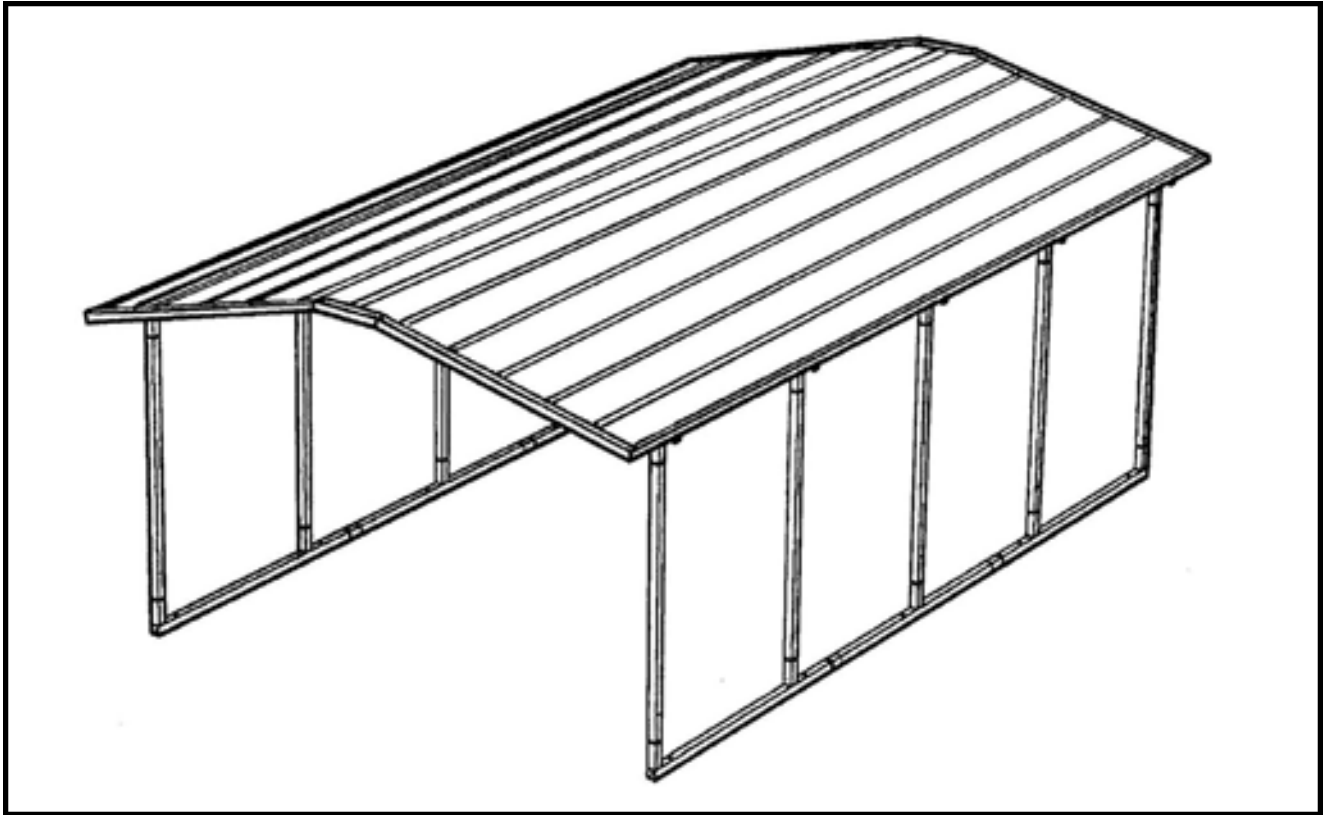




## INSTALLATION INSTRUCTIONS

### 12' X 20' X 6' CARPORT

**FRAME SIZE: 11'-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

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## **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:**

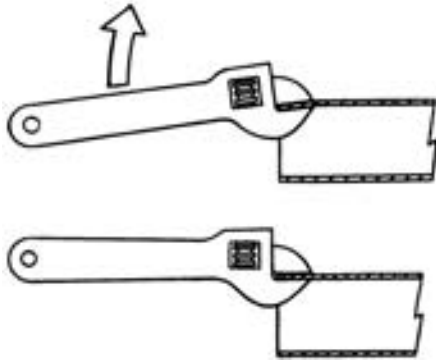
Always wear safety glasses or goggles when installing self-drilling screws.

# ATTENTION:

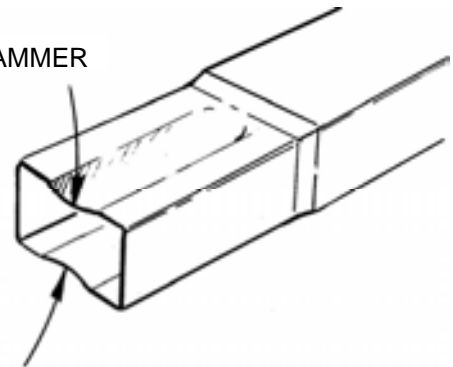
**IT IS IMPORTANT THAT YOU READ THE FOLLOWING NOTE BEFORE STARTING THE ASSEMBLY OF YOUR CARPORT**

## 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



## What you'll need

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



Chalk Line and  
Mason Line or  
Nylon String



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.

2 Step Ladders



Safety Goggles  
Or glasses



Level



Shovel or  
Post Hole  
Digger



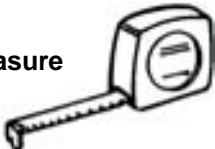
Work Gloves



Pencil/Marker  
And Felt Marker



Tape Measure



Hammer



Tin Snips

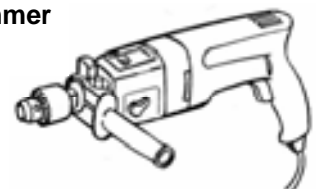


## Items you may need

Adjustable wrench



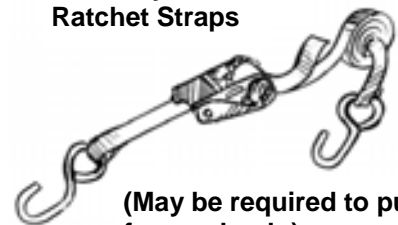
Hammer  
Drill



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



Motor Cycle or  
Ratchet Straps



Wrench, 3/4" & 1/2"



Vise grip or other  
quick clamp



(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-EC42

**PEAK**, 2" x 2" x 72" with two bends. QTY. (5) Part # 74-6000-2B

**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. 3

**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**, #12 X 1" painted self-drilling screws with rubber washers. QTY. 160

