging paintwork).

Important note: Knuckles are colour coded as follows, ensure that the correct knuckle is used for each connection.

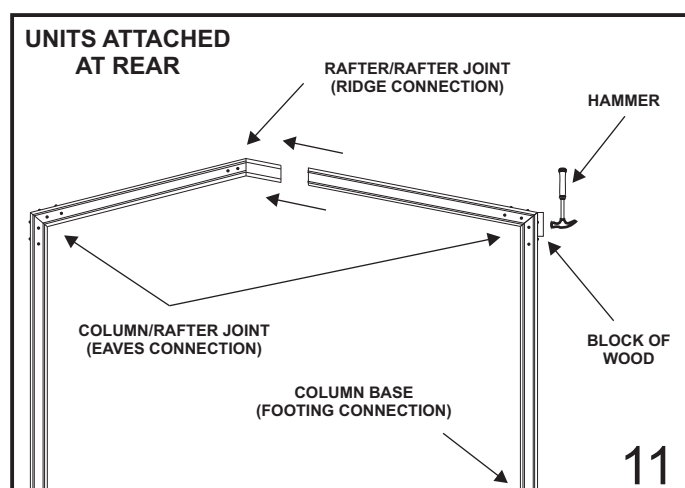
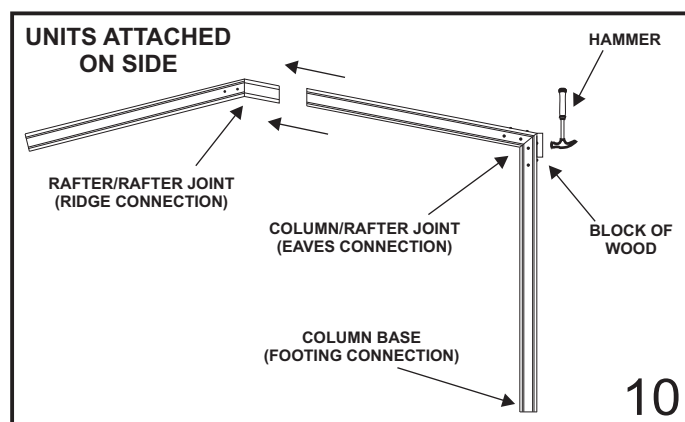
22° Ridge Knuckle - Green

22° Eaves Knuckle - Red

30° Eaves and Ridge Knuckle - Yellow

Join all frame members; first insert eaves knuckle into column to rafter joint, next the footing knuckle/footing plate into the column base and then finally the ridge knuckle into the two halves of the frame at the ridge (refer to Figures 10 and 11 for knuckle locations).

Use a hammer at the eaves knuckle to join the two sides together. If knuckles are difficult to insert apply a lubricant or grease.

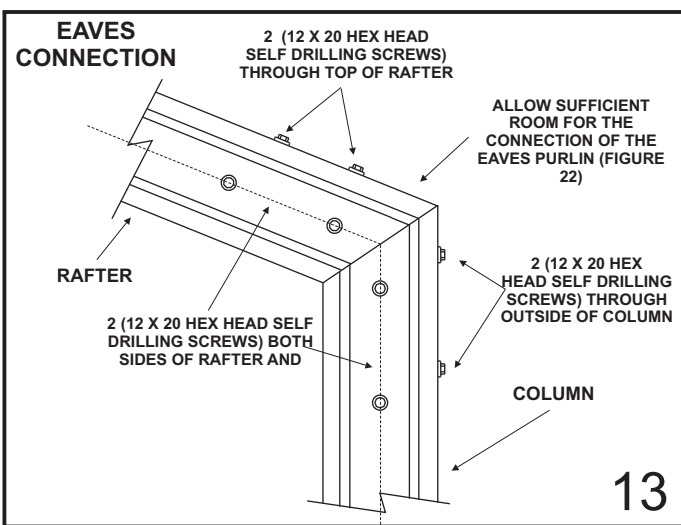
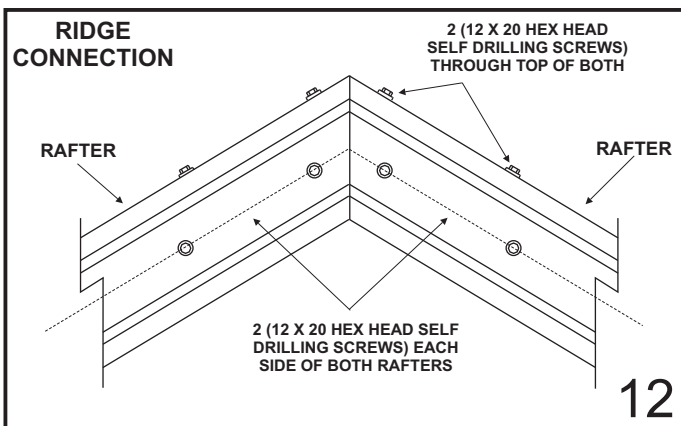


4.1 EAVES AND RIDGE CONNECTION

Screw together eaves and ridge connections using two 12x20 hex head self drilling screws both sides of each member, and two 12x20 hex head self drilling screws through the top (double flange side) of each member. Pilot holes indicate screw locations as shown in figures 12 and 13.

