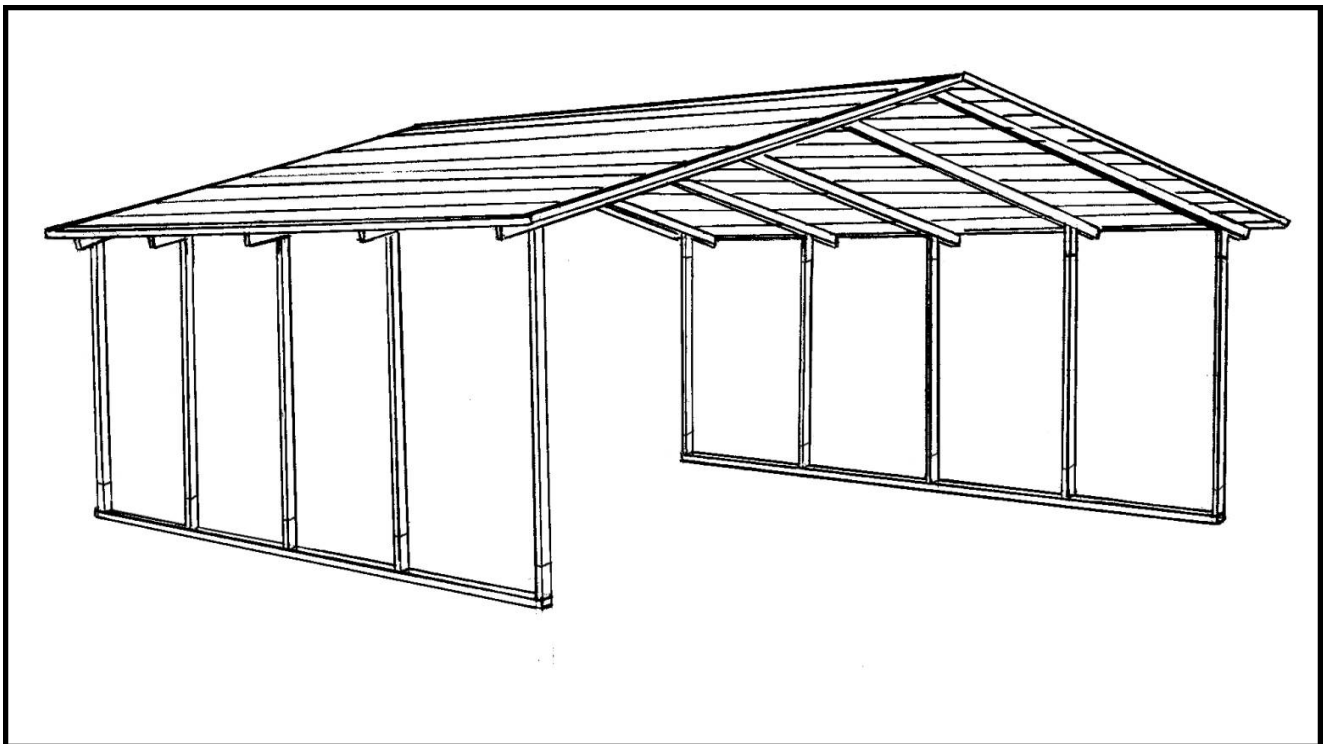




INSTALLATION INSTRUCTIONS

13' X 20' X 6' SUBURBAN SERIES CARPORT

FRAME SIZE: 13'-4" X 18' x 6' (2" SQUARE TUBING)



Our unique assembly process quickly transforms the individual pieces into a finished structure that will give you a lifetime of service. Great care has been taken to ensure complete satisfaction with your purchase. In the unlikely event that there are any missing or damaged parts, or if you simply need technical assistance, please call our Toll Free Hotline at 1-800-900-7222 and your questions will be addressed promptly. Thank you for choosing the VersaTube Building System.

SAFETY AND HAZARD INSTRUCTIONS

CAUTION:

Read the following safety warnings and all instructions in their entirety prior to installation. If you have questions or are missing any parts, contact Mid-South Metal Products, Inc. (DBA, VersaTube Building Systems) Customer Service at 1-800-900-7222 before proceeding.

WARNING:

Metal parts may get hot when exposed to high heat or direct sunlight. Avoid contact with skin and wear protective gloves and clothing to prevent the possibility of burns.

WARNING:

Do not stand or walk on the structure. It is not designed to support human weight or the storage of materials on the roof. Collapse of the structure may cause serious injury due to weight of components.

WARNING:

Avoid installation on windy days as wind may create hazards during the installation process. Wind may blow material or cause partially installed components to collapse prior to being secured or fully installed. The weight of the components or structure may cause serious injury if it should collapse.

WARNING:

Metal conducts electricity and electrical shock hazards exist since the structure is made of metal. During installation or storage, keep the structure and all components away from electrical sources. Make sure that your selected location is away from power lines, underground cables, and any other source of electrical power. Serious injury or even death may occur if contact is made with electrical current.

WARNING:

If the structure is moved once it has been installed, be certain to inspect all components and conditions and follow each and every step of these instructions to make certain that the structure is securely anchored, properly installed, and aligned. Failure to follow these steps could lead to collapse of the structure and may result in serious risk of injury.

WARNING:

Be careful of the sharp edges which may cause cuts or lacerations. Wear protective work gloves and suitable clothing for protection and always take care when handling metal parts.

WARNING:

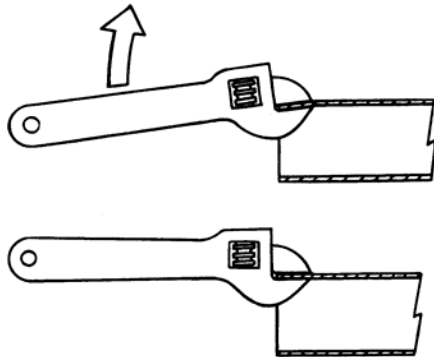
Always wear safety glasses or goggles when installing self-drilling screws.

ATTENTION:

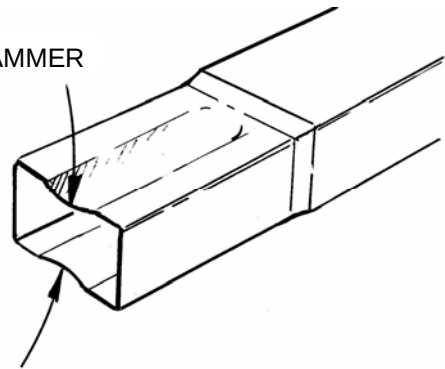
IT IS IMPORTANT THAT YOU READ THE FOLLOWING NOTE BEFORE STARTING THE ASSEMBLY OF YOUR CARPORT

NOTE:

If during the installation process you have difficulty fitting frame components together, use an adjustable wrench to open the end of the receiving tube as shown below. Close wrench down around bent portion of tube and bend wall outward. It may also be helpful to hit the center of the swage at the end of the tube to create more of a lead.



STRIKE WITH HAMMER



Torque Setting

Cordless (14 or 18 volt)
Or Electric Screw Gun
With 5/16" Socket Drive



Safety Goggles
Or glasses



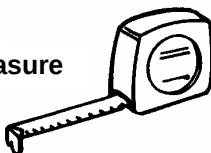
Work Gloves



Pencil/Marker
And Felt Marker



Tape Measure



Hammer



Tin Snips



What you'll need

Chalk Line and
Mason Line or
Nylon String



Level



2 Step Ladders



One must be able to comfortably reach the peak of the building 10' to 16' high depending on building width and height. An extension ladder can also be helpful when installing sheet metal.

Shovel or
Post Hole
Digger



Items you may need

Adjustable wrench



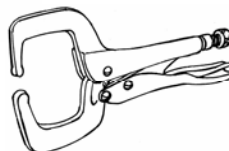
Masonry
Drill Bit
1/2" x 8"
Drill depth



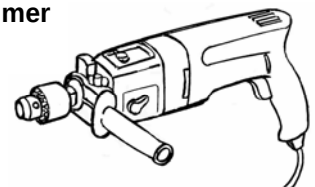
Wrench, 3/4" & 1/2"



Vise grip or other
quick clamp



Hammer
Drill



Motor Cycle or
Ratchet Straps



(May be required to pull frame plumb.)

