

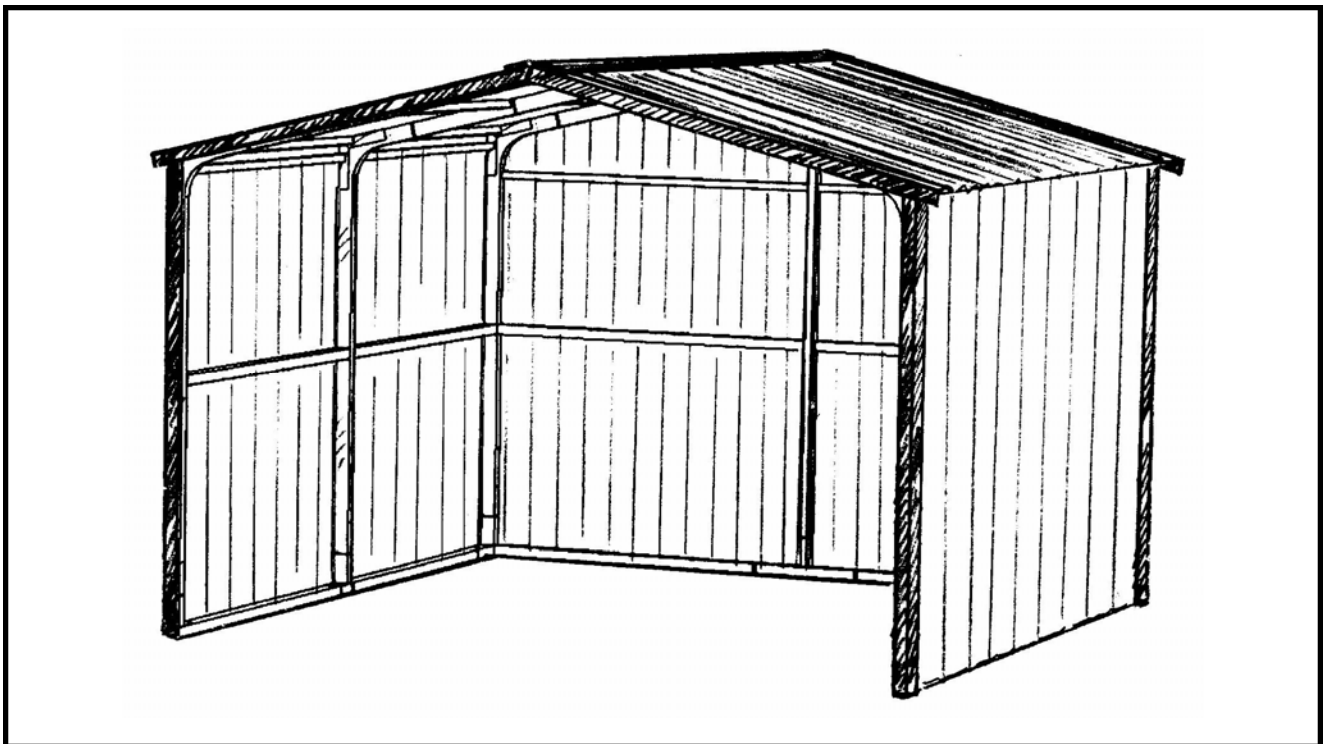


## INSTALLATION INSTRUCTIONS

### **LS-12    12' X 12'-2" X 7 1/2' FRAME**

ACTUAL FRAME BASE SIZE: 12' X 12'-2"

### **LOAFING SHED**



Our unique assembly process quickly transforms the individual pieces into a finished structure that will give you years of service. Great care has been taken to ensure complete satisfaction with your purchase. Thank you for choosing the Versatube Building System.

# **SAFETY. HAZARD. AND MAINTENANCE 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.

## **CAUTION:**

VersaTube Building Systems designs and manufactures framing products to meet minimum load requirements in most areas. It is the buyer's sole responsibility to determine the specific building code requirements applicable in the city and/or county of the state in which this product is being erected, and to ensure the product is installed with sufficient materials and in such a manner as to comply with the codes.

## **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:**

Standing or walking on the structure could cause damage to the sheet metal panels. If you must walk on the roof, step within 1' of a major frame member. The structure must be properly braced to support human weight. Collapse of the structure may cause serious injury do 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:**

In the event that your structure is fully enclosed, be sure to provide proper and adequate ventilation and egress and ingress. Hazardous, poisonous or noxious substances should not be stored in the structures absent proper ventilation. Follow all warnings and instructions of the manufacturer of any substance stored in your building. Also, proper ingress and egress should be provided to prevent persons or children from Becoming trapped inside the structure.

## **WARNING:**

If metal panels are selected to cover all or a portion of your structure, 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.

## **NOTE:**

The VersaTube Building System is an all domestically produced galvanized tubular steel framing system. Maintenance is required twice annually on particular areas of the framing system i.e. "weld seams" and "cut or raw ends". This maintenance is performed by applying any "Zinc coated" silver spray paint found at local mass merchant or paint store to these areas twice annually or every six (6) months.

## **NOTE:**

All sheet metal cladding applied to the VersaTube frame are attached with self drilling screws with a rubber washer. These screws produce small shavings when drilling through the cladding. If the shavings are allowed to sit on the sheet metal for an extended period, rust spots will form and promote deterioration. Metal shavings must be brushed after installation of the sheet metal. Claims reported against rust spots will not be honored by VersaTube Building Systems.

## ATTENTION:

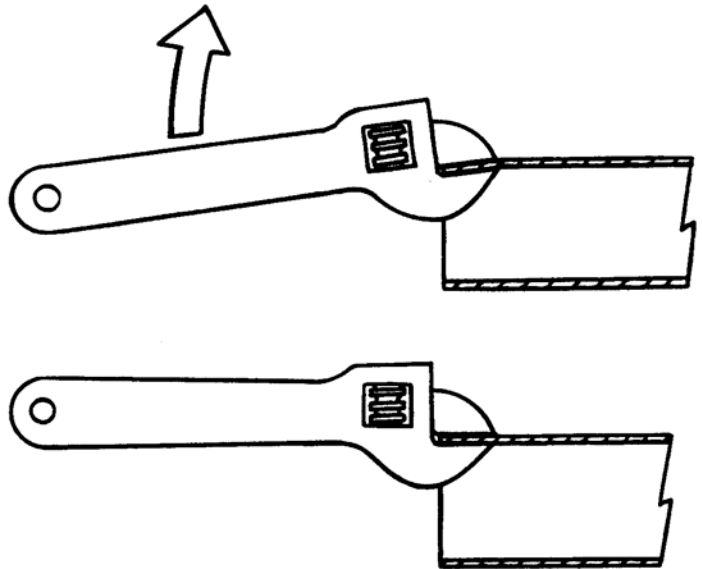
**IT IS IMPORTANT THAT YOU READ THE FOLLOWING NOTES  
BEFORE STARTING THE ASSEMBLY OF YOUR SHELTER**

### NOTE:

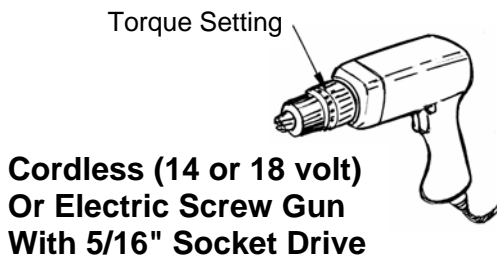
If you are not mounting the shelter to a concrete pad, you should level the selected area and remove high spots caused by roots or rocks. It is particularly important that the areas on which the shelter base plate assemblies will sit are level with each other. Choose a level site away from power lines.

### NOTE:

If during the installation process you have Difficulty fitting frame components together, use an adjustable wrench to open end of receiving tube as shown at right. Close wrench down around bent portion of tube and bend wall outward.



## What you'll need:

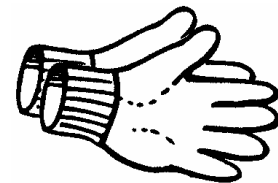


**Mason Line or  
Nylon String**

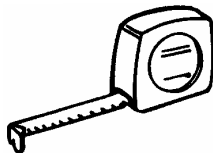
**2 Step Ladders**



**Work Gloves**



**Tape Measure**



**Level**



**Hammer**



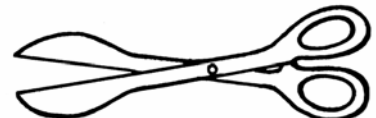
**Shovel and Post  
Hole Digger  
(not shown)**