Make sure that the two ends are flush at the connection, leaving no gaps.

Note: Allow sufficient room for the eaves and apex purlins to be fixed onto the rafter (Figure 12 & 13).

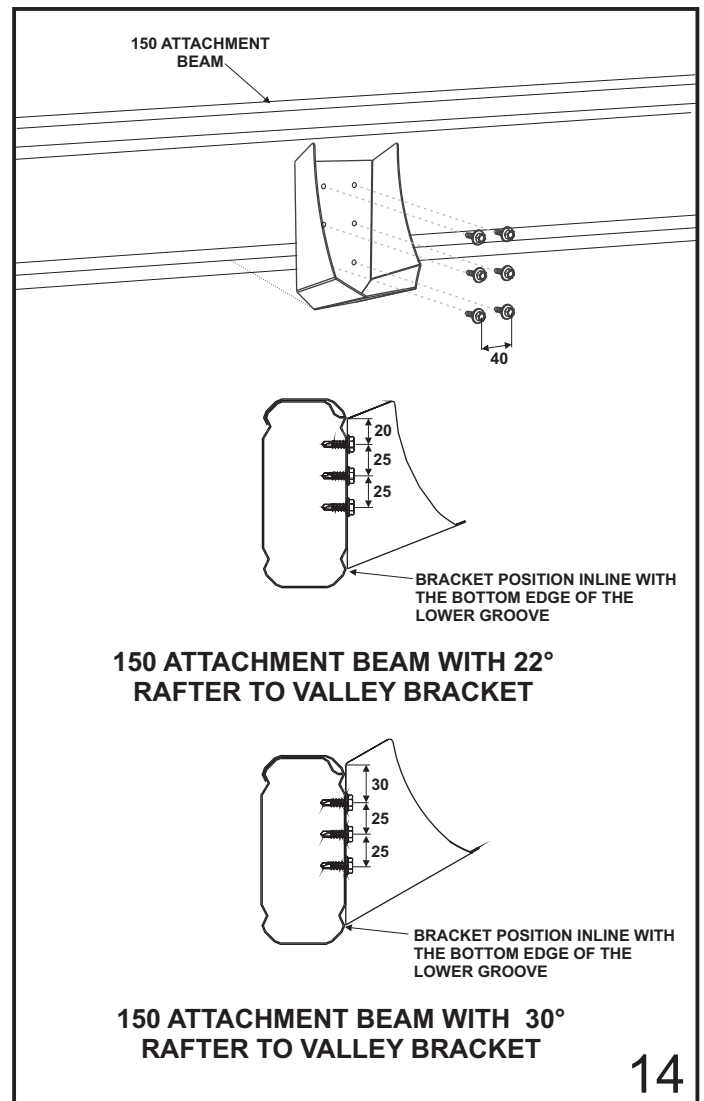


5.0 PORTAL FRAME ERECTION

Portal Frames should be spaced evenly along the length of the unit. Refer to drawings for frame centre spacing.

