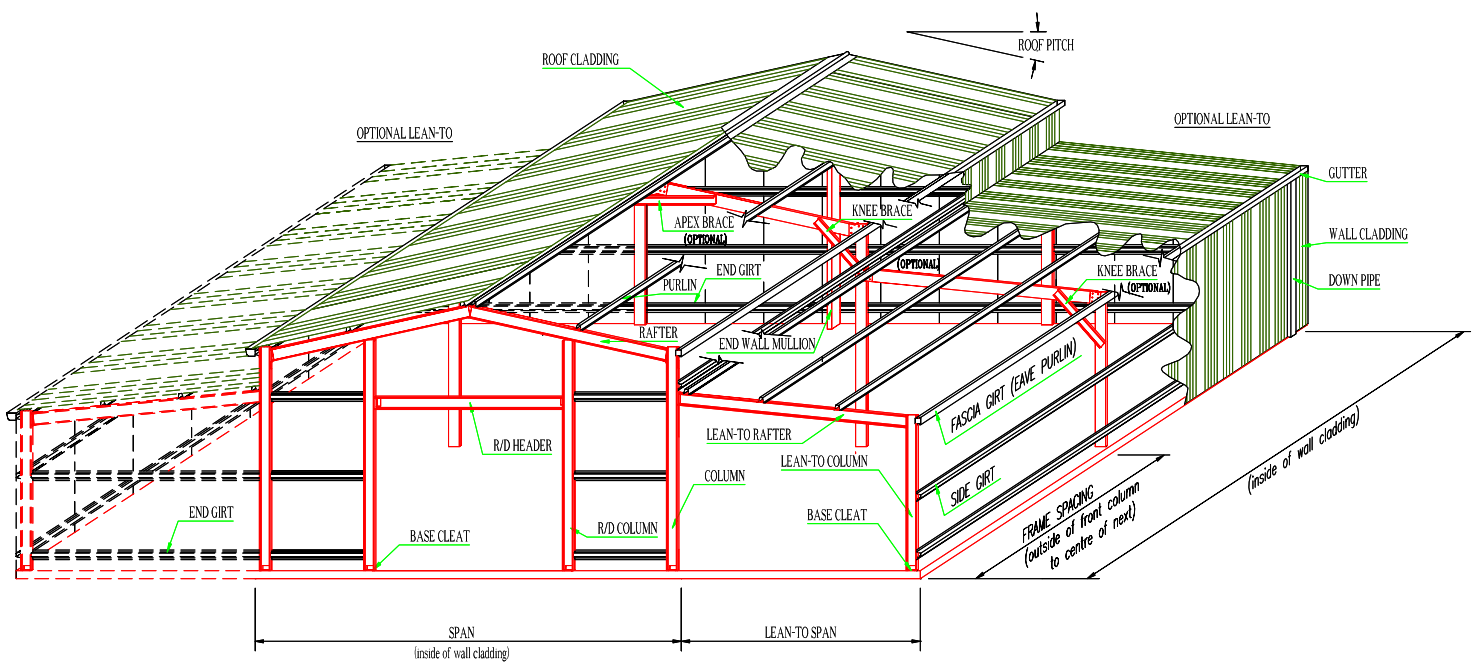


# INSTRUCTION MANUAL FOR MULTIBUILD

## 'AMERICAN BARN'



**SUPPLIED BY:**

## **‘AMERICAN BARN’**

The ‘American Barn’ uses similar components to other steel frame buildings. There are additional haunch brackets required for the ‘dual roof system’. The haunch and apex brackets are typically 22 degrees for the main roof with the side lean-too haunch brackets being 11 degrees. These can be changed.

The ‘American Barn’ uses 2 different lengths of roof cladding, one length being for the main roof and the other for the side lean-tos. There are also 4 runs of gutter compared to 2 on a conventional building, if used.

The outer walls of the lean-tos are usually clad, while the internal walls of the main ‘centre’ structure are usually left unclad, apart from the small section of cladding which covers the gap between the main roof and the lean-too roofs called the ‘Pelmet’.

Before commencing the erecting of your new barn, it is a good idea to sort all the materials as shown on the accompanying Bill of Materials list and make yourself familiar with the Engineers Plans.

Take your time. **DO NOT TRY TO BREAK ANY WORLD RECORDS**, and you will be assured of a quality product of which you’ll be proud.

## **INSTRUCTION MANUAL FOR ERECTING STEEL FRAMED BUILDINGS GENERATED BY MULTIBUILD COMPUTER SOFTWARE.**

**It is important to be aware of the following:**

**Before erecting your new building, please check that all local building department requirements such as Building Applications are adhered to.**

This is not a work safety manual; it is of utmost importance to follow all safety recommendations of the OH&S (Occupational Health and Safety) Authority. Do not work on the building in damp conditions and do not walk on roof sheeting in damp or frosty conditions.

If you are employing a tradesman to erect your building for you, check with the governing authority to see if he needs to be licensed and also check that all insurances for both he and his employees are current.

Any information contained in this instruction manual overrides any details as shown on the instruction video. This manual must be used in conjunction with the engineer's plans as submitted to the building department.

**NOTE: THE ENGINEERS PLANS OVERRIDE ANY INFORMATION IN THIS MANUAL.**

An instruction video/CD for a 6.0x7.0x2.4m garage is available from your garage/shed reseller, and is to be used as a guide only, to show you tips and techniques.

All measurements are to be taken from the accompanying plans and specifications.

**This manual is to be read in conjunction with:**

### **1. Engineering plans supplied with the building.**

This contains a Members Isometric Drawing of a typical building and is not specific to the building purchased. It has all of the connection details for the specific building and contains elevation drawing of the building supplied. The members schedule is written from the supplier's software, and will give particulars on member sizes and spacing, as well as other relevant information.

### **2. Bill Of Materials**

This is a list of all components ordered for this building. You can consult it to check you have received all components. It also shows what each component is intended for.

### **3. Structural Details**

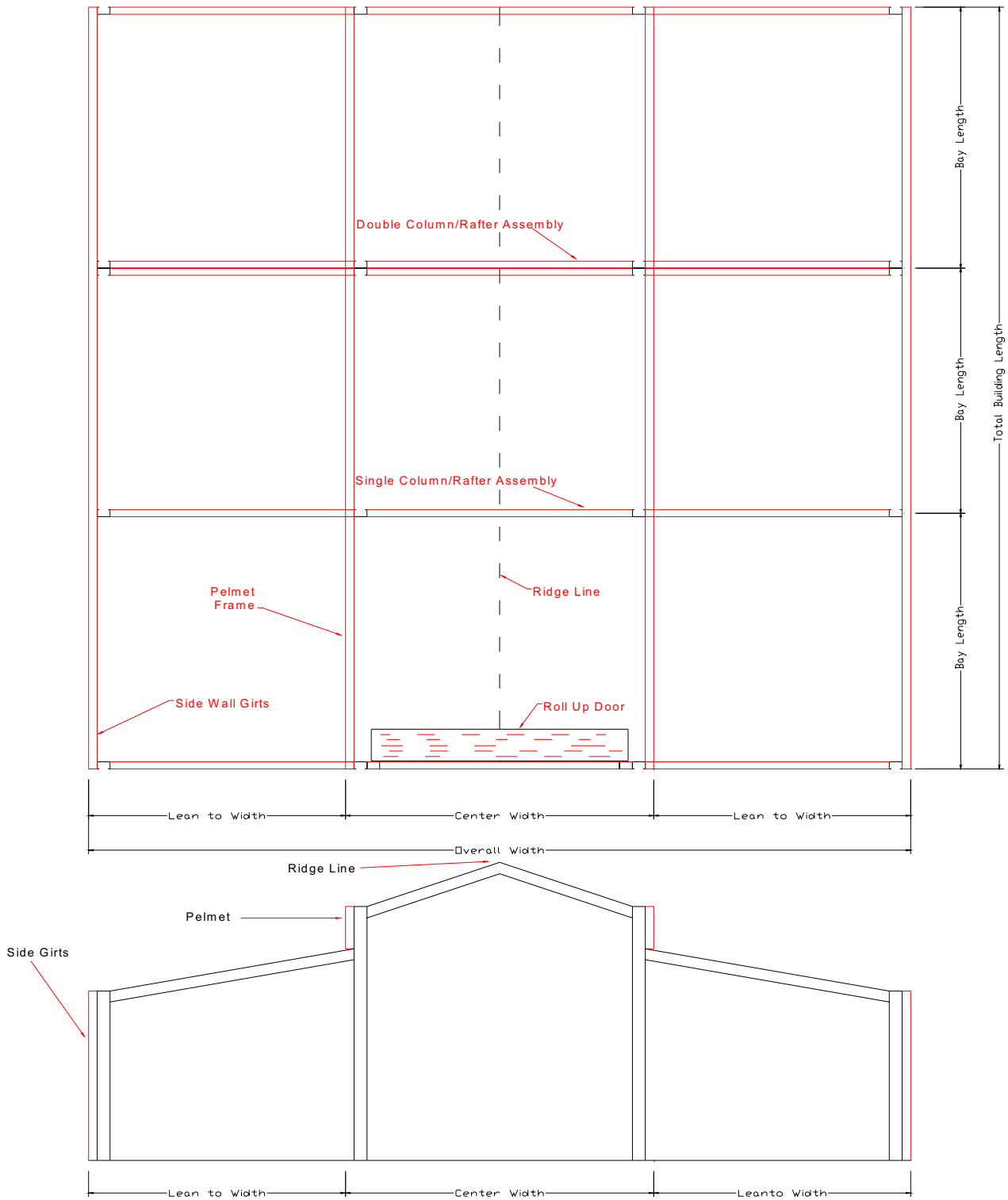
This is a list of all structural components, including the spacing of these items and their location in the building. It also gives an estimated height to the apex of the structure.

Refer to the following schedules for the following:

- Schedule 1 - Tools
- Schedule 2 - Eave Purlin Bracket Location
- Schedule 3 - Installation of Side Door.
- Schedule 4 - Installation of End Door.
- Schedule 5 - Fitting Windows and Doors.

#### Separate Sections

- Annexure 1 - Garaport Bay extension.
- Annexure 2 - Lean-tos on the side of buildings
- Annexure 3 – Horizontal Clad Buildings
- Annexure 4 - Mezzanine floor instructions



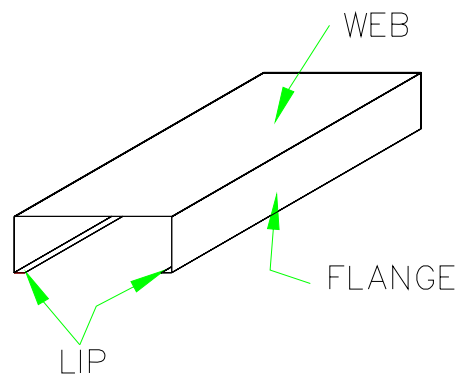
**Typical American Barn Layout**

## Frame Components

The following is a description of each of the components used in construction. The underlined component name corresponds with the name used on the Engineering Plans, Members Isometric Drawing and the Bill Of Materials (BOM) and Structural Details.

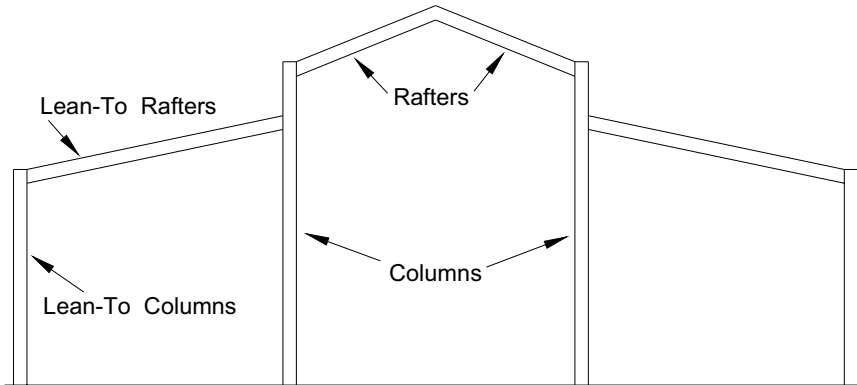
1. **Columns**. CEE Sections which may vary in size depending on the span, height and other relevant considerations. These may be double or single pieces. They may also have wind braces attached. They are the main supports for the centre of the building. The rafters and the lean-to rafters are attached to them.
2. **Lean-to Columns**. CEE Sections which may vary in size depending on the span, height and other relevant considerations. These may be double or single pieces. The lean-to rafters are attached to these.
3. **Rafter**. CEE Sections which may vary in size depending on the span, height and other relevant considerations. This member is used in the main centre section of the structure. They can be single or doubled regardless of the configuration of the columns. They are joined together with apex brackets. Rafters are also referred to as end wall rafters and intermediate rafters, depending on their location in the structure.
4. **Lean-to Rafters**. CEE Sections which may vary in size depending on the span, height and other relevant considerations. This member is used in the lean-to part of the structure. They join the lean-to columns to the main columns by haunch brackets in most situations and occasionally flat plate brackets or Mullion Fixing Angles

5.

