GROWspan™
greenhouse structures

GrowSpan™ Gothic Cold Frames

Photo may show a different but similar model.

STK#	DIMENSIONS
106324	20' W x 12' H x 24' L
106325	20' W x 12' H x 36' L
106326	20' W x 12' H x 48' L
106327	20' W x 12' H x 60' L
106328	20' W x 12' H x 72' L
106329	20' W x 12' H x 96' L

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WARNING: Cancer and Reproductive Toxicity - P65Warnings.ca.gov

Revision date: 01.01.16

GROWspan™
greenhouse structures

YOU MUST READ THIS DOCUMENT BEFORE YOU BEGIN TO ASSEMBLE THE SHELTER.

Thank you for purchasing this GrowSpan™ Cold Frame. When properly assembled and maintained, this product will provide years of reliable service. These instructions include helpful hints and important information needed to safely assemble and properly maintain the cold frame. Please read these instructions ***before*** you begin.

If you have any questions during the assembly, contact Customer Service for assistance.

SAFETY PRECAUTIONS

- Wear eye protection.
- Wear head protection.
- Wear gloves when handling metal parts.
- Use a portable GFCI (Ground Fault Circuit Interrupter) when working with power tools and cords.
- Do not climb on the frame during or after construction.
- Do not occupy the structure during high winds, tornadoes, or hurricanes.
- Provide adequate ventilation if the structure is enclosed.
- Do not store hazardous materials in the structure.
- Provide proper ingress and egress to prevent entrapment.

LOCATION

Choosing the proper location is an important step before you begin to assemble the structure.

The following suggestions and precautions will help you determine whether your selected location is the best location.

- Never erect the structure under power lines.
- Identify whether underground cables and pipes are present *before* preparing the site or anchoring the structure.
- Location should be away from structures that could cause snow to drift on or around the building.
- Do not position the structure where large loads such as snow and ice, large tree branches, or other overhead obstacles could fall.
- *Always check local building codes before you begin.*

SITE

After choosing a location, proper preparation of the site is essential. Follow the information below.

- *A level site is required*. The site must be level to properly and safely erect and anchor the structure.
- If the site is not level, use footings to provide a secure base to assemble the structure. Pre-cast concrete blocks, pressure-treated wood posts, or poured footings are all acceptable when properly used. (Some shelters use ground posts or rafter feet.)
- Drainage: Water draining off the structure and from areas surrounding the site should drain away from the site to prevent damage to the site, the structure, and contents of the structure.

⚠ **WARNING:** The individuals assembling this structure are responsible for designing and furnishing all temporary bracing, shoring and support needed during the assembly process. For safety reasons, those who are not familiar with recognized construction methods and techniques must seek the help of a qualified contractor.

ASSEMBLY PROCEDURE

Following the instructions as presented will help ensure the proper assembly of your structure. Failing to follow these steps may result in an improperly assembled and anchored structure and will void all warranty and protection the owner is entitled.

The steps outlining the assembly process are as follows:

1. Verify that all parts are included in the shipment. Notify Customer Service for questions or concerns.
2. Read these instructions, and all additional documentation included with the shipment ***before*** you begin assembling the structure.
3. Gather the tools, bracing, ladders (or lifts), and assistance needed to assemble the structure.
4. Check the weather ***before*** you install the roof cover and any panels (if equipped). Do not install covers or panels on a windy or stormy day.
5. Re-evaluate the location and site based on the information and precautions presented in the documentation included with the shipment.
6. Prepare the site (if applicable).
7. Assemble the frame components in the order they are presented in these instructions.
8. Assemble the frame including the struts (if equipped).
9. Consult the MUST READ document and properly anchor the assembled frame.
10. Install, tighten, and secure the end panel and main cover (if equipped). This applies to covers that stretch over the frame assembly. Your shelter may include roof panels or side panels or both.
11. Read the care and maintenance information at the end of these instructions.
12. Complete and return all warranty information as instructed.

LIST OF WORDS AND PHRASES

Before you begin, it is important to become familiar with the words and phrases used in this instruction manual.

These words and phrases are common to most GrowSpan™ shelters and identify the different parts of the shelter. (Some are used in this document. Others may not apply to this particular shelter.) These terms describe the shipped parts and can also be found on the materials list/spec sheets included with the shipment. To aid in the assembly, read through the following definitions before you begin to assemble your shelter.

- **Conduit:** An assembly of pipes used to secure the main cover and end panels (if equipped). Purlins and some strut assemblies also consist of connected pipes to form a conduit. Each pipe joint of a conduit assembly is secured with a self-tapping Tek screw.
- **Coupler or Fitting:** A part of the frame assembly where legs, purlins and rafter pipes are inserted and secured. In most instances, 3-way and 4-way couplers are used. In some larger applications, couplers are used to secure the joints of the different rafter sections during the assembly of the rafters. Some shelters do not use couplers.
- **Foot or Rafter Foot:** The part attached to and found at the base of the rafter or leg of the shelter. Depending on the shelter, the foot is an optional purchase. Some shelters do not offer an optional foot. Some use 1-way connectors or ground posts.
- **Must Read Document:** This document includes building and shelter anchoring instructions, steps for end wall reinforcement, safety precautions, and notices and warnings. The Must Read document is sent with all shelters and buildings. If you did not receive a Must Read document, contact Customer Service to request one.
- **On-Center:** Term used to describe a measurement taken from the vertical center of the rafter or frame member to the vertical center of another.
- **Purlin:** The pipe assembly that runs perpendicular to the rafters or framework that supports the main cover. Purlins are found on the sides and roof areas of the assembled frame, are evenly spaced, and typically run from the front to the back of the shelter.
- **Plain or Straight Pipe:** A term used to describe a pipe that has the same diameter or width throughout its entire length.
- **Strut:** A strut is usually a length of pipe with two flattened ends and is used for diagonal bracing of the shelter frame. A strut is typically secured to the frame work by special brackets and bolts.
- **Swaged End or Swaged Pipe:** The term “swaged" refers to the tapered end of the pipe or tube. Swaged ends of a pipe can be inserted into couplers and the straight ends of other pipes.
- **Tek Screw:** A self-tapping fastener used to secure pipe joints and to fasten brackets to rafters.

REQUIRED TOOLS

The following list identifies the main tools needed to assemble the shelter. Additional tools and supports may be needed depending on the structure, location, and application.

- Tape measure or measuring device
- Marker to mark locations on the pipes
- Variable speed drill and impact driver (cordless with extra batteries works best)
- Metal-cutting saw
- Wrenches and impact socket set, or an adjustable wrench
- Scissors, utility knife, or tin snips
- Hammers and gloves
- Adjustable pliers and self-locking pliers
- Ladders, work platforms, and other machinery for lifting designed to work safely at the height of the building

UNPACK AND IDENTIFY PARTS

The following steps will ensure that you have all the necessary parts before you begin to assemble the shelter frame.

1. Unpack the contents of the shipment and place where you can easily inventory the parts. Refer to the Bill of Materials/Spec Sheets.
2. Verify that all parts listed on the Bill of Materials/Spec Sheets are present. If anything is missing or you have questions, consult the Pictorial Parts Guide and all diagrams for clarification, or contact Customer Service.

   NOTE: At this time, you do not need to open the plastic bags containing smaller parts such as fasteners or washers (if equipped).

SPECIAL NOTE: Baseboards for Frame

These instructions describe installing a baseboard (recommended) at ground level along each side of the frame. The baseboard runs from the front to the back of the frame.

This baseboard is *not included* with the shipment and must be supplied by the customer. Treated or recycled plastic lumber can be used for a baseboard.

The baseboard, when installed properly, helps prevent the ground posts from sinking into the ground when anchored. Depending on the building, it also provides a surface to attach struts or other building components.

Consult these instructions, or contact Customer Service for additional information regarding baseboards.

The following graphics and photos will help you identify the different parts. (Some parts are not shown.)

FA4482B
Tek Screw

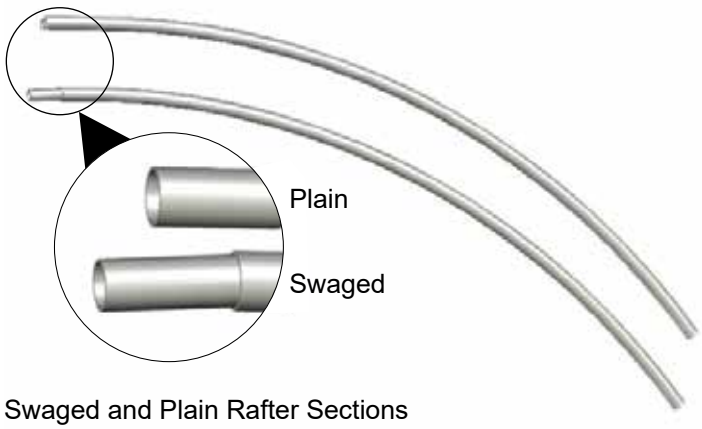
QH1073
Post Driver

102548
Cross Connector

102856
End Clamp

QH1402
Band Clamp

102675
Ground Post



Swaged and Plain Rafter Sections

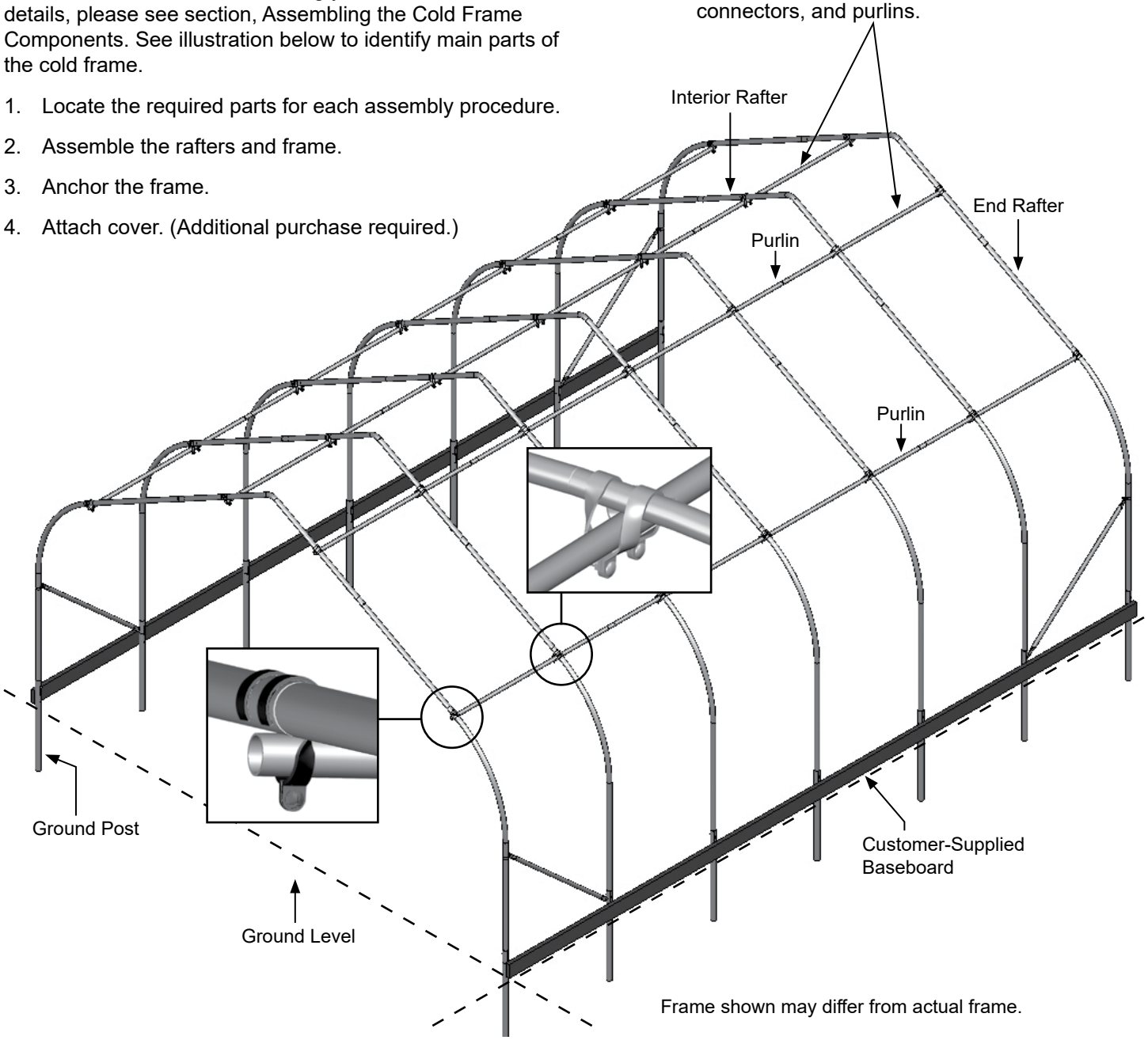
GrowSpan™ Gothic Cold Frames

ATTENTION: Position purlins evenly during the frame assembly. Use the rafter pipe joints as guides when installing the end clamps, cross connectors, and purlins.