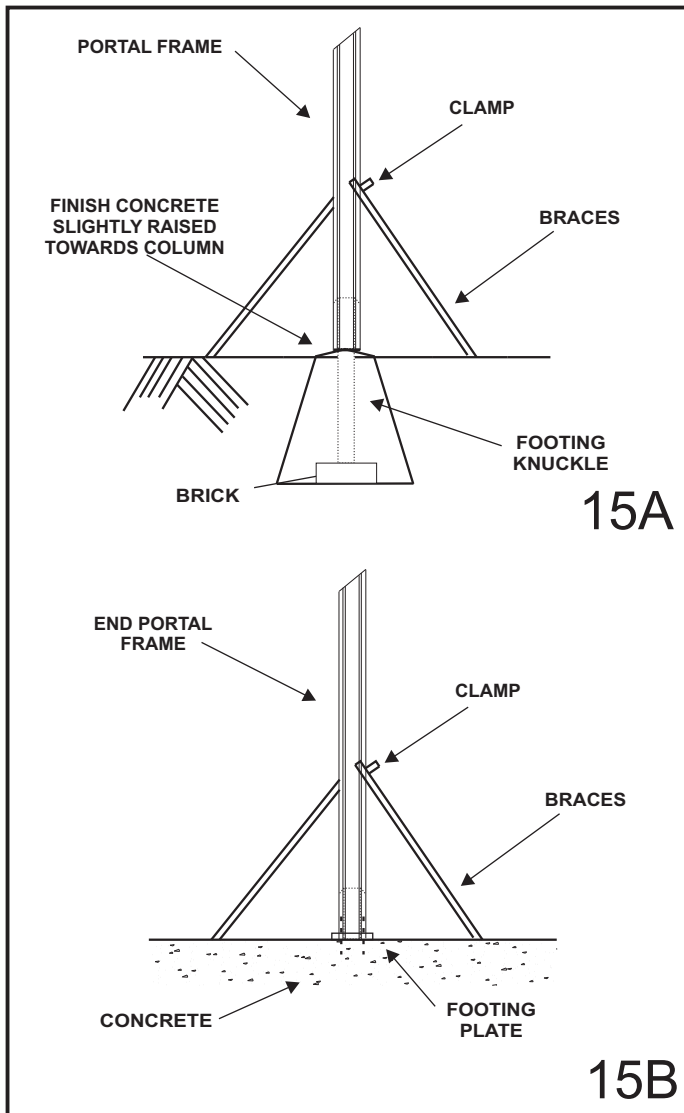
5.1 SIDE ATTACHED

For side attached units fix the rafter to valley bracket to the 150 attachment beam at the correct portal frame positions using six 12x20 hex head screws per bracket through the pre-drilled holes (Figure 14). Please note the bottom face of the bracket lines up with the bottom edge of the lower groove in the 150 attachment beam (Figure 14). Check positions before drilling.



5.1.1 IN GROUND FOOTING

Stand each portal frame in the appropriate footing location and temporarily brace in position with clamps and struts (see Figure 15A).



15A

15B

Locate frames in rafter to valley brackets and check column base is at the ground surface and the clear opening between the column and 150 attachment beam is correct. Finally and most importantly check that the columns are vertical.

Fix the gable rafters into the rafter to valley brackets with two 12x20 hex head screws either side (Figure 16).

Bolt columns to the footing knuckle through the predrilled holes using M10 cup head bolts as shown in figure 17. Ensure that the bolt heads are all on the same side of the frame.

Concrete the footings and leave overnight to cure.

Note: The concrete should be finished slightly raised towards the column, ensuring water runs away from the column (Figure 15A). A 5-10mm gap must be left between the bottom of the column and the concrete.

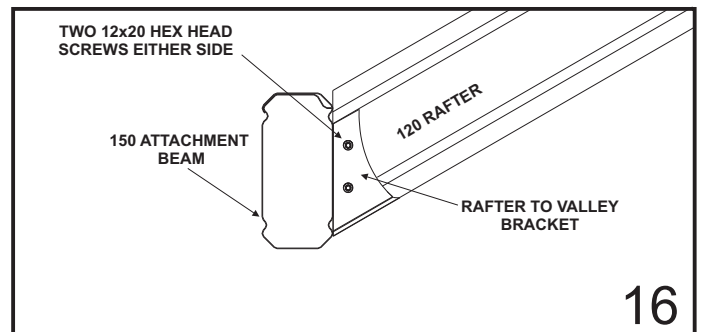
Important Note: The concrete is to only be in contact with the footing knuckle. If concrete or soil is in permanent contact with the columns, corrosion will result in the base of the coloured column. Refer to the "Selection, Use and Maintenance of Stratco Steel Products" brochure for complete details of maintenance requirements.

5.1.2 ON CONCRETE FOOTING

Stand each portal frame in the appropriate footing location and temporarily brace in position with clamps and struts (see Figure 15B).

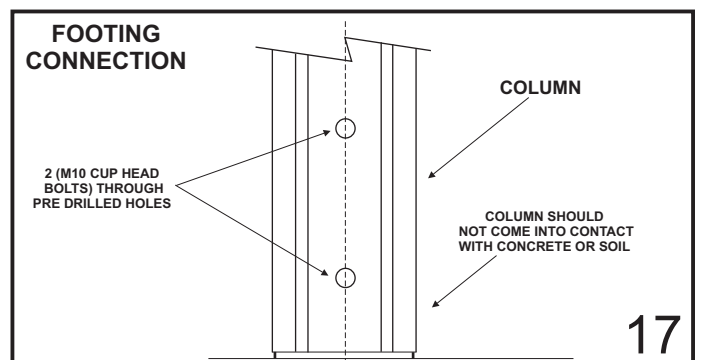
Locate frames in rafter to valley brackets and check column base is at the ground surface and the clear opening between the column and 150 attachment beam is correct. Finally and most importantly check that the columns are vertical.

Fix the gable rafters into the rafter to valley brackets with two 12x20 hex head screws either side (Figure 16).



16

Bolt the columns to the footings through the predrilled holes using M10 cup head bolts as shown in figure 17. Ensure that the bolt heads are all on the same side of the frame.



17

Bolt the footing plates to the chemical anchors installed earlier (refer Section 3.2).

Note: A 5-10mm gap should be left between the bottom of the column and the footing plate.

Important Note: If soil is in permanent contact with the columns, corrosion will result in the base of the column. Refer to the "Selection, Use and Maintenance of Stratco Steel Products" brochure for complete details of the maintenance requirements.

5.2 REAR ATTACHED

Measure the rear gable frame opening and attach end rafter brackets to the 150 attachment beam at the appropriate spacing using six 10x16 hex head self drilling screws (Figure 19).