**Pencil/Marker**



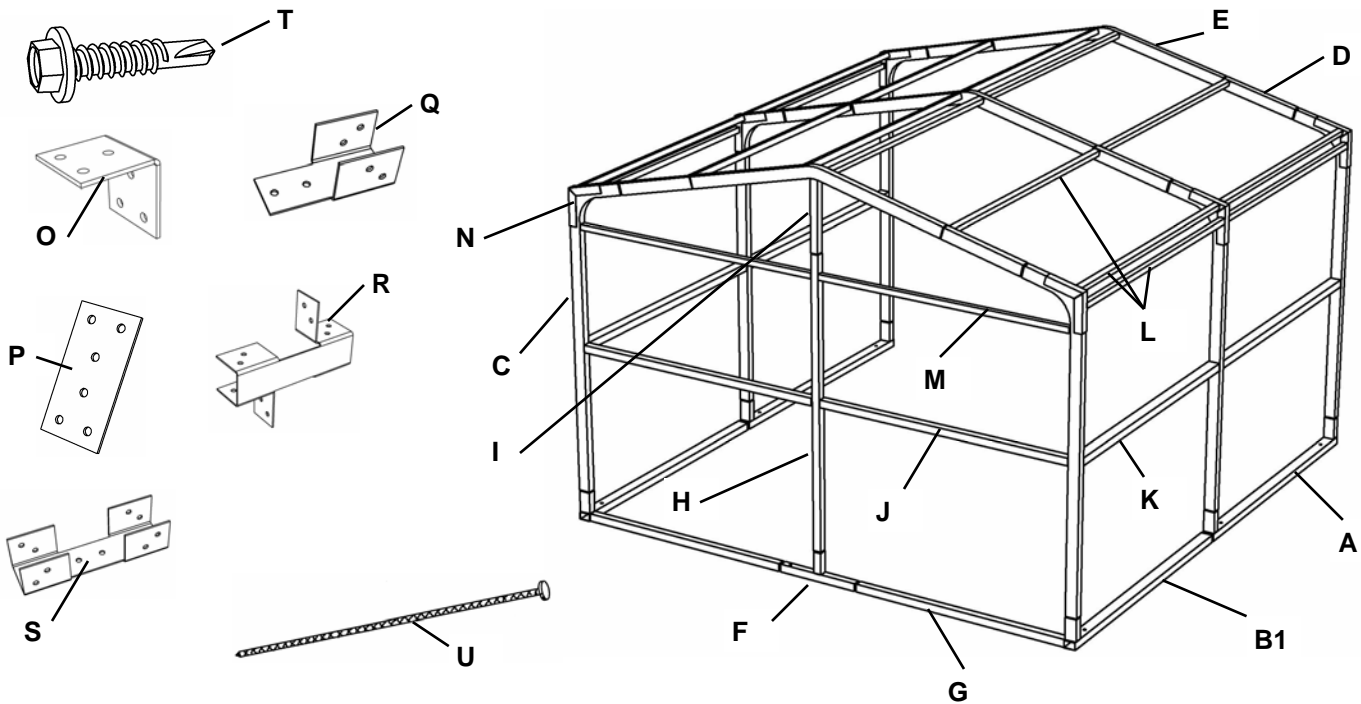
**Tin Snips**



**Safety Glasses or goggles**



# LS-12 LOAFING SHED PARTS LIST



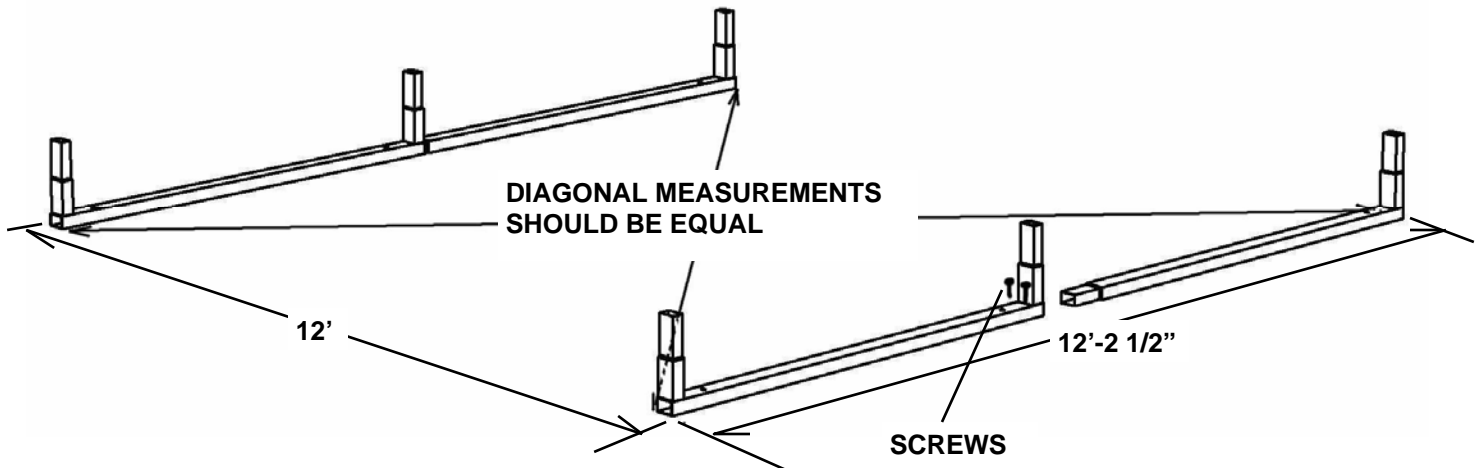
PART NO.	PART	QTY.	LETTER
71-4602	STARTER BASE RAIL (2 VERTICAL PINS)	2	A
71-7040	6' BASE EXTENSION (1 VERTICAL PIN)	2	B
71-5000	SIDE POST	6	C
71-2000	RAFTER	6	D
71-6000	PEAK	3	E
71-BE-T	T-CONNECTOR	1	F
7400-5775	BACK BASE RAIL 2" X 2" X 57 3/4"	2	G
74-8175	BACK VERTICAL 2" X 2" X 81 3/4" WITH 1 SWAGED END	1	H
7400-1850	BACK VERTICAL EXTENSION 2" X 2" X 18 1/2"	1	I
7400-6775	LOWER BACK GIRT 2" X 2" X 67 3/4"	2	J
7100-6975	LOWER SIDE GIRTS 2" X 3" X 69 3/4"	4	K
7500-06975	UPPER SIDE GIRTS & ROOF PURLINS 1 1/2" X 1 1/2" X 69 3/4"	16	L
7500-06775	UPPER BACK GIRTS 1 1/2" X 1 1/2" X 67 3/4"	2	M
BK-40	CORNER BRACKET	6	N
BK-10	ANGLE BRACKET	14	O
BK-20	FLAT BRACKET	1	P
BK-30	SINGLE PURLIN BRACKET	18	Q
BK-31	DOUBLE PURLIN BRACKET	5	R
BK-31W	DOUBLE PURLIN BRACKET (WIDE)	4	S
71-9999	#12 X 1" HEX HEAD SELF-DRILLING SCREWS (70 PACK)	4	T
ANC-24	30" GROUND ANCHORS (MAY OR MAY NOT BE INCLUDED)	7	U
71-9999-PAN	#10 X 7/8" PAN HEAD, SQUARE DRIVE, SELF-DRILLING SCREWS	60	V

## STEP 1 BASE RAIL ASSEMBLY

First, you must level the ground in the location of your shelter.

Place one Starter Base Rail (A,) ( 2 pins) into one 6' Base Extension (B) (1 pin) . Set the length from the end of the starter base rail to the end of the extension t at 12'-2 1/2" and fasten the joint with two #12 x 1" self-drilling screws on the top of the base rails. Repeat assembly with remaining Base rails.

Place the two base rail assemblies in your chosen location and position them 12' apart (outside to outside of rails). Measure the diagonals to square up the assembly. The measurements should be equal.



## STEP 2 ANCHORING THE BASE RAILS

To anchor the base rails, make a mark on the ground at the anchor points (5/8" holes) in the base rails. Move the rails to one side and dig a hole at each anchor point 12" in diameter x 2' deep. (or below frost line)

Place the assembled base rails back over the holes, measure diagonals again to square the structure, insert Versatube 30" ground anchors or (1/2" threaded rod with a flat washer and nut at the top) through anchor holes in base rails and hammer them into the bottom of the holes.

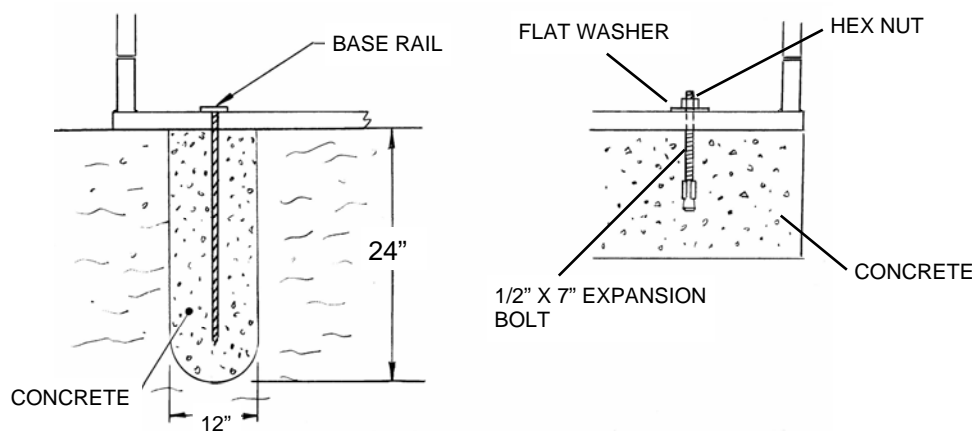
Fill each hole up to grade (ground level) with concrete.

Note: Recheck all measurements while concrete is still wet and make any necessary adjustments.

If you choose to pour a footing, it should be at least 8" wide x 12" deep (or below frost line) The footing should have a #5 Reinforcement bar running the entire length and centered in the footing.

If you choose a concrete footing you can anchor the structure to the footing with 1/2" x 7" expansion bolts (anchors).

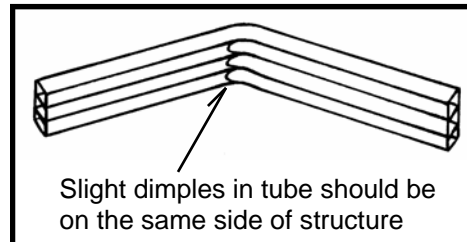
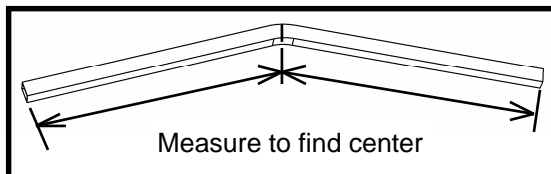
See anchor manufacturer's instructions for proper installation.



### STEP 3 ROOF/WALL SECTION ASSEMBLY

#### HELPFUL HINT:

Prior to starting step 3, it is helpful to measure and mark the center point of each peak (D). First align each peak so the slight dimple in the bend is to the same side. Next, measure from each end to the center to determine the center of the peak as shown below. Mark this point and then recheck the measurement from both ends to make sure that it is accurate. This step will help in centering the steel roof panels later.