OVERVIEW

This section describes assembling your cold frame. For details, please see section, Assembling the Cold Frame Components. See illustration below to identify main parts of the cold frame.

1. Locate the required parts for each assembly procedure.
2. Assemble the rafters and frame.
3. Anchor the frame.
4. Attach cover. (Additional purchase required.)



Frame shown may differ from actual frame.

LAY OUT THE BUILDING SITE

After the site is prepared, lay out the building site.

Taking these steps ***before*** assembling the shelter saves time and ensures that the structure is positioned as desired.

Ground posts must be driven to the proper depth. Width of the shelter is measured from the center of one ground post to the center of the remaining ground post.

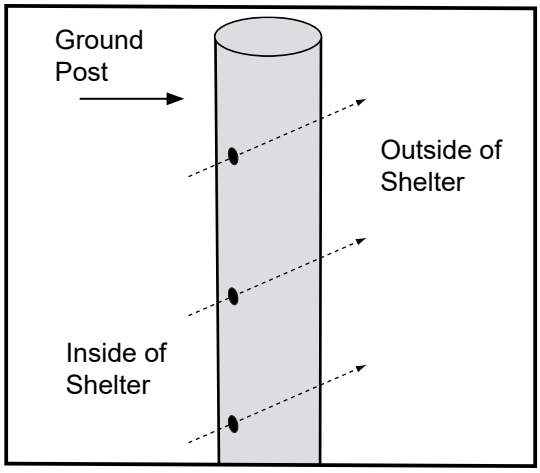
SQUARE THE SITE

Gather the parts:

- Ground posts
- Post driver

1. Identify a corner where a ground post will be positioned and drive the first corner ground post into the ground.

   NOTE: Insert the ground post driver into the top of the ground post to protect the post and drive the post into the ground. *The top of the post will be one (1) foot above the finished grade when properly driven.*



   ATTENTION: Position the pre-drilled holes facing to the inside/outside of the shelter so they can be aligned with the bolt holes in the rafter legs.

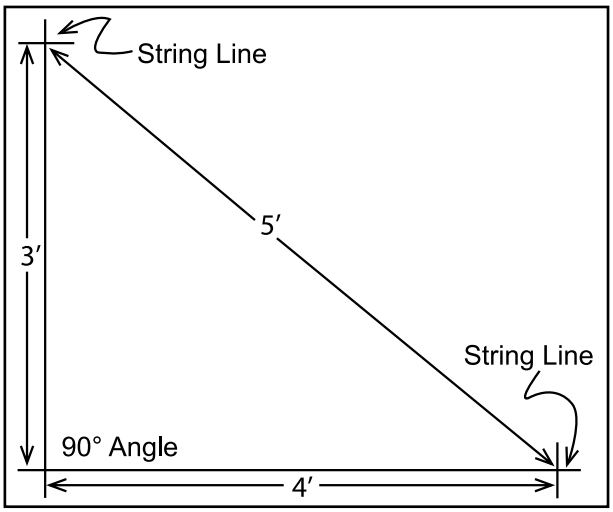
   To align the bolt holes in the ground posts with those in the rafter *after driving the ground posts,* insert a tapered rod or pry bar into a ground post bolt hole and turn the post using the rod or pry bar.

2. After the first corner ground post is in place, string a line the width of the building (center-to-center) and drive the second corner ground post into the ground just enough to hold it in place.

3. Use a transit or line level to drive the second corner ground post to the same depth as the first ground post.

4. String a line at least as long as the building 90° from the line between the first and second corner ground posts.

   NOTE: A transit can be used to ensure an accurate 90° angle, or the 3-4-5 rule can be used. Refer to diagram. Using multiples of 3-4-5 such as 6-8-10 or 12-16-20 helps to maintain an accurate 90° angle.



5. After squaring the position of the building, measure the length and drive the third corner ground post.

6. Repeat the same step for the last corner ground post.

   NOTE: The distance measured diagonally between corner ground posts must be equal for the building to be square.

7. Check all dimensions (and adjust if needed) before driving the remaining posts to the required height.

8. After all four corner posts are accurately installed, tie a string line between the tops of the corner ground posts on the same side of the shelter. The string is used to identify the tops of all remaining ground posts. The string must remain tight and level.

9. Use a tape measure to mark the 48" on-center locations of the remaining ground posts.

10. Drive the remaining ground posts into the ground at the required 48" on-center width and the height identified by the string.

    NOTE: Verify that the holes in the ground posts are in the proper position and that each post is plumb and driven to the correct depth.

11. Continue with the **Rafter Assembly** steps that follow.

ASSEMBLING THE COLD FRAME COMPONENTS

After the site is prepared and an inventory of parts is complete, continue with the rafter assembly.

NOTE: All rafter assemblies consist of rafter tubes and purlin clamps. Consult the rafter diagram in the Quick Start section of these instructions before and during the rafter assembly process.

Assistance is required to assemble the greenhouse frame.

RAFTER ASSEMBLY

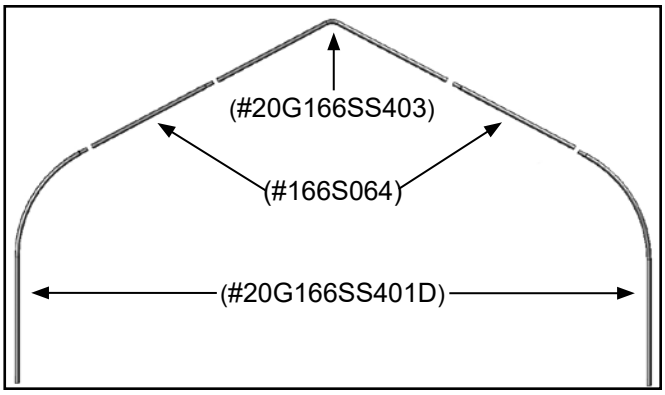
Gather the Parts:

- Rafter Pipe (#20G166SS401D)
- Rafter Pipe (#20G166SS403)
- Rafter Pipe (#166S064)
- End Clamps (#102856)
- Tek Screws (# FA4482B)
- Nut Setter 3/8" x 2-9/16 Magnetic

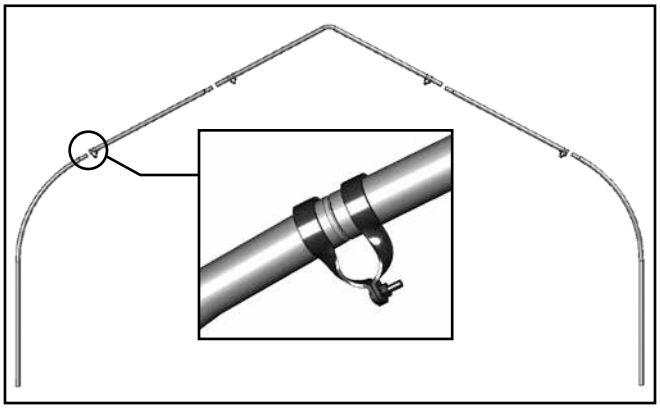
END RAFTER ASSEMBLY

The end rafters include purlin end clamps and band clamps. Install the purlin end clamps before the different pipes of the rafters are connected. The band clamps for the side struts are installed when the two (2) end rafters are set onto the ground posts.

1. Select the five (5) pipes needed to assemble the first end rafter and arrange on a level surface.



2. Slide four (4) end purlin clamps—two on each side of the peak—over the rafter pipes. Position all end clamps at the rafter pipe joints.

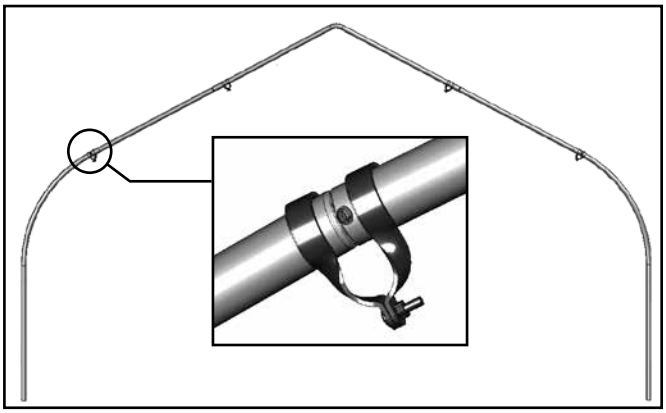


End clamp as seen from inside the assembled frame.

NOTE: Position all purlin clamps at the rafter pipe joints. Consult the Quick Start section for additional information.

3. After slipping the clamps over the rafter pipes, insert the swaged end of the rafter pipes into the plain ends of the pipes to assemble the rafter.

4. Once the rafter is assembled, reposition the purlin clamps over the pipe joints and install a Tek screw through the rafter pipes to secure each joint.



End clamp as seen from inside the assembled frame.

IMPORTANT: To prevent damage to the cover and end panels (if equipped), position the Tek screws so the heads do not contact the cover when it is installed.

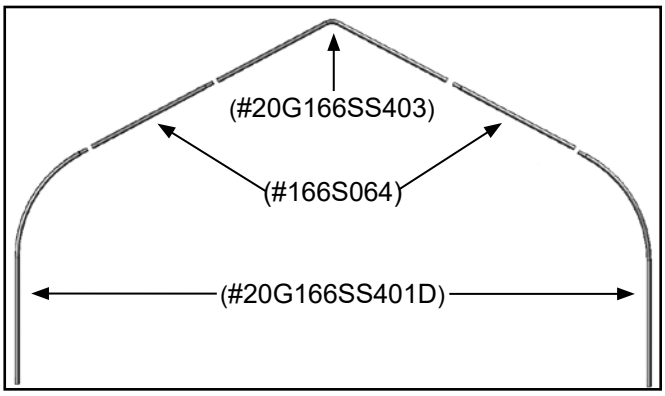
5. Repeat steps for to assemble the remaining end rafter and set both end rafters aside.

RAFTER ASSEMBLY (continued)

INTERIOR RAFTER ASSEMBLY

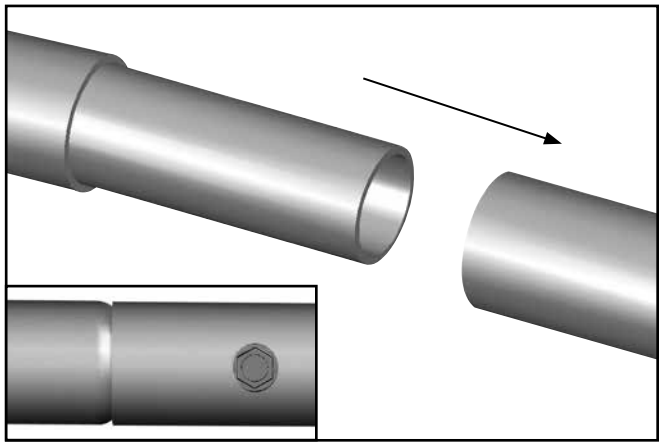
Complete the following steps *for the interior rafters*.

1. Select the pipes for the first interior rafter assembly and position these on the ground as shown.



IMPORTANT: Interior rafters do not use end clamps. Instead, cross connectors are attached during the frame assembly.

2. Insert the swaged ends of the rafter pipes into the plain ends of the pipes and secure each joint with a Tek screw.



NOTE: For longer frames, it may be easier to assemble a few rafters at a time and then begin to assemble the frame. Position Tek screws so they will not contact the cover when the frame is assembled.

3. Once rafters are assembled, assemble the frame.

FRAME ASSEMBLY

After all ground posts are driven in place and rafters are assembled, assemble the frame.

NOTE: The baseboards (strongly recommended) shown in the diagrams throughout these instructions are not included and must be supplied by the customer.

Contact Customer service at 1-800-245-9881 to purchase baseboards, or for additional information.

ASSEMBLE AND PRE-MARK THE PURLINS

The following steps describe one way to speed the assembly process and eliminate the need to measure each purlin as it is installed. Pre-marking the purlins ensures that an accurate spacing of the rafter assemblies is achieved and maintained during assembly.

Gather the parts:

- 1.315" x 75" swaged (#131S075) and 1.315" x XX" plain (#131P0XX) pipe
- Marker and tape measure

NOTE: The purlins are part of the assembled frame and run perpendicular to the rafter assemblies. Each purlin consists of 1.315" x 75" (#131S075) swaged pipes (number is determined by shelter length) and one (1) 1.315" x XX" (#131P0XX) plain pipe.

ATTENTION: The XX" represents the remaining length required to reach the end of the shelter. Consult the Spec Sheet and Side Profile diagrams for part identification.

1. Select the required pipe sections for one purlin and connect these by inserting the swaged ends of the pipes into the plain ends until the entire purlin is assembled.

   NOTE: Assemble the purlins in a location that is accessible during the assembly of the frame, but will not interfere with the process of lifting and setting the rafters.

2. Verify that each pipe joint is properly seated.

   NOTE: These pipes must be separated during the assembly procedure. Do not fasten them together at this time.

