



ClearSpan™ End Panel Installation Guide



Photos show end panel examples. Lower photo shows an installed panel as seen from the inside.

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

STK#

107909

End Panel Installation Guide

Revision date: 11.14.14



READ THIS DOCUMENT BEFORE YOU BEGIN!

Thank you for purchasing this ClearSpan™ end panel. This guide includes helpful hints and important information needed to safely attach and properly maintain the end panel and installation kit components. Please read these instructions **before** you begin.

If you have any questions during the assembly, contact customer service for assistance.

SAFETY PRECAUTIONS

- Wear eye protection.
- Wear head protection.
- Wear gloves when handling metal tubes (if equipped).
- Use a portable GFCI (Ground Fault Circuit Interrupter) when working with power tools and cords.
- Do not climb on the end wall or shelter frame during or after construction.
- Do not occupy the shelter during high winds, tornadoes, or hurricanes.
- Never attempt to install an end panel during windy or stormy conditions.
- Anchor the main shelter frame *before* installing an end panel.
- Do not store hazardous materials in the shelter after installing end panels.
- Provide proper ingress and egress to prevent entrapment.

⚠ WARNING: The individuals assembling this end frame 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

The steps below describe attaching a typical end panel to a typical end frame of a ClearSpan™ building. Verify that all parts are included in the shipment. Notify customer service for questions or concerns.

ATTENTION: The frame and end panels shown throughout this guide may differ from your frame and end panel. *It is the responsibility of the owner/installer to adapt these steps as needed to attach the actual end panel.*

Depending on the end frame, some components contained in the installation kit may not apply to your end wall frame.

Read these instructions and additional documentation (if any) included with the shipment **before** you begin.

1. Gather the tools, bracing, ladders (and lifts), and assistance needed to reach the top of the end wall to install the panel.
2. Check the weather **before** you install the end panel. *Do not install the end panel on a windy or stormy day.*
3. Attach the end panel to the end frame.
4. Read the care and maintenance information.
5. Complete and return all warranty information as instructed (if included with the shipment).

REQUIRED TOOLS

The following list identifies the main tools needed to attach the end panel. *Additional tools and supports may be needed depending on the structure, location, and end panel size and design.*

- Tape measure or measuring device
- Variable speed drill and impact driver (cordless with extra batteries works best)
- Metal file and metal-cutting saw
- Scissors or utility knife to cut strap (if included in kit)
- Hammers, gloves and eye protection
- Ladders, work platforms, and other machinery for lifting designed to work safely at the height of the building and end wall.

ATTENTION: Consult the services of a qualified, professional contractor if you are not familiar with the installation of similar covers and end panels.

UNPACK AND IDENTIFY PARTS

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

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 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 and washers (if present).

Custom End Panels

The procedures presented in this guide describe attaching a typical end panel to a typical end frame of a ClearSpan™ building. If you are attaching a custom panel or a typical panel to an end frame that differs from what is shown, some steps may not apply.

It is the responsibility of the owner/contractor to review the steps in this guide and to adapt the procedures as needed to account for differences.

If you have questions, consult the services of a qualified, professional contractor familiar with the installation of similar covers and panels.

END FRAME: Final Check

Before you attach the end panel, inspect the end frame for sharp edges or fasteners that could damage the panel.

1. Verify that all end frame members are properly secured.
2. Verify that all bolts and clamps are tight.
3. Recheck the end frame assembly for sharp edges or clamps and bolts that may interfere with the installation of the end panel. File or tape sharp edges as needed.
4. Reposition clamps and bolts as needed and tape all rafter pipe joints with duct tape to protect the panel.
5. Verify that the main building frame is properly and adequately anchored.

ATTENTION: DO NOT ATTACH AN END PANEL TO AN UNANCHORED FRAME.

6. Remove the ratchets that secure the bonnet portion of the main cover at each end of the original shelter. (This step may not apply to all applications.) See Page 15 for additional ratchet information.
7. Continue by attaching the end panel.

Installation Kit Components and Typical End Panels

The design and size of end panel determines which components are included in each installation kit. For the purpose of this installation guide, the following conditions apply:

- End panels (20', 26', and some 30' wide) are secured to end rafter and end frame using Tek screws, washers, and fabric clips. These are the components typically included with the installation kits for these end panels. *No 1" strapping or ratchets are typically included.*

EXCEPTION: In some instances for a 30' wide end panel, PVC or metal conduit pipe or both are included in the kit as well as ratchets and 1" strapping.