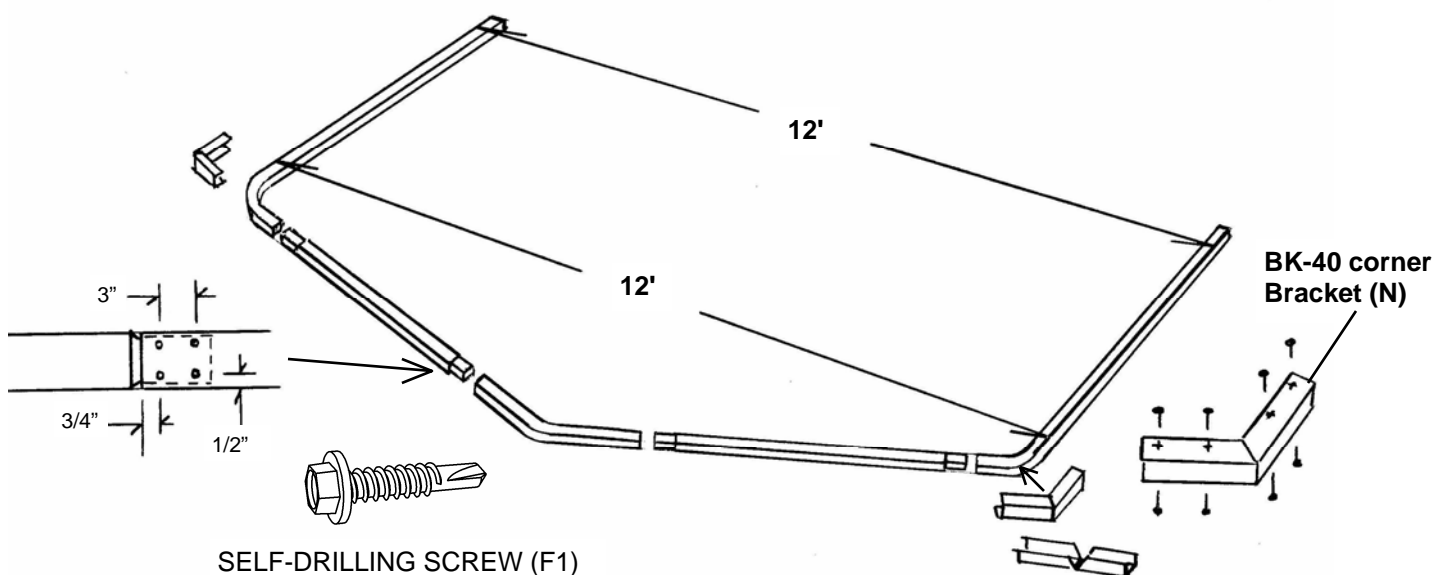


#### ROOF/WALL SECTION ASSEMBLY

Take one Side Post (C) and insert one Rafter (D). Repeat this assembly with another Side Post and Rafter. Now, Connect the two assemblies with one Peak (E). Measure 12 feet across the assembly from outside to outside toward the top and bottom of the assembly. Try to keep the joint spacing equal on both sides of the assembly. Recheck the 12 foot outside dimensions and fasten the peak joints with (4) #12 x 1" Self-Drilling Screws (T) and the Rafter to side post joints with (2) screws (T). (See illustration below.)

Now, Bend and attach a Corner Bracket (N) to each Side Post corner with (8) screws (T). Note that the corner brackets are shipped flat and must be bent to the proper angle for installation. The outside flat surfaces should be parallel with the side post outside flat surfaces.

Place the Roof/Wall section assembly on the Base Rail assembly to check the fit make any necessary adjustments (this may require reattaching of joints on the Roof/Wall section assembly). Make equal adjustments on both sides of the assembly. When the assembly fits properly, lay it back on the ground and use it as a template or guide for assembling the remaining Roof/Wall sections. NOTE: Concrete must be set.



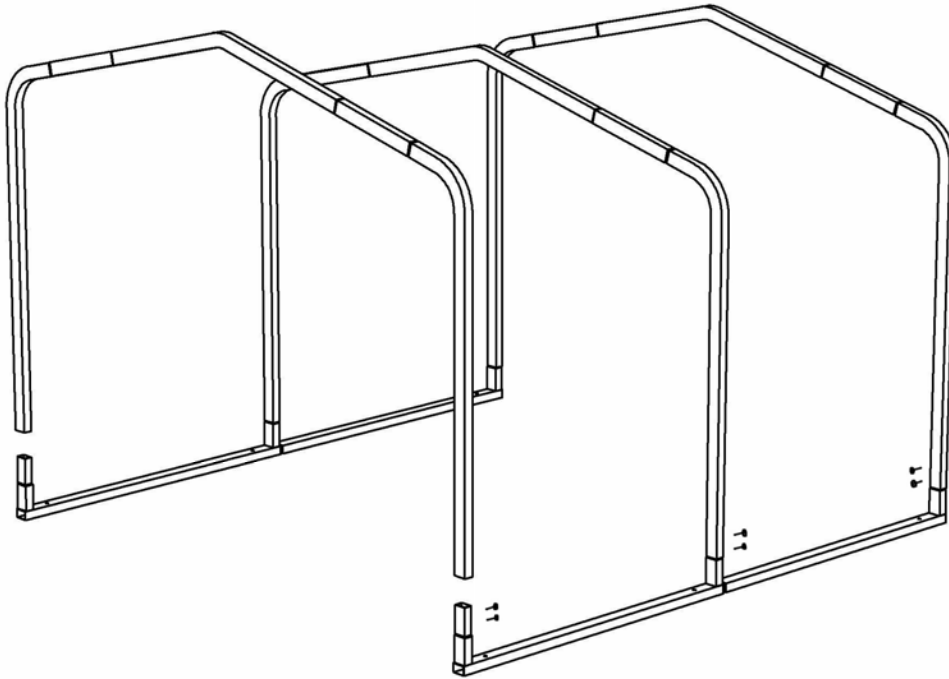
## STEP 4: ASSEMBLE ROOF/WALL SECTIONS TO BASE RAILS

NOTE: This step will take at least two people to complete safely and easily. Lift one complete Roof/Wall assembly and place each leg of the assembly onto the corresponding pins on the base rail assembly as shown.

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

NOTE: Screws should be positioned on the side or inside of the tubes, away from the outside surfaces where sheet metal panels will be attached.

If you purchased a front or back enclosure, both ends of the building should be free of screw heads.

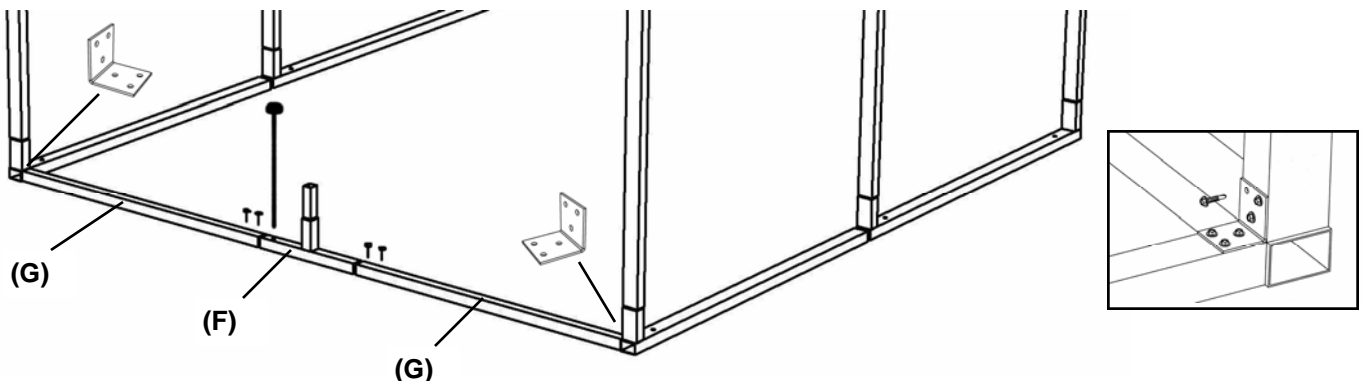


## STEP 5: ASSEMBLE BACK BASE RAIL

Connect (1) T-Connector (F) and (2) Back Base Rails (G) together as shown. Do not install screws at this time.

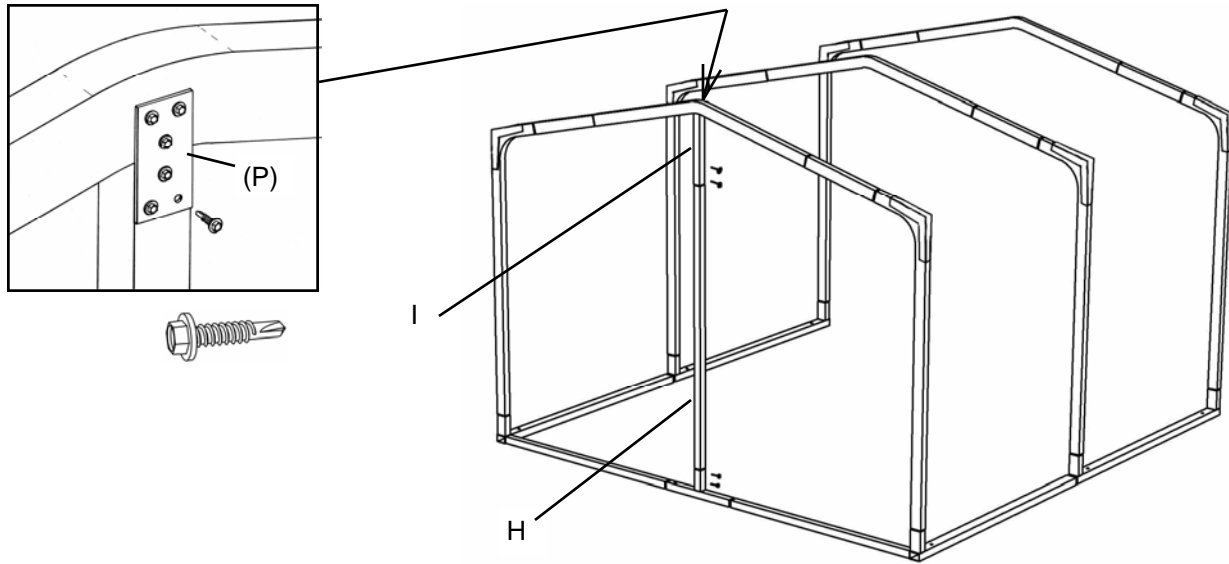
Now, place the assembly between the side base rails at the back of the building. Line the back base rails up with the vertical pins on the side base rails and fasten them to the vertical pins with Angle Brackets (O). Center the T-Connector and fasten it to the base rails with 2 screws at each joint. Place the screws on top.

Anchor the T-Connector With a Versatube 30" Ground Anchor by driving the anchor through the anchor hole into the ground. Ground Anchors must be purchased separately. They are not provided with the kit. If you are using another type of anchor , you should install one here. You can substitute a 1/2" x 30" threaded rod with a flat washer and a nut at the top.