**SCREWS FOR ANGLE TRIM**, #12 X 3/4" painted stitching screws with rubber washers. QTY. 25

**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. 8

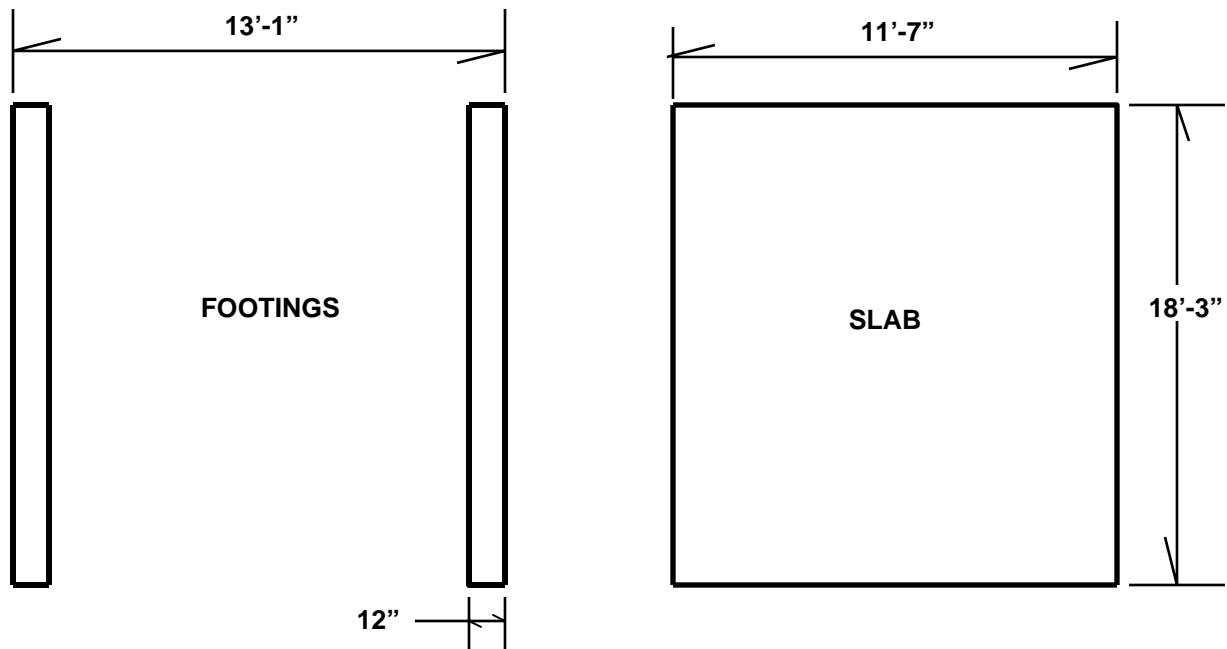
## SIGHT PREPARATION FOR CARPORT

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'-1" 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 9". The carport frame is 11'-4" wide so the outside width of the footings will be 13'-1". 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.



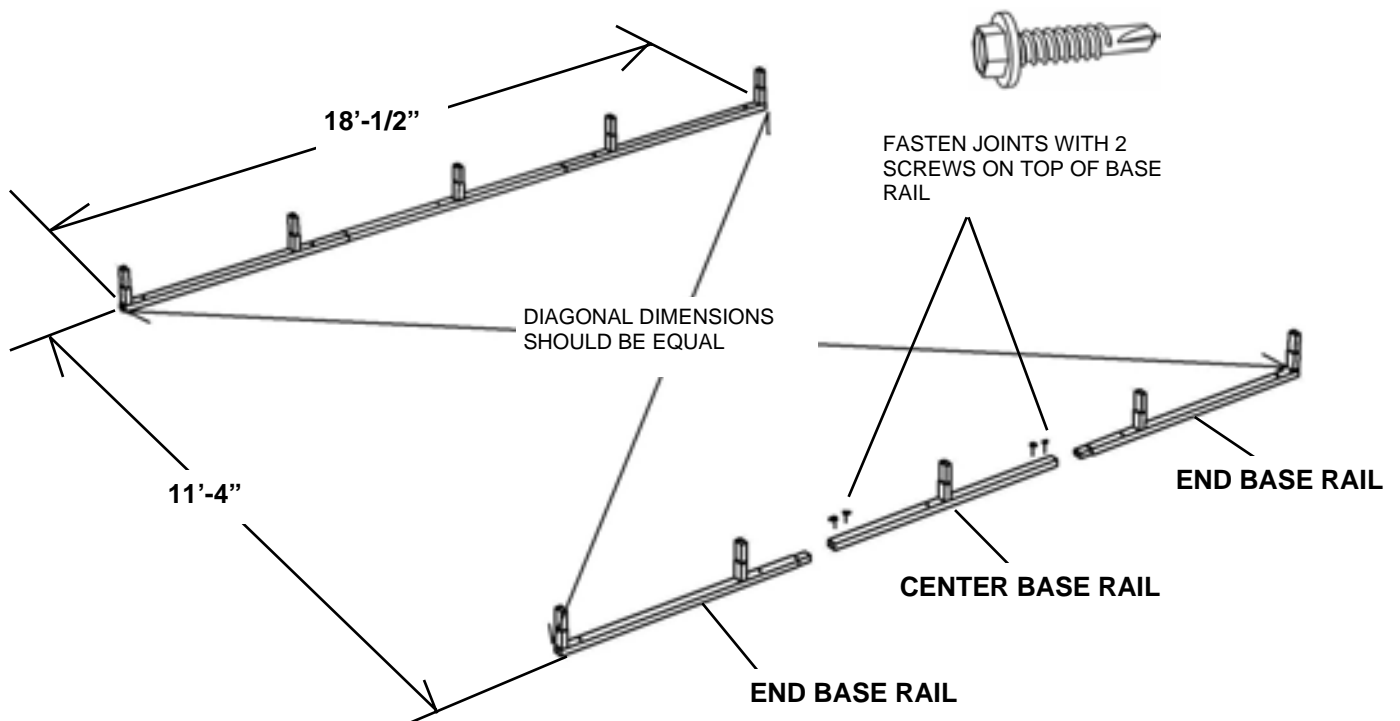
## BASE RAIL ASSEMBLY

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 11'-4" apart, outside to outside dimensions.

Measure carefully 11'-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 11'-4" outside to outside. Once the frame is square and at 11'-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