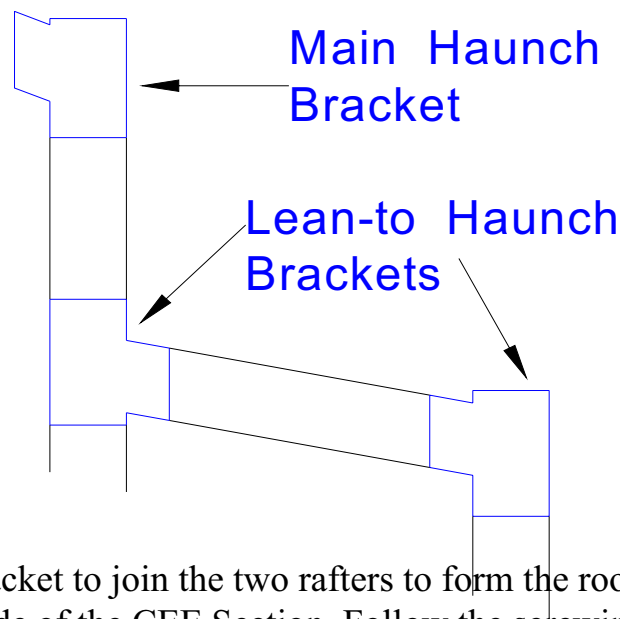


C SECTION.

6. **Portal Frame.** Consists of 2 Columns and 2 Rafters for the main center section, and additional columns and rafters for the lean-to joined together with bracketry to make up a complete frame. It is common to have a double frame, consisting of 4 columns and 4 rafters attached back to back, or even double columns and single rafter, as the engineering may require.

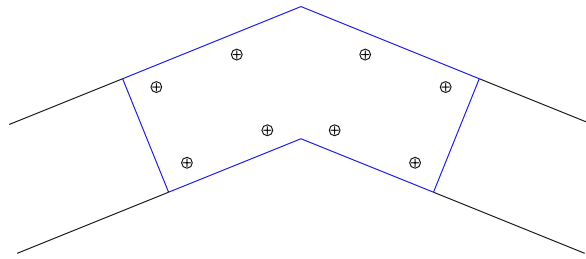


7. **Haunch Brackets.** The brackets used to join the columns to the rafters. Haunch brackets must always be attached to the web side of the CEE Section. It is of the utmost importance to follow the screwing or bolting procedure as shown.  
Important Note: Some connections require 2 brackets per connection, and back to back connection may require 4 brackets. Check your MultiBuild BOM output for clarification.



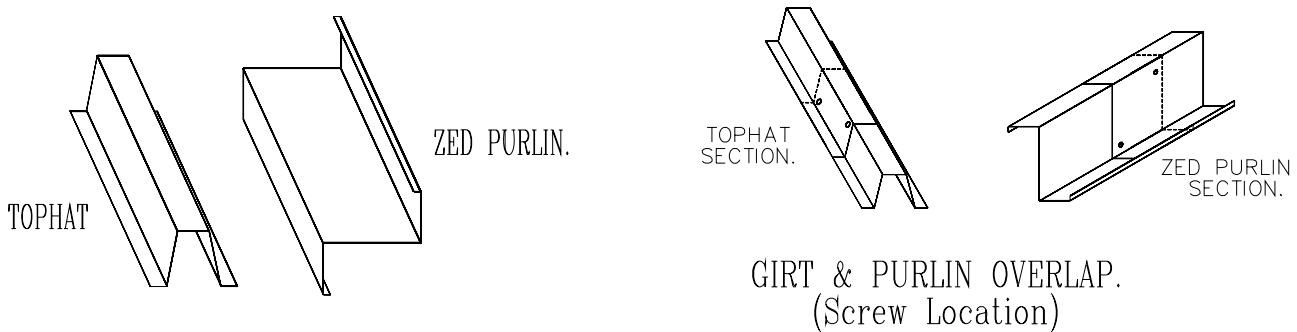
**Apex Brackets** A Bracket to join the two rafters to form the roof apex. These must be attached to the web side of the CEE Section. Follow the screwing or bolting procedure as shown.

Important Note: Some connections require 2 brackets per connection, and back to back connection may require 4 brackets. Check your MultiBuild output for clarification.



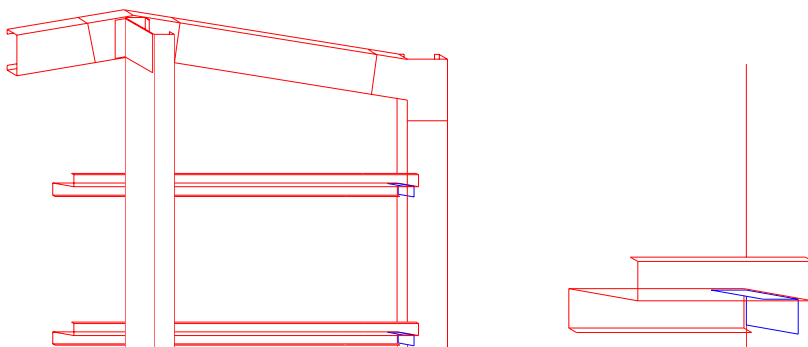
## Apex Brackets

8. **Roof Purlin.** Either a Tophat or a ZED Section depending on the size and type of structure, tek screwed to the rafters to support the roof cladding. Use the frame teks to attach all framework.
9. **Side Girts.** Either a Tophat or a ZED Section depending on the size and type of structure, attached with frame teks to the columns to support the wall cladding.
10. **End Girts.** Either a Tophat or a ZED Section depending on the size and type of structure, attached between the corner columns with one end wall girt bracket on each end and tek screwed to the end wall mullion where they overlap.



## Purlin and Girts

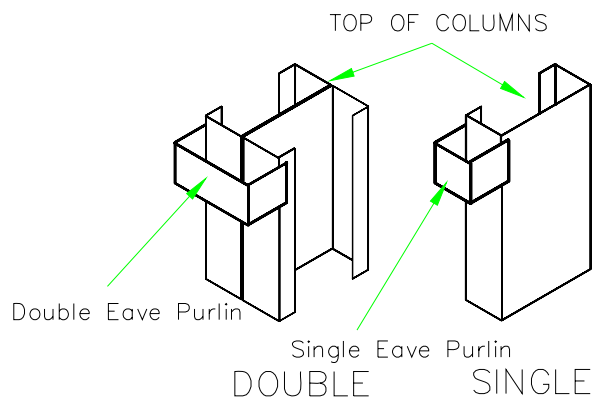
11. **Girt Bracket.** An 'L' shaped bracket to join wall girts to columns and door headers to doorjambs.





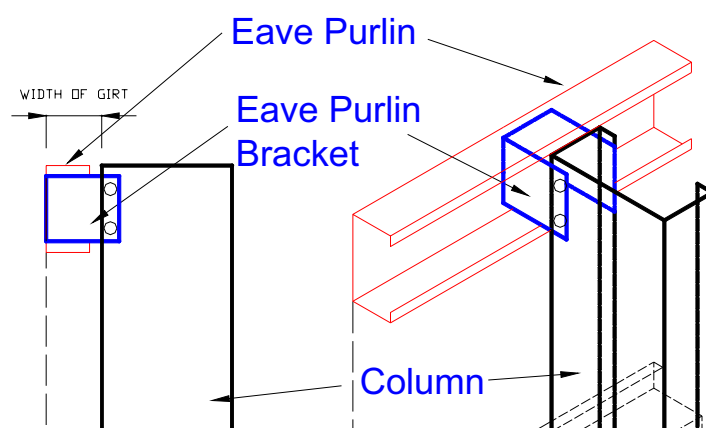
12. **Eave Purlin Bracket.** A U-shaped bracket tek screwed to one ‘web’ and one lip of the column to hold the eave purlin in place. The purpose of the bracket is to hold the eave purlin out and in line with the outside edge of the side girts. The location of the Eave Purlin Bracket on the column, and lean-to column, is detailed in Schedule 8.

Note: For back-to-back columns, a double eave purlin bracket is used. These are screwed to the ‘lip’ side of both columns.

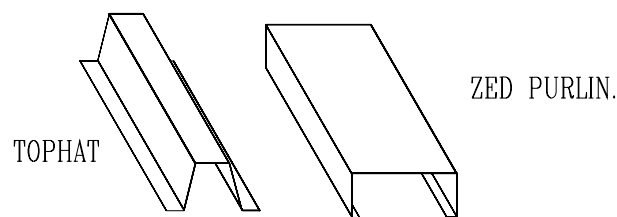


EAVE PURLIN BRACKETS.

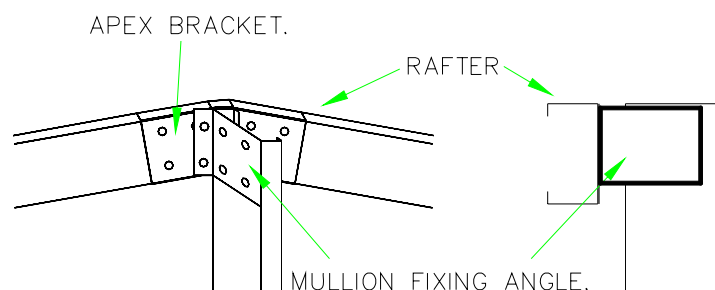
13. **Eave Purlin.** (Fascia Girt) This is used to support the top of the wall cladding, where it joins the roof cladding. The size of the Purlin varies with the rest of the frame. The location of the Eave Purlin can be determined by using the table in Schedule 2.



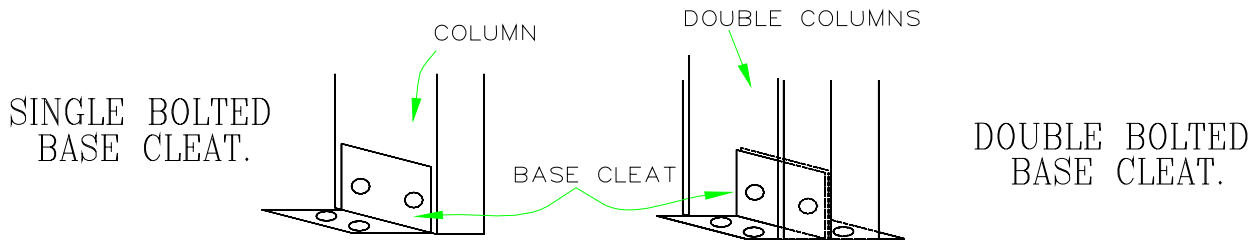
- a. **Eave Purlin.** These are a CEE Section screwed onto the column using the Eave Purlin Bracket.
- b. **Topspan Eave Purlin.** This is an option in lieu of a CEE Section eave purlin and tek screws directly to the columns. This option can only be used only for frames using Tophat purlins and girt.



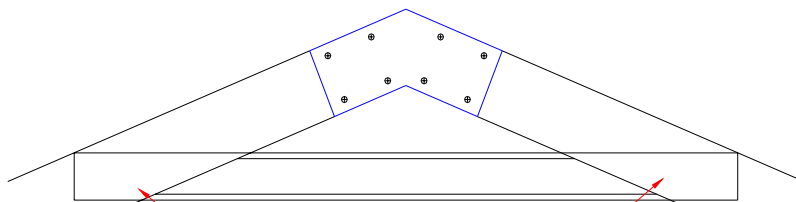
14. **End Wall Mullion.** A CEE Section usually the same size as the columns but oriented sideways. (I.e. perpendicular to the end wall.) These are longer than the columns and extend to the top of the rafters. They are attached to the rafters with a Mullion Fixing angle and attach to the footing or slab via a base cleat.
15. **Mullion Fixing Angle.** An 'L' shaped bracket tek screwed to the web at the top of the end wall mullion/s and to the web of the rafter. Centre end wall mullions are situated directly under the apex of the roof and are tek screwed through the Apex Bracket into the "web" of the rafter. Also used to connect the end wall door jamb/s to the rafter. (See diagram)



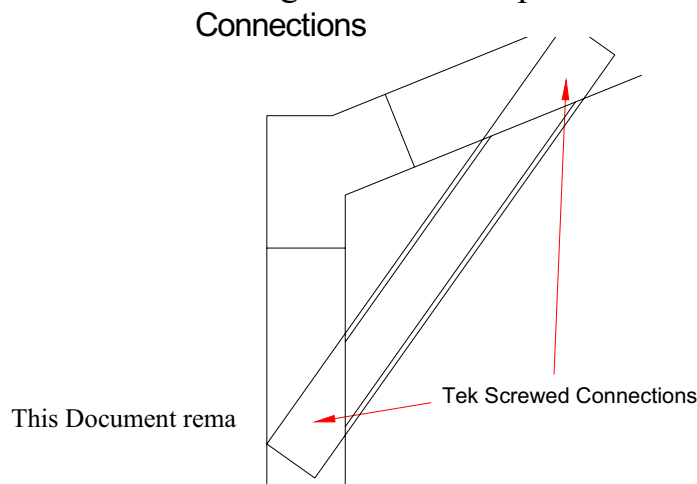
16. **Base Cleat.** Angle bracket tek screwed or bolted to the web of the base of the column, end wall mullions and end wall doorjamb, which are then attached to the footing or slab. Where a double column is used, attach a base cleat to the inside of each back-to-back column.