Consult Panel A and Panel B on Page 5 to view typical end panel designs.

- End panels that are 30' wide or wider typically include D-rings along the upper radius and are secured to the end rafter using 1" strap. Tek screws, washers, PVC and/or metal conduit, and additional 1" strap are included. *No fabric clips are included.*

EXCEPTION: In some instances, a 30' wide panel may be designed without D-rings. In those cases, fabric clips are included with the installation kit for that panel.

Consult Panel B and Panel C on Pages 5-6 to view typical end panel designs.

- For end panel widths not indicated above and for customer end panels, the installation kits may include a combination of all components mentioned above to adequately secure the panel to the end frame.
- This guide *does not* address the installation of custom end panels or the installation of a typical end panel on an atypical building frame or end frame. The customer can, however, review the information and steps presented in this guide to determine the best and safest way to attach an end panel of a similar design.

Always consult the services of a qualified and experienced contractor if you are not familiar with the installation of similar covers panels.



The parts shown below are contained in a typical end panel installation kit. The width and height of the end wall and the end panel design determines the components of the typical end panel installation kit.

Consult the bill of materials that shipped with your end panel installation kit to identify which components are included.



FAMF01B Washers (all kits)



CC6213 and CC6214 Fabric Clips (for end panels without D-rings)



LJ7510 Duct Tape (all kits)

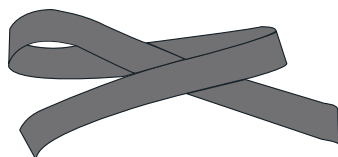


100441 Driver (all kits)



FA4482B Tek Screws (all kits)

ATTENTION: Installation kits for end panels with D-rings attached to the upper edge also include the parts shown in this column. PVC conduit and 1.315" pipe components (not shown) are also included in some kits.



103620 1" Strap (typically shipped in a roll)



QH1061 Ratchet

Depending on availability, the parts shipped with the installation kit may differ from the parts shown. Consult the bill of materials to verify that the shipment is complete.

SHELTER CARE AND MAINTENANCE

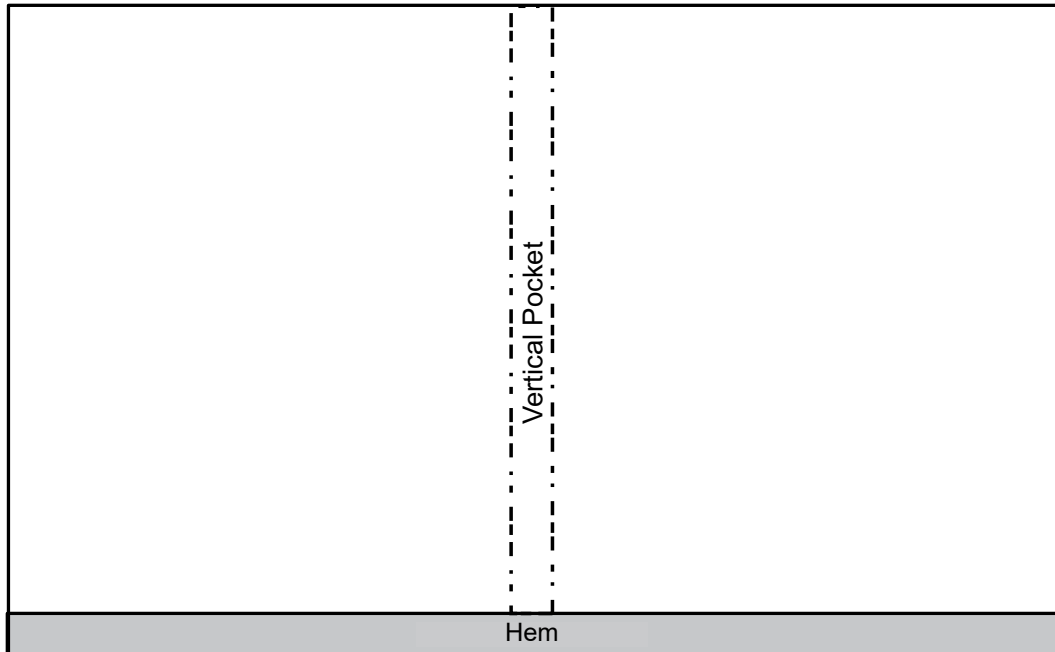
Proper care and maintenance of your ClearSpan™ shelter and its components is important. Check the following items periodically to properly and adequately maintain your building:

- Regularly check the main cover and panels (if equipped) to see that these remain tight and in proper repair.
- Check the cable turnbuckles and cable clamps to see that these remain tight (if equipped). Tighten as needed.
- Check the cable (if equipped) to verify that it is not worn or wearing on a frame member.
- Frequently check the anchoring system and all components. Replace worn or damaged parts immediately.
- Check all fasteners frequently to verify that these remain tight and in good repair.
- Do not climb or stand on the building or frame at anytime.
- Remove debris and objects that may accumulate on the shelter. Use tools that will not damage the cover when removing debris.
- Remove snow to prevent excess accumulation. Use tools that will not damage the cover when removing snow. *Never allow snow to accumulate on the main cover or to remain against the sides or end panels after it is removed from the main cover.*
- Check the contents of the shelter to verify that nothing is touching the cover or panels (if equipped) that could cause damage.
- Replace all worn or damaged parts.
- For replacement or missing parts, call 1-800-245-9881 for assistance.

NOTE: With the exception of Truss Arch buildings, ClearSpan™ shelters and greenhouses do not have any tested loading criteria.

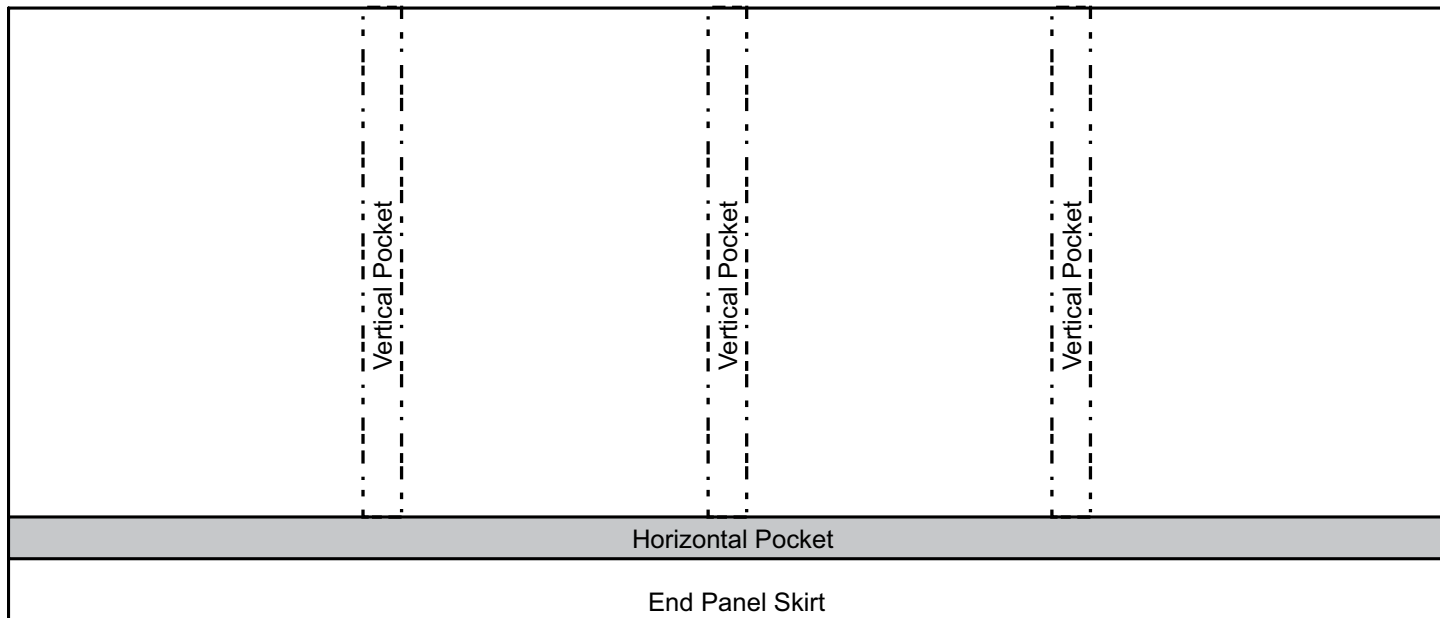
Typical End Panel Designs

PANEL A



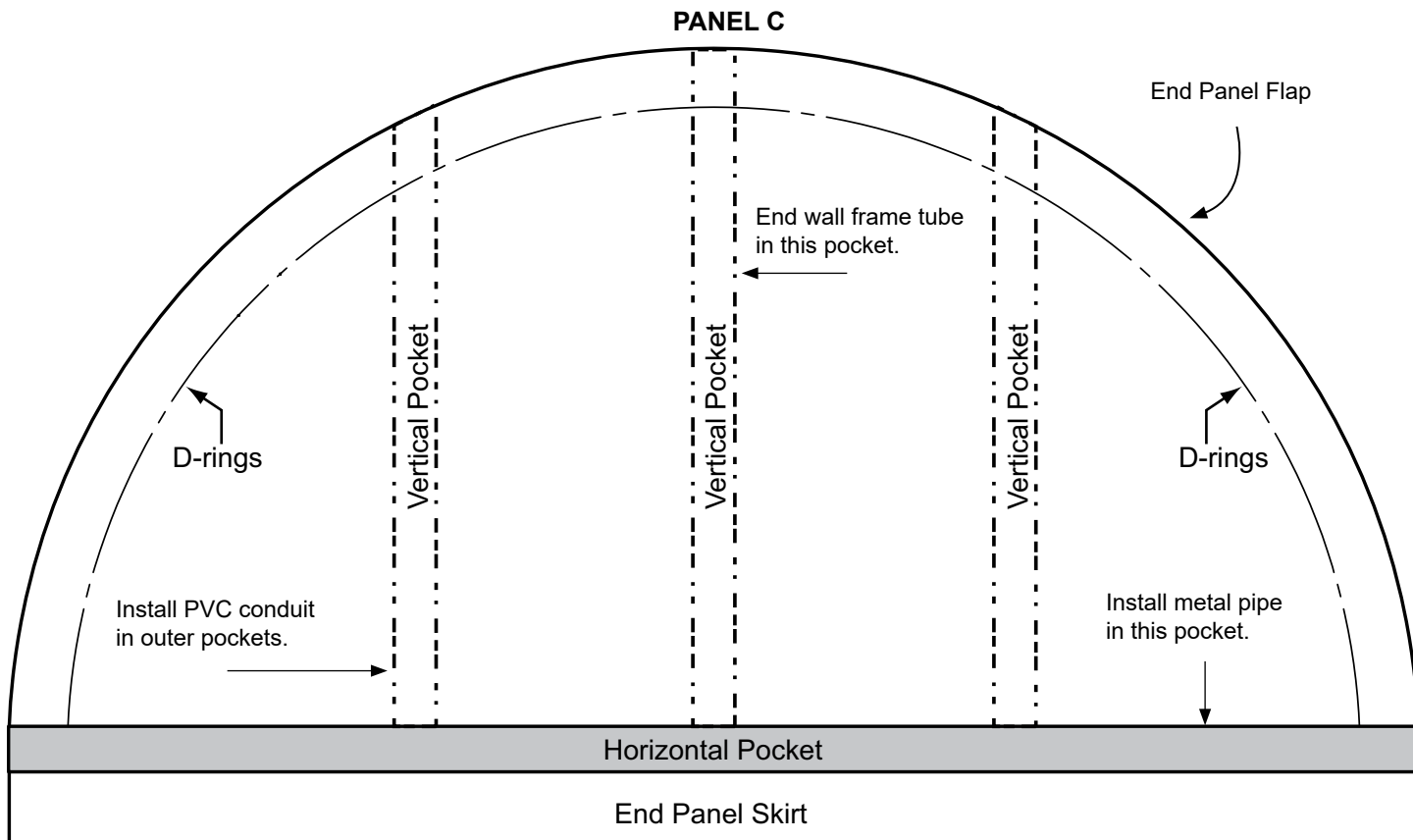
PANEL A (No D-Rings): This end panel is typically shipped as a rectangle. After installation, excess panel material can be trimmed for appearance if desired. For some end walls, the center end frame member is installed inside the vertical end panel pocket to secure end panel to end frame. For other applications, vertical pocket material is cut, wrapped around end wall frame members, and secured to metal tubes using Tek screws and washers. Consult the services of a professional contractor to determine the best way to secure your end panel to the end frame. May not apply to custom end panels or to your end frame. Panels of this design are typically attached to the end rafter using fabric clips and Tek screws.

PANEL B



PANEL B (No D-Rings): Like Panel A, this end panel is typically shipped as a rectangle. Metal pipe is assembled and inserted into the horizontal pocket while PVC conduit is inserted into the vertical pockets. The metal conduit is secured to the end frame using 1" strap and QH1061 ratchets. The PVC conduit is secured to the end frame using 1" strap threaded between the PVC conduit and around an end frame member. (May not apply to custom end panels or to your end frame.) Consult the services of a professional contractor to determine the best way to secure your end panel to the end frame. Panels of this design are typically attached to the end rafter using fabric clips and Tek screws. The panel skirt—below lower pocket—can be buried, remain loose, or it can be secured to the end wall. Secure each metal pipe splice using a Tek screw. Wrap the Tek screw and splice with a few layers of duct tape.

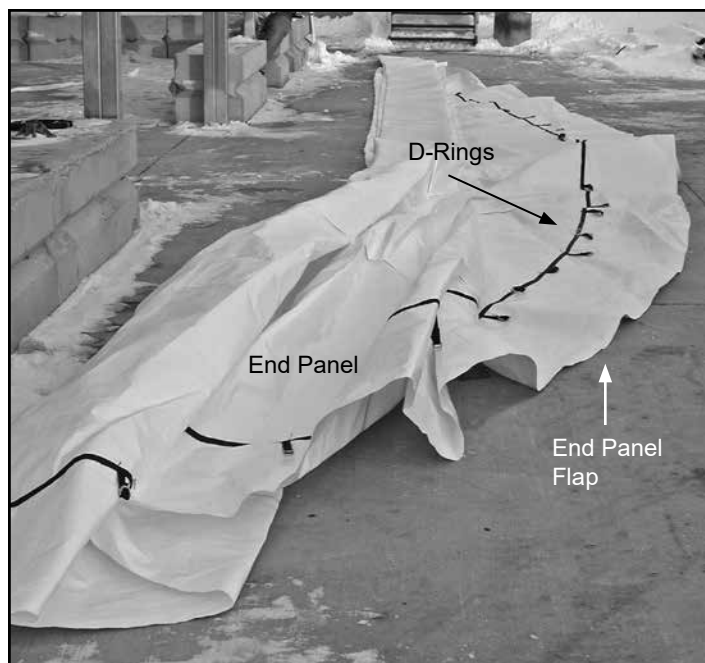
Typical End Panel Designs (continued)