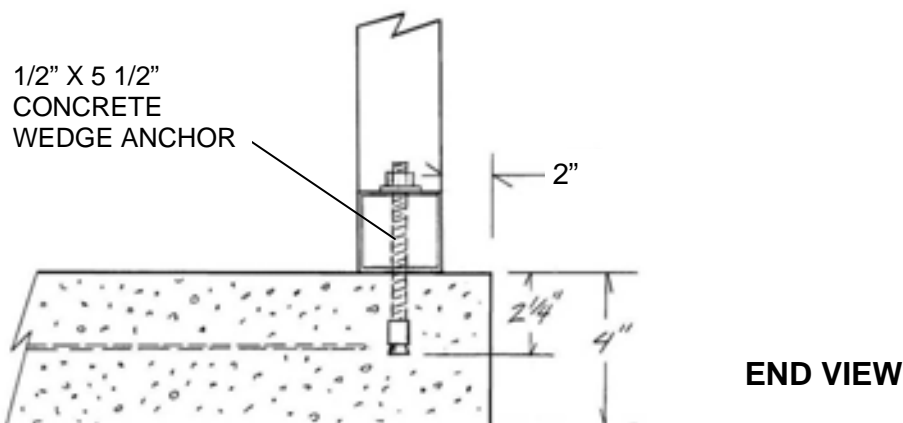
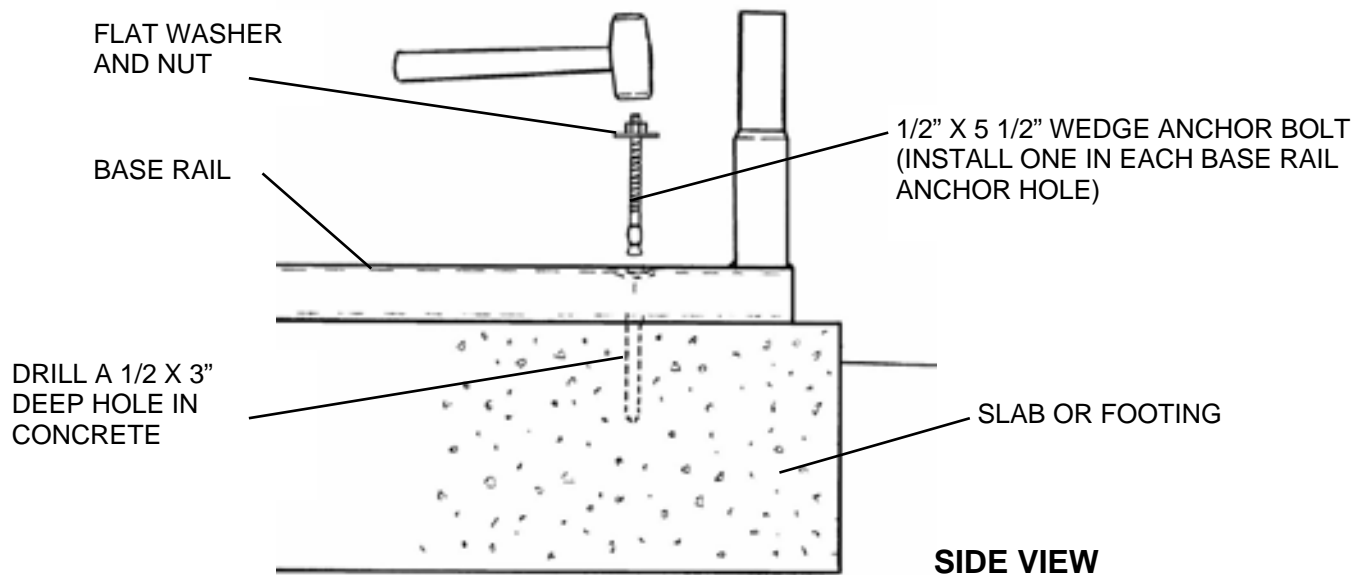
After you have completed all measurements and have the base rails in place and squared, screw the joints together with 2 screws per joint on the top surface of the base rail. This will assure that the rails remain straight and do not vibrate apart when you drill the anchor holes in the concrete. Concrete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

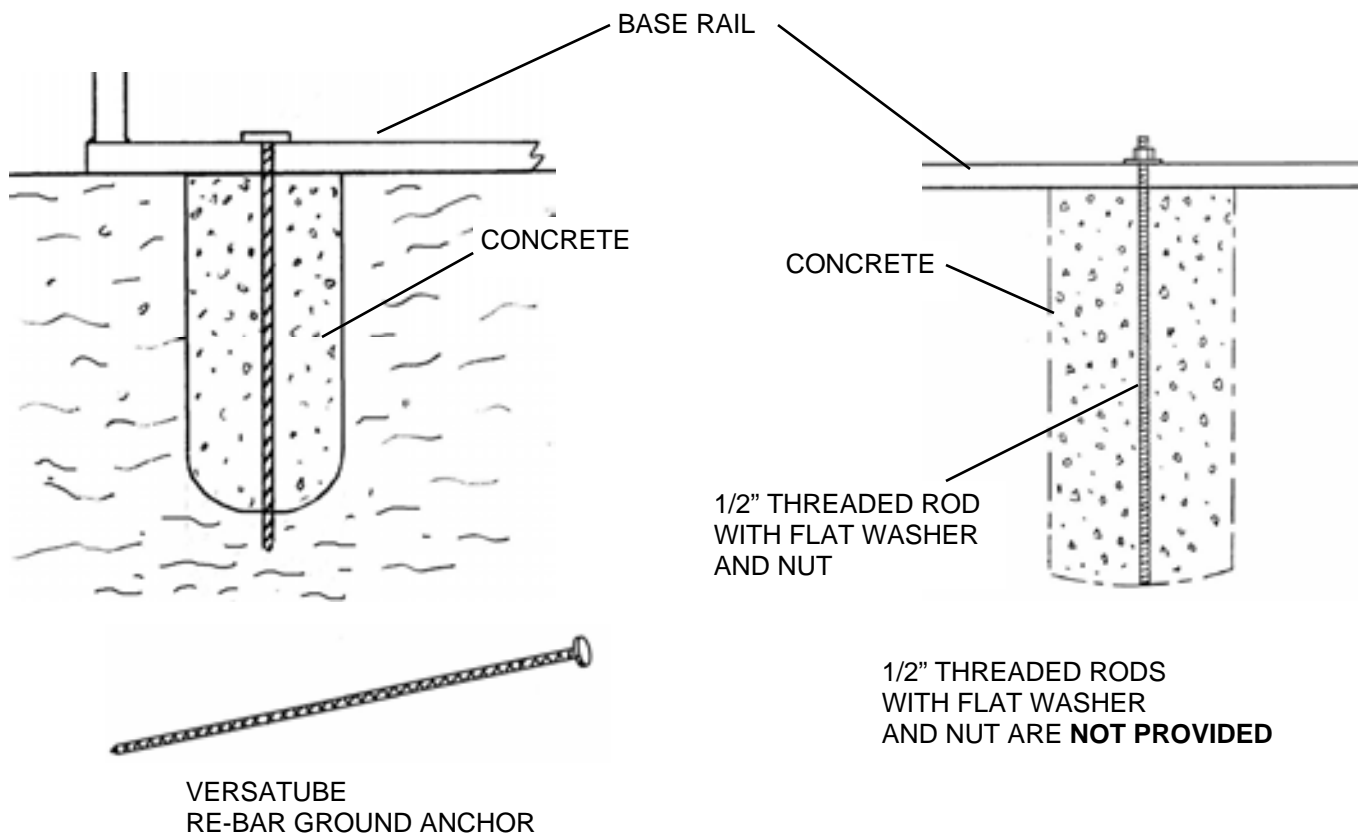
### ANCHORING

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.