BASIC CARPORT PARTS LIST

END BASE RAIL 2" x 2" x 75" rail with 2 welded vertical pins, swaged one end. QTY. (4), part # 74-4500

CENTER BASE RAIL, 2" X 2" X 75" rail with 1 welded vertical pin in center. QTY. (2) part # 74-4000

SIDE POST, 2" x 2" x 64" tube swaged at one end. QTY. 10. Part # HE-5-2

EAVE CORNER, Welded Eave Corner. QTY. 10. Part # 746-EC25

PEAK, 2" x 2" x 72" with one bend in the center. QTY. (5) Part # 74-6000

RAFTERS, 2" x 2" x 38 3/8" tube swaged both ends. Part # 746-2100, QTY. 10

ROOF SIDE EDGE TRIM, J-TRIM 10' long, QTY. 4 pc

ROOF FRONT & BACK EDGE TRIM, Angle Trim 2" x 2" x 10' long. QTY. 4

BUTYL TAPE, Length will change depending on the size of the carport. Part # 71-9401

PLASTIC END CAPS, QTY. (10) Part # 9901-EC-2

FRAME SCREWS, # 12 hex head, Self-Drilling screws. 70 pack #71-9999 & 40 pack # 71-9999-A. QTY 1 of each

SCREWS FOR ROOF METAL & TRIM, #12 X 1" painted self-drilling screws with rubber washers. QTY. 160

VERSATUBE ANCHORS,

REBAR ANCHOR, used with concrete. #4 x 30" rebar with welded top plate. # ANC-24 Use 1 per post. QTY. 10
Concrete Wedge Anchors 1/2" x 5 1/2" are not supplied.

SHEET METAL PANELS, 29ga. R-panel 10' long. QTY. 10

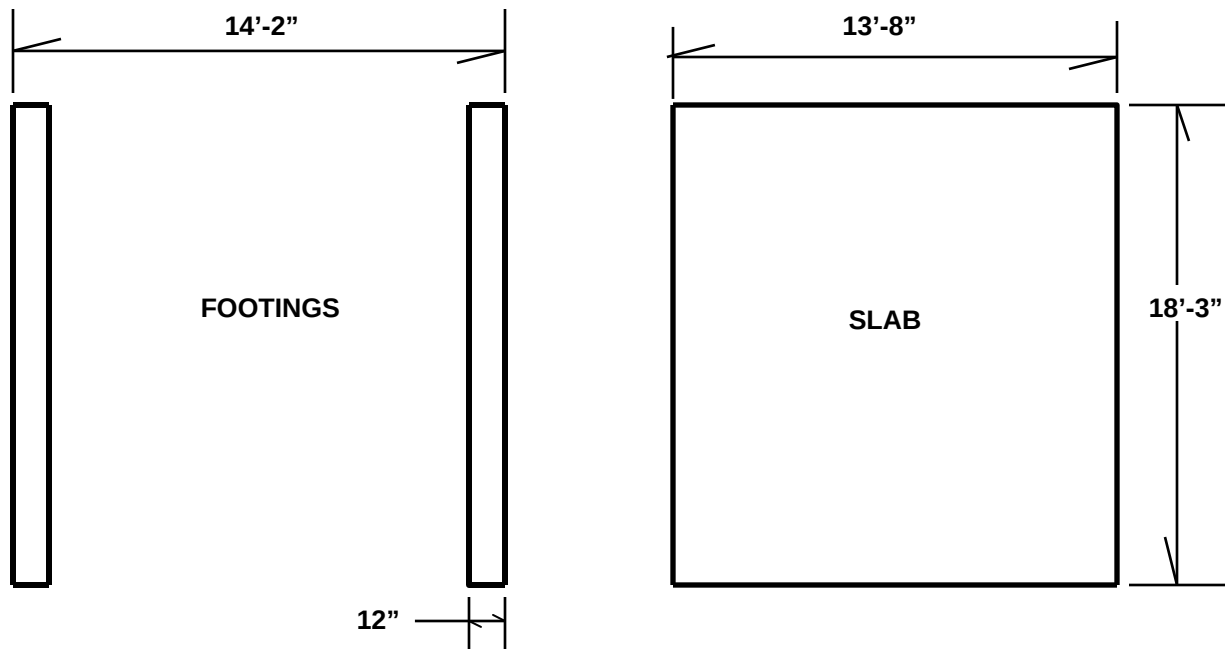
SIGHT PREPARATION FOR CARPORT

The Versatube carport frame is designed to be placed on the ground, concrete footings, or a 4" concrete slab. In either case, the mounting surface should slope back to front or front to back 1/8" per foot (about 2 1/4" on a 18' frame). The slope will allow water to run over the roof metal lap joint and not gather on the roof. If water runs into the lap joint your roof may leak. It is important that you create one of these conditions prior to your carport installation. We recommend that you check with your local building official prior to starting your project to find out what is acceptable for foundations and anchoring in your county.

SLAB: If you will be pouring a slab for your carport, the slab should be 4" thick with 6/6/10/10 welded wire fabric reinforcement at mid-depth of the slab. The slab should slope 1/8" per foot back to front or front to back. The concrete should be 2500 to 3000 PSI.

The outside dimensions of the slab should be at least 4" wider and 3" longer than the frame. The slab should be at least 13'-8" wide x 18'-3" long. This will allow the center of your anchor bolts to be 3" from the edge of the slab.

FOOTINGS: Footings should be 12" wide and 12" deep and should be positioned so the base rails are centered in the footing. If you center the base rails on the footing the outside dimension of the footing will be the carport width plus 10". The carport frame is 13'-4" wide so the outside width of the footings will be 14'-2". The footings can extend 2" to 3" above grade (ground level). The footings should slope 1/8" per foot back to front or front to back.



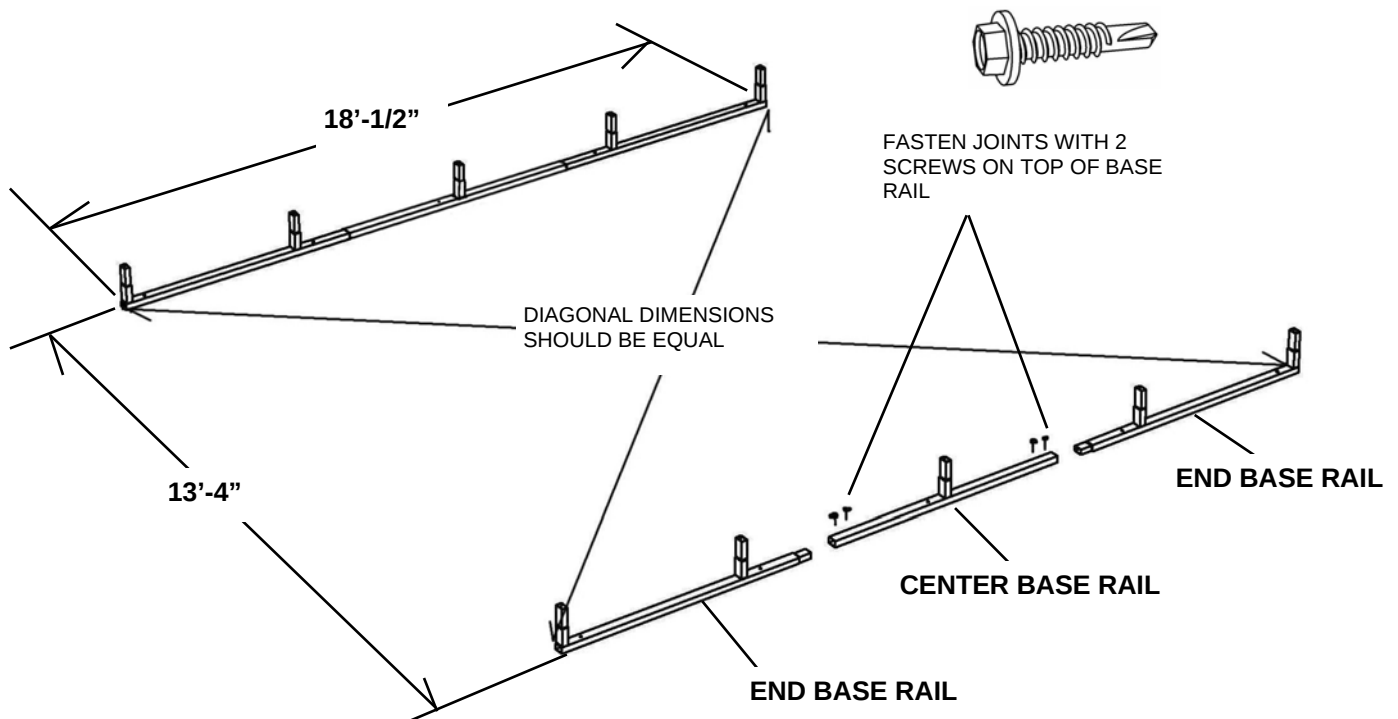
BASE RAIL ASSEMBLY

Take one end base rail (two pins) and connect to one center base rail (one pin). Connect another end base rail to the opposite end of the center base rail as shown. The assembled sections should measure 18'-1/2" in length to the ends of the base rails.