## STEP 6: ASSEMBLE BACK VERTICAL AND EXTENSION

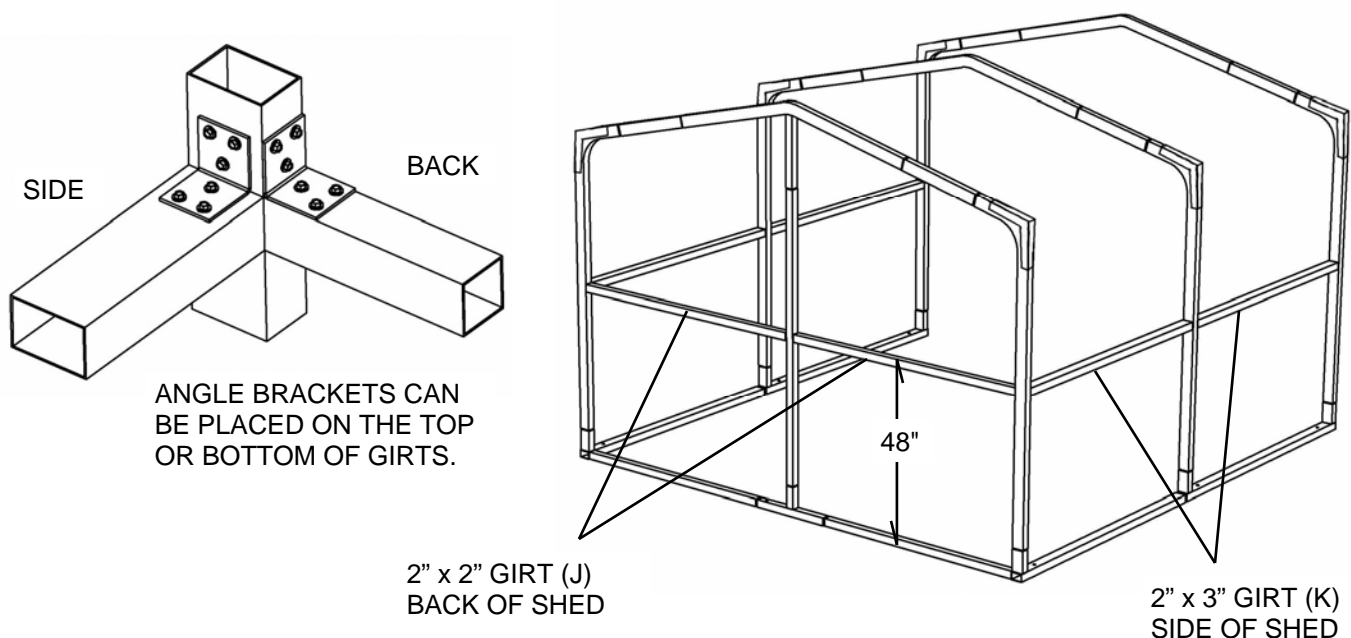
Connect (1) Back Vertical (H) to (1) Back Vertical Extension (I). Do not install screws at this time. Place the assembly on the T-Connector (F) and fasten the joint with 2 screws on the side of the parts. Now, Adjust the vertical Extension (I) up until it touches the bottom of the peak and fasten it to the peak (E) with a Flat bracket (P) on the inside of the Shelter. Install 2 screws in the joint at this time.



## STEP 7: ASSEMBLE LOWER GIRTS

The lower Side Girts (K) are 2" x 3" x 69 3/4" four per unit. The back Girts are 2" x 2" x 67 3/4" two per unit. Fasten the girts to the frame with Angle Brackets (O) with self-drilling screws (T) as shown below. Brackets may be placed on the top or bottom of the girts. The top of the girts should be 48" from the bottom of the base rail.

Note: keep the side posts plumb as you attach the girts. The girts are cut about 1/4" shorter than the actual post spacing.

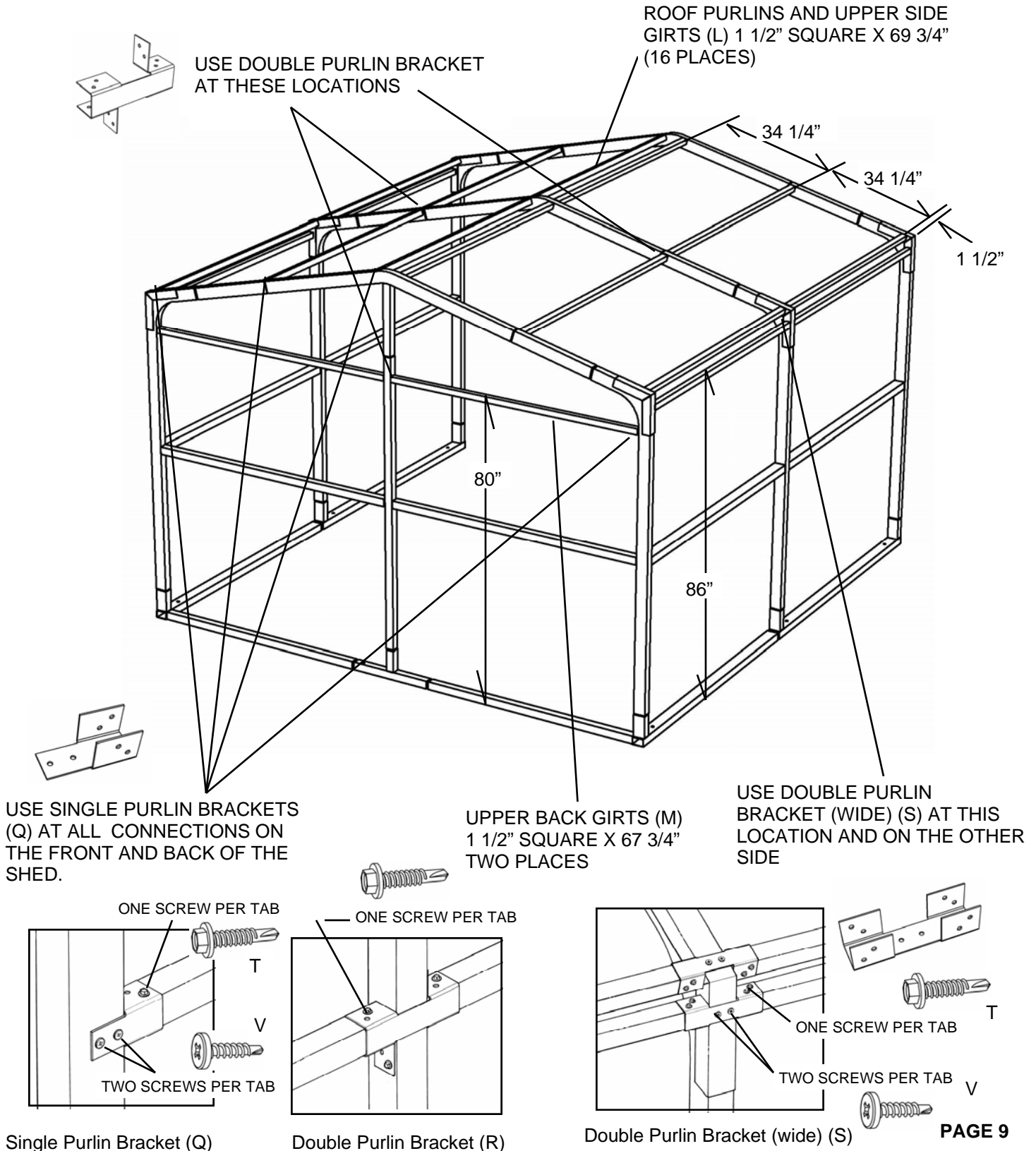




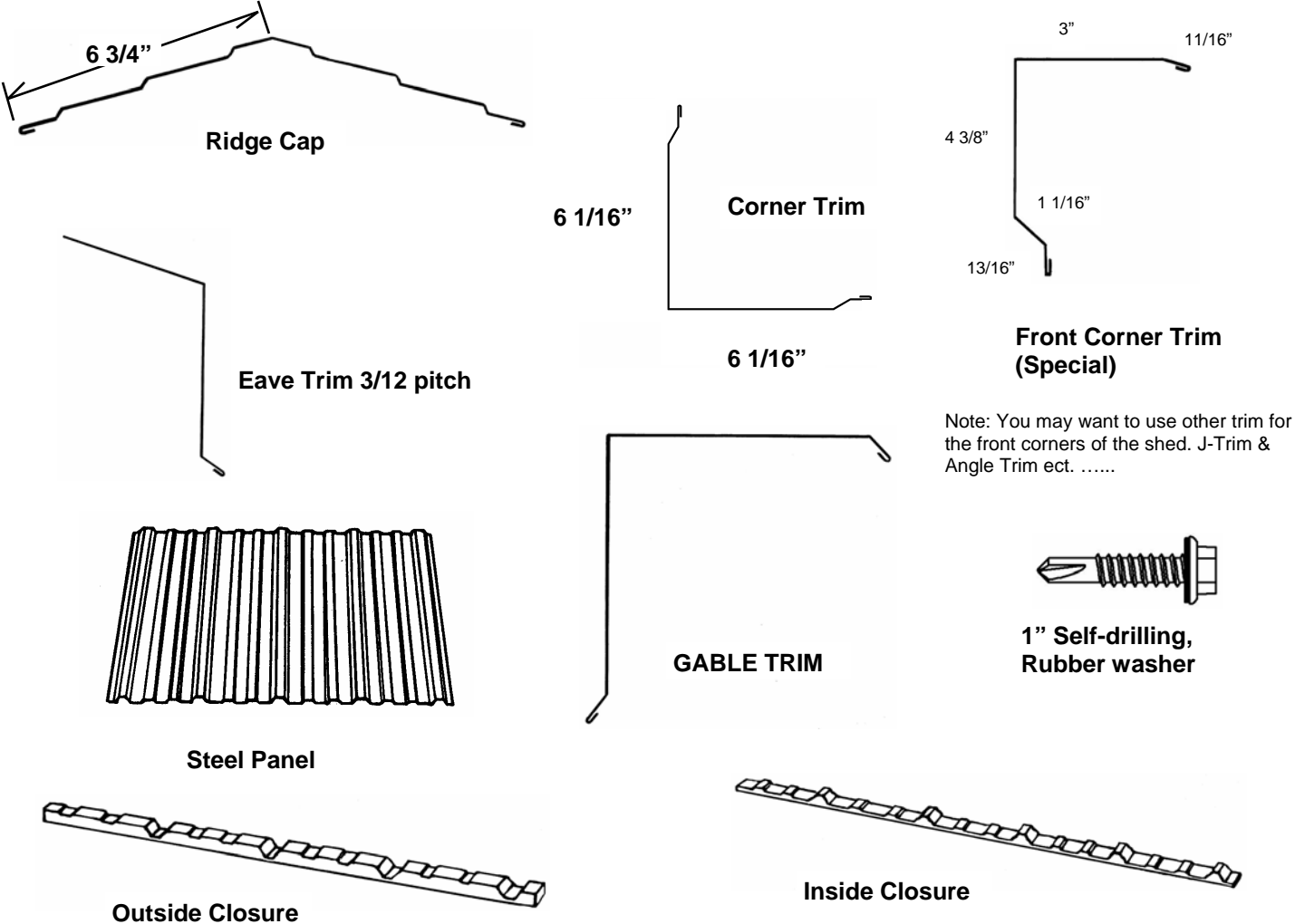
## STEP 8: ASSEMBLE UPPER SIDE GIRTS AND ROOF PURLINS

Fasten Upper Side Girts and Roof Purlins (L) and Upper Back Girts (M) to frame with Purlin Brackets as shown below. Use #12 x 1" self-drilling Screws (T) on all inside tabs (the ones away from the sheet metal) and #10 x 7/8" Pan head, square drive screws (V) on the outside tabs on the single purlin brackets and the wide double purlin brackets.