3. For the 48" rafter spacing, measure forty-eight and three-quarters inches (48-3/4") from one end of the assembled purlin and mark the distance on the pipe.

   NOTE: This first measurement is three-quarters (3/4) of an inch longer than the on-center rafter spacing to account for the length of purlin pipe that extends through the end purlin clamp of the first end rafter.

FRAME ASSEMBLY (continued)

4. From the location marked in the previous step, measure forty-eight inches (48") and make another mark on the assembled purlin.
5. Continue to mark the purlin in 48" intervals until all locations are marked. These marks help to maintain the 48" on-center rafter spacing of the shelter during assembly.
6. Repeat this procedure until all assembled purlins are marked.
7. After assembling all rafters and pre-marking the purlins, assemble the frame.

ASSEMBLE THE FRAME

After all ground posts are driven in place, rafters are assembled and purlins pre-marked, assemble the frame.

Gather the parts:

- All rafter assemblies and pre-marked purlins
- Band clamps (#QH1402)
- Cross connector (#102548)
- 5/16" x 2-1/2" machine bolts and 5/16" nuts
- Lifts, ladders, and assistants
- Rope or cable

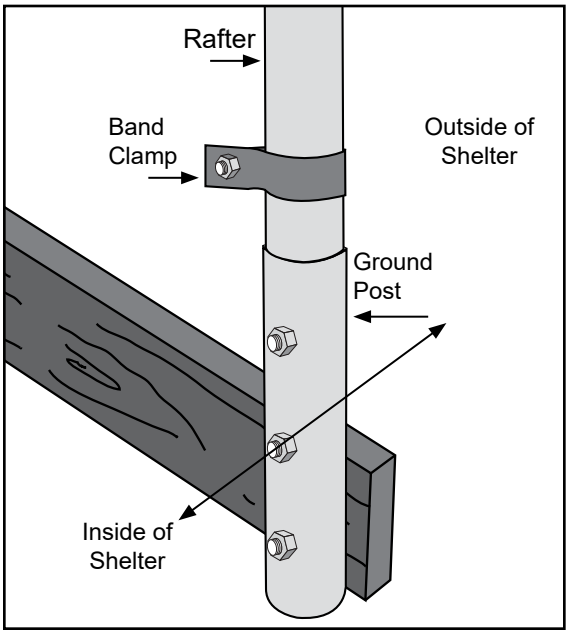
1. Carefully stand the *first end rafter*, slide a band clamp onto each rafter leg, and place the leg pipes in the first set of ground posts.

   Brace the rafter in place to keep it straight. Depending on the frame size, a lift and additional assistants may be needed. Consult Quick Start section for details.

Rafter shown differs in design.

ATTENTION: Stand the rafter so the nuts and bolts of the end clamps are to the inside of the frame.

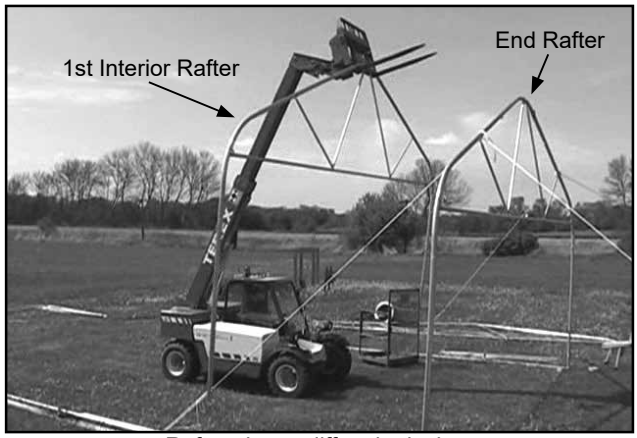
2. Align bolt holes and secure the leg pipes to the ground posts using the 5/16" x 2 1/2" machine bolts and nuts.



3. Use rope or cable to keep the rafter in position.

Rafter shown differs in design.

4. Carefully position the first interior rafter in place and secure the leg pipes to the ground posts.



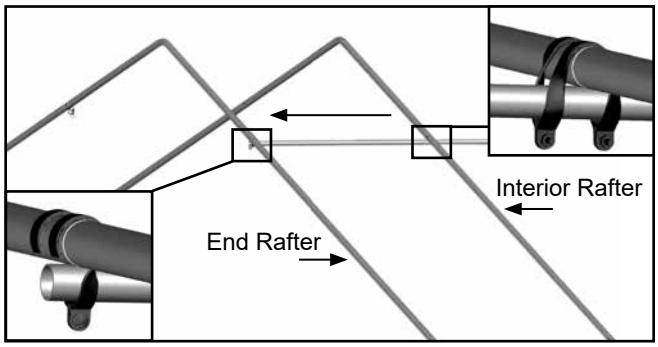
Rafter shown differs in design.

FRAME ASSEMBLY (continued)

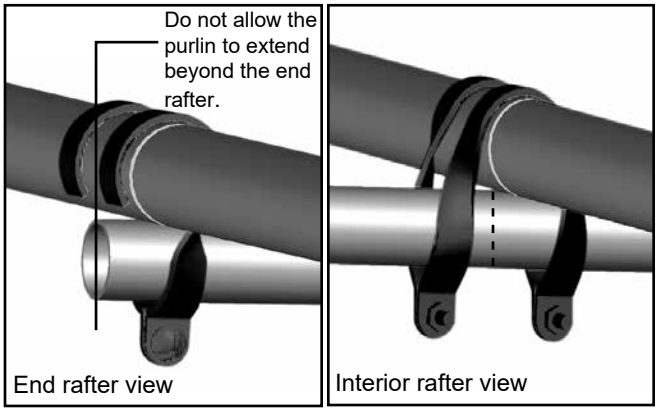
5. As the second rafter is steadied, remove one section of pipe from one assembled purlin.

   NOTE: Work from the end of the purlin where the first measurement was taken during the pre-marking procedure.

6. Insert the purlin pipe through an upper end clamp of the end rafter and through a cross connector placed in the same position on the *interior rafter.* Consult Quick Start section for purlin location per frame.

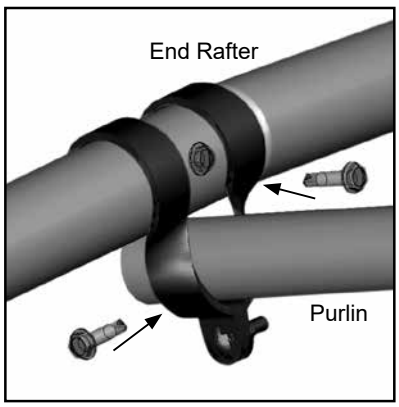


7. Align the plain end of the purlin with the center of the end rafter. Rotate the purlin pipe so that the first mark is visible (near the clamp of the interior rafter).

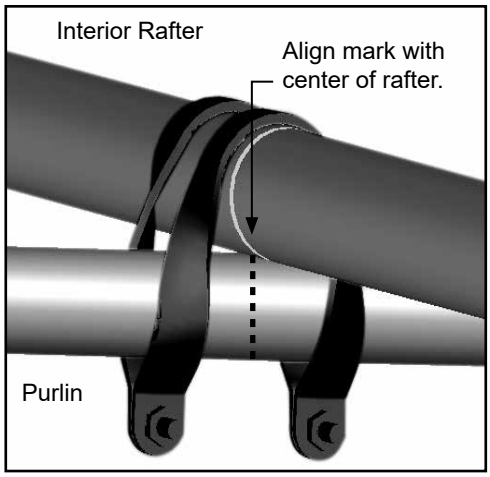


8. Tighten the end clamp and secure it to the rafter with a Tek screw.

9. Install Tek screw through end clamp and into the purlin pipe.



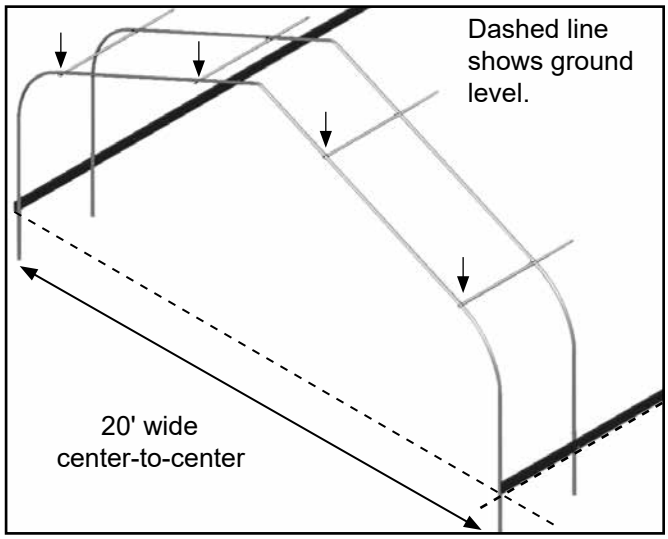
10. Move to the interior rafter and align the mark on the purlin with the center of the rafter to maintain the proper spacing.



11. Verify that the rafter spacing is forty-eight inches (48") on-center (adjust as needed) and tighten the cross connector.

12. Secure the cross connector to the rafter using a Tek screw. See Quick Start section if needed.

13. Repeat Steps 6-12 to install the first section of each purlin assembly for the first two rafters.



Frame shown may differ slightly from actual frame.

14. Choose another interior rafter assembly and set it in position. DO NOT USE THE REMAINING END RAFTER.

15. Secure the rafter legs to the ground posts as previously described and steady the rafter.

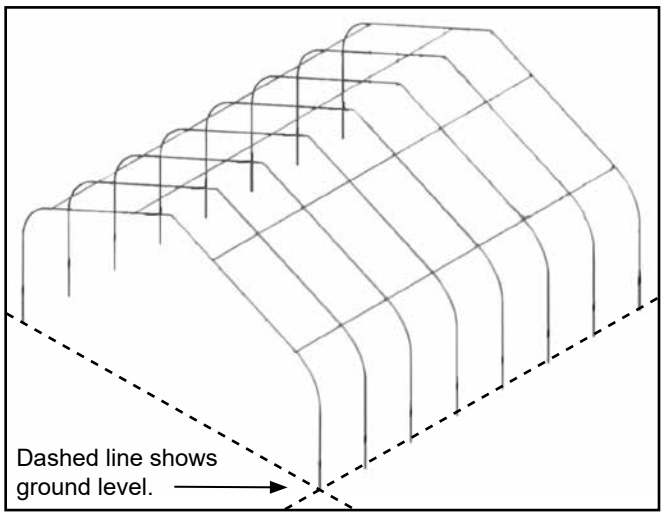
16. Remove another section of purlin pipe from each pre-marked purlin assembly and attach these to the rafter.

17. Verify that the distance between the rafters is 48" center-to-center. *Adjust the rafter forward or backward as needed to maintain this dimension.*

FRAME ASSEMBLY (continued)

18. Secure the purlin pipe joint with a Tek screw.
19. Repeat the above steps as needed to stand and secure the remaining interior rafters and purlins to complete the frame assembly.
20. Slide a band clamp onto each leg of the remaining end rafter, secure the rafter to the ground posts, and attach the purlins to it. Verify that the end clamps are positioned with the nut and bolt to the inside of the assembled frame. Refer to the Quick Start section and previous diagrams if needed.

    NOTE: If the last end rafter is plumb and the purlin extends beyond the end of the rafter, cut the last section of purlin pipe to the required length.



Frame shown may differ slightly from actual frame.

21. Once all rafters are set and all purlins are in place and secure, return to each pipe splice of each purlin and verify that a Tek screw is installed. Install a Tek screw if needed.
22. Remove any temporary bracing (if needed) and install the baseboards and the side struts.

BASEBOARD INSTALLATION (RECOMMENDED)

The baseboard (strongly recommended) is supplied by the customer and is attached at ground level along both sides of the frame. It helps keep the ground posts in place and also prevents the frame from working into the ground when anchored.

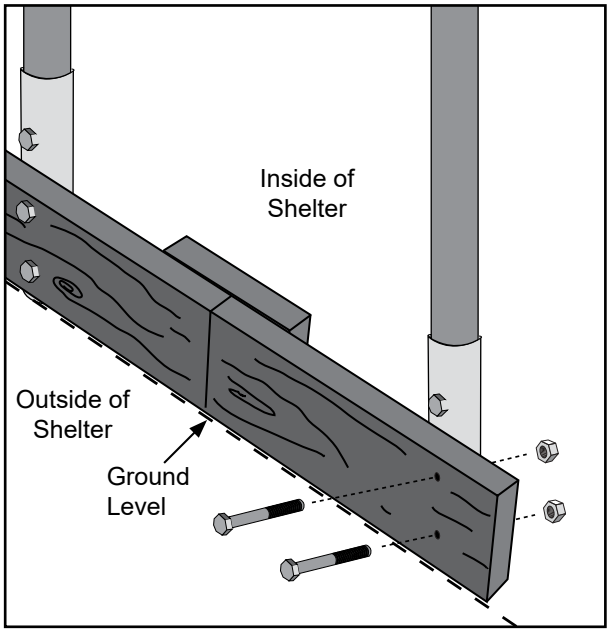
Attach the baseboards to the frame on the outside of the ground posts at this time.