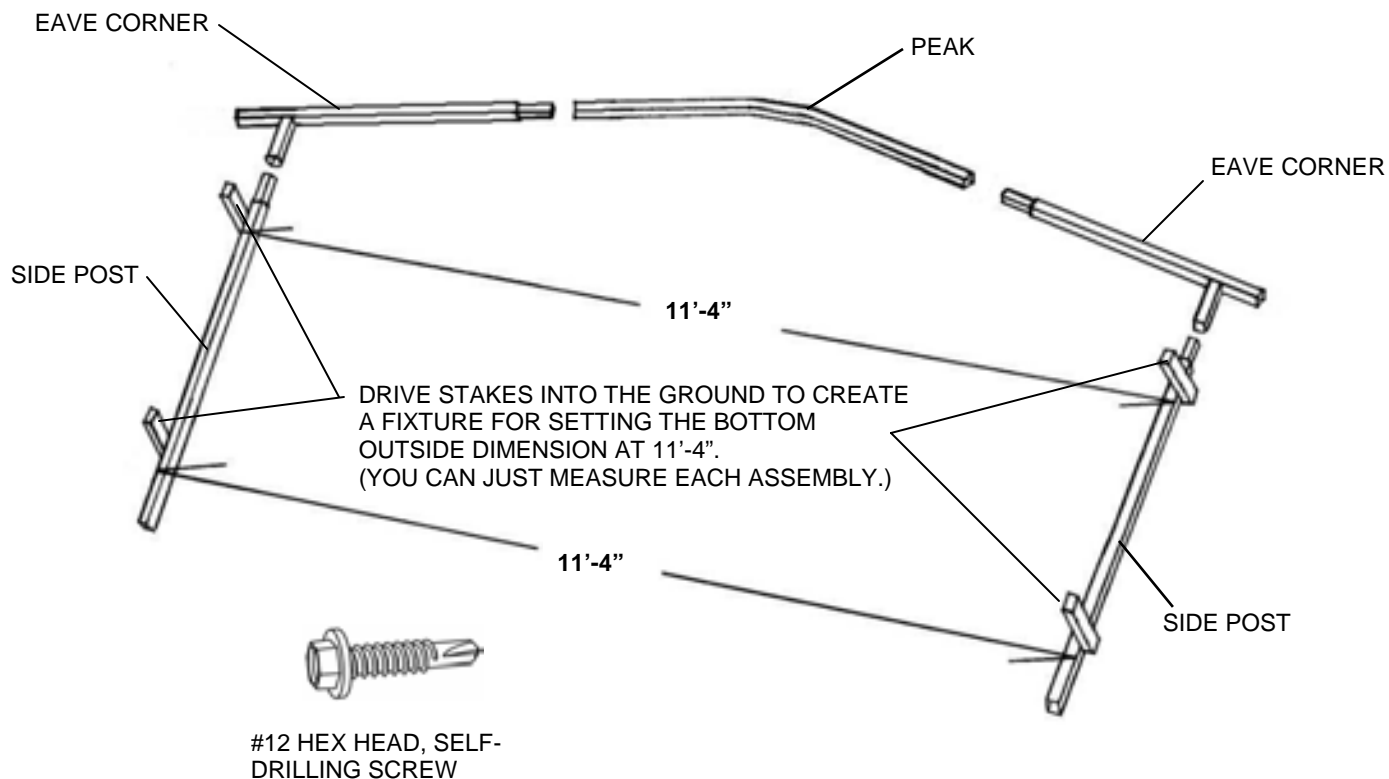
## ROOF/WALL FRAME ASSEMBLY

On the ground, assemble (1) peak, (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. (11'-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.



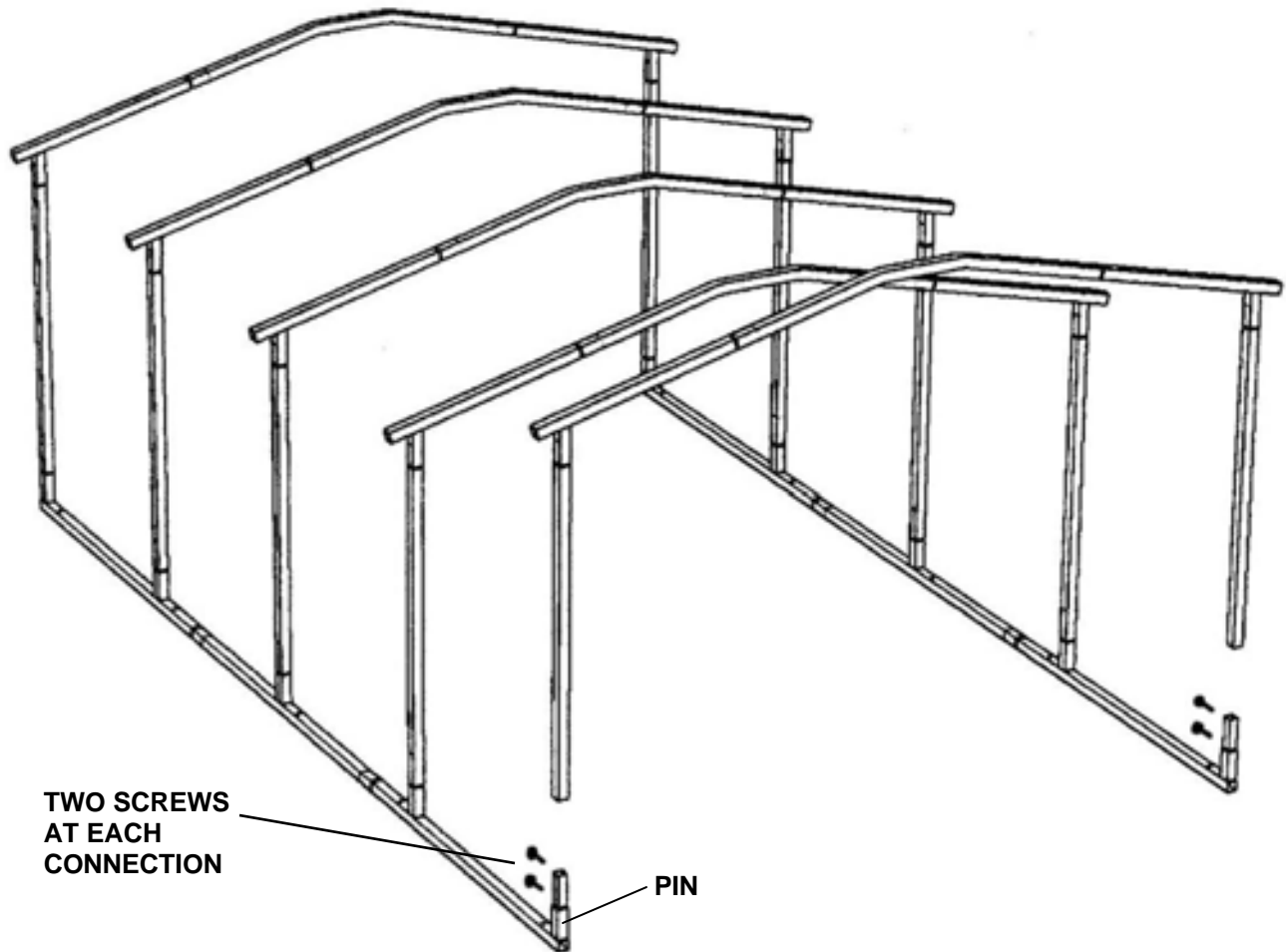
## ATTACHING ROOF/WALL ASSEMBLIES TO BASE RAIL SECTIONS

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)