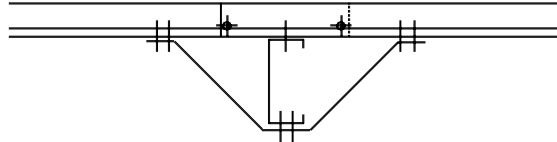
17. **Apex Brace.** CEE Purlin, which connects to the intermediate rafters (end rafters only if end wall is not clad) on either side of the apex. The brace is tek screwed to the rafters. These are not used on all buildings. Refer to the plans.



18. **Knee Brace.** CEE Purlin, which forms a brace between the columns to the rafter. These are not used on all buildings. Refer to the plans. Tek screw the knee brace into position.

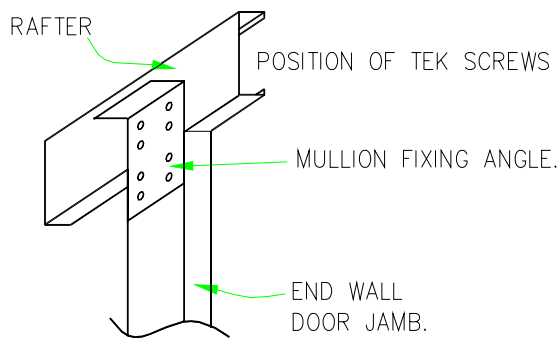


19. **Fly Brace.** Galvanized strapping screwed to the underside of the rafter and the roof purlin on either side. Place two tek screws to each end into the roof purlins and two screws into the bottom flange of the rafter. Refer to plans for usage.



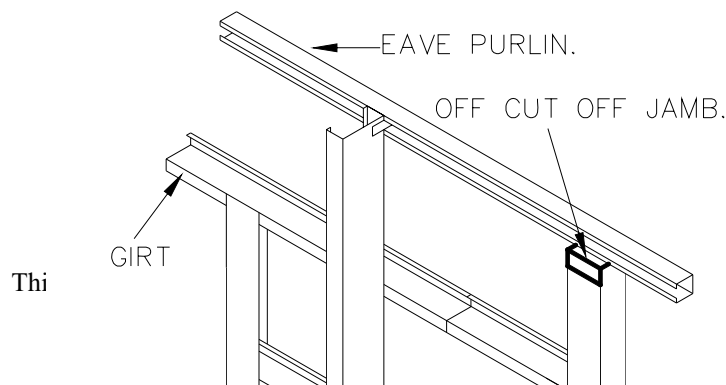
FLYBRACE.

20. **Diagonal Bracing Strap.** Bracing is required on most buildings to reduce movement caused by wind. Refer to engineering plans to type, size, and location and connection details.
21. **Door Jamb.** (End Wall) A CEE Purlin, which is usually, the same size as the main columns, and forms the side framework of the door opening to an end wall. It fits under the rafter and is attached to the web of the rafter with a mullion fixing angle.

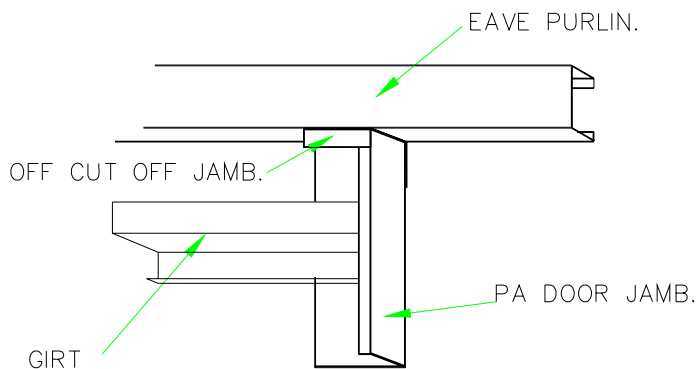


DOOR JAMB.

22. **Door Jamb.** (Side Wall) Is a length of folded galvanized section which wraps around the wall girt to form the door opening. The length of the jamb will vary depending on the height of the door and the height of the structure. The door Jamb will either extend to the eave purlin or to the next girt above the opening as illustrated below.

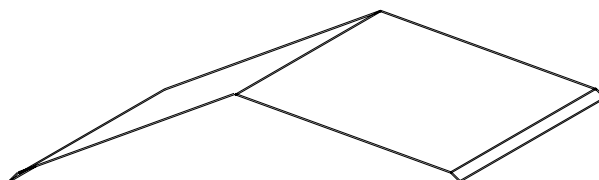


23. **Door Header.** Either a CEE or a Tophat purlin. These are fitted between the End wall doorjamb or the sidewall jamb to form a header above the door. They are secured to these members using end wall girt brackets and framing tek screws.
24. **P.A. Door Jambs.** These are of the same configuration as the doorjamb mentioned previous. They form the opening for the framed P.A. Door (Personal Access) to fit into.



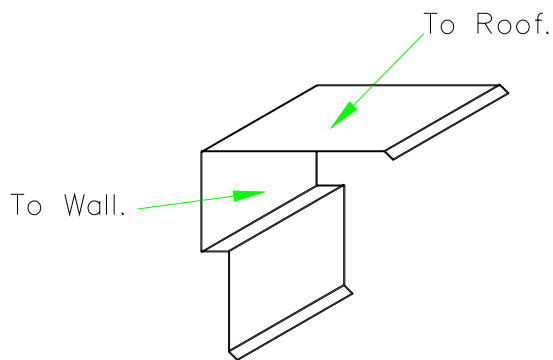
PA DOOR JAMB.

25. **Roof & Wall Sheets.** Wall and roof sheeting is fixed to the wall girts and roof purlins the screws provided. See the manufacturer's product binder for profiles and fixing details.
26. **Ridge Cap.** This covers the gap between the two runs of roof cladding at the apex of the roof. Fixed with tek screws into the top of the roof cladding. Below is a diagram of a typical Ridge Cap.



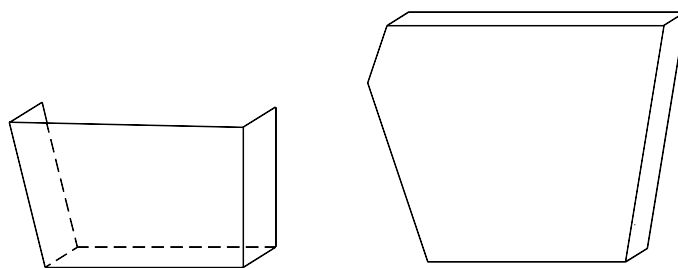
RIDGE CAP

27. **Gable Flashing.** To cover the gap between the roof and the wall cladding at the gable ends of the building. Fixed the roof with teks and to the wall cladding overlaps with rivets. Below is a diagram of a typical gable flashing, also called a barge capping.

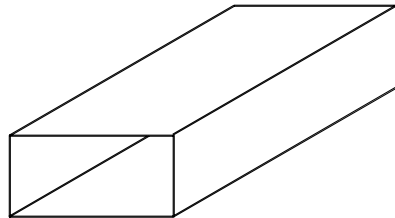


## RAKE FLASHING / BARGE CAP

28. **Gutter.** Guttering is optional on all structures. If used, follow the following instructions. Fitted to the top of the sidewall cladding to collect rainwater from the roof sheets. Gutter brackets are attached to the rib on the roof sheet, to the top outside edge of the gutter, to hold the shape of the gutter and to stop it from collapsing under peak volume
29. **Stop End.** To seal gutter ends. Riveted into position and sealed to stop leaks. The shape will match the gutter style chosen.

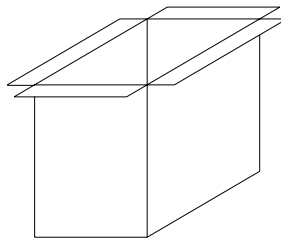


30. **Downspout.** Connected to the guttering with a downspout nozzle to convey the rainwater to ground level. Riveted to the downspout nozzle at the gutter and held in place with a tek screw drilled into the back of the downpipe from inside the building.



DOWNSPOUT

31. **Downspout Nozzle.** To connect downspout to the gutter.



32. **Corner Flashing.** Usually 50 x 50, 75 x 75 or 100 x 100 depending on the style of building and the type of wall cladding being used. Also used for door trims etc.



33. **Screws.**

Wall Screws. To screw the wall cladding to the wall girts. These are the smallest screw supplied. This screw comes with a neoprene washer.

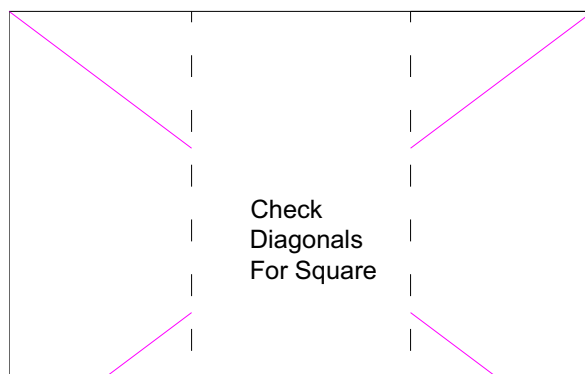
Frame Screw. (No Seal) To screw the bracketry to the framework and the purlins and girts to the frame. These are a stubby screw with a built-in washer type head.

Roofing Screw. To screw the roof sheets into the roof purlins. This screw comes with a neoprene washer.

34. **Pop Rivets.** To fix corner flashings, trim angles and rake flashing to the wall cladding. Also to fix downspouts to downspout nozzle.
35. **Structural Frame Bolts.** There are two types of bolt sets supplied with this line of buildings. For the smaller buildings a 12mm bolt set is supplied and for the larger buildings a 16mm bolt set is required. A Bolt set consists of 1 bolt, 2 washers and 1 nut.
36. **Hold Down Bolts.** These will vary depending on the wind rating and the size of the building. They may be power bolts, wedge anchors, tru bolts, hold down ‘U’ bolts or chemical anchors.

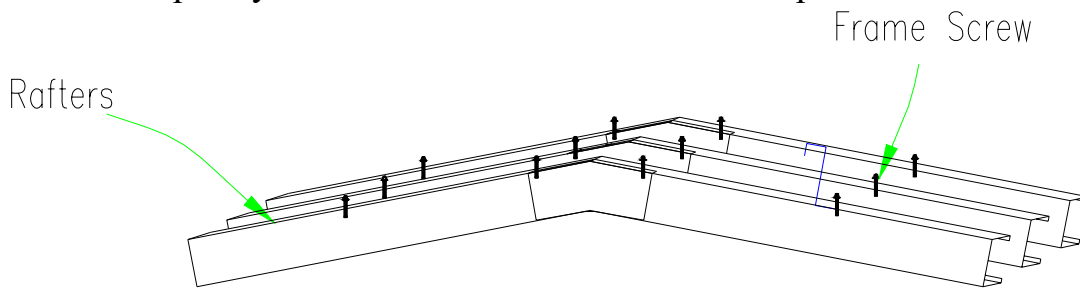
## Tilt up Method

1. The most common type of footing for these buildings is a concrete slab. It is important that your slab or footings comply with the accompanying engineer’s details, and are both diagonally square and level before starting. The slab size must be the exact size of the building. Pier must be to the correct depth, square and cleaned out to remove any loose soil.
- If using footings other than a slab, refer to the supplier for an engineering output for the dimensions of the specific footing required.**





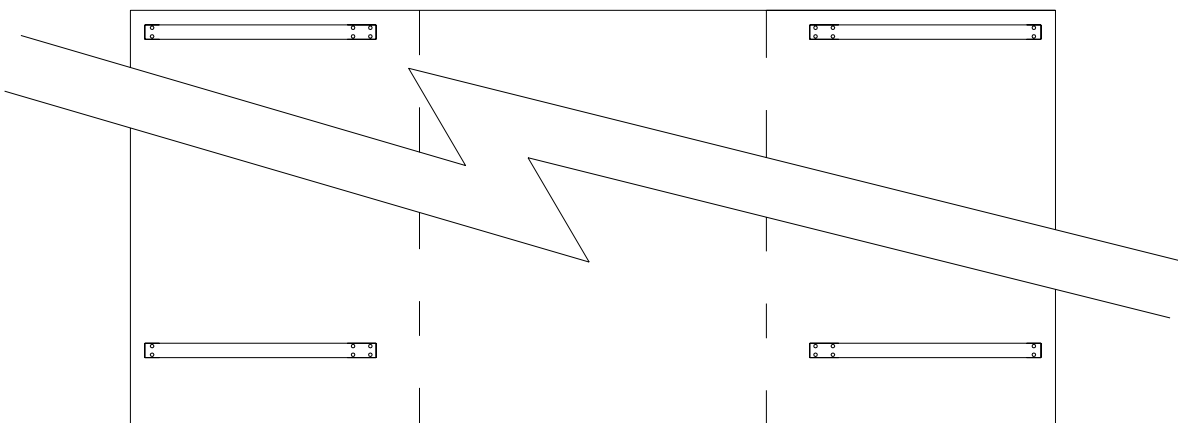
- Using Apex Brackets, join the rafters together in pairs. Stand rafters side by side on the slab and mark the position of the roof purlins with a permanent marker or crayon, (quantity and spacing as per the MultiBuild Structural Printout) and put aside until required. The diagram below shows an optional way of inserting a temporary frame screw at the bottom of each purlin.