Gather the Parts

- Treated or recycled plastic lumber (supplied by customer).
- 1/4" x 4" Carriage Bolts and 1/4" Nuts

NOTE: The following procedure describes one way to install the recommended baseboards. The size and type of the baseboard chosen may require the use of alternative steps. When properly installed, baseboards run the length of the frame.

On the outside of the frame, attach the first baseboard to the ground posts using the 1/4" x 4" carriage bolts and nuts. Continue adding baseboards to complete the first run. Splices are made between posts as shown. Use a short section of baseboard to secure separate baseboards at a splice.



NOTE: The boards should be at ground level or slightly into grade to prevent the shelter from sinking and to create a seal along the bottom. After installing the baseboards, continue with these instructions.

If the recommended baseboard (customer-supplied) is not used, secure the required diagonal struts to the ground post using a Tek screw or other customer-supplied fastener. The installation of the diagonal struts is described as follows.

SIDE STRUT INSTALLATION

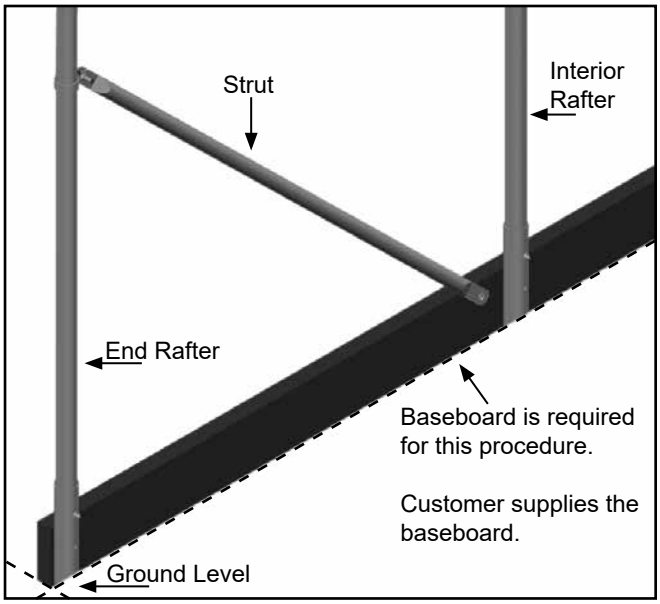
There are four (4) side struts for the shelter. These struts are positioned between the end rafters and the first interior rafter on each side of the shelter.

Complete these steps to install the four (4) side struts:

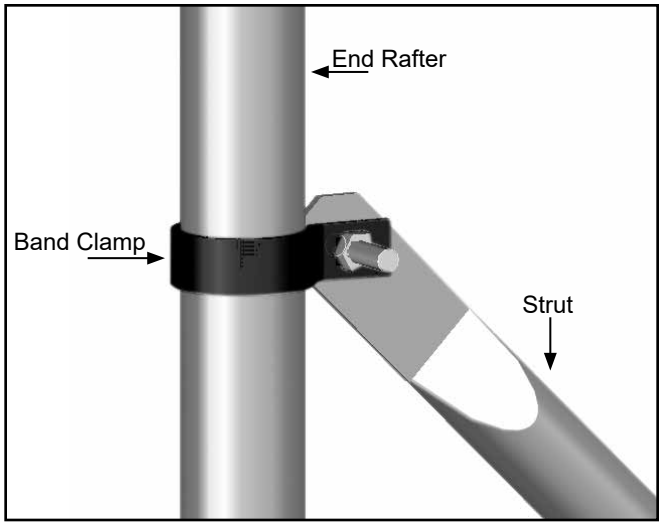
Gather the Parts

- Struts
- Band Clamps (#QH1402)
- Lag screw or nut and bolt (supplied by customer)

1. Locate one strut and position it between one end rafter leg and the leg of the first interior rafter as shown below.

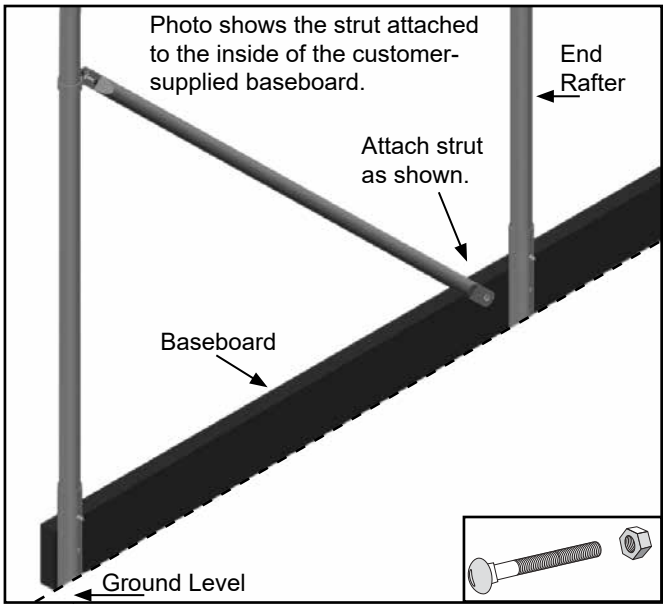


2. Attach one end of the strut to the band clamp as shown in the diagram below.



NOTE: Head of bolt on the band clamp must face the toward the outside of the shelter.

3. Attach the remaining end of the strut to the baseboard using a lag screw or nut and bolt (not included). See the diagram that follows for location.



NOTE: A baseboard provides a place to attach each strut and helps keep the ground posts at the required depth. The customer is responsible for providing a baseboard for this frame. If no baseboard is present, attach the strut to the ground post using a Tek screw or other customer supplied fasteners.

4. Repeat the above steps to attach the remaining side struts to the shelter.
5. After securing the struts, verify that all clamps are secured with a Tek screw to the rafters.
6. Verify that each pipe splice (purlin and rafter) is secured with a Tek screw.
7. Complete the next procedure to anchor the assembled frame.

ANCHOR THE ASSEMBLED FRAME

At this point, anchor the greenhouse frame. Consult the MUST READ document for anchoring information and suggestions. Please call customer service at 1-800-245-9881 for additional anchoring information.

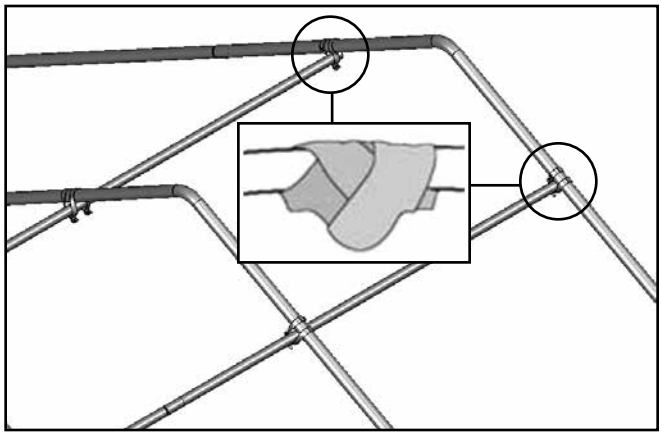
CAUTION: The anchor assembly is an integral part of the greenhouse construction. Improper anchoring may cause instability and failure of the structure to perform as designed. Failing to anchor the shelter properly will void the manufacturer's warranty and may cause serious injury and damage.

FINISH ROUGH EDGES

Gather the parts:

- Duct tape (supplied by customer)
- Metal file

1. Check for any sharp edges on the frame and file them smooth so they will not cut the cover.
2. Apply two layers of heavy duct tape on all pipe connections and clamps that may contact the cover.



Frame shown may differ slightly from actual frame.

OPTIONAL COVER INSTALLATION (Cover is not included with standard cold frame. Additional purchase is required if installing a cover and/or roll-up side accessory.)

The following sections describe the installation of a film cover. The cover shown in the following diagrams may differ from the actual cover. It is shown to illustrate a basic cover installation.

Additional parts and supplies must be purchased to complete the cover installation. *These are not included with the basic cold frame components.*

Contact Customer Service if you want to purchase a cover for your cold frame and to determine which cover and additional components are best suited for the application.

OPTIONAL MAIN COVER INSTALLATION

After the frame is assembled and the baseboards are attached to the frame, the optional cover can be installed.

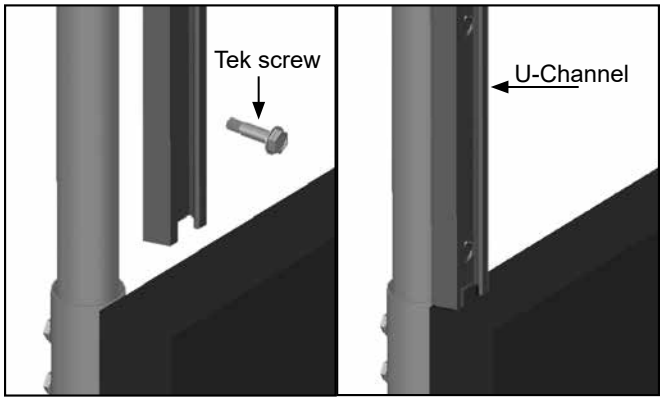
The steps to install the main cover include:

1. Install poly latch U-channel on the tops of the end rafters and to the baseboard.
2. Pull cover over the shelter.
3. Attach the main cover to one peak, stretch to the other peak and secure with poly latch spring.
4. Stretch the cover along one side and attach.
5. Stretch to other side and attach.

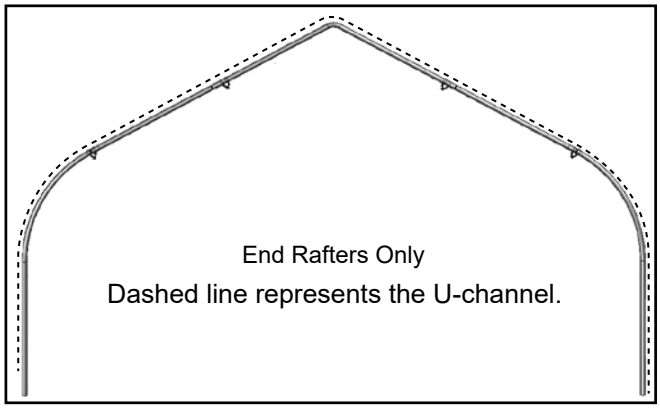
Install Poly Latch U-Channel for Main Cover (No Roll-Up Sides)

NOTE: If you are installing a film cover and intend to have the optional roll-up sides for that film cover, skip this procedure and continue with the **OPTIONAL MAIN COVER INSTALLATION WITH ROLL-UP SIDES** procedure.

1. Using Tek screws, attach a section of the poly latch U-channel (#102179) to the top of the first end rafter. Begin at the *top of the baseboard* as shown below.



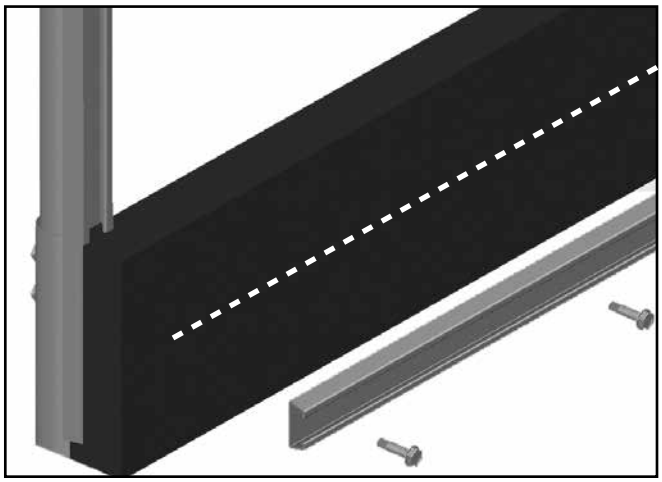
2. Continue to attach the U-channel sections working up and over the first end rafter.

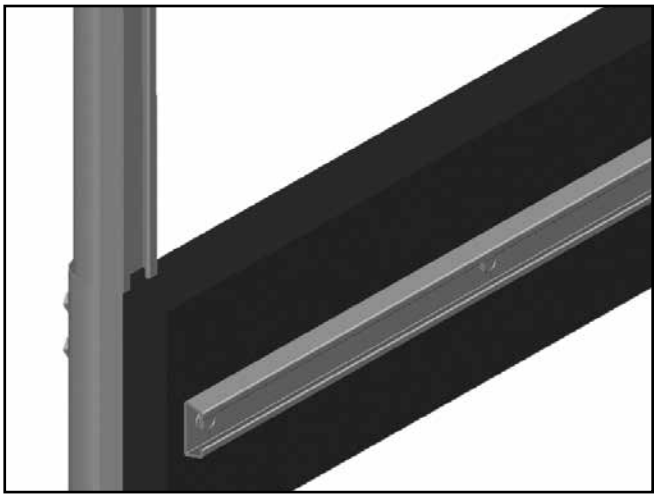


ATTENTION: The U-channel is attached to the top of the rafter and will bend with the curve of the rafter as it is attached. See diagram that follows.