Note: Use one screw per tab except on outside tabs where Pan Head Screws are used. (See drawings at bottom of page) Use #2 square drive bit on pan head screws.



# SHEET METAL INSTALLATION / PARTS LIST



## SHEET METAL PARTS LIST

PART	QTY.
ROOF PANEL 76" LONG 29 GA	8
SIDE WALL PANEL 88" LONG 29 GA	8
BACK WALL END PANELS 97" LONG 29 GA	2
BACK WALL CENTER PANELS 106" 29 GA	2
RIDGE CAP 10'-6" LONG	2
EAVE TRIM 10' LONG (ROOF/WALL JOINT)	3
CORNER TRIM 8' LONG (BACK CORNERS)	2
SPECIAL FRONT CORNER TRIM 8' LONG (FRONT CORNERS)	2
GABLE TRIM 10' LONG (ROOF GABLE)	4
INSIDE FOAM CLOSURE STRIP (ABOVE EAVE TRIM)	8
OUTSIDE FOAM CLOSURE STRIP (UNDER RIDGE CAP)	8
SCREWS 1" SELF-DRILLING, PAINTED ROOF COLOR	200
SCREWS 1" SELF DRILLING, PAINTED SIDEWALL COLOR	300
SCREWS 1" SELF-DRILLING, PAINTED TRIM COLOR	100

## STEP 8: INSTALLING SIDE SHEET METAL PANELS:

### SHEET METAL PANELS FOR THE SIDE OF THE BUILDING ARE 88" LONG.

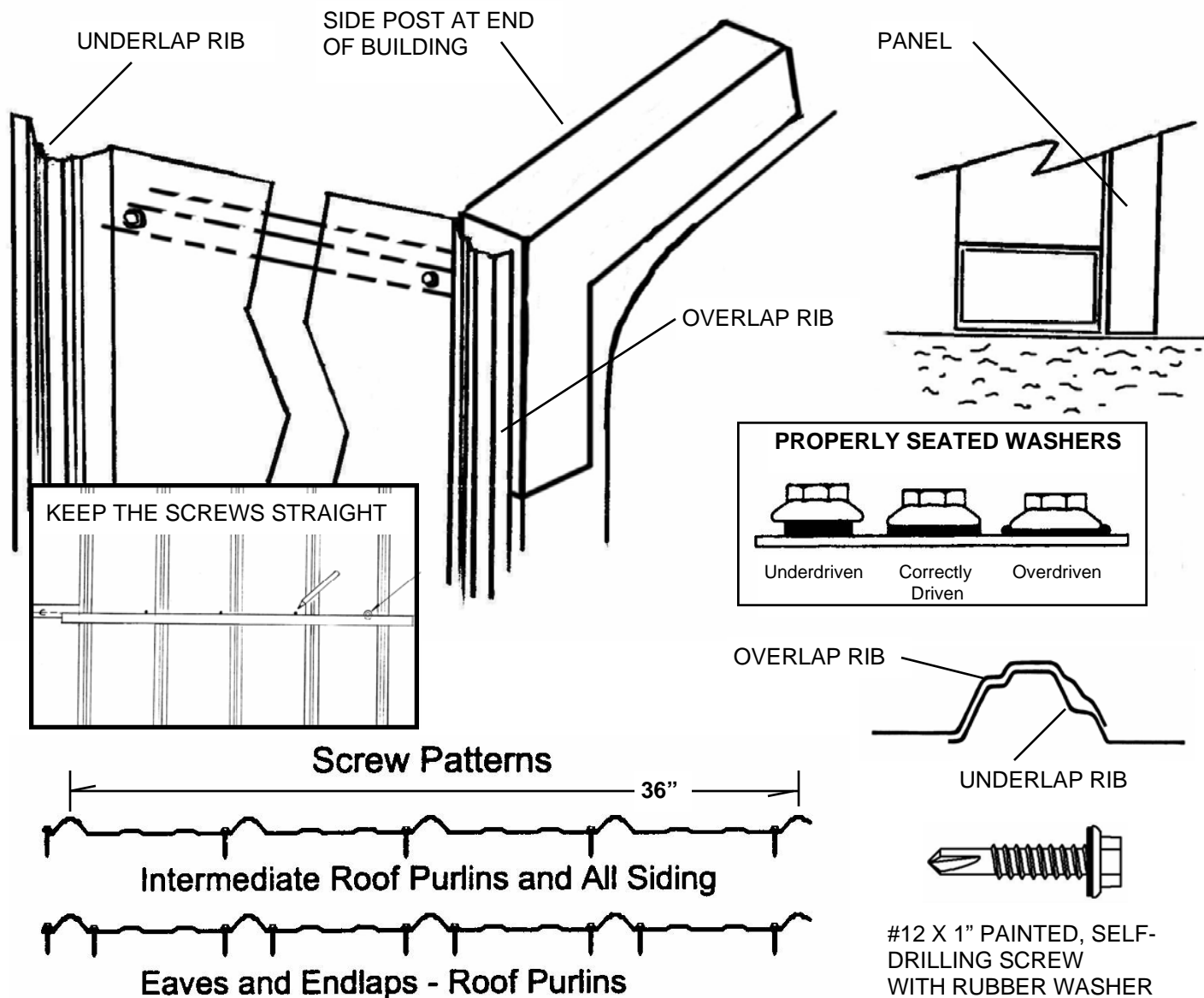
Start at one corner of the building. (it is preferred that you chose a corner that is away from the prevailing wind) . Make sure that the frame is plumb when installing the first side panel. All additional panels will depend on the first panel being plumb and square.

Carefully place the first panel at the bottom of the base rail if no curb or footing is available. Place the overlap edge at the starting corner of the building. This will allow you to easily overlap the second panel over the first and so on down the length of the building.

Attach the panels to the girts and base rail with #12 x 1" painted, Self-Drilling Screws with rubber washers. Place one screw about 3/4" to one side of each major rib. (Take care to set the torque on your drill driver to properly seat the washers on the painted screws. When drilling into two thin sheets of metal the setting should be lower. See detail below.)

NOTE: IT is important to keep the panels from stretching or compressing in width as you install them. The panels should be 36" from the center of the major rib on one side of the panel to the center of the major rib at the other side of the panel. Measure each panel as you go or pre-mark the building frame every 36" to check the panel width as you go. The last panel installed on the side on the building should come out flush with the other end of the building frame.

Tip: To keep the screws in a straight line down the length of the building, install screws next to the 1st major rib. Hold a straight edge between the center point of the screw and the center of the girt or purlin at the other side of the panel and mark dots along that line where the remaining screws will be located with a felt tip marker. You can also tie a small loop in one end of a string, hook it over the first screw and draw the string to the center of the girt. Holding the string taut, use a felt marker to mark location points for the remaining screws.



## STEP 10: INSTALLING GABLE END (BACK) SHEET METAL PANELS

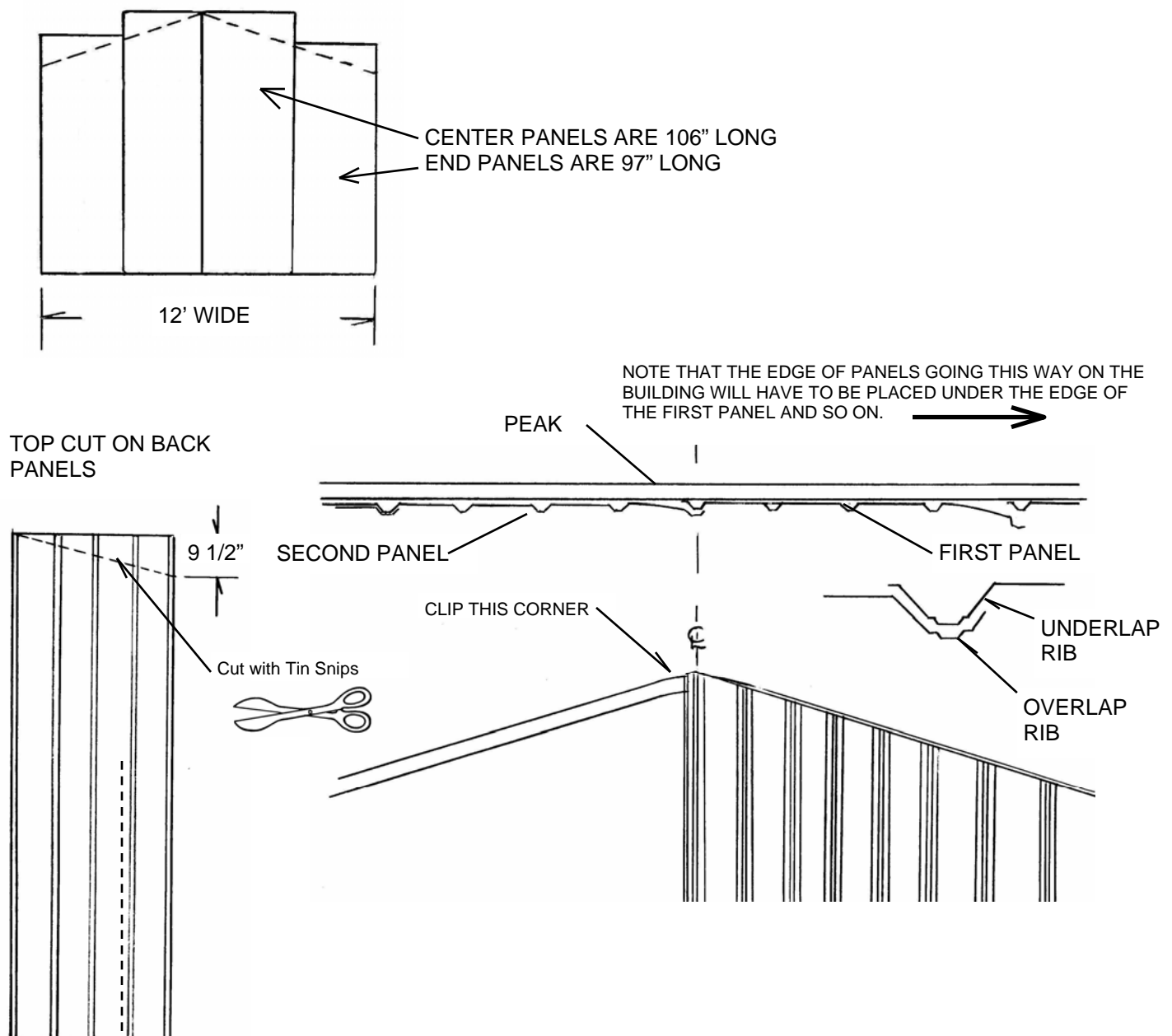
Start in the middle of the building and work to the sides. See the panel layout drawing . The drawing will give you the panel lengths and locations.