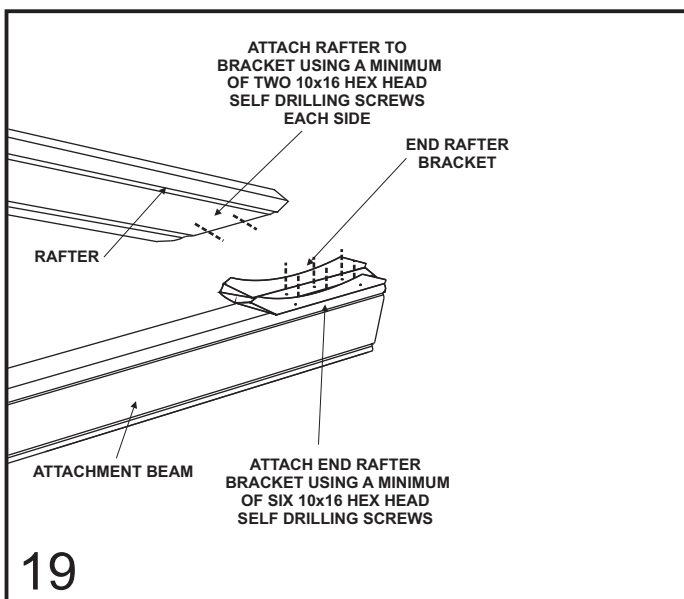
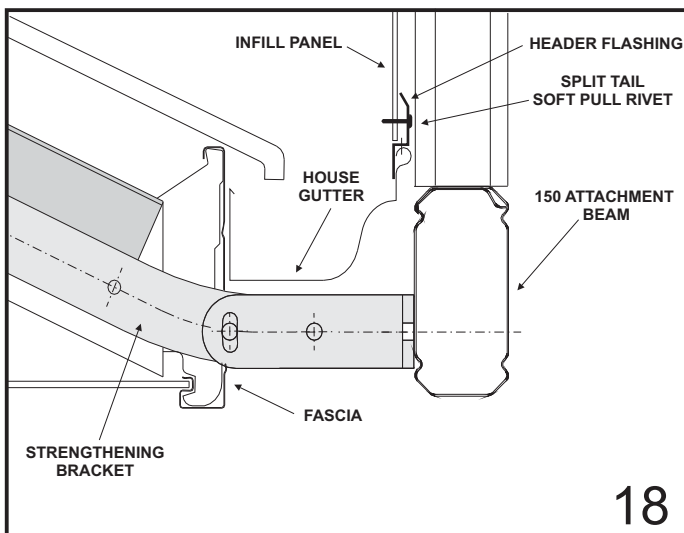
Fasten the rafters that form the rear gable frame into the end rafter brackets with a minimum of two 10x16 hex head screws either side (Figure 19).

5.2.1 HEADER FLASHING

When a gable is fixed at the rear to an attachment beam, elevated to the existing house gutter height, typically a header flashing is used in conjunction with the rear infill. In this case, the rear attachment beam is considered a header and along with the rear gable frame is fixed as close as possible (within 5mm) to the existing gutter in order to accommodate the header flashing (Figure 18). The gable frame is fixed on the rear header over end rafter brackets (Figure 19).

Fix the header flashing into position over the existing gutter lip with rivets. Infill panels are located behind the header flashing and fixed with split tail soft pull rivets at 500mm centres (Figure 18).

Refer section 10 for details of fixing infill panels to portal frames.



5.2.2 IN GROUND FOOTING

Stand the remaining portal frames in the appropriate footing locations and brace in position with clamps and struts (see figure 15A).

Check column base is at the ground surface and most importantly that the columns are vertical.

Bolt the columns to the footing knuckle through the predrilled holes using M10 cup head bolts as shown in figure 17. Ensure that the bolt heads are all on the same side of the frame.

Concrete the footings and leave overnight to cure.

Note: The concrete should be finished slightly raised towards the column, ensuring water runs away from the column, see Figure 15A. A 5 - 10mm gap must be left between the bottom of the column and the concrete.

Important Note: The concrete is to only be in contact with the footing knuckle. If concrete or soil is in permanent contact with the columns, corrosion will result in the base of the coloured column. Refer to the "Selection, Use and Maintenance of Stratco Steel Products" brochure for complete details of maintenance requirements.

5.2.3. ON CONCRETE FOOTING

Stand the remaining portal frames in the appropriate footing location and brace in position with clamps and struts (see figure 15B).

Check column base is at the ground surface and most importantly that the columns are vertical.

Bolt the columns to the footings through the predrilled holes using M10 cup head bolts as shown in figure 17. Ensure that the bolt heads are all on the same side of the frame.