OPTIONAL MAIN COVER INSTALLATION (continued)

3. Repeat these steps for the remaining end rafter.
4. After attaching the poly latch U-channel to the tops of the end rafters, use Tek screws to attach the U-channel to the baseboard as shown. (See dashed line below.)





5. Continue to attach the U-channel until it has been installed on both baseboards.
6. Continue by installing the main cover.

INSTALL THE COVER FILM

After all of the poly latch U-channel is attached to the shelter, the cover film is unpacked and pulled into place. Assistants positioned inside the frame along the length of the film edge can help when pulling the film into place. In some instances, ropes or straps are used to pull the cover film onto the frame depending on the length of the cover and the width of the frame.

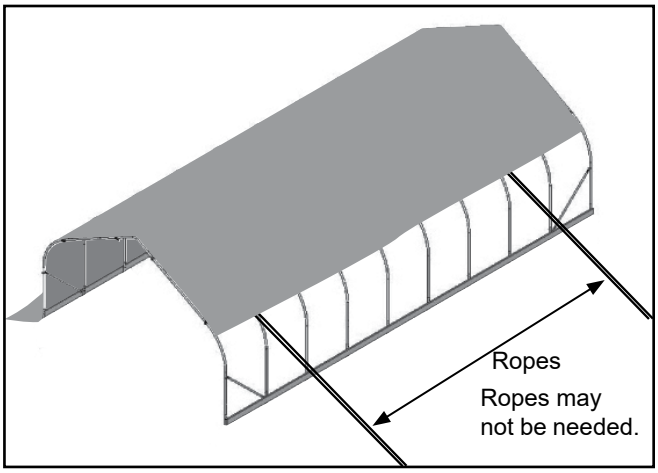
WARNING: To prevent damage to the cover and to prevent serious personal injury, DO NOT attempt to install the main cover on windy or stormy days.

Continue with the steps that follow.

1. Unpack the cover film and position it at the base along one side of the frame.
2. With assistance, pull the cover film over the frame.

   ATTENTION: Depending on the height and width of the frame, ropes can be tied to the film edge, thrown over the frame, and pulled to lift the cover film into place. See the diagram below.

   The ropes must be long enough to reach over the top of the frame to the other side. Long buildings will require additional ropes to prevent tearing the cover film when it is pulled into place.
3. With the film in place on the frame, center the cover side-to-side and end-to-end.



Shelter shown may differ than the actual model.

IMPORTANT: To prevent damage to the main cover during installation, additional personnel and lifts may be needed.

COVER INSTALLATION (continued)

4. Once the main cover is in place and centered on the frame, begin at the peak of one end rafter and install the wire spring into the U-channel to secure the cover.

   ATTENTION: Center the main cover front to back and side-to-side to ensure that enough cover material is present to lock into the U-channel.

   If used, the rope can remain in place to temporarily secure the cover if needed. Remove the ropes as the cover is secured to the frame.

   Photos show installing the spring into the U-channel on the outside of a frame. The process is the same for the U-channel attached to the top of the end rafters.

5. Continue adding the spring into the U-channel at the top of the first end rafter. Ensure that an even amount of the cover is exposed and maintained along the edge of the frame as it is attached.

   NOTE: The cover material is cut longer/wider than is required to cover the frame. For easier anchoring, allow approximately 8" to extend past the edge of the end rafter as the cover is anchored in place.

6. Continue down both edges of the first end rafter until the entire length of the end of the main cover is secured in place.

7. Stretch the cover to the other end of the building and repeat the steps to secure the main cover in the U-channel.

   NOTE: Pull the cover tight as the spring is inserted into the U-channel.

8. After the cover is stretched end-to-end and secured using the spring and U-channel, move to one side of the frame and repeat the steps to anchor the main cover to the first side.

   Begin at one end of the U-channel and work toward the other.

   NOTE: Maintain an even length along the side. The final stretching of the cover takes place when the last side is secured.

9. After securing the first side, move to the remaining side and secure it in place.

   IMPORTANT: *DO NOT REMOVE TOO MUCH OF THE EXCESS COVER MATERIAL AT EACH END.* Some excess main cover material–the material that extends beyond the end rafters–should remain in place. If the main cover needs stretched in the future, remove the spring from the U-channel, grasp the excess material, pull the cover tight, and reinstall the spring.

10. Read the **Care and Maintenance** information that follows.

OPTIONAL MAIN COVER INSTALLATION WITH ROLL-UP SIDES (ADDITIONAL PURCHASE REQUIRED)

INSTALL POLY LATCH U-CHANNEL

For a roll-up side application, attaching the ribbon board to the rafters and then attaching the poly-latch U-channel to the ribbon board is recommended for the best results.

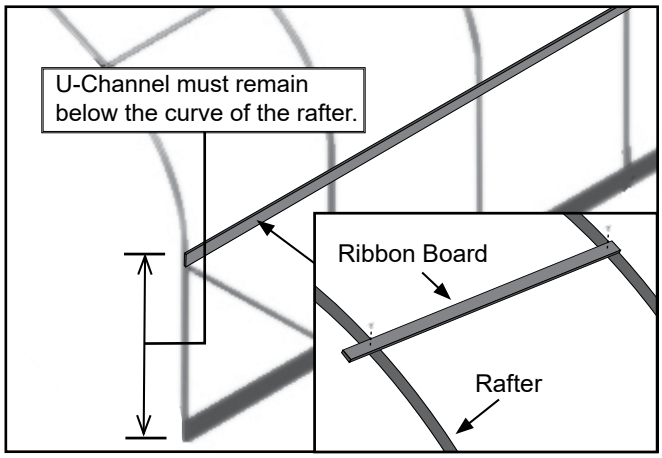
Gather the parts:

- Aluminum U-Channel (supplied by customer)
- Ribbon board (supplied by customer)
- Tek screws (supplied by customer)

1. Measure the desired height to identify the top of the roll-up sides.

   NOTE: *For the roll-up side panel to function properly, the poly-latch channel attached to the sides of the frame must remain below the curve of the rafter.*

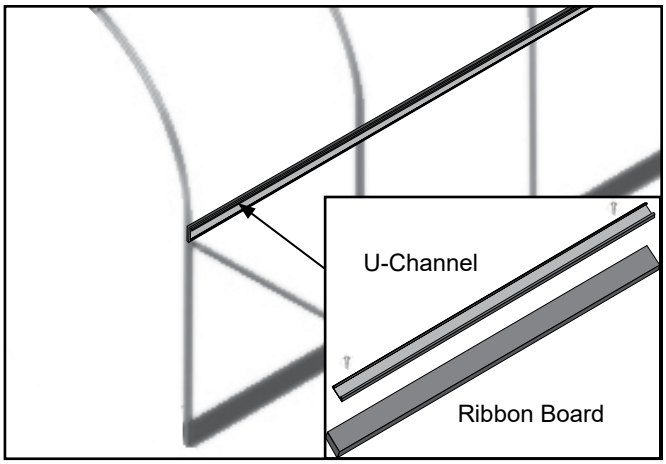
   Attaching a ribbon board (not included) to the rafters and then attaching the poly-latch U-Channel to the ribbon board is recommended for the best results. Consult the diagram below for clarification.



Shelter shown may differ than the actual model.

NOTE: Ribbon board and baseboard (recommended) shown in the diagram above *are not included* and are supplied by the customer.

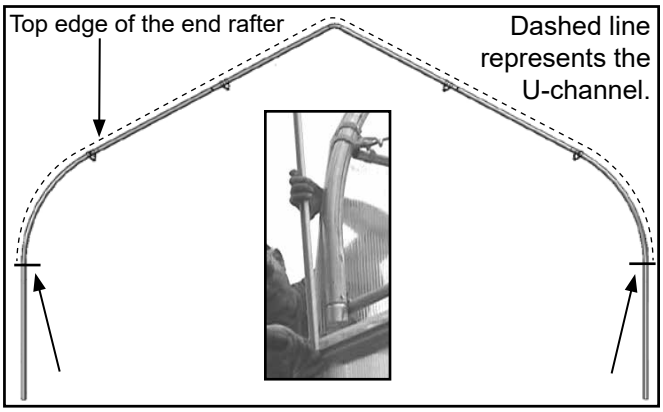
2. Attach one section of the poly latch U-channel to the side of the frame using Tek screws. Attach U-channel flush with the outside edge of the end rafters.



Shelter shown may differ than the actual model.

NOTE: The single poly latch is attached to the sides and tops of the end rafters.

3. Continue to attach the U-channel sections to the rafters (or ribbon board if used) and work toward the other end of the frame. Cut the last section of U-channel to the required length so that it is flush with the edge of the end rafter (if needed).
4. Repeat these steps for the remaining side.
5. *After* attaching the U-channel to the sides of the frame, use Tek screws to attach the single U-channel to the top edge of the end rafters.



Location of the side runs of U-channel and ribbon board.

Insert shows the installation of poly latch U-channel on top of an end rafter. The poly latch U-channel will bend with the curve of the rafter as it is attached.

6. Continue to attach the U-channel until it has been installed on the top of *both end rafters*.

OPTIONAL MAIN COVER INSTALLATION WITH ROLL-UP SIDES (continued)

INSTALL MAIN COVER WITH ROLL-UP SIDES

Gather the parts:

- Main cover
- Ropes long enough to reach over the frame (provided by customer)
- U-channel spring
- Box cutter or utility knife

Assembly Procedure

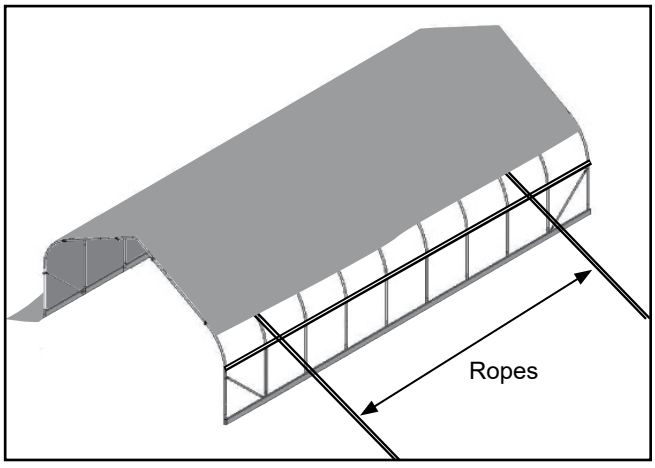
After the poly latch U-channel is attached to the frame, unpack the main cover and pull into place. Ropes or straps are typically used to pull the main cover onto and over the frame.

WARNING: To prevent damage to the cover and to prevent serious personal injury, DO NOT attempt to install the main cover on windy or stormy days.

1. Unpack the main cover and position it at the base along one side of the frame.
2. Make small holes along the edge of the cover at evenly spaced intervals and tie rope to the cover. (The length of the cover determines the number of holes that are needed to attach the ropes.)

   NOTE: The ropes must be long enough to reach over the top of the building to the other side. Long buildings will require additional ropes to prevent tearing the main cover when it is pulled into place.
3. After tying the ropes to the main cover, throw the ropes over the top of the frame and pull the covers into place.

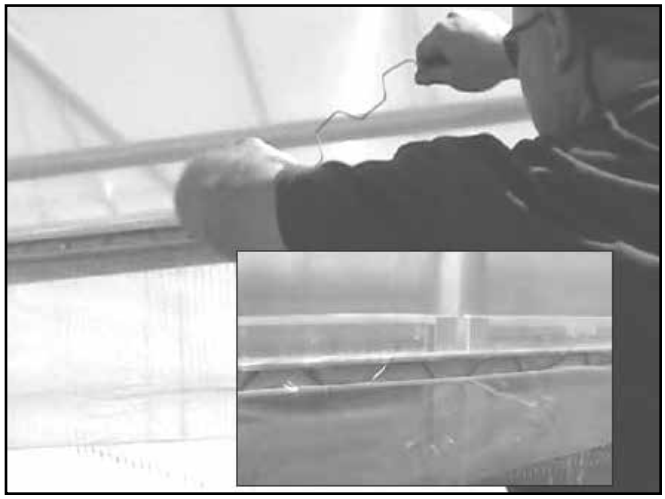
   Use ropes to pull cover over the greenhouse and onto the frame. ADDITIONAL ASSISTANCE IS REQUIRED.
4. Center cover side-to-side and end-to-end..



Shelter shown may differ than actual model.

IMPORTANT: To prevent damage to the main cover during installation, additional personnel and lifts may be needed.

5. Once the main cover is in place and centered on the frame, begin at the peak of one end rafter and install the wire spring into the U-channel to secure the cover.



Photos show installing the spring into the U-channel on the outside of the frame. The process is the same for the U-channel attached to the top of the end rafters.