## TEMPORARY SCREWS TO POSITION ROOF PURLINS

(Spacings As Per Plans)

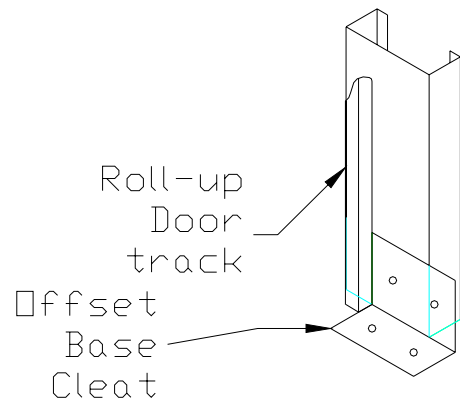
- Lay the lean-to columns flat on the slab or ground, with the “web” face up. These columns are to be laid out across the slab in pairs with the top of the column facing each other. Top of a lean-to column will have more than 2 holes punched in it. Distance the columns apart to suit the bay spacings.



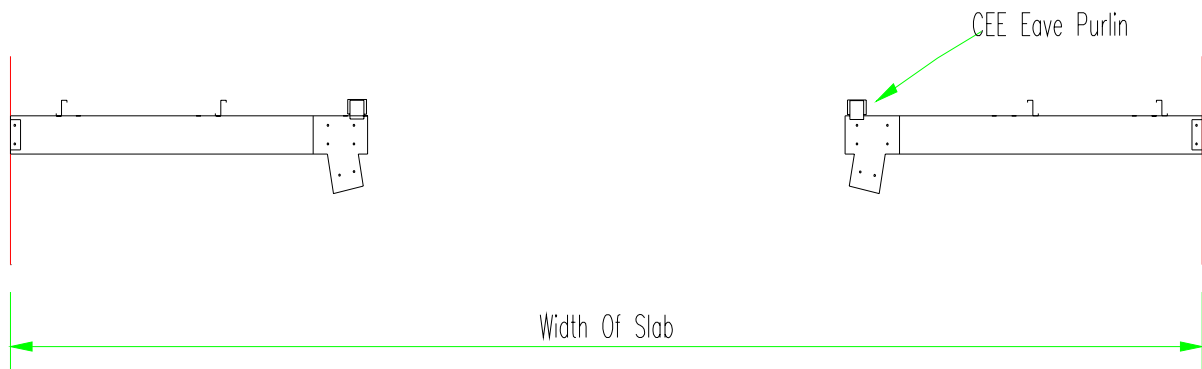
Attach haunch brackets to the web side of the lean-to columns. Ensure that the top of the bracket is flush with the top of the lean-to column. Tek screw or bolt the bracket into place.

- Fix base cleat bracket to the web side of the base of the column. Where double columns are used, base cleats are fixed to the inside of the CEE.

Note: It maybe necessary to offset base cleats on door mullions to allow for door tracks.

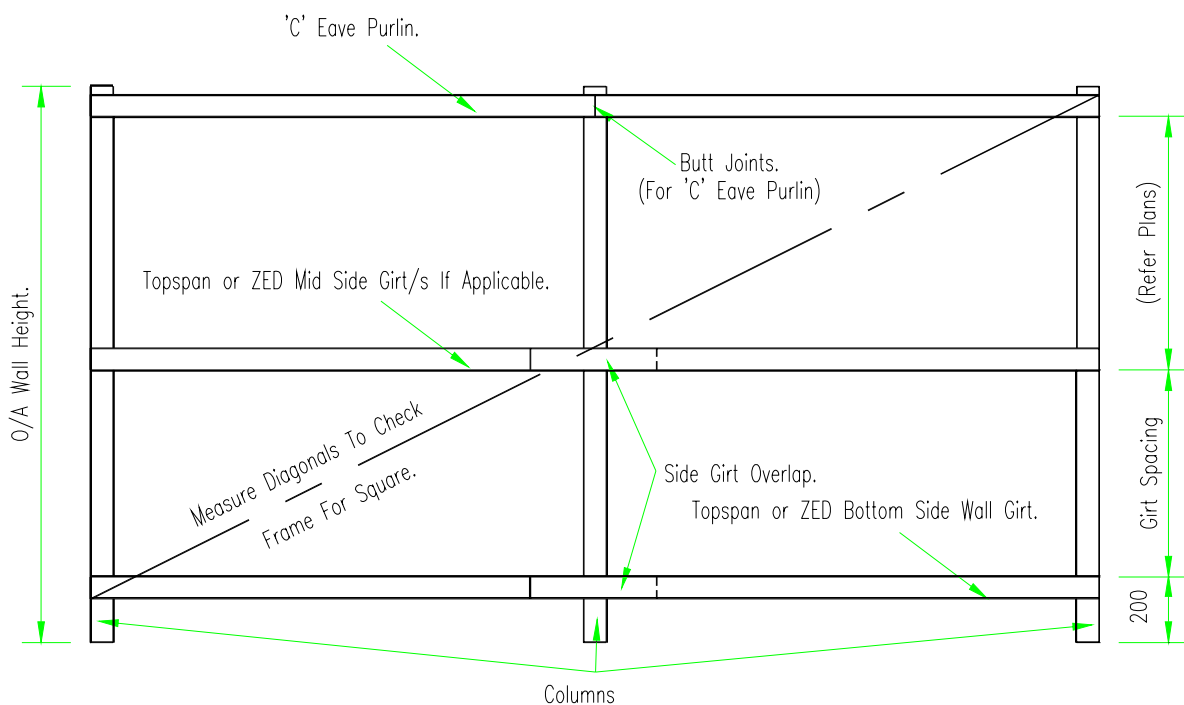


- Attach Eave Purlin Brackets to the top of each lean-to column, using 2 frame screws per side. The Eave purlin should be at the height stipulated in schedule 8. Eave Purlin Brackets come in Single for end columns or for single intermediate columns, and double for intermediate “back to back” columns. They vary in size depending on girt and frame size.



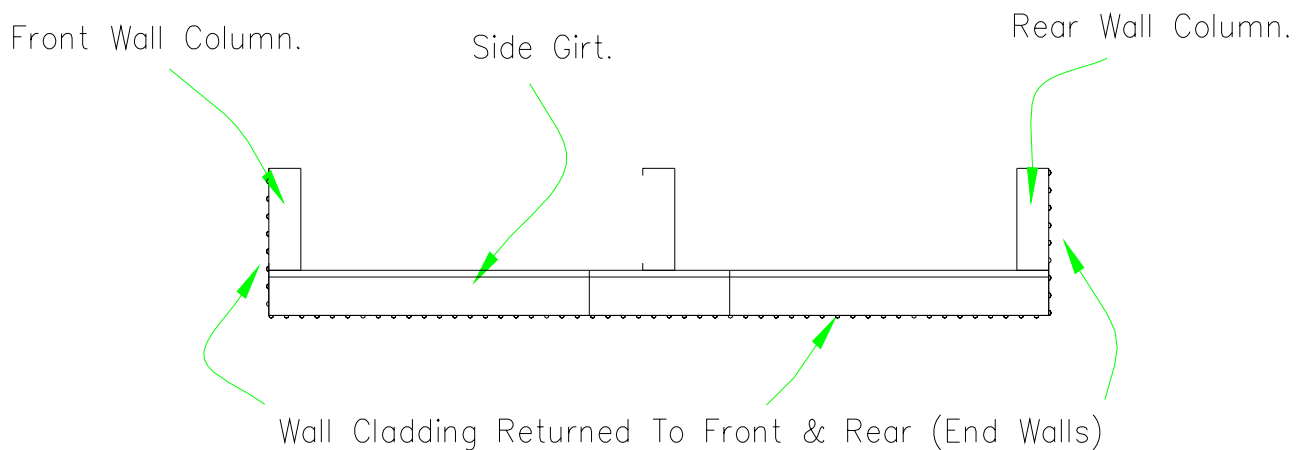
- Eave Purlin is a CEE purlin, which is used as the topmost side girt. The size of the eave purlin is dependant on the size of the frame. Tek screw the eave purlin to the eave purlin bracket using 2 framing screws per connection. (4 teks when butting purlins together)

7. Join sidewall girts together (with overlap required) to suit the length of the building. For ease of handling, it is recommended that the girts be joined together in multiples of two at a time. First row of girts is 200mm from floor level. If a Side Door is to be installed, refer to the schedule covering this topic.  
 Note: The eave purlin which is a CEE is not overlapped. They are ‘Butt Jointed’ together on an eave purlin bracket.

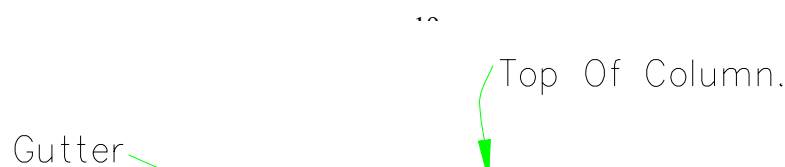


8. Frame screw top girt (being the eave purlin) bottom side girt and intermediate girt/s to the column using one (1) screw per join ONLY at this stage. The end of the girts will be flush with the outside edge of the end columns. I.e. overall length of the slab.
9. Sight along the bottom of the lean-to columns or use a string line to make sure the bottoms of the columns are in a straight line.
10. Measure the diagonals of the wall frame ensuring that both measurements are the same. If not, adjust the wall, without removing the girt, until the measurements are the same.
11. Finish screwing the side girts to the columns using 2 screws per connection.

12. At this stage the wall can be stood in place, anchored into place and propped. Alternately, you can sheet the wall on the ground as described below.
13. Start sheeting side walls, (wall cladding to be a minimum of 35mm below the bottom of the column i.e. below the top of the slab) making sure that the male rib of the cladding i.e. the edge of the sheet with the lip, faces the rear of the building (away from the doors)
14. The quantity of sidewall sheets supplied allows for the sheeting to be folded around both end walls (i.e. front and rear wall) to the inside edge of the column. The sheeting may also be cut at the position where it would normally be folded to allow for the use of corner flashings. It is most important that the off cuts are then used as per usual on the end walls. (Otherwise a shortage of wall cladding may occur.)



15. Using the required number of wall screws per sheet per girt, fix wall sheets, one sheet at a time, using a straight edge to ensure screws are placed in a straight line. Mark and cut last wall sheet to each sidewall, flush to end of wall girts (if corner flashings are applicable) and use off cut around the corner on end wall. Where no corner flashings are supplied, fold wall sheeting around corners. Always start sheeting from door end of building.
16. If a P.A. (Personal Access) Door is to be installed, either on the gable end or side wall, allow the standard overlap on wall cladding, and leave out the wall sheeting where the door is to be positioned, until all other sheets are screwed into position. Install the sheet above the personal door once the height of the door has been established. Do not fit P.A. Door until walls are standing.
17. Fit gutter to ribs of wall sheets with wall screws. Gutters maybe installed level or with a slight downfall to downspout end. Count the number of brackets per

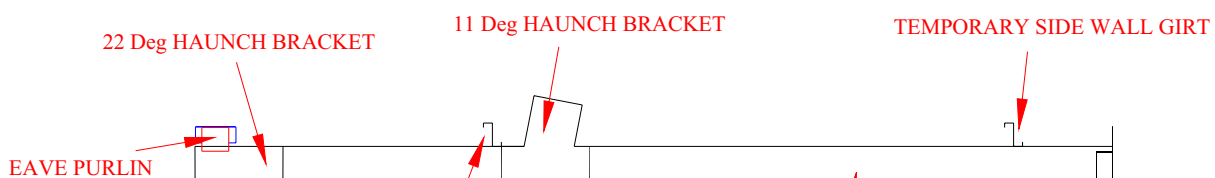


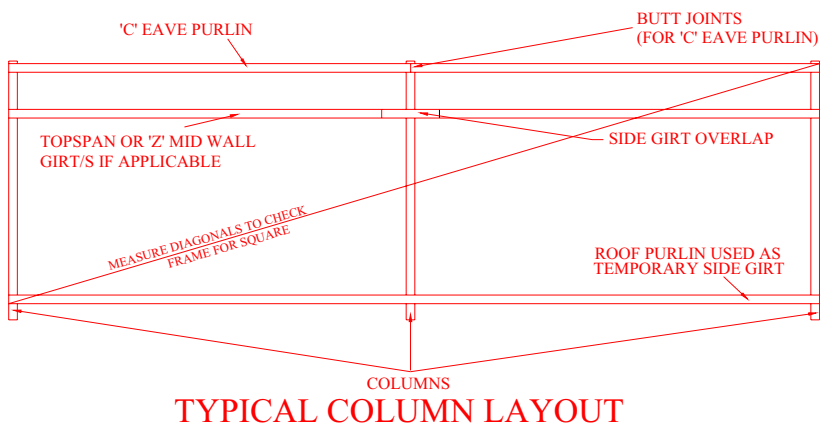
side of building and space brackets evenly.

18. Fit gutter stop ends to the gutter and rivet into position.  
Cut a hole in the gutters to suit the size and quantity of the downspout nozzle as supplied and rivet into position. Apply silicone to the downspout nozzle and stop ends to avoid any leakage.  
Overall length of the gutters is the overall length of the building from outside to outside edge of end wall sheets.  
***Depending upon the length of the structure, gutters can either be fitted now or after the walls are standing.***
19. At this stage, both sidewalls of the structure are usually sheeted and ready to stand. On smaller buildings where space is limited on the floor slab, only one wall at a time can be built.
20. Fit the 22 degree haunch brackets to the top of the centre columns and the 11 degree brackets 'upside down' in a position to correspond with the measurements supplied. The locating holes in the column for this connection need to be drilled on site.
21. Assemble one centre wall assembly at a time. Fit the eave Purlin brackets and the eave Purlin to each of the columns. Fit the other side wall girts.