Start by placing the underlap edge of the first panel flush with one edge of the back center frame post.

The length or height of the sheet metal panels are sized to fit your building. (See drawing for panel lengths). To cut the roof angle on the top of the panel measure down on the outside edge of the panel 9 1/2" and make a mark. Now, draw a line between the upper corner and the mark. This will be the angle cut for the roof pitch. Cut with large straight cut tin snips. Fasten the first panel to the back girts with 1" painted self-drilling screws with rubber washers. Do Not place any screws next to the overlap rib until you lift and insert the underlap edge of the next panel in that direction.

The second back panel will also start in the center of the building with the overlap rib in the center of the building. Measure and cut the top of this panel opposite of the first panel. (The overlap rib will be the top corner measurement and the underlap rib will be the low measurement.) Note that panels going to one side of the building will lap under the previous panel. You will need to leave out the screws in the overlap rib until the next panel is installed.

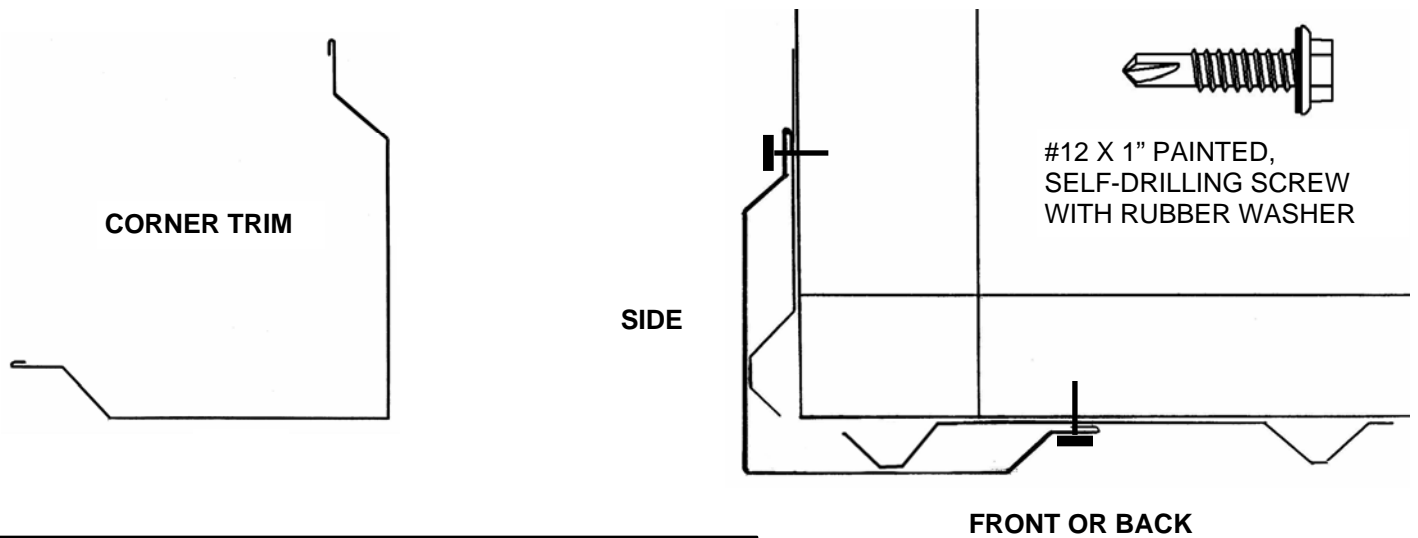
Measure and trim the top angle on the remaining panels as you did the first and second panels.



## STEP 11: INSTALLING CORNER TRIM ON BACK CORNERS OF SHED

Your trim package contains 2 pieces of corner trim 8' long. Cut pieces to 88".

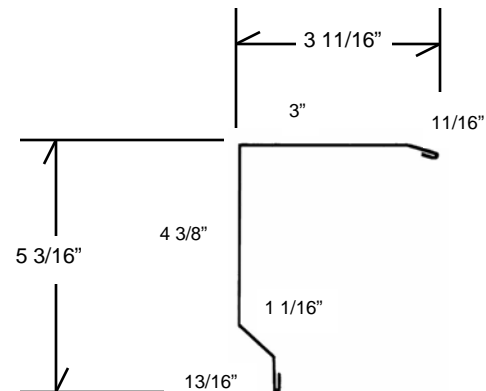
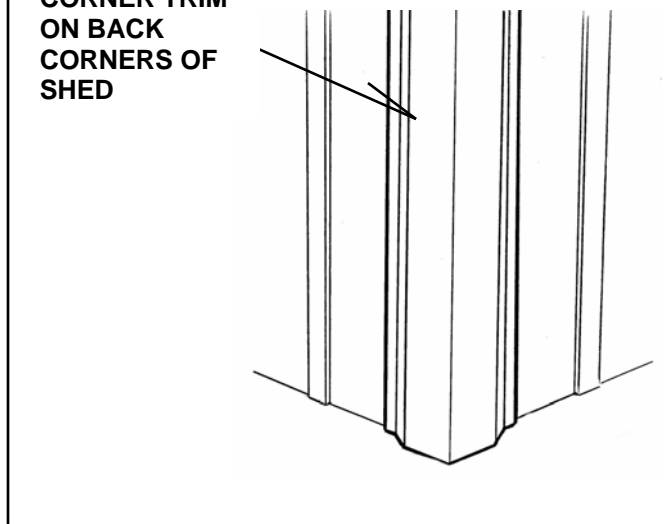
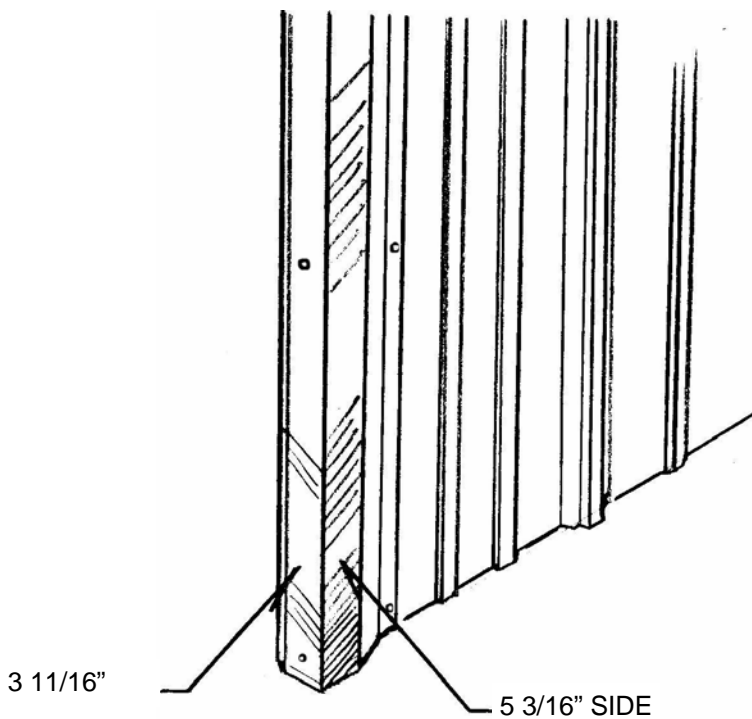
Install a piece of Corner Trim on the 2 back corners of the shed with 1" Painted, Self-Drilling Screws with rubber washers. Install the screws through the flat flanges at the edges of the trim into the wall girts and base rail.



## STEP 12: STALLING FRONT CORNER TRIM ON FRONT CORNERS.

Cut two pieces of special front corner trim 88" long and fasten them on the front corners of the shed as shown with #12 x 1" painted self-drilling screws into the corner post and side girts. Note: The 3 11/16" side of the trim should be on the front of the shed. NOTE: You may want to use another type of trim on the front corners of the shed. J-Trim & Angle Trim .....

**CORNER TRIM ON BACK CORNERS OF SHED**



**FRONT CORNER TRIM ON FRONT CORNER OF SHED**

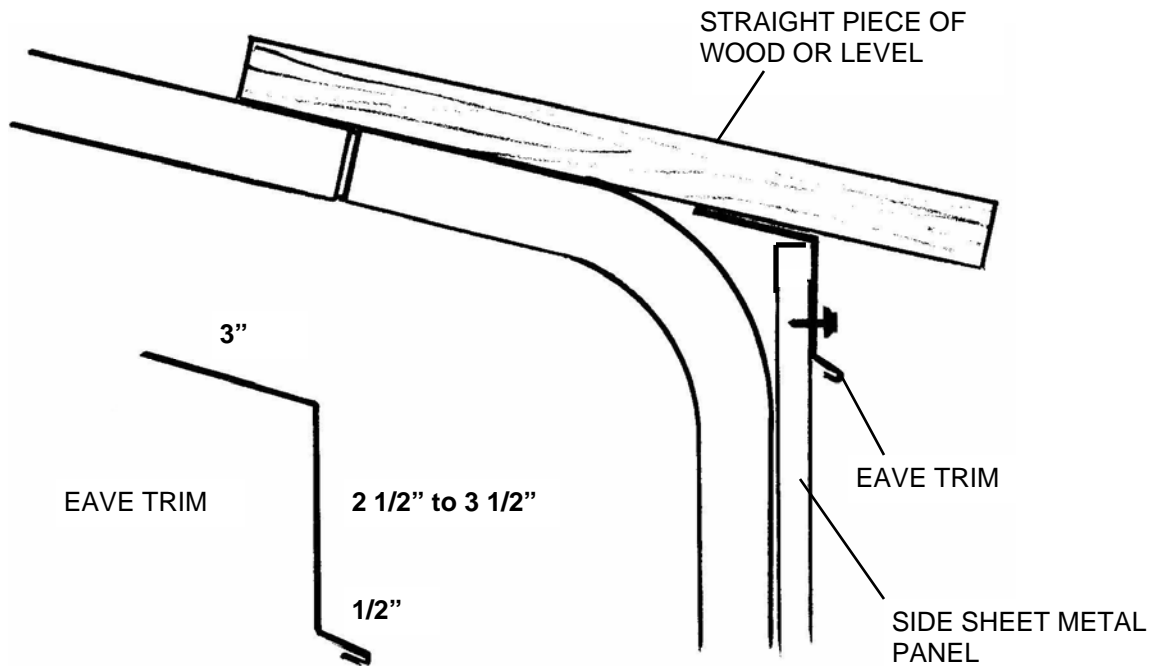
**Front Corner Trim (Special)**

## STEP 13: INSTALLING EAVE TRIM

Attach the Eave Trim at the top of the side sheet metal all the way down both sides of the building with #12 x1" Painted, Self-Drilling Screws with Rubber washers. Place the screws into the center of every other major rib.