ATTENTION: Center the main cover front to back and side-to-side to ensure that enough cover material is present to lock into the U-channel. *The excess cover along each side is rolled up when the roll-up side assemblies are installed.*

The rope can remain in place to temporarily secure the cover if needed. Remove the ropes as the cover is secured to the frame.

As the spring is installed into the U-channel at the top of the first end rafter, ensure that an even amount of the cover is exposed and maintained along the edge of the frame.

NOTE: The cover material is cut longer/wider than is required to cover the frame. For easier anchoring, allow approximately 10" to extend past the edge of the end rafter as the cover is anchored into place.

IMPORTANT: *DO NOT REMOVE TOO MUCH OF THE EXCESS COVER MATERIAL AT EACH END.* Some excess main cover material–the material that extends beyond the end rafters–should remain in place. If the main cover needs stretched in the future, remove the spring from the U-channel, grasp the excess material, pull the cover tight, and reinstall the spring.

OPTIONAL MAIN COVER INSTALLATION W/ ROLL-UP SIDES (CONTINUED)

6. Continue down both edges of the first end rafter until the entire length of the end of the main cover film is secured in place.
7. Move to the other end of the building and repeat the steps to secure the main cover in the U-channel.
8. After the cover is stretched end-to-end and secured using the spring and U-channel, move to one side of the frame and repeat the steps to anchor the cover film to the first side.

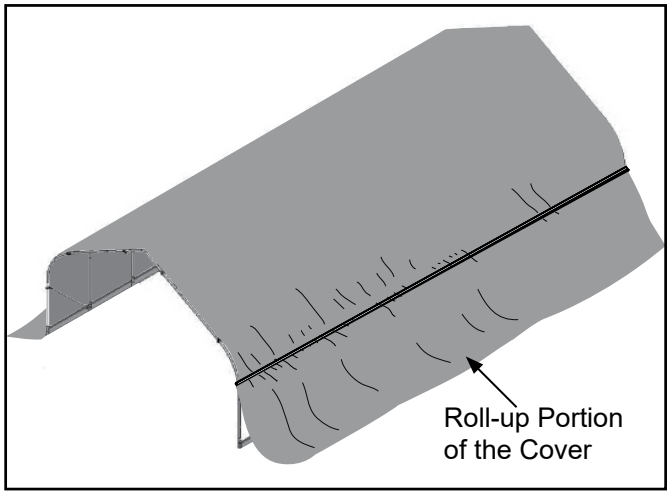
   NOTE: Begin at one end of the U-channel and work toward the other. Another option is to begin at the middle of each side and work towards each end. Maintain an even length as working along the side. The final stretching of the cover will take place when the last side is secured.

Attach main cover to Poly Latch U-Channel.

9. After securing the first side, move to the remaining side, stretch the cover, and secure it in place.

   NOTE: Pull the cover tight as the spring is inserted into the U-channel.

   The excess material along the sides is rolled up in the roll-up side assembly.



10. Once the main cover is installed and secured in the U-channel, follow the instructions provided with the Twist-of-the-Wrist Assembly if used.
11. Once you have completed the Twist-of-the-Wrist installation and install your Anti-Billow ropes, read the **Care and Maintenance** section that follows.

SHELTER CARE AND MAINTENANCE

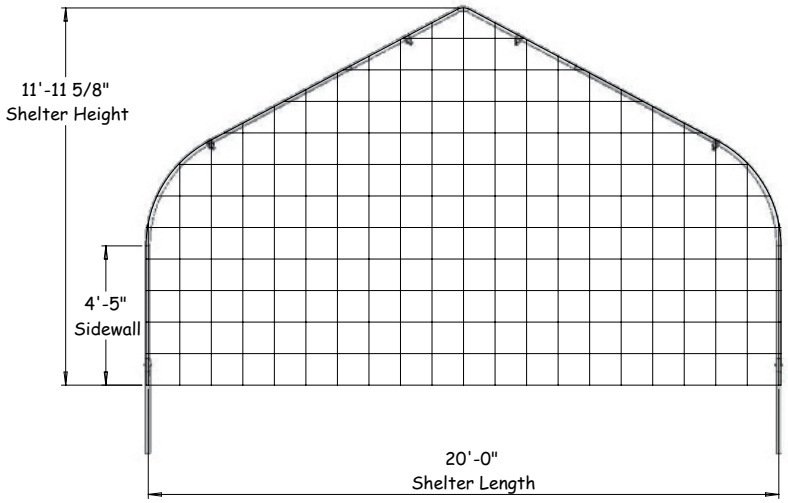
Proper care and maintenance of the shelter is important. Check the following items periodically to properly maintain the shelter:

- Check the ground posts and anchoring system (if equipped) to see that all components are tight and in good repair.
- Check connections and all fasteners to verify that they remain tight.
- Verify that all connections and connectors are secure. Tighten these if necessary.
- Check the cover material (if equipped) to verify that it is in good repair.
- Do not climb or stand on the cold frame at anytime.
- Remove debris and objects that can accumulate on the cold frame. Use tools that will not damage the cover when removing debris.
- Remove snow to prevent excess accumulation. Use tools that will not damage the cover when removing snow.
- Check the contents of the shelter to verify that nothing is touching the cover (if equipped) that could cause damage.
- If the cold frame is moved, inspect all parts and connections before reassembling.
- For replacement, missing parts or additional information on optional cover, call 1-800-245-9881 for assistance.

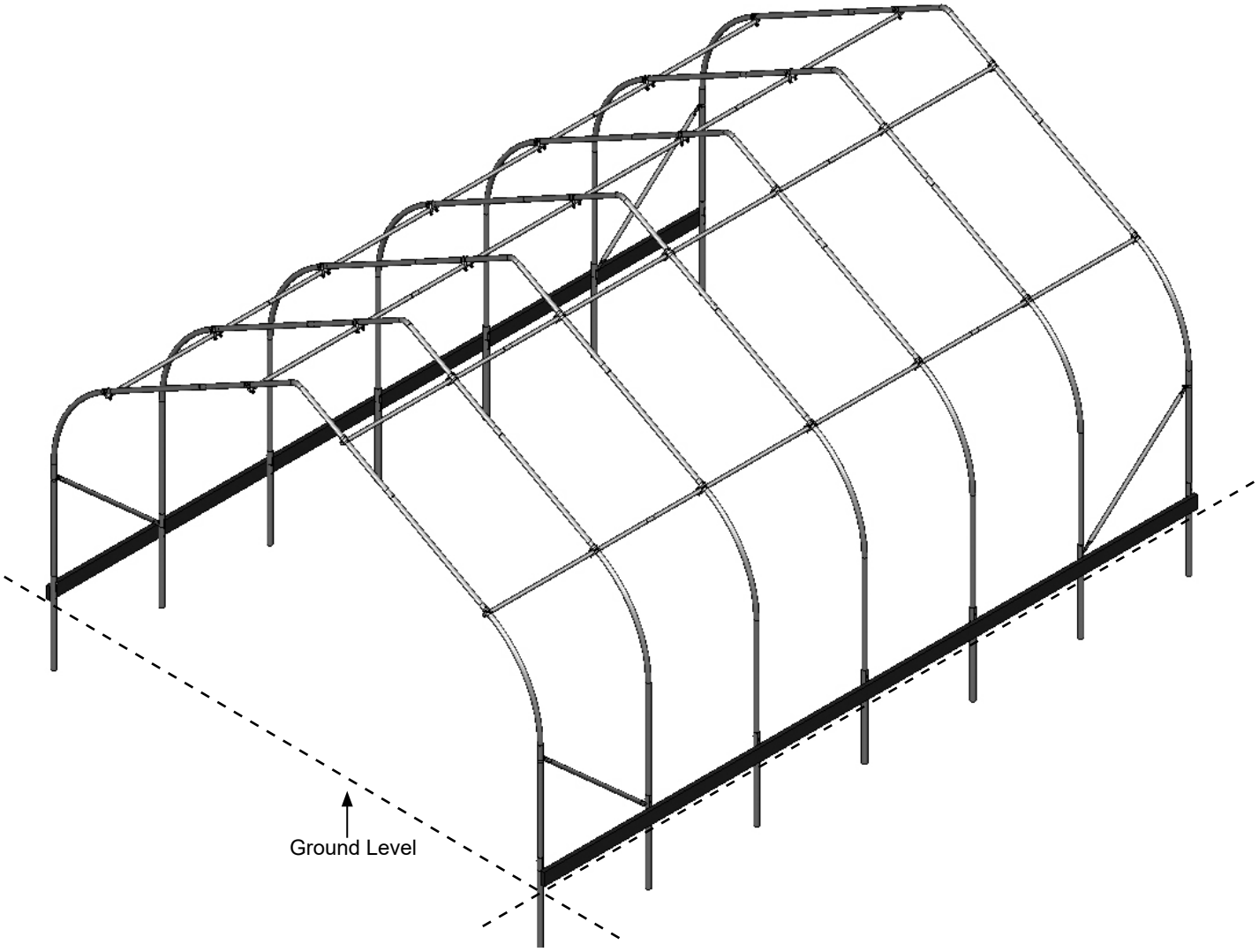
GROWspan™
greenhouse structures

QUICK START GUIDE

20' Wide Cold Frame

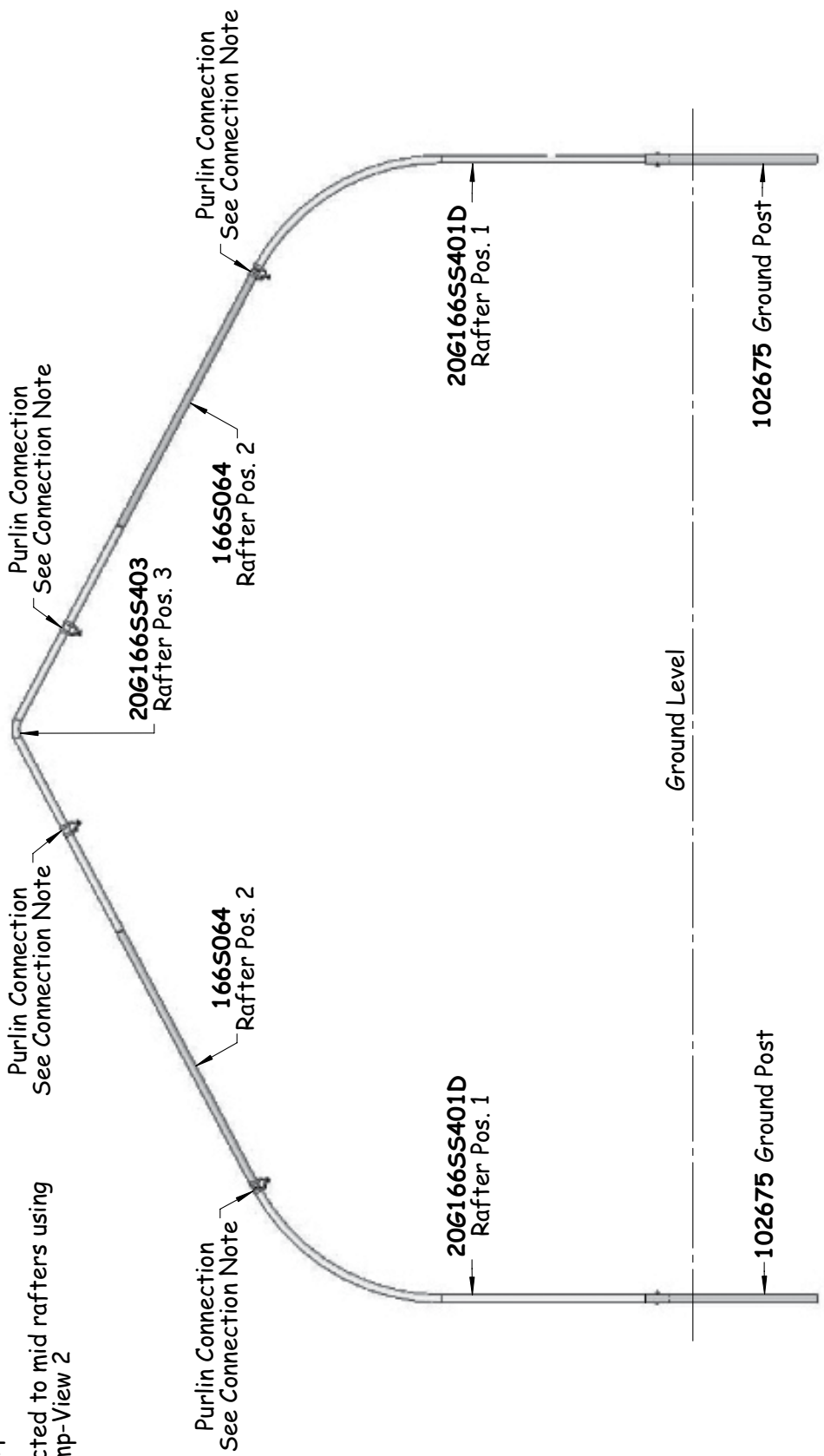


FRONT
Grid Represents 12" Squares



Frame shown may differ from actual frame.