Space the joints as evenly as possible while maintaining the 18'-1/2" overall length. Make sure that the base rail assembly is straight and attach each joint with two self-drilling screws on the top of the base rail sections. Continue to check the overall length of the assembly after each joint attachment. Repeat these assembly steps for the base rail sections on the opposite side of the carport.

Position the assembled sections on the concrete slab, footings or ground. Base rails should be 13'-4" apart, outside to outside dimensions.

Measure carefully 13'-4" feet at each upright pin. Now, measure the diagonals as shown. They should be equal. This will square up the base rail assembly. Adjust as required, continue to measure and adjust until the diagonal measurements are equal and the base rail assemblies are parallel at 13'-4" outside to outside. Once the frame is square and at 13'-4" in width anchor the base rails to the slab or footing with 1/2" x 5 1/2" concrete wedge anchors (not supplied) or to the ground with Versatube rebar anchors and concrete. You will need 10 anchors. See anchoring on the next page.



ANCHORING CARPORT BASE RAILS:

These instructions offer two anchoring methods: (1) To a concrete slab or concrete footings with concrete wedge anchor bolts (not provided). (2) To the ground with Versatube Rebar Anchors and concrete.

ANCHORING TO CONCRETE SLAB OR FOOTING WITH 1/2" X 5 1/2" WEDGE ANCHORS

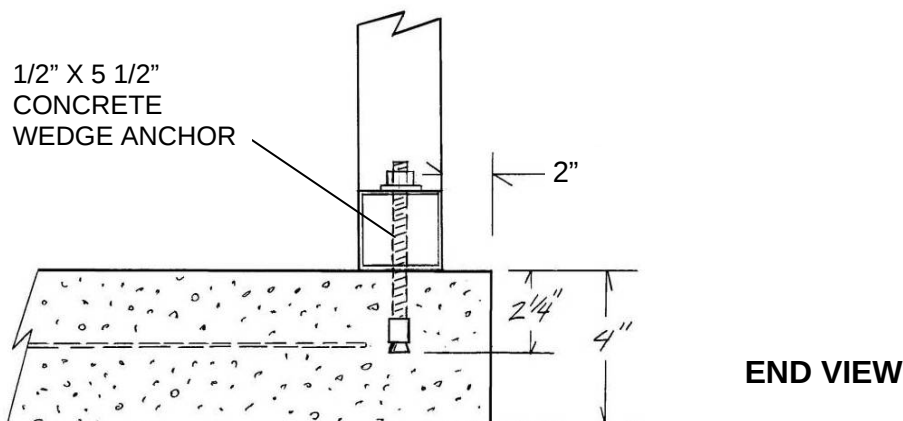
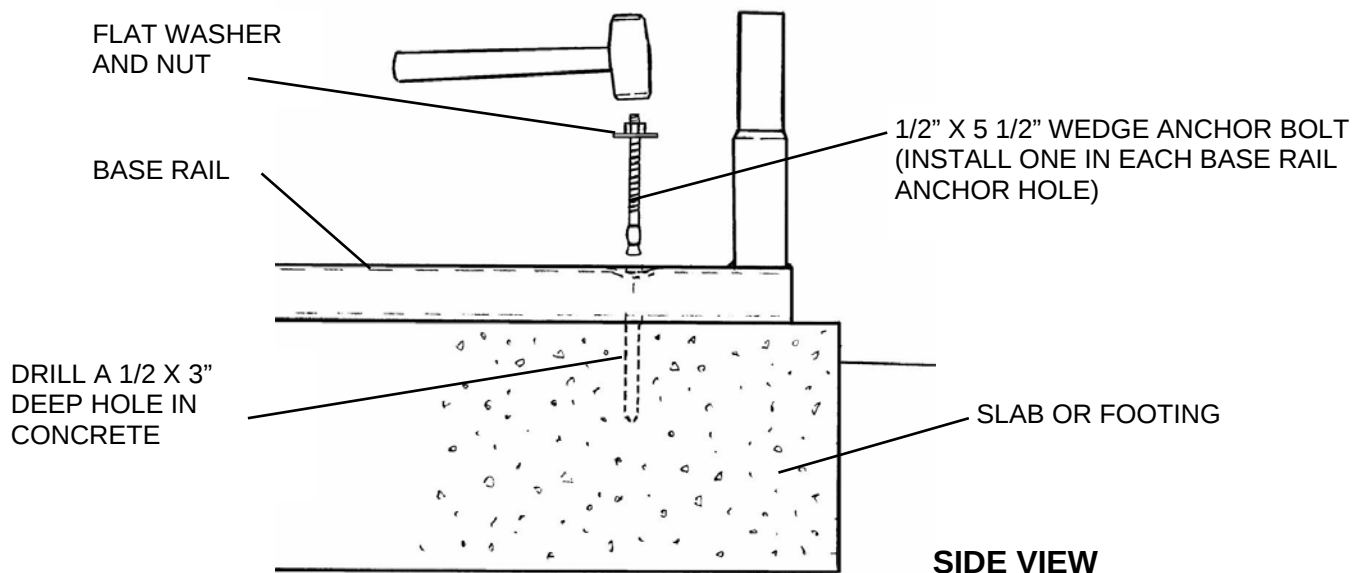
After you have completed all measurements and have the base rails in place and squared, screw the joints together with 2 screws per joint on the top surface of the base rail. This will assure that the rails remain straight and do not vibrate apart when you drill the anchor holes in the concrete. Concrete should be cured.

To drill the anchor holes, you will need a hammer drill and a 1/2" x 8" or 12" concrete drill bit.

Hold the base rail in place with your foot, insert the drill bit through the anchor hole in the base rail and drill a hole 3" into the concrete. The base rail is 2" thick, so the total depth from the top of the base rail will be 5".

Place a flat washer onto the anchor bolt and screw on a hex nut until about 2 threads are exposed above the nut. Now, place the bolt in the hole and tap it down with a hammer until the nut and washer touch the top of the base rail. Use a 3/4" wrench to tighten the nut. Tighten the nut until it is snug. Do not crush the base rail tube.

Place an anchor in each base rail anchor location (10 required).



ANCHORING TO GROUND WITH CONCRETE PIERS

DIGGING HOLES FOR CONCRETE

Mark the locations of the rails and the anchor holes on the ground. Move the base rails to one side and dig holes at each anchor point for concrete. You may want to rent a gas-powered post hole digger with an 8" or 12" diameter auger for this job.

HOLE SIZE:

Counties with 70 or 80 mph Exposure C wind: Use a 12" diameter hole 14" deep or a 8" diameter hole 18" deep.

Counties with 90 mph Exposure C wind: Use a 12" diameter hole 18" deep or an 8" diameter hole 24" deep.