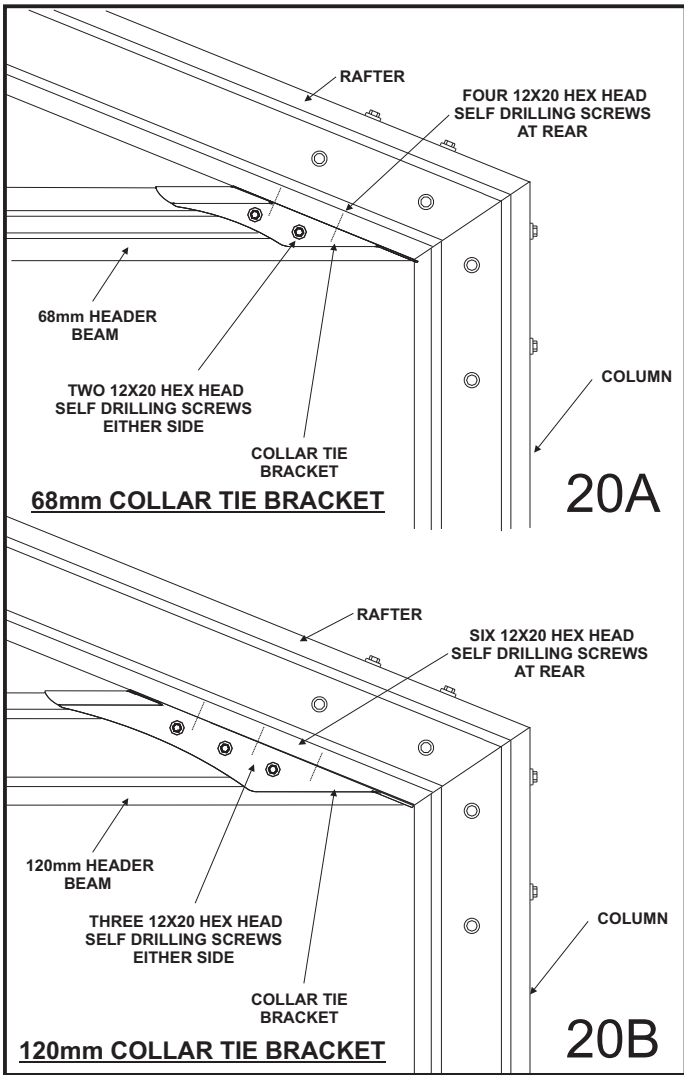
Bolt the footing plates to the chemical anchors installed earlier (refer Section 3.2).

Note: A 5 - 10mm gap should be left between the bottom of the column and the footing plate.

Important Note: If soil is in permanent contact with the columns, corrosion will result in the base of the column. Refer to the "Selection, Use and Maintenance of Stratco Steel Products" brochure for complete details of the maintenance requirements.

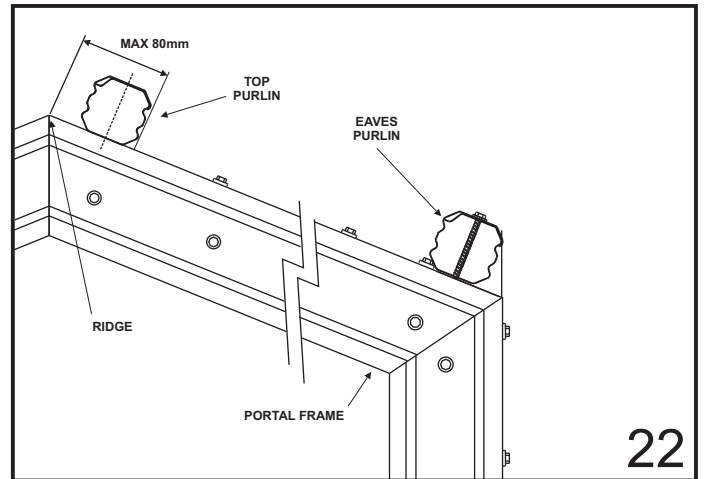
5.3 HEADER BEAM ATTACHMENT

If a gable infill frame is required, attach the header beam using collar tie brackets fixed to the end portal frames with three 12x20 hex head self drilling screws at the rear. Fasten the header beam to each bracket with two 12x20 hex head self drilling screws each side (Figure 20A). If a 120mm header beam is required fix the bracket to the frame with four 12x20 hex head self drilling screws at the rear. Fasten the header beam to each bracket with three 12x20 hex head self drilling screws each side (Figure 20 B).