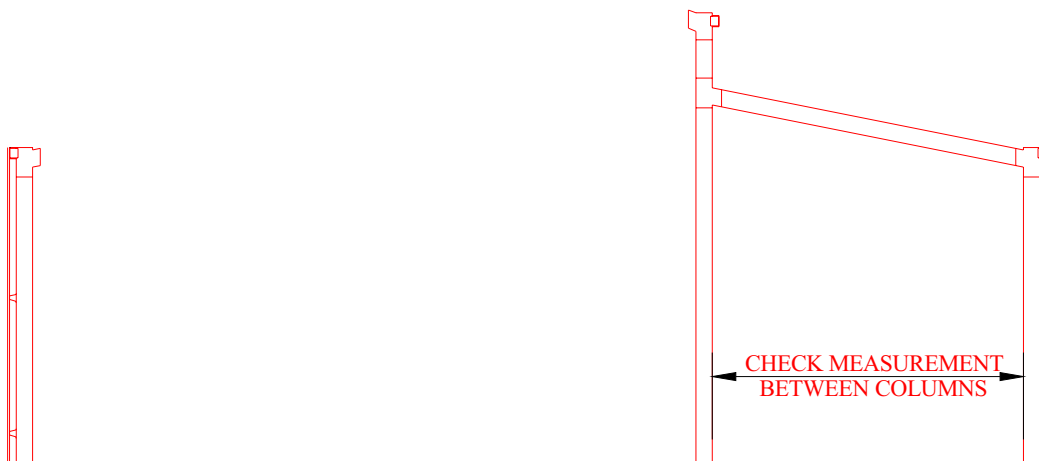
Using some of the roof purlins, tek screw a temporary bottom row of side girts to act as a brace to aid in squaring the wall frame. These roof purlins will be removed once the columns are anchored to the slab.

22. Do not fit any pelmet wall sheets at this stage to the centre walls.





23. Stand and prop the centre wall check measurements between the Lean-to columns and centre columns and drill and anchor to slab.



**STAND MAIN WALL COLUMN AND INSTALL LEAN-TO RAFTER**

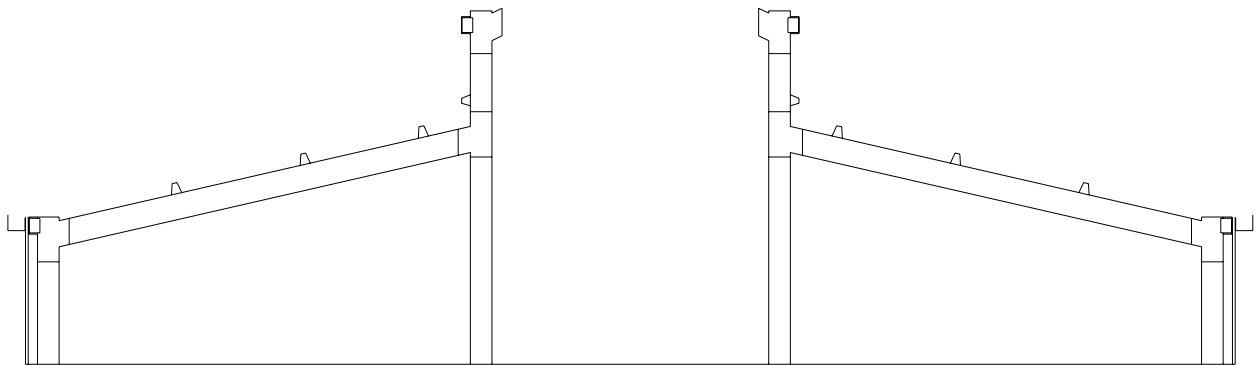


24.Repeat Steps 2 & 3 above for the other centre wall.

25.Check all Lean-to columns and centre columns for plumb, and double check the measurement between the bottoms and the tops of the 2 centre wall columns to be sure that the main roof rafters will fit into place when required.

26.Fit Lean-to rafters into position.

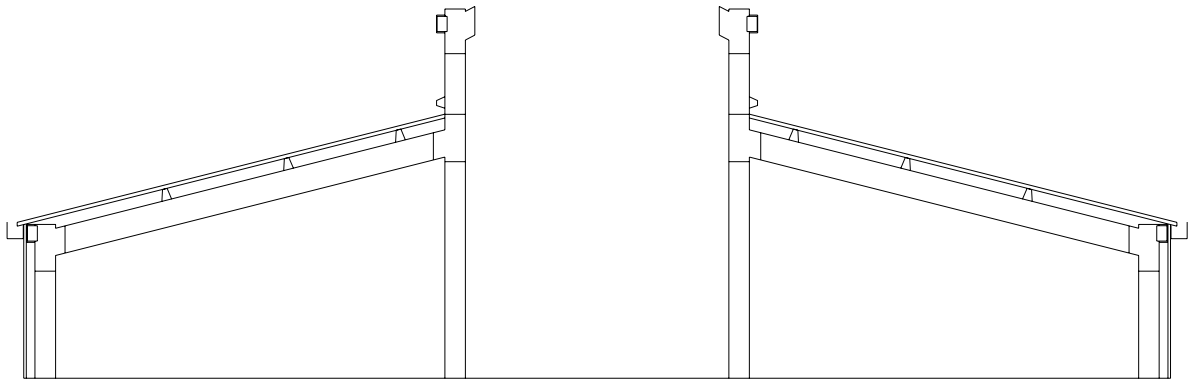
27.Fit roof purlins to both Lean-tos at this stage.



Install Lean-to Roof Purlins

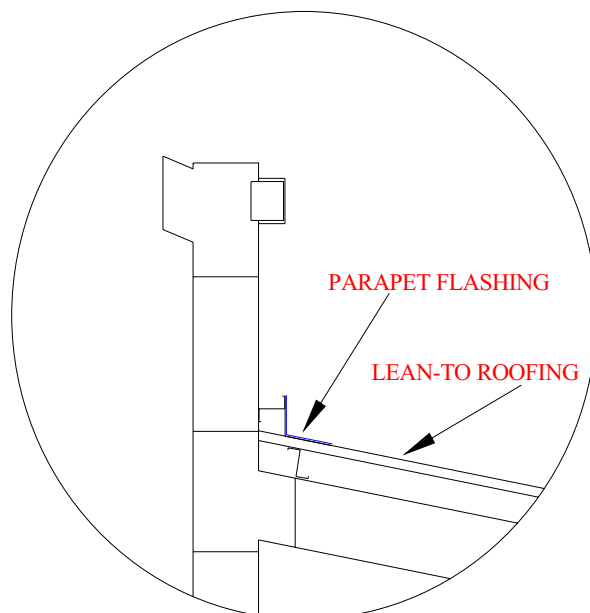
28.Double check end wall columns for plumb.

29. Install Roof Cladding to both the Lean-to roofs.



Install Lean-to Roof Sheeting

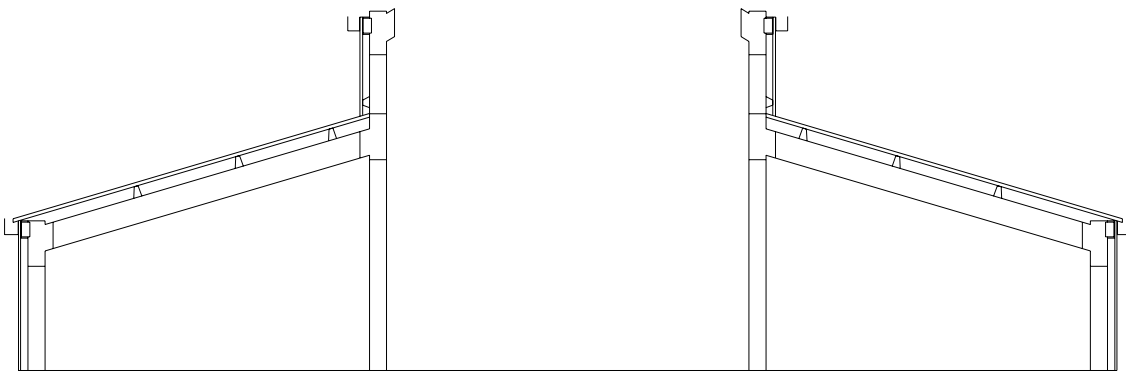
30. Install Parapet Flashings to Lean-to roofs (see diagram.)



**INSTALL PARAPET FLASHING**



31. Attach Pelmet wall cladding to the centre wall on both sides of barn.



### **INSTALL PELMET CLADDING & GUTTERS**

32. Fit Gutter Brackets and gutters

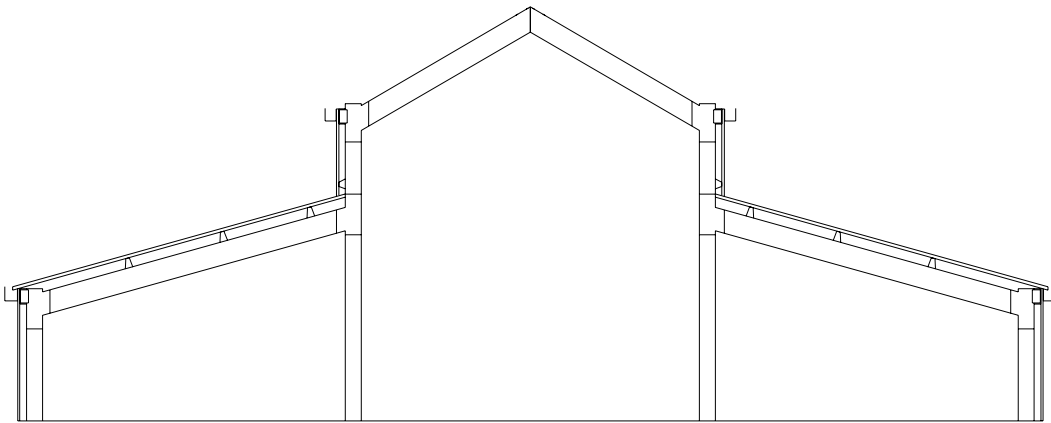
(It is advisable to allow a slight fall towards the centre of the barn on main roof gutters only. i.e. not on the Lean-to sidewalls.)

33. Attach downspouts and make up spreaders to disperse the main roof rainwater.

34. This is done by cutting a length of downspout approximately 500mm long, drilling holes along one edge to disperse rainwater, and fitting at right angles to the bottom of the downspout to the main roof only. A hole to suit the dimension of the downspout will need to be cut in the spreader, half way along its length. This will allow the water from the main roof to be discharged onto the Lean-to roofs and then into the downspout off the Lean-to roofs.

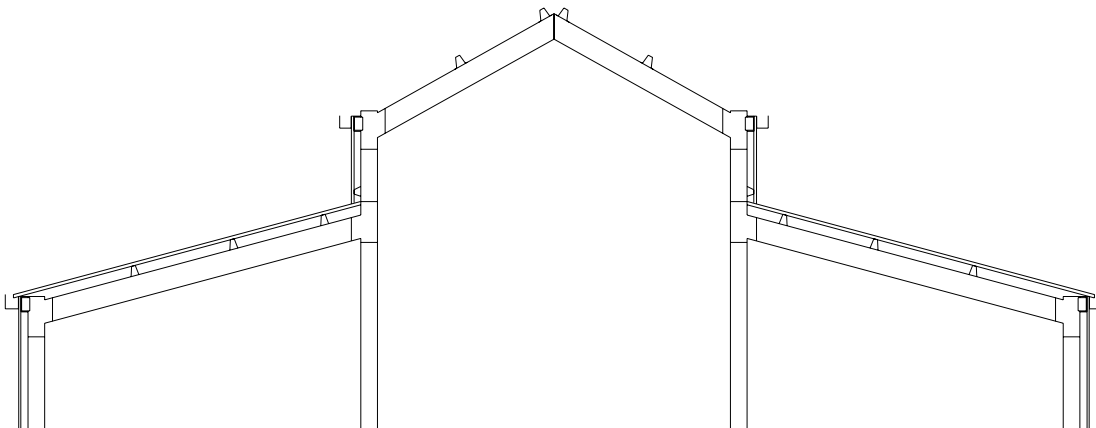
35. Fit main roof rafters. This can be done by having one person standing on each Lean-to roof, and another person in the middle of the main building, to pass the rafters up and support them while the persons on the Lean-tos fix them into position.

BEWARE: IT IS ADVISABLE TO PLACE PLANKS OR SIMILAR ON THE LEAN-TO ROOFS TO AVOID 'KINKING' OF ROOF SHEETS. PLACE SOME FOAM RUBBER OR SIMILAR UNDER PLANKS TO AVOID SCRATCHING OF COLOURED ROOF SHEETS.