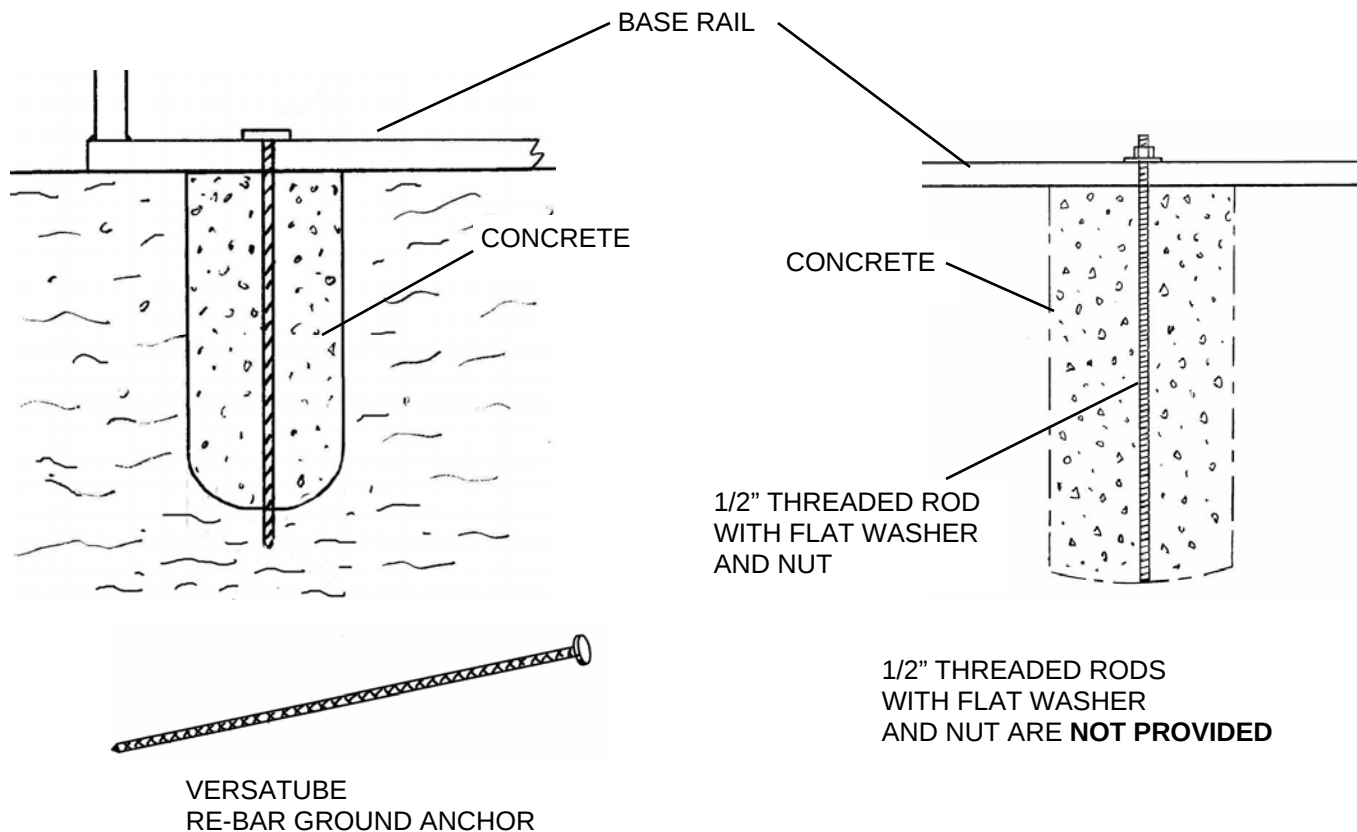
ANCHORING

Move the base rails back into position over the holes. Re-measure to make sure the rails are in the proper location (see layout on page 6).

Now drop or drive a Versatube 30" re-bar ground anchor or a 1/2" x 36" threaded rod with a flat washer and nut at the top (not provide) into each anchor hole. A 24" rod could also be used. Threaded rods are normally 3' long from your building center.

Mix up concrete and pour into holes up to ground level. You may want to rent a mixer for this job. Before the concrete sets, re-check all your dimensions to make sure the frame is square and has the proper width.

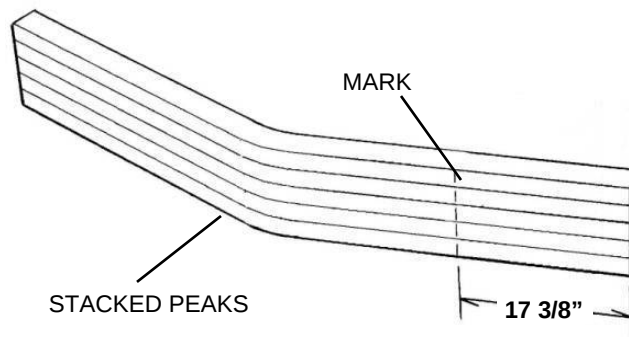
Let the concrete cure overnight before installing the Roof/Wall assemblies.



NOTE: If it is necessary to assemble and anchor the carport all in one work session, you can anchor the carport after it is complete. If you assemble the frame and install sheet metal before anchoring the base rails, it is important to have the site prepared and level. This will allow you to get the frame square and the sheet metal properly aligned with the frame.

ROOF/WALL FRAME ASSEMBLY

Before you start the assembly of the Roof/Wall sections, stack the Peak tubes, line up the ends and mark a line on the top of each peak 17 3/8" from one end. This will be the location of the edge of your first run of sheet metal panels on the roof of the carport.

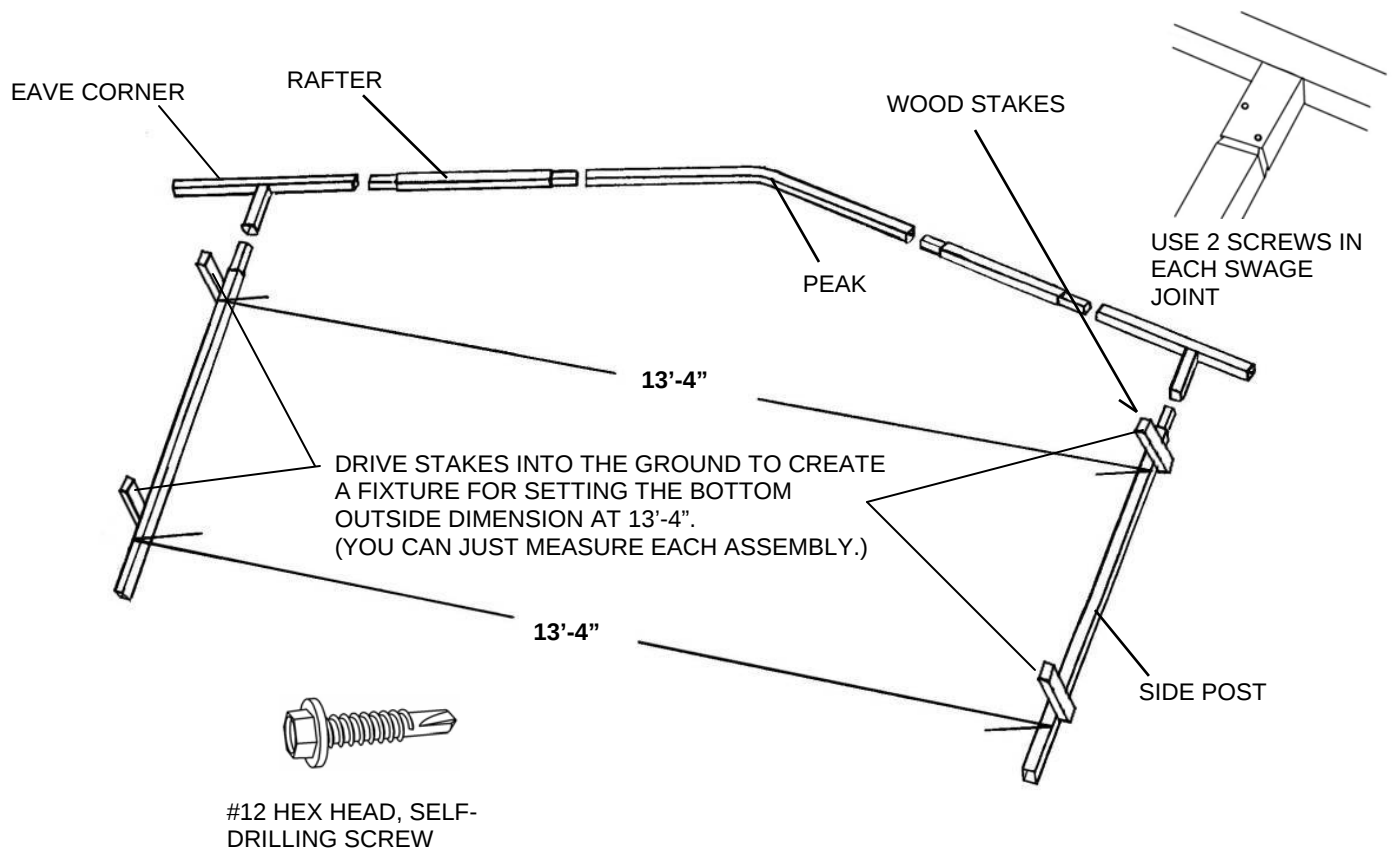


On the ground, assemble (1) peak, (2) rafters, (2) eave corners and (2) side posts.