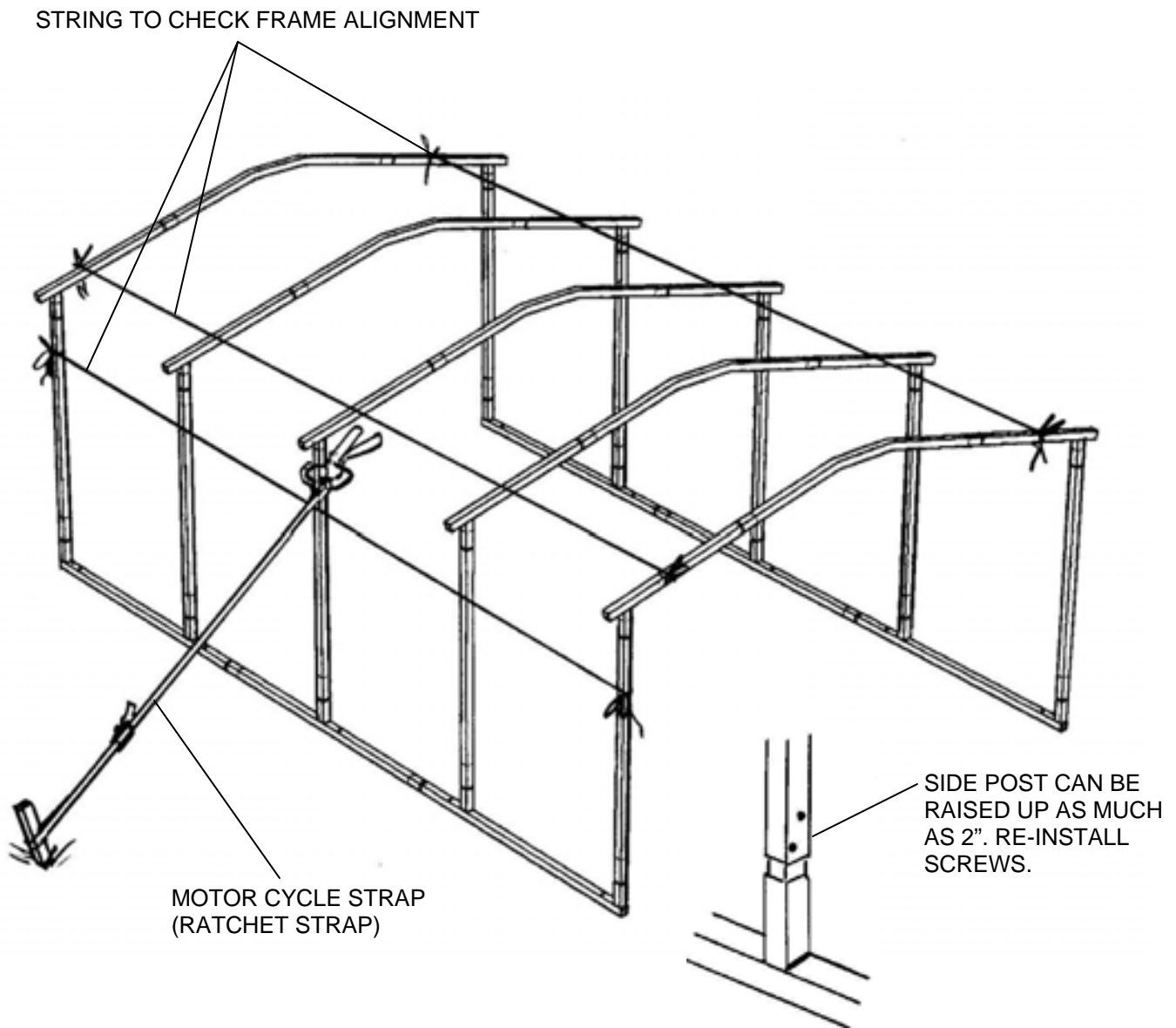
NOTE: Screws should be positioned on the side of the tubes.

NOTE: Please see the next page for checking the frame for alignment. You may want to align your frame before you install any screws at the pin joints.



## CHECKING THE FRAME SECTIONS FOR ALIGNMENT

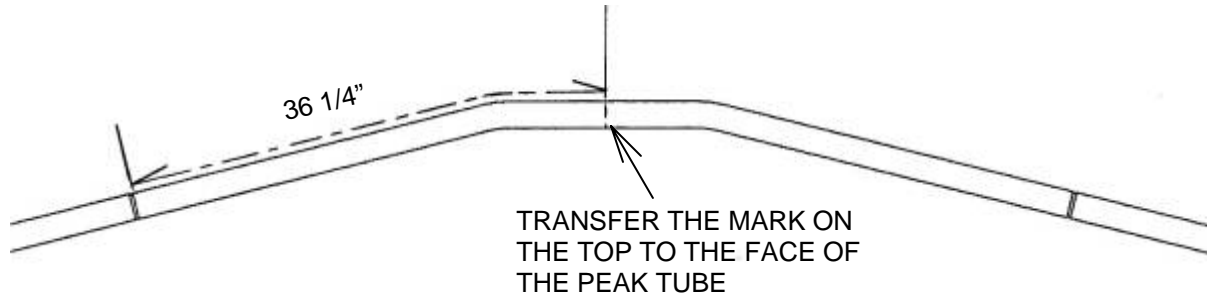
You can be sure that your frame is aligned properly by tying strings to the front and back frame sections in the locations shown below. The strings should be pulled tight. The strings on the top of the frame will show you if the frames are all at the same height and the side string will tell you if they 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, if you have installed them 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 or ratchet 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.