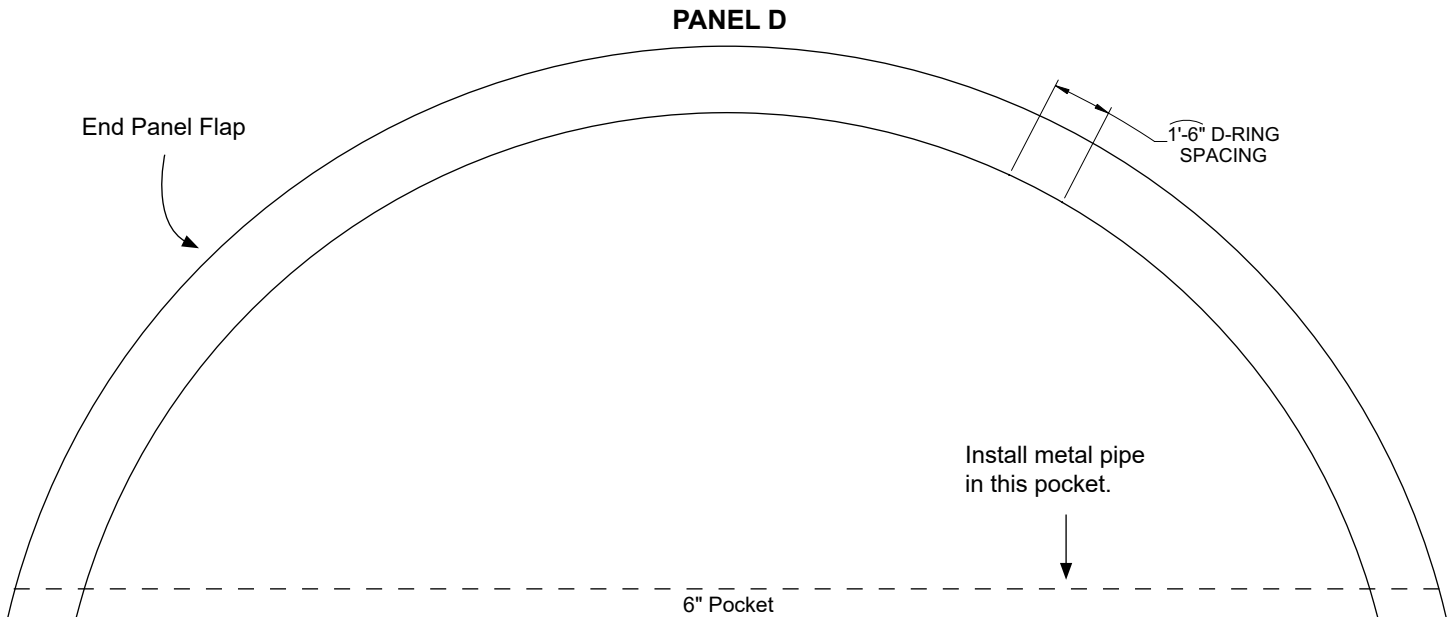
PANEL C (D-Rings): Panel C panels include evenly-spaced D-rings attached to the radius along the top edge. This end panel is typically shipped as shown above. Like Panel B panels, metal pipe is assembled and inserted into the horizontal pocket while PVC conduit is inserted into the vertical pockets. The metal conduit assembly is secured to the end frame using 1" strap and QH1061 ratchets. The PVC conduit is secured to the end frame using 1" strap threaded between the PVC conduit and around an end frame member. (May not apply to custom end panels or to your end frame.) Consult the services of a professional contractor to determine the best way to secure your end panel to the end frame.

Panels of this design are typically attached to the end wall using 1" strap threaded through the D-rings and around the rafter. The panel skirt can remain loose, be buried, or it can be secured to the end wall as desired. For typical applications, the upper flap of the end panel is pulled between the end rafter and the main cover. It is then secured to the end rafter using a few Tek screws and washers to keep it in place. The 1" strap is also secured at each end to keep it in place.

Secure each metal pipe splice using a Tek screw. Wrap the Tek screw and splice with a few layers of duct tape to protect the panel.



Typical End Panel Designs (continued)



PANEL D (No vertical pockets): For a panel of this style, metal pipe is assembled and inserted into the horizontal pocket. The metal conduit is secured to the end frame or pony wall using 1" strap and QH1061 ratchets. (May not apply to custom end panels or to your end frame.) Consult the services of a professional contractor to determine the best way to secure your end panel to the end frame. Panels of this design are typically attached to the end wall using 1" strap threaded through the D-rings and around the rafter. For typical applications, the upper flap of the end panel is pulled between the end rafter and the main cover. It is then secured to the backside of the end rafter using a few Tek screws and washers to keep it in place. The 1" strap is also secured at each end to keep it in place.

Secure each metal pipe splice using a Tek screw. Wrap the Tek screw and splice with a few layers of duct tape to protect the panel.

TYPICAL END PANEL INSTALLATION (No D-Rings)

The following procedure describes attaching an end panel (without D-rings) to the base rail using Tek screws and washers (FAMF01B) installed from the outside. This is one suggested installation method; consult a contractor for additional methods for your end frame and panel if needed. Some steps may not apply to your (or a custom) end panel.

If your end panel *includes attached D-rings* (Panel C on Page 6), continue with the steps on Page 9.

If your end panel *does not include* D-rings attached to the upper edge, continued with the steps on the next page.

SPECIAL NOTE: It may be necessary to remove the ratchets used to secure the main cover bonnet at the ends of the building *before* installing the end panel. Main cover bonnet ratchets are reinstalled once the end panel is attached.

End panel and frame shown in the diagrams on the next page differ in design and size. The steps to install the basic end panel are the same despite these obvious differences.

CLEARSPAN™ END PANEL INSTALLATION