Before you fasten the joints with screws, take a measurement across the top and bottom of the assembly as shown. This outside measurement is the outside size of your carport frame. (13'-4") Try to keep the joint spacing on both sides of the assembly equal. **It is very helpful to drive stakes into the ground at the width of the carport and use them to set the dimension at the bottom of the assembly. You should set the bottom dimension before you adjust and set the top dimension.**

Now, fasten the joints with #12 hex head, self-drilling screws. Use 2 screws in each joint. See details below.

NOTE: You can use the first assembly as a template to assemble the remaining Roof/Wall Frames.

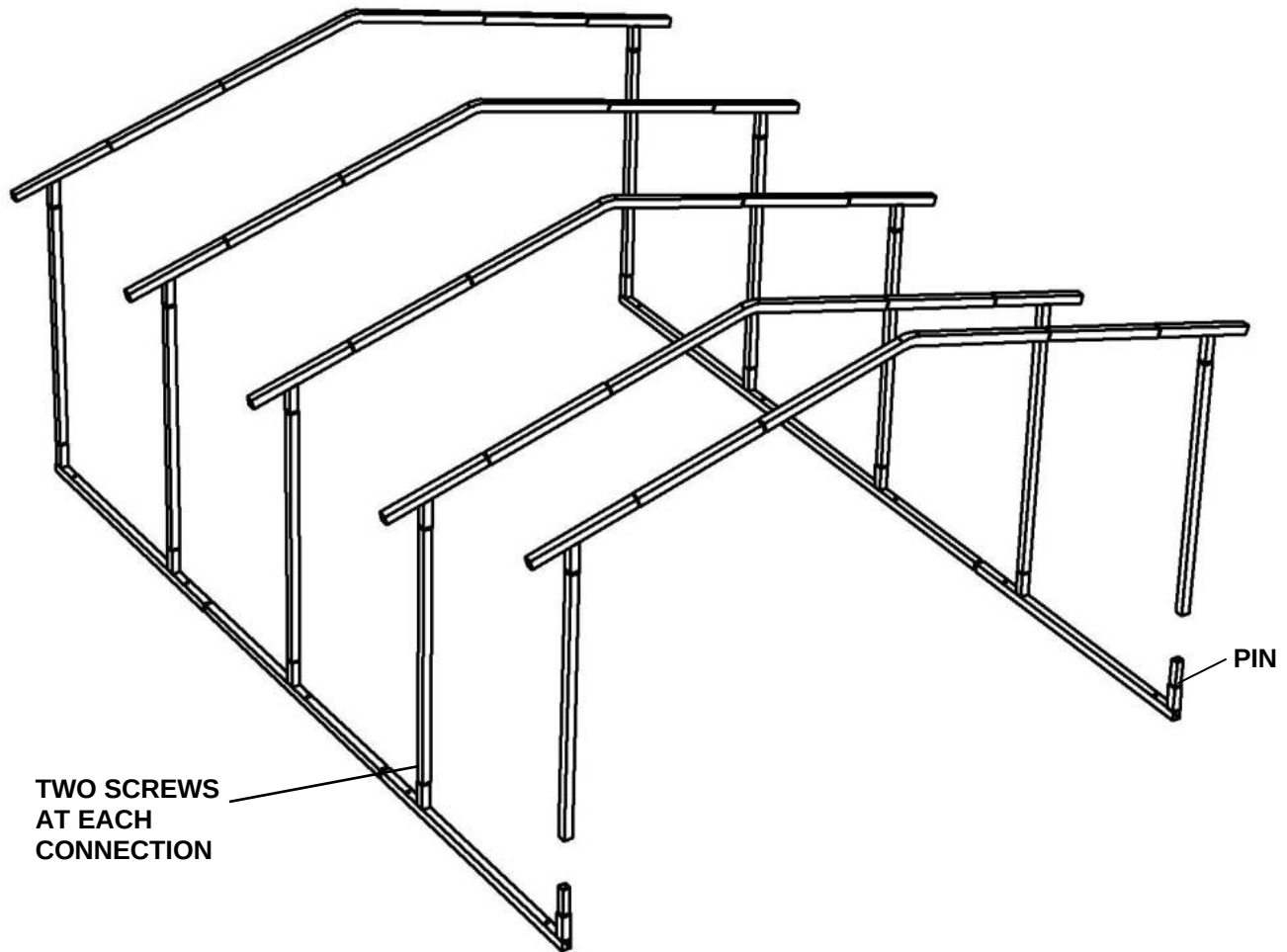


ATTACHING ROOF/WALL ASSEMBLIES TO BASE RAIL SECTIONS

NOTE: This step will take at least two people to complete safely and easily. Lifting one complete Roof/Wall assembly, place each leg of the assembly over the corresponding pins on the base assembly as shown. Insert both upright wall sections onto the base rail assembly at the same time as nearly as possible to ease assembly. Firmly and completely place each section onto the corresponding pins.

Repeat with each roof/wall assembly section until all rough assembly is complete. Now, attach 2 self-drilling screws (F1) at each connection. (See illustration below)

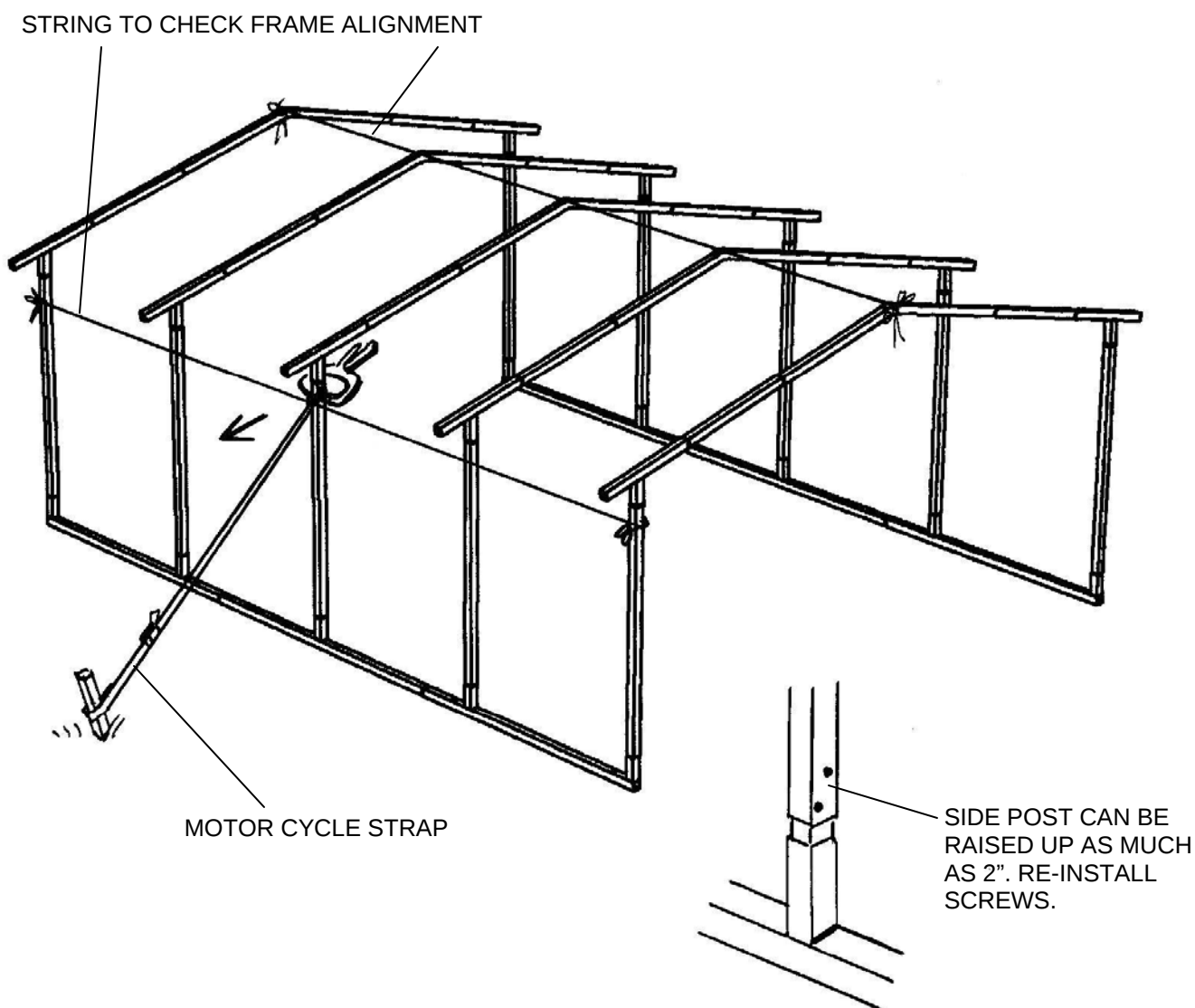
NOTE: Screws should be positioned on the side of the tubes.



