



GrowSpan™ Round Premium Greenhouses



Photo may show a different but similar model.

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

STK#	DIMENSIONS
106197	12' W x 8' 1" H x 12' L
106198	12' W x 8' 1" H x 16' L
106199	12' W x 8' 1" H x 20' L
106200	12' W x 8' 1" H x 24' L

Revision date: 01.10.19



READ THIS DOCUMENT BEFORE YOU BEGIN

Thank you for purchasing this GrowSpan™ greenhouse. 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 greenhouse. Please read these instructions **before** you begin.

If you have any questions during the assembly, contact Customer Service at 1-800-245-9881 for assistance.

SAFETY PRECAUTIONS

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

ANCHORING INSTRUCTIONS

Prior to assembling this greenhouse, please read the **MUST READ** document included with the shipment.

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

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 greenhouse 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. The following site characteristics will help ensure the integrity of the structure.

- *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.*

POLYCARBONATE PANELS

Do not allow panels to remain in direct sunlight with protective film in place. Doing so will cause protective film to become difficult if not impossible to remove before installation.

Store panels indoors or cover with a light-colored tarp until you are ready to install.

ASSEMBLY PROCEDURE

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

Steps outlining assembly are as follows:

1. Verify all parts are included in shipment. Notify Customer Service for questions or concerns.
2. Read these instructions, the Must Read document, and all additional documentation included with shipment **before** you begin.
3. Gather tools, bracing, ladders (and lifts), and assistants needed to assemble greenhouse.
4. Check weather **before** installing roof cladding. Do not install cladding on a windy or stormy day.
5. Re-evaluate location and site based on information and precautions presented in documentation included.
6. Prepare site.
7. Assemble frame components in the order presented.
8. Assemble frame including struts (if equipped).
9. Consult MUST READ document and properly anchor frame.
10. Install end wall frame.
11. Install end wall cladding and door.
12. Install roof cladding.
13. Read the care and maintenance information in next column.
14. Complete and return all warranty documents as instructed.

SHELTER CARE AND MAINTENANCE

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

- Regularly check all polycarbonate panels to see these are secure and in good condition. Replace damaged panels immediately.
- Check connections and all fasteners to verify these remain tight.
- Do not climb or stand on greenhouse at anytime.
- Inspect anchoring system to verify all components remain tight and in good condition.
- Remove debris and objects that accumulate on greenhouse. Use tools that will not damage panels cover when removing debris.
- Remove snow to prevent excess accumulation. Use tools that will not damage polycarbonate panels when removing snow.
- Check contents of shelter to verify that nothing is touching panels that could cause damage.
- If greenhouse is disassembled and moved, inspect all parts and connections before reassembly.
- Depending on contents, construction of shelter, shelter materials, and shelter location, the potential for condensation exists. GrowSpan™ offers several items that can be used to help alleviate a condensation condition.

Please contact a GrowSpan™ representative for additional information.

- For replacement or missing parts, call 1-800-245-9881 for assistance.

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REQUIRED TOOLS

The following list identifies the main tools needed to assemble the shelter. Additional tools and supports may be needed.

- Tape measure or measuring device
- Marker to mark locations on the pipes
- Variable speed clutched drill driver (cordless with extra batteries works best)
- Saw to cut metal and polycarbonate panels
- Wrenches and impact socket set, or an adjustable wrench
- Scissors, utility knife, or tin snips
- Hammers, rubber mallet, and gloves
- Flat bar or putty knives for panel installation
- Drill bit set that includes a 5/16" bit
- Chalk line
- Caulk gun to apply sealant
- Adjustable pliers and self-locking pliers
- Ladders, work platforms, and other machinery for lifting designed to work safely at the height of the building
- Rope for temporary rafter bracing during frame assembly

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 works well 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 (if equipped) or other building components.

If used, the baseboard is installed after the roof panels.

Suggested baseboard dimensions: 2" x 6" (minimum). Length determined by greenhouse. See page 32 for additional baseboard comments.

QUICK START GUIDE

For a quick overview of the building and its components, consult the information and diagrams in the Quick Start section near the back of these instructions.

ASSEMBLY NOTE: Install Tek screws using a clutched drill driver running approximately 750 RPM while applying approximately 50 lbs of force.

Do not use an impact driver to install Tek screws!

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.

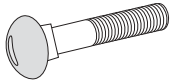
NOTE: At this time, you do not need to open the plastic bags containing smaller parts such as fasteners or washers (if equipped).



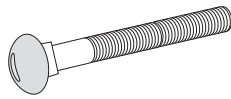
The following graphics and photos will help you identify the different parts. (Some parts are not shown.)



FA4482B
Tek Screw



FAH320B & FALB02B
Carriage Bolt & Hex Nut



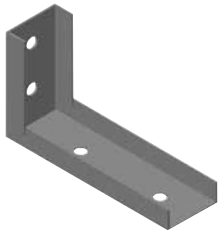
FAH009B & FALB01B
Carriage Bolt & Hex Nut



108553 Wafer
Head Screws



102921 & FA4484B
Neo-bonded Galvanized
Washers and Long Tek Screws



QH1330
Angle Bracket



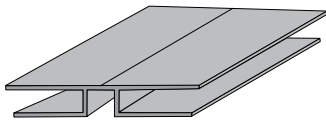
102855
End Clamp



102479
Cross Connector



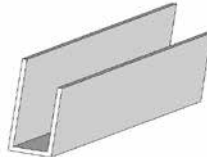
104074
Square-to-Round Tube
Connect Bracket



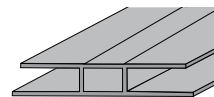
Aluminum 8'
H-Channel Profile



104548
End Cap Profile
Doors/Fans/Vents



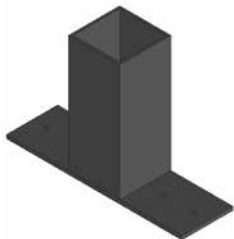
104213
Aluminum
U-Channel Profile



111929 & 111928
H-channel -
Clear Plastic



QH1400
Band Clamps



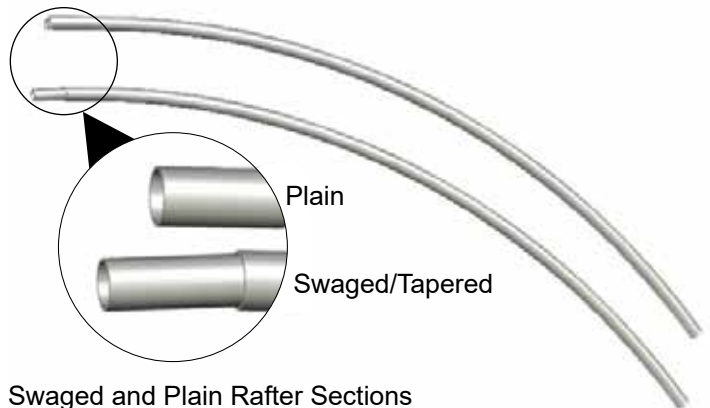
104624
Square Tube Fitting



QH1072
Post Driver



DE4007 Sealant



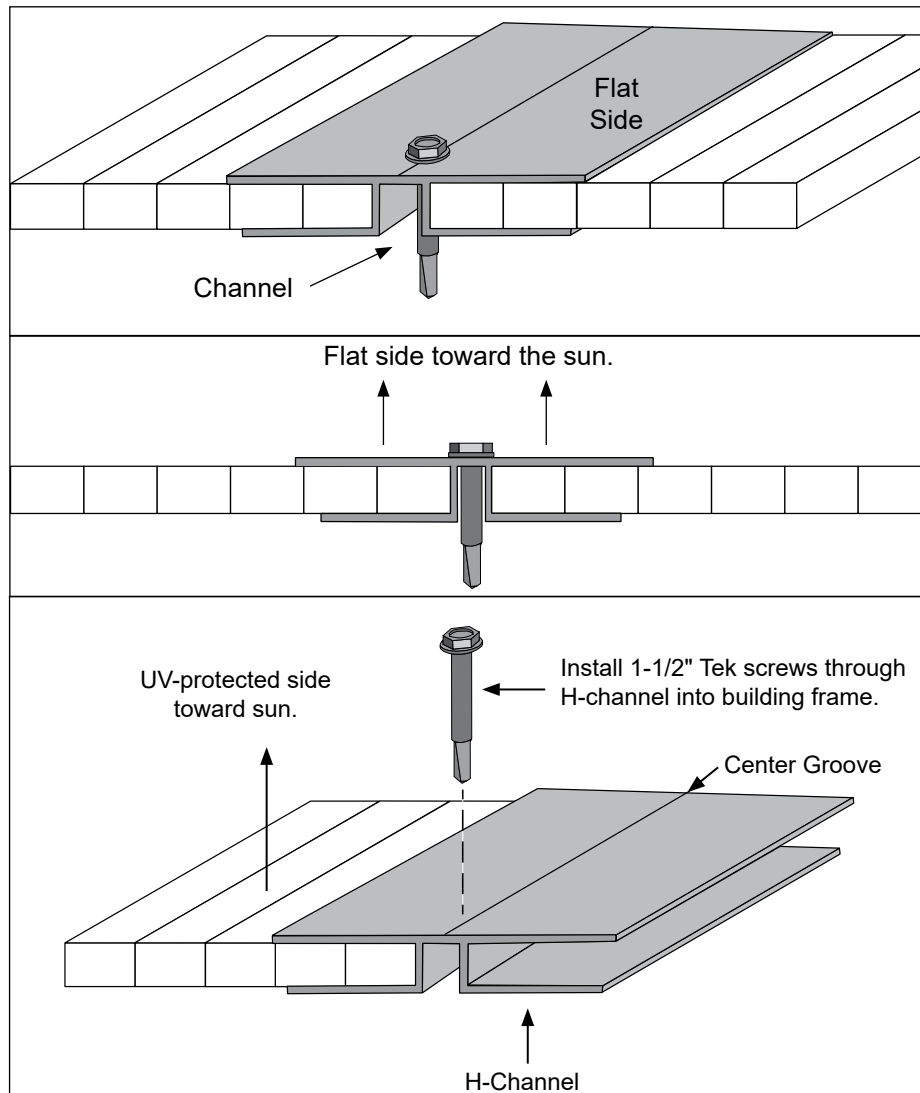
H-CHANNEL INSTALLATION INSTRUCTIONS

The new H-channel design requires installation of flat side facing out with channel side toward building. Some diagrams and photos in this document may show installation of *original* H-channel with channel side facing out. ***Design of new H-channel does not allow channel-side out installation.***

Use the diagrams on this page to install H-channel with flat side facing out.



ATTENTION: Use only 1-1/2" Tek screws to attach H-channel to building frame. ***Do not use shorter screws. They will not hold. Do not use washers on Tek screws when installing the 113236Z096 H-channel.***



ASSEMBLY NOTE: Install Tek screws using a clutch drill driver running approximately 750 RPM while applying approximately 50 lbs of force.

Do not use an impact driver to install Tek screws!



ATTENTION: Install all twin-wall polycarbonate panels with UV-protected side toward the sun.



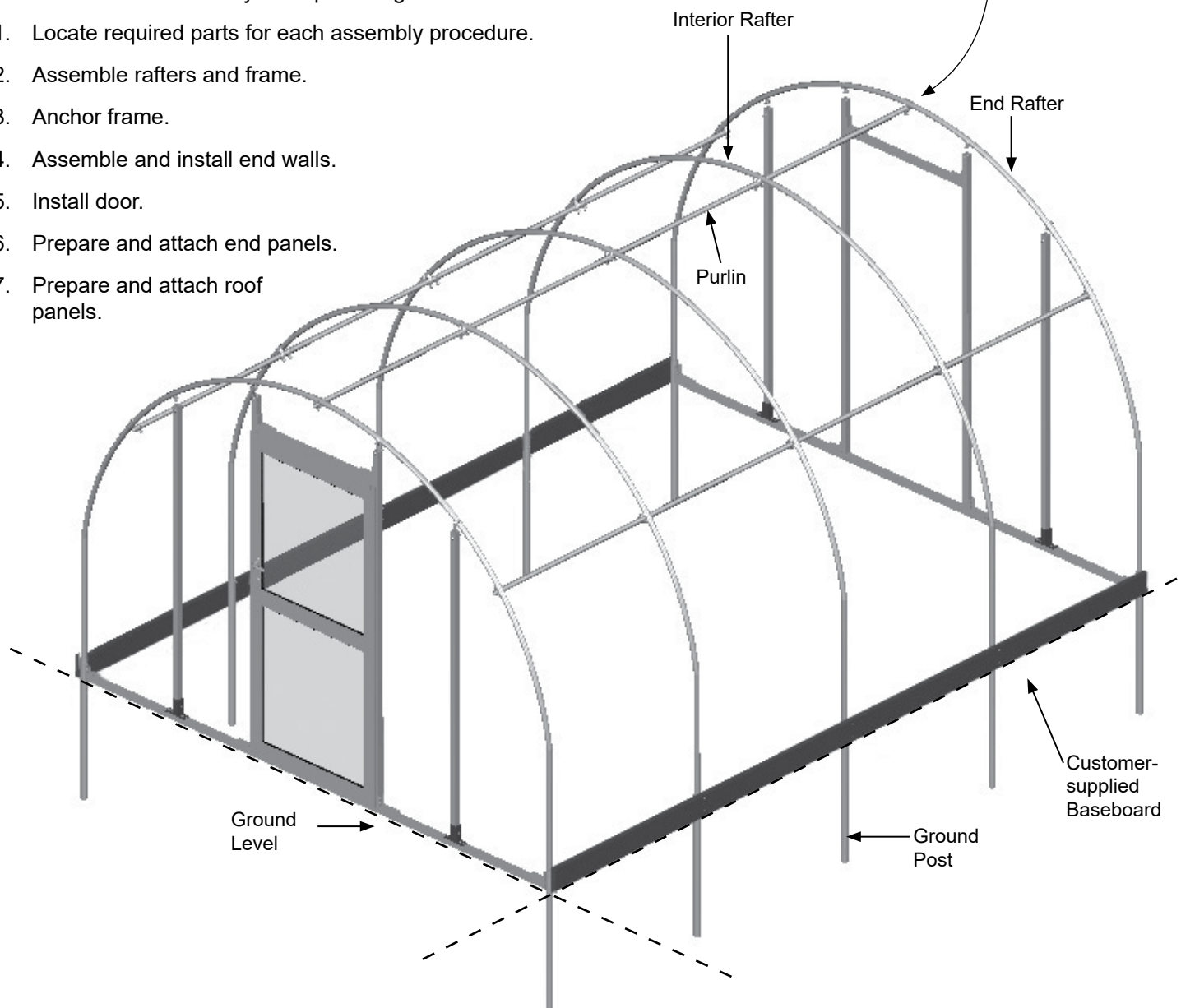
GrowSpan™ Round Premium Greenhouses

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

OVERVIEW

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

1. Locate required parts for each assembly procedure.
2. Assemble rafters and frame.
3. Anchor frame.
4. Assemble and install end walls.
5. Install door.
6. Prepare and attach end panels.
7. Prepare and attach roof panels.



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LAY OUT BUILDING SITE

After the site is prepared, lay out building site.

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

Drive ground posts 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.

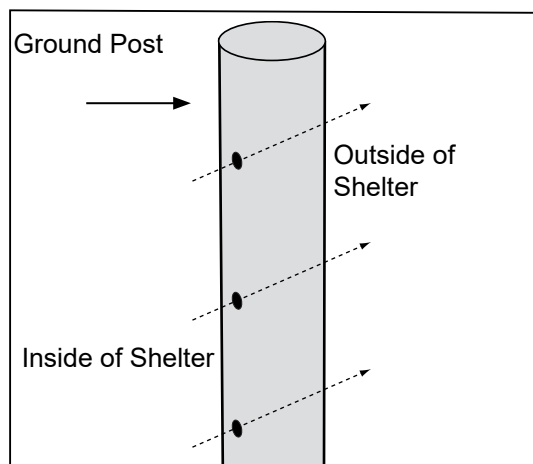
SQUARE THE SITE

Gather the parts:

- Ground posts
- 5/16" x 2-1/2" machine bolts
- 5/16" nuts

1. Identify a corner where a ground post will be positioned and drive the first 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 twelve (12) inches above the finished grade when properly driven.*



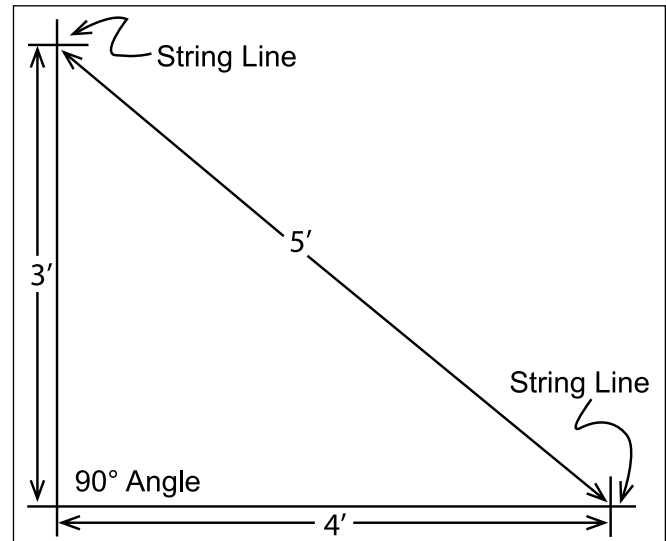
ATTENTION: Position the pre-drilled holes facing to the inside/outside of the shelter so they can be aligned with the bolt holes in the rafter legs.

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 ground post into the ground just enough to hold it in place.

3. Use a transit or line level to drive the second corner post to the same depth as the first ground post.
4. String a line at least as long as the building from the first stake at 90°.

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 (center-to-center) and drive the next corner ground post.
6. Repeat the same step for the last corner post.

NOTE: The distance measured diagonally between corner 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 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. See Step 1 if needed.

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 FRAME COMPONENTS

After 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 Front Profile 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

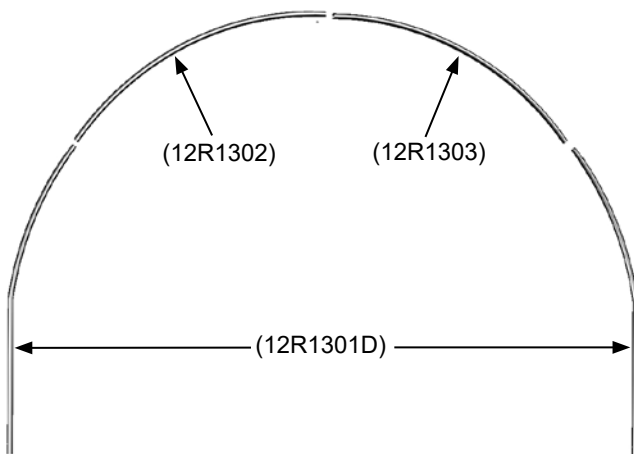
Gather the parts:

- Rafter pipe (12R1301D)
- Rafter pipe (12R1302)
- Rafter pipe (12R1303)
- End clamps (102855)
- Tek screws (FA4482B)
- Magnetic nut setter 3/8" x 2-9/16"

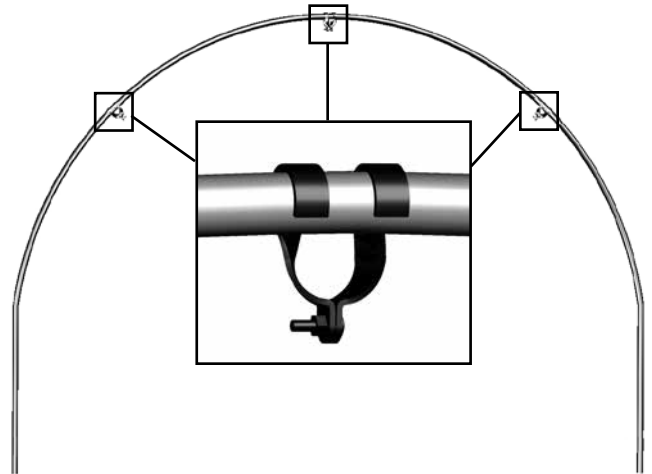
END RAFTER ASSEMBLY

The end rafters include purlin end clamps. Install the purlin end clamps before the different pipes of the rafters are connected.

1. Select the four (4) pipes needed to assemble the first end rafter and arrange on a level surface.



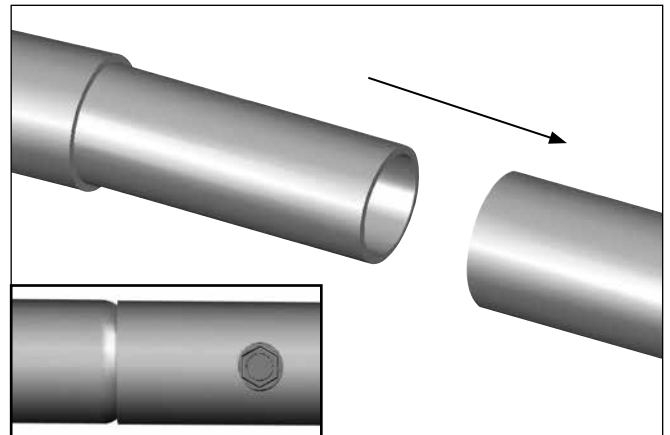
2. Slide three (3) end purlin clamps over the rafter pipes.



End clamp as seen from outside the assembled rafter.

NOTE: Consult the Front Profile diagram in the Quick Start section for proper end clamp placement and position.

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, install a Tek screw through the rafter pipes to secure each joint. See the diagram above.

IMPORTANT: Verify that you are installing the screw through the pipe that contains the swaged end of the adjacent pipe. 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 to assemble the remaining end rafter and set both end rafters aside.

ASSEMBLY NOTE: Install Tek screws using a clutched drill driver running approximately 750 RPM while applying approximately 50 lbs of force.

Do not use an impact driver to install Tek screws!

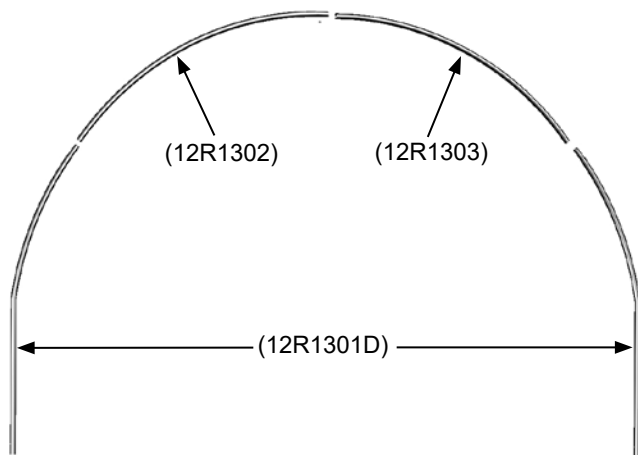
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RAFTER ASSEMBLY (CONTINUED)

INTERIOR RAFTER ASSEMBLY

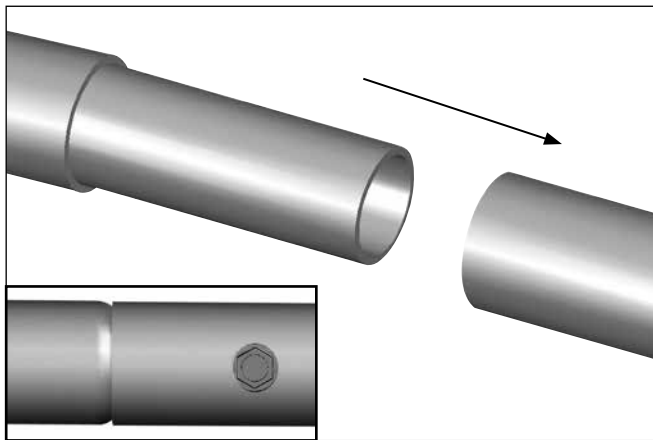
Complete the following steps *for the interior rafters*.

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.

3. Once rafters are assembled, assemble the frame.

ASSEMBLE FRAME

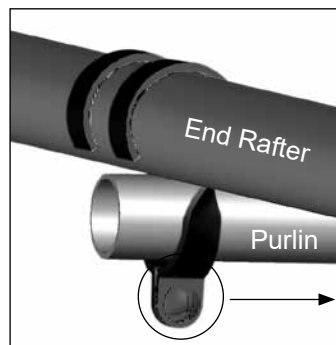
Gather parts:

- All rafter assemblies and cross connectors (102479)
- Purlin pipe 1.315" x 75" swaged (131S075)
- Purlin pipe 1.315" x XX" plain (131P0XX)
- 5/16" x 2-1/2" machine bolts and 5/16" nuts
- Tek screws (FA4482B)
- Marker and tape measure
- Lifts, ladders, and assistants
- Rope or cable to temporarily brace rafters

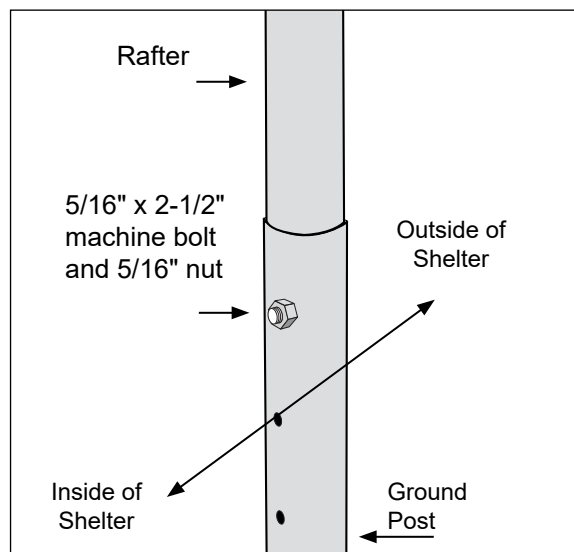
NOTE: The purlins run perpendicular to rafter assemblies. Each purlin consists of 1.315" x 75" (131S075) swaged pipes (number is determined by shelter length) and one (1) 1.315" x XX" (131P0XX) plain pipe. Consult Side Profile drawings for XX part identification.

Complete these steps to assemble frame.

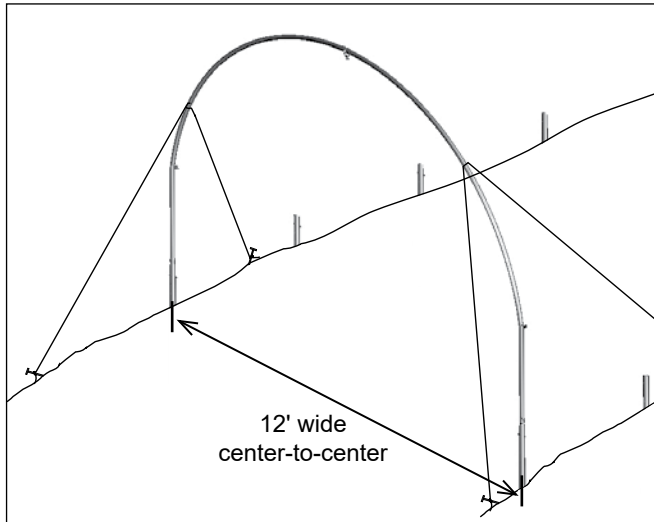
1. Carefully stand *first end rafter* and place leg pipes in first set of ground posts. *Verify nuts and bolts of end clamps are to the inside of the frame.*



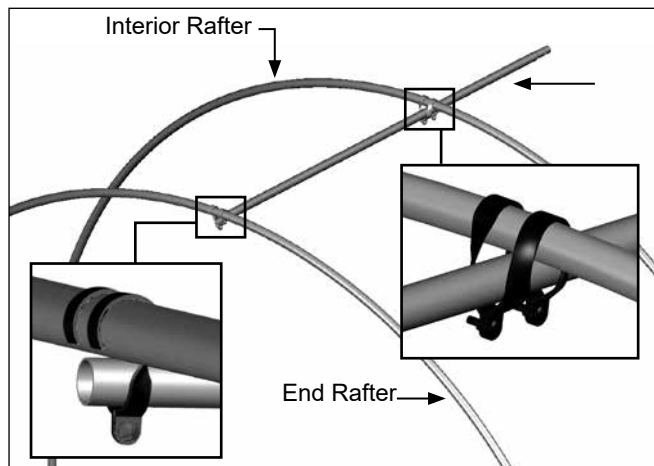
2. Secure leg pipes to ground posts using 5/16" x 2-1/2" machine bolts and nuts.



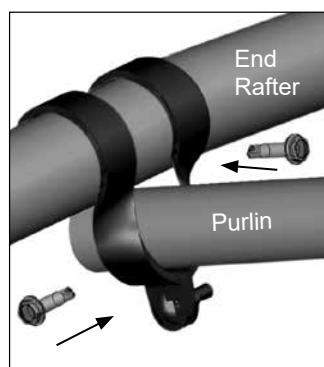
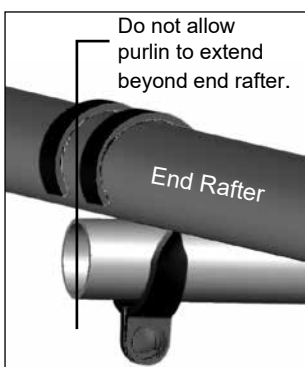
- Use rope or cable to brace rafter in position.



- Carefully position first *interior rafter* in place and secure leg pipes to the ground posts.
- As second rafter is steadied, take one 131S075 pipe and insert purlin pipe (plain end) through top end clamp of end rafter and through a cross connector at top of *interior rafter*. Consult Quick Start section for purlin location per frame.

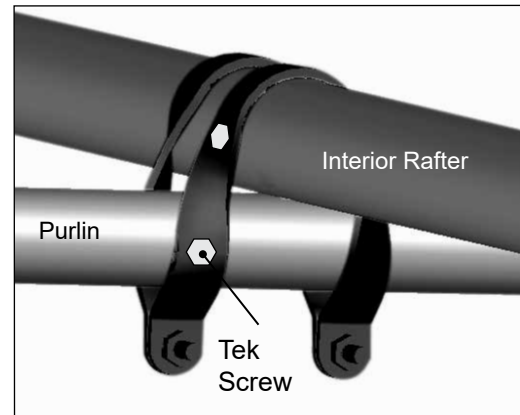


- Align plain end of purlin with outside edge of end rafter. Do not allow pipe to extend beyond edge of rafter tube.

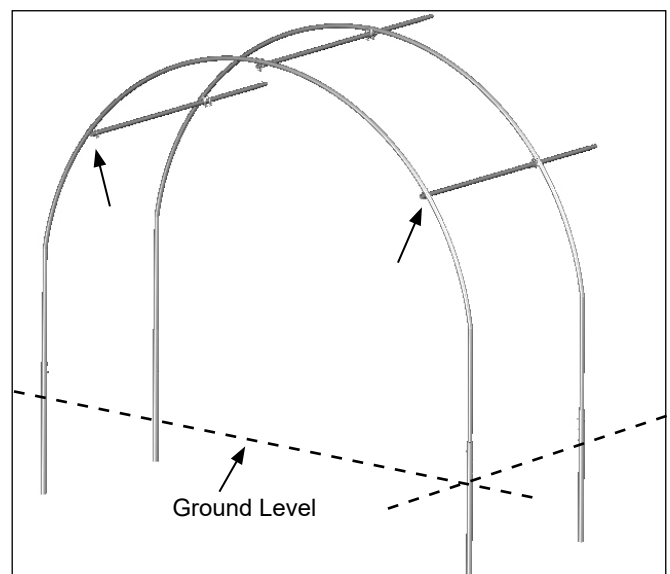


- Tighten end clamp and secure it to rafter and purlin using an FA4482B Tek screw.

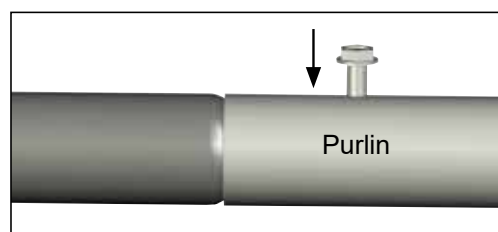
- Move to the interior rafter, set rafter spacing at forty-eight inches (48") on-center (adjust forward or backward as needed), and tighten cross connector.
- Secure cross connector to rafter and purlin using Tek screws. See Quick Start section if needed.



- Repeat **Steps 5 - 9** to install first section of each purlin assembly for first two rafters.



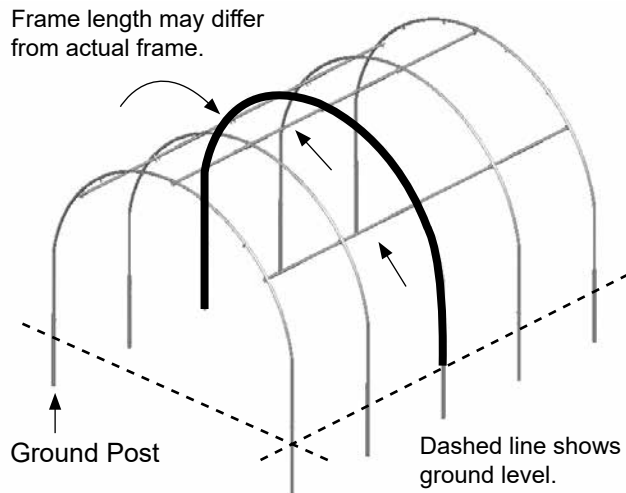
- Choose another interior rafter assembly and set it in position. **DO NOT USE THE REMAINING END RAFTER.**
- Secure rafter legs to ground posts as previously described and steady the rafter.
- Add another 131S075 pipe to top purlin pipe and secure pipe joint using an FA4482B Tek screw.



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FRAME ASSEMBLY (CONTINUED)

14. Verify distance between rafters is 48" center-to-center. *Adjust rafter forward or backward as needed.* Tighten cross connector and secure connector to purlin and mid rafter. (See Step 9.)



15. Repeat steps as needed to add and attach next sections of purlin pipes. See arrows in above diagram.
16. Stand and secure remaining interior rafters and purlins to complete frame assembly.
17. Finally, stand and secure end rafter to ground posts and attach purlins. *Verify end clamps are positioned with the nut and bolt inside assembled frame.* Refer to the Quick Start section and previous diagrams if needed.

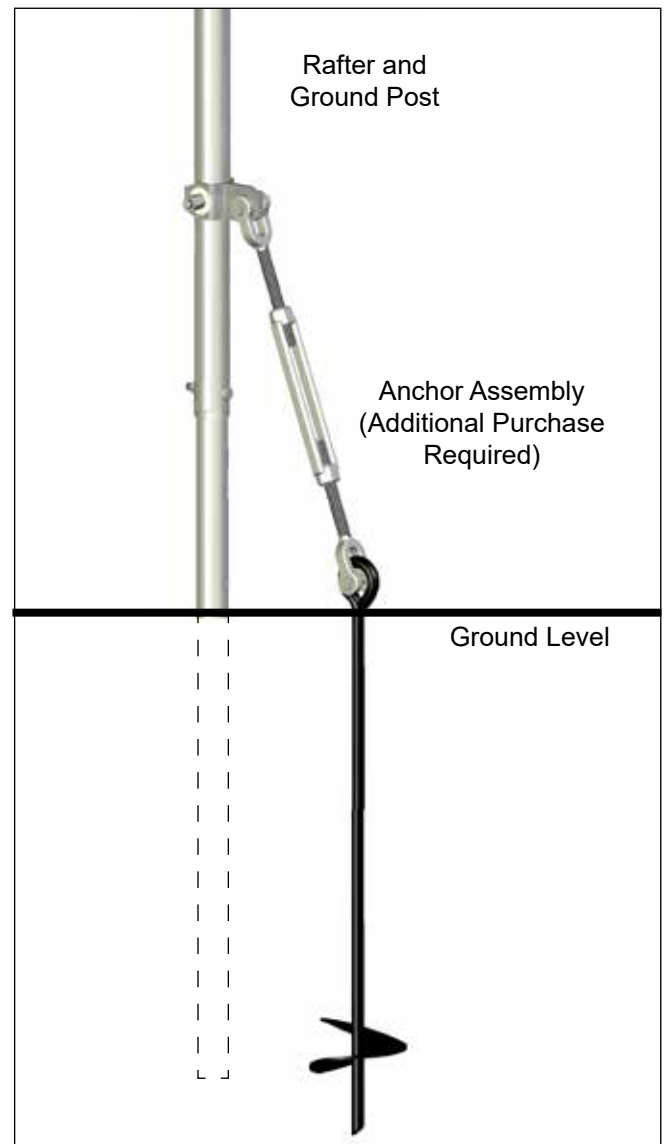
NOTE: If last end rafter is plumb and purlin extends beyond end rafter, cut the last section of plain purlin pipe (131P0XX) to required length.

Typically purlins do not require cutting. Verify you have correctly assembled purlins using correct pipes *before cutting any pipe to length.* Review Side Profile diagram for you building in Quick Start section.

18. Return to each pipe splice of each purlin and each rafter and verify that a Tek screw is installed to secure the joint. **Install a Tek screw if needed.**
19. Remove any temporary bracing (if needed) and anchor the 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.



ASSEMBLY NOTE: Install Tek screws using a clutched drill driver running approximately 750 RPM while applying approximately 50 lbs of force.

Do not use an impact driver to install Tek screws!

END WALL INSTALLATION

Steps to install end walls for greenhouse include:

1. Install end wall framing. (See diagrams in Quick Start section at back of these instructions. Read installing accessories note below.)
2. Prepare polycarbonate end panels and attach.
3. Assemble doors and attach.

INSTALL END WALL FRAMING

Site variations and different methods for anchoring greenhouse may require slight changes to these instructions. *It is the responsibility of the owner/builder to adapt these instructions as needed to adjust for these and other differences.*

INSTALLING END WALL FRAMING FOR OPTIONAL HEATERS, VENT FANS, AND MOTORIZED SHUTTERS (if equipped):

Optional accessories such as heaters, vent fans and motorized shutter units are typically installed or attached to end walls. Additional horizontal framing (included) is installed *between* vertical end wall frame tubes to mount most accessories. Spacing shown for end wall supports on end frame diagrams may be too narrow for some larger accessories. *Diagrams do not show framing for accessories.*

When framing end wall, consult installation instructions for accessories (if equipped), or measure width of accessory to accurately space and position end frame tubes. Consult panel installation diagrams in Quick Start section.

Before installing any greenhouse accessory, adhere to the following:

- Consult end frame diagrams before installing accessory horizontal framing.
- Consult diagrams in Quick Start section showing polycarbonate panel locations and locations of aluminum trim and profile *before* repositioning any end wall vertical.
- **DO NOT MOVE END WALL VERTICALS USED AT THE SEAM OF TWO (2) POLYCARBONATE PANELS.**
- *All electrical work to be completed by a licensed electrician and according to established codes.*
- *For gas heaters, a professional, qualified service technician must install the unit.*

Complete these steps to install the accessory framing:

1. Based on the installation requirements and precautions of the accessory, choose a location in the end wall to mount the accessory, and cut a 1.5" x 1.5" frame tube to the required length for framing.
2. Attach these horizontal frame tubes between the vertical frame tubes (at required height determined by instructions included with accessory) using angle brackets.

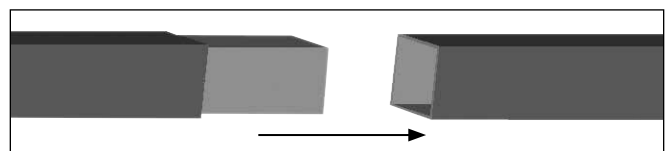
INSTALL END WALL FRAMES

Refer to Quick Start section for layout of frame. Materials and parts needed to assemble end frame include:

- Square tube (102897)
- Square tube fitting (104624)
- Angle brackets (QH1330) & band clamp (QH1400)
- Square-to-round tube connect bracket (104074)
- Carriage bolt (FAH320) and nut (FALB32B)
- Tek screws (FA4482B)

Complete these steps:

1. Locate square metal tubing for base tube. Base tube consists of two (2) 99" swaged tubes joined and cut to length. See Quick Start section for clarification.
2. Insert swaged end into plain end to connect tubes.
3. Position assembled base tube on ground between legs of end rafter at front of greenhouse. Anchor it in place.

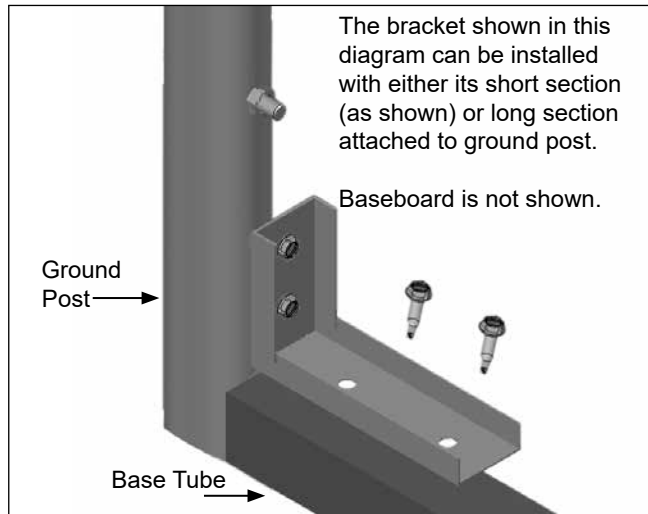


NOTE: This base tube will be directly below and in line with the end rafter.

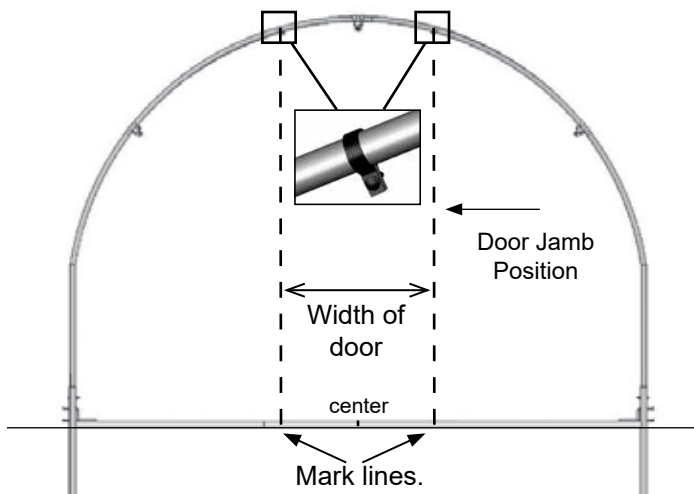
GROWSPAN™ ROUND PREMIUM GREENHOUSES

END WALL INSTALLATION (continued)

4. Secure base tube to end rafter ground posts using angle brackets and FA4482B Tek screws.

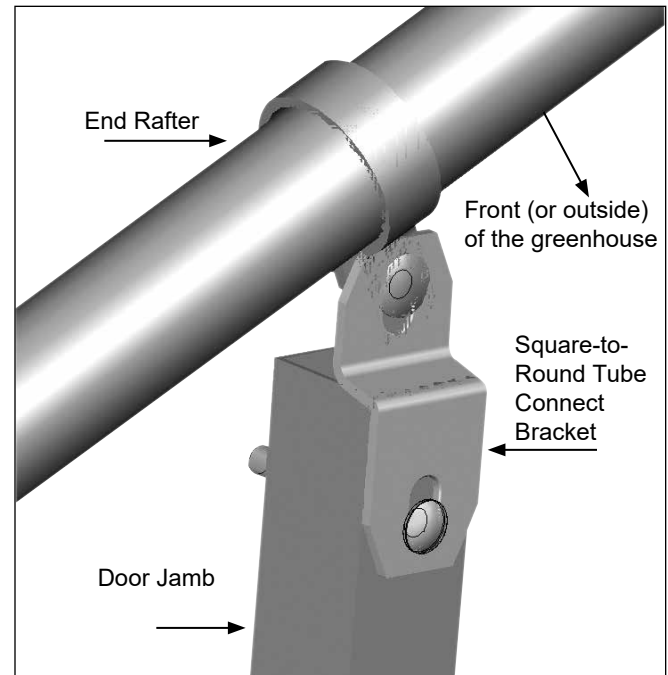


5. On base tube surface facing inside the greenhouse, install a short Tek screw at each splice joint.
6. Mark center of base tube.
7. Measure width of door that shipped with greenhouse. Mark lines accordingly to determine position of vertical frame tubes.
8. Place band clamps on end rafter above the lines as shown below. **DO NOT TIGHTEN BOLTS AT THIS TIME.**



9. Select tubing for two vertical frame tubes (jambs) for sides of door. Each support includes one (1) long 99" section of square tubing (102897 swaged end) and one (1) square-to-round tube bracket (104074).

10. Measure distance *between top of base tube and band clamp (Step 7)* to determine length of door jamb.
11. On this frame tube, mark length determined in Step 10 (above) and *subtract the amount needed to account for the square-to-round tube connect bracket*, which attaches to top of jamb. See diagram below. Cut tube accordingly *at swaged end* to fit.

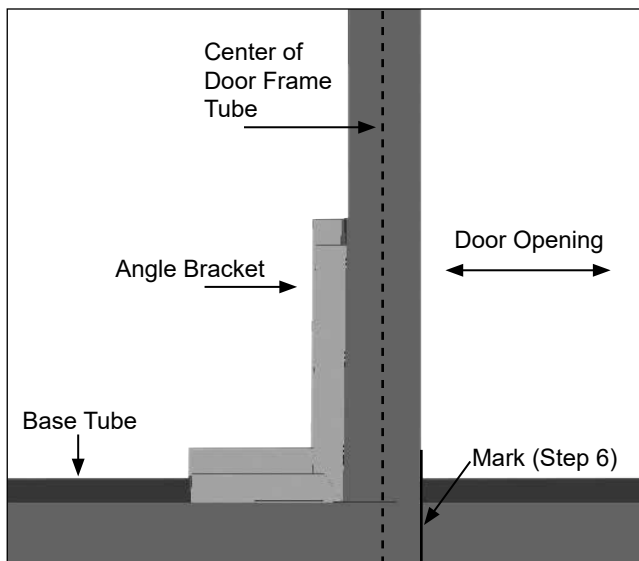


12. Select a square-to-round tube connect bracket and attach bracket to one end of door jamb. Use a 5/16" drill bit to drill a hole through tube and attach bracket using a nut and carriage bolt.
13. Repeat steps to cut remaining door jamb.
14. With square-to-round tube bracket attached to top of each door jamb, use band clamp bolt to attach bracket to the band clamp. **DO NOT TIGHTEN AT THIS TIME.**

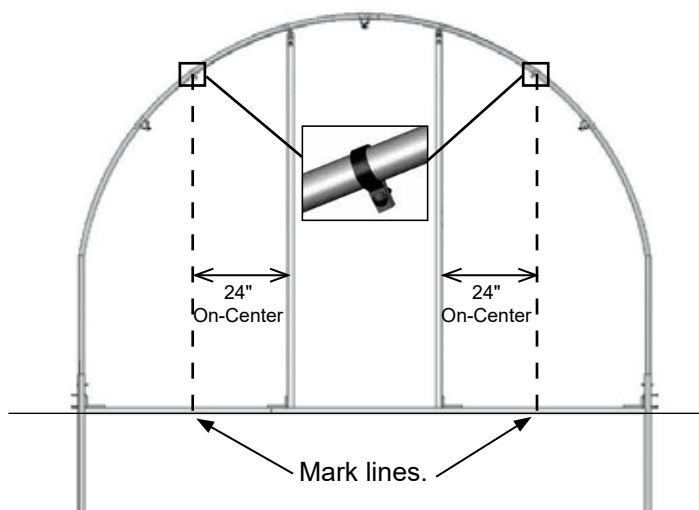
NOTE: Position bolt heads for each clamp to the outside. At this point, door jambs should be loosely attached to end rafter.

INSTALL THE END WALL FRAME (continued)

15. Using marks on base tube for rough door opening (Steps 6 & 7), attach bottom of each door jamb to base tube using an angle bracket and Tek screws. Consult end frame diagram if needed.



16. Verify both door jambs are plumb and recheck width. Adjust if needed. Tighten top band clamp and *install a short Tek screw through clamp into rafter*.
17. Using 24" on-center measurements, mark positions of remaining vertical frame tubes. Place band clamps on end rafter above lines on base tube. *Do not tighten bolts at this time.*

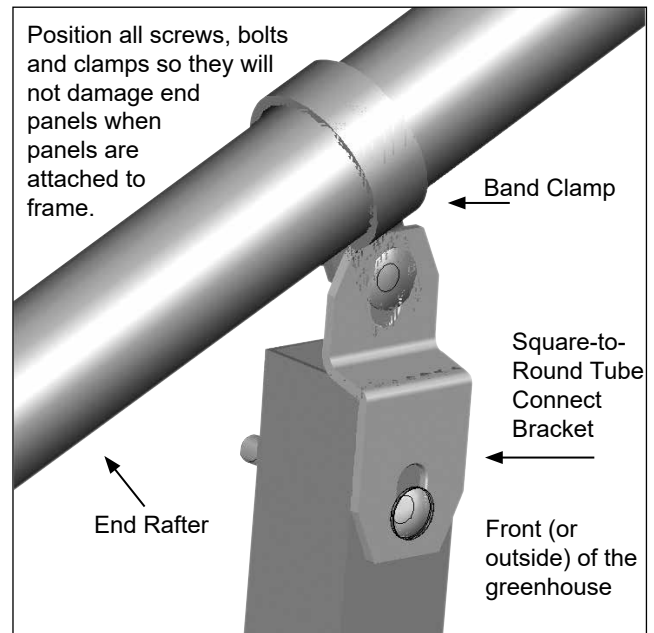


18. Choose parts for each remaining vertical frame tube. Each vertical support includes one (1) long 99" section of square tubing (102897 swaged end), one (1) square-to-round tube bracket (104074), and one (1) square tube fitting (104624) to attach support to base tube.

19. Repeat Steps 10 -11 to cut each tube for the remaining vertical frame members.

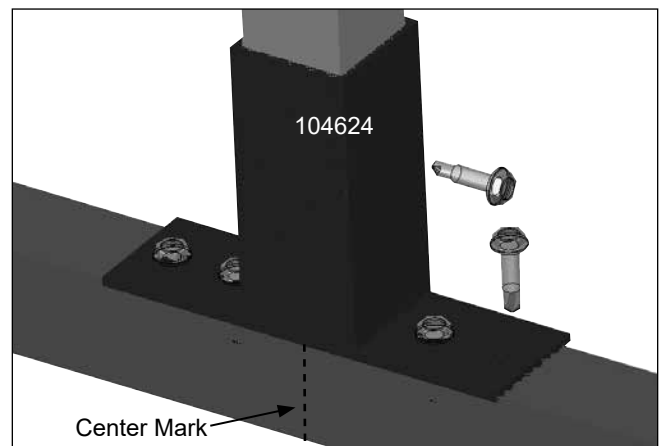
ATTENTION: Remember to subtract amount needed to account for square-to-round tube bracket.

20. Choose a square-to-round tube bracket and attach to one end of tube. Use a 5/16" drill bit to drill a hole through tube. Attach bracket to tube using a nut and carriage bolt.



21. Place a square tube fitting on bottom of frame tube.

22. Align center of frame tube with center mark on base tube and attach top to the band clamp. Do not tighten.

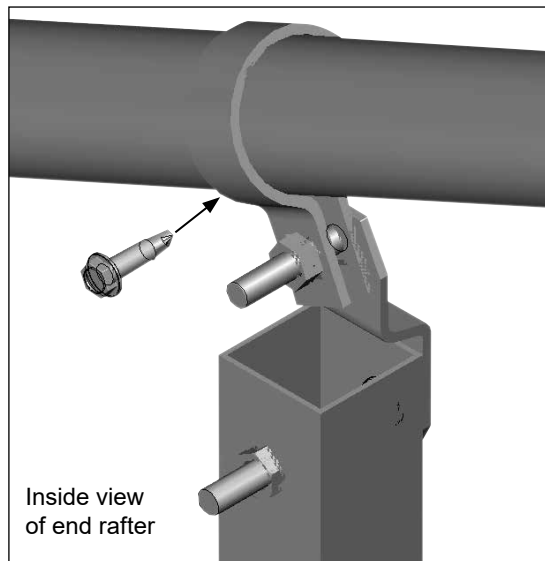


23. Verify that frame tube is plumb and use FA4482B Tek screws to secure square tube fitting to base tube.

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INSTALL THE END WALL FRAME (continued)

24. Tighten band clamp and *install a short Tek screw through backside of clamp and into rafter.*

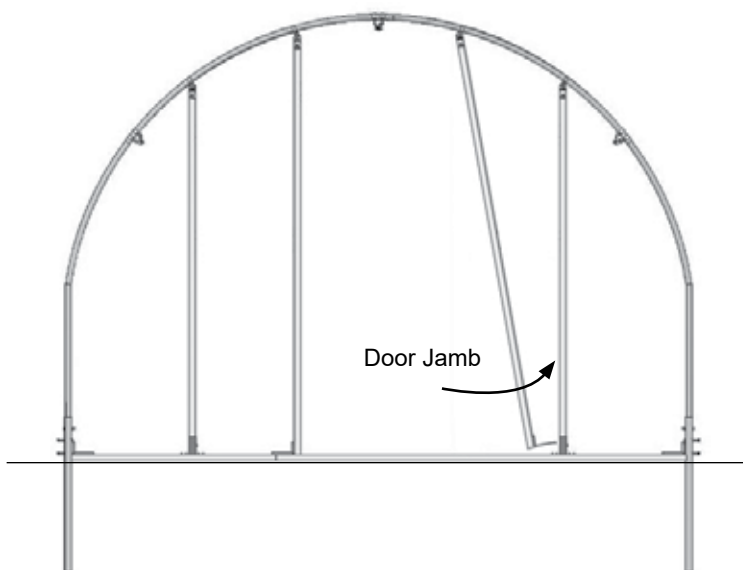


25. Repeat procedure as needed to assemble and install the remaining vertical end wall supports.

DOOR INSTALLATION

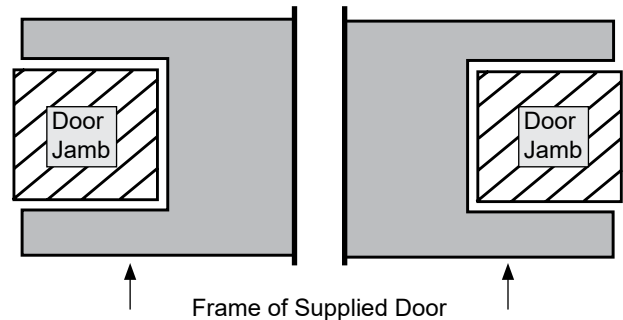
Install door between door jambs. The following steps describe one way to install door.

1. Move to bottom of door jamb and swing tube outward as shown below.



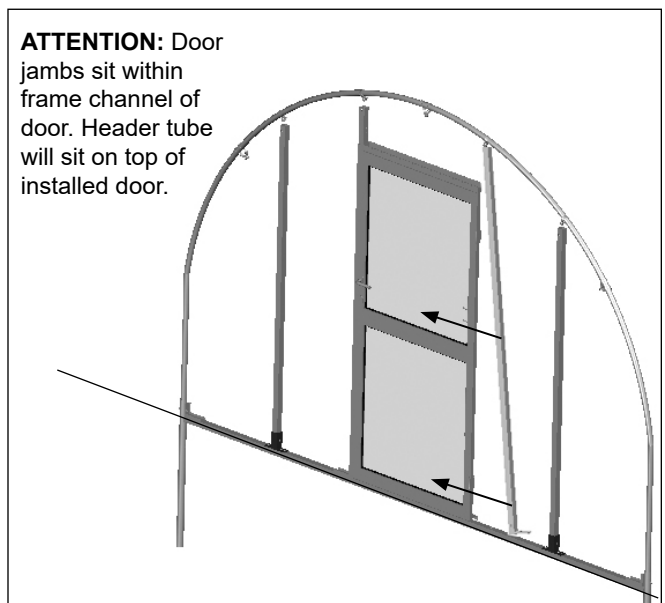
ATTENTION: If tube is attached to base rail, remove Tek screws and continue.

ATTENTION: Frame of door is designed to "wrap around" the door jambs. Diagram below shows how door is installed.

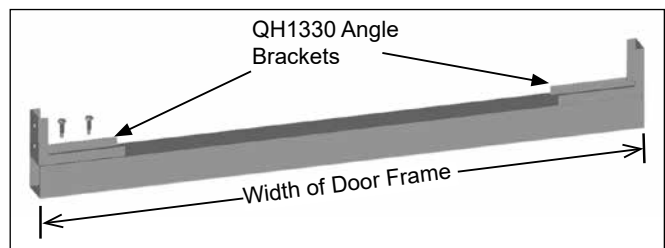


TOP VIEW OF DOOR

2. With proper assistance, lift door and position it in the opening.



3. With door held in place, swing loose door jamb back into position. Secure jamb to base rail using Tek screws.
4. Choose square tube for door header and cut swaged end to proper width of rough door opening.



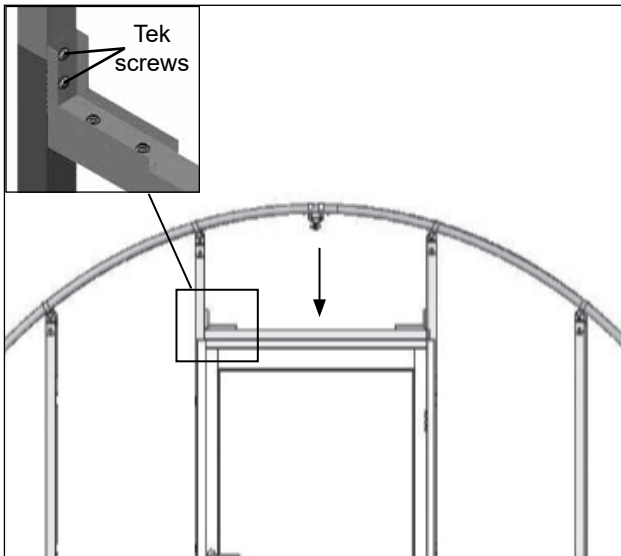
5. Attach two (2) (QH1330) angle brackets to header using Tek screws. Verify brackets are flush with tube ends.

INSTALL THE END WALL FRAME (continued)

6. Place door header tube on top of installed door. Verify header is tight against jambs and is level. Secure header to jambs using Tek screws.



Space below reserved for customer notes.



7. Repeat steps to assemble remaining end frame.

ATTENTION: End framing for back end wall is identical, but will not include a door.

8. After end frames are assembled, return to each band clamp and pipe splice of base tubes and verify that a Tek screw is installed. Install a Tek screw if needed.
9. Continue by installing polycarbonate end wall panels.

ASSEMBLY NOTE: Install Tek screws using a clutched drill driver running approximately 750 RPM while applying approximately 50 lbs of force.

Do not use an impact driver to install Tek screws!

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END PANEL INSTALLATION

After installing end wall framing, attach polycarbonate panels. Steps that follow describe one way to complete end wall panel installation.

Materials and parts needed to install end panels include:

- Polycarbonate Panels (See diagrams in Quick Start section for panel layout and identification.)
- White vent tape (104774) & foil tape (DH8007)
- Aluminum H-channel (113236Z096)
- End cap profile (104548) & U-channel (104213)
- Tek screws (FA4484B) & Neo-bonded, galvanized washers (102921B)

Read the following information before starting:

- H-channel is used to join two (2) separate panels at seam.
- Tek Screws and galvanized washers are used to secure panels to each end wall frame column.
- Install polycarbonate panels with UV-protected side to the outside. Mark side with a marker or tape to identify after removing protective film if needed.

ATTENTION: Remove protective film from panels before installation. **Do not allow film to remain intact and in direct sunlight;** doing so will make film difficult **if not impossible** to remove.

- During preparation, rest edges of panels on cardboard or other material to protect them from dirt and damage.
- Seal bottom edge of panels with white vent tape. Top is sealed with foil tape after installation.
- Consult polycarbonate panels (Quick Start section) for location and lengths of each panel. Diagrams are located at the back of these instructions.

ATTENTION: Position panels as shown on panel diagrams. Using a panel in the incorrect place can affect placement of subsequent panels. Begin at *door end* of frame.

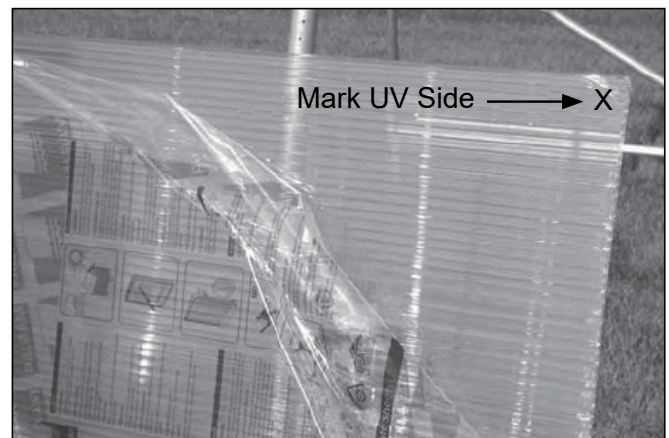
Complete the following general steps to install end wall panels. **Evenly space screws every 16".**

NOTE: If equipped, install all accessories (fans, vents, heaters, etc.) after installing polycarbonate panels.

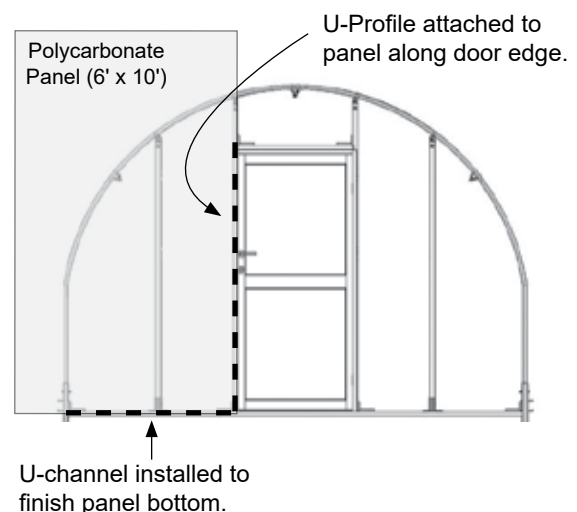
1. Select first panel and remove protective film panel.

Secure end panels to all vertical end frame tubes using FA4484B screws and 102921B washers. **Do not attach panels to end rafter.**

Always remove protective film and mark and install UV-protected side to the outside toward the sun.



2. Apply vent tape *along one end of panel* to seal cells. This is bottom of panel when installed.
3. Install a piece of 104213 U-channel along door edge of panel. Consult panel location diagrams. Place panel at edge of opening for door as shown below.



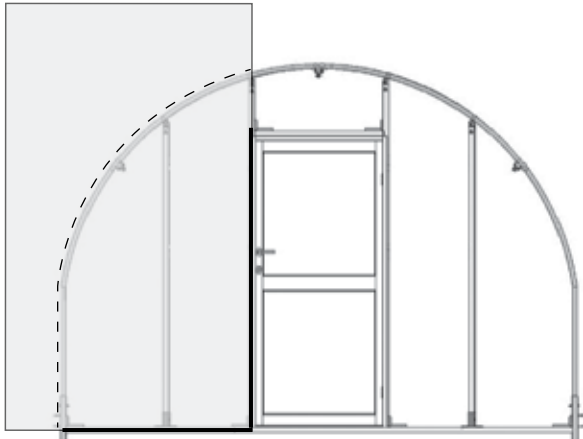
NOTE: If door design allows, tuck panel behind door channel of door.

4. Finish bottom of panel using 104213 u-channel.

END PANEL INSTALLATION (continued)

5. Attach panel (taped end down) to vertical end wall framing using FA4484B Tek screws and 102921 neo-bonded washers. Consult End Panel diagrams. **Space screws evenly at 16"**.

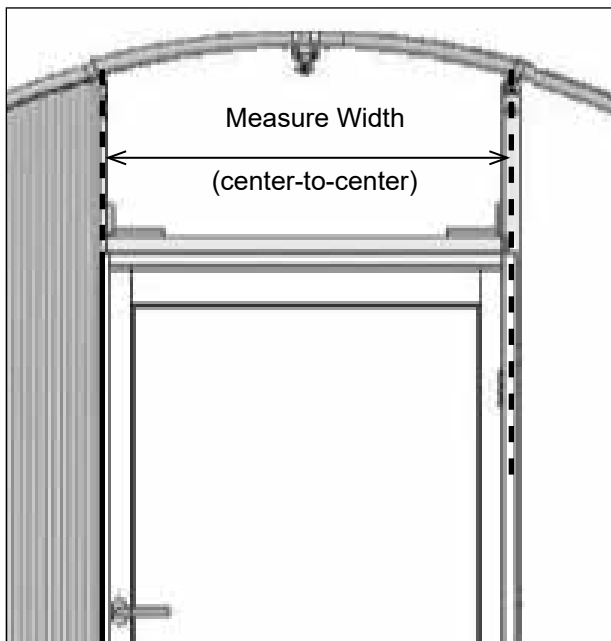
ATTENTION: Do **not** secure panel to end rafter. Doing so will interfere with flashing installation.



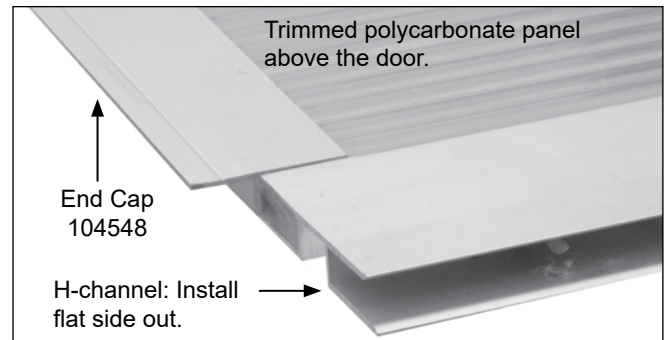
6. With panel secured in place, cut it to size. **Use rafter as a guide when cutting top.**

ATTENTION: Skip this step if desired and complete it once *all panels are installed*. Review flashing and roof panel installation steps later in this guide to determine end panel length. Panel to remain flush with top of end rafter pipe.

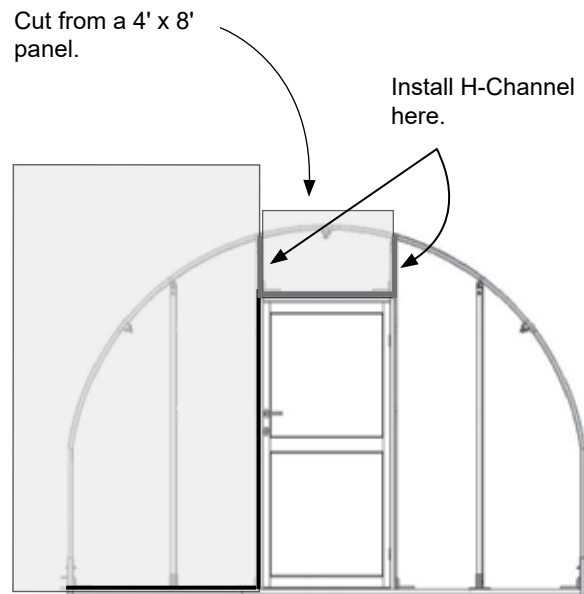
7. Take the 4' x 8' panel and cut a section to cover above door. Prepare as previously described. Remember to account for installation of adjacent panel and H-channel between panels. Actual frame may differ.



8. After cutting panel to proper width, measure and cut two sections of H-channel to correct length. H-channel is used to join two separate panels. *Install H-channel with flat side out.*
9. Install one section of H-channel along each panel edge. Install H-channel flush with panel bottom. *Install panel with UV-protected side out.*
10. Measure between *edges of H-channel* at panel bottom and cut a section of end cap profile (104548) to fit between H-channel.



11. Install end cap profile on bottom of small panel. *When installed, it will overlap top of door frame.*
12. Using Tek screws (no washers), secure panel in place above door by installing a screw through center of H-channel and into frame member. Install flat side out. Install UV-protected side of panel to the outside.



NOTE: H-channel to remain below top of rafter and short enough to allow for installation of flashing.

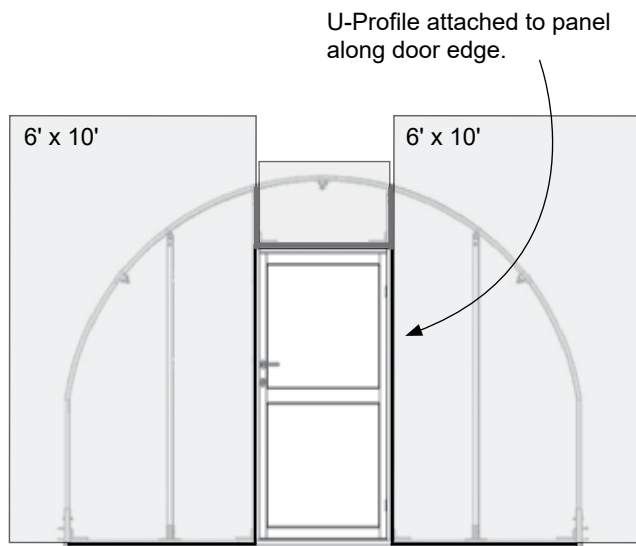
13. Repeat steps to prepare and install final 6' x 10' panel for this end wall.

Secure end panels to all vertical end frame tubes using FA4484B screws and 102921B washers.

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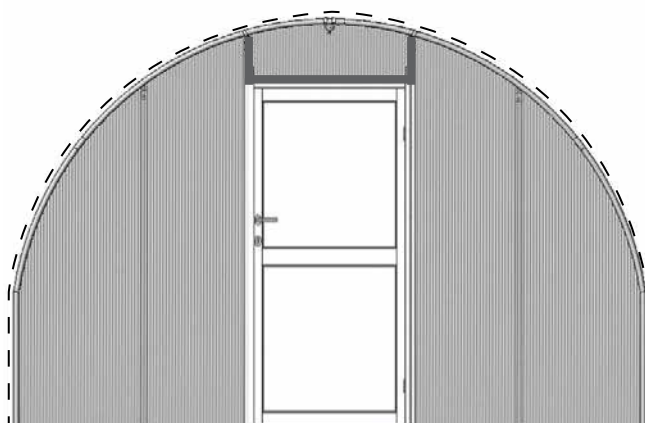
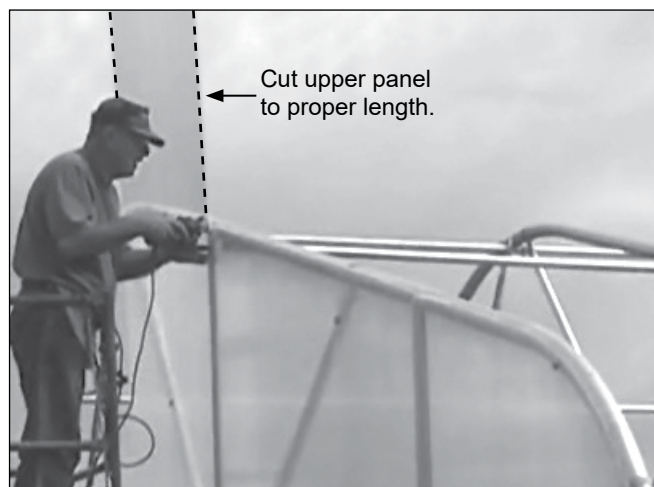
END PANEL INSTALLATION (continued)

14. Place panel in position with its UV-protected surface to the outside and attach to end wall framing.



ATTENTION: Space screws and washers at 16" on-center. Install 104213 u-channel along bottom of panels.

15. Cut panel(s) to proper height after attaching to frame.



ATTENTION: In above photo, top of panel is removed using a power tool equipped with a round cutting bit.

Greenhouse in photo used for illustration only. It is of a different model.

Review flashing installation steps later in this guide to determine length. Panel to remain flush with top of end rafter pipe.

Flashing, installed in the next procedure, will cover tops of all end panels. See dashed line in previous diagram.

16. Apply DH8007 foil tape to the tops of all end panels to seal all open cells before flashing installation. See dashed line in previous diagram.
17. Standing outside the door, install Tek screws through door frame and into end wall frame member to secure.



18. Repeat procedures (as needed) to install remaining end panels for other end of greenhouse.

NOTE: Consult Quick Start section for additional information and panel identification for back (no door) end wall

19. Continue with **Gable Flashing Installation** procedures on next pages.

GABLE FLASHING INSTALLATION

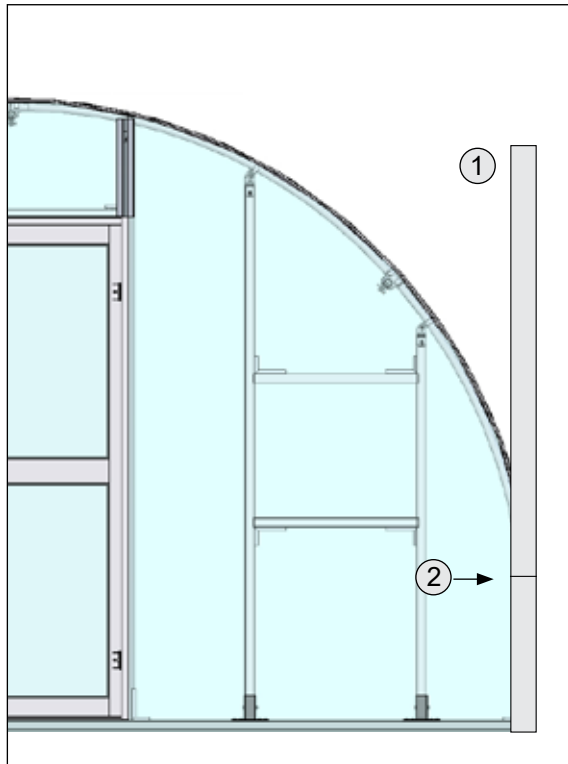
After installing end panels, install flashing to finish and seal top edge of end wall panels.

Complete these steps:

1. Take one section of PGFLSAXXFCW0063 flashing and place it in place on end rafter.
2. Mark flashing where rafter begins to bend.

Gather Parts and Tools:

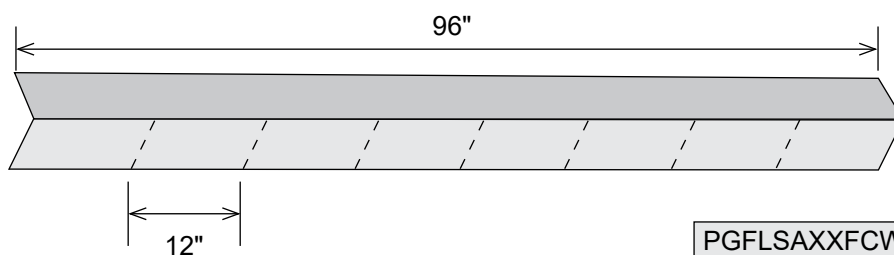
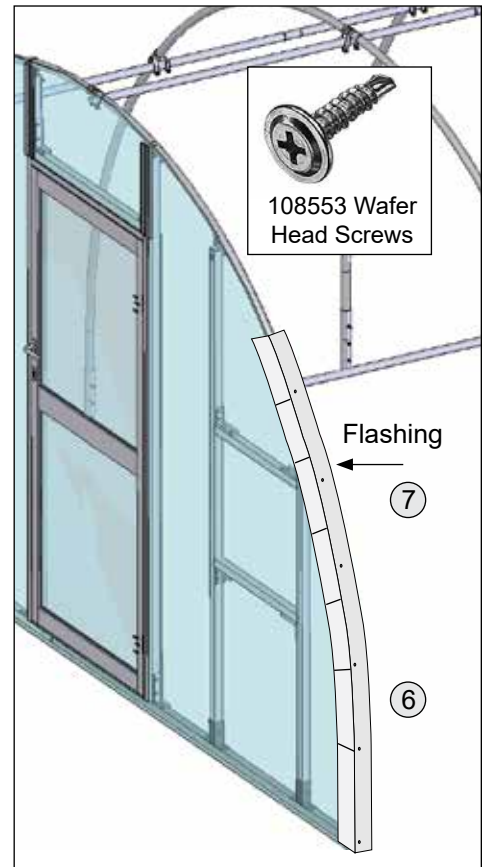
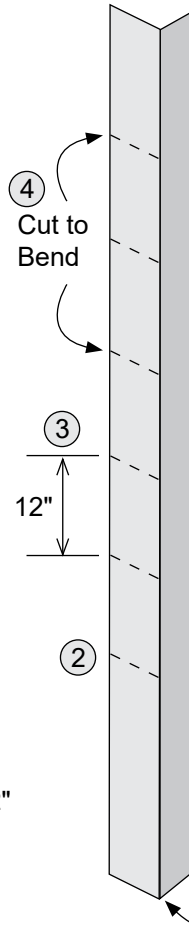
- PGFLSAXXFCW0063 Flashing (8' long)
- 108553 Wafer Head Screws
- Clutched Drill Driver and Phillips Head Bit
- Tool to cut metal flashing.
- Tape Measure and Marker.



3. From first cut, mark remainder of flashing face at 12" on-center intervals.

ATTENTION: To allow flashing to bend more easily, decrease the on-center spacing of cut lines.

4. Using tin snips, cut flashing face to the bend in flashing. Flashing face is the part that overlaps tops of end panels.
5. Repeat steps to cut flashing face to the flashing bend.
6. Place prepared flashing against top of end rafter with cut surface against end panels.
7. Using 108553 wafer head screws spaced at 16" on-center intervals, secure flashing to top of end rafter.
8. Prepare another piece of flashing and attach to rafter. Overlap end of first section with end of second section of flashing approximately 2" to 3".

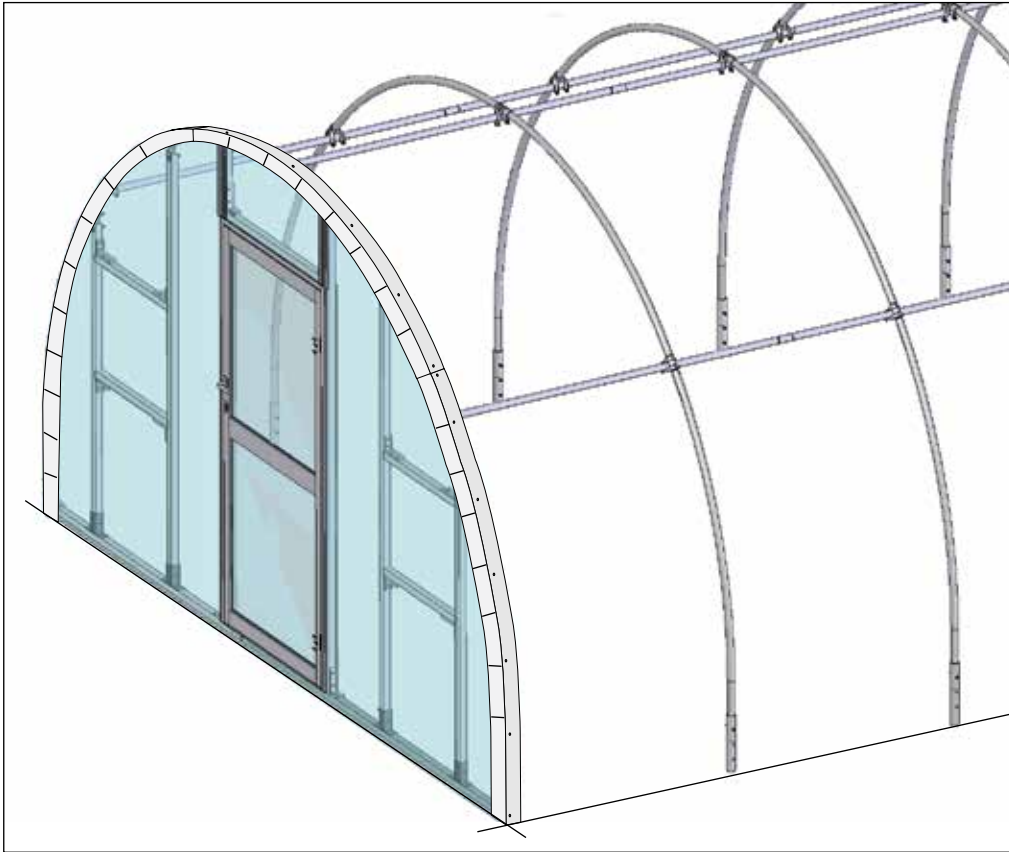


PGFLSAXXFCW0063 Flashing

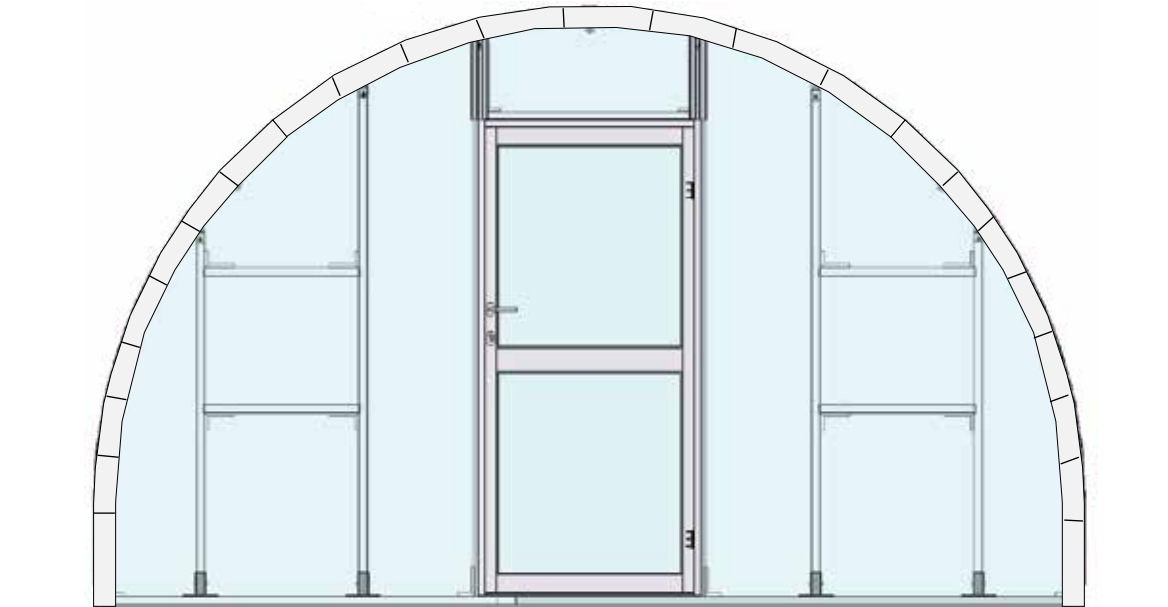
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GABLE FLASHING INSTALLATION — continued

9. Continue installing flashing and work down to ground.



ATTENTION: Be mindful of where to cut last section of flashing as you near end of end rafter. You may not need to cut every 12" to install final section.



10. Once one end is complete, attach flashing to remaining end rafter.
11. Continue with next procedure.

INSTALL ROOF PANELS: OVERVIEW

Install polycarbonate roof panels after installing end panels and flashing. These are the main steps to attach panels:

1. Prepare and install lower panels first along both sides for first two (2) bays (as shown).
2. Install upper panel for end bay. (Upper panel overlaps lower panel at least six (6) inches.)
3. Repeating Steps 1 & 2, work toward other end of frame until all panels are installed.
4. Attach aluminum profile to lower edge of upper panel and secure using Tek screws and washers.
5. Seal panels and profile.
6. Continue with baseboard installation if used.

INSTALL POLYCARBONATE ROOF PANELS

The diagram that follows shows locations of different panels. Frame shown below may differ from actual frame.

NOTE: Install so upper panels overlap top edge of lower panels **at least six (6) inches**.

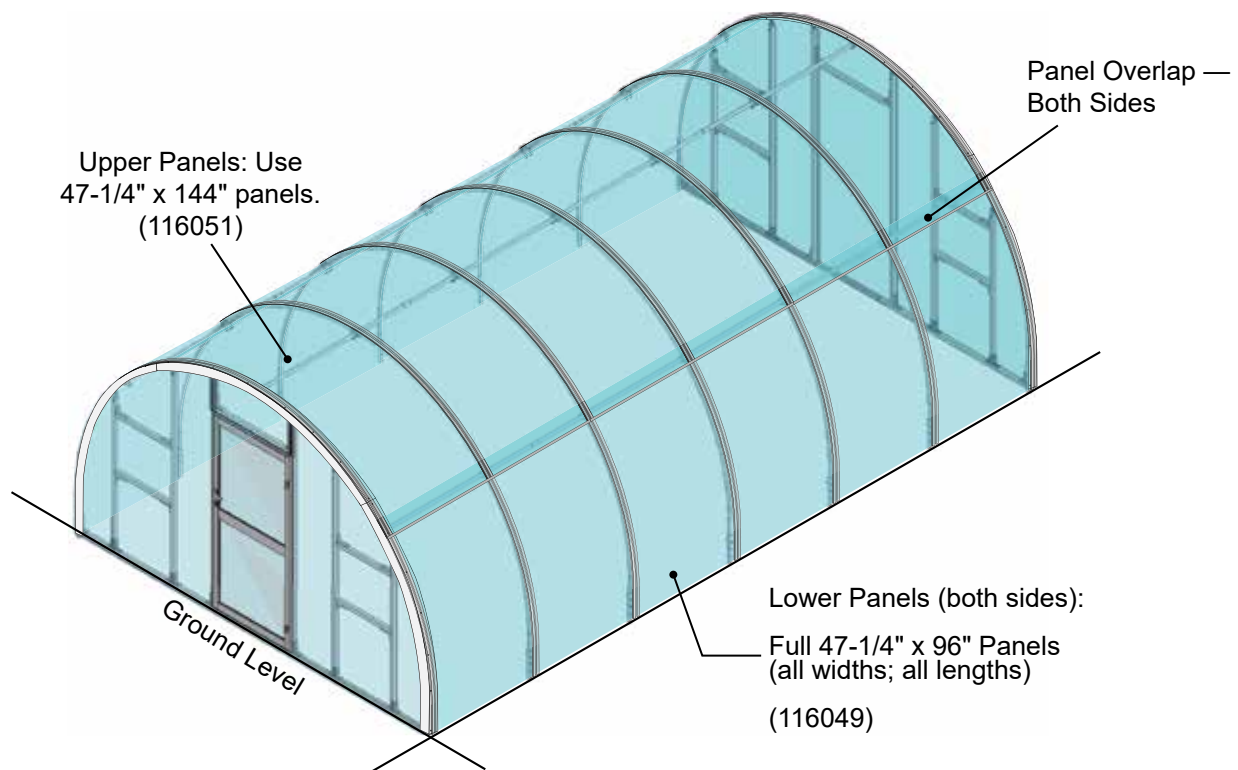
ASSEMBLY NOTE: Install Tek screws using a clutched drill driver running approximately 750 RPM while applying approximately 50 lbs of force.

Do not use an impact driver to install Tek screws!

Gather Parts:

- 116049 Panels (47-1/4" x 96")
- 116051 Panel (47-1/4" x 144") cut to size
- 104213 Aluminum U-channel
- 111928 8' H-Channel & 111929 12' H-Channel
- 102921 Neo-Bonded Washers & FA4484B Tek Screws
- 104774 Vent Tape and DH8007 Foil Tape

ATTENTION: DO NOT store or allow polycarbonate panels to remain in direct sunlight for an extended period of time before installation. **Doing so could cause protective film to become difficult if not impossible to remove.**



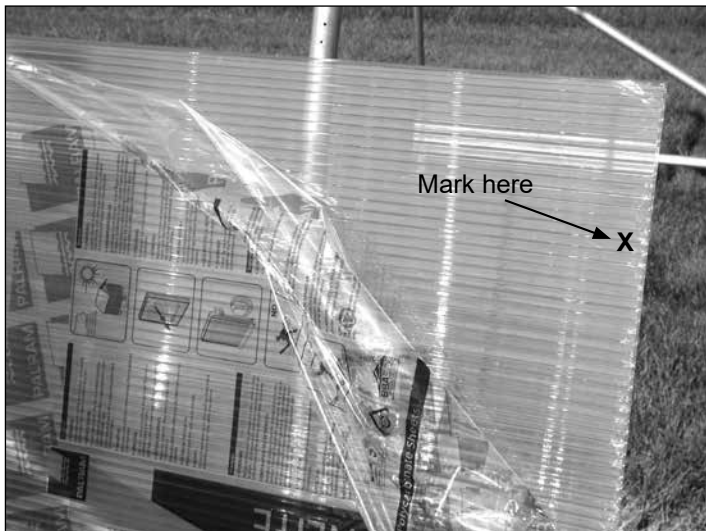
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POLYCARBONATE ROOF PANELS

There are different ways to install polycarbonate roof panels. Individuals familiar with the installation of these panels and overall assembly of similar greenhouses may choose to install according to past experience. Since there are differences between buildings, read through the procedure that follows to better understand panel installation for this greenhouse.

This procedure describes one way to install panels. Complete these steps:

1. Take one 116049 panel (47-1/4" x 96"), mark UV-protected side, and remove protective film.



NOTE: Mark UV-protected side using a piece of tape or other means to ensure side is installed toward the sun.

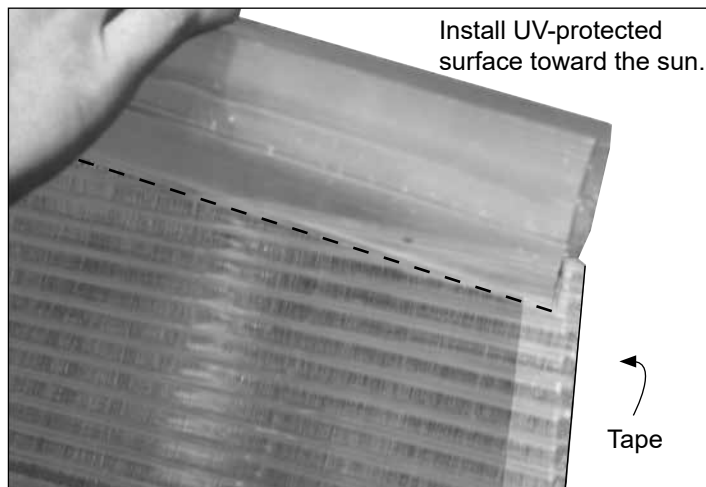
2. Apply vent tape (104774) to cover one end of panel.



3. Move to opposite end of panel and cover open cells using DH8007 foil tape.

NOTE: Panel end with vent tape is the bottom; panel end capped with foil tape is the top.

4. Place panel on a covered surface and install 111928 H-channel (8') along *both sides*.



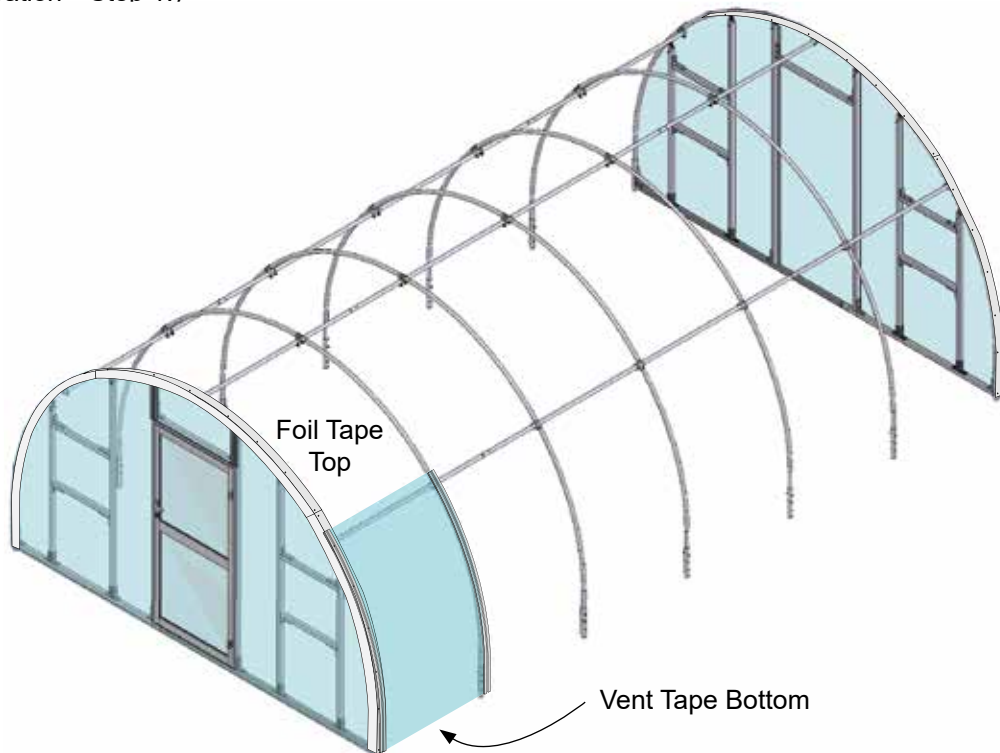
NOTE: If needed, use a thin bar or putty knife to carefully pry H-channel open for easier installation. Use a rubber mallet to gently tap H-channel into place along each panel side. Do not damage channel or panel.



5. After panel is prepared, carefully lift and move panel to first bay at one end of assembled frame.

POLYCARBONATE ROOF PANELS (continued)

6. With assistance, place panel against frame and align center of H-channel with center of second rafter. **Position end with foil tape at top.** Verify you have UV-protected surface of panel facing toward sun. (Panel was marked earlier during preparation—Step 1.)



ATTENTION: If baseboard will be installed after panel installation is complete, continue with next step. If no baseboard will be installed, embed taped bottom of each lower panel approximately 4" - 6" below grade to seal greenhouse.

7. Using FA4484B Tek screws and 102921 neo-bonded washers, attach panel to rafters. Use assistants and hand clamps as needed to hold panel tight to rafters as screws are installed.

Ensure panel remains square on frame during installation. Next panels will not align properly if first panel is improperly installed.

If panel does not align, check that rafters are spaced at 48" on-center from ground post along one side to those on opposite side. *Adjust rafters as needed.*

Duct tape can be used in small pieces to hold H-channel in place along panel edges. Do not allow to work loose during installation. H-channel to remain tight to panel edge.

IMPORTANT: *Space screws at 16" on-center. Install last screws at top of panel 7" from panel end to allow space for upper panel to overlap when it is installed.*

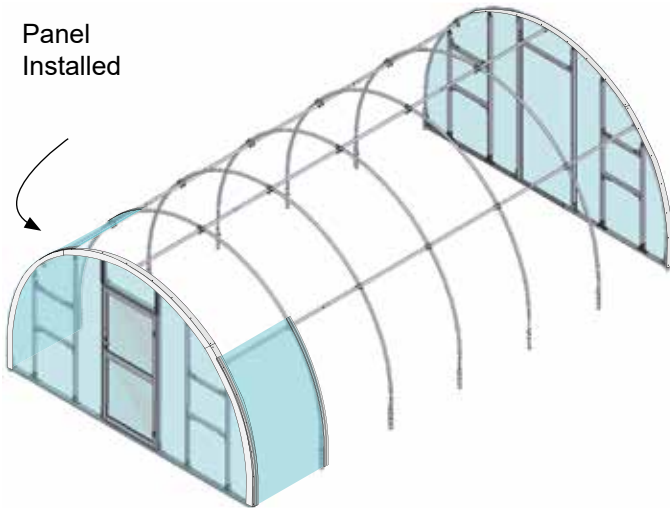


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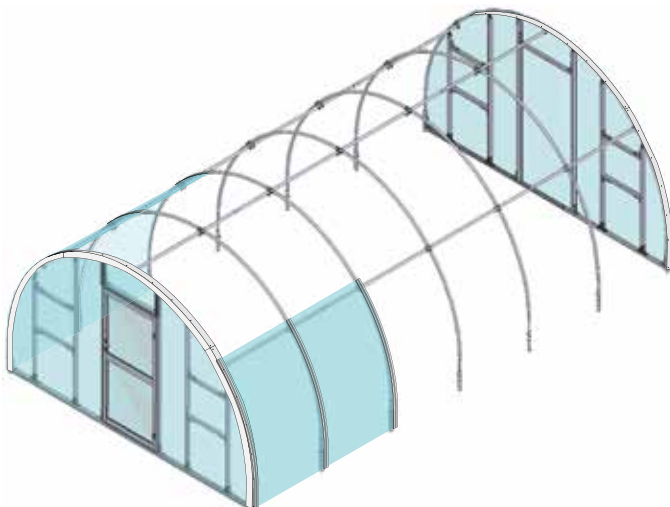
POLYCARBONATE ROOF PANELS (continued)

8. After installing first lower panel, select another 116049 panel (47-1/4" x 96") and prepare for installation as described in Steps 1-4.
9. Move to opposite side of frame (same bay) and install panel in lower position for that side. Review previous panel installation steps and information if needed.

Panel Installed



10. Repeat steps 1-9 to prepare and install next two lower panels for next frame bay.



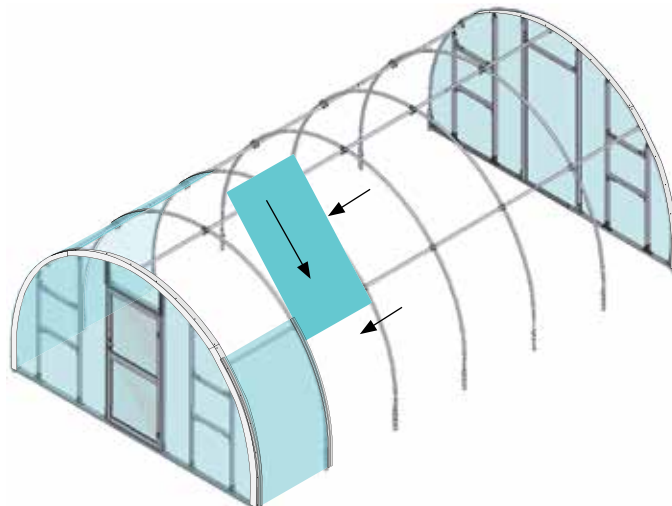
ATTENTION: Do not install H-channel along edge of panel that will connect to previously installed panel.

Verify that panels align with center of rafters and that each panel is fully inserted into the H-channel of the previously panel.

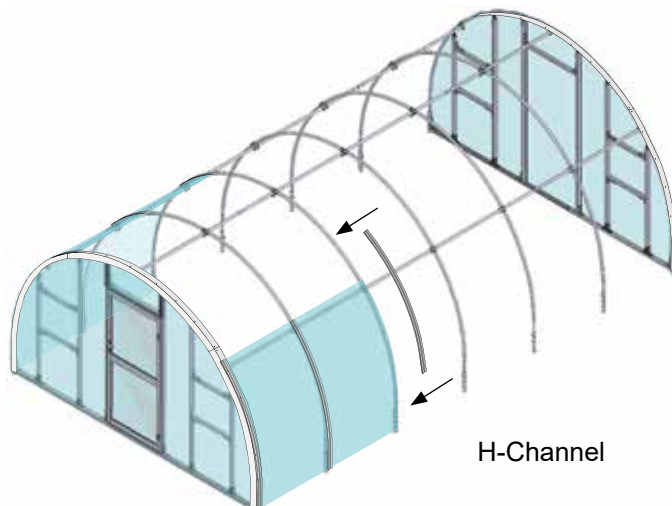
If you are unable to install second set of panels due to limited assistants or other reasons, review the alternative installation steps in next column. If you were able to install panels, continue with Step 11.

ALTERNATIVE INSTALLATION FOR ROOF PANELS

During assembly, sometimes installing panel from the side is challenging. An alternative method shows sliding lower panels into H-channel from top. Review diagrams below for another way to install lower panels.



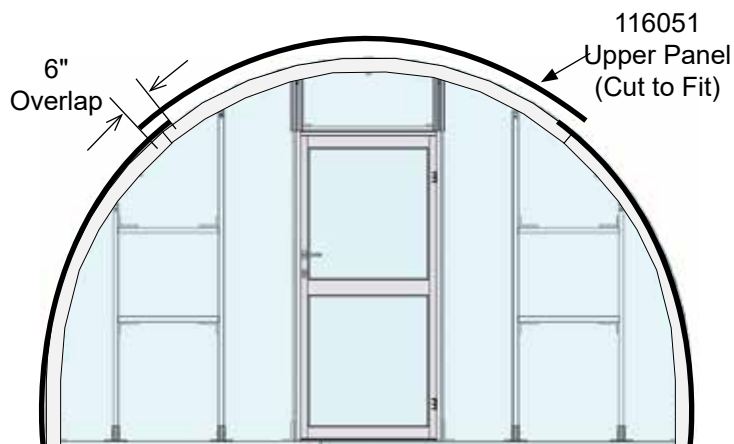
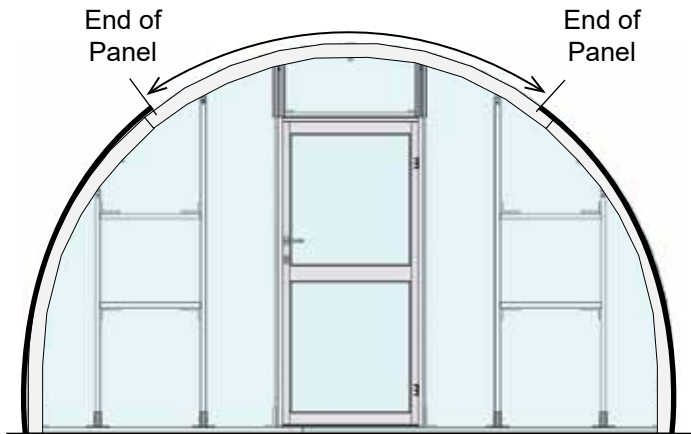
- a. After installing lower panels of first frame bay, prepare the next lower panel as previously described *but do not attach any H-channel along the edge*.
- b. With an assistant stationed along side and someone near panel top, insert lower corner of panel into H-channel of installed panel.
- c. With someone pushing gently from the side to keep panel in H-channel, have an assistant push panel down from top. Lubricate H-channel and edge of panel with water if needed.
- d. Once panel is fully installed, attach a piece of H-channel to panel edge and secure panel to frame as previously described (See Step 7).



- e. Continue with next step.

POLYCARBONATE ROOF PANELS (continued)

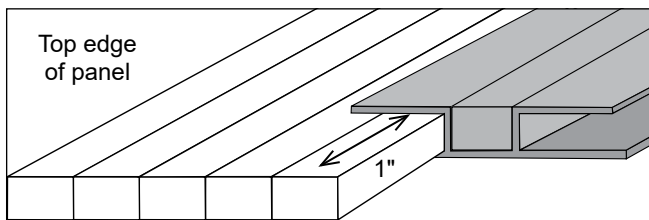
11. Next, measure from top of first panel to top of second panel **and add 12" to allow for a 6" overlap** on each side/lower panel.



12. Take a 144" (12') panel (116051) and cut to the dimension determined in previous step.
13. Peel back a corner of the protective film, mark UV-protected side, and remove all protective film.

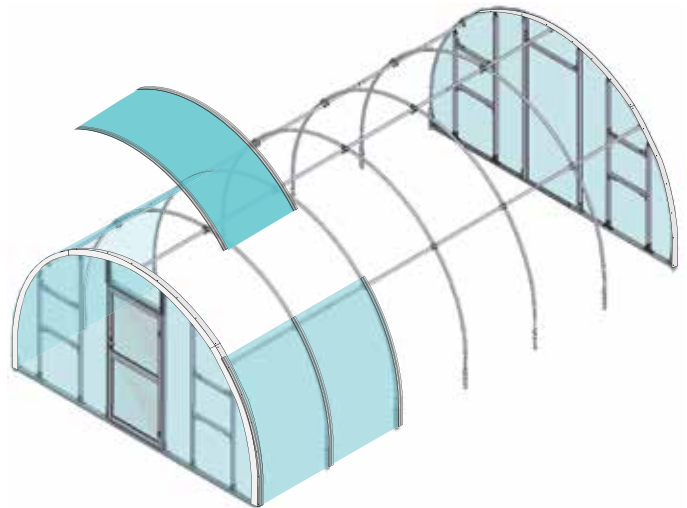
NOTE: Ends of all upper panels are capped with 104213 aluminum U-channel. *Vent tape and foil tape are not used on upper panels.*

14. Take two sections of 12' H-channel (111929) and cut each section 2" shorter than panel length.

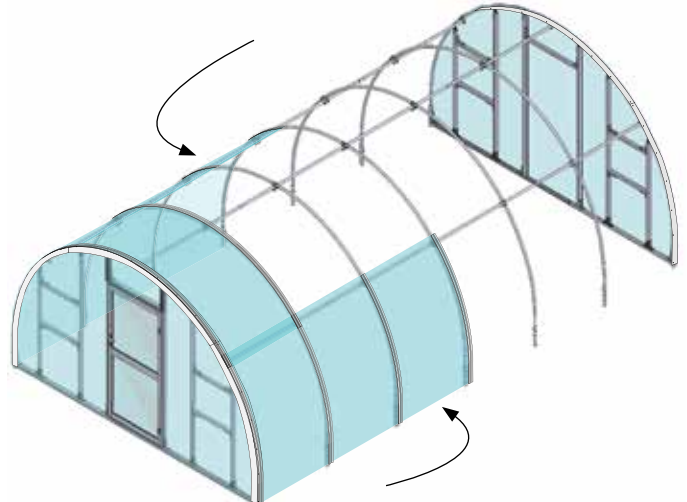


NOTE: This allows space for installation of the 104213 U-channel once panel is installed.

15. With assistant stationed inside and outside the frame, carefully set panel on frame and overlap top of each lower panel.
16. Center panel and center H-channel with center of end rafter and first interior rafter.



17. Secure panel to rafters as previously described using FA4484B Tek screws and 102921 washers.
18. Repeat steps to prepare and install the next two lower panels — one on each side on same bay.

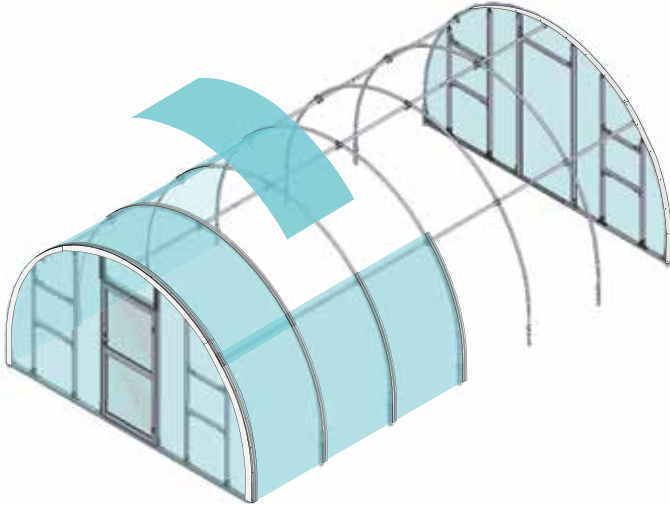


19. Take another 12' panel and prepare as previously described (Steps 12 -13). **Do not install H-channel along side at this time.**

GROWSPAN™ ROUND PREMIUM GREENHOUSES

POLYCARBONATE ROOF PANELS (continued)

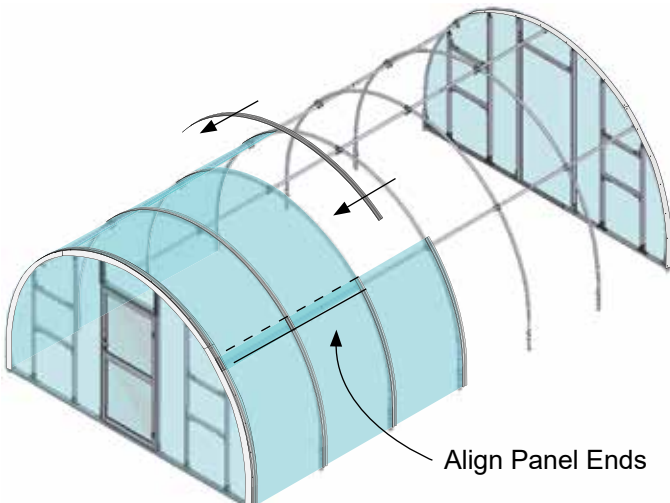
20. Verify UV-protected side is facing toward the sun and install panel. Use large, flat putty knives or similar means to help guide panel edge into H-channel of previously installed panel. Lubricate H-channel with water if needed.



ATTENTION: Align ends of all upper panels to allow for the installation of 104213 aluminum U-channel later.

If you are unable to install panel into H-channel from side, review alternative installation method and information shown on next page. Once panel is installed, continue with next step.

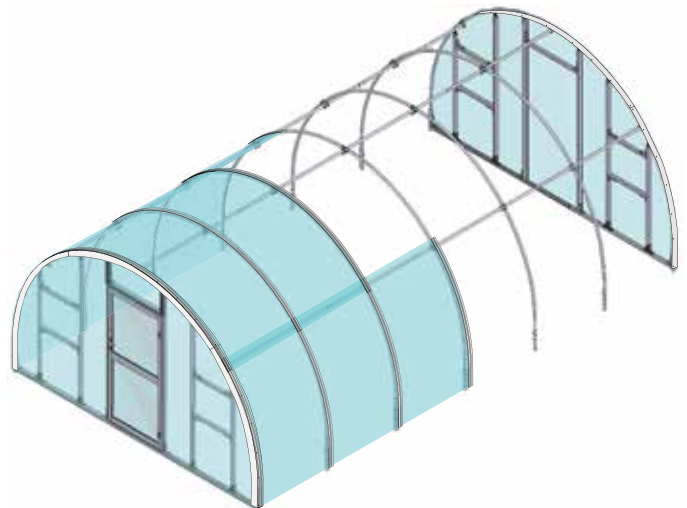
21. Take a 12' piece of H-channel and cut it to fit upper panel. **Remember to cut H-channel 2" shorter (Step 14) to allow for U-channel installation.**



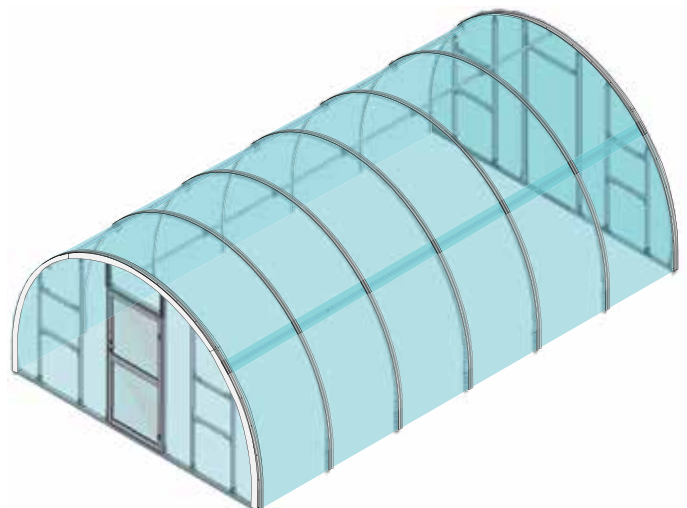
22. With assistance, install H-channel along side of upper panel and secure to rafter as previously described. Verify that upper panel ends on both sides of the frame are aligned. See solid line above.

Dashed line shows tops of lower panels *under the upper panels*.

ATTENTION: Do not over-tighten Tek screws. Screws should be snug without crushing or distorting panel and H-channel.



23. Repeat steps as needed to install all remaining panels and work toward other end of frame.

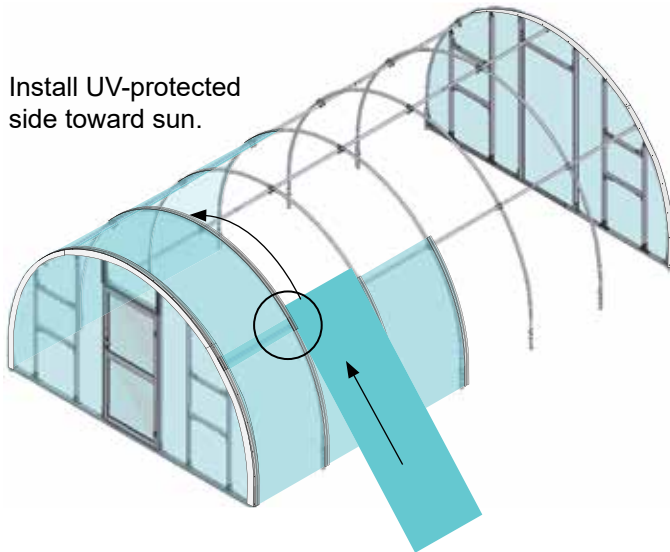


24. After installing all panels, skip next page and continue with the installation of overlap bracing and U-channel.

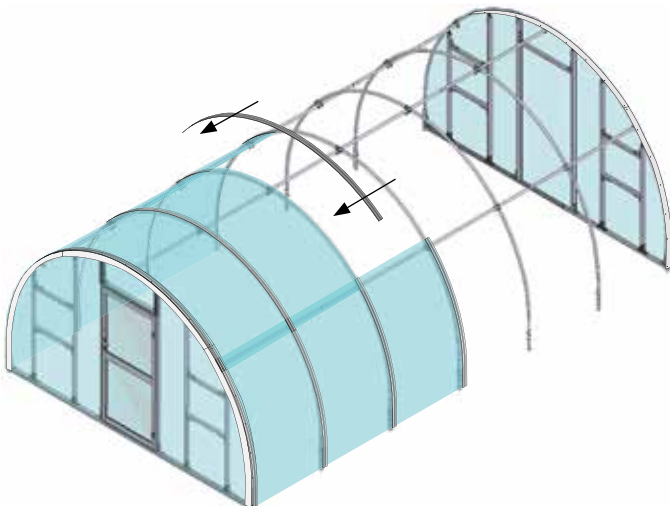
ALTERNATIVE INSTALLATION FOR ROOF PANELS

Skip this section if panels are installed. An alternative method to sliding upper panels in from side shows sliding upper panel into H-channel from the bottom. If you were unable to install panels from the side, try this procedure:

- a. After installing first upper panel and the next set of lower panels, prepare next upper panel as previously described *but do not attach any H-channel along the edge*.

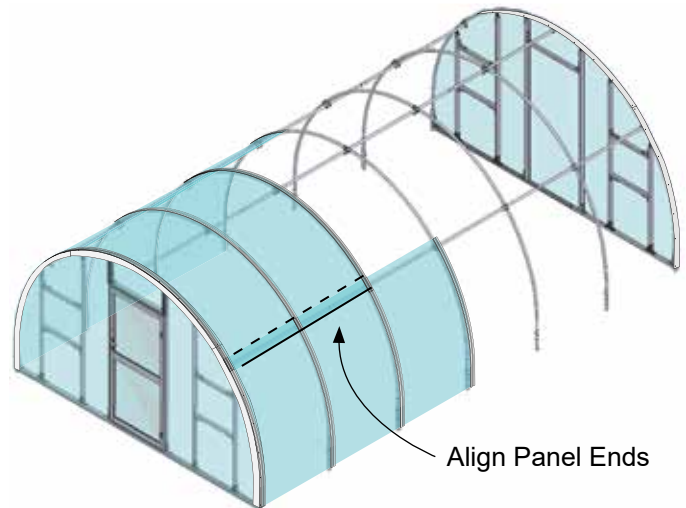


- b. With an assistant stationed along side, someone near panel bottom, and another at top, insert panel corner into H-channel of installed upper panel.
- c. With someone pushing gently from side to keep panel in H-channel, have an assistant push panel up from bottom. *Lubricate the H-channel and edge of panel with water if needed. See circle above.*
- d. Once panel is fully installed, prepare and attach a piece of H-channel to panel edge.



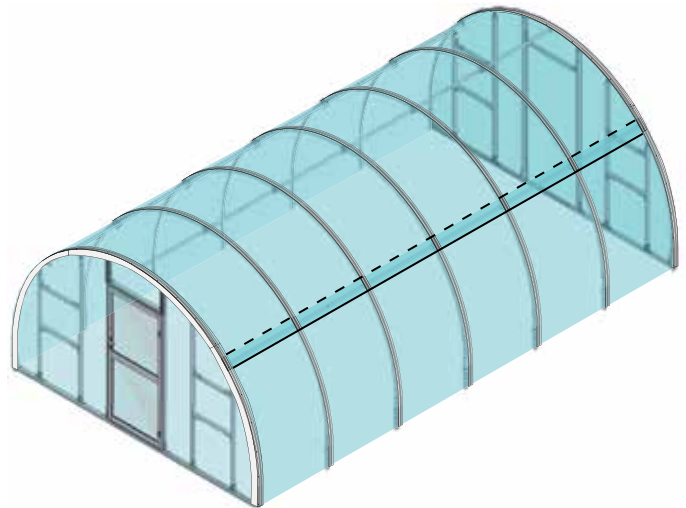
REMEMBER: Cut H-channel 2" shorter than panel length to install U-channel at each end later.

- e. Align ends of panel with ends of previous installed panel and secure panel to rafters as described (See Step 7).



ATTENTION: Verify that upper panel ends on both sides of frame are aligned. See solid line above. Dashed line shows tops of lower panels under upper panels.

- f. Repeat steps as needed to install all remaining panels.



- g. With all panels installed, continue with procedure on next page.

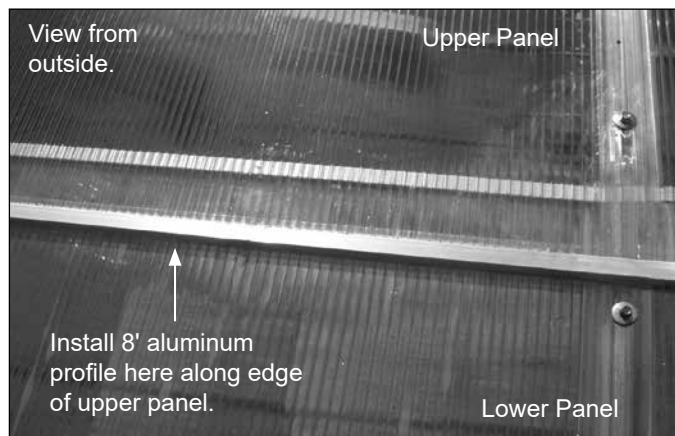
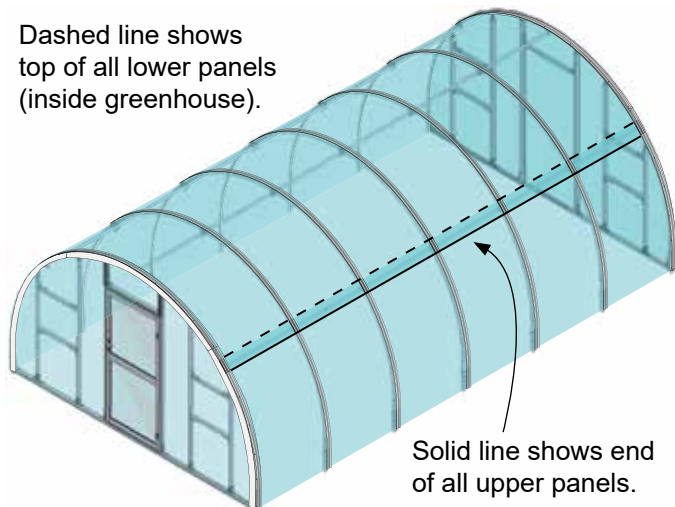
GROWSPAN™ ROUND PREMIUM GREENHOUSES

INSTALL OVERLAP BRACING AND U-CHANNEL

Complete this procedure to finish panel installation:

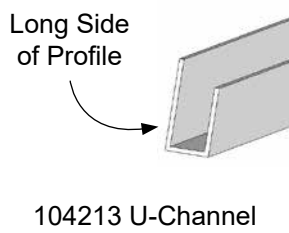
1. Install 8' sections of aluminum profile (104213) along lower edge of all upper panels on both sides. Trim last section to length as needed.

Dashed line shows top of all lower panels (inside greenhouse).



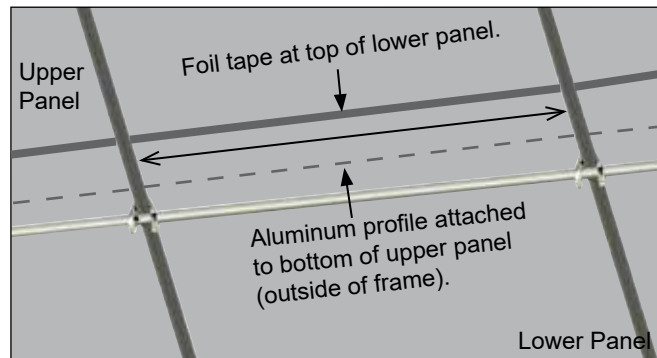
NOTE: Install long side of profile on top of panel.

Do not use Tek screws or washers when installing aluminum U-channel at this time.



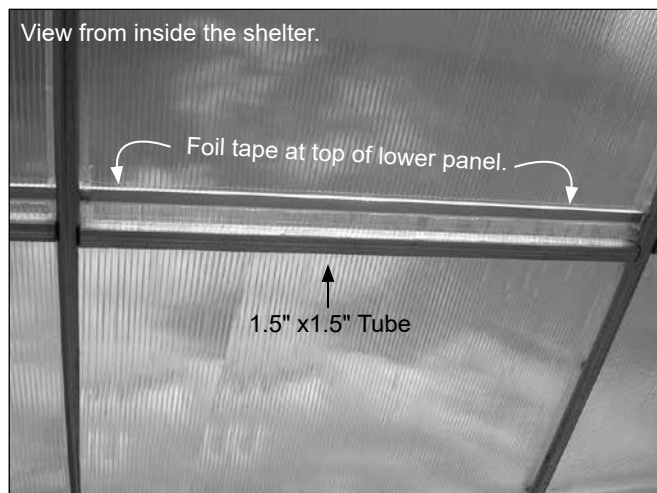
2. Move inside the frame and measure between rafters at point where upper and lower panels overlap.

3. Cut a piece of 104779 (1.5" x 1.5") square tubing to fit between rafters. (All tubes should be same length.)

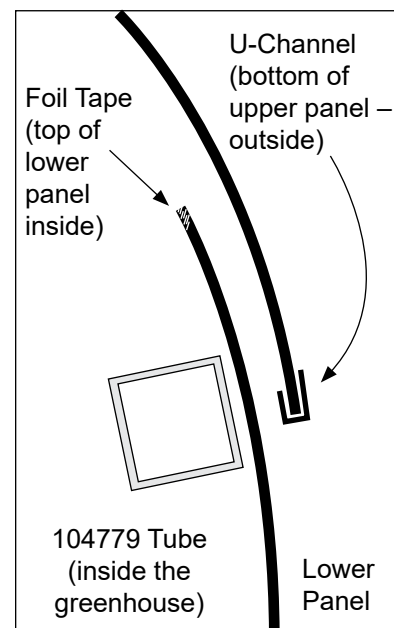


NOTE: Diagram (above) shows where to measure to determine length of 1.5" x 1.5" tube. Diagram shows installed panels as seen standing inside greenhouse.

4. From inside the frame, align square tube as shown over lower end of upper panel (dashed line). Hold tube in place tight against panel.

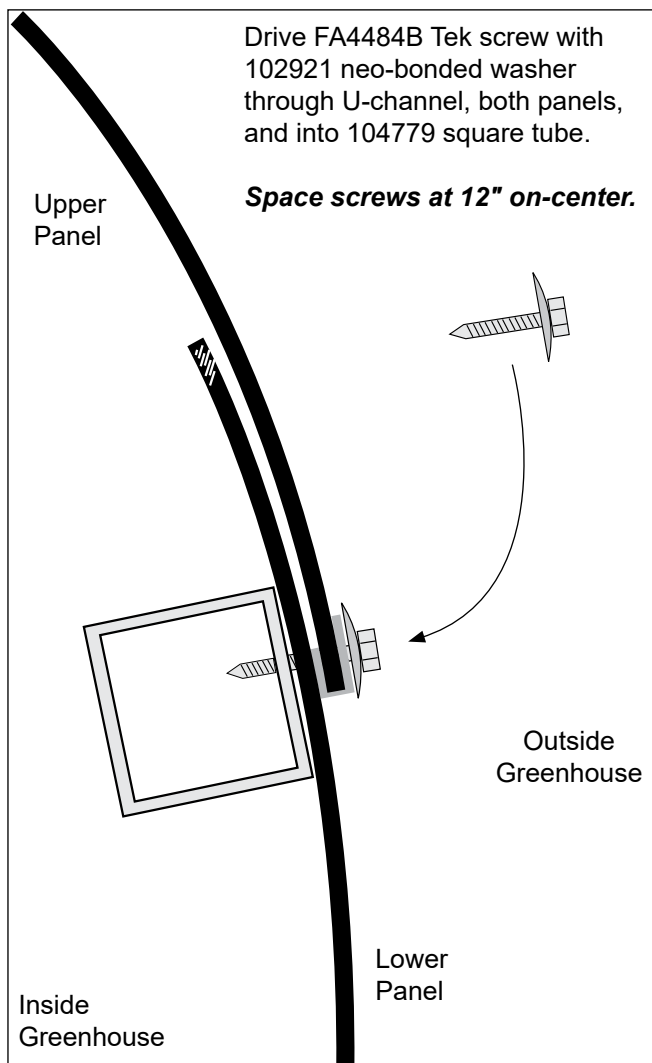
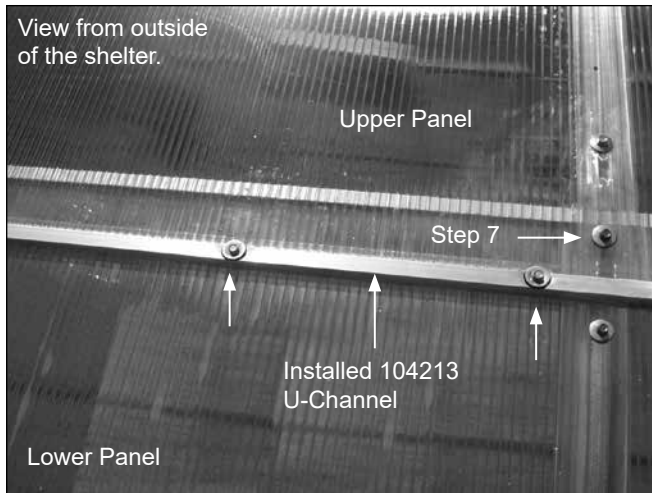


ATTENTION: Align and install tube as shown to secure upper and lower panels together at overlap seam. View shows underside of panels as seen from inside greenhouse.



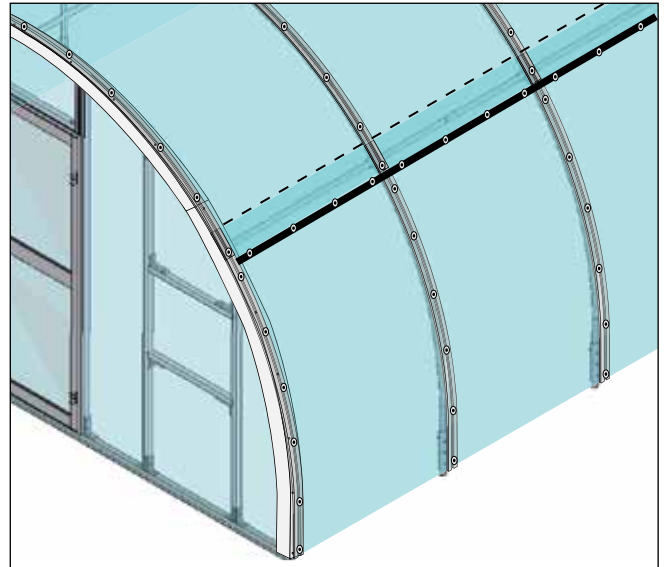
INSTALL OVERLAP BRACING AND U-CHANNEL — continued

5. With tube aligned and someone holding it in place inside the greenhouse, drive FA4484B Tek screws with neo-bonded washers through from the outside into the 1.5" x 1.5" tube (104779).



NOTE: Do not climb on panels to install screws. Take steps to protect panels during screw installation.

6. Repeat steps as needed to cut and attach additional 1.5" x 1.5" square tubes to secure overlap seam of all panels. **Install one tube per overlap as shown.**



7. Install an additional Tek screw and washer at end of H-channel if needed to secure channel to rafter. See photo in Step 5.
8. Continue by reading baseboard installation information on next page.

ATTENTION: If you are not installing a baseboard, skip to and continue by sealing greenhouse using the supplied silicone sealant.

GROWSPAN™ ROUND PREMIUM GREENHOUSES

SPECIAL NOTE ABOUT BASEBOARD INSTALLATION

After installing all panels, installing baseboards is strongly recommended. **Minimum size is 2" x 6". Length determined by building length. Materials for baseboards are supplied by the customer.**

Fasteners to secure baseboards to frame are included with building.

A baseboard (2" x 6" minimum) protects the lower section of all panels. In addition, baseboards help keep ground posts properly seated after anchors are installed. Consult the following information before installing baseboards.

Install baseboards after all panels are installed.



BASEBOARD INSTALLATION (RECOMMENDED)

Gather parts:

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

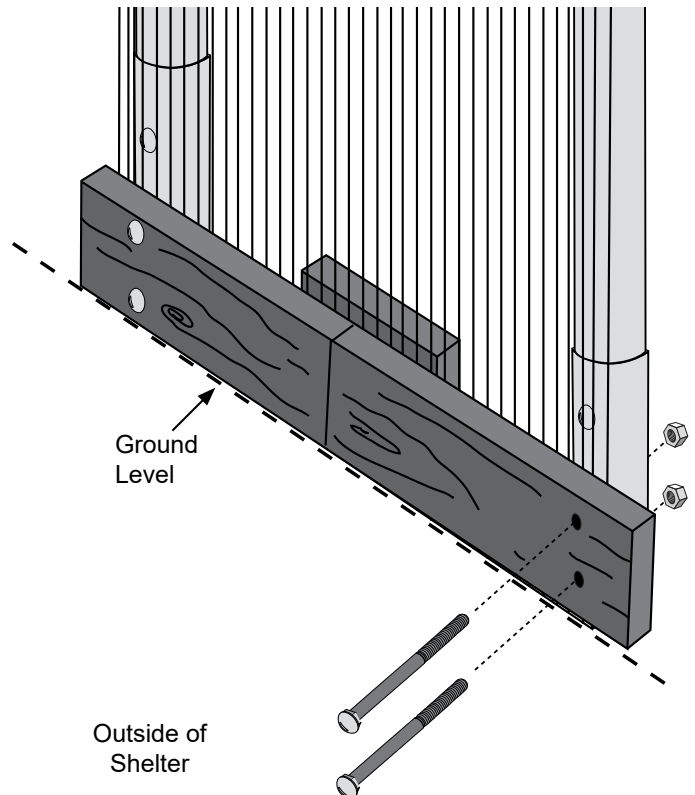
The procedure (next column) shows one way to install baseboards. Size and type of baseboard chosen may require alternative steps. When properly installed, baseboards run the length of frame on the outside.

Set boards at ground level or slightly into grade to prevent shelter from sinking and to create a seal along bottom.

ATTENTION: Skip this section if you are not installing baseboards. Continue with procedure on next page.

Install baseboards after all panels are installed. General installation steps:

1. Remove Tek screws that may interfere with baseboard installation.
2. Position baseboard as shown and clamp or hold in place.



ATTENTION: Never attach two boards to the same ground post. *All baseboard splices should be between rafters as shown above.*

Use a short section of baseboard to secure separate baseboards at a splice. **Customer supplies all materials to secure all baseboard splices.**

3. From inside the greenhouse, drill holes through ground posts, panels, and baseboard. (Ground posts may come pre-drilled.)
4. Secure with 1/4" x 4" carriage bolts and nuts. Insert from outside.

Depending on baseboard dimensions, countersink bolt holes in baseboard as needed to allow bolts to reach through all components.

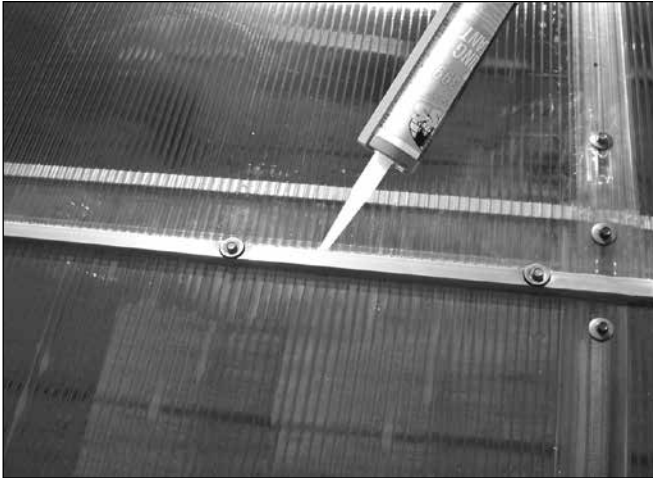
5. Continue by sealing greenhouse using the supplied silicone sealant. See next page.

SEAL TRIM AND PANEL SEAMS

The following steps describe one way to seal seams, joints, and trim edges.

NOTE: The amount of sealant needed to complete the following steps will vary and depends on how thick sealant is applied. *Call Customer Service at 1.800.245.9881 to purchase additional sealant if needed.*

1. Open supplied sealant and apply a thin bead to the outside of upper panel to seal panel to U-channel.
2. Seal seams between all H-channel and U-channel sections.

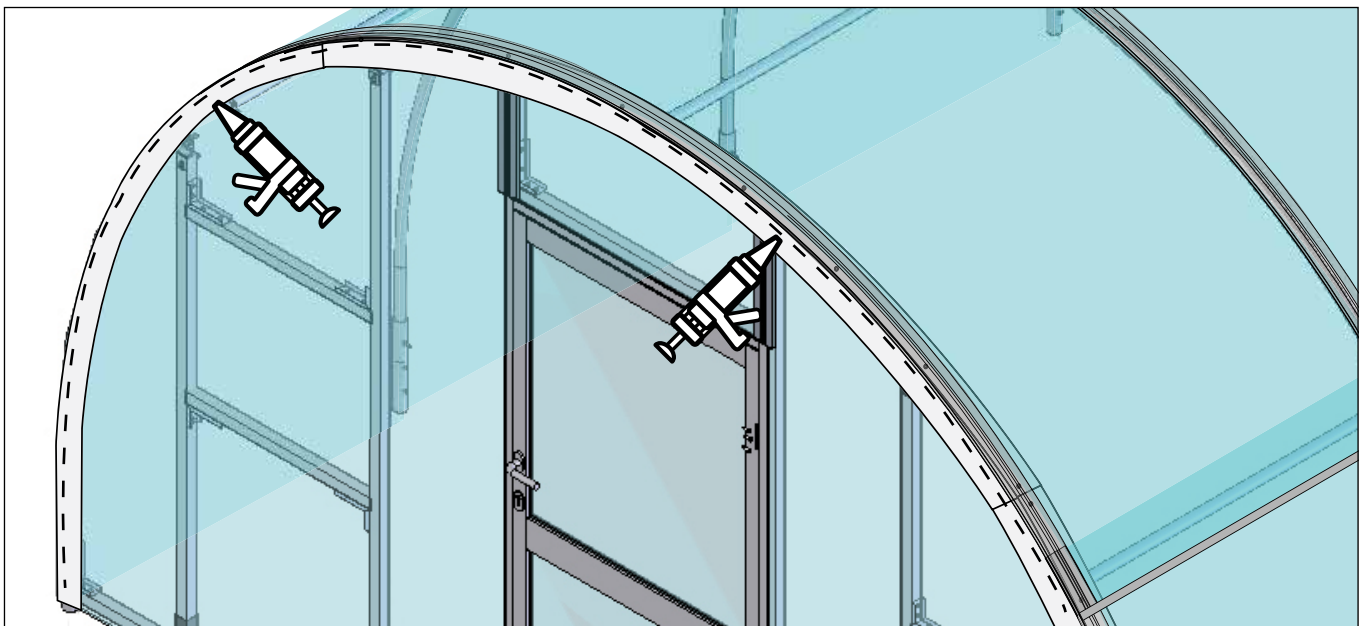


3. Apply a bead of sealant along bottom edge of upper panels at all panel overlap joints.
4. Inspect all H-channel and panels for holes and seal when found.
5. Seal joint between flashing and H-channel attached to end rafters. See panel below.



NOTE: Sealing this joint helps keep water from entering between H-channel and flashing.

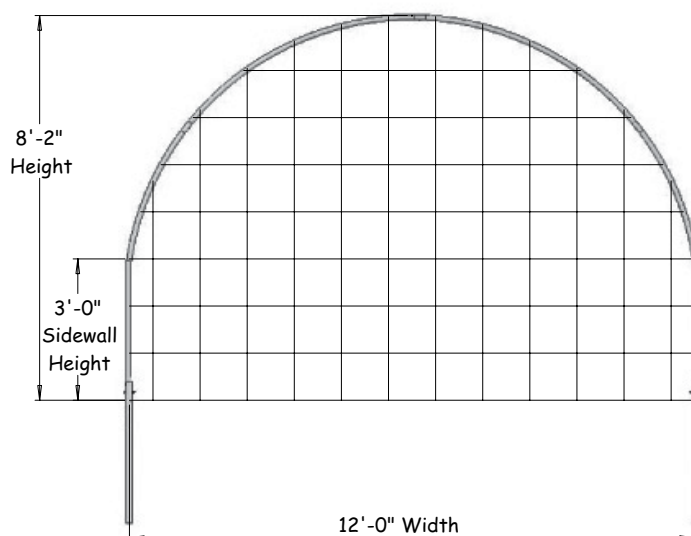
6. Continue by reading the care and maintenance information near front of this manual.



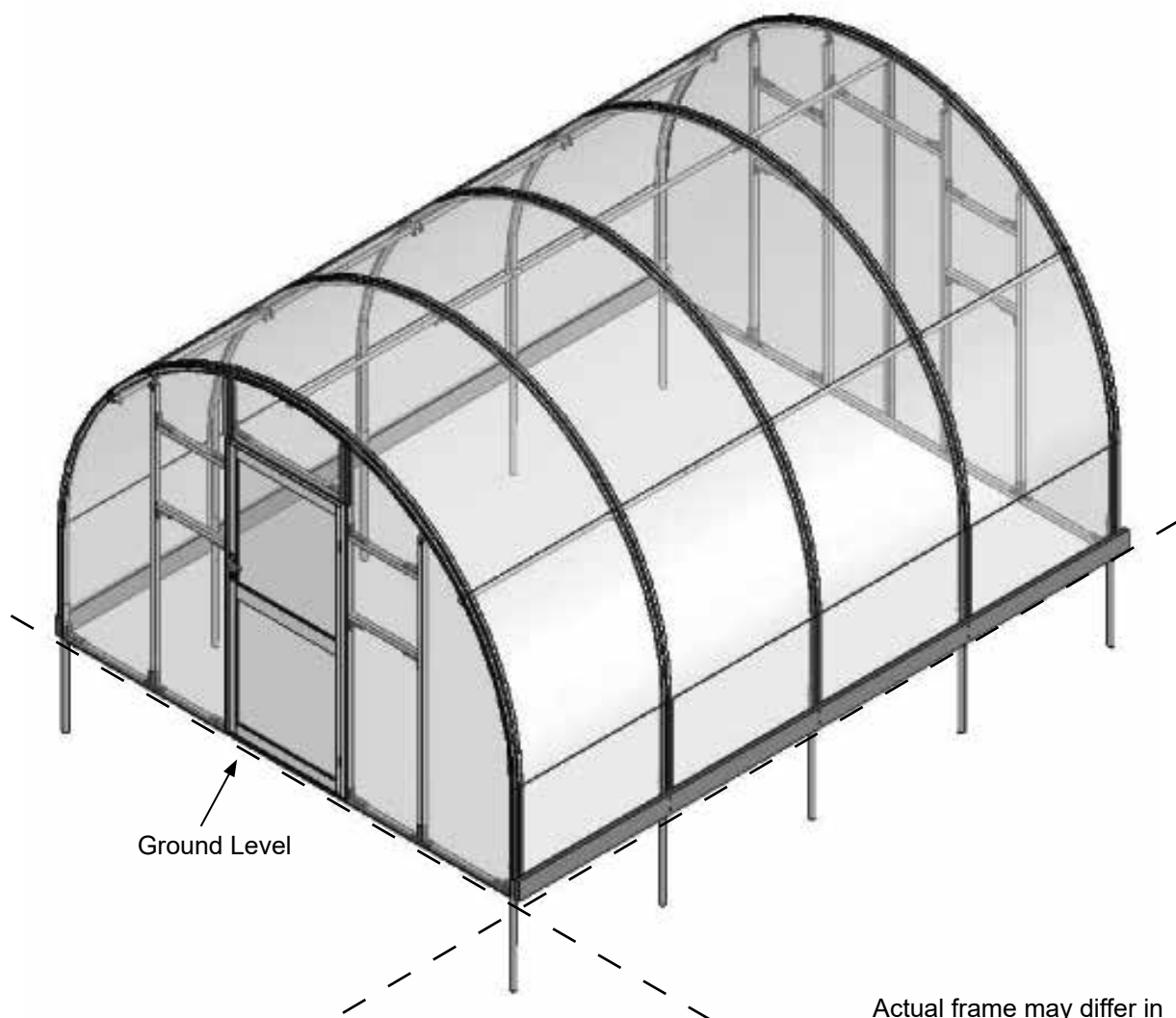


QUICK START GUIDE

12' Wide Round Premium Greenhouse

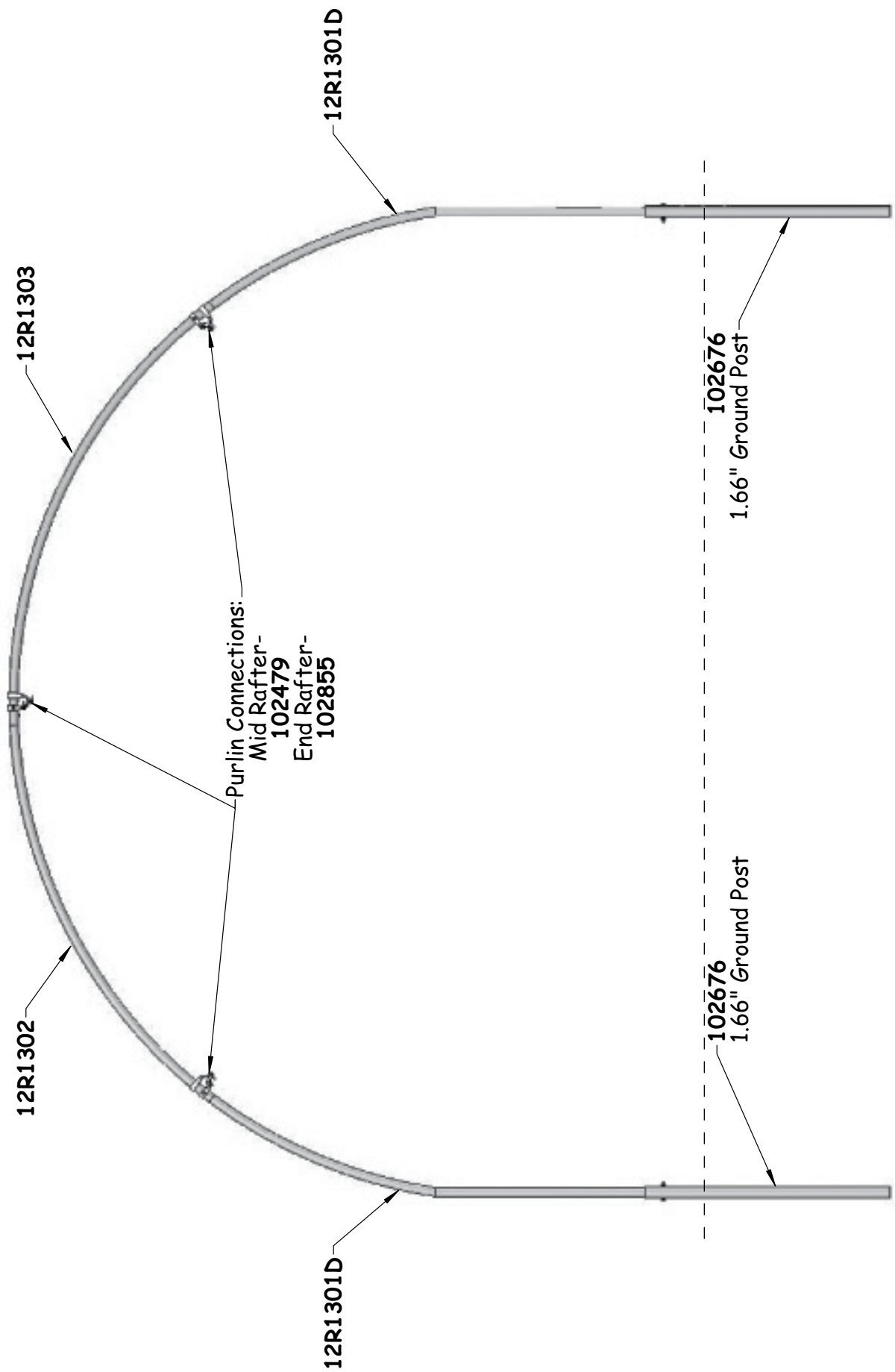


FRONT
Grid Represents 12" Squares

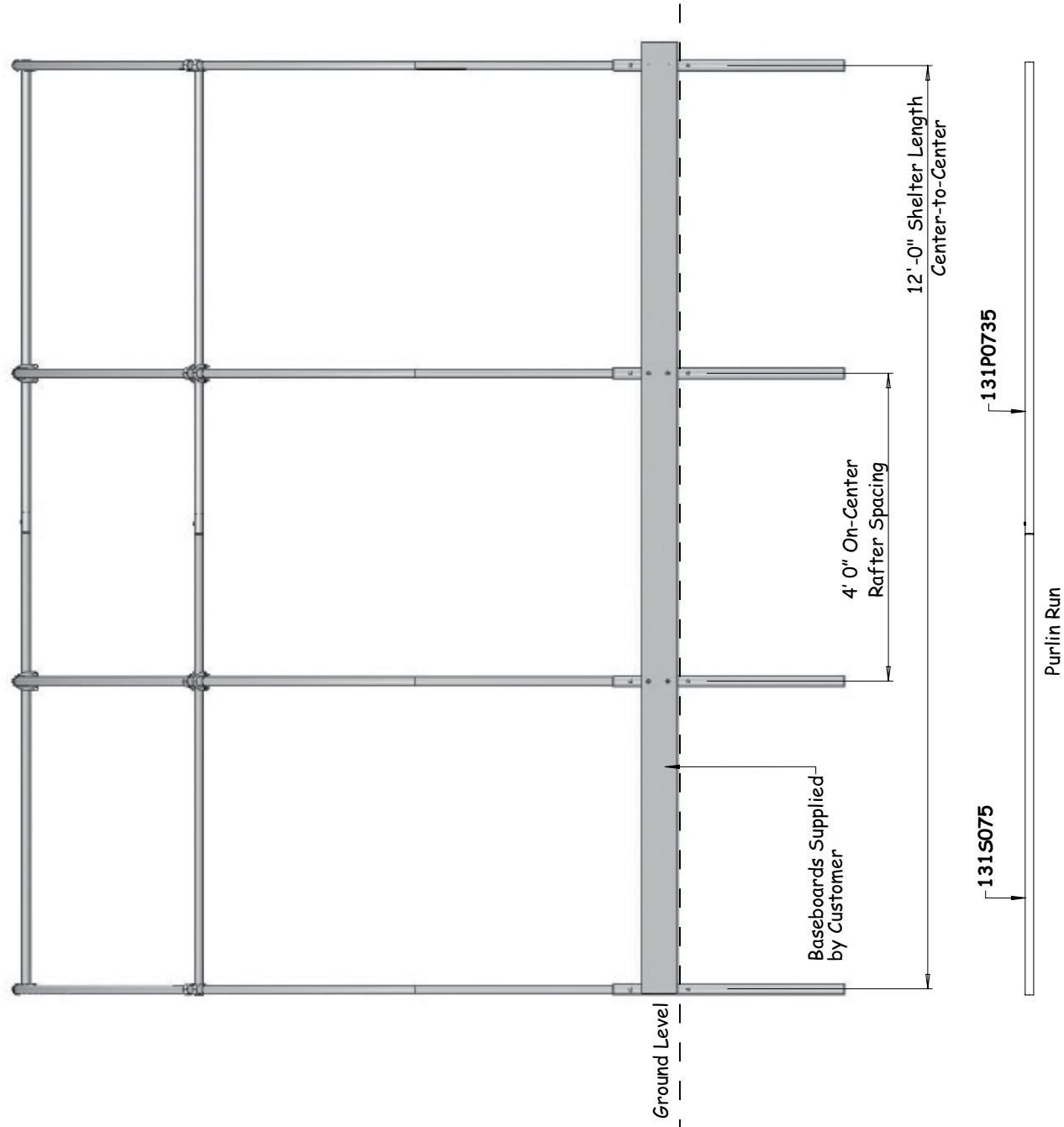


Actual frame may differ in length from frame shown.

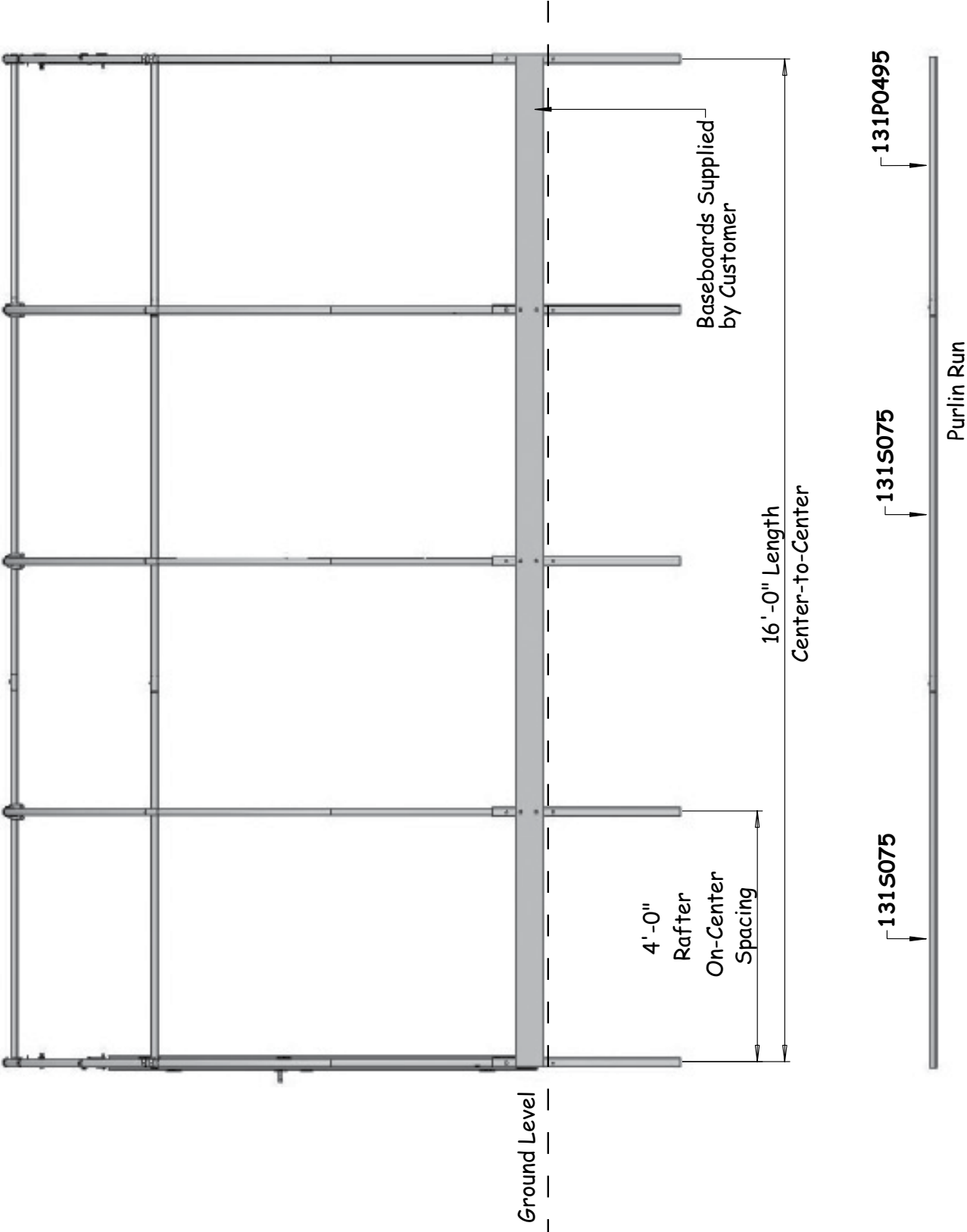
FRONT PROFILE



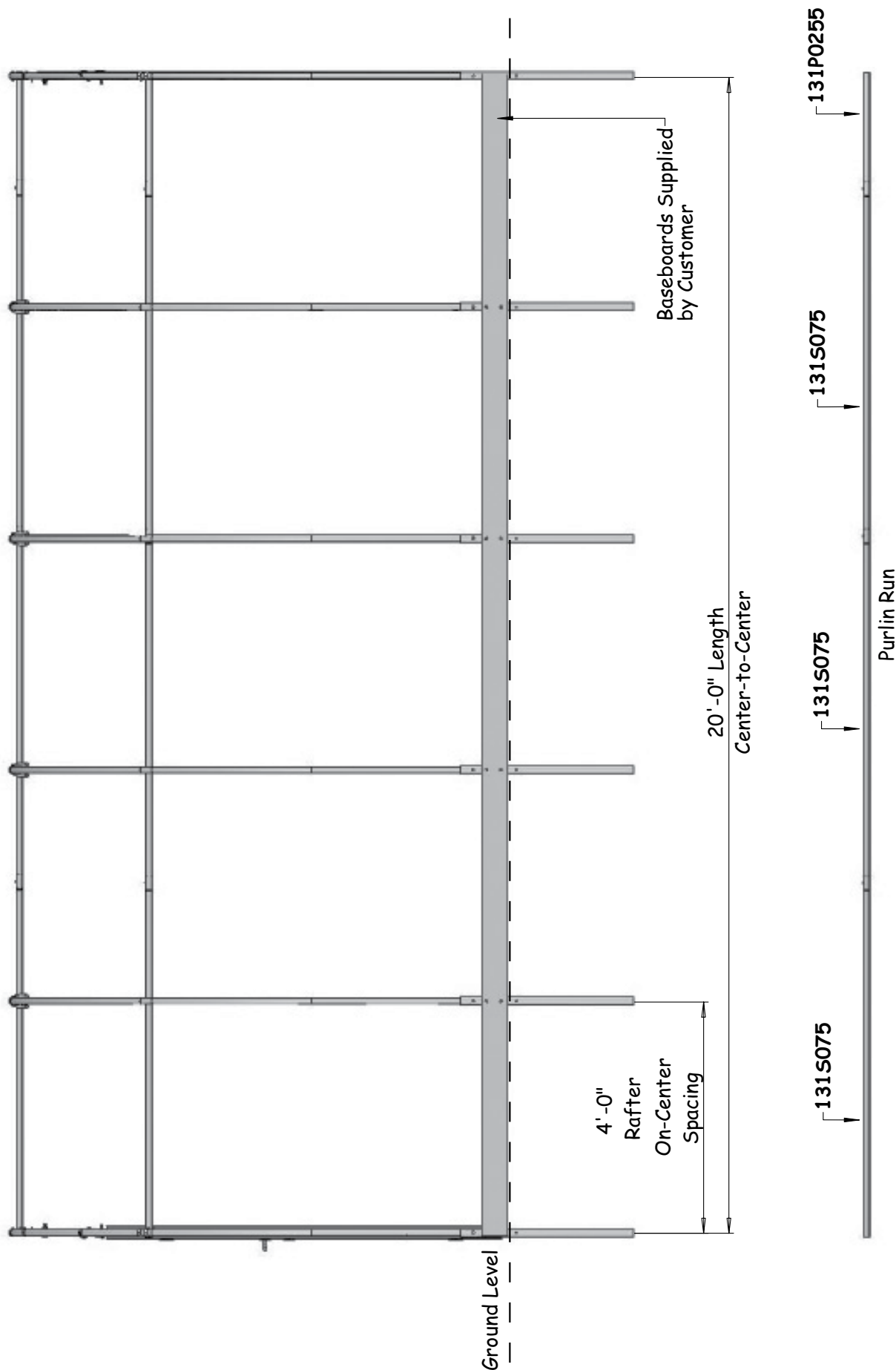
SIDE PROFILE - 106197



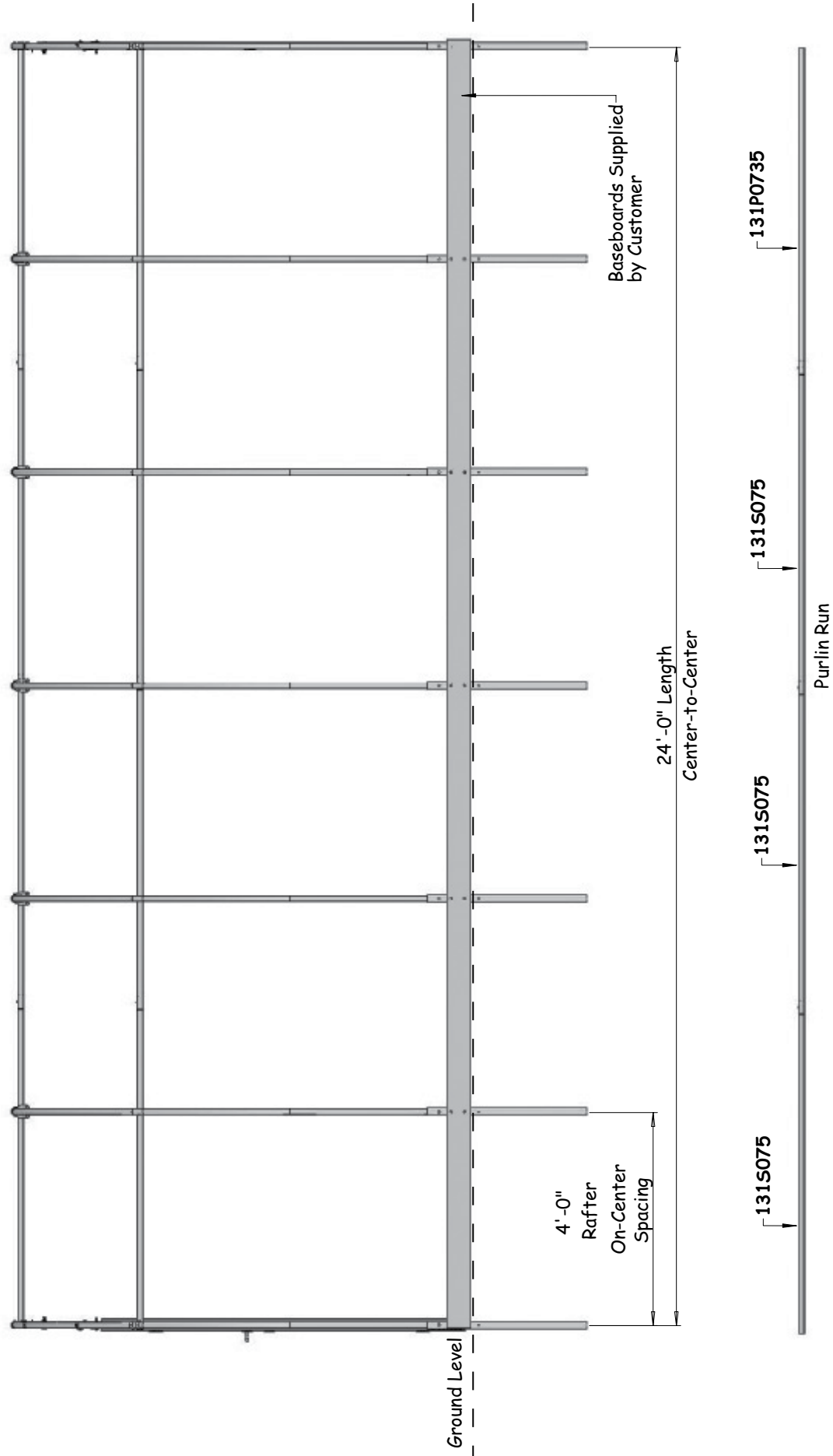
SIDE PROFILE - 106198



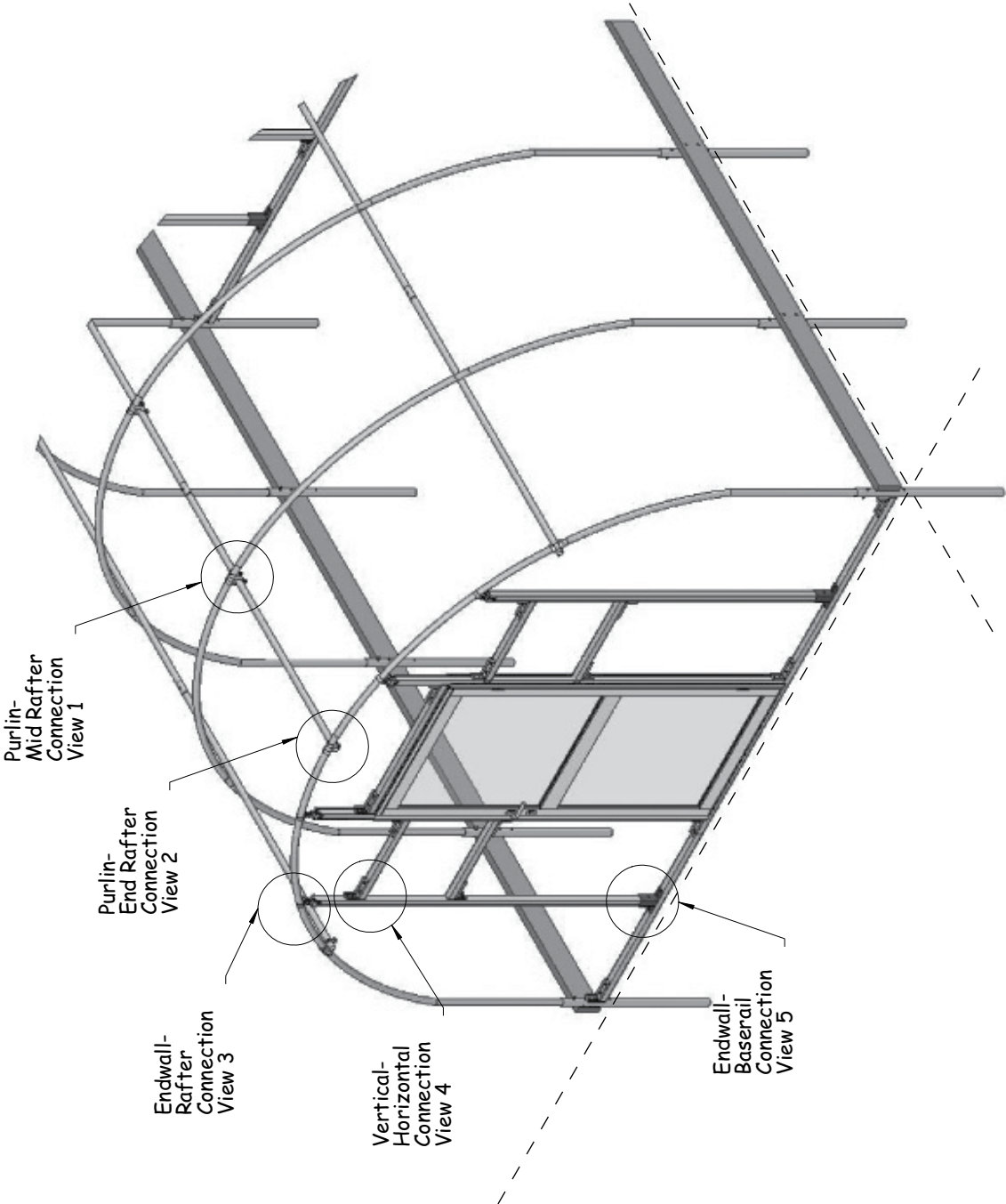
SIDE PROFILE - 106199



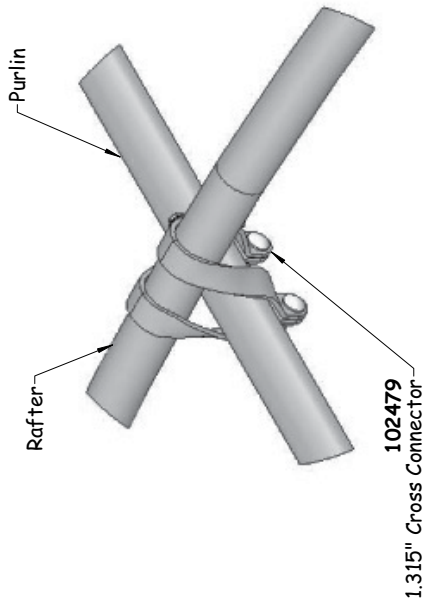
SIDE PROFILE - 106200



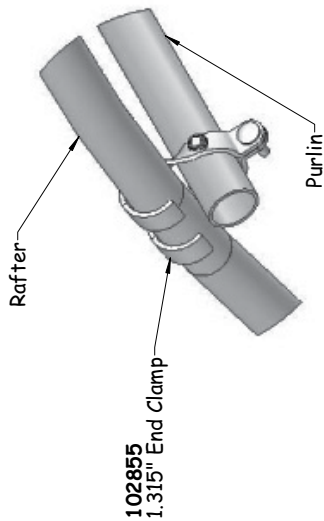
CONNECTIONS



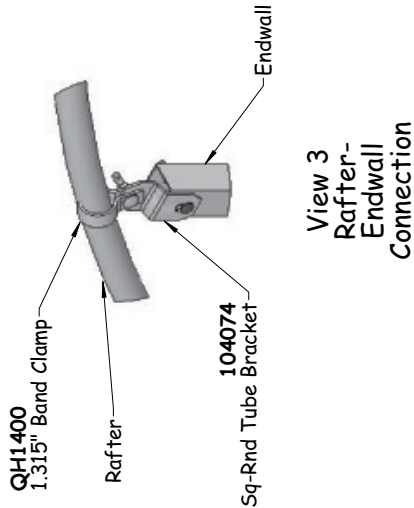
CONNECTION DETAILS



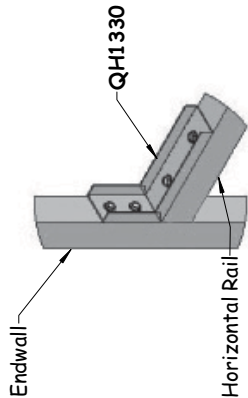
View 1
Purlin-
Mid Rafter
Connection



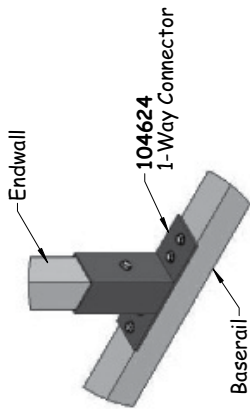
View 2
Purlin-
End Rafter
Connection



View 3
Rafter-
Endwall
Connection

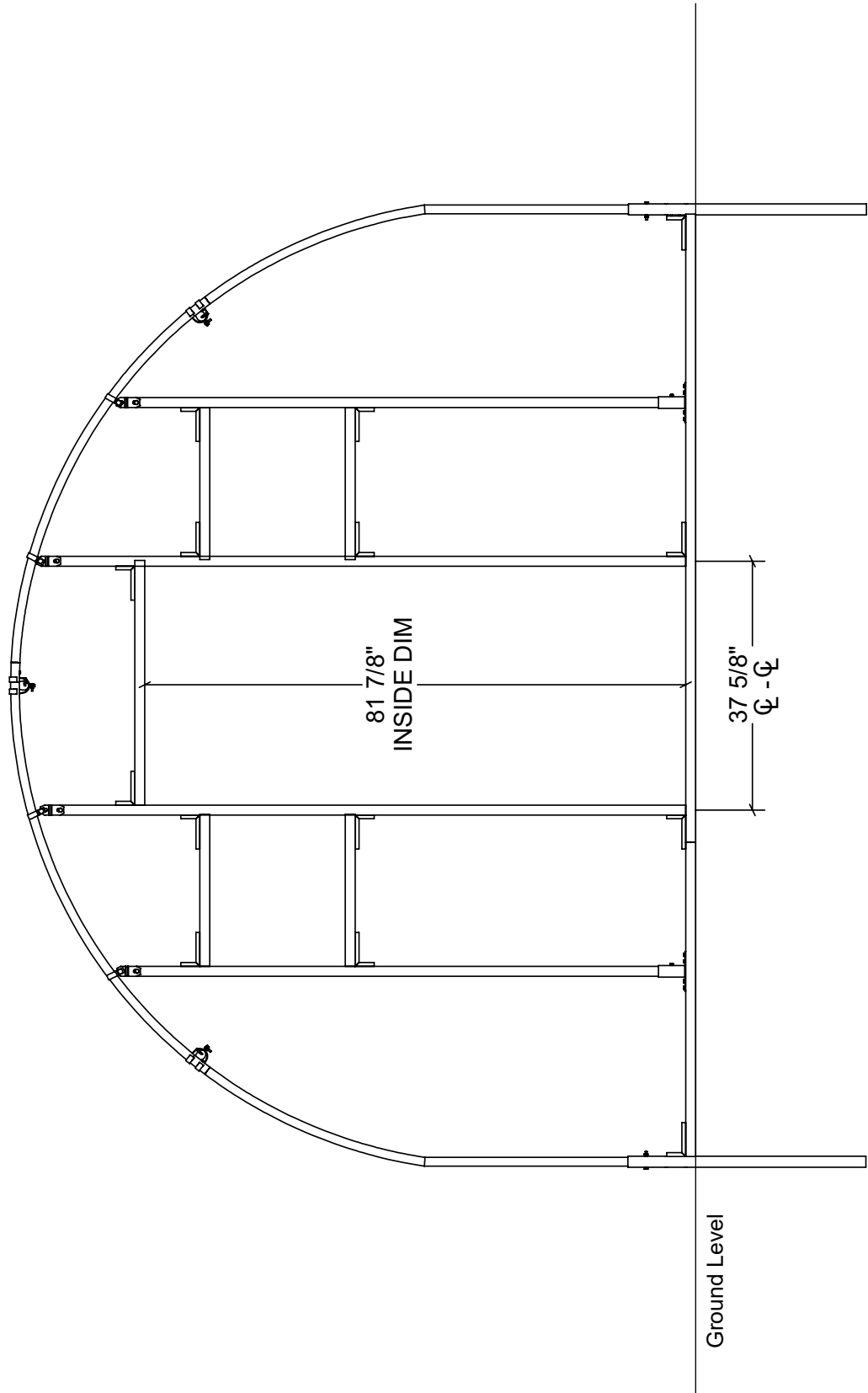


View 4
Vertical-
Horizontal
Connection



View 5
Endwall-
Baserail
Connection

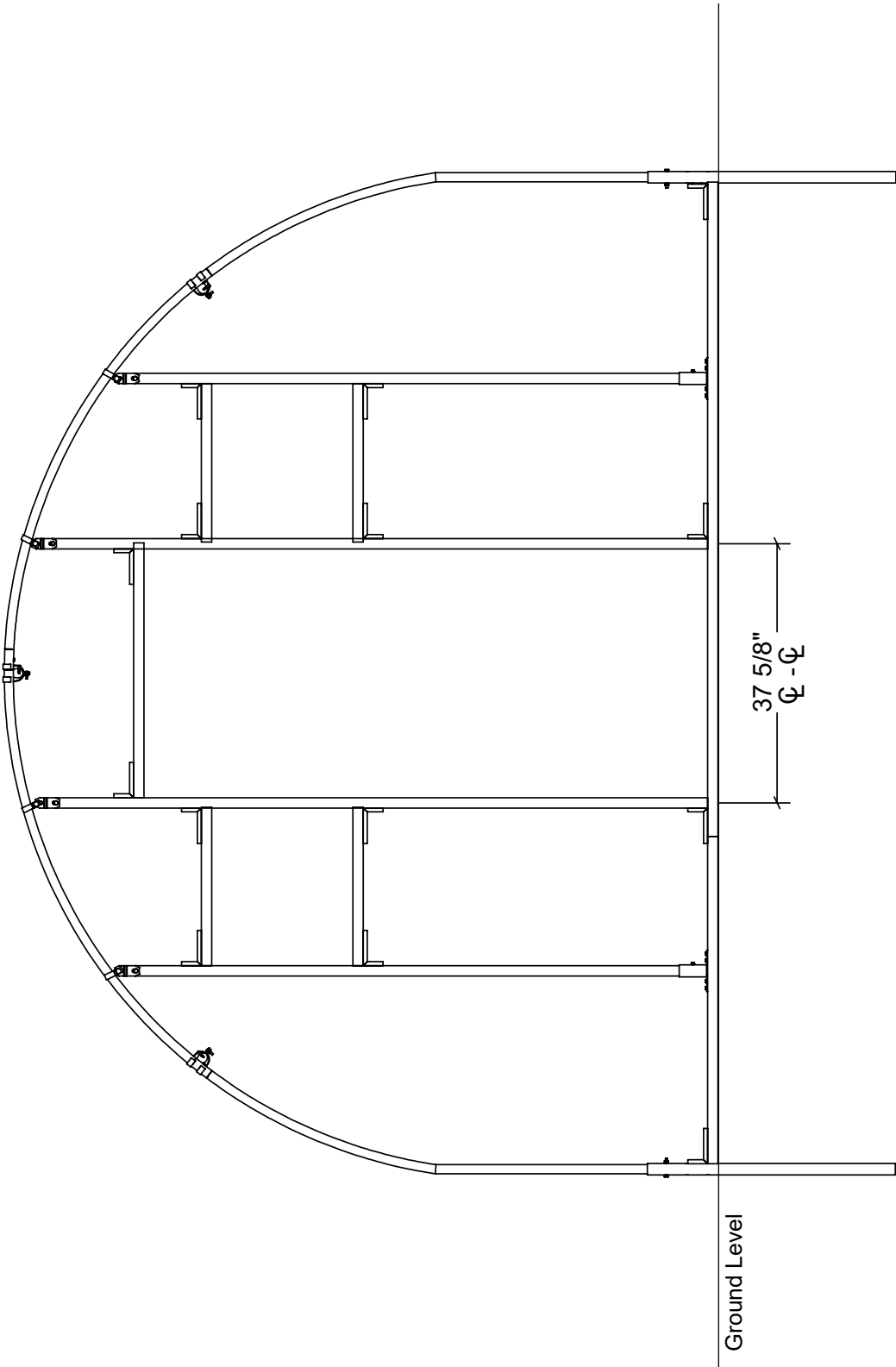
END FRAMING - FRONT



NOTE: COLUMNS NOT DIMENSIONED HAVE A NON-CRITICAL PLACEMENT AND ARE USED FOR POLYCARBONATE SUPPORT.

ALL END FRAMING TUBES ARE FULL LENGTH OR CUT FROM 1 1/2" X 1 1/2" SQUARE TUBING.

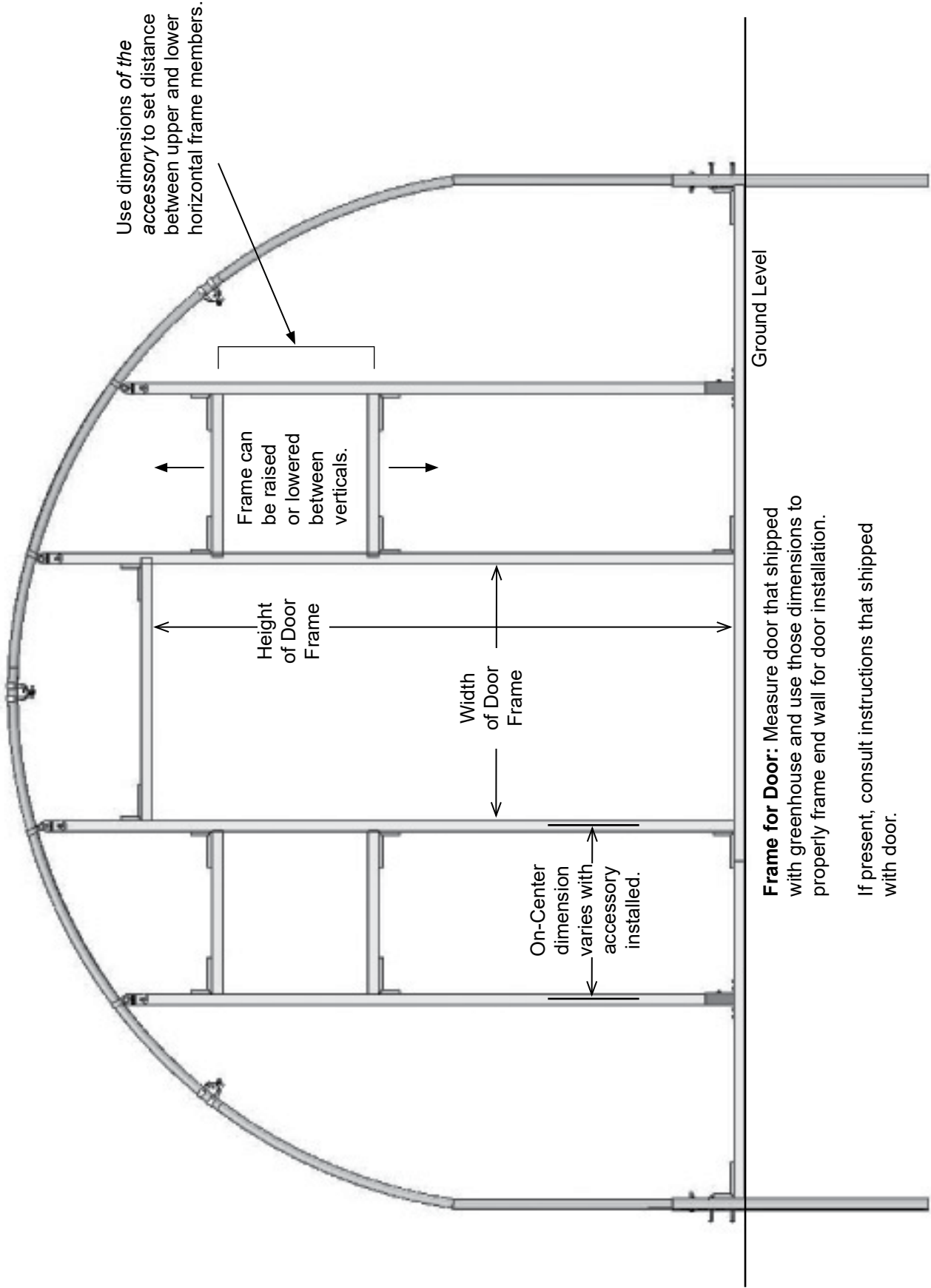
END FRAMING - BACK



NOTE: COLUMNS NOT DIMENSIONED HAVE A NON-CRITICAL PLACEMENT AND ARE USED FOR POLYCARBONATE SUPPORT.

ALL END FRAMING TUBES ARE FULL LENGTH OR CUT FROM 1 1/2" X 1 1/2" SQUARE TUBING.

END FRAMING - DIMENSIONS



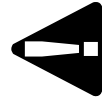
Frame for Door: Measure door that shipped with greenhouse and use those dimensions to properly frame end wall for door installation.

If present, consult instructions that shipped with door.

H-CHANNEL INSTALLATION INSTRUCTIONS

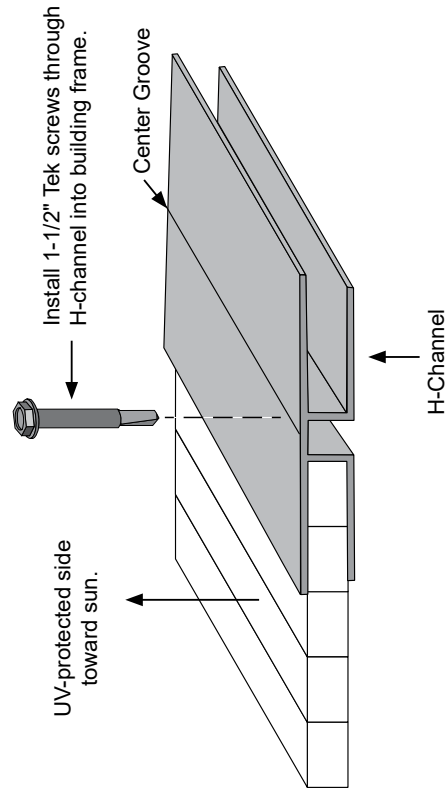
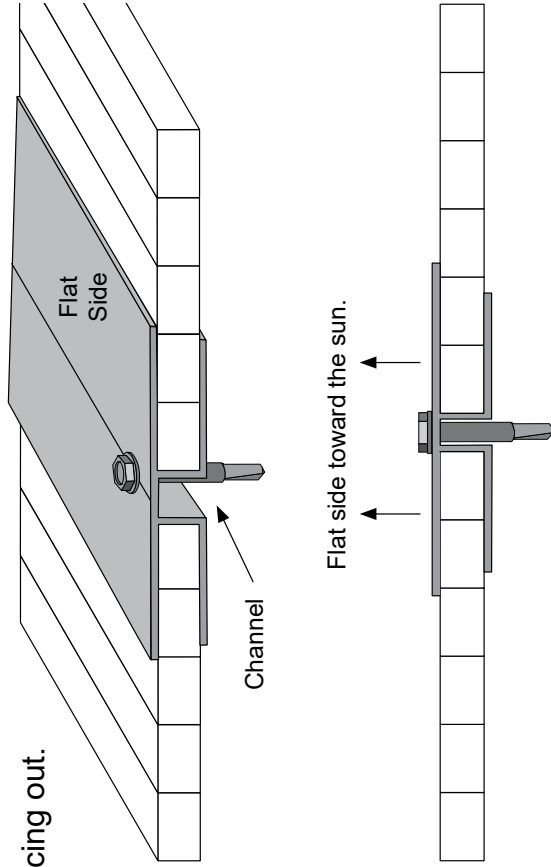
The new H-channel design requires installation of flat side facing out with channel side toward building. Some diagrams and photos in this document may show installation of *original* H-channel with channel side facing out. Design of new H-channel does *not* allow channel-side out installation.

Use the diagrams on this page to install H-channel with flat side facing out.



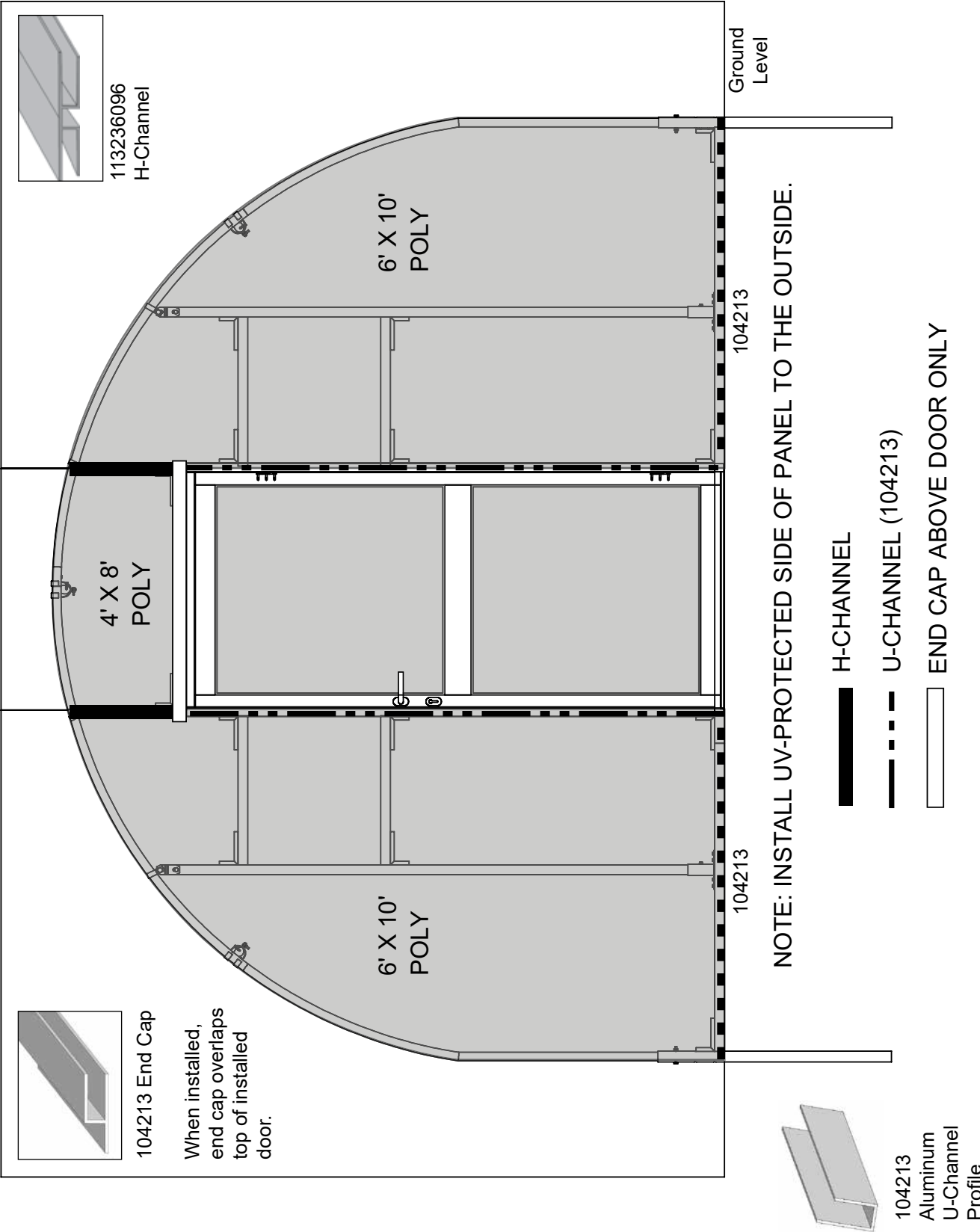
ATTENTION: Use only 1-1/2" Tek screws to attach H-channel to building frame. **Do not use shorter screws. They will not hold. Do not use washers on Tek screws when installing the 113236Z096 H-channel.**

ASSEMBLY NOTE: Install Tek screws using a clutched drill driver running approximately 750 RPM while applying approximately 50 lbs of force.
Do not use an impact driver to install Tek screws!

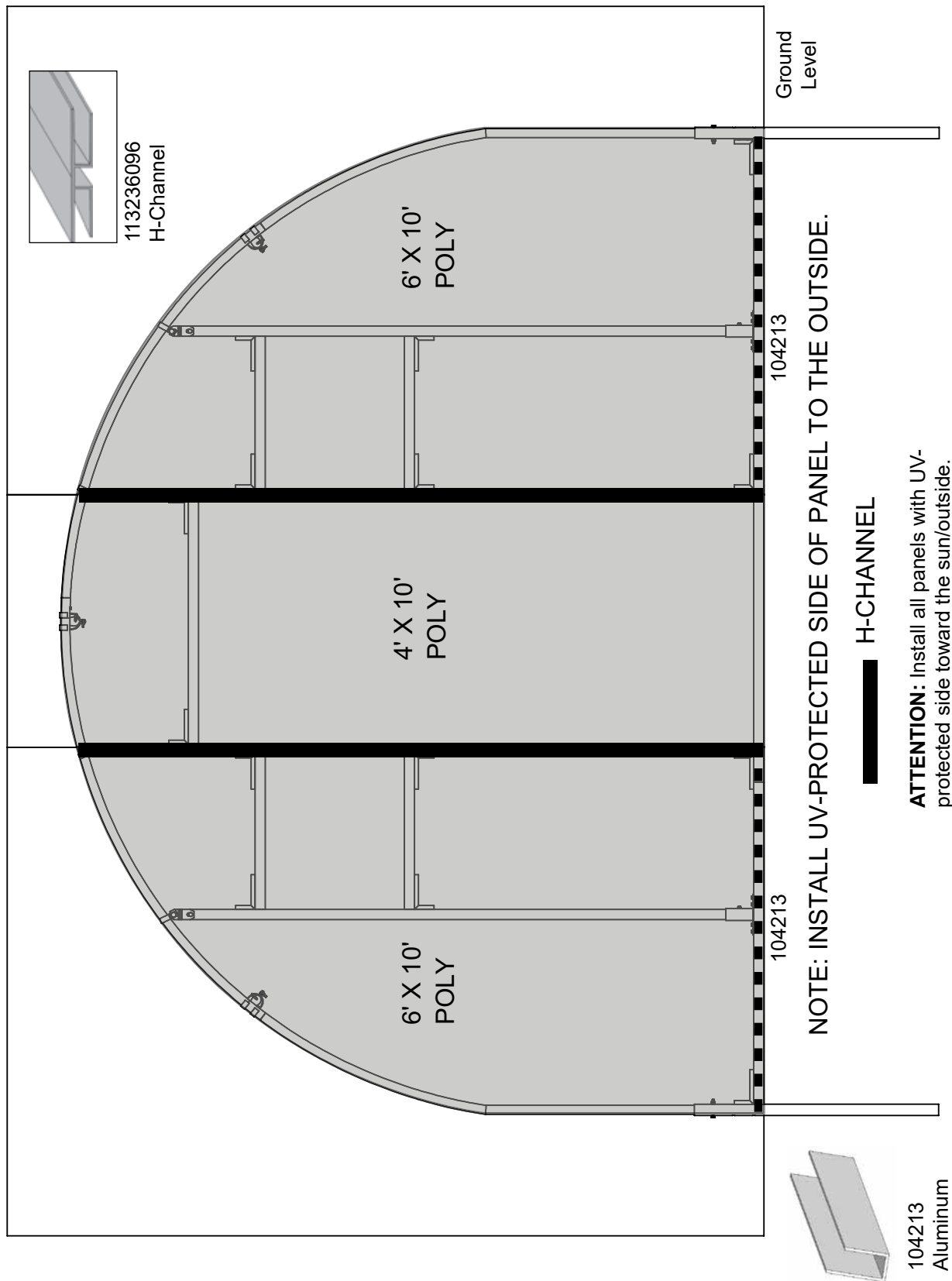


ATTENTION: Install all twin-wall polycarbonate panels with UV-protected side toward the sun.

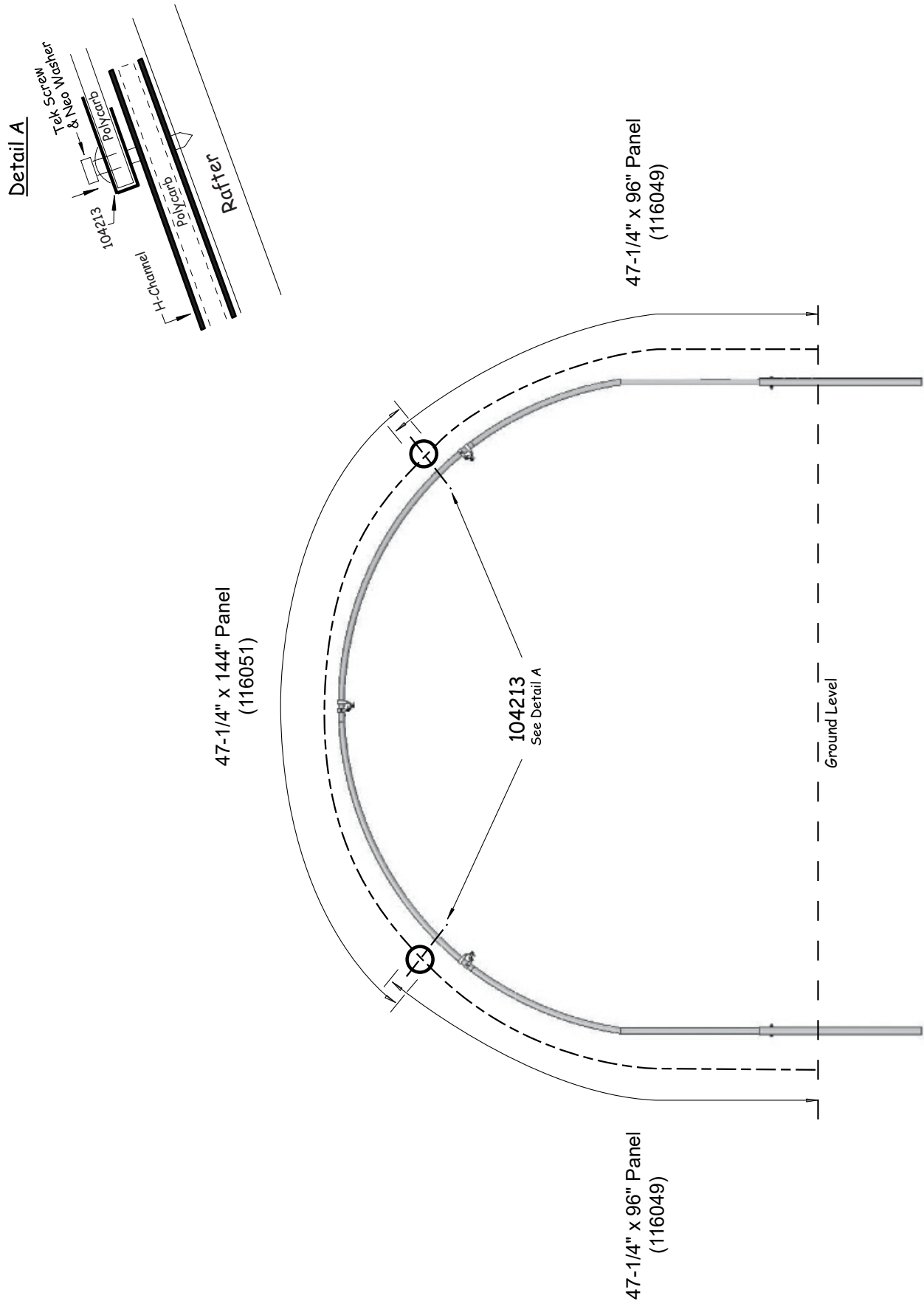
POLYCARBONATE PANELS - FRONT

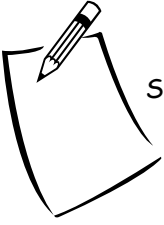


POLYCARBONATE PANELS - BACK



MAIN COVER DETAILS





Space below reserved for customer notes.