FRONT PROFILE

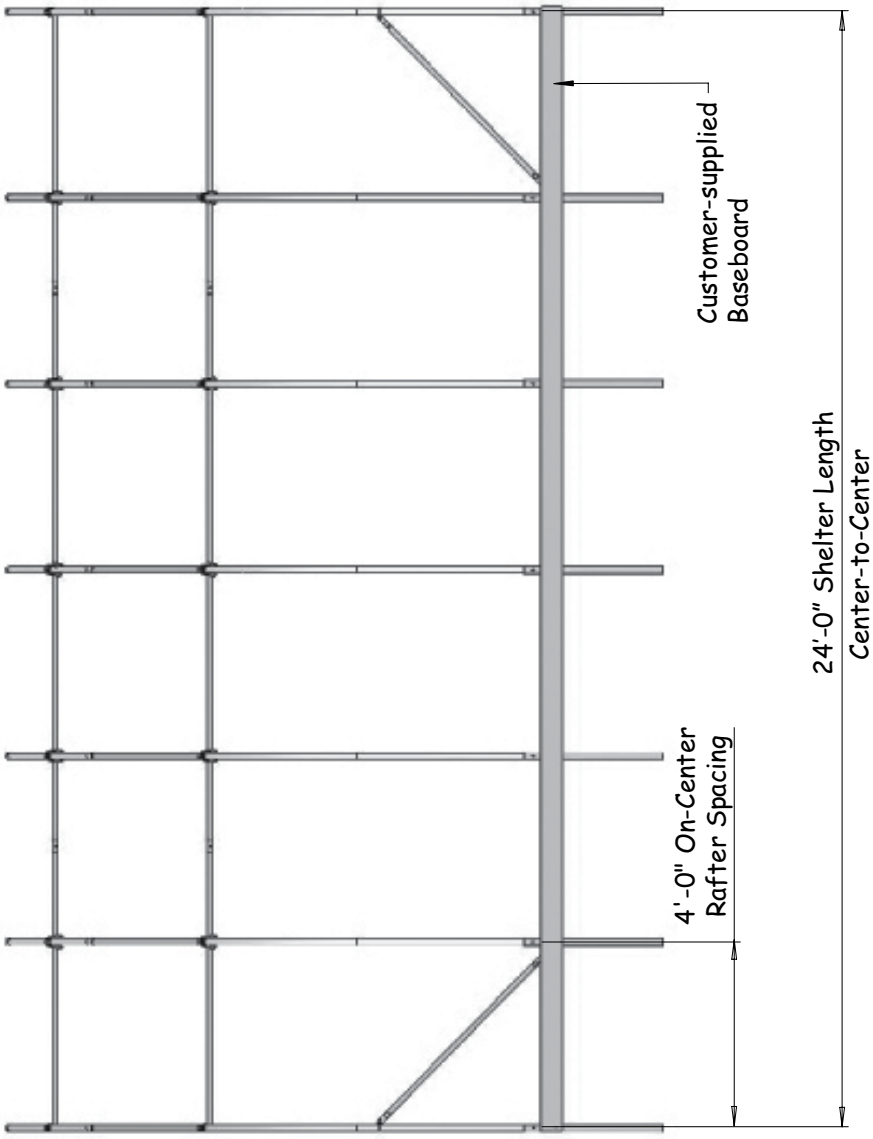


Connection Note

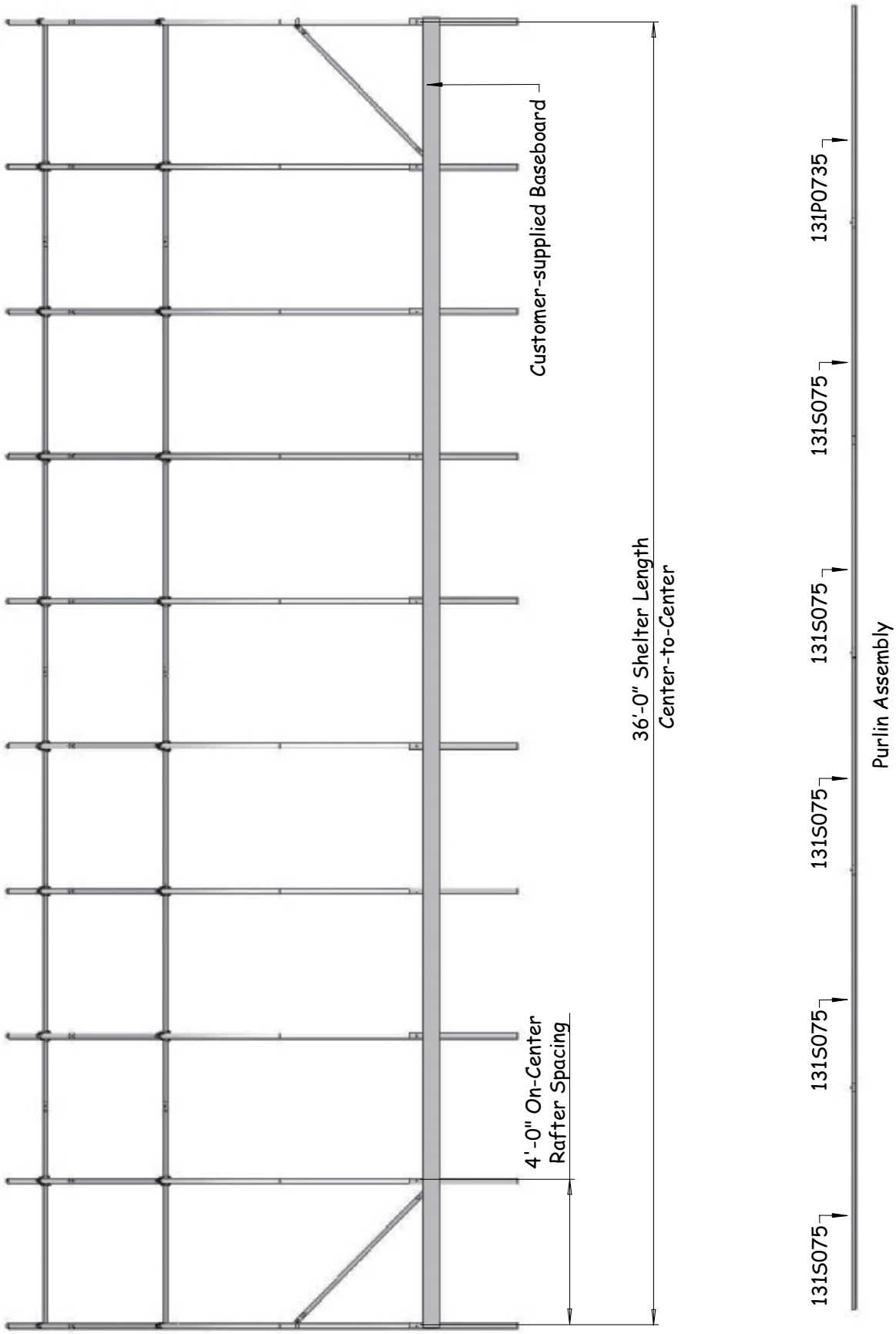
Purlin connected to end rafters using **102856** clamp-View 1