6.0 PURLINS

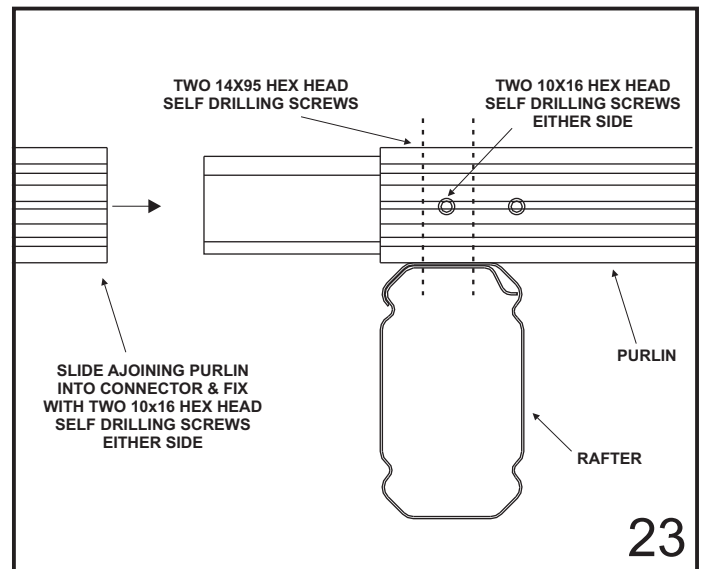
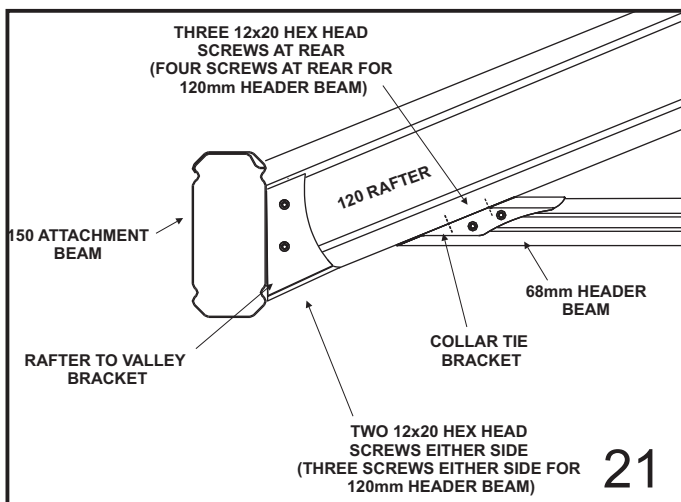
The top purlin is positioned no greater than 80mm from the gable ridge it may be necessary to remove the 12x20 hex head screw closest to the apex (Figure 22). The lowest purlin shall be positioned flush with the outside edge of the portal frame (Figure 22). Any intermediate purlins are spaced evenly on rafters, ensuring maximum recommended deck end spans are not exceeded. Where there is no purlin overhang ensure that the end of the purlins are flush with the top of the rafter chamfer, as shown in figure 30.



Where purlins are continuous over rafters they are fixed in position using 14x95 hex head self drilling screws. If it is necessary for purlins to be broken over standard gable frames (ie, purlins continue in the same direction past a join) a 68mm in-line purlin connector is used (Figure 23).

For a side attached Traditional Gable, on the attachment beam side, attach a collar tie bracket to the rafter to valley bracket using three 12x20 hex head self drilling screws at the rear. Fasten the header beam to the bracket using two 12x20 hex head self drilling screws each side (Figure 21).

Refer to Section 10 for details of fixing infill panels to portal frames.



7.0 GUTTER ASSEMBLY

Gutter is to be located along the side of gable units and fixed to the eaves purlin. Initially leave an overhang at each end of the unit, once the infill and barges have been installed gutters can be trimmed back for a neat finish. Gutter stop ends are then fixed and sealed.

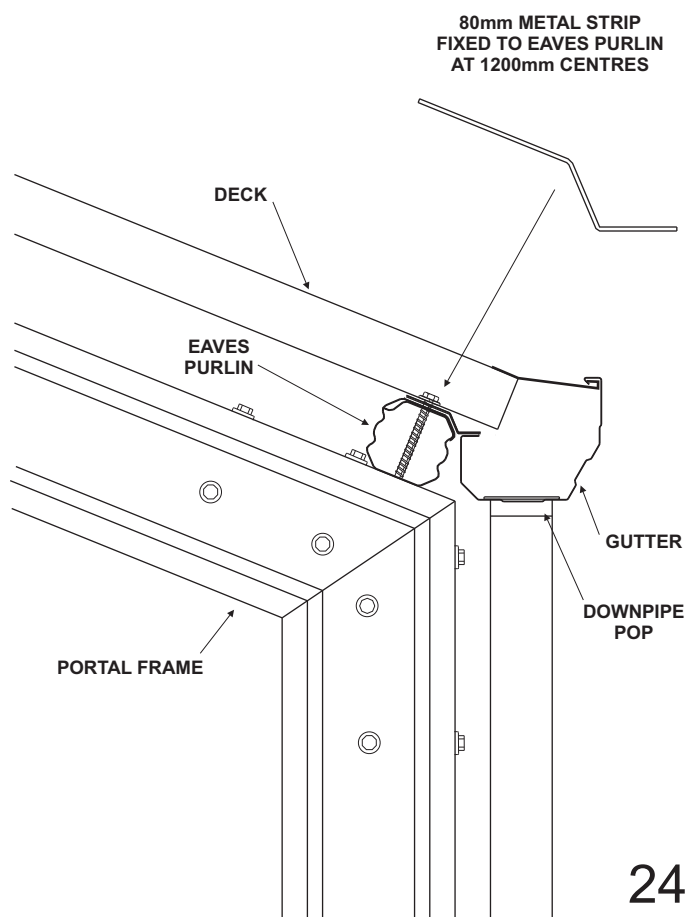
Notch a hole in the gutter and insert a downpipe pop so that the downpipe is in line with a portal frame column. Fasten the pop in place using rivets and silicone seal.

Note: If your column footings are in ground you would have installed your portal frames with a slight fall towards downpipe end. Ensure that the gutter is notched at the right end. However, if you are bolting the footings on to existing concrete slab and there is a slight fall in the slab, ensure that the downpipe is at the lower end of the slab to help the water run off.

Cut 80 mm long metal strips from band supplied. Bend the strips as shown in figure 24 to allow clearance between roof sheets and gutter. Pop rivet these tags to the top of the eaves purlins at 1200 mm centres. Rivet the back lip of the gutter to these tags, ensuring the back face of the gutter is held vertical as shown in figure 24. Waterproof rivets with silicone.