To position the top edge of the Eave Trim place a straight board or level on top of the roof frame and extend it out to act as a stop for the top of the Eave Trim. See the illustration. Eave Trim comes in 10" lengths. You will need to cut a shorter piece 40" long to underlap the 10' piece about 12 1/2" down each side of the shed. Install the 40" piece first, starting at the back of the shed.

Eave Trim should overlap Corner Trim and be flush with the corner trim at the front and back of the shed.



## STEP 14: INSTALLING ROOF SHEET METAL PANELS

LENGTH OF ROOF PANELS: 76"

### YOU WILL NEED AT LEAST TWO PEOPLE TO INSTALL ROOF SHEET METAL PANELS

One person will be on a tall step ladder, extension ladder, or scaffold inside the building at the building peak and the other on the outside of the building at the eave. An additional person on the inside of the building on a step ladder close to the side wall can be helpful in lifting the panels onto the roof.

The roof metal is sized to allow a 2" overhang at the eave. We recommend that you measure up the gable end wall frame from the corner of the eave trim 74" and put a mark on the outside of the peak portion of the frame.

See illustration on next page.

Now, about 1/2" down from the top surface of the peak drive a 1" self-drilling screw into the front of the frame about half way in at your mark. This screw will be an anchor for a mason line (or string) to be stretched from the front of the building to the back. This string will be used to locate the top of the roof sheet metal and keep it straight down the length of the building.

Measure and drive another screw into the outside of the frame at the back of the building. Tie and stretch a mason line or nylon string between the two screws.

Place the first sheet of roof sheet metal at the front or back edge of the roof flush with the outside of the building frame. You should start on the same end of the building that you started the side metal. Place the Overlap edge of the panel flush with the end of the building frame.

The person at the upper end of the panel must line the panel edge up with the edge of the building and set the upper edge of the panel even with the string. The person at the lower end of the panel should line the edge of the panel with the edge of the building frame and attach the edge of the panel to the lower roof purlin with a 1" painted, self-drilling screw with rubber washer.

The person at the top should then attach the edge of the panel flush with the end of the building. The person at the bottom should then measure the distance from the center of the first rib to the center of the last rib. Set the distance at 36" and attach that edge of the panel to the lower purlin. Then take a measurement from the underlap edge of the panel to the next Roof/Wall Frame Section and the person at the top must set the top edge at the same distance and attach the top edge of the panel to the top roof purlin. This will assure you that the panels at the top and bottom will come out even with the other end of the building. Now, Install remaining screws into top and bottom roof purlins. Use the same straight edge or string method that you used on the sides of the building to keep the screws straight and make sure that you hit the purlins with the screws. At the eave or lower end of the roof panel place one screw on both sides of each major rib.

We recommend that you install one screw next to the underlap rib of the panel at each roof purlin at this time. This will make the roof more secure when you have to walk on it, and give you location points for installing the remaining screws later when the purlins are not visible. (A third person will save time and energy with this step.)

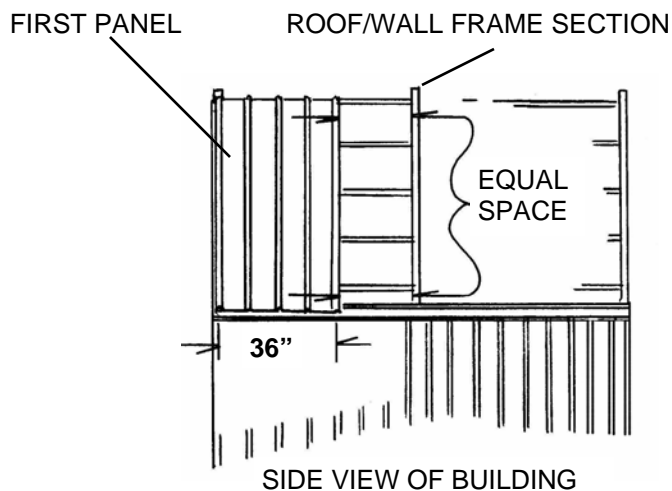
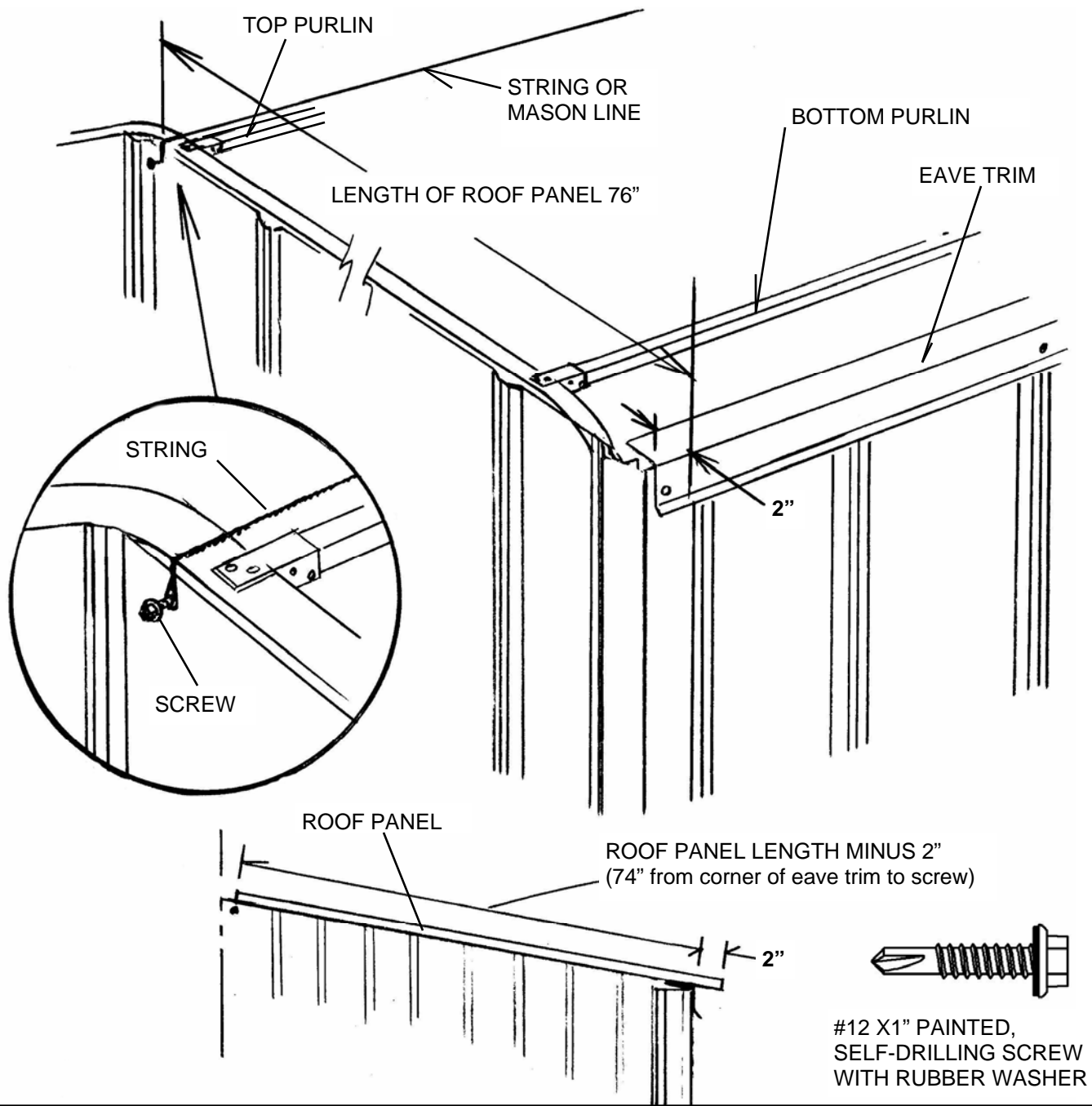
Place the overlap edge of the next roof panel over the underlap edge of the previous panel. Line the panel up with the string at the top and attach that edge at the top and bottom of the panel. Now, take the same measurements that you did on the first panel. 36" between the center of the first and last rib. Attach at the bottom, measure to the next frame section, set the top edge at the same dimension and attach the top of the panel. Place one screw in remaining roof purlins at the edge of the panel.

Repeat this installation method down the length of the building.

When you install the panels on the other side of the roof, you will have to work the top side of the panels from one side or from the roof on the other side.

When all roof panels have been installed you must get up onto the roof and use the straight edge or string method to install the remaining screws. **When walking on the roof step on the flats only (not on major ribs) . Step on or very near the purlins or frame members. The screws should be a guide to purlin and frame locations.**

**(See illustrations on next page)**



### **REMAINING SCREWS**

When all roof panels on the building have been installed climb onto the roof. Step only on flat areas next to a frame sections or purlins. Install the remaining screws. (use one screw next to each major rib.)