Purlin connected to mid rafters using **102548** clamp-View 2

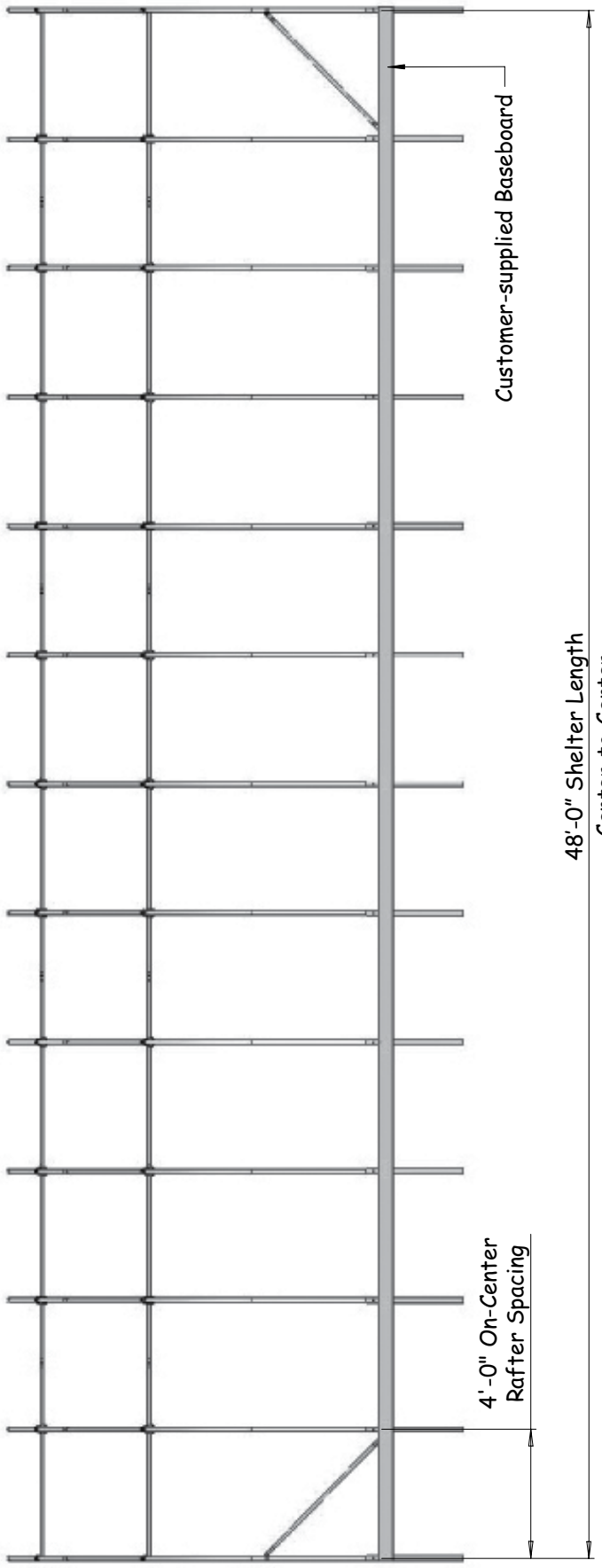
SIDE PROFILE - 106324



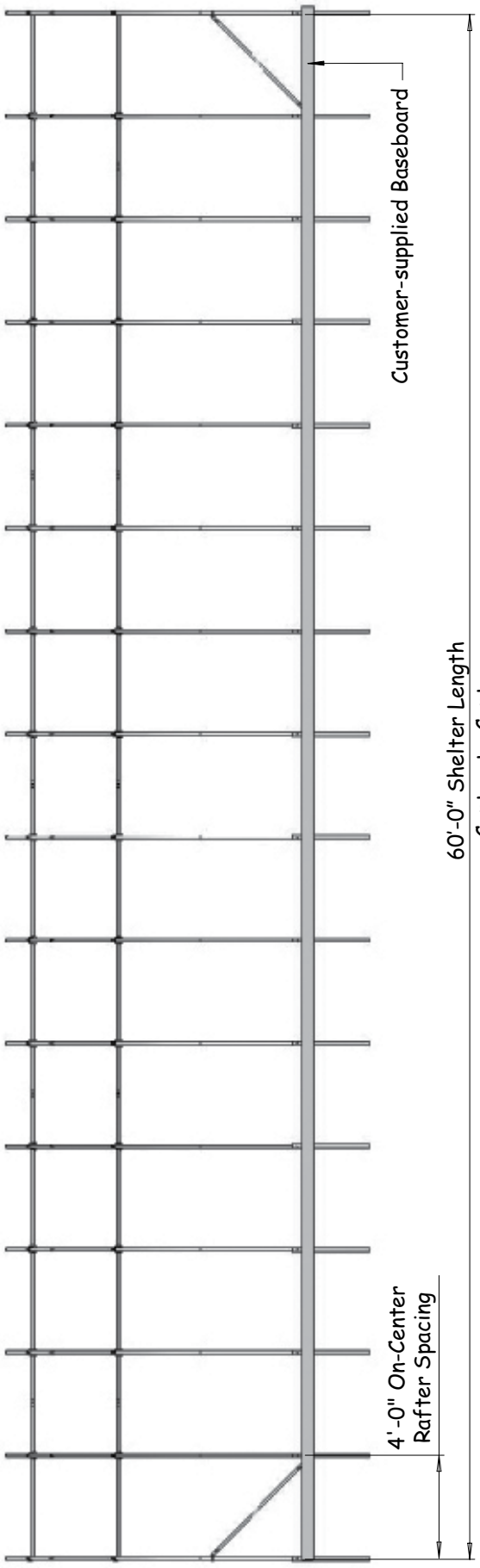
SIDE PROFILE - 106325

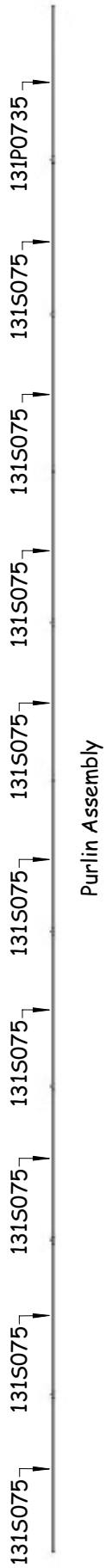


SIDE PROFILE - 106326



SIDE PROFILE - 106327





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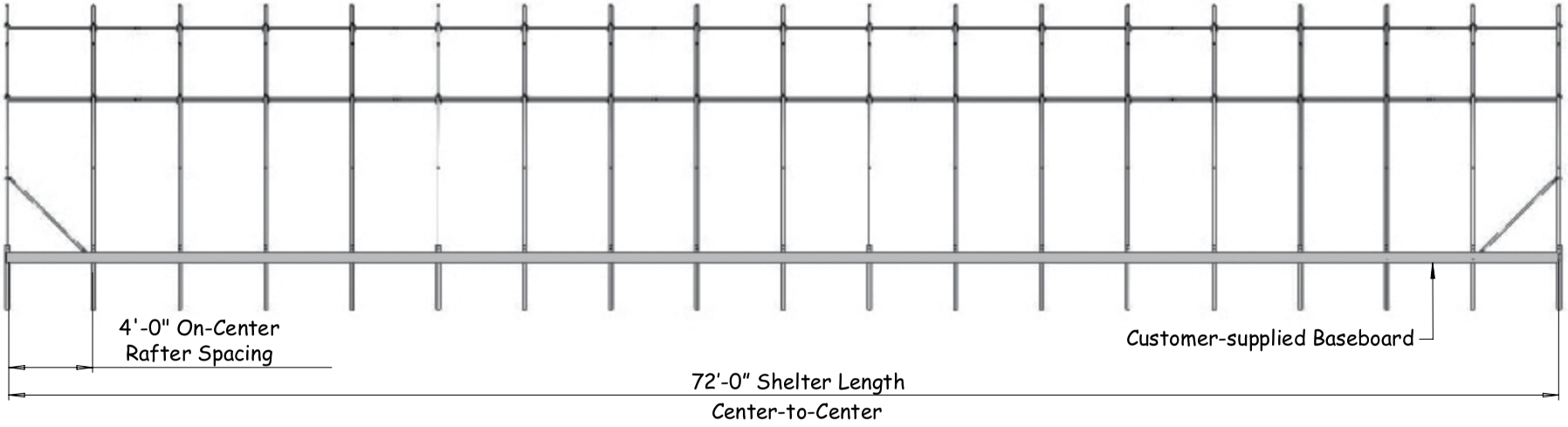

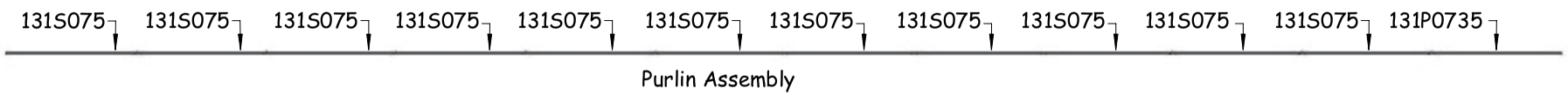

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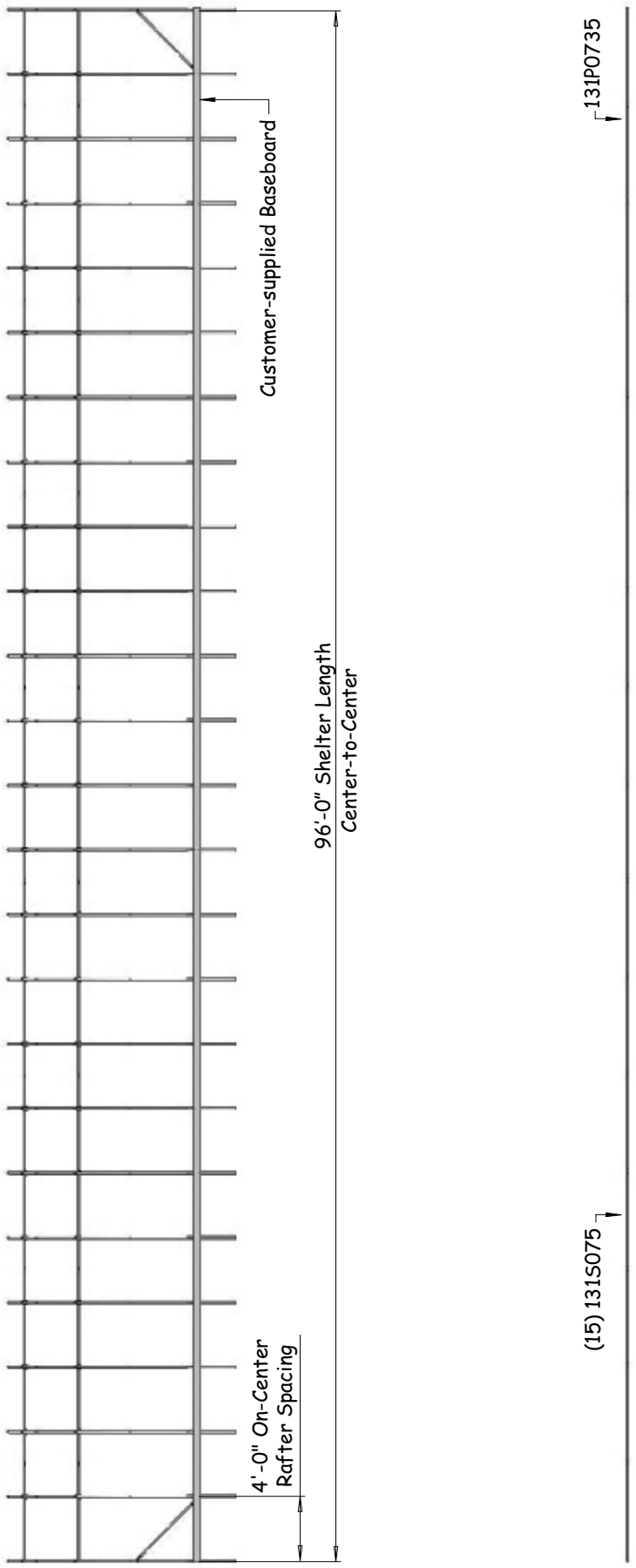
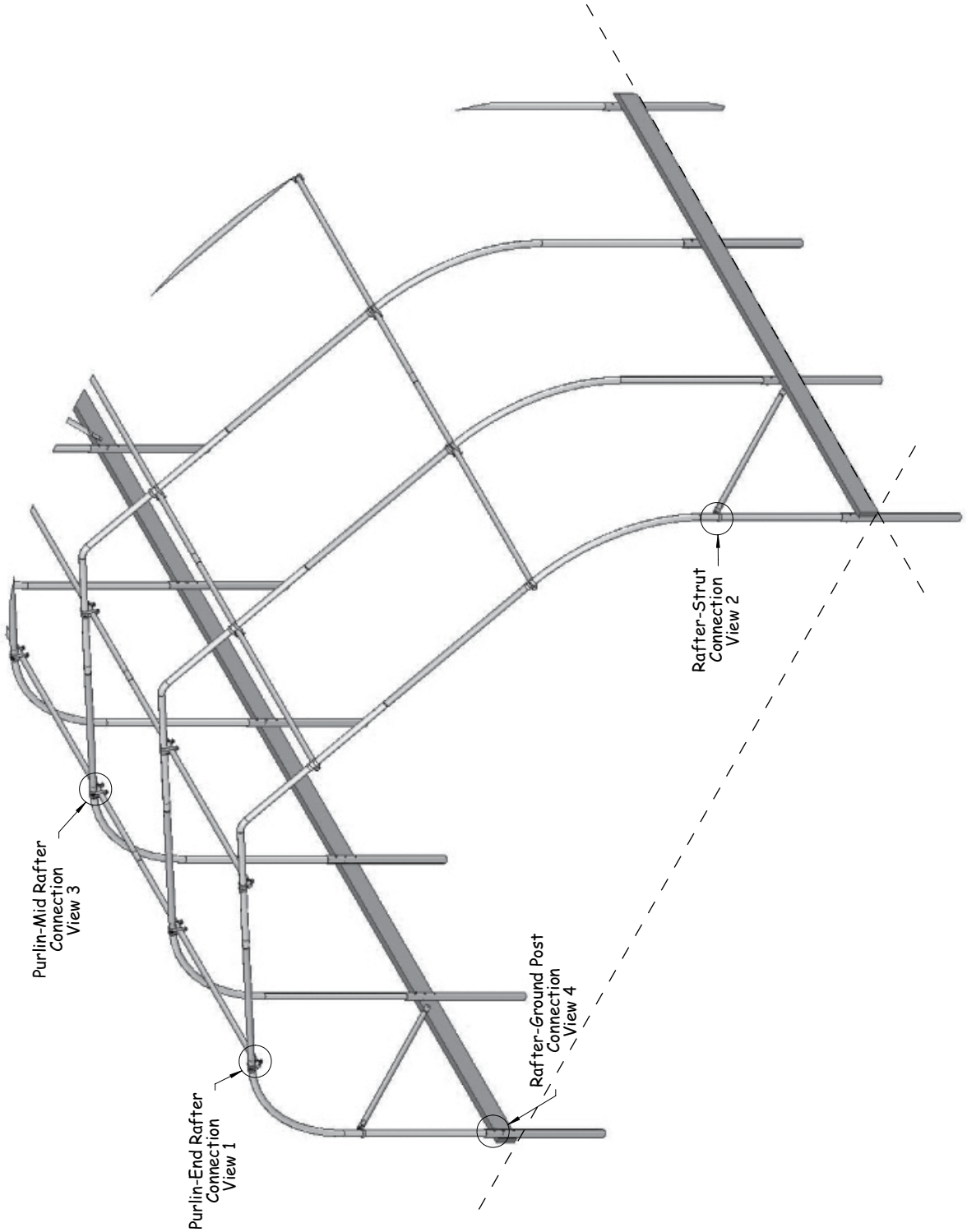
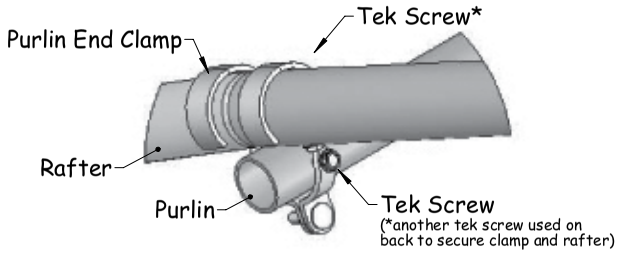


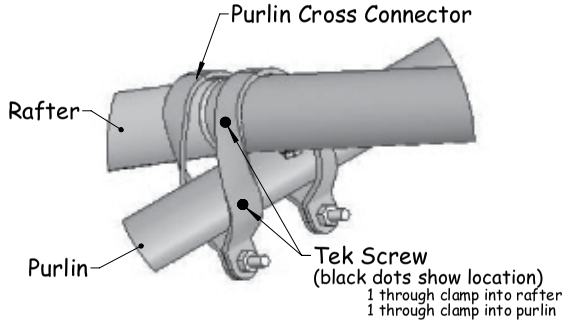
CONNECTIONS



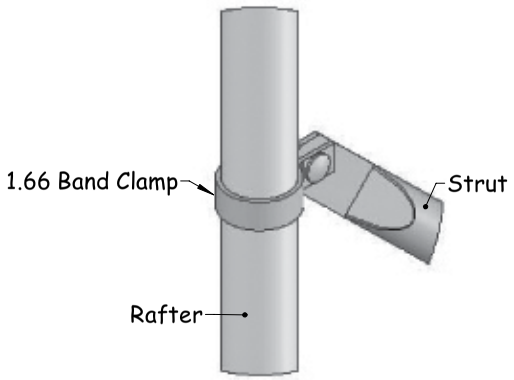
CONNECTION - DETAILS



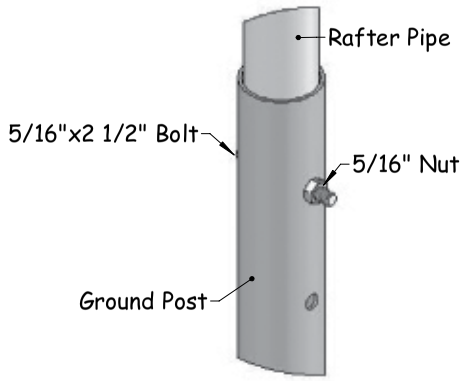
VIEW 1
PURLIN - END RAFTER



VIEW 3
PURLIN - MID RAFTER



VIEW 2
RAFTER - STRUT



VIEW 4
RAFTER - GROUND POST