## INSTALLING SHEET METAL ROOF PANELS

### FINDING THE CENTER OF EACH PEAK:

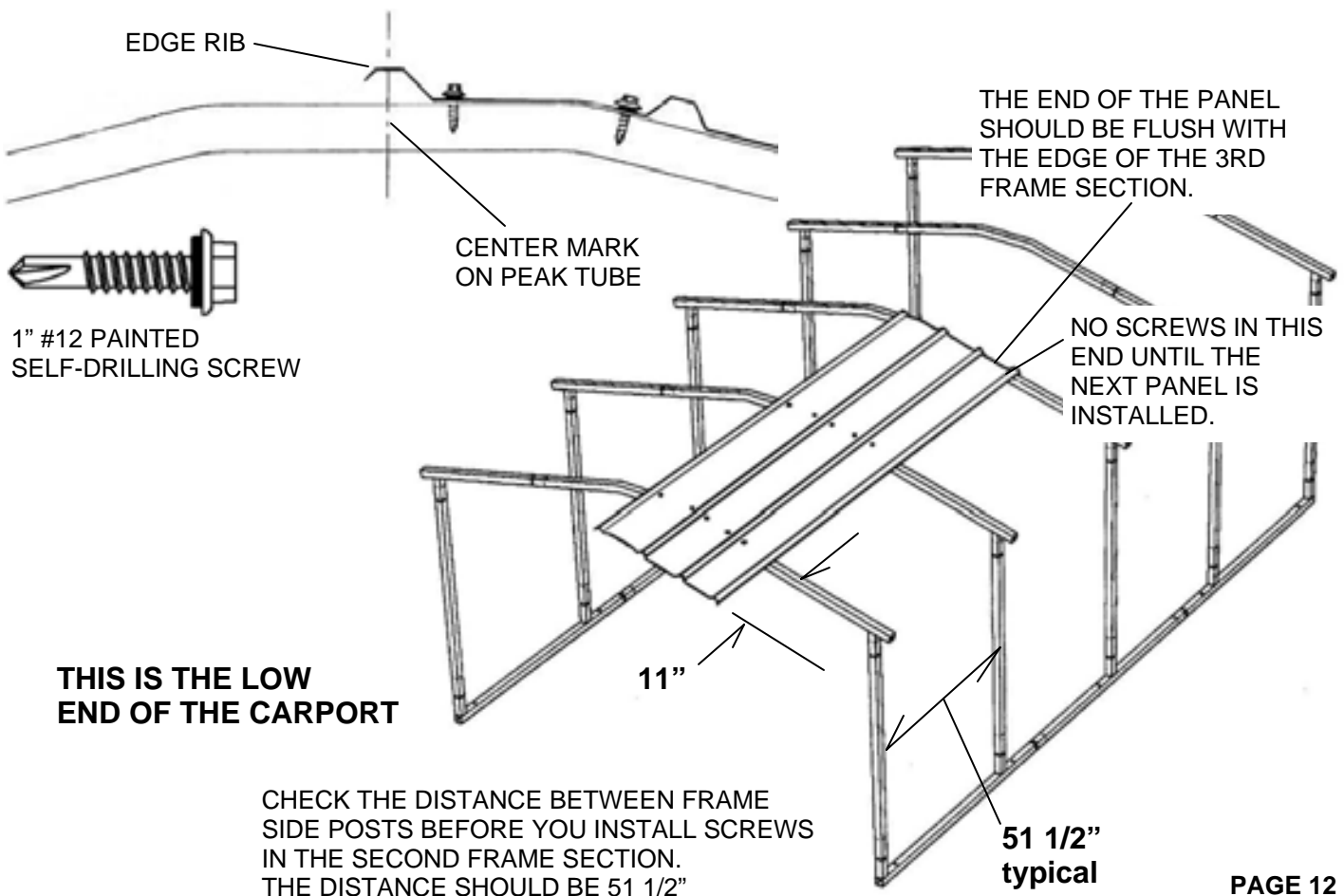
Before you install the first course of roof panels down the center of the roof you must find the center of each peak. Use your measuring tape to measure up from one end of the peak  $36\frac{1}{4}$ " make a mark on the top of the peak frame tube. This mark should be in the center of the peak tube. Now, measure up from the other end of the tube  $36\frac{1}{4}$ " to check the center location. If the two marks do not come out in the same place make a mark centered between the two measured marks. This will be the true center of the peak tube. Now, transfer the center mark to the face of the peak tube so that you can see it when you are installing the sheet metal panel. Make center marks on the front, center and back frame peak tubes.



### INSTALLING THE FIRST COURSE OF PANELS:

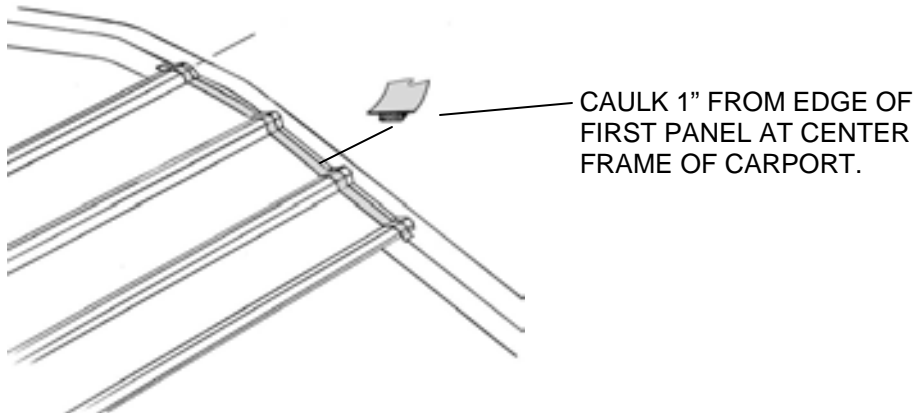
The edge rib of the first panel will be located in the center of the peak. It is critical that you get the first course located properly. The first course will act as a guide for all the remaining courses. The center line that you marked on the front, center and back frames will be your guide to locate the first course of panels.

Install the first panel at the low end of the carport. Place the panel on the roof and line up the center of the edge rib of the panel 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 attach the panel to the frame with painted self-drilling screws in the pattern shown in the illustration below. (When complete, you will use one screw on both sides of each major rib.)



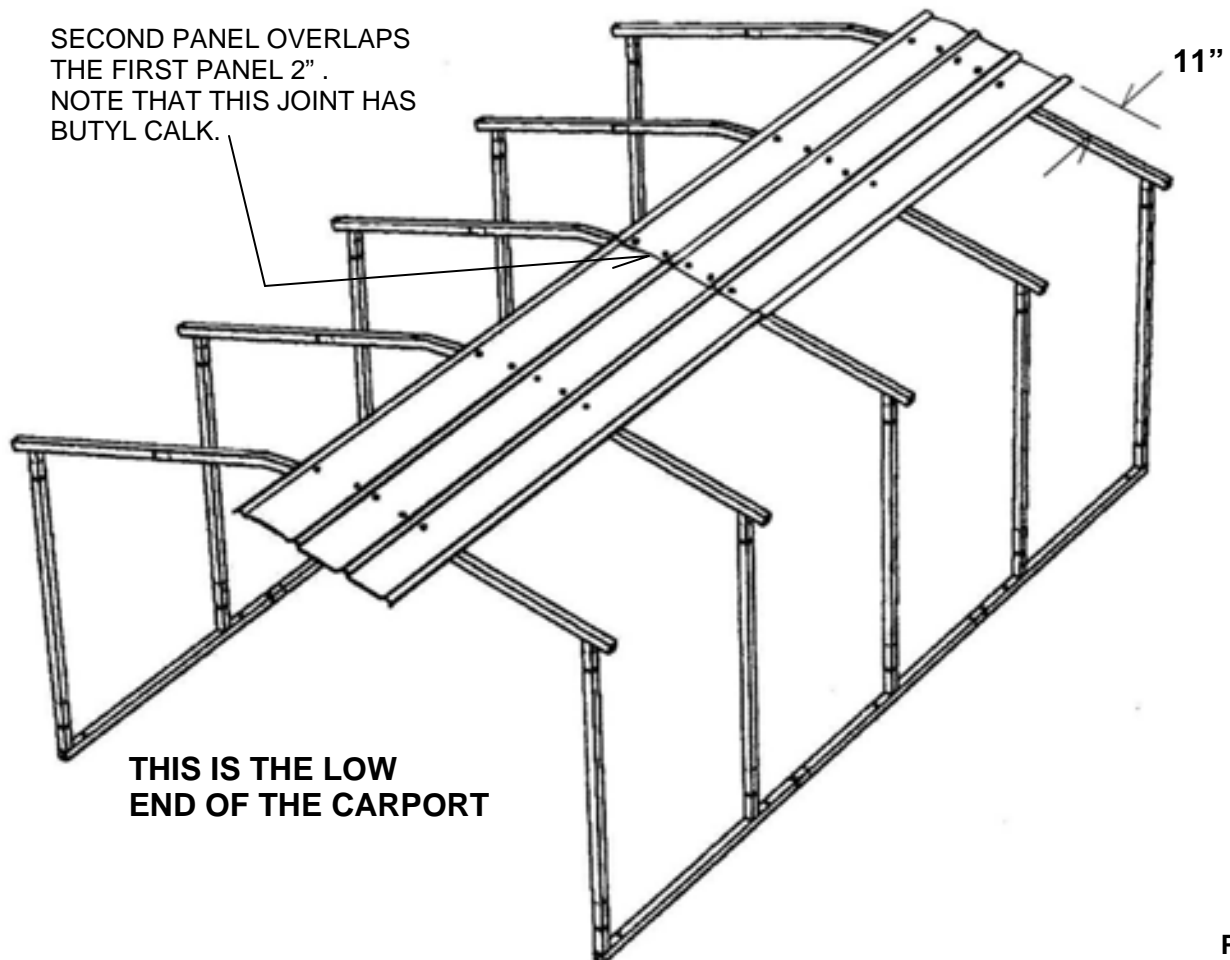
## INSTALLING BUTYL CAULK AT END OF PANEL:

Run a bead of butyl caulk across the end of the panel 1" from the edge. (The end at the center frame) Let a small amount of caulk extend over the edges. . *The butyl caulk comes on a roll with protective paper on one side of the caulk.*



## INSTALLING THE SECOND PANEL:

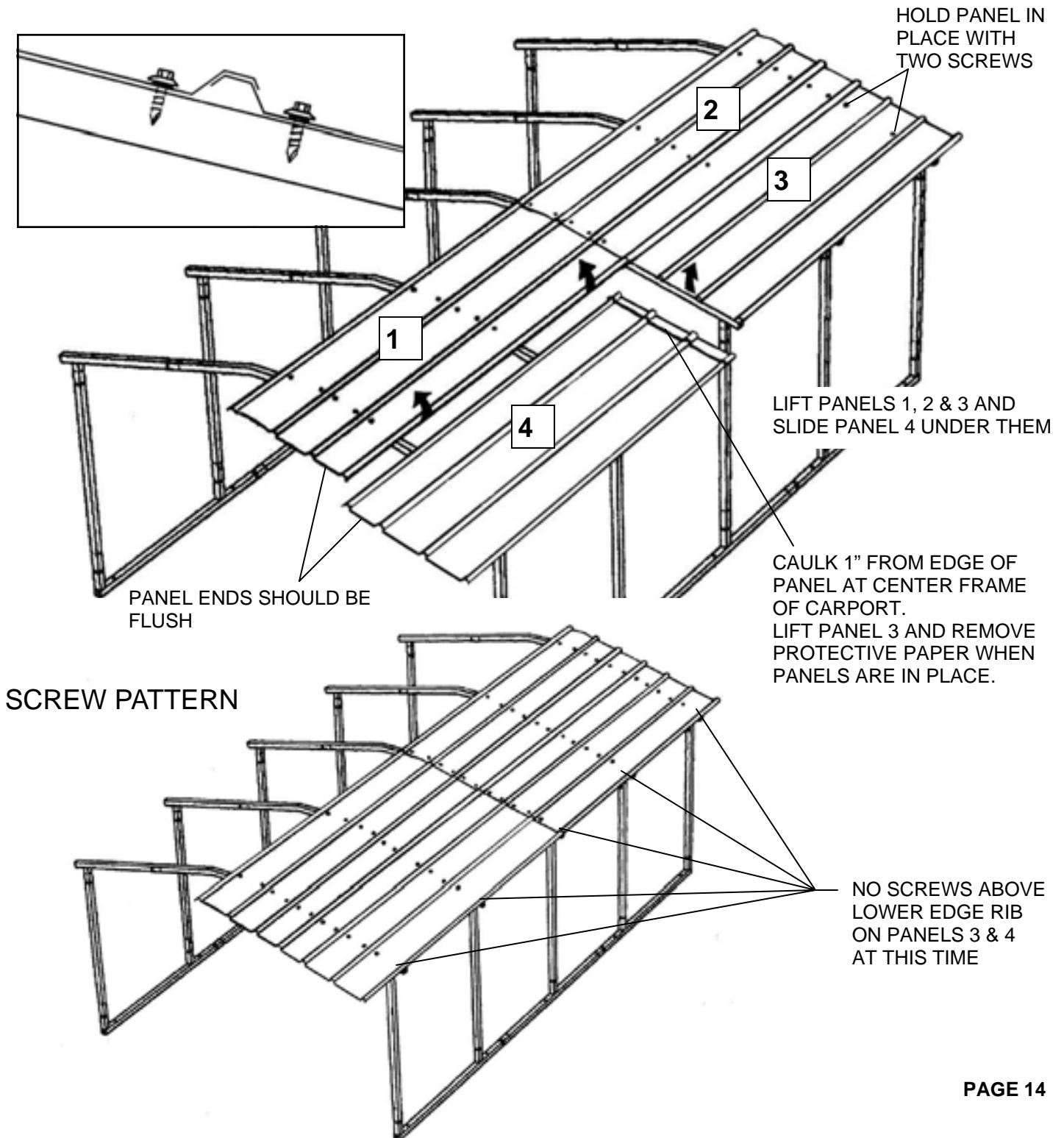
The second panel will overlap the first panel 2" and go from the center frame to the high end of the carport. The panel should overhang the frame section 11". Set the second panel in place. Make sure that it is centered in the frame and that the end overlaps the end frame about 11". The second panel should overlap the first panel 2". Place several screws at the end with the overhang to hold the panel in place. Now, lift the overlap end of the panel and remove the protective paper on the butyl caulk. Press the ends of panel one and two together firmly. Fasten panel two to the frame using screws in the pattern shown below. Check the spacing of the frames before you install screws. (51 1/2" between frames)



## INSTALLING THE THIRD AND FORTH PANEL:

To install the third panel, start at the higher end of the carport (the same end that you installed panel 2). Place panel 3 on the roof and slide the upper edge rib under the lower edge rib of panel 2. Line the ends of the panel 3 up with the ends of panel 2. Attach the panel to the end frame with two screws to prevent the panel from sliding or shifting while panel 4 is installed.