**Do not step on major ribs.**



## STEP 15: INSTALLING GABLE TRIM

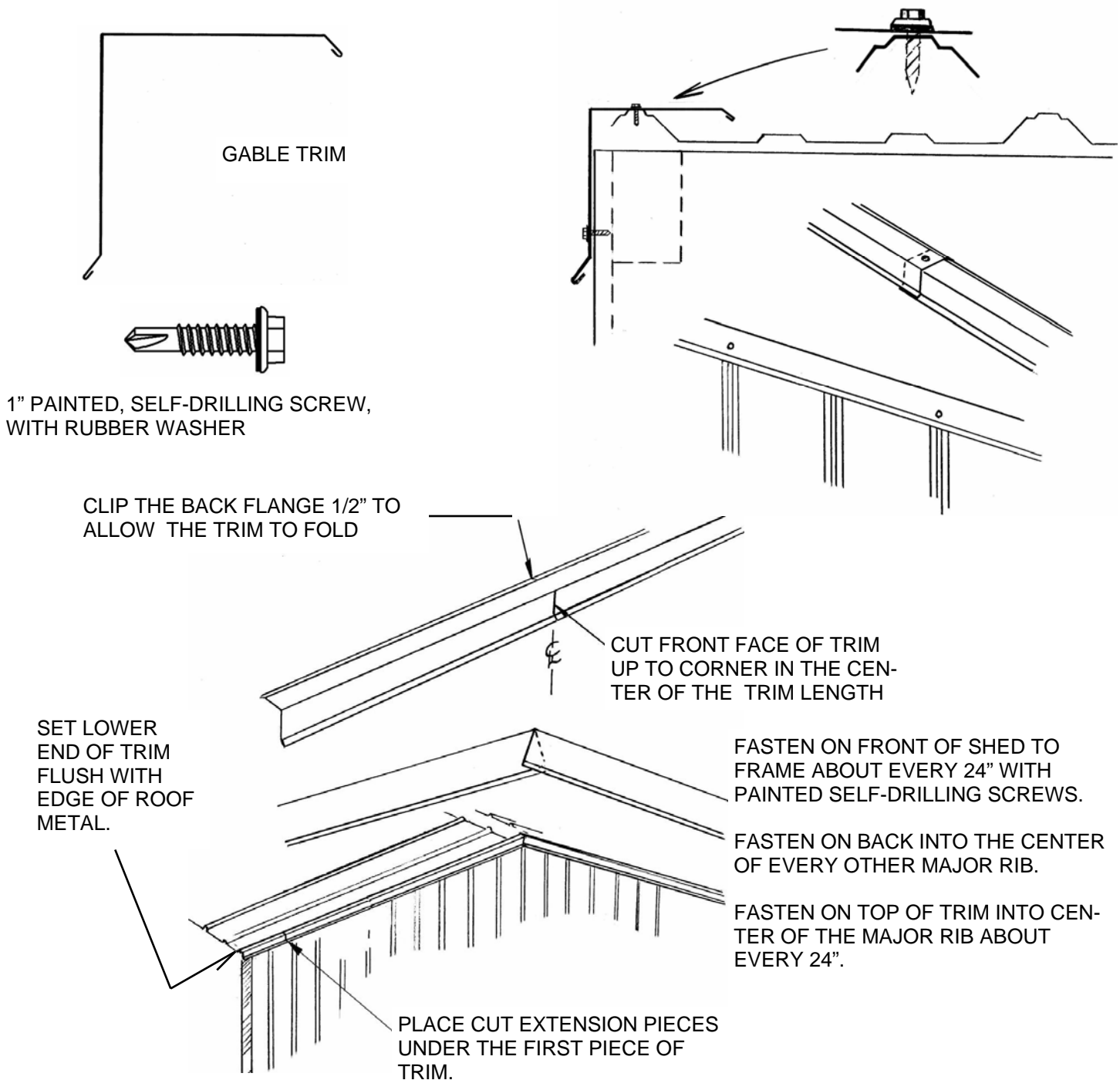
GABLE TRIM WILL COME IN 10' LENGTHS.

Gable Trim will finish the roof joints at the gable ends of the building between the roof and the back wall panels or front frame.

Take two 10' pieces of Gable Trim, measure to find the center and cut the front face of the trim up to the 90° bend. Now clip the top flange at the back 1/2" and fold the trim to match the gable peak angle. These pieces of trim will be placed on the front and back gable peaks of the shed. Fasten the trim on the front to the shed frame about every 24" with #12 x 1" self drilling painted screws with rubber washers. Fasten the trim on the top into the center of the major rib on the roof panel. You may want to measure and snap a chalk line to locate the center of the rib.

On the back of the shed, fasten the front face of the trim into the top of every other major rib on the back panels. Fasten the top of the trim as you did the front trim. NOTE: Do not place any screws in the lower portion of the trim until lower extension pieces are inserted under the first piece of trim.

Now, Cut 4 pieces of trim 24" long and insert them under the lower ends of the first trim pieces. Flush them at the bottom with the lower edge of the roof panels and fasten as you did the first trim pieces.



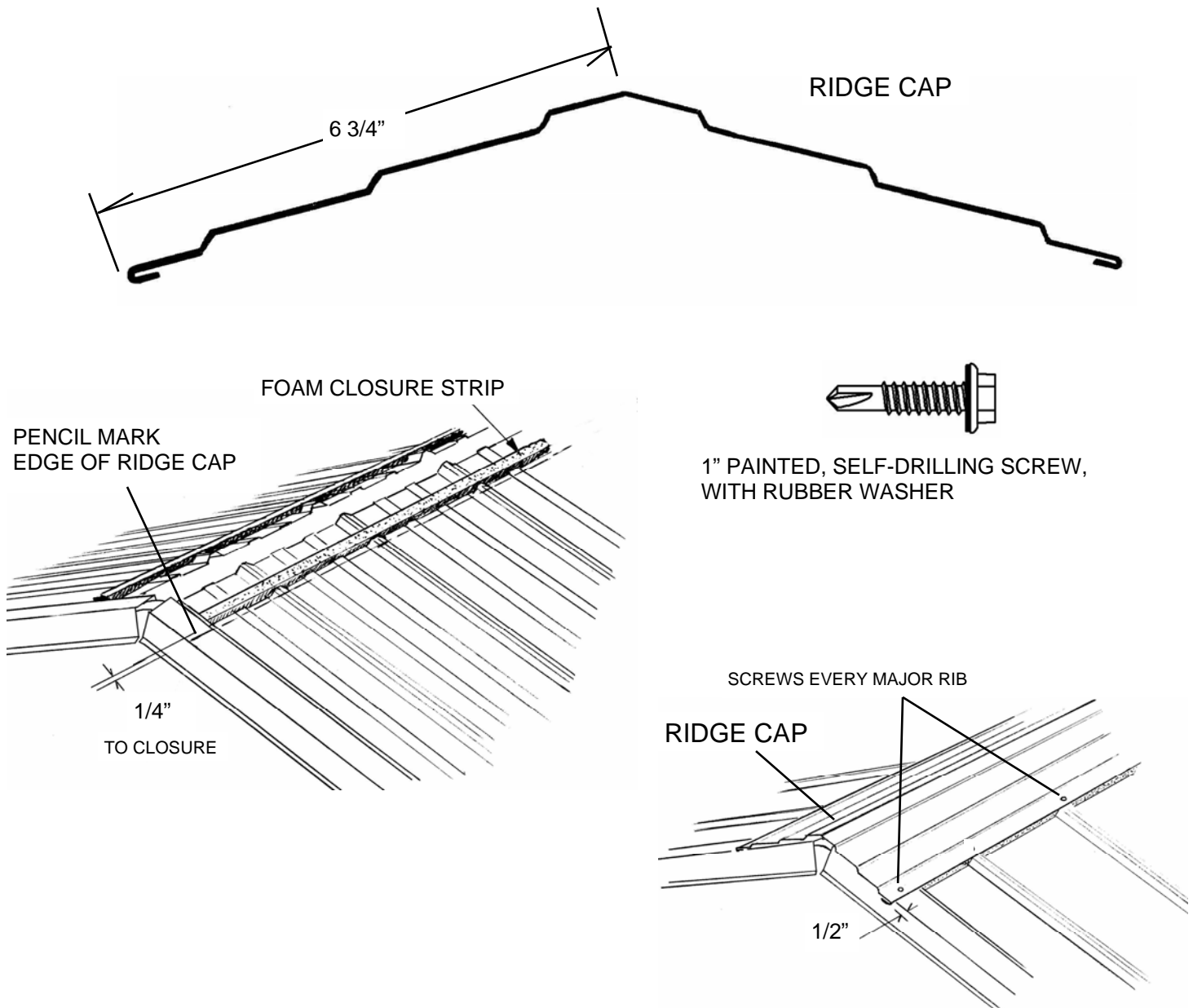
## STEP 15: INSTALLATION OF RIDGE CAP

RIDGE CAP WILL COME IN 10'-6" LENGTHS. CUT ONE PIECE TO A LENGTH OF 3'. THE RIDGE CAP SHOULD OVERHANG THE GABLE TRIM 1/2" AT BOTH ENDS OF THE BUILDING.

Place the 3' piece of Ridge Cap on the peak of the building at the back of the building. Now place the 10'-6" piece on the peak at the front of the building. The 10'-6" piece will overlap the back 3' piece. The ends of the Ridge cap should hang 1/2" over the Rake Trim on both ends of the building. Center it side to side and make a mark with a pencil along the lower edges. This will provide a measuring point for locating Outside Foam Closure Strips.

Remove the Ridge Cap pieces and press Outside Closure strips to the roof panels all the way down the building on both sides of the roof. The lower edge of the Closure should be 1/4" up from the pencil line.

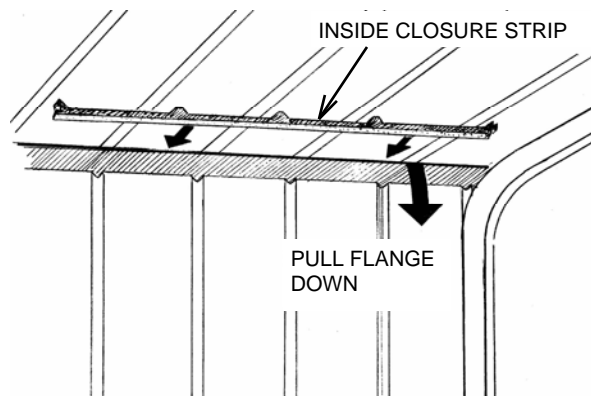
Install the 3' piece of Ridge Cap on the peak at the back of the building. Let the Ridge Cap overhang the Gable Trim by 1/2". Fasten with 1" Painted, Self-drilling Screws through the edge flange and into the top of every major rib. Lap the 10'-6" piece of Ridge Cap over the first using two beads of Butyl or Urethane sealant in the lap joint. The 10'-6" piece should overhang the Gable Trim at the front of the building 1/2". Don't forget to adjust the torque on the drill driver.



## STEP 16: INSTALL INSIDE CLOSURE STRIPS AT EAVE

On the inside of the building, install Inside Foam Closure Strips between the eave trim flange and the roof panels. Peel the strips off the backing paper, pull down the eave trim flange and work the closure strips between the flange and the roof panels. The ends of the strips will interlock at a major rib. Start in one corner and work to the other.

FOAM CLOSURE INTERLOCK



NOTE: IF YOU WILL BE USING YOUR SHED TO SHADE HORSES, WE RECOMMEND THE YOU LINE THE LOWER 4' OF THE SHED ON THE INSIDE WITH EXTERIOR GRADE PLY WOOD TO PREVENT KICKING DAMAGE TO THE SHEET METAL.