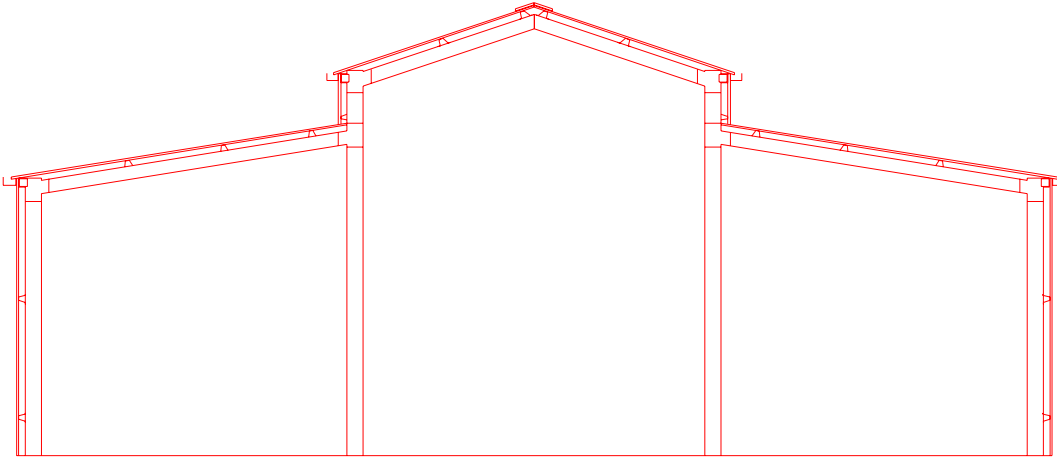
## INSTALL MAIN ROOF RAFTERS

36. Install the main roof purlins.



## INSTALL MAIN ROOF PURLINS

37. Install the roof cladding to the main roof of the barn.



## FINISHED PORTAL FRAME WITH CLADDING

38. Install the Ridge Cap to the main roof.
39. Fit the end wall sheathing starting from the inside of the end wall lean-to columns. (where the side wall sheathing finished)
40. Trim the end wall sheathing level with the top of the rafters.
41. Fit Gable Flashings. Fit the Lean-to gable flashings first, followed by the main roof gable flashings.
42. Fit Personal Access Door/s, Doors etc.

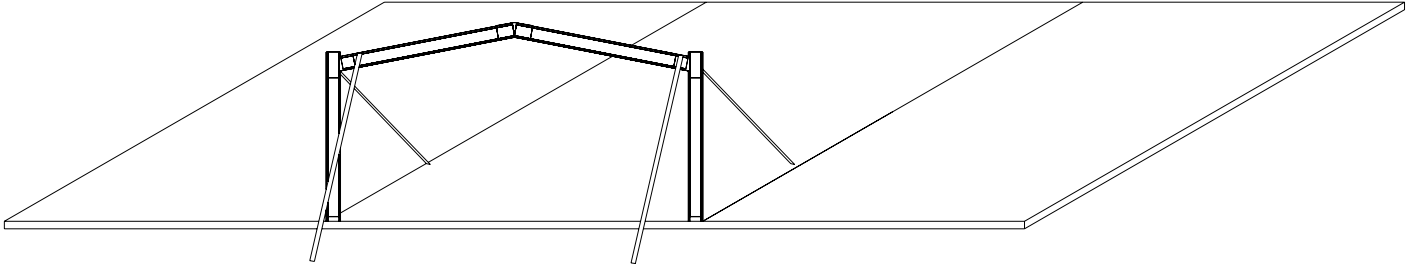
## **Part 2 – Frame First Method**

**Before commencing the erecting of the barn, it is an idea to set out the locations of each column using a chalk line to ensure all columns are in a straight line. The slab size is the neat measurement between wall sheets (i.e. overall measurement from outside to outside of wall girts.)**

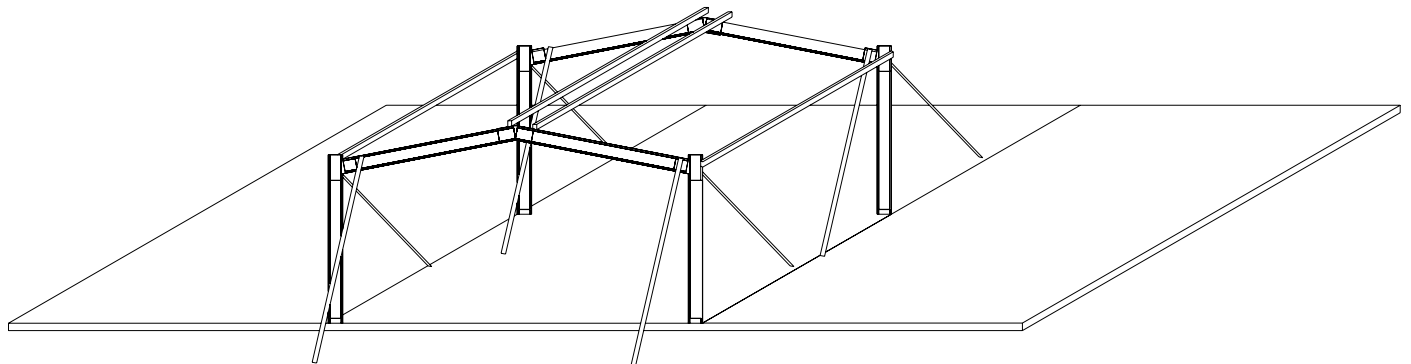
**Note; that this method is a lot slower than the tilt up method, but is better for larger structures or in windy conditions. Most procedures covered in Part 2 have been described in Part 1. Please read this section first.**

1. Make each of the centre portal assemblies on the ground. Check them for square and bolt them together.  
TIP: Line up the bottom of the columns with the edge of the slab, and measure the diagonals for square. Trace around the completed portal assembly once it has been squared up and remove from this location. You now have a template to make the subsequent assemblies.
2. The first of the centre portals is positioned on the edge of the slab, or where the edge of the slab should be if other foundations are being used. Stand the assembly

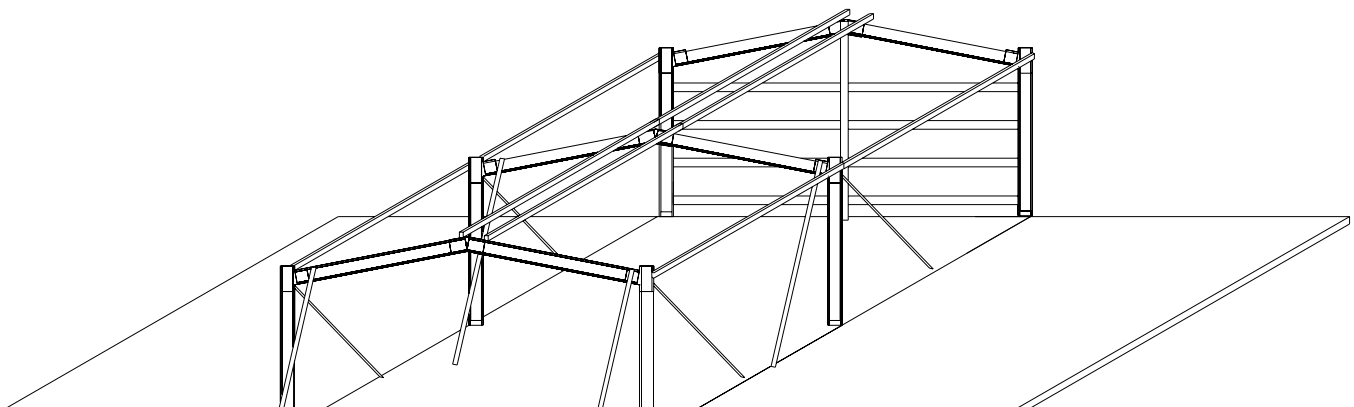
and prop securely. Anchor the base cleats to the concrete with the anchor bolts provided. Use a chalk line to mark the alignment of the remaining columns.



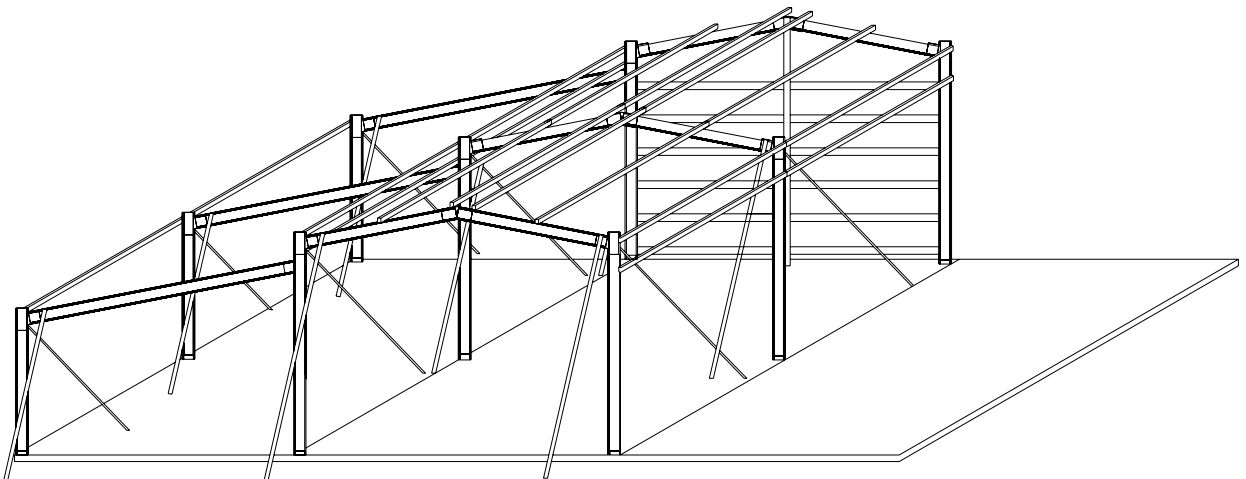
3. Mark out the location of the second portal assembly. Stand and prop in position. Insert the anchor bolts. Install the eave purlins and a couple of roof purlins to help steady the structure.



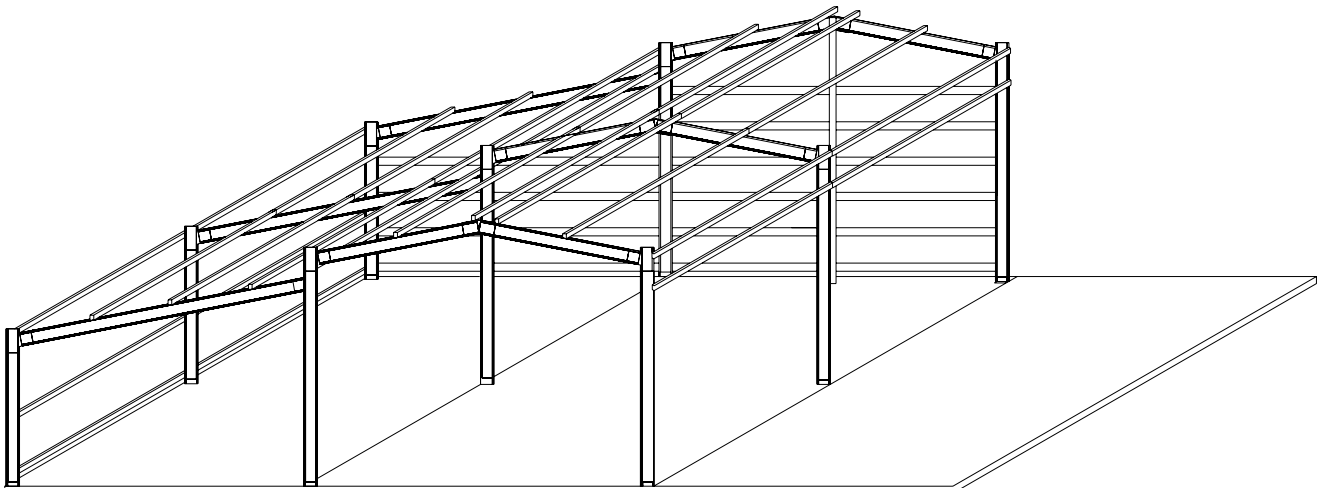
4. Install all subsequent portal assemblies which is dependant on the length of building and bay size until rear portal is completed. Install the rear wall mullion/s if required and install the end wall girt brackets and end wall girts. This will help stabilize the building.