CHECKING THE FRAME SECTIONS FOR ALIGNMENT

You can be sure that your frame is aligned properly by tying two strings to the frame on one side to the front and back frame sections. Tie one string below the eave corner and one at the peak of the frame. The strings should be pulled tight.

The top string will show you if the frames are all at the same height and the side string will tell you if they are all in line down the side. If you need to adjust the height of any of the frames you can remove the screws in the side posts at the pins and raise up the lower frame sections. Reinstall the screws. If you need to move a frame section to one side or the other you can use a motorcycle strap and a clamp to pull the frame from one side. Place the clamp near the top of the side post and hook the strap above the clamp. Drive a stake in the ground at an angle about 5' from the carport and attach the other end of the strap to the stake. Ratchet up the strap until the frame is aligned with the other frames. Leave the strap in place until at least the first course of sheet metal is on the roof.



IMPORTANT: If you are enclosing the sides and back of your carport, proceed at this time to the supplement instructions for side and back enclosure. Come back to these assembly instructions for the installation of roof panels and trim.

INSTALLING SHEET METAL ROOF PANELS

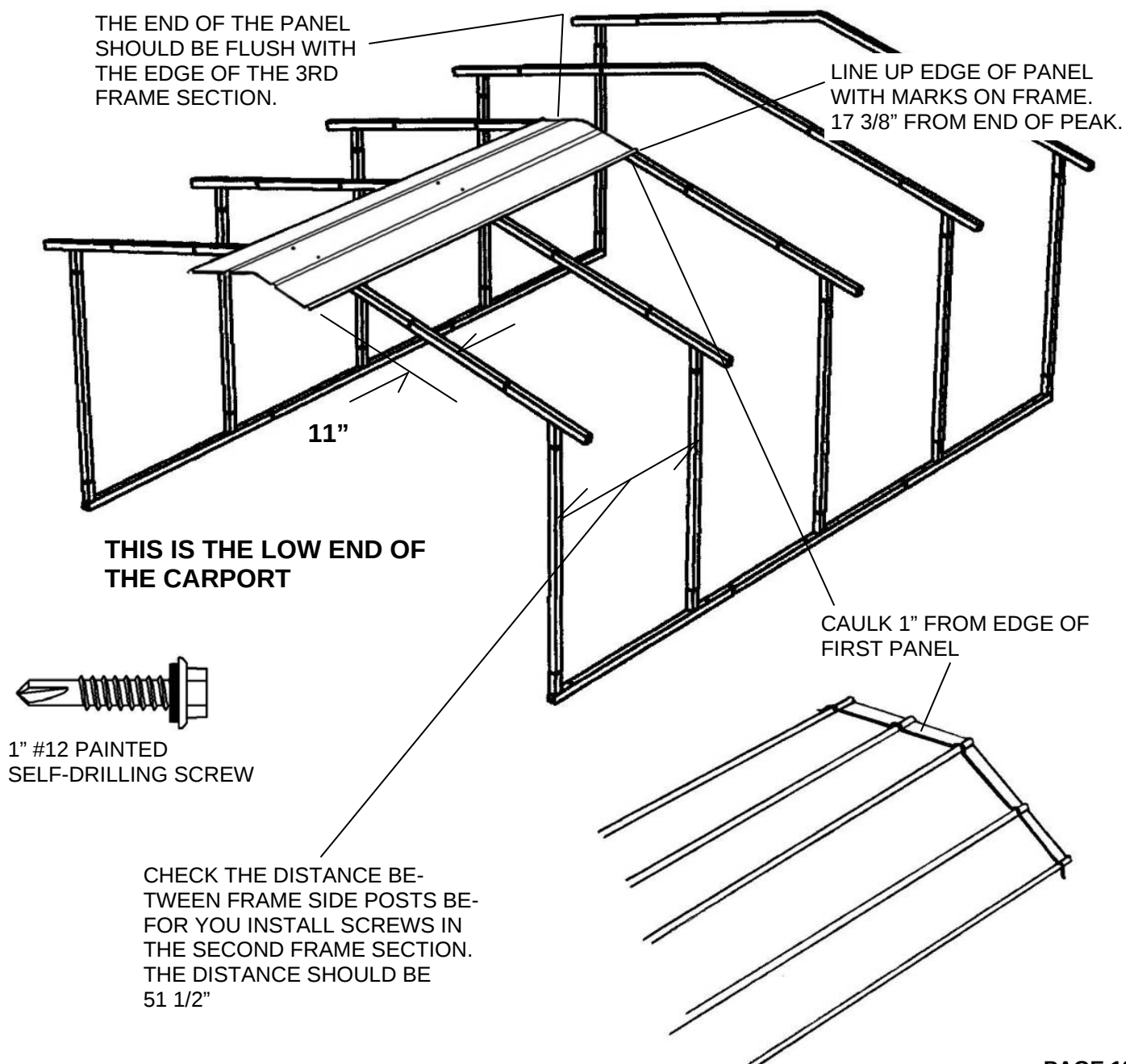
INSTALLING THE FIRST COURSE OF PANELS:

The first course of sheet metal panels on the roof will be centered on the peak of the building. It is critical that you get the first course located properly. The first course will act as a guide for all the remaining courses.

As you were assembling the frames you marked the peaks on one side 17 3/8" up from one end of the peak. This line will be your guide to locate the edge of the first course of panels. If you did not mark the peaks you can do that at this time.

Install the first panel at the low end of the carport. Place the panel on the roof with one edge lined up with your marks on the frame peaks. The panel end should overhang the frame at the low end 11". When the panel is lined up install painted self-drilling screws in the pattern shown in the illustration below. Do not place screws above the panel edges or the high end of the panel at this time.

Run a bead of butyl caulk across the upper end of the panel 1" from the end on the panel. Let a small amount of caulk extend over the edges. Before installing the second roof panel remove the protective paper on the caulk.