Once the decking is installed, attach the universal deck straps at maximum 1200mm centres by crest fixing to roof sheets with 10x16 screws.

Attach downpipes over downpipe pops and fasten downpipes with straps to the adjoining column.



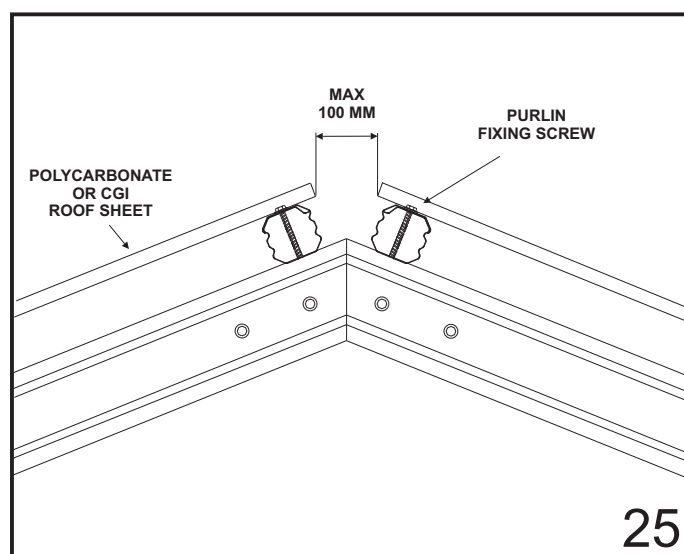
24

8.0 ATTACH DECKING

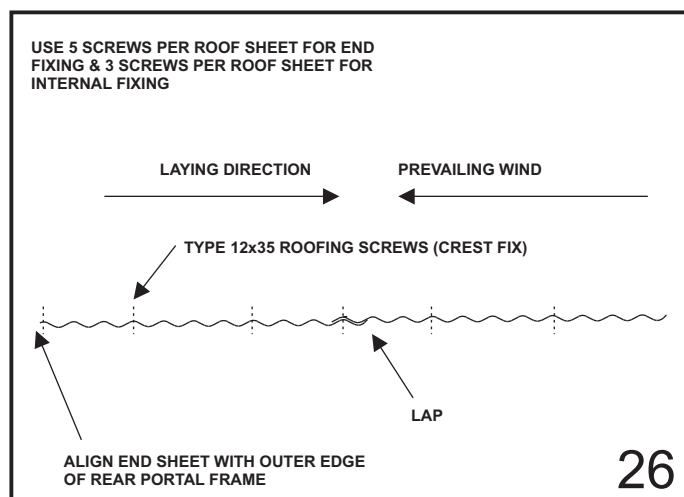
Begin by attaching deck at one end of the carport roof with the CGI or Polycarbonate sheets, allowing for a 40 mm overhang at the eaves into the gutter and a maximum 100mm gap at the ridge (Figure 25). Always have the lap joint facing away from the prevailing wind direction on all carport roof faces (refer Figure 26).

Crest fix CGI or Polycarbonate sheeting with 12x35 Roofing Screws using 5 per sheet for end spans and 3 per sheet for internal spans.

Note: For cyclonic conditions make sure a cyclonic washer assembly is included with every fixing.



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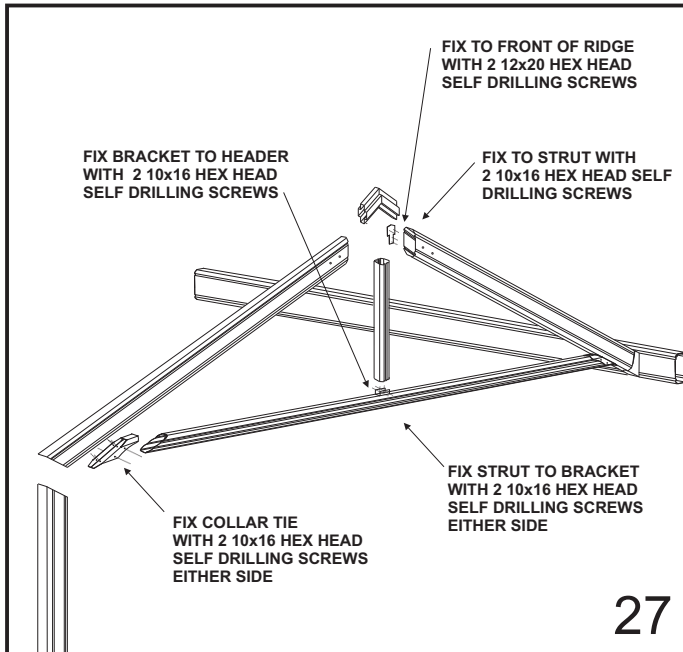
9.0 RIDGE CAPPING

For CGI and Polycarbonate roofing, screw or rivet (depending on ridge cap style) the ridge cap directly onto the top of the deck. Waterproof rivets with silicone.

Note: Do not rivet to polycarbonate decking, screw only.