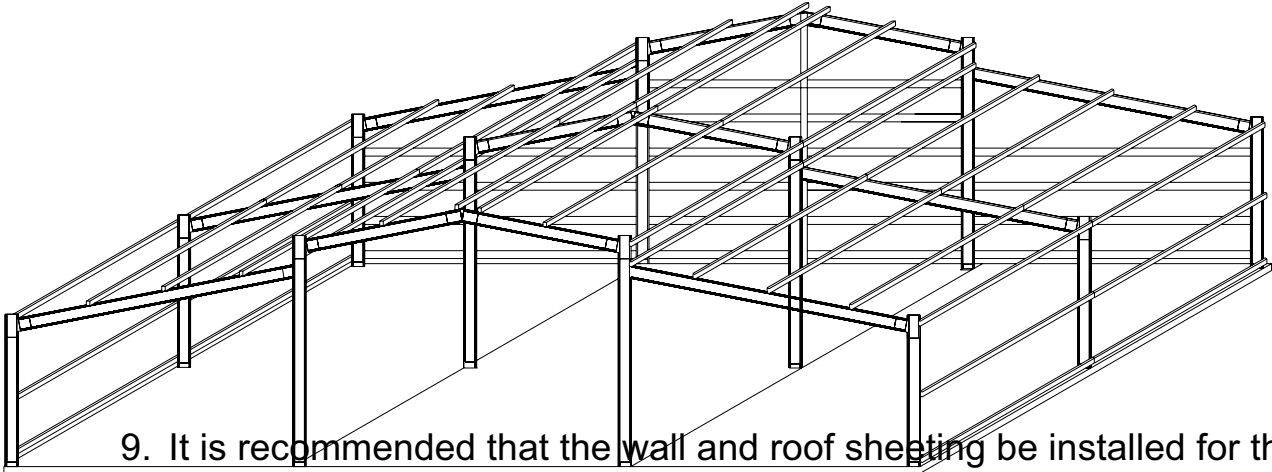
5. Install the remainder of the roof purlins at the required spacing and insert the side girt that is located at the bottom of the purlin wall.
6. Inset the lean-to columns and rafters for one of the building.  
Note, as per the centre section of the building, the columns are inset the depth of the side girt in from the edge of the slab. Prop these assemblies until secured.



7. Insert the roof purlins, side girt and end girts for the installed lean-to at the required spacing.



8. Repeat the previous step for the other lean-to.



9. It is recommended that the wall and roof sheeting be installed for the completed portion of the building. This will keep the building square and protect the incomplete building from wind damage.

10. Wall sheeting is completed first, followed by the lean-to roofs. This will give easy access to the pelmet wall and the centre roof area of the building. Gutters, if used are installed, together with the downspout nozzles and downspouts.

11. Complete the front wall frame.

12. Insert the ridge cap and rake flashings. Trim around any door openings and install doors.

13. Brush down the entire building with a soft broom, to remove any swarf (Metal shavings) that might discolour the painted finish.

## Schedule - 1 Tools

**The following is a list of basic tools required:**

1. Hammer
2. Small Tape Measure
3. Long Tape Measure
4. Quick release clamps
5. Snips
6. Open End Wrenches
7. Crayon or Permanent marker.
8. Pencil
9. Score and Snap Knife for scribing and folding wall sheets
10. Chalk line
11. String line



12. Water level or Auto Level
13. Builders level
14. Square
15. Screw Drivers
16. Tek Screw Gun or Electric Drill with Clutch with a 5/16" Hex Head and a wafer tek bit to suit wafer screws. (If supplied in kit)
17. Electric Drill (a battery drill will also be very handy)
18. Nibbler OR
19. Angle Grinder
20. Silicone and Calking Gun or alternately 2 tubes of Gutter Silicone.
21. Multigrips or pliers.

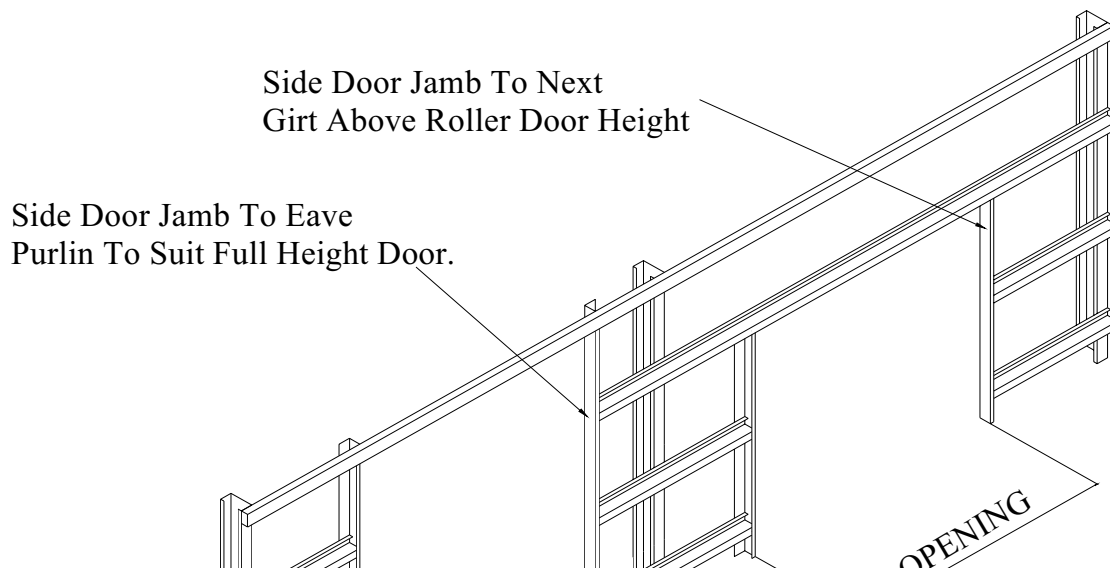
If using an angle grinder BEWARE.

Not only can these be extremely dangerous to operate, they leave 'swarf' on zinc and colorsteel cladding, which can cause rusting and void any warranties. Be sure to thoroughly sweep any 'swarf' off with a soft hair broom. DO NOT USE NEAR ANY COLORSTEEL FENCING, MOTOR VEHICLES OR GLASS.

*If using an angle grinder be sure to wear safety goggles and follow all safety regulations in relation to the use of power tools.*

## Schedule 2- Installation of Side Door.

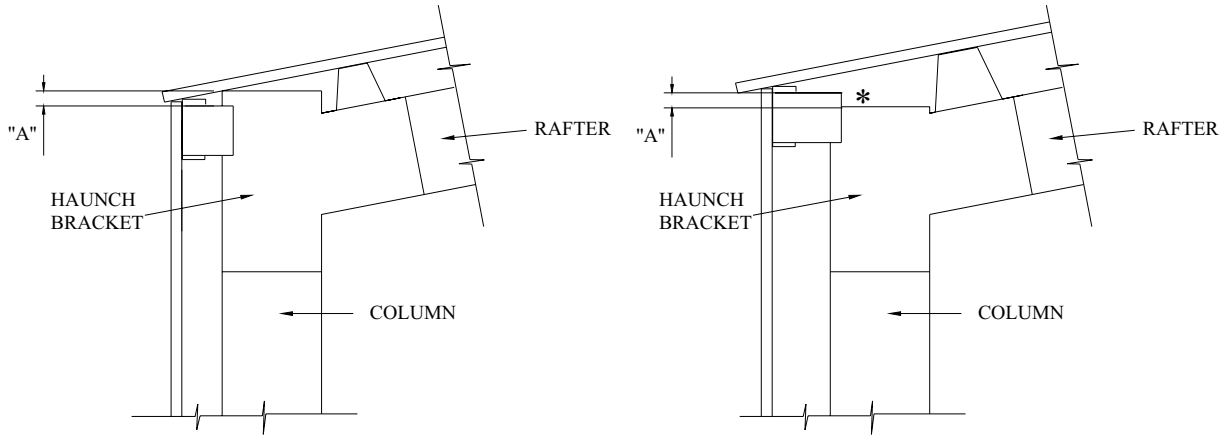
1. Opening size for the side door will be the nominal width of the door. Cut the wall girt to allow for the width of the door to be installed.
2. If there is a side girt between the top of the door and the top eaves purlin then the jamb will suit this length. IF THERE IS NO GIRT ABOVE THE OPENING, (i.e. between the top of door and top eaves purlin) then the length of the jamb will be to the top eaves purlin. It is to be attached to the eave purlin or side girt whichever is applicable.



3. Fit L/H and R/H side doorjamb to the next side girt above door opening if there is any. If there is no side girt above the opening, then it is to be attached to the eave purlin. Cut corners of the jamb vertically to the required height, fold back and screw to the underside of the eave purlin. Screw the two upright (uncut) legs to both sides of the eave purlin. Screw the base cleat to the bottom of doorjamb and screw the doorjamb at intersection of girts, which were cut off.
4. Fit the CEE section door header between the jambs using girt brackets and screws. Height of door header is equivalent to the height of the door opening required.
5. Side doors can be located anywhere between two sidewall columns. If the door should be offset to either the Left or Right of the Bay, allow a minimum of 4” for the door brackets, from door opening to inside face of column.
6. Follow manufacturer’s installation supplied with the door.
7. Fit wall sheeting above and around the opening.
8. Trim the opening.



## Schedule 2 - Eave Purlin Bracket Location



DETAIL - 1

DETAIL - 2

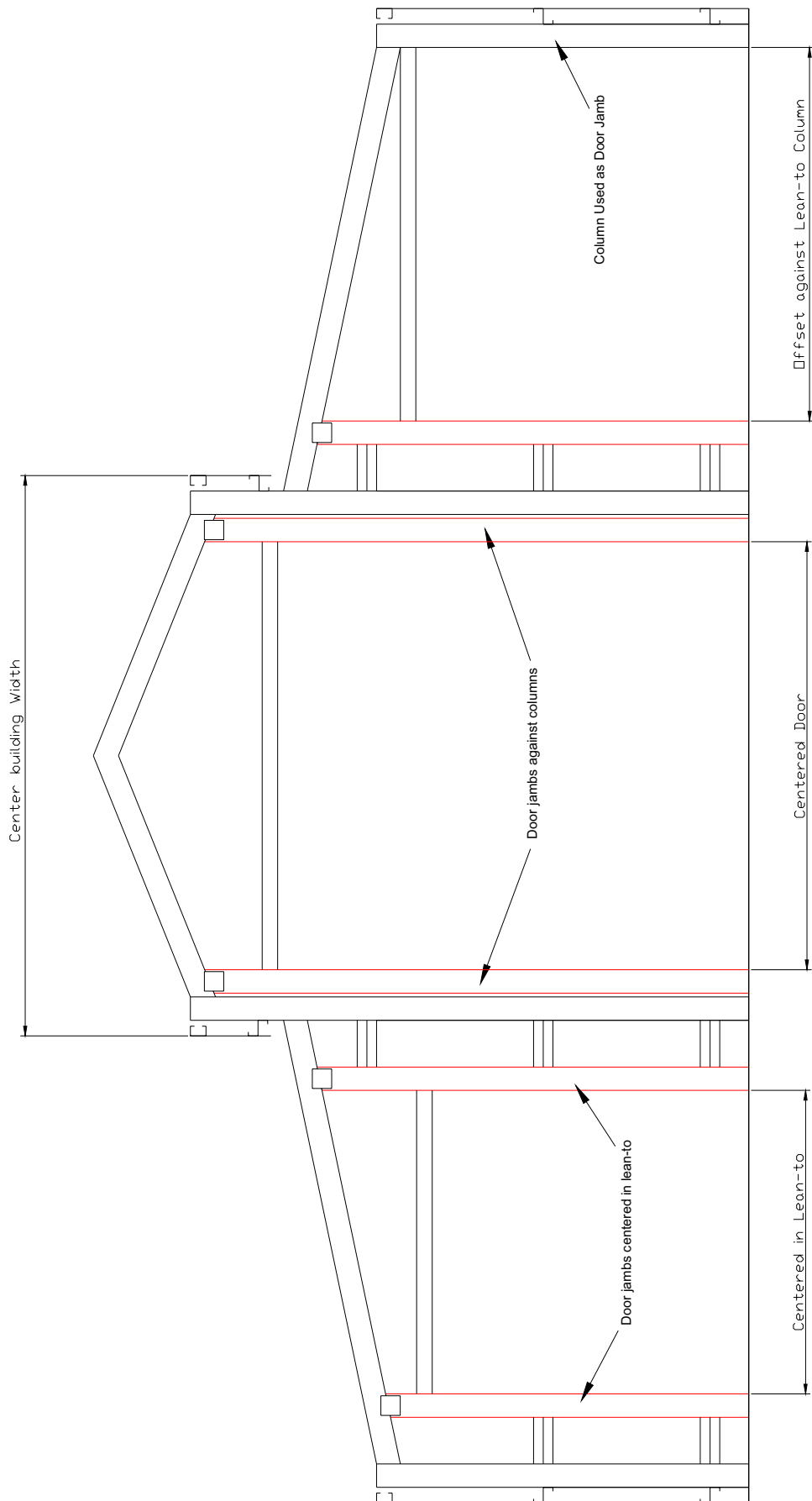
\* NOTE: FOR ALL MINUS DIMENSIONS SEE DETAIL - 2

	TOPHAT 64					TOPHAT 120				
PITCH	11	15	22	30	45	11	15	22	30	45
C150	21.5	27.5	31.5	45.5	72.5	-23	-14	-5	16	52
C200	21.5	26.5	35.5	45.5	72.5	-22	-14	-0	16	52
C250	-	-	-	-	-	27	35	51	84	135
C300	-	-	-	-	-	38	47	63	84	-
	"A"					"A"				

	'Z' PURLIN 100					'Z' PURLIN 150				
PITCH	11	15	22	30	45	11	15	22	30	45
C150	-21	-14	-7	13	45	-62	-52	-41	-16	24
C200	-20	-14	2	13	45	-61	-52	-35	-16	24
C250	-	-	-	-	-	-12	-1	18	53	110
C300	-	-	-	-	-	-1	9	28	-	-
	"A"					"A"				