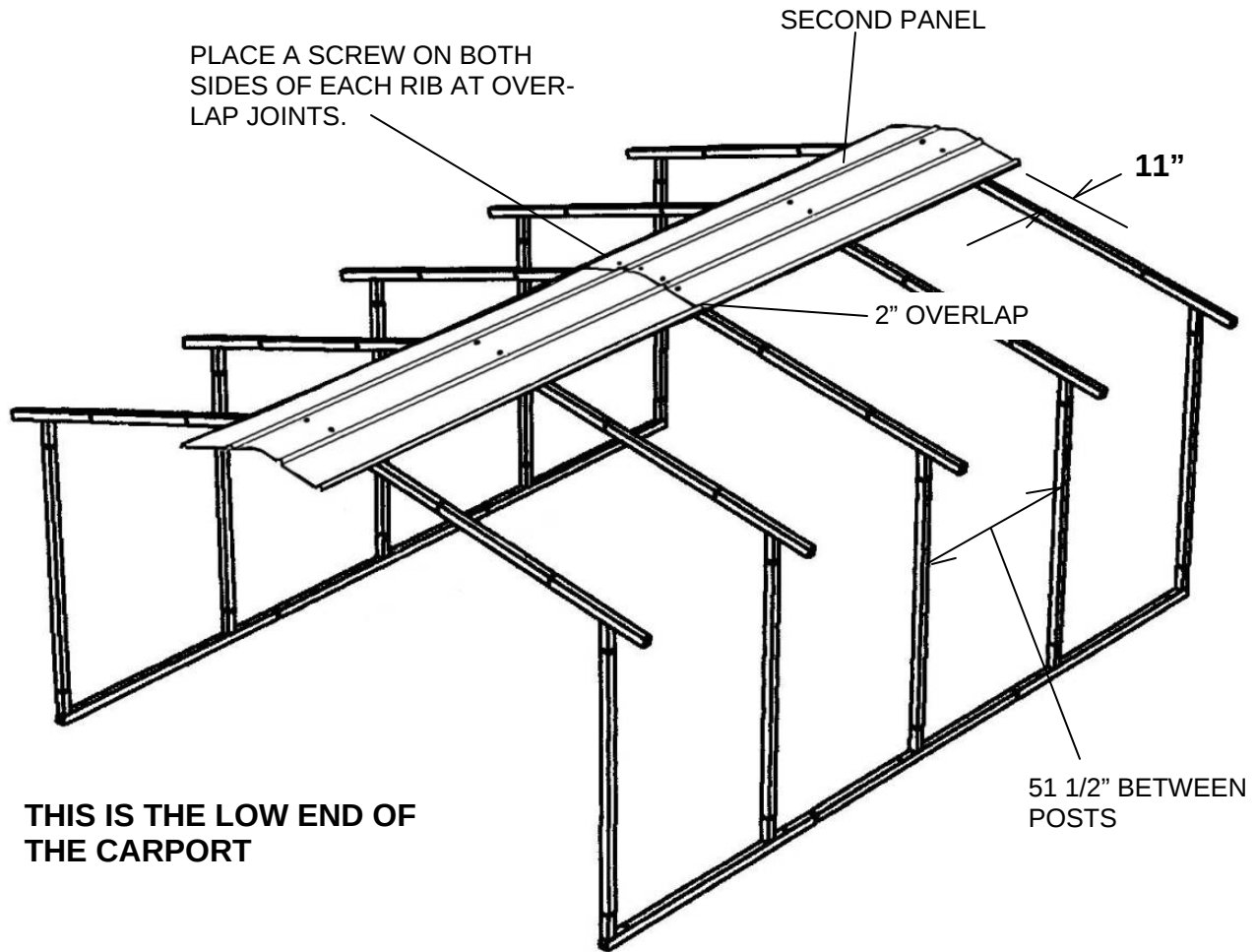


INSTALLING THE SECOND PANEL IN THE FIRST COURSE

The lower end of the second panel in the first course will overlap the first panel 2". If you have not removed the protective paper from the caulk, do that at this time.

Place the second panel on the roof with the lower end of the panel overlapping the first panel 2" and the edge of the panel lined up with the marks on each frame section peak. Press the end with the caulk together tightly and attach with screws in the pattern shown on the illustration below. The end of the panel should hang 11" over the end of the frame.

Note: check the distance between the side posts at the top before you install screws in the 4th and 5th frame sections. The distance between posts should be 51 1/2". (No screws above the lower edge at this time) Place one screw on both sides of ribs at the overlap joint.



INSTALLING THE 3RD AND 4TH PANELS

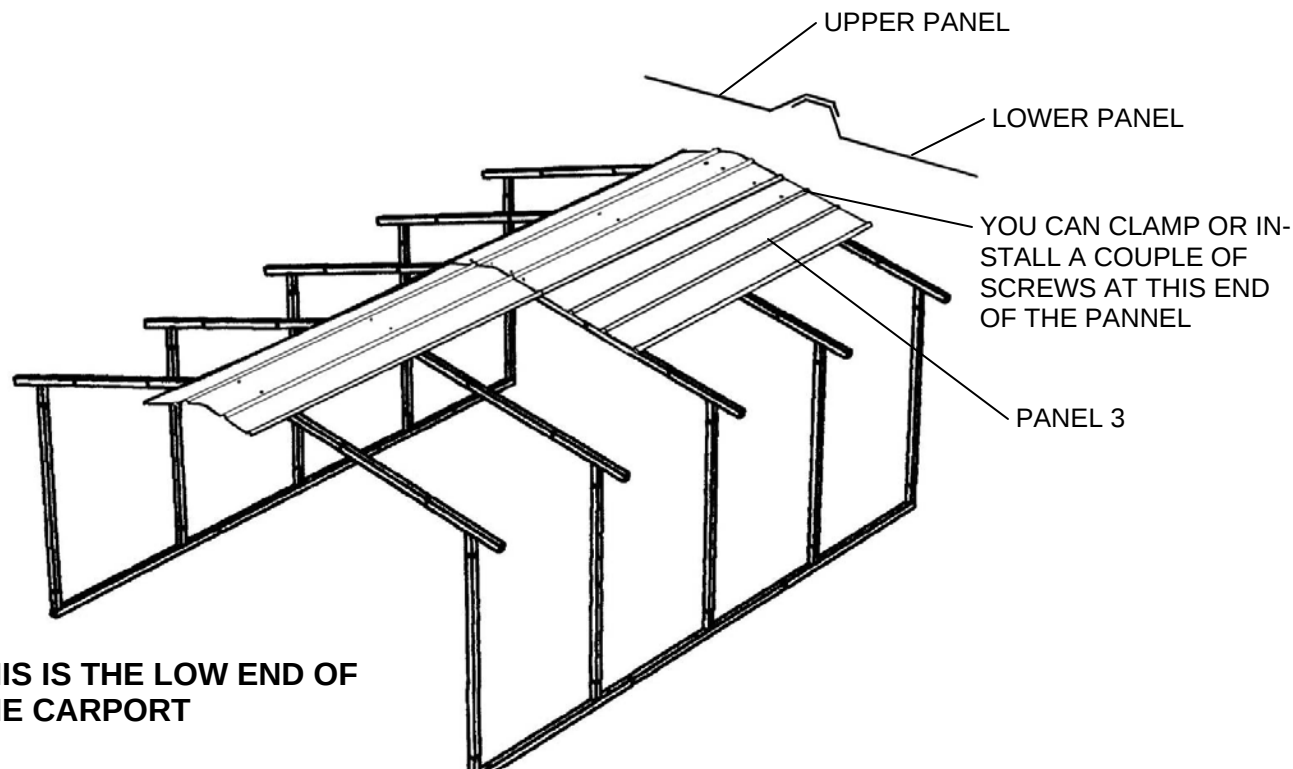
Place the third panel on the roof with the upper edge lapped under the second panel. You may want to clamp the panel in place at the end of the carport or install one or two screws at that end. Do not install screws at any other point at this time.

INSTALLING THE 4TH PANEL:

On panel 4 install a bead of caulk 1" from the end of the panel. Remove the protective paper on the caulk. Set the panel on the roof as shown. Lift up the edges of panels 1, 2, and 3 and slide panel 4 under panels 1, 2, and 3. panel 3 should overlap panel 4 2".

Now, attach panels 3 and 4 with screws above each major rib. Place screws on both sides of ribs at end lap joint.

Do not install screws above the lower edge of the panels until the next course of panels is installed. You can now install screws above the lower ribs of panels 1 and 2.