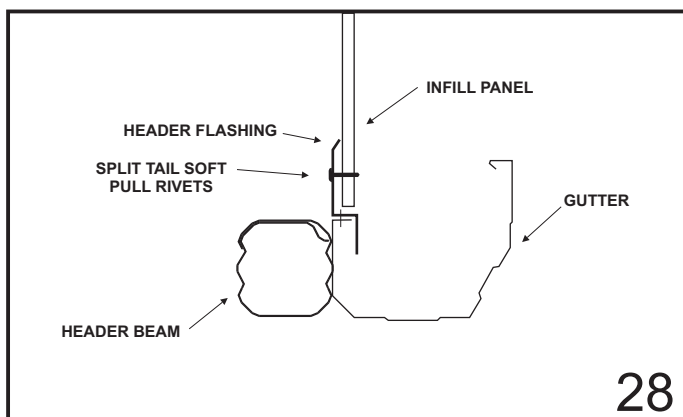
10.0 INFILL PANELS

Two styles of header flashings are available to neatly finish the base of infill panels, one is used on header beams with gutter and the other for headers without gutter. Gable infill panels are to be cut in triangular shapes to fit the end frame. Panels can be painted to the desired colour before installing.



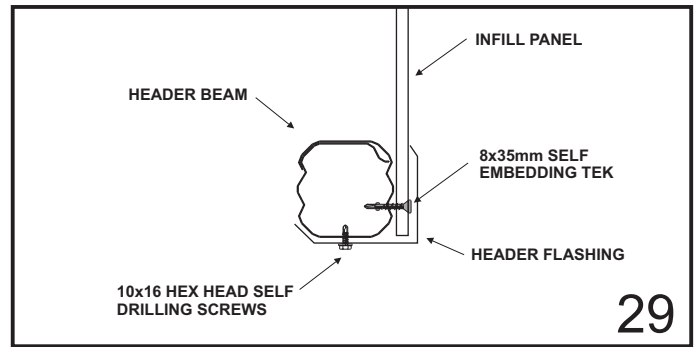
10.1 HEADER BEAM WITH GUTTER

Attach the header flashing to the rear gutter lip with rivets. Infill panels are fixed through the top groove of rafters and the end strut with 8x35mm self embedding screws at 500mm centres in non-cyclonic areas and 250mm centres in cyclonic areas. Panels are fixed at the base through the header flashing with split tail soft pull rivets at 500mm centres (Figure 28).



10.2 HEADER BEAM WITHOUT GUTTER

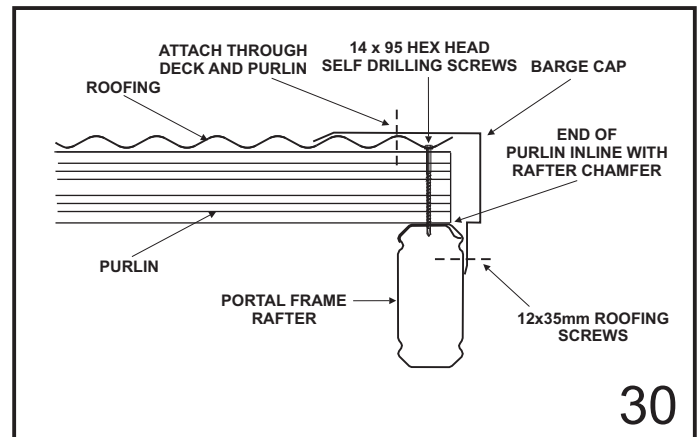
Infill panels are fixed through the top groove of rafters and the lower groove of the header beam with 8x35mm self embedding screws. Fix at 500mm centres in non-cyclonic areas and 250mm centres in cyclonic areas. Panels are fixed to the end strut at the same spacings. Attach the header flashing to the underside of the header beam with 10x16 hex head screws to neatly finish the base of the infill panels (Figure 29).



11.0 ATTACHING BARGE CAPPING

If barge capping is required at the ends of the unit, attach the barge cap by screwing the lower lip to the rafter and screw the top section to the purlin through the deck, as shown in figure 30. Mitre the barge at the apex of the gable for a neat finish. Run the barge cap along the gable section and finish neatly.

If infill panels have been installed, the lower lip of the barge capping should cover the panel screws to give a neat finish.



12.0 HELPFUL TIPS

Leave plastic coating on members until they are about to be fastened to the structure. This will help prevent scratching of the colorbond finish.

Sweep the roof and clean gutters after the completion of work. Ensure any swarf and rivet stubs are removed as they can cause unsightly rust stains.

Do not allow soil to remain in permanent contact with the columns, as corrosion will result in the base of the column. Refer to the "Selection, Use and Maintenance of Stratco Steel Products" brochure for complete details of the maintenance requirements.

Double check all measurements and drilling locations before proceeding.

Regularly check framework for squareness and vertical alignment to make sure it hasn't moved during construction.

13.0 MAINTENANCE

Regular washing or hosing of the inside and outside of your Stratco Heritage Outback will ensure it looks its best at all times. Refer to the "Selection, Use and Maintenance of Stratco Steel Products" brochure for complete details of maintenance requirements.