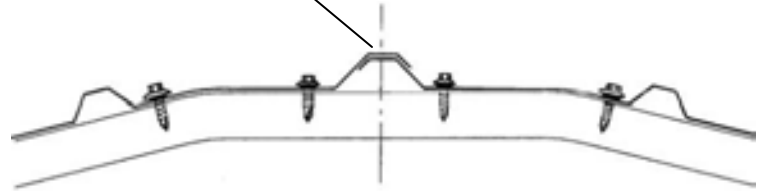
Before you install the fourth panel, place a bead of butyl caulk 1" from the end of the panel as you did on panel 1. Place panel 4 on the roof with the caulked end at the center of the carport. Lift up the edges of panels 1, 2 and 3 and slide panel 4 under the other panels. Line up the ends of panel 1 and 4. Panel 4 should slide about 2" under panel 3. When every thing is lined up, lift up panel 3 and remove the protective paper from the caulk. Press panels 3 and 4 together at the joint. Attach the panels to the frame with screws in the pattern shown below. No screws at this time above lower edge rib.



## INSTALLING THE REMAINING PANELS ON THE OTHER SIDE OF THE CARPORT:

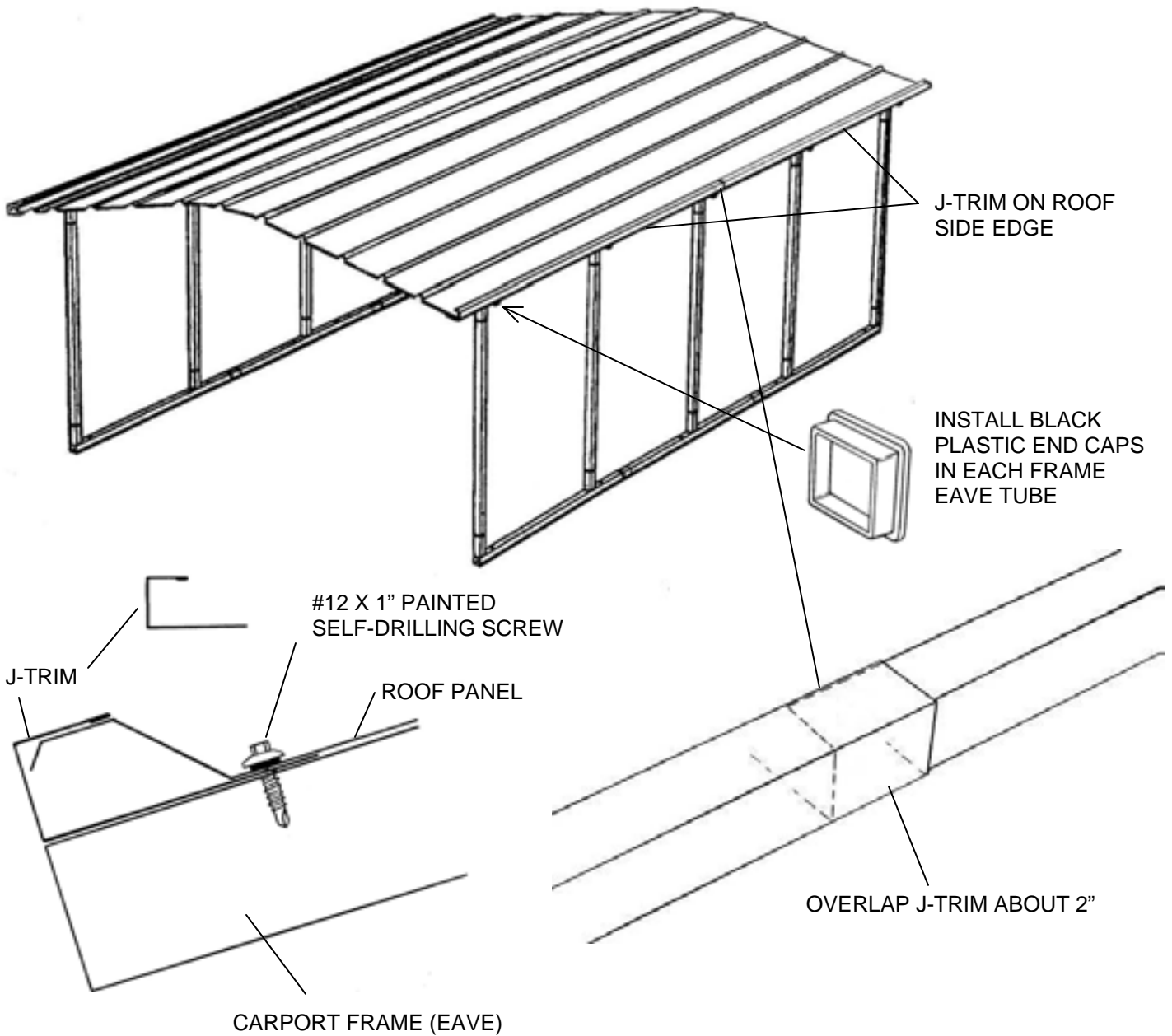
Install the panels on the other side of the carport as you did the panels on the first side. Do not install the screws above the lower edge ribs on the lower panels until you install the edge J-Trim. The screws above the lower edge rib will also attach the J-Trim on the roof edge.

LAP JOINT IN THE CENTER OF THE PEAK



## INSTALLING ROOF EDGE TRIM

The J-Trim will come in 10' lengths and you will install two 10' lengths of trim per side. Start with the first piece of trim at the back of the carport roof. Place the short leg of the trim on the top of the roof edge as shown below. The back end of the trim should be flush with the back end of the roof panel. You will now attach the trim to the frame by installing the self-drilling screws above the bottom rib of the roof sheet metal. Place the screws about 1/2" up from the rib. You want to be sure that you catch the long flange of the J-Trim with the screw. (Do not place the screw into the center frame section until you install the front piece of J-Trim. Slide the front piece of J-Trim into place with the front end flush with the front roof panel edge. The back end of the trim will overlap the back J-Trim about 2". Now, install the remaining roof panel screws to catch the front J-Trim. Install black plastic end caps in each frame eave tube end. Repeat this assembly on the other side of the carport.



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

You will have 3 pieces of 2" x 2" angle trim in your kit 10' long. Using your tin snips, cut 2 pieces 52" long for the center trim. Measure and mark the trim 17 3/4" in from both ends on the front surface of the trim. Put two small marks on the top surface of the trim at the back at the same dimensions. On the front surface, cut from the edge to the corner, two places. On the top surface make two 1/4" clips in the hemmed edge to allow the trim to fold. Repeat this on the other 52" piece of trim and then fold the trim slightly as shown below. These pieces of trim will be installed at the peak of the carport after the end trim pieces are installed.

Now cut 4 pieces of trim 52" long. These will be the end trim on the front and back corners of the roof.

Start at one corner of the carport roof and place one piece of the 52" long 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 stitching screws. See the illustration below for the location of the screws. Don't install screws in the roof panels at overlap joints. Install a piece of angle trim on all 4 corners of the carport roof.

Now, install your center trim pieces on the front and back of the roof. Place the trim on the roof panels as shown centered on the carport roof. Both ends will overlap the end trim that you just installed. Line the trim up and attach it to the roof panels with screws in the pattern shown.