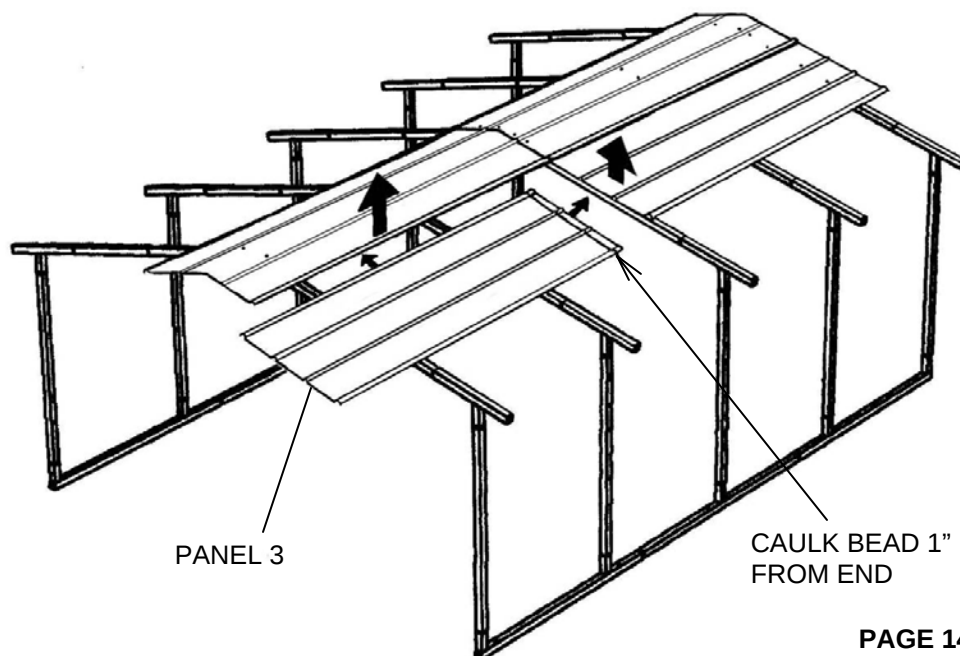


INSTALL PANELS 5 AND 6 JUST LIKE YOU INSTALLED PANELS 3 AND 4.

Place screws above each major rib and above and below ribs at end lap joint.

(Do not place screws above the lower rib at this time. You will install screws above the lower rib when the J-Trim is installed.)

Repeat the assembly on the other side of the carport.

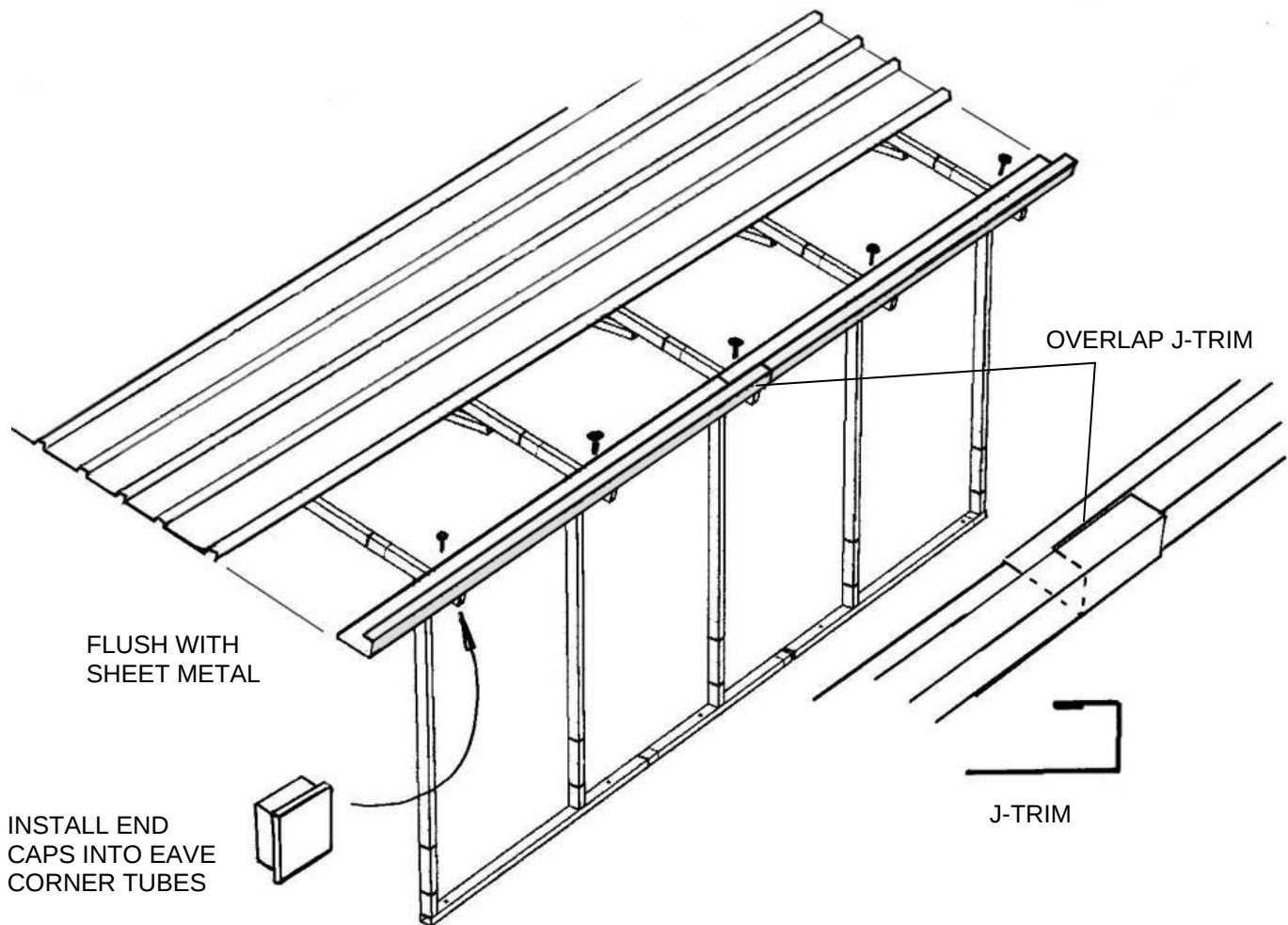


INSTALLING THE REMAINING PANELS

Do not install the last course of panels until you install a run of J-Trim along the eave of the carport.

Install J-Trim along the edge of the eave as shown below. Trim the J-Trim to length as needed on longer carports to allow at least a 3" overlap at a frame section. J-Trim on 20' carports will not need to be trimmed. The last piece of J-Trim on longer carports will not need to be trimmed.

The J-Trim should overhang the ends of the carport frame the same distance that the sheet metal panels overhang the frame (11" or 10"). Measure the distance that the last course of sheet metal is overhanging the frame and use that measurement to set the J-Trim overhang. Screw the J-Trim in place flush with the eave corner ends using the same screws you are using to attach the sheet metal panels to the frame.



INSTALLING THE LAST PANEL COURSE AT THE EAVE

When you install the lower or last course of sheet metal panels you must lift the edge of the panels above, slide the last course under the course above and then slide the lower edge into the J-Trim. Match up the panel edge ribs with the course above and attach as you did the previous courses with one screw above each rib and screws above and below the ribs at front to back seams.

INSTALL PLASTIC END CAPS Install one plastic end cap in each eave corner tube.

Repeat assembly on the other side of the roof.

IMPORTANT: To prevent rust stains on your roof, sweep or wash all metal shavings from the self-drilling screws off of the roof.

INSTALLING 2" ANGLE TRIM ON FRONT AND BACK OF CARPORT ROOF

You will have 4 pieces of 2" x 2" angle trim in your kit 10' long. Using your tin snips, cut 2 pieces in half. Measure to find the center of the trim and mark square lines with your pencil to use as a guide to cut the trim in half. Cut from both edges to the corner. This will give you 4 pieces of trim 5' long and 2 pieces of trim 10' long.

Start at one corner of the carport roof and place one piece of the 5' trim on the roof panel. Let about 1/8" to 1/4" of the trim to extend past the J-Trim that you just installed on the roof side edge. Fasten the trim to the roof panel with painted self-drilling screws. Note the screw pattern shown below. Do not install screws into the end rib or ribs that overlap. Repeat this for all 4 corners.

Take a piece of 10' angle trim and use your tin snips to cut one wall from the edge to the corner in the center of the part. This will allow the trim to fold in the center. Fold the trim and place it on the roof with the fold point centered in the peak. The ends will overlap the trim that you just installed on the roof front corners. Place screws in locations shown. Repeat at other end of carport.