### Schedule 3 - Installation of end door.

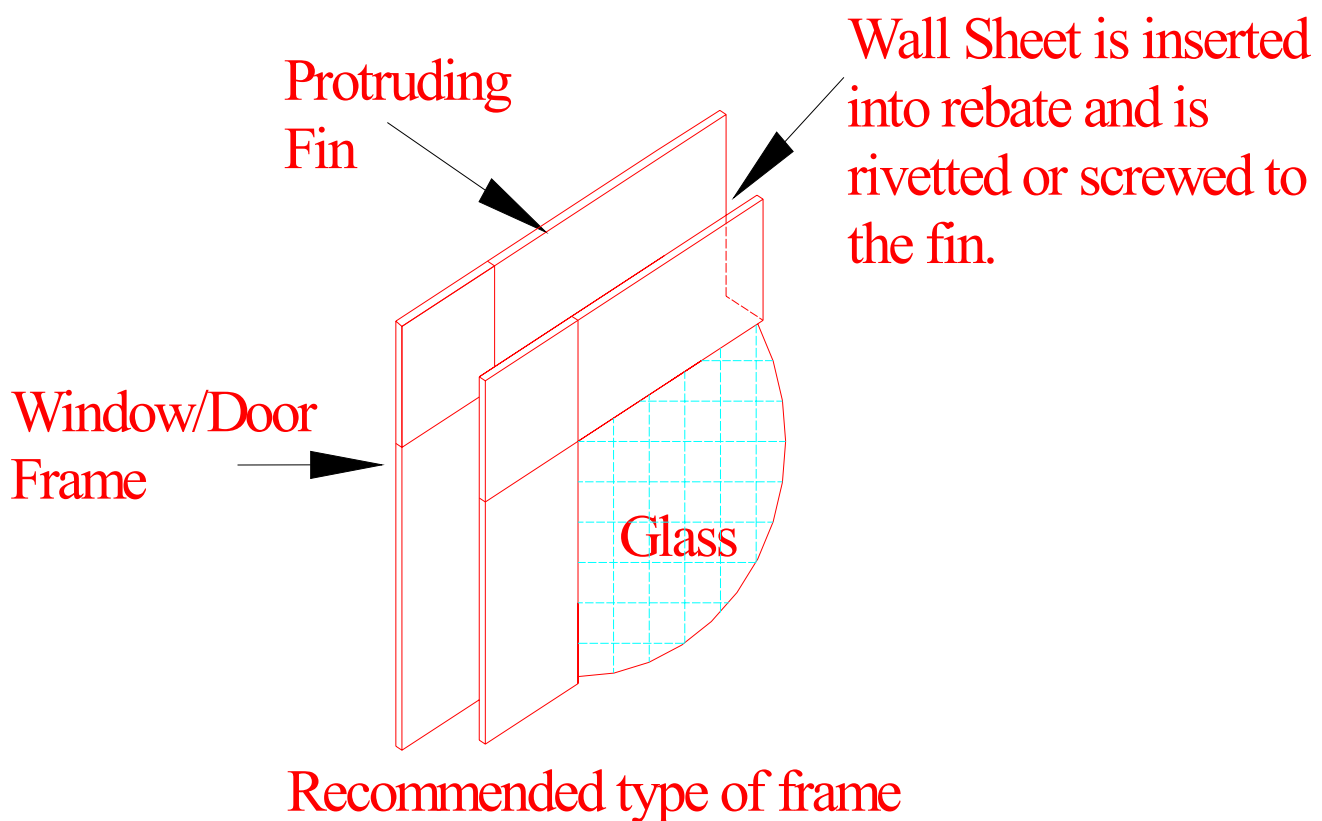
1. Opening size for the end door will be the nominal width of the door. Fit L/H and R/H end wall doorjamb, usually CEE's to the underside of the rafter with mullion fixing angle. (Note: For exact fit roller doors to end wall, only one doorjamb is required, between the doors.) The orientation of the end wall doorjamb is in the same manner as the columns of the structure. The distance between the jambs is the nominal width of the door. Fit base cleat to bottom of column.
2. Attach the CEE section door header between the jambs above the door opening with an angle bracket and screws. Height of door header is equivalent to the height of the door opening required, but will usually be at a maximum level of to the bottom of the haunch brackets. The door header is flush to outside face of the doorjamb. Level across to the other jamb. Web side of CEE section faces outside of the structure.
3. End wall door/s must be located as per plan, as end wall doorjamb are usually cut to required size.
4. Follow manufacturer's installation instructions supplied with the door.
5. Fit wall sheeting above and around the opening.
6. Trim around the opening.



## Schedule 5 – Fitting Windows and Sliding glass doors.

The windows and glass sliding doors used have a reveal or fin protruding from the center of the window frame which extends for approximately 1 ¼”.

### Vinyl or Aluminum Window\Door



### Recommended type of frame

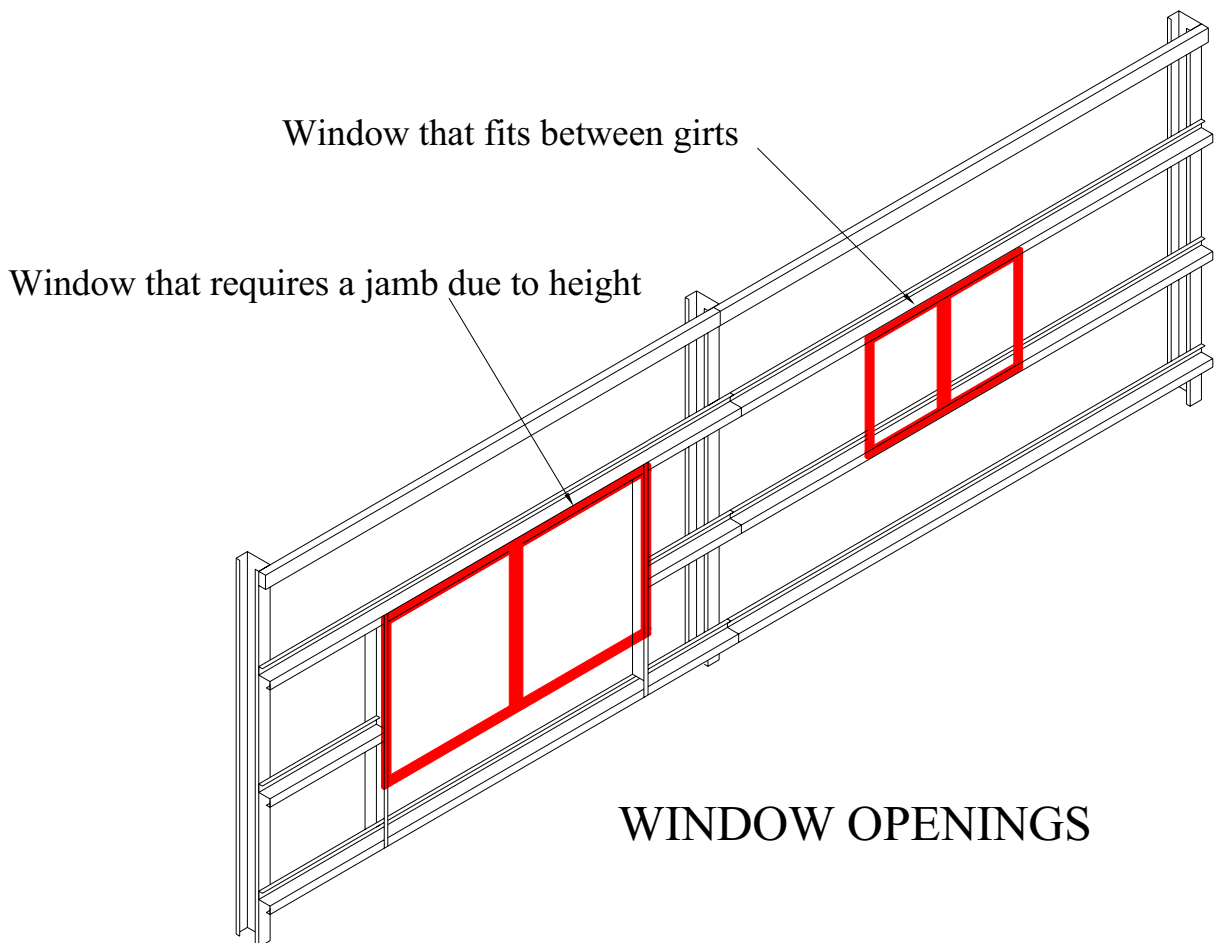
Windows and glass sliding doors may be installed in the following ways:

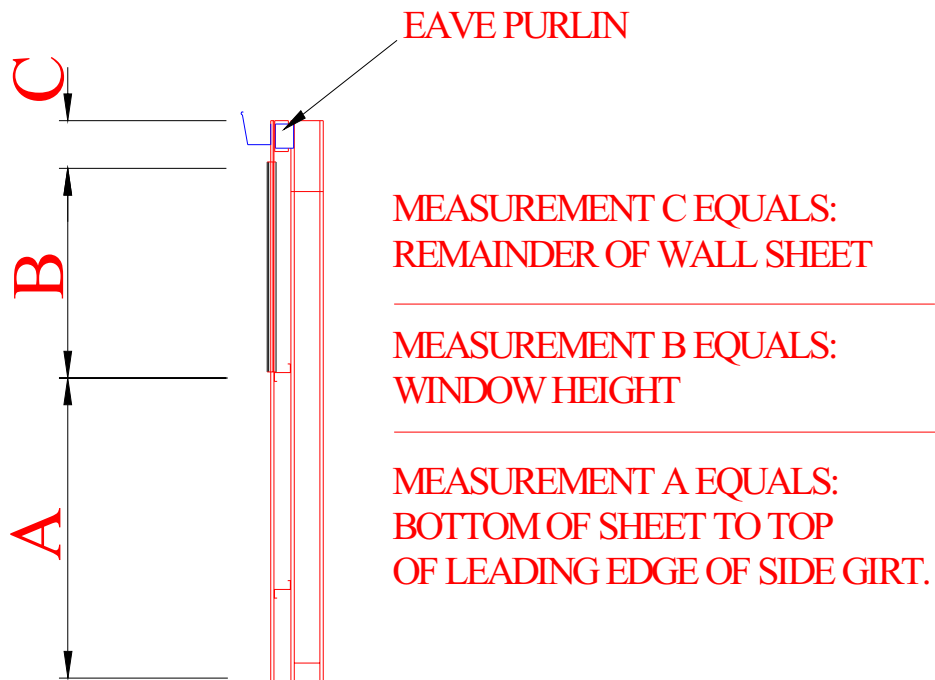
1. Providing that the height of the window is not greater than the spacing between the girts, the bottom flange of the window can be attached to the girt found at about 4' from the ground. The protruding fin is attached directly to that girt.
2. The top of the window is attached to either the next girt above the window, the wall sheeting if close to a girt, (within 6") or directly to the eave purlin in particular instances.



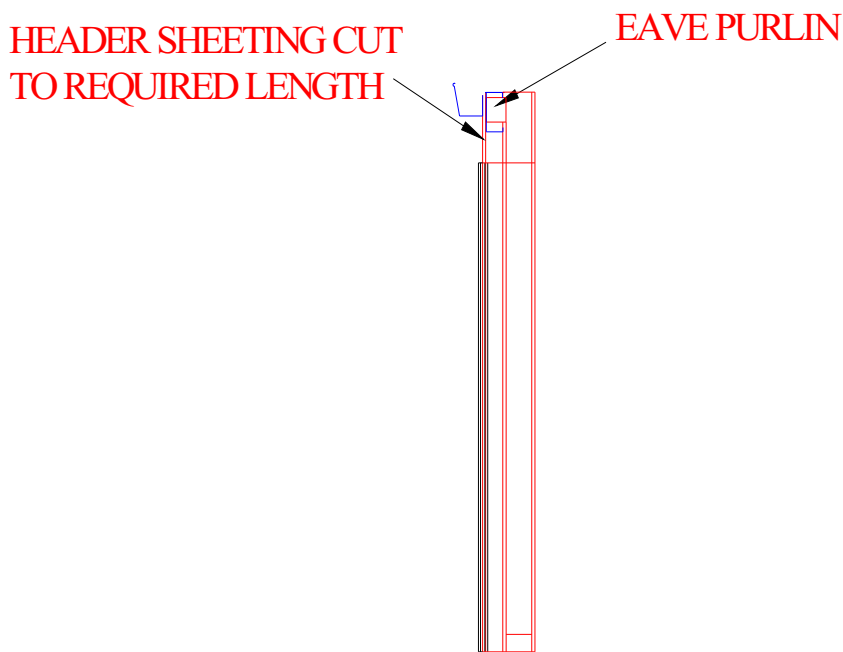
3. Windows that are higher than the girt spacing and glass sliding doors will require side door jambs to be fitted so that the side flanges may be attached to these jambs for rigidity. Measure the width of the door or window and allow a slight clearance so as not to break glass when installing into opening. Install the jambs as per the instructions found in Schedule 2. Note: windows that are higher than the spacing between the girts will only require a jamb between the girt above and below the window to form a frame. See diagram below.
4. Trim sheeting to fit around the window or door and fasten to window or door reveal with wall screws or rivets. These will need to be measured and cut on site.

**Note: on end walls, the sheets above the window or door will need to be measured and cut to the required length with the required angle to suit roof pitch.**





## WINDOW INSTALLATION



## SLIDING GLASS DOOR INSTALLATION