



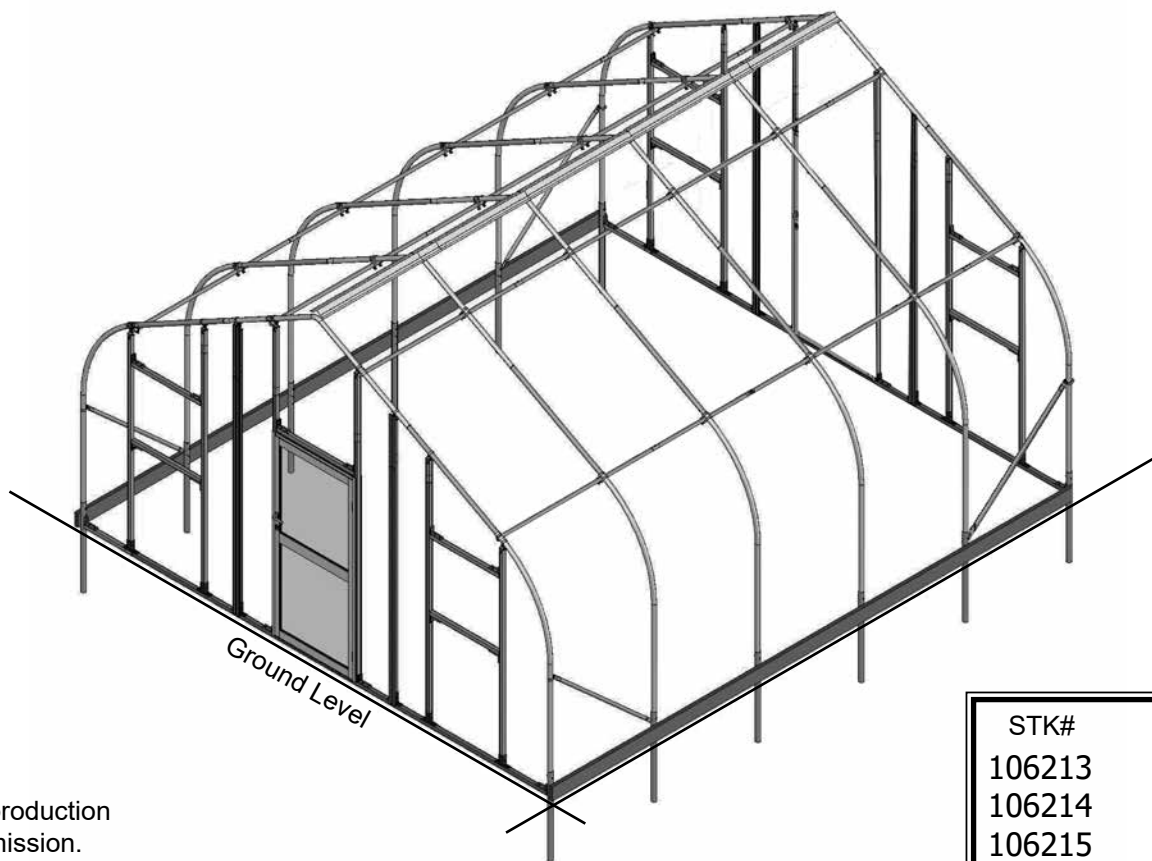
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GrowSpan™ Gothic Premium Greenhouse — 18' Wide

Photo may show a different but similar model. Frame length may differ.

BEGIN HERE:

- Frame
- End Panels
- Doors



STK#	DIMENSIONS
106213	18' W x 12' H x 20' L
106214	18' W x 12' H x 24' L
106215	18' W x 12' H x 28' L
106216	18' W x 12' H x 32' L

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

Revision date: 08.12.20

Important Information

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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 greenhouse or framing during or after construction.
- Do not occupy greenhouse during high winds, tornadoes, or hurricanes.
- Provide adequate ventilation if structure is enclosed.
- Do not store hazardous materials in 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.

Important Information

LOCATION


Choosing the proper location is an important step before you begin. The following suggestions and precautions will help determine whether your selected location is the best location.

- Never erect structure under power lines.
- Identify whether underground cables and pipes are present *before* preparing site or anchoring structure.
- Location should be away from structures that could cause snow to drift on or around building.
- Do not position 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 and follow them during construction.*

SITE

After choosing a location, proper preparation of the site is essential. The following site characteristics will help ensure structure integrity.

- *A level site is required.* Site must be level to properly and safely erect and anchor the structure.
- **Drainage:** Water draining off structure and from areas surrounding site should drain away to prevent damage to the site, the structure, and structure contents.

 **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 proper assembly. Failing to follow these steps may result in an improperly assembled and anchored greenhouse and ***can void all warranty and protection the owner is entitled to.***

Steps outlining entire 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 the shipment ***before*** you begin.
3. Gather tools, bracing, ladders (and lifts), and assistants needed to assemble greenhouse.
4. Check weather ***before*** installing roof cover and any panels (if equipped). *Do not install on a windy or stormy day.*
5. Re-evaluate location and site based on information and precautions presented in documentation included with shipment.
6. Prepare site (if applicable).
7. Assemble frame components in the order presented.
8. Consult MUST READ document to properly anchor assembled frame.
9. Install end wall frame, cladding, and double doors as presented in this guide.
10. Install flashing and roof and sidewall cladding (polycarbonate panels) — **See Assembly Guide #2.**
11. Read and follow the care and maintenance information near the end of this guide.

Important Information

REQUIRED TOOLS

The following list identifies the main tools needed for assembly. Additional tools and supports may be needed depending on structure and location.

- Tape measure or measuring device.
- Marker to mark locations on pipes.
- Clutched drill driver to drive Tek screws. (Cordless with extra batteries works best.) **Do not use an impact driver to install Tek screws.**
- Saw for metal and wood cutting.
- Wrench and socket set, or an adjustable wrench.
- Scissors, utility knife, and tin snips.
- Flat bar or putty knife
- Drill and drill bits
- Chalk line
- Caulk gun to apply sealant
- Hammers and gloves.
- Adjustable pliers and self-locking pliers.
- Ladders, work platforms, and other machinery for lifting designed to work safely at building height.

UNPACK AND IDENTIFY PARTS

The following steps will ensure that you have all the necessary parts *before* you begin.

1. Unpack contents of shipment and place where you can easily inventory parts. Refer to Bill of Materials/Spec Sheets.
2. Verify all parts listed on 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, do not open plastic bags containing smaller parts such as fasteners or washers (if equipped).

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!

SPECIAL NOTE: BASEBOARDS FOR FRAME (Customer-Supplied)

If desired, baseboards can be installed at ground level along each side of the frame. Baseboards run front to back of assembled frame. Recommended dimensions: 2" x 6"; Length as needed.

This baseboard is *not included* and must be supplied by the customer if used. Treated or recycled plastic lumber works best for a baseboard when allowed. The baseboard, when installed properly, helps prevent ground posts from sinking when anchored and helps seal the greenhouse along sides at ground level.

Building includes 1/4" hardware to attach customer-supplied baseboards: 1/4" x 4" (FAH009B) carriage bolts and 1/4" (FALB01B) nuts.

IMPORTANT: If used, install baseboards *after* all polycarbonate panels are installed. **See Guide #2.**

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.

QUICK START GUIDE

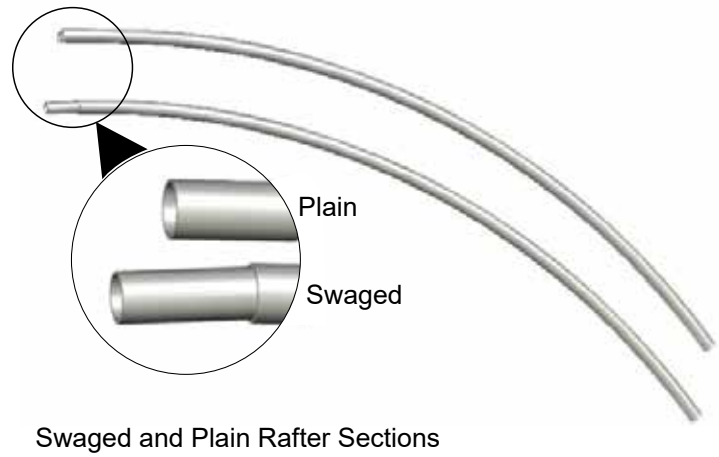
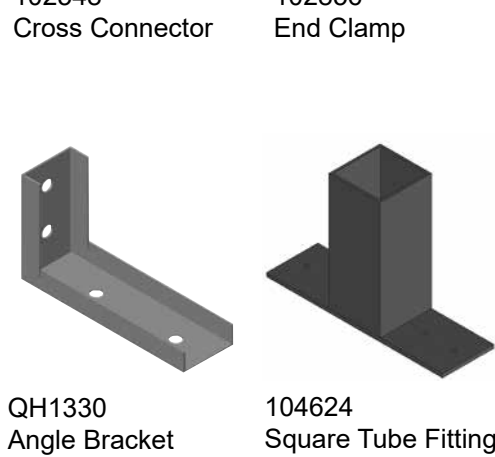
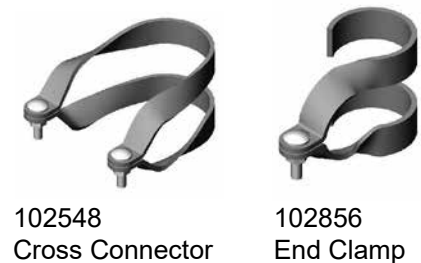
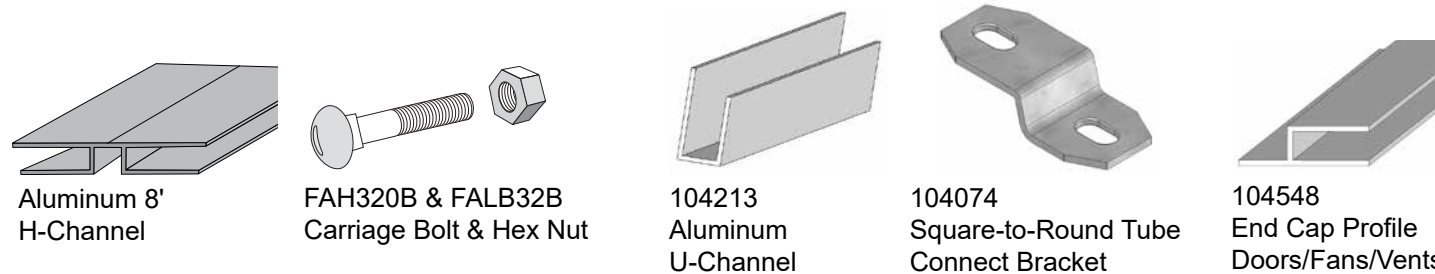
For a quick overview of the building and its components, consult the information and diagrams in the Quick Start section near the back of these instructions.

Parts

The following graphics and photos identify different parts. (Some parts are not shown.)

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!

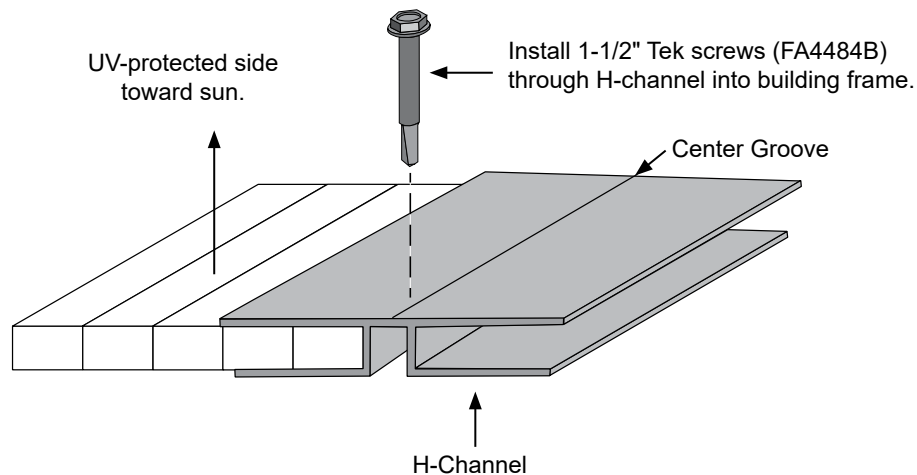
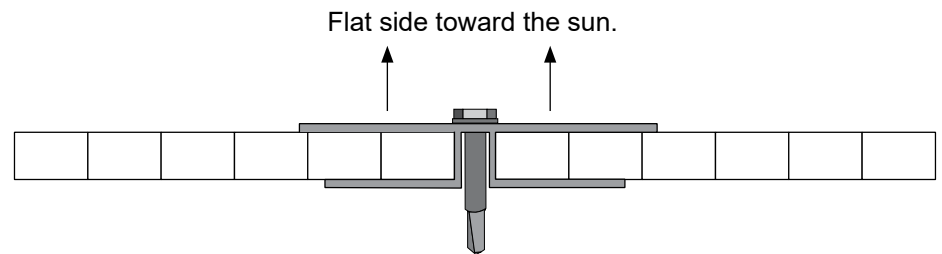
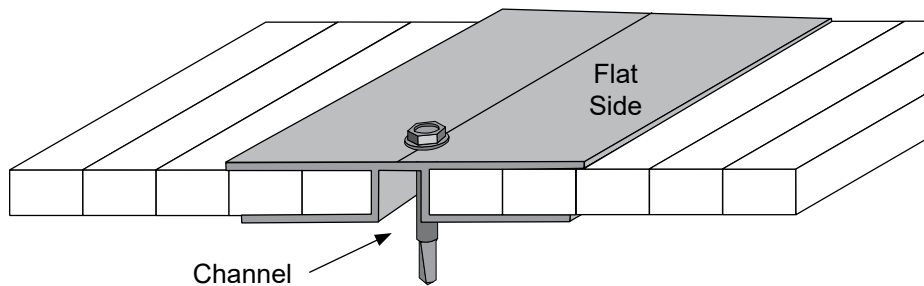


Install H-Channel — End Walls

The H-channel (113236Z096) design requires installation of the flat side facing out with channel side toward the frame. Some diagrams and photos in this document may show installation of H-channel with channel side facing out. Design of the 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 (FA4484B) to attach H-channel to building frame. **Do not use the shorter 1" Tek screws. They will not hold. Do not use washers on Tek screws when installing H-channel. See diagrams below.**



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

Anchoring & Frame Overview

ANCHOR ASSEMBLED FRAME

Consult the MUST READ document for anchoring information and suggestions. If needed, call customer service at 1-800-245-9881 for additional anchoring information.

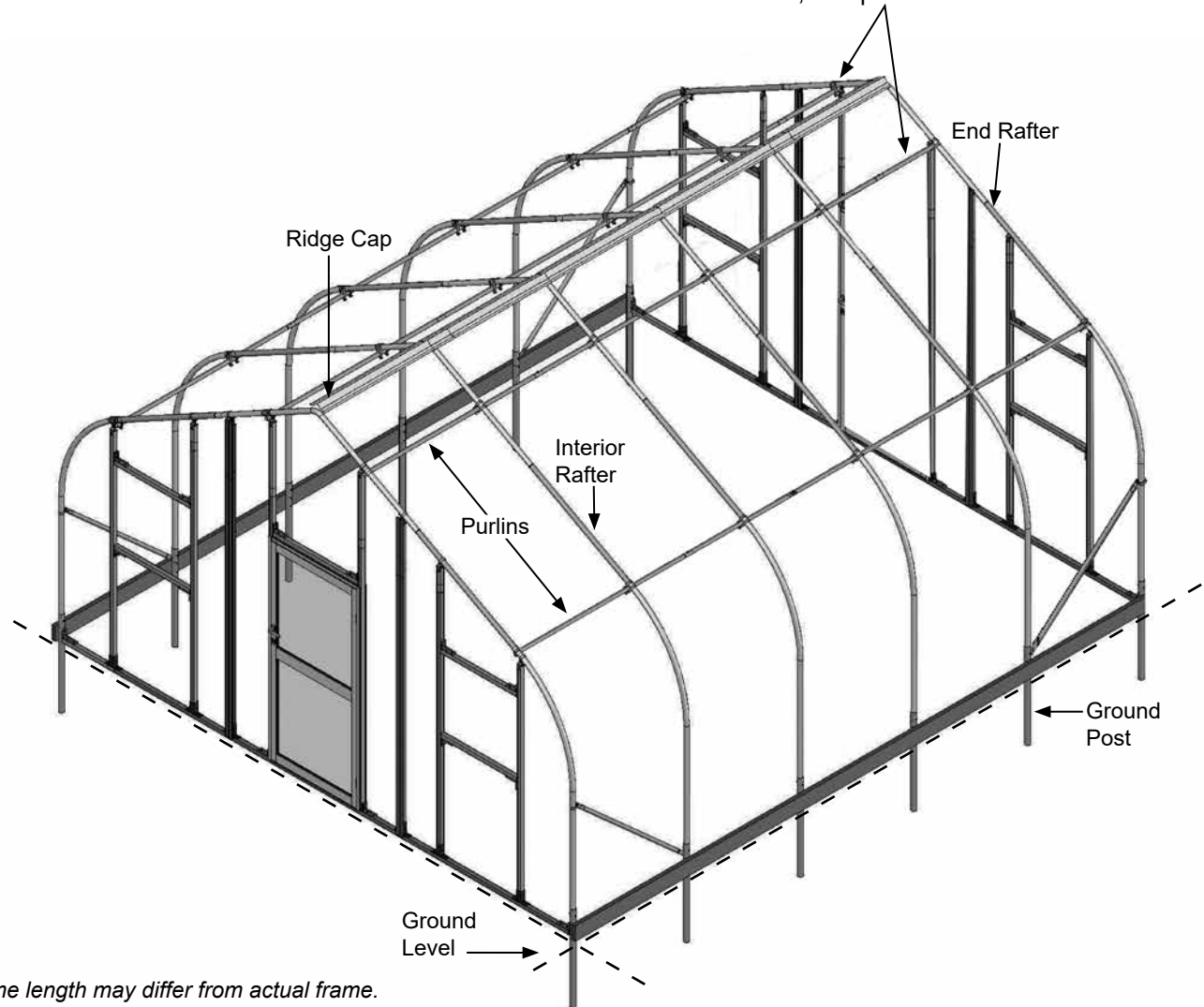
⚠ CAUTION: The anchor assembly is an integral part of the greenhouse construction. Improper anchoring may cause instability and failure of the structure to perform as designed. *Failing to anchor the shelter properly will void the manufacturer's warranty and may cause serious injury and damage.*

ASSEMBLY OVERVIEW — GENERAL

See illustration below to identify main parts of greenhouse frame.

1. Locate required parts and instruction guides for each assembly procedure.
2. Set ground posts (or anchor base plates — if equipped — to foundation).
3. Assemble rafters and frame.
4. Prepare and attach polycarbonate panels for end walls — **Guide #1**.
5. Install door — **Guide #1**.
6. Attach flashing and main cover cladding (polycarbonate) — **Guide #2**.
7. Install accessories (if equipped). See instructions included with accessory (fans, shutters, heaters, etc.).

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



Layout Building Site

LAY OUT BUILDING SITE

Prepare and set ground posts. *Drive ground posts to the proper depth. Width of shelter is measured from center of one ground post to center of the remaining ground post.*

SQUARE THE SITE

1. Identify a corner where a ground post will be positioned and drive first ground post into ground. Insert ground post driver into top of ground post to protect post and drive post. *Top of post will be one (1) foot above finished grade when properly driven.*

ATTENTION: Position pre-drilled holes facing inside/outside of shelter so they align with bolt holes in rafter pipes. To align bolt holes in ground posts with those in rafter *after driving posts*, insert a tapered rod or pry bar into a ground post bolt hole and turn post. See Figure 1.

2. After first corner ground post is in place, string a line the width of building (center-to-center) and drive second ground post into ground just enough to hold it in place.
3. Drive second corner post to same depth as first ground post.
4. String a line at least as long as the building from first stake at 90°.

NOTE: Use the 3-4-5 rule (or other means) to set an accurate 90° angle. 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. See Figure 2.

5. After squaring building position, measure length (center-to-center) and drive next corner ground post.
6. Repeat step for last corner post.

NOTE: Distance measured diagonally between corner posts must be equal for building to be square.

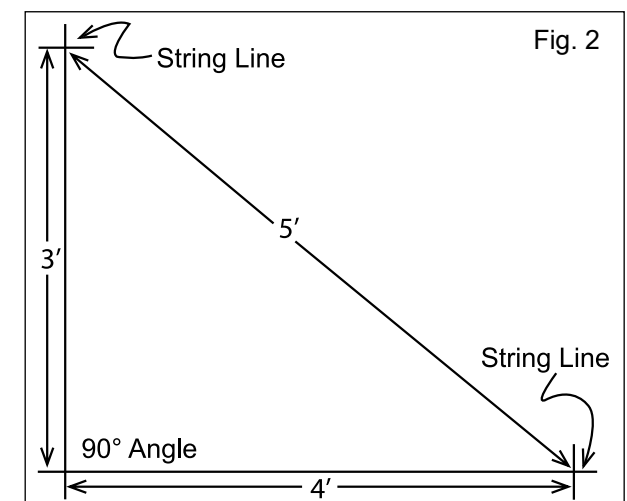
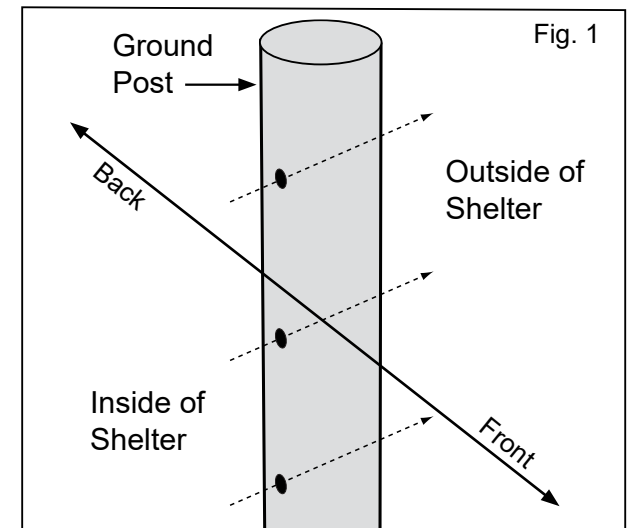
7. Check all dimensions (and adjust if needed) before driving remaining posts to the required height.
8. After all corner posts are accurately installed, tie a string line between tops of corner ground posts on same side of shelter. String is used to identify tops of all remaining posts between corner posts. ***String to remain tight and level during ground post installation.***
9. Use a tape measure to mark 48" on-center locations of remaining ground posts.
10. Drive remaining ground posts at required 48" on-center width and to height identified by string.

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

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

Gather parts:

- Ground posts
- 5/16" x 2-1/2" hex bolts (FAG336B)
- 5/16" nuts (FALB02B)



Assemble Rafter — End Rafters (2)

ASSEMBLE GREENHOUSE FRAME — END RAFTERS (2)

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

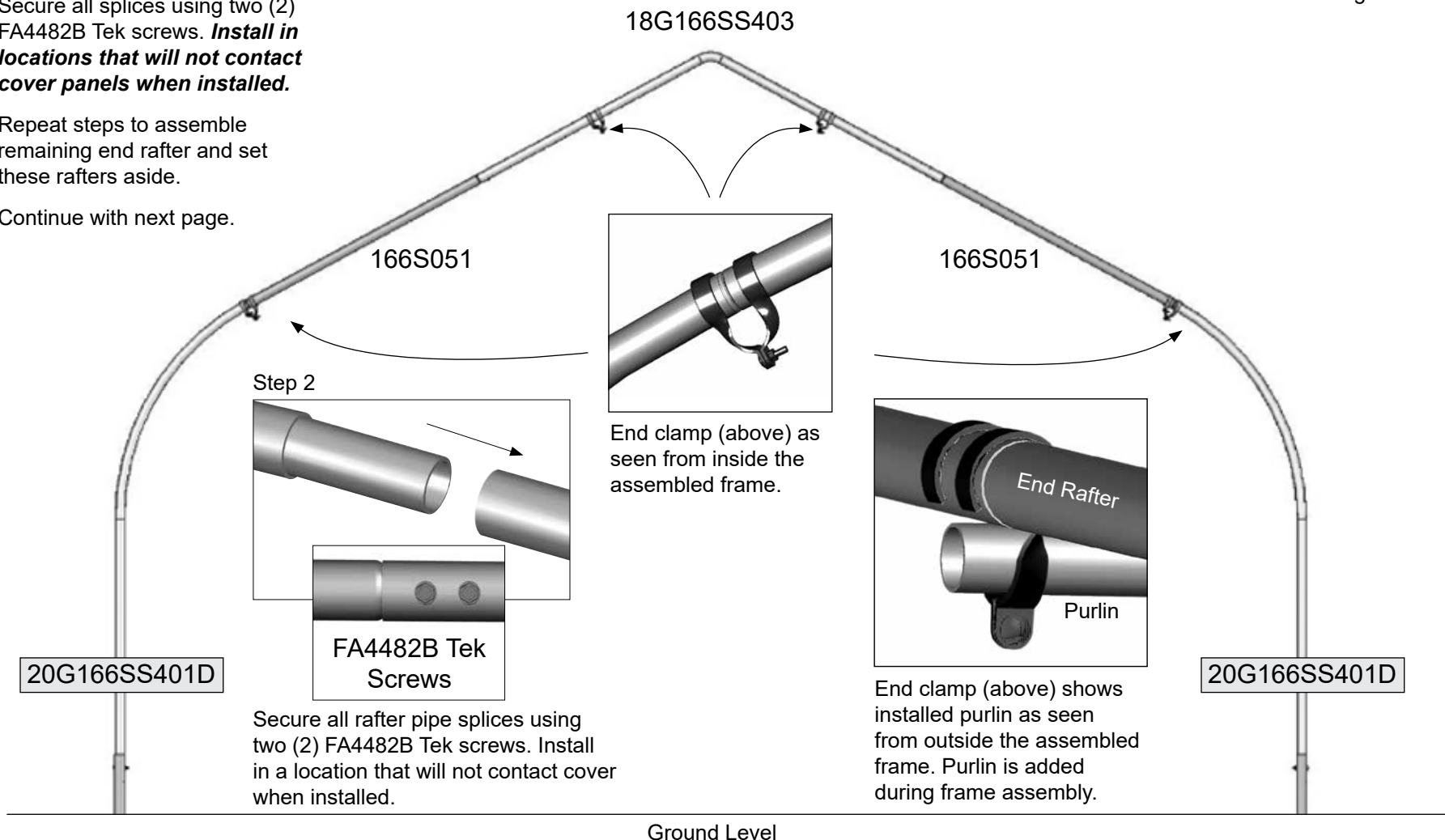
NOTE: All rafter assemblies consist of rafter tubes and purlin clamps. Consult rafter diagram below and in Quick Start section near the back of this guide *before and during* assembly. Assistance is required to assemble greenhouse.

Complete these steps:

1. Assemble end rafter as shown.
2. Secure all splices using two (2) FA4482B Tek screws. **Install in locations that will not contact cover panels when installed.**
3. Repeat steps to assemble remaining end rafter and set these rafters aside.
4. Continue with next page.

Gather parts:

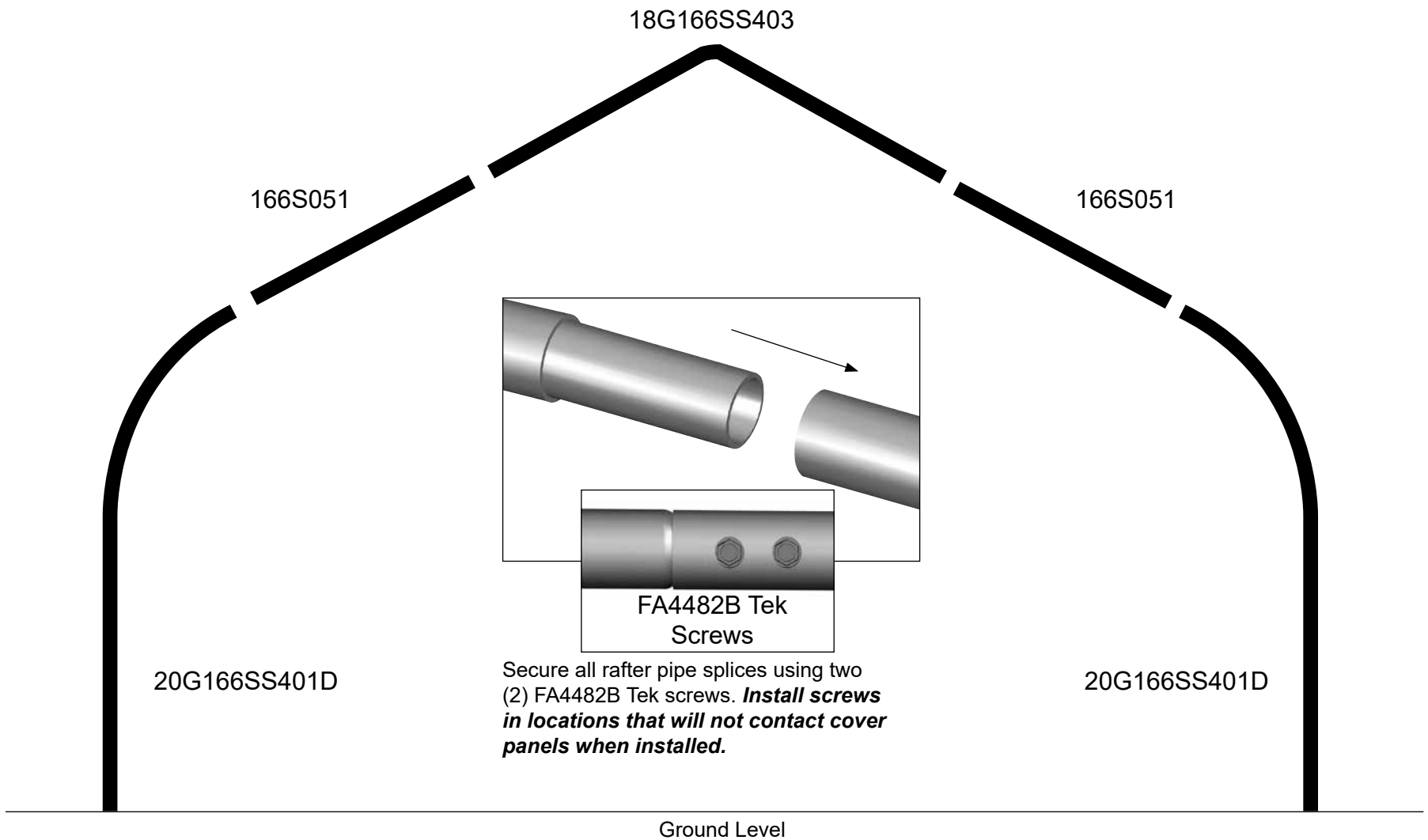
- Rafter Pipe (18G166SS403)
- Rafter Pipe (20G166SS401D)
- Rafter Pipe (166S051)
- End Clamps (102856) for end rafters
- Tek Screws (FA4482B)
- Nut Setter 3/8" x 2-9/16 Magnetic



Assemble Rafter — Interior

INTERIOR RAFTER ASSEMBLY

Depending on length of building and available space, assemble all or some of the remaining rafters. Secure all rafter pipe splices as described on previous page. Set assembled rafters aside in an accessible location. Purlin cross-connector clamps for interior rafters are installed during frame assembly.



Assemble Frame

BASIC FRAME ASSEMBLY TIPS

- Enlist the services of experienced assistants.
- Never leave end rafter assembly standing without temporary supports (straps, braces, etc.).
- Never remove end rafter temporary braces or straps without first connecting end rafter to at least two set interior rafters using purlin pipes and clamps.
- Use lift to set rafters; small building rafters can be set by hand when assistants are available.
- Wear safety gear at all times during frame assembly.

Gather parts:

- All rafter assemblies and purlin pipe.
- Band clamps (#QH1402)
- Cross connector (#102548)
- 5/16" x 2-1/2" machine bolts (FAG336B) and 5/16" nuts (FALB02B)
- Lifts, ladders, and assistants; Rope, strap, or cable.

Complete these steps to assemble frame:

1. Use photo below and on next page to stand and set first end rafter. Ensure end clamps on end rafter are oriented as shown in diagrams for end rafter assembly procedure presented earlier. **Clamps cannot be removed and reinstalled without first separating rafter pipes.**

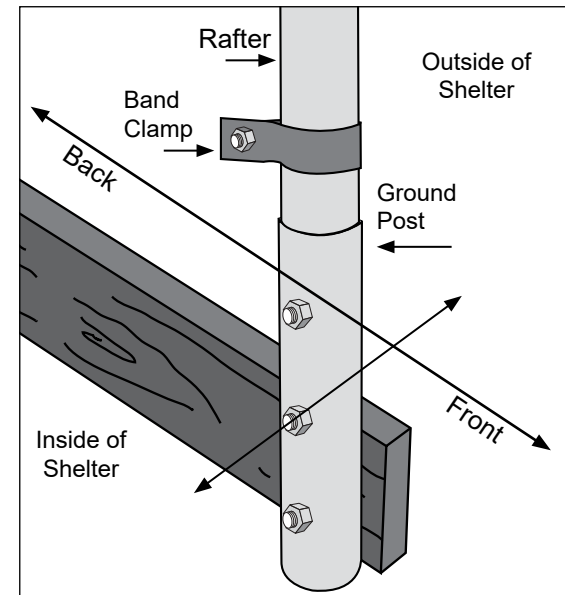


ATTENTION: Secure rafter to lift using straps. Do not attempt to lift and move rafter without securing properly to lift. Enlist the services of a qualified, experienced contractor if needed. **Do not attempt if you have never used a lift!**

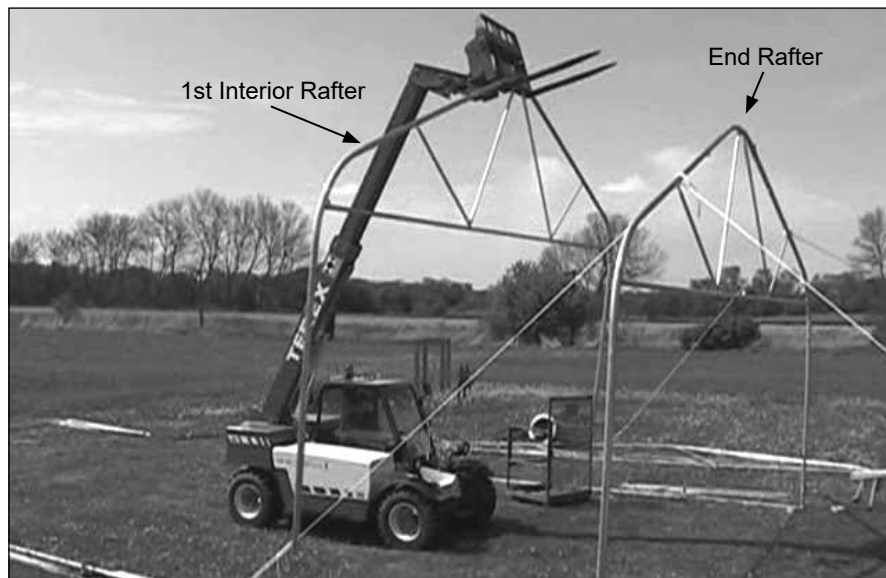
Assemble Frame

FRAME ASSEMBLY — CONTINUED

- Slide a band clamp (QH1402) onto each leg of first end rafter. Tape in place if needed. Set rafter on ground posts and secure to posts using 5/16" x 2 1/2" (FAG336B) bolts and nuts (FALB02B). **Secure to top hole in ground post.** Use rope, cable, strap, or braces to stabilize rafter.



- Slide a band clamp onto legs of first interior rafter, lift, and set rafter on next set of ground posts. Secure as described above. Actual frame may differ.



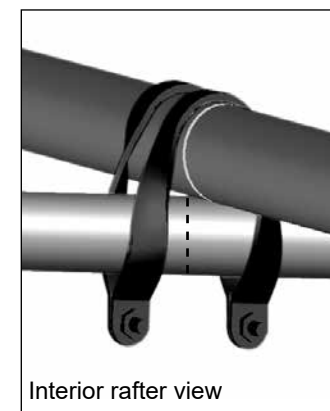
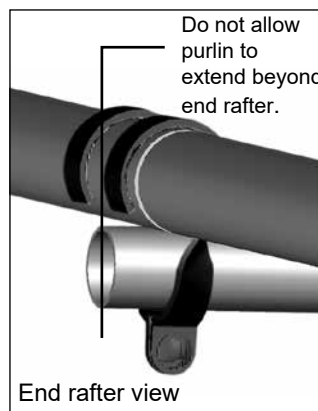
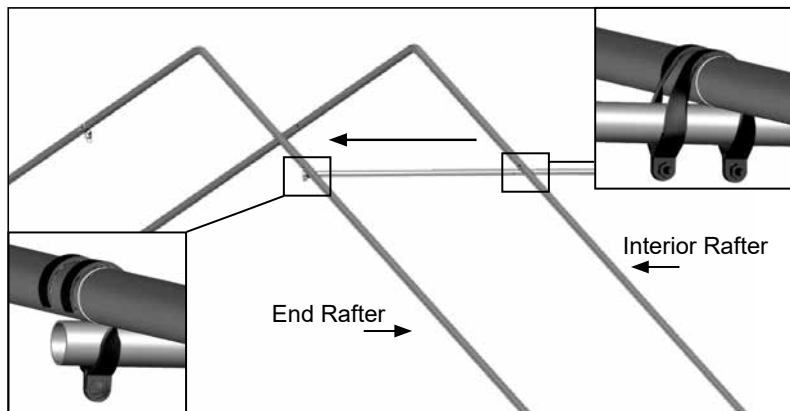
NOTE: Customer-supplied baseboards are shown in some diagrams throughout these instructions.

BASEBOARDS: If used, recommended dimensions: 2" x 6" or wider. Length determined by building.

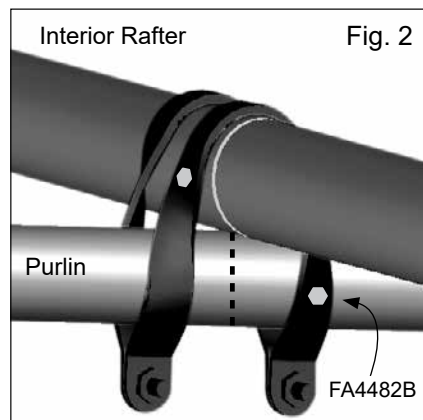
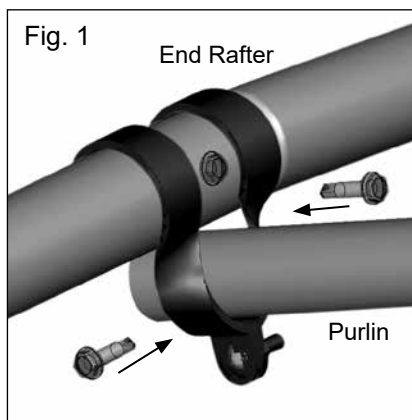
Install baseboards after all polycarbonate panels are installed. See Guide #2.

FRAME ASSEMBLY — CONTINUED

4. Confirm on-center rafter spacing and connect first rafters using first run of purlin pipe (131S075). **Position purlin according to frame diagrams found in Quick Start section of this guide.** Use the 102548 cross connector for all interior rafters. Position plain end of pipe at end rafter.



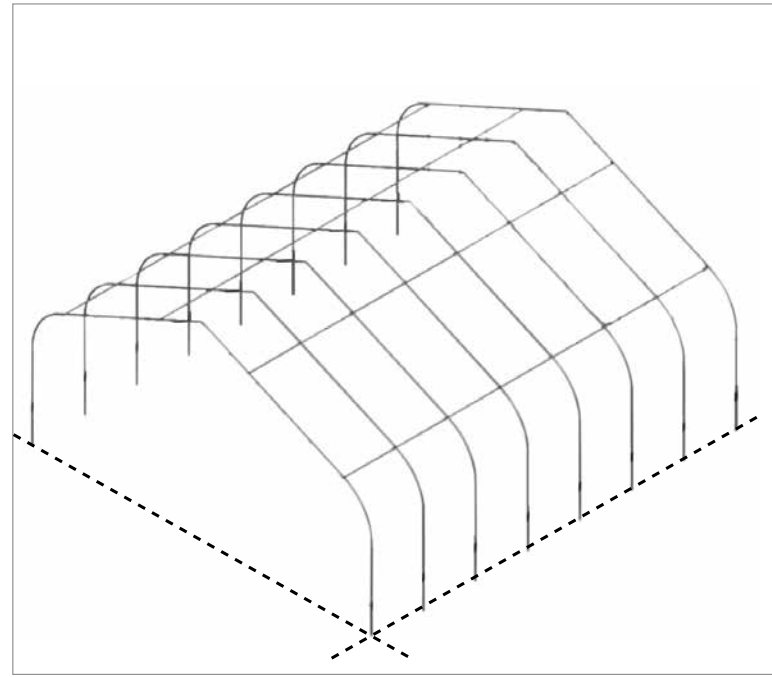
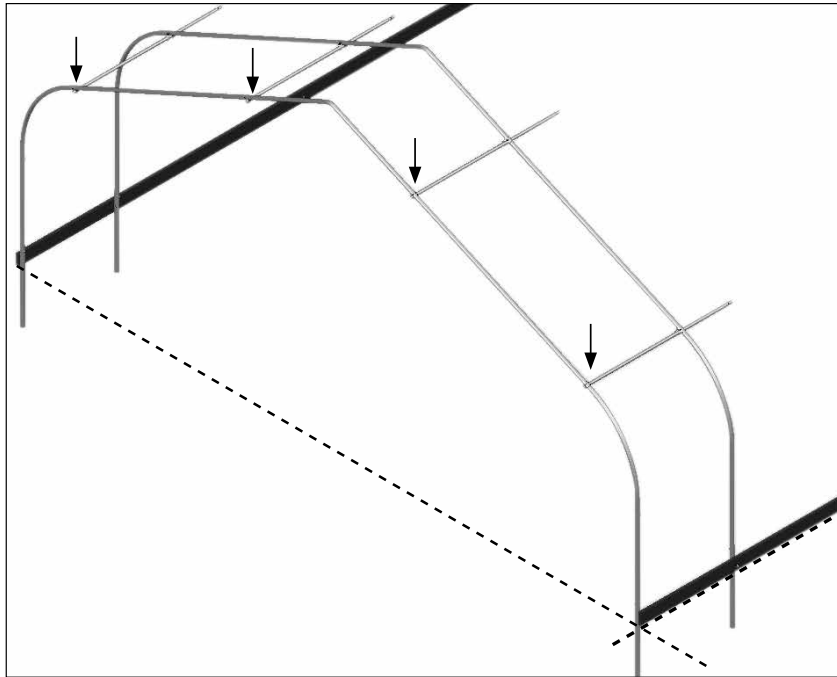
5. Tighten end clamp to secure pipe. Drive FA4482B Tek screw through end clamp into rafter to secure clamp to rafter. Install an FA4482B Tek screw through end clamp and into purlin pipe. See Figure 1 below. See also details in Quick Start section.



6. Move to interior rafter, verify 48" on-center rafter spacing (adjust as needed), and tighten cross connector. Secure connector to rafter and purlin as described in previous step. See Figure 2 above.

FRAME ASSEMBLY — CONTINUED

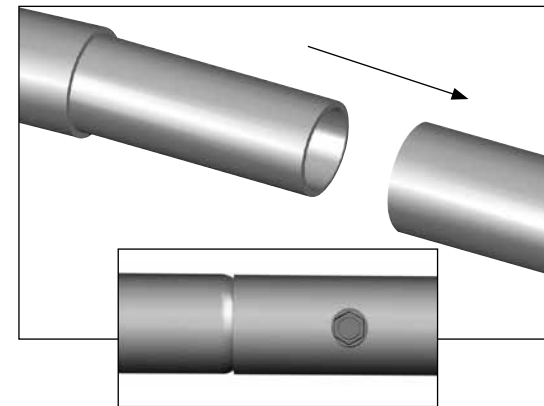
- Repeat steps to install first section of purlin pipe between end rafter and first interior rafter. Purlins run parallel with each other and are spaced as shown in diagrams. See Quick Start diagrams near back of this guide. Temporary bracing can be removed once all purlins are installed between first set of rafters.



- Choose another interior rafter assembly and set it in position. **Do not use remaining end rafter.** Secure rafter legs to ground posts and steady rafter.
- Add another pipe and cross connector clamp to each purlin run. Verify on-center rafter spacing and tighten clamps. Repeat Step 6 to secure clamps to rafter and purlin pipe. See Figure 2 previous page.
- Secure each purlin pipe splice using an FA4482B Tek screw.
- Repeat steps as needed to complete assembly of frame.

ATTENTION: Slide a band clamp onto each leg of remaining end rafter, secure rafter to ground posts, and attach purlins to it. Verify that end clamps are positioned with nut and bolt to the inside of assembled frame. Refer to Quick Start section and previous diagrams if needed. If last end rafter is plumb and final purlin pipe extends beyond end of rafter, cut purlin pipe to required length.

- Once all rafters are set and all purlins are in place and secure, return to each purlin pipe splice and verify a Tek screw is installed and tightened. Install screws if needed.
- Remove any temporary bracing (if needed) and install struts.



Steps 10 & 12: Secure all purlin pipe splices using an FA4482B Tek screw for each splice.

Install Struts

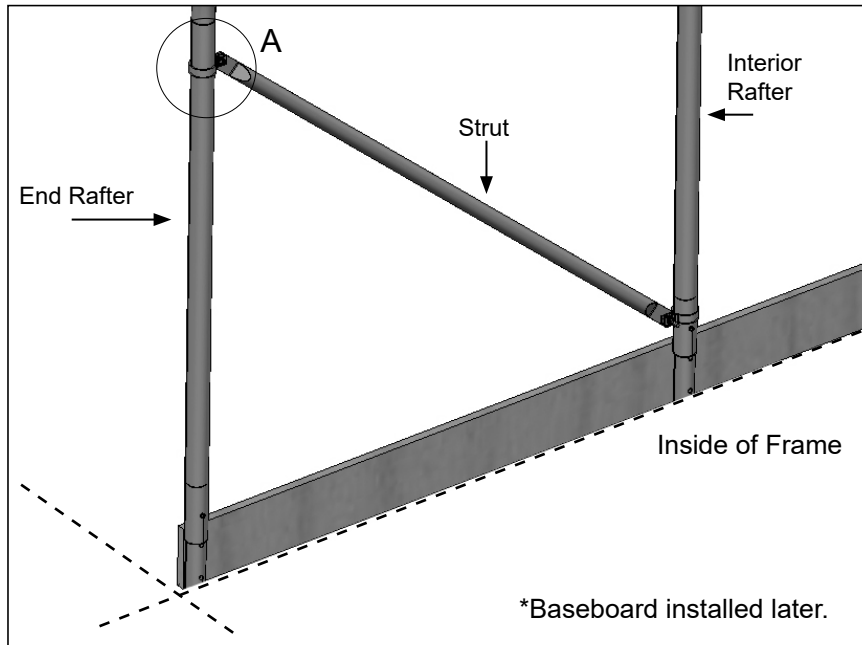
STRUT INSTALLATION — FRAME SIDES AT EACH END

There are four (4) side struts for the frame. Struts are positioned between end rafters and first interior rafter. Gather parts:

- Struts (See Quick Start section for part identification.)
- Band Clamps (#QH1402) — 2 per strut. (Installed earlier during frame assembly steps.)

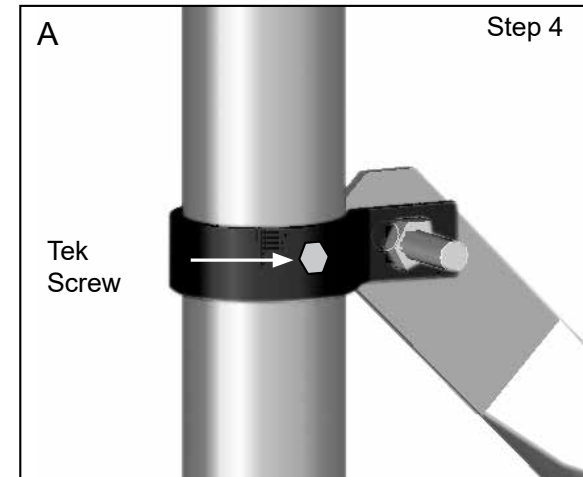
Complete these steps to install struts:

1. Review diagrams in Quick Start section for additional details.
2. Attach strut upper end to end rafter band clamp. (Install clamp if needed.) Adjust strut position so lower end of strut reaches band clamp on second rafter. (Install that band clamp too if needed.)



3. Attach lower end to band clamp on interior rafter. Install band clamp if needed.

4. Once strut is fully attached, drive an FA4482B Tek screw through each band clamp into rafter pipe. Install in a location that will not contact roof or end wall cladding or side panels when these are installed.



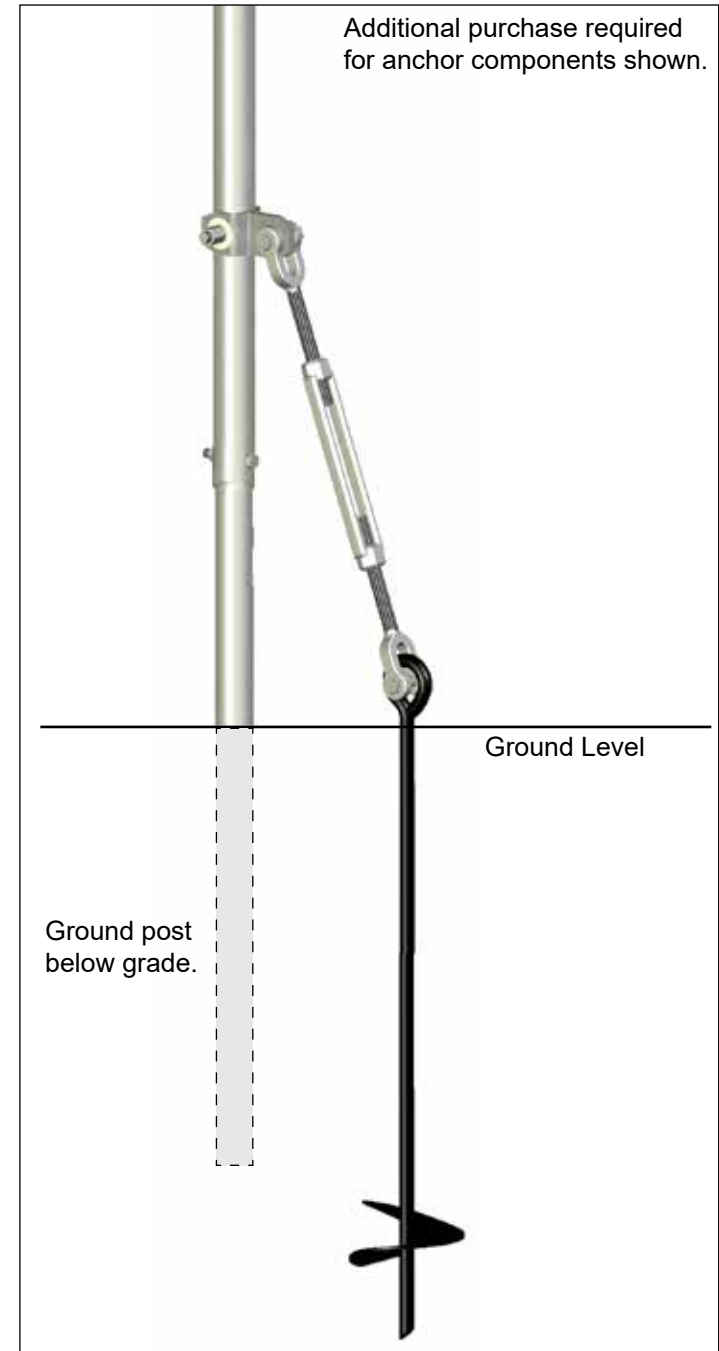
5. Continue by anchoring the frame. See information on next page and read **MUST READ** document included with building documentation.

Anchor Assembled Frame

ANCHOR THE ASSEMBLED FRAME

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

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



End Wall Frame — Accessories Note

A NOTE ABOUT 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 in end walls of this greenhouse. Additional horizontal framing (included) is installed *between* vertical end wall frame tubes to mount these accessories. Spacing shown for end wall supports on end frame diagrams may be too narrow for installation of some larger accessories.

Diagrams typically 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 to identify verticals that can be moved.***

Before installing any greenhouse accessory, adhere to the following:

- Consult end frame diagrams **before** installing accessory horizontal framing.
- If labeled, move only those verticals labeled as "NON-CRITICAL" on end frame diagrams when deciding where to install additional horizontal framing for accessories.

NOTE: Some vertical frame tubes must remain in locations shown on end frame diagrams. Polycarbonate panel installation requires specific on-center spacing. *Moving critical end frame tubes can compromise end panel installation.*

- 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 REPOSITION END WALL VERTICALS USED AT SEAM OF TWO (2) POLYCARBONATE PANELS.
- Always consult installation guides that shipped with the accessory for additional precautions, recommendations, and safety requirements.
- Before installing any electrical accessory, consult a professional electrician for precautions and additional assistance.
- For gas heaters, ***a professional, qualified service technician must install the unit.***

Complete these steps to install accessory framing:

1. Based on installation requirements and precautions of the accessory, choose a location to mount accessory, and cut a 1.5" x 1.5" frame tube to required length for framing.
2. Attach these horizontal frame tubes between vertical frame tubes (at required height determined by installation instructions included with that accessory) using QH1330 brackets.

Install End Wall Frame — General Notes

INSTALL END WALL FRAME

Refer to end frame diagrams in Quick Start section and those on the following pages for assembly details. **Read notes below to assemble end wall frame.**

- Secure all tube splices and connections using FA4482B Tek screws. One for each splice and connection is sufficient.
- Install all Tek screws in locations that *will not contact* roof or end wall cladding when cladding is installed.
- Secure base tube between ground posts using FA4482B Tek screws and QH1330 brackets.
- Vertical frame member dimensions are measured from center-to-center unless noted otherwise on diagrams.
- When measuring vertical tube lengths, remember to account for the square-to-round bracket (104074) that connects vertical tubes to band clamps on end rafter.
- Secure each band clamp to end rafter using an FA4482B Tek screw.
- Secure each square tube fitting (104624) to each vertical frame tube using an FA4482B Tek screw.
- During installation, ensure all vertical tubes are plumb.

Detailed steps start on next page. These are main frame assembly and installation steps:

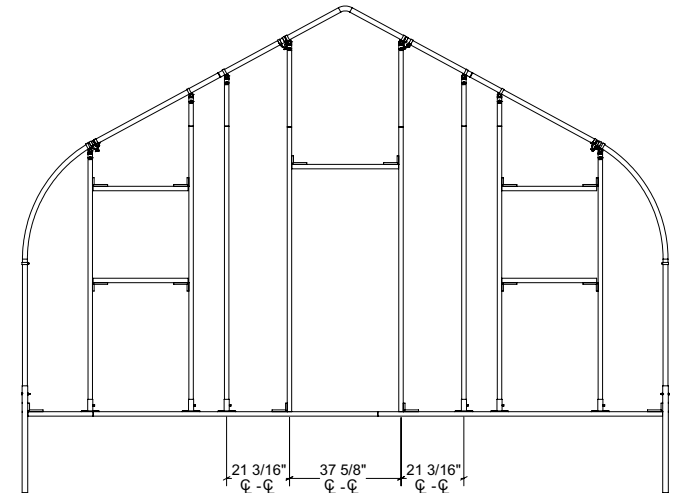
1. Assemble and install base rail. Use 102897 swaged tubes, joined, and cut to fit.
2. Frame and install door. Use QH1330 brackets installed outside door opening to secure door jambs to base rail and header to door jambs.
3. Review dimensions for accessories such as fans and shutters and determine where to install these in the end walls.

ATTENTION: Consider door operation and required locations of end wall vertical tubes for end wall polycarbonate panel installation. Positions of some vertical tubes cannot be moved regardless of accessories.

4. Install all vertical frame tubes.
5. Secure all band clamps to end rafter tube using an FA4482B Tek screw for each.
6. Check all tube splices to ensure each is secured with a Tek screw.
7. Continue with end wall cladding installation.

Gather parts:

- Square Tube #102897
- Angle Brackets (#QH1330) & Band Clamp (#QH1402)
- Square Tube Fitting (#104624)
- Square-to-Round Tube Connect Bracket (#104074)
- Carriage Bolt (#FAH320) and Nut (#FALB32B)
- Tek Screws (#FA4482B)



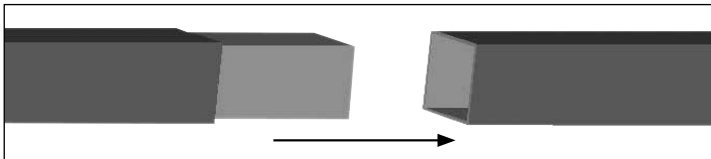
Confirm door design and dimensions by examining the door included with your greenhouse. Adjust rough opening dimensions shown above as needed to install door.

ATTENTION: Some doors designs require setting door in place and then installing door jambs. See page 20.

Install End Wall Frame

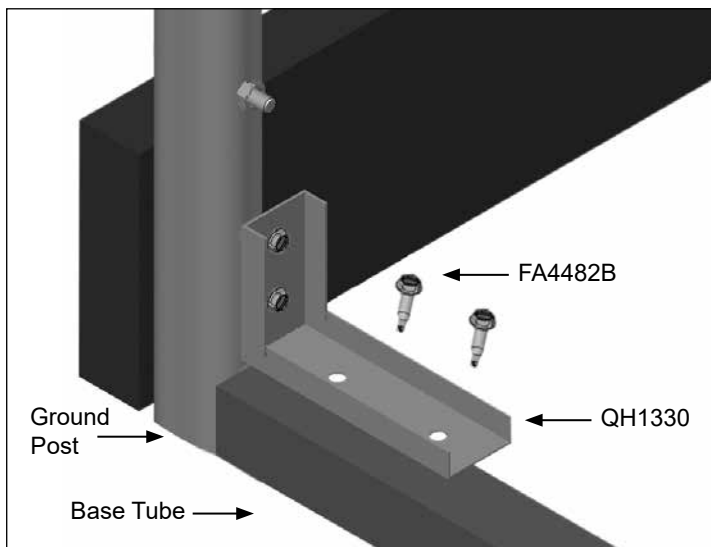
INSTALL END WALL FRAME — CONTINUED

1. Locate square tubing for base rail. See Quick Start section for clarification. Construct base rail using 102897 tubes joined and cut to fit between end rafter ground posts.



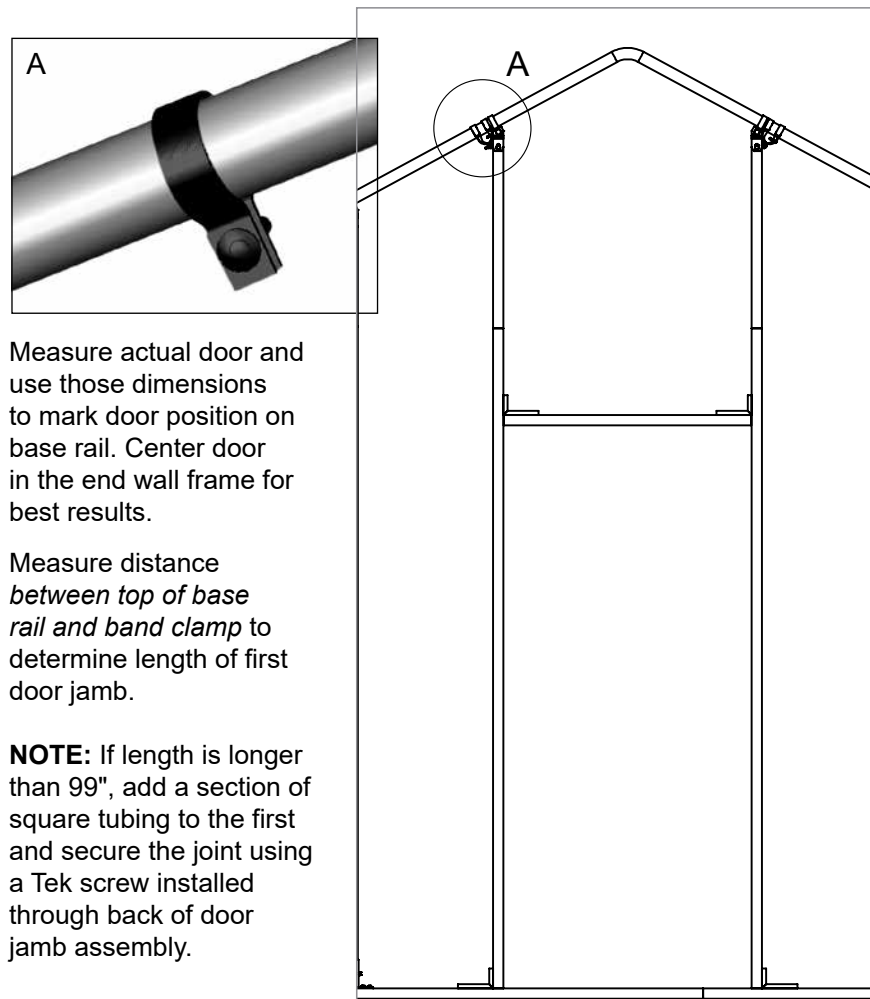
Secure all tube splices using an FA4482B Tek screw.

2. Position assembled base rail on ground between end rafter ground posts at front of greenhouse and secure using an angle bracket (QH1330) at each end and FA4482B Tek screws.



3. Install an FA4482B Tek screw at tube splice on back side to secure joint.

4. Place band clamps on end rafter above door as shown below. **DO NOT TIGHTEN THE BOLTS AT THIS TIME.**
5. Select tubing for two door jambs. Each support includes at least: One (1) 102897 swaged tube assembly cut to length and one (1) square-to-round tube bracket (#104074). See diagram below and on next page.



6. Measure actual door and use those dimensions to mark door position on base rail. Center door in the end wall frame for best results.
7. Measure distance *between top of base rail and band clamp* to determine length of first door jamb.

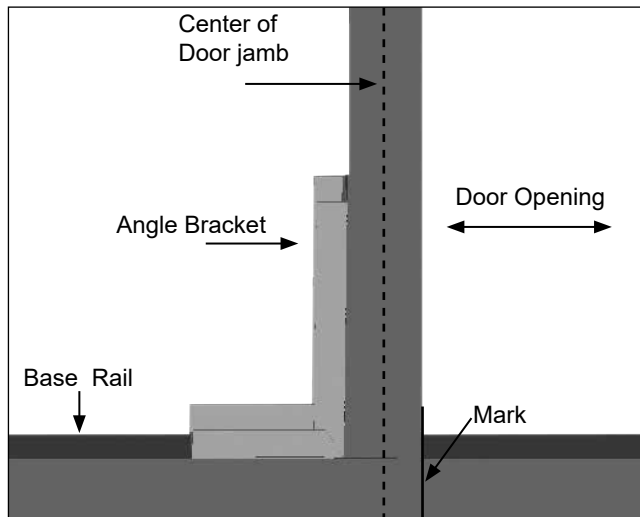
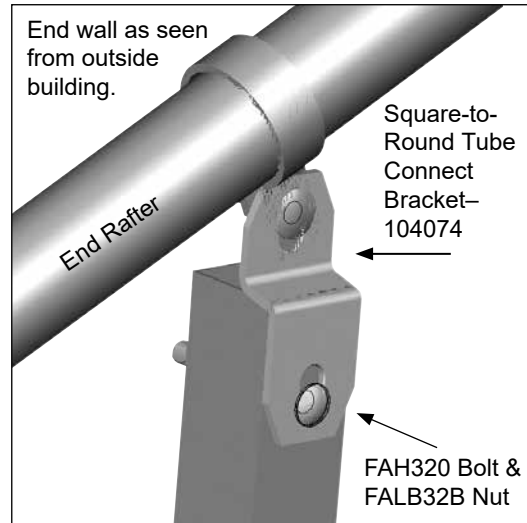
NOTE: If length is longer than 99", add a section of square tubing to the first and secure the joint using a Tek screw installed through back of door jamb assembly.

8. On door jamb, mark length determined in previous step and *subtract the amount needed to account for the square-to-round tube connect bracket*, which is attached to top of door jamb. See diagram on next page.

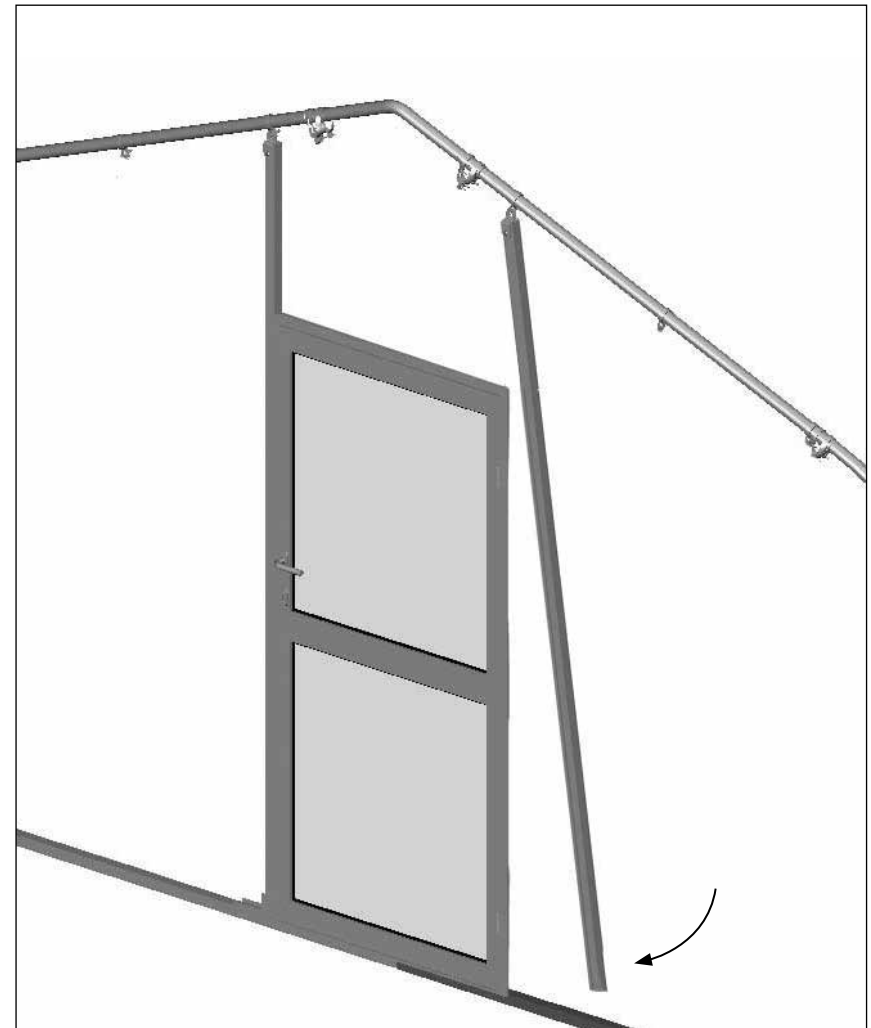
Install End Wall Frame

INSTALL END WALL FRAME — CONTINUED

9. Select a square-to-round tube connect bracket and attach it to one end of door jamb. Use a 5/16" drill bit and drill to drill mounting hole through tube. Attach bracket using nut and carriage bolt.
10. Use bolt in band clamp to attach bracket to band clamp. **DO NOT TIGHTEN AT THIS TIME.** Position bolt heads to the outside (or front/back) of greenhouse.
11. Repeat steps as needed to construct remaining door jamb and attach bracket to top.
12. Attach second jamb to band clamp on rafter.
13. Using marks on base rail for door, *attach bottom of door jamb to base rail using an angle bracket (QH1330).* Verify jamb is plumb using a level or similar means.



14. Tighten band clamp bolt to lock first door jamb in place.
15. Take door and set it on base rail between secured vertical door jamb and the loose door jamb. Door frame "wraps around" door jambs. Diagram below shows typical installation.
16. Swing loose door jamb back into position tight to door frame and secure bottom to base rail using Tek screws and QH1330 bracket.

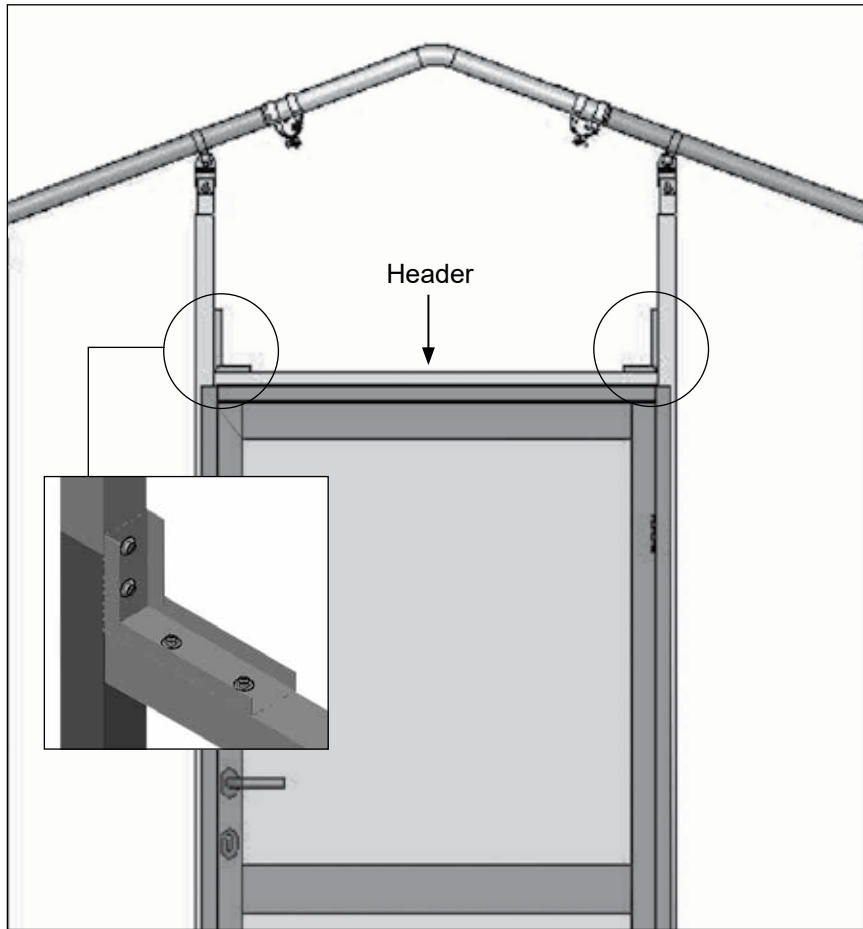


NOTE: Verify jamb is plumb before installing Tek screws. Adjust if needed. Frame shown may differ slightly from actual frame.

Install End Wall Frame

INSTALL END WALL FRAME — CONTINUED

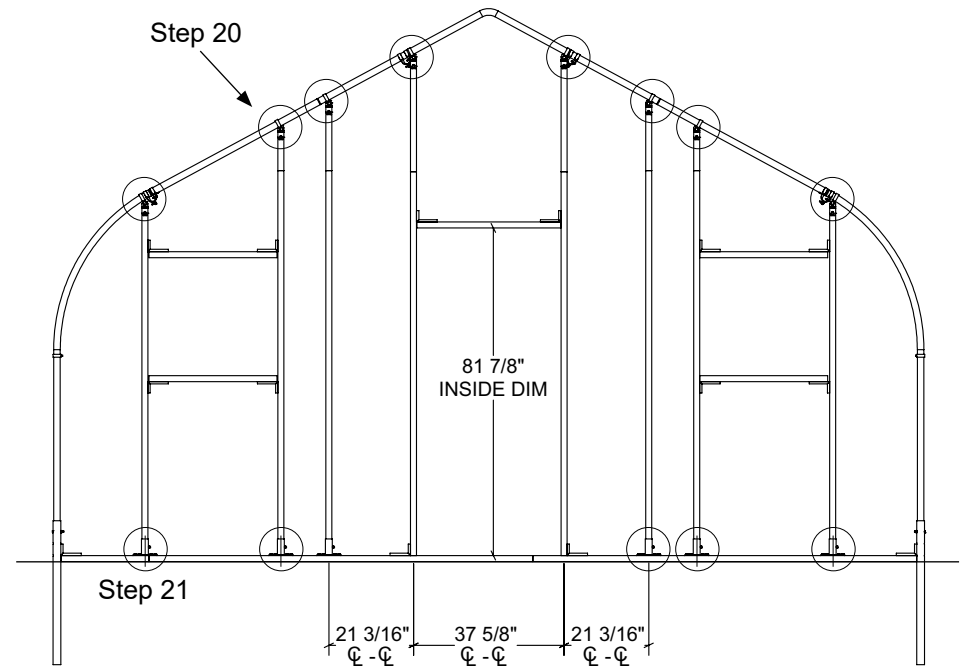
17. Choose square tube for header and cut proper length.
18. Using two angle brackets, attach header tube between door jambs as shown below.



19. Verify that both door jambs are plumb and recheck width of door opening at top and bottom. Adjust if needed.

NOTE: Do not secure door to door jambs at this time. Jambs should be tight to door frame.

20. Use end frame diagram to determine number of remaining vertical frame supports and place one band clamp on end rafter for each support.



21. Using end frame diagrams (Quick Start section), *measure and mark (on base rail) the locations of remaining supports.*

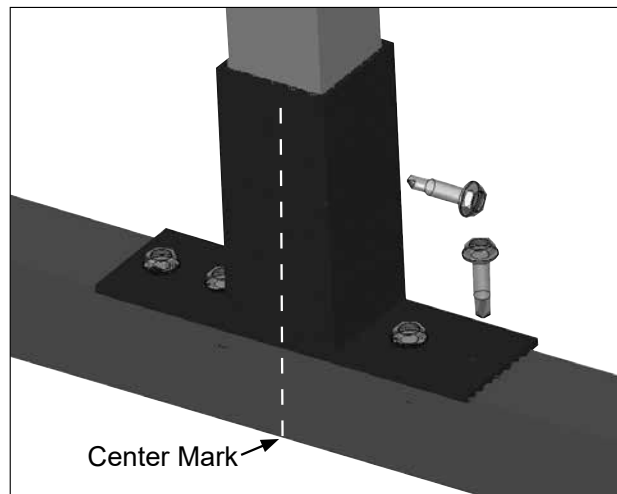
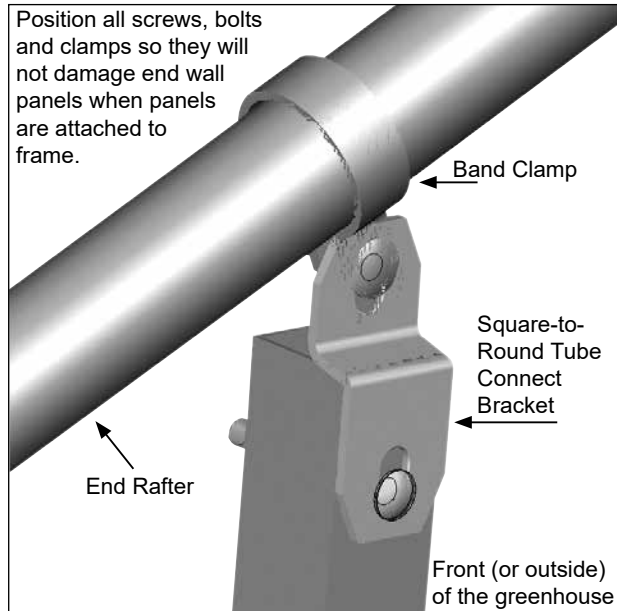
ATTENTION: If no dimensions are shown, evenly space the supports for installation. If accessories such as fans and shutters are included, consult those items to determine required rough openings. Frame the remainder of the end wall as needed.

22. Choose parts for each remaining vertical support.
23. Use previous steps to measure and cut square tube for the support. Subtract length for the square-to-round tube bracket.

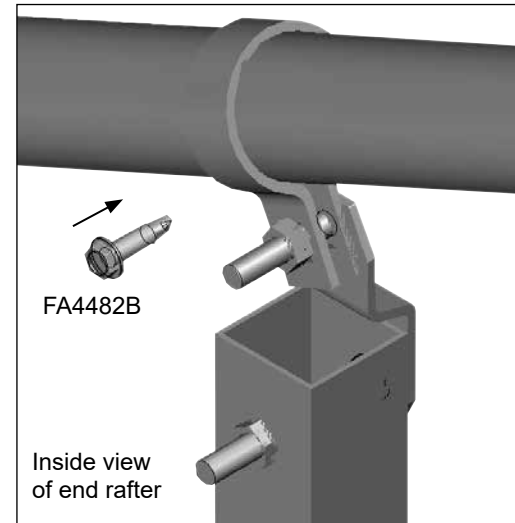
Install End Wall Frame

INSTALL END WALL FRAME — CONTINUED

24. Repeat steps to attach square-to-round tube bracket to support tube.
25. Place square tube fitting on bottom of support. Align center with center mark on base rail. Attach top to band clamp. Do not tighten.
26. Verify that frame tube is plumb and use FA4482B screws to secure 104624 tube fitting to base rail.



27. Tighten top band clamp and *install a Tek screw through clamp and into back of rafter.*

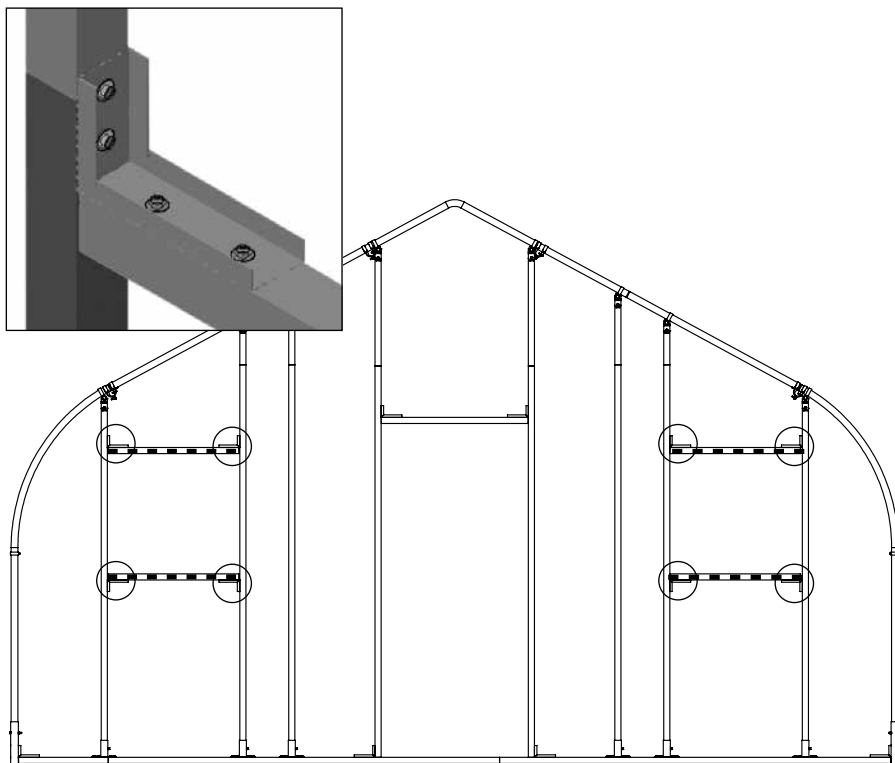


28. Repeat procedures as needed to assemble and install all remaining vertical supports.
29. Return to each band clamp, 104624 fitting, and pipe splice and verify a Tek screw is installed in each location. Install a Tek screw if needed.
30. Repeat steps as needed to install end framing for remaining end of greenhouse frame.
31. Continue with procedures on next pages.

INSTALL FRAMING FOR ACCESSORIES (OPTIONAL)

Complete these steps to install accessory framing:

1. Read note regarding installation of optional accessories near beginning of end wall installation section.
2. Based on installation requirements and precautions of the accessory, choose a location in the end wall where you can mount the accessory.
3. Cut two (2) 1.5" x 1.5" frame tubes to required length.
4. Attach these horizontal frame tubes between the vertical frame tubes using QH1330 brackets. See below.



ATTENTION: Dashed lines show where additional frame tubes are installed. If you are not installing any accessories, the accessory framing is not needed.

Install End Wall Cladding

END PANEL INSTALLATION

After end frames are assembled, install polycarbonate panels. Steps that follow describe one way to complete panel installation.

Materials and parts needed to install end panels include:

- Polycarbonate panels, DH8007 foil tape & 104774 vent tape
- Aluminum U-channel (104213) & 104548 End Cap
- Aluminum 8' H-channel (113236Z096)
- Tek screws (FA4484B) & Neo-bonded, galvanized washers (102921B)

Read the following information before starting:

- U-channel (104213) used to finish bottom of some polycarbonate panels.
- Aluminum 8' H-channel used to join two (2) separate polycarbonate panels at seam.
- FA4484B Tek screws and 102921B galvanized washers used to secure aluminum channel and panels to frame.
- Install polycarbonate panels with UV-protected side toward the sun. Mark side with a marker or piece of tape if needed after removing protective film.

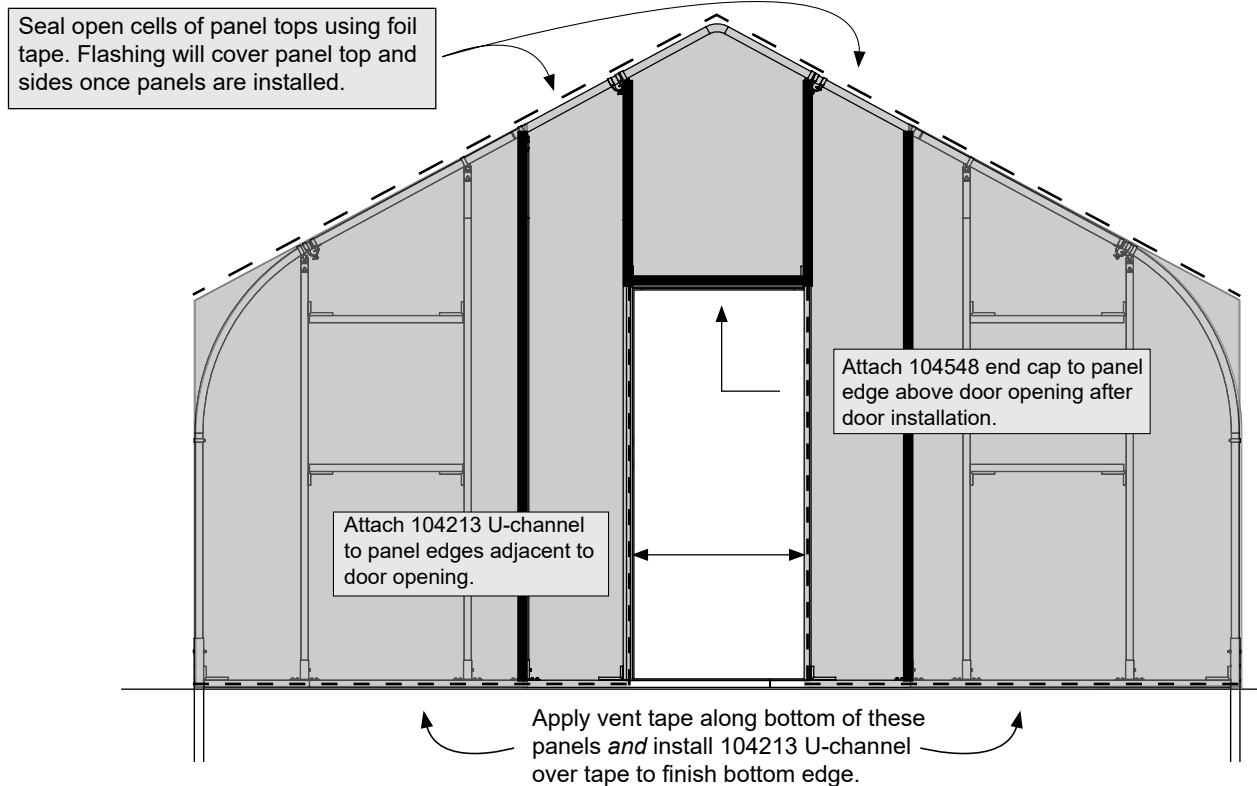
ATTENTION: Remove protective film from panels. *Allowing film to remain intact and in direct sunlight will make it difficult if not impossible to remove.*

- During preparation, rest panel edges on cardboard or other material to protect them from dirt and damage.
- Seal bottom edge of panels with vent tape.
- Consult polycarbonate panels (Quick Start section) for location and dimensions of each panel. Diagrams are located near back of these instructions.

ATTENTION: Position panels as shown on diagrams. Using a panel in the incorrect place can affect placement of subsequent panels.

INSTALLING ACCESSORIES

Install all accessories (fans, vents, heaters, etc.) after installing all polycarbonate sheets.



Install End Wall Cladding

TYPICAL PANEL PREPARATION

ATTENTION: Complete the following steps as directed after cutting panels to size. In some instances, this is before panel is attached to frame; in other instances, this is after panel is attached to frame. Procedure depends on panel location.

1. All End Panels: Remove protective film from each panel before installation. Identify and mark UV-protected side using a piece of tape or similar non-permanent means. **Always install UV-protected side toward the sun.**

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

2. Seal bottom of lower panels using 104774 vent tape. (Applies to panel edges that attach to end frame base tube only.)
3. After installing panels in lower positions, install 104213 U-channel over vent taped bottom ends of panels.
4. Apply foil tape (DE8007) to seal top of all panels along end rafter. See dashed line in diagram on previous page. This panel edge is ultimately covered with flashing when it is installed.



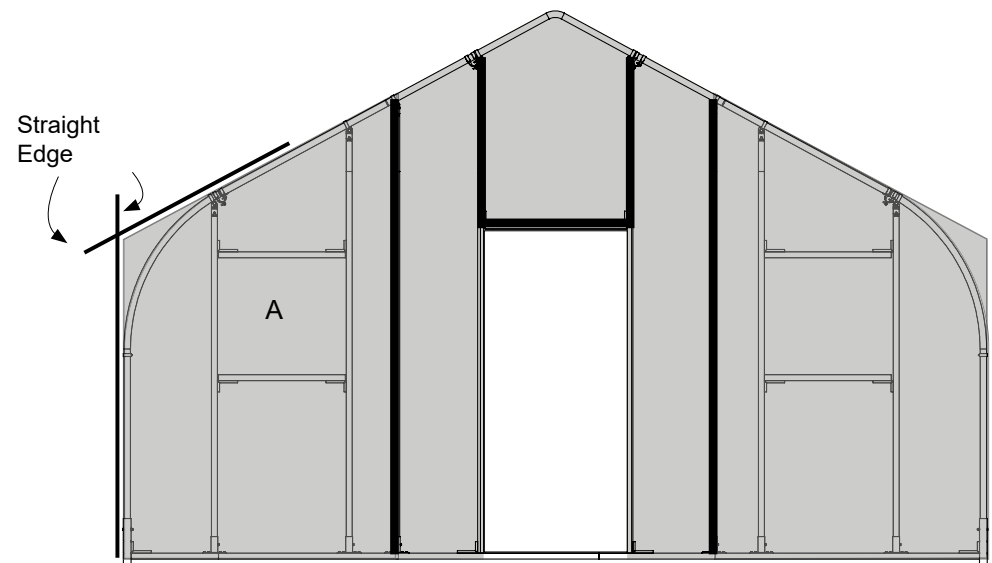
CUT PANELS TO LENGTH

For upper panels (above door opening) it is best to rough cut panel length on the ground, then fit panel to end frame in its location and mark height using end rafter as a guide.

To cut end panel (A) at rafter radius, temporarily attach panel to end wall and use two straight edges to determine where sidewall and roof lines meet. Mark this intersection on the panel, remove panel and cut to shape.

WARNING: DO NOT CUT PANEL TO FOLLOW RAFTER RADIUS! ROOF PANELS DO NOT BEND AROUND RADIUS WHEN INSTALLED. REVIEW ROOF AND SIDEWALL PANEL INSTALLATION GUIDE #2 FOR ADDITIONAL DETAILS.

After panels are installed and cut to fit, then apply foil tape to seal the open cells at top as described above. Flashing is installed after panel installation is complete.



Install End Wall Cladding

Complete the following general steps to install end panels.

1. Consult panel location diagrams and select a panel. Example shows installing panel next to the door first. See A in diagram at right for first panel.
2. Measure frame opening that panel will cover to determine panel size and cut panel as needed. *Panel above door: Measure width to center of each frame member.*

ATTENTION: Remove protective film, mark UV-protected side with piece of tape, and apply vent tape to panel bottom.

3. Take 113236Z096 aluminum H-channel and cut to needed length if needed. For panel above door, cut a piece for each edge.

NOTE: Review panel layout diagram in Quick Start section to best understand where to install the different aluminum profiles. When attaching any aluminum profile, remember to account for areas where different sections of profile (U-channel, end cap, and H-channel) intersect so you cut profile to proper length.

Determine how you want these profiles to intersect and install as needed to achieve the desired, uniform, and finished look.

4. Space FA4484B Tek screws **evenly at 16" on-center** when securing panels. **DO NOT USE WASHERS WHEN SECURING H-CHANNEL TO END FRAME.**

ATTENTION: Install 104213 U-channel on bottom of outer panels prior to installation.

Use diagram (lower right) when attaching panels and H-channel to frame. Install H-channel with flat side out as shown. No washer is needed for H-channel installation. Use washer for panel installation only as shown in photo.



Use an FA4484B Tek screw and washer to secure panel to end wall frame. Do not crush panel when installing screws.

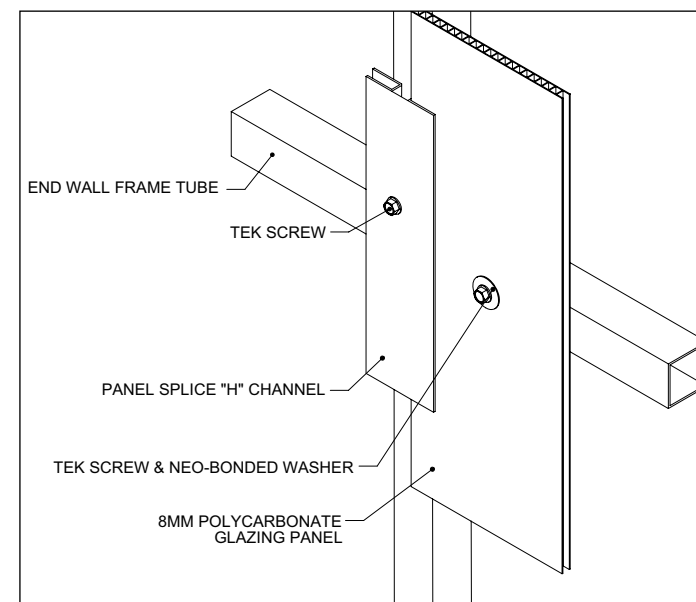
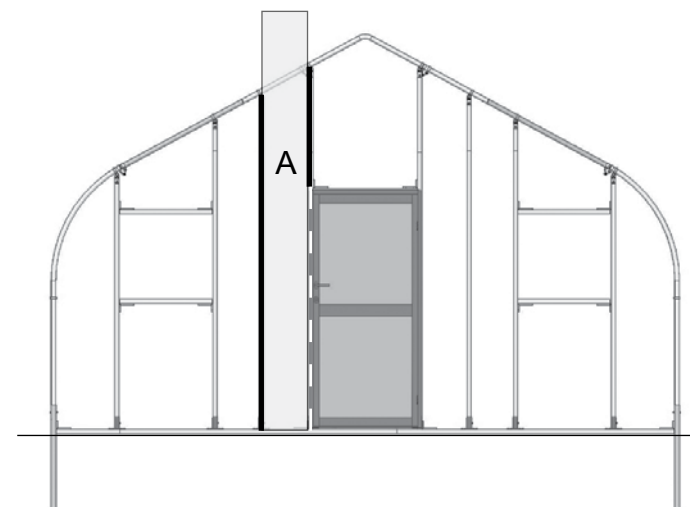


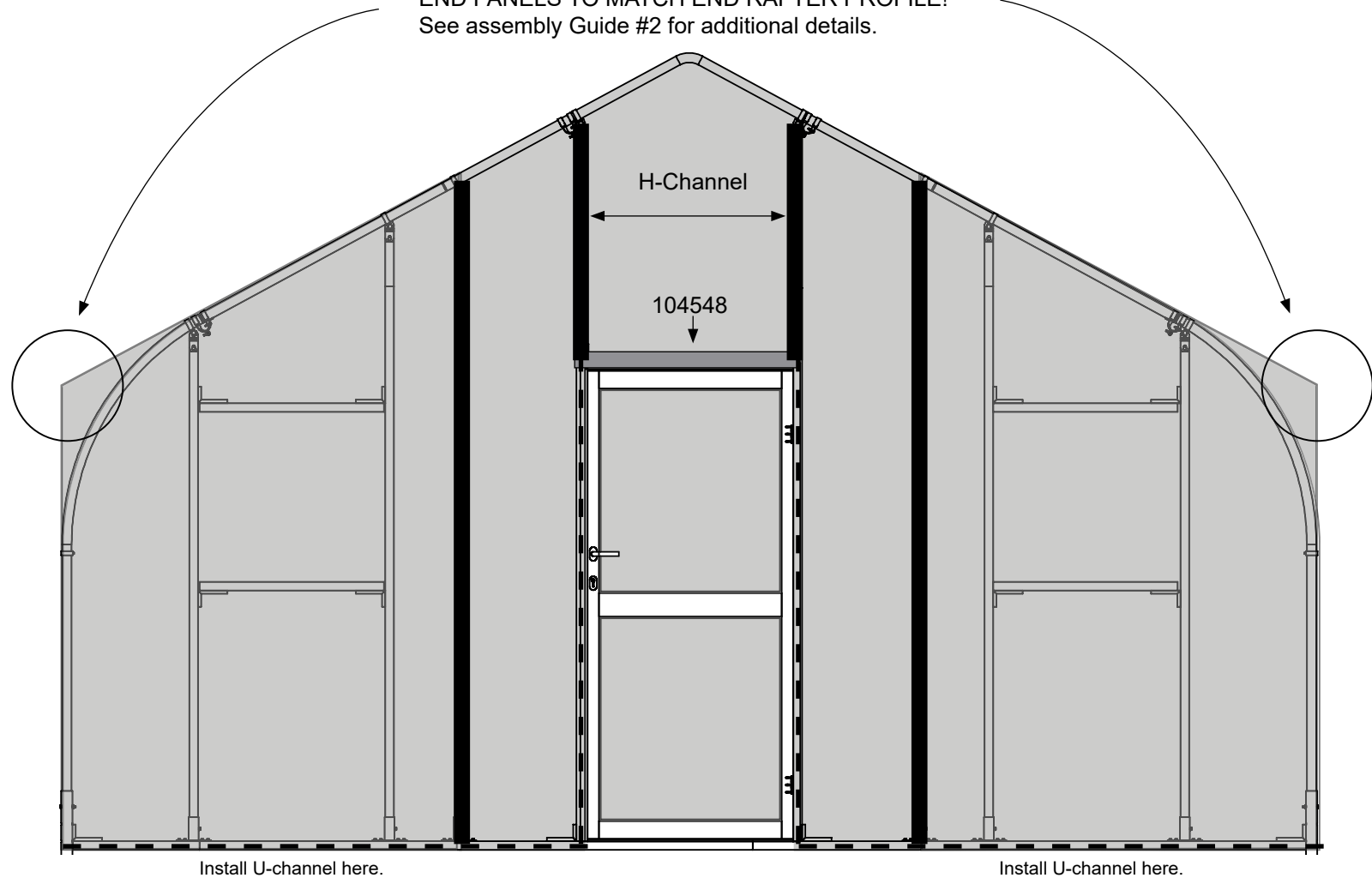
Diagram shows basic panel installation and fasteners used to secure polycarbonate panels.

Install End Wall Cladding

END PANEL INSTALLATION (continued)

1. Continue installing panels and aluminum profile in locations shown on end panel diagrams (Quick Start section) for front and back end walls. End wall with door shown below.

ATTENTION: Remember to cut outer end panels to match roof and sidewall panel profile. **DO NOT CUT END PANELS TO MATCH END RAFTER PROFILE!** See assembly Guide #2 for additional details.



ATTENTION: Install 104213 U-channel along panel edges shown above (dashed line). Panel edges adjacent to door are capped with 104213 U-channel and then tucked behind door channel when possible. Bottom edge of panel above door is capped with 104548 end cap.

2. After installing all end panels, continue with **Guide #2**.

Shelter Care & Maintenance

SHELTER CARE AND MAINTENANCE

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

- Regularly check to ensure cover cladding is tight and in proper repair. Tighten and adjust film (if equipped) tension as needed to prevent damage and wear.
- Check connections and all fasteners to verify they remain tight and in good condition.
- Check polycarbonate panels (if equipped) to verify these are secure and in good repair. Verify that nothing is touching panels that may cause damage.
- Do not climb or stand on greenhouse at anytime.
- Frequently inspect anti-billow ropes (if equipped) and replace worn or broken ropes immediately.
- Remove debris and objects that accumulate on greenhouse. Use tools that will not damage cover when removing debris.
- Remove snow to prevent excess accumulation. Use tools that will not damage cover when removing snow.
- Check contents of shelter to verify nothing is touching cover that could cause damage.
- If shelter is dismantled and moved, inspect all parts and connections before using. Do not reassemble using the same Tek screw mounting holes. **Drive screws in new positions.**
- Depending on contents, construction of shelter, shelter materials, and shelter location, the potential for condensation exists. GrowSpan™ offers several items to alleviate a condensation condition. Please contact a GrowSpan™ representative for additional information.
- For replacement or missing parts, call customer service for assistance.



Customer Notes

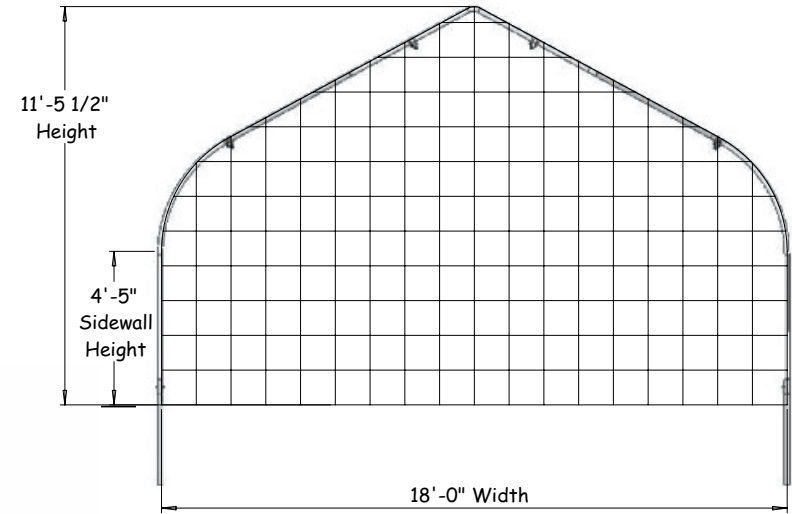
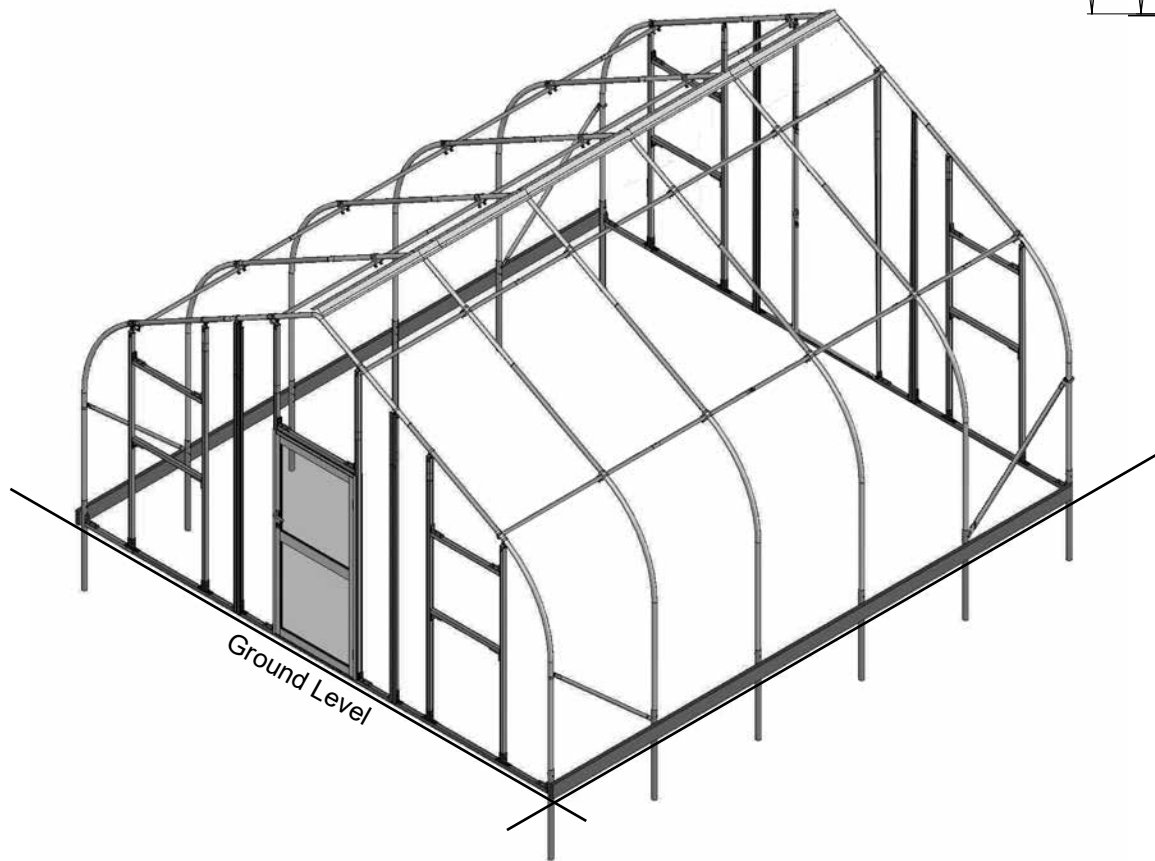


Quick Start Guide



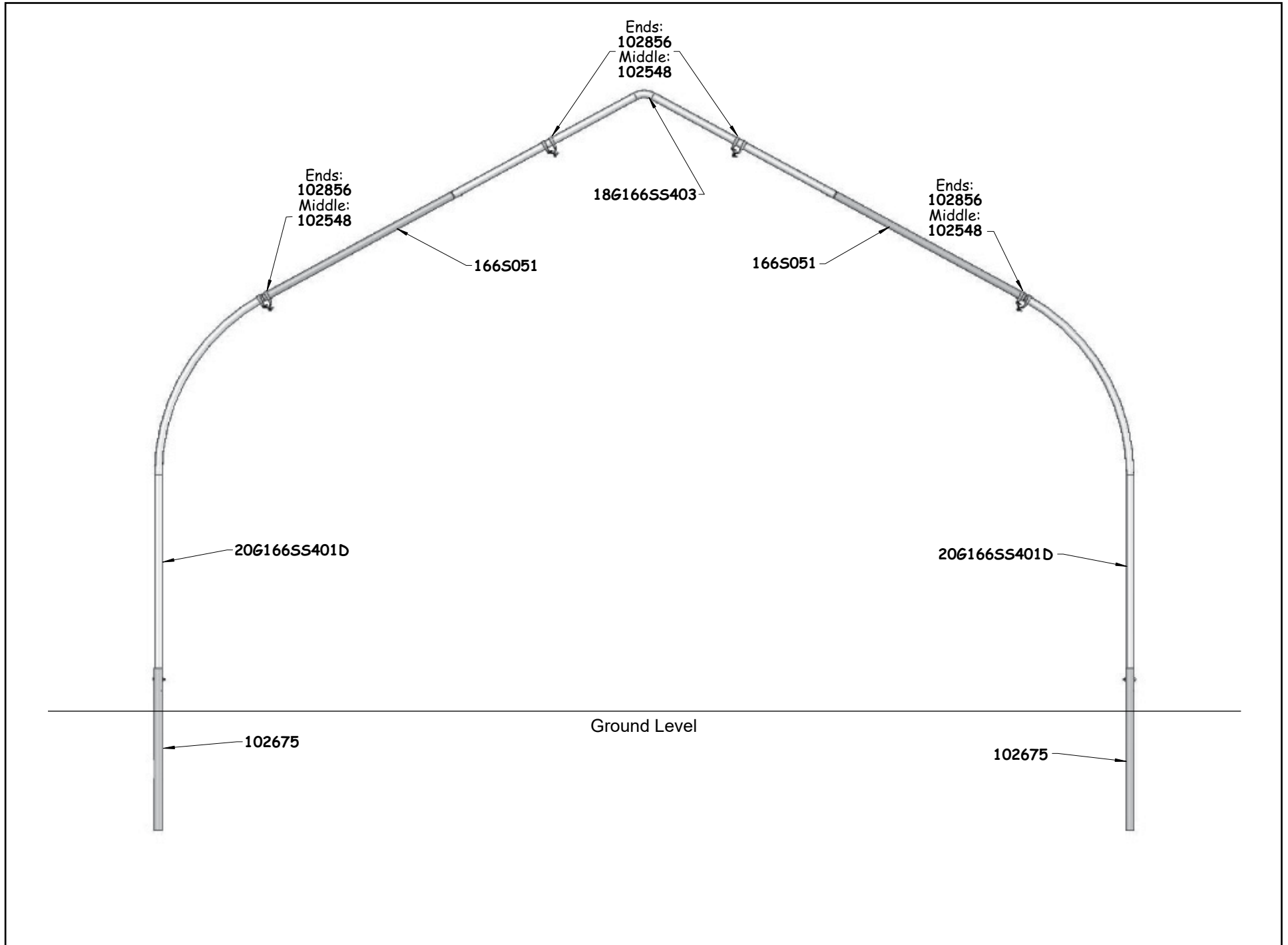
QUICK START GUIDE

18" Wide Gothic Premium Greenhouse

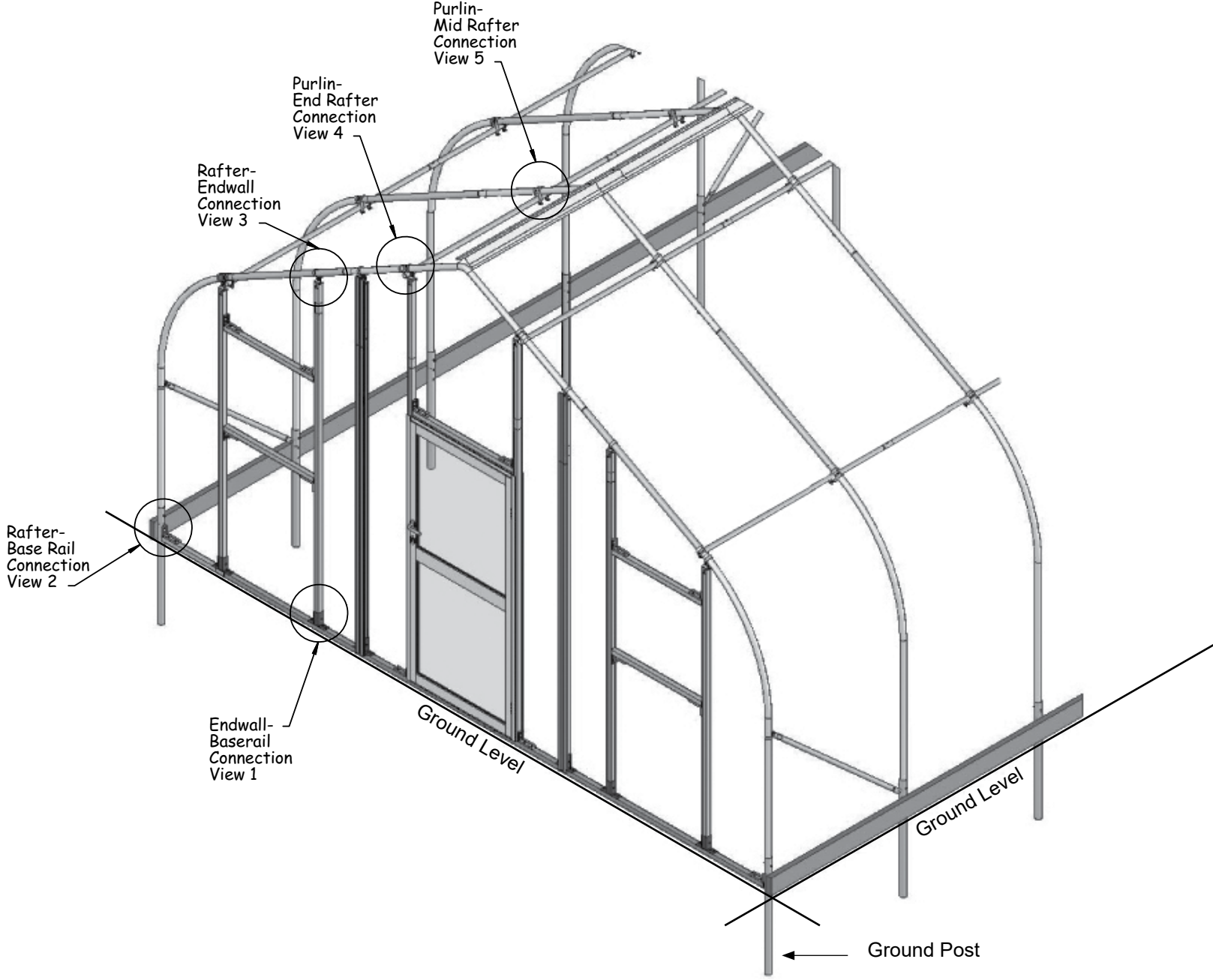


FRONT
Grid Represents 12" Squares

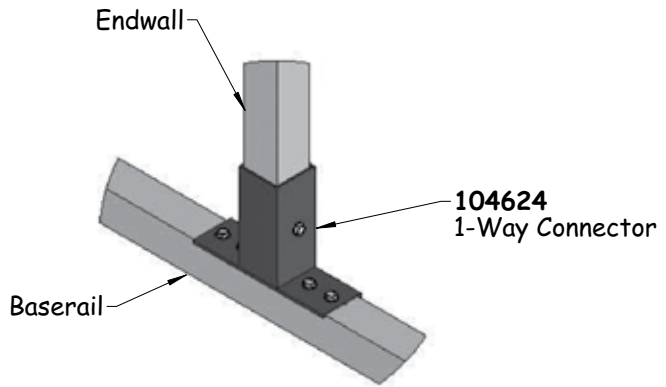
Front Profile



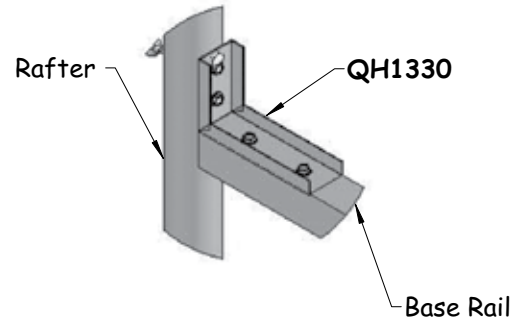
Connections



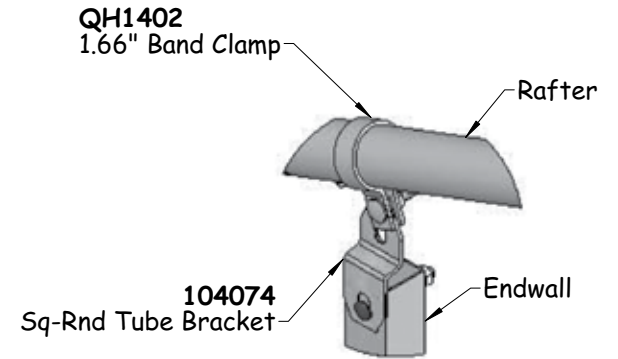
Connection - Frame Details



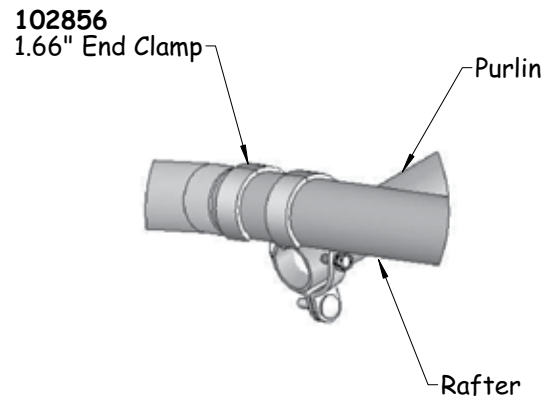
View 1
Endwall- Baserail
Connection



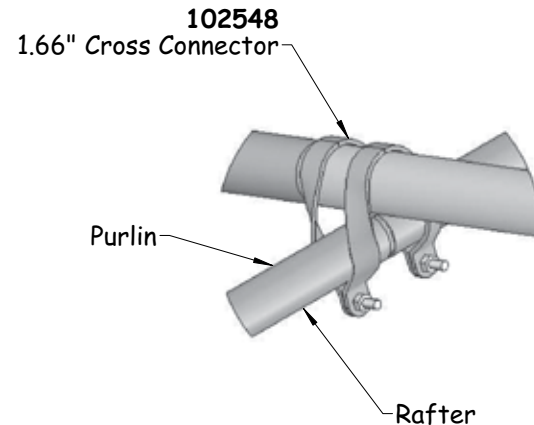
View 2
Rafter- Base Rail
Connection



View 3
Rafter- Endwall
Connection

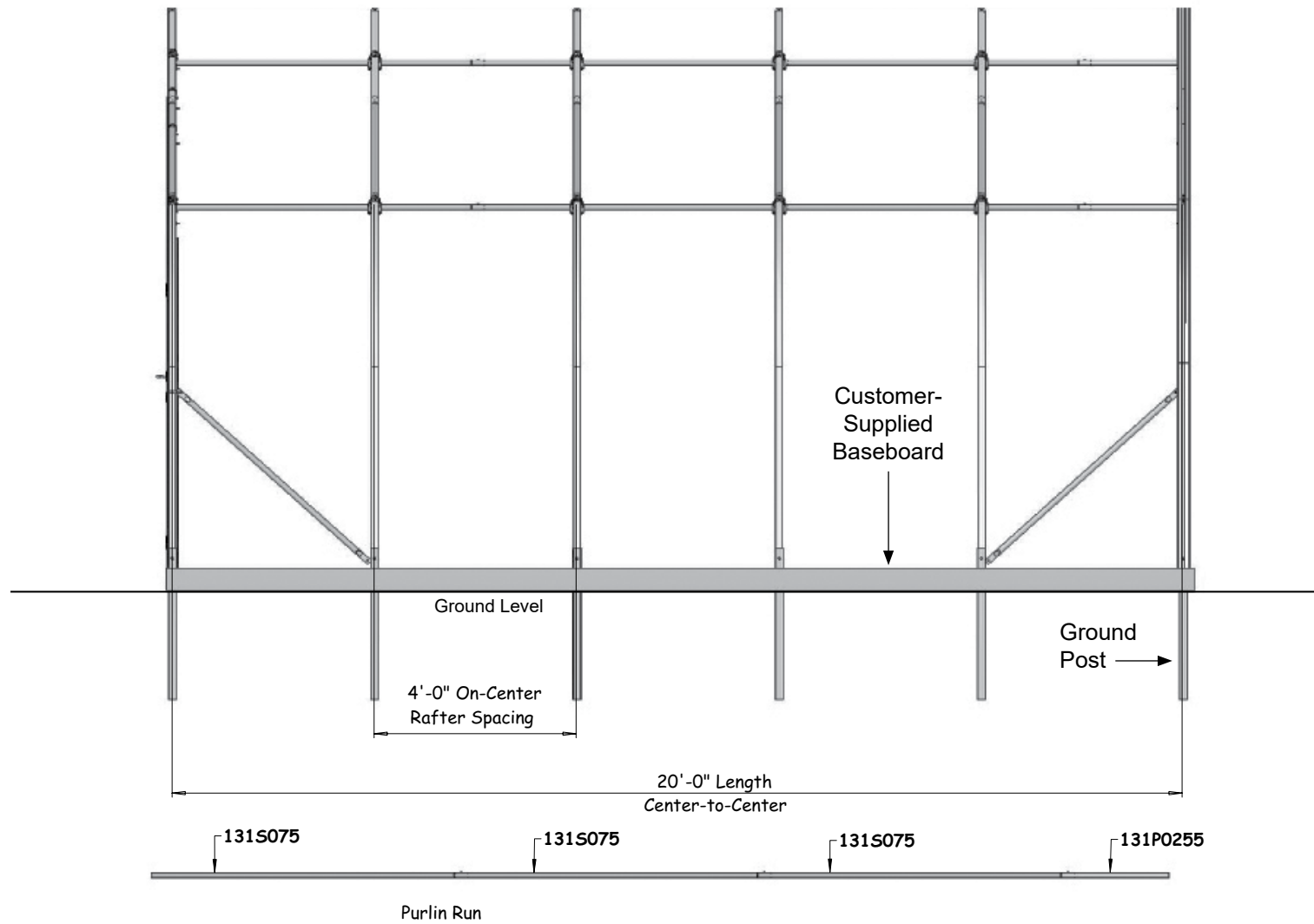


View 4
Purlin- End Rafter
Connection



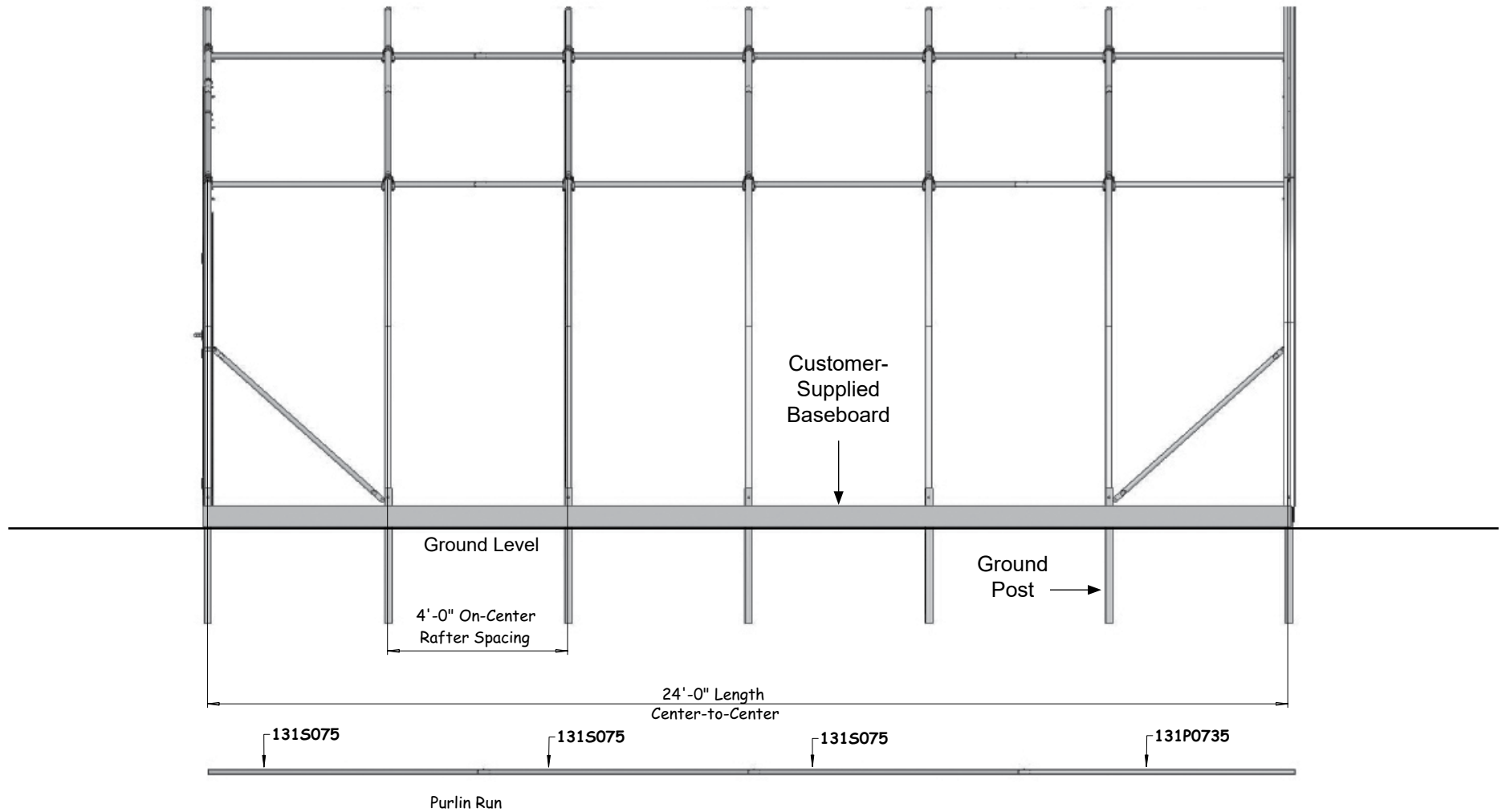
View 5
Purlin - Mid Rafter
Connection

Side Profile - 106213



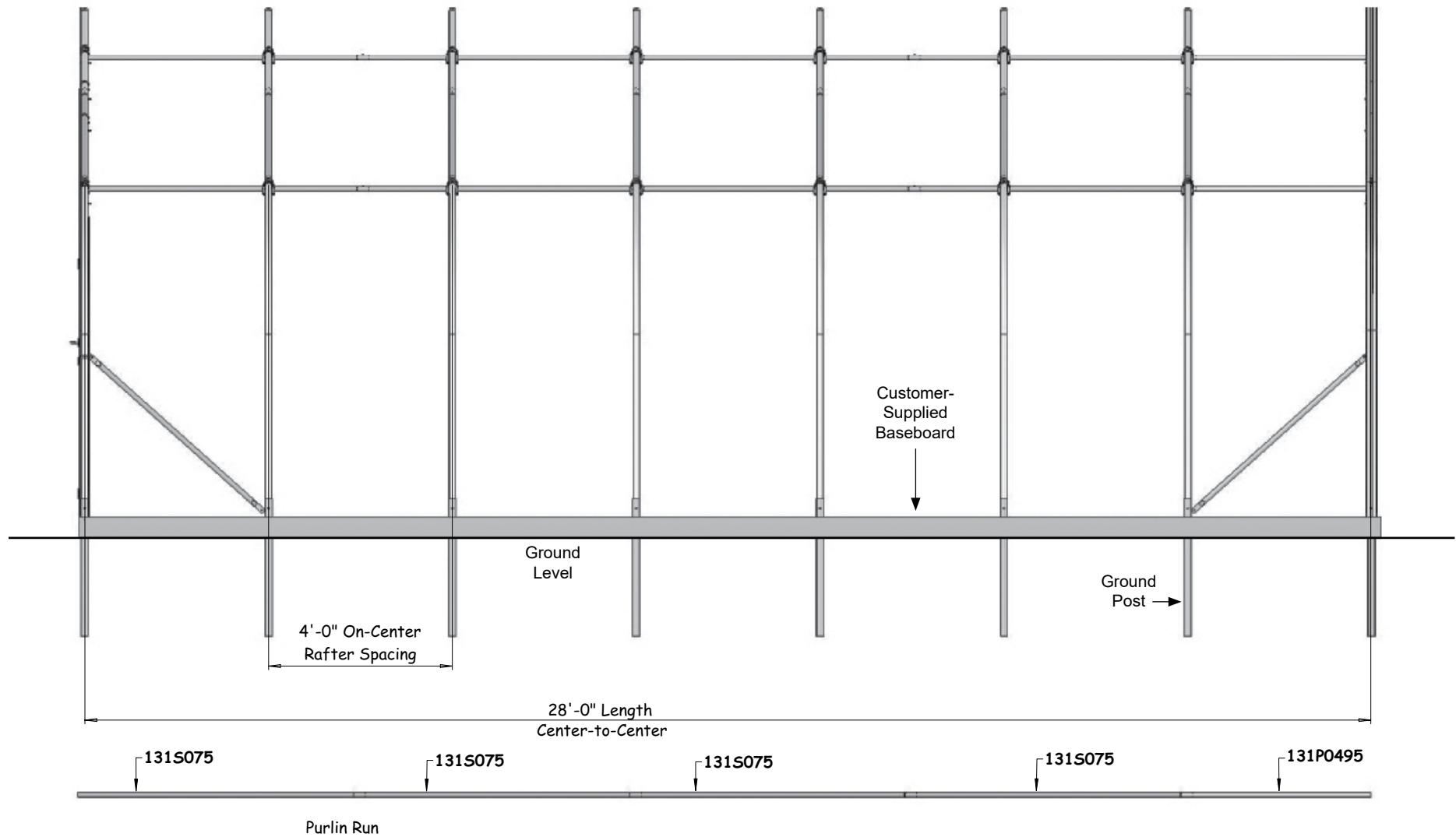
ATTENTION: Baseboard is strongly recommended. Install after installing all polycarbonate panels. **See Guide #2.**

Side Profile - 106214



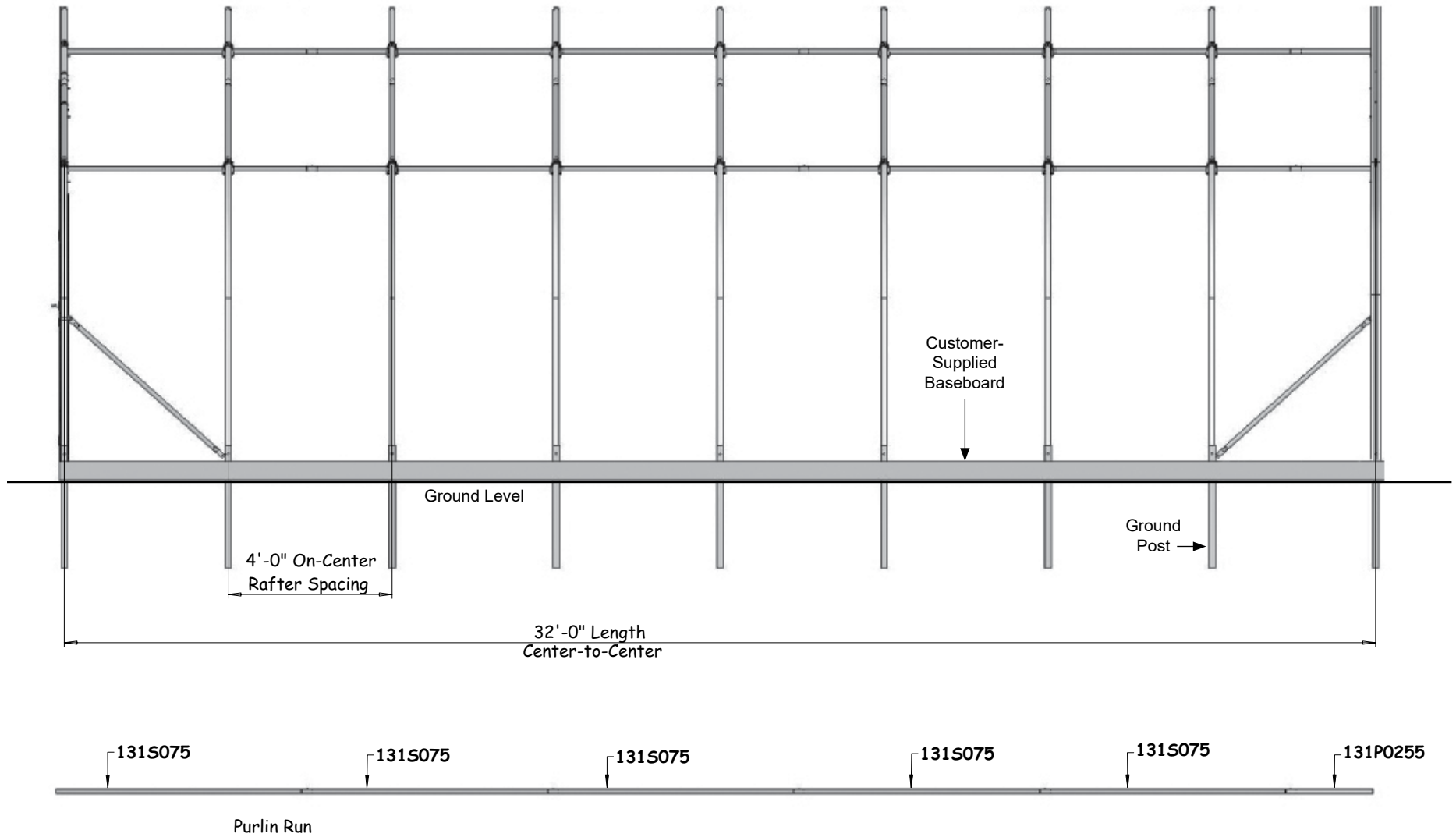
ATTENTION: Baseboard is strongly recommended. Install after installing all polycarbonate panels. **See Guide #2.**

Side Profile - 106215



ATTENTION: Baseboard is strongly recommended. Install after installing all polycarbonate panels. **See Guide #2.**

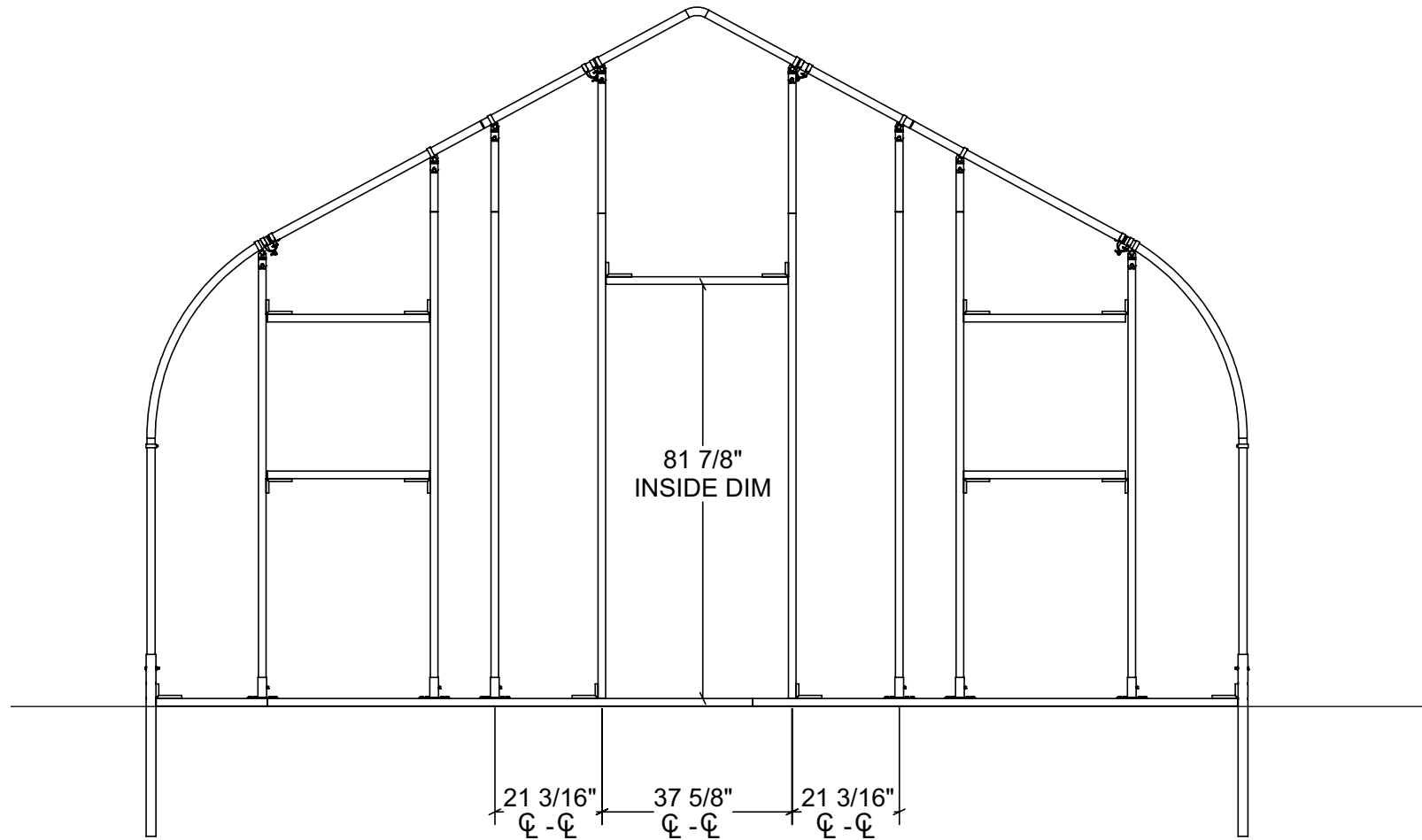
Side Profile - 106216



ATTENTION: Baseboard is strongly recommended. Install after installing all polycarbonate panels. **See Guide #2.**

Front End Frame Diagram

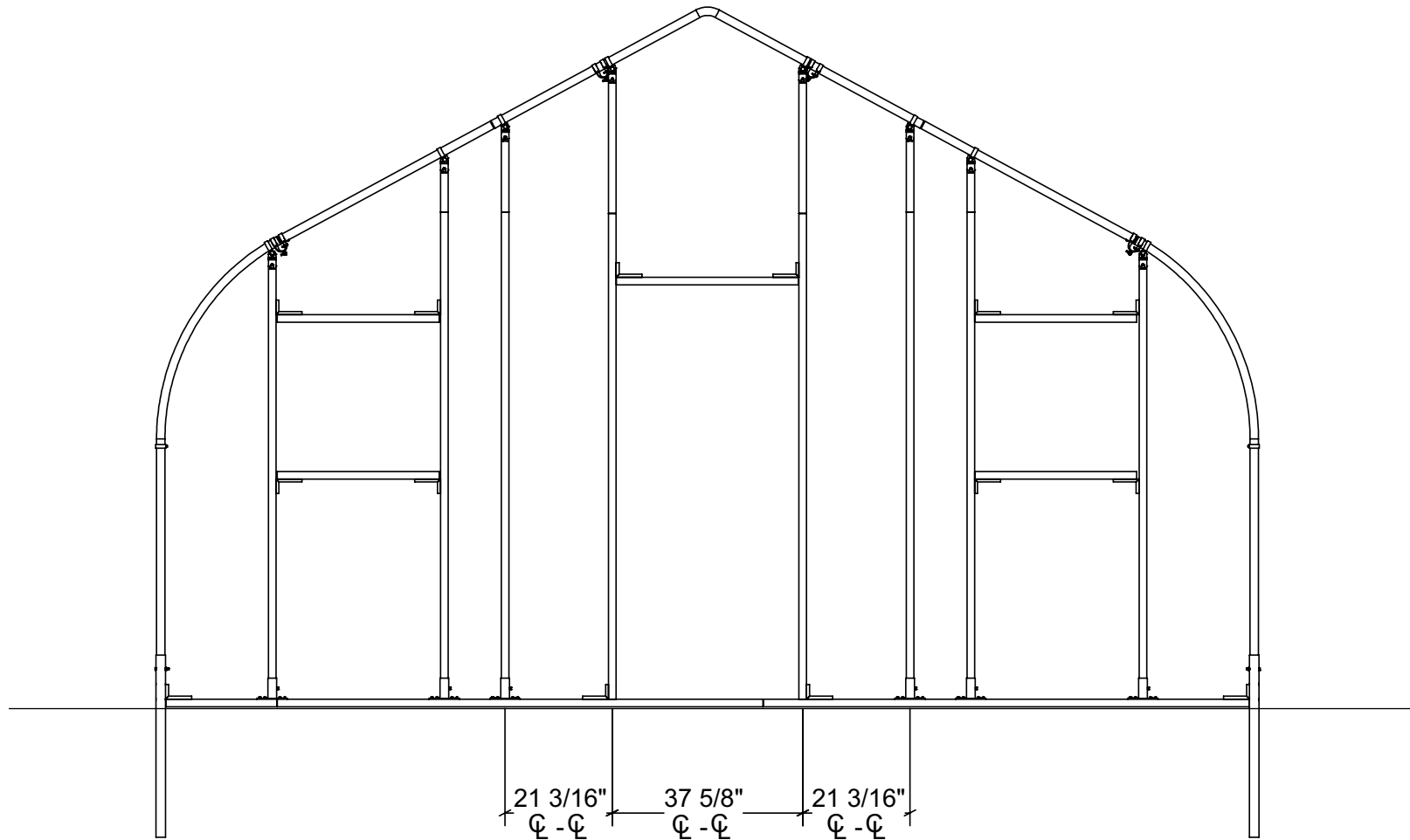
ATTENTION: Measure door that shipped with the greenhouse and frame end wall rough door opening based on those dimensions.



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.

Back End Frame Diagram



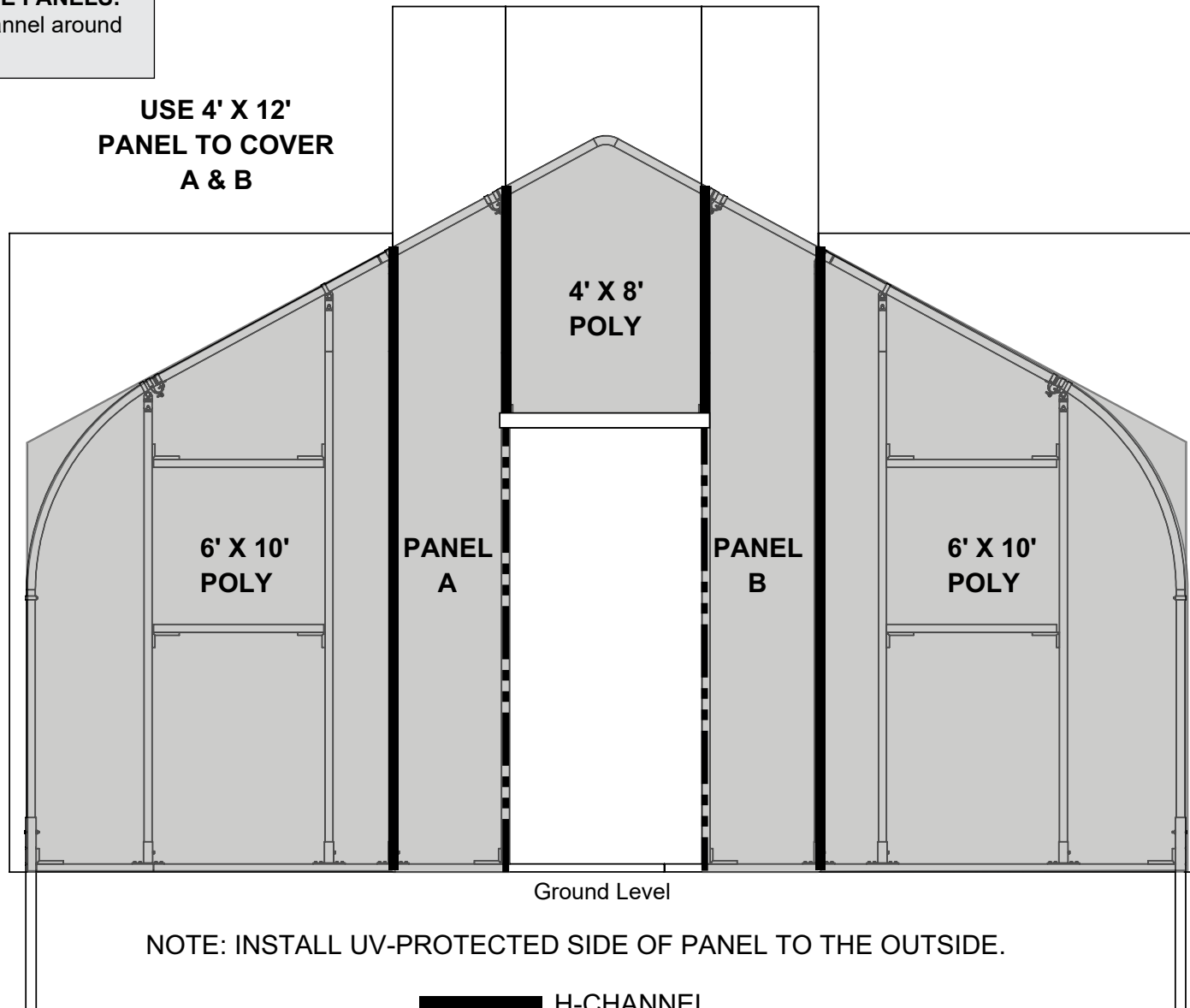
NOTE: COLUMNS NOT DIMENSIONED HAVE A NON-CRITICAL PLACEMENT AND ARE USED FOR POLYCARBONATE SUPPORT.

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

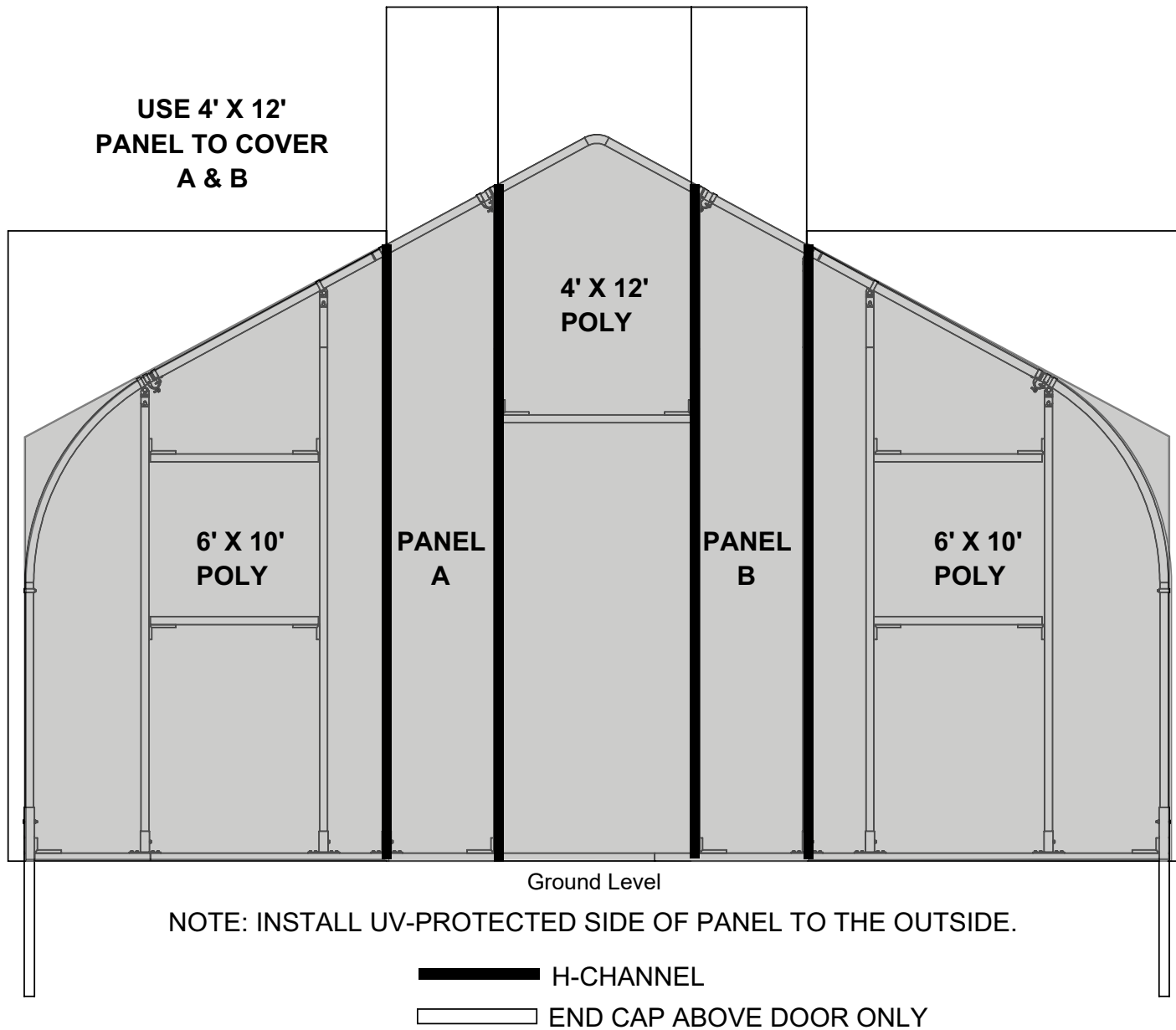
End Wall: Panel Layout with Door

POLYCARBONATE PANELS:

Use 104213 U-channel around door opening.



End Wall: Panel Layout without Door

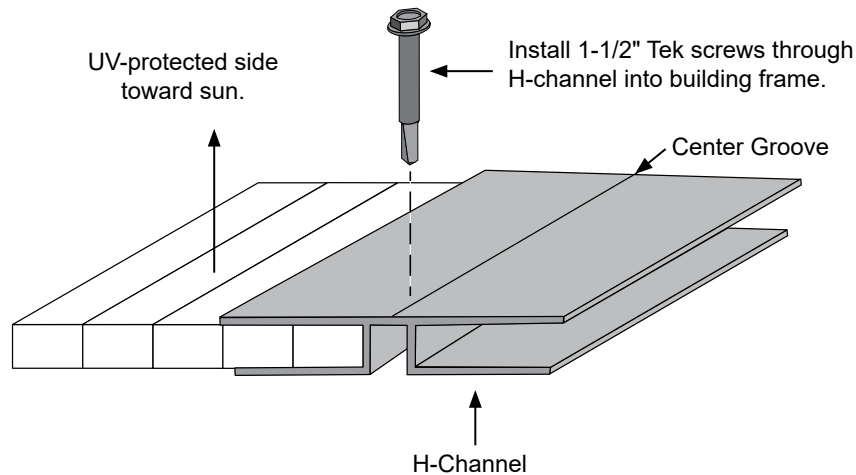
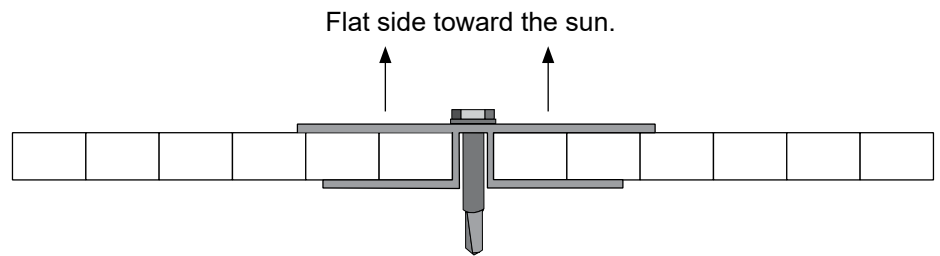
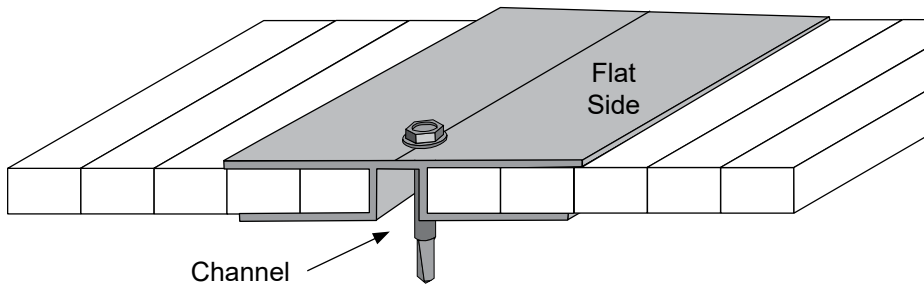


H-Channel Installation Instructions

The new H-channel design requires installation of the flat side facing out with channel side toward building frame. Some diagrams and photos in this document 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 H-channel.**



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

Customer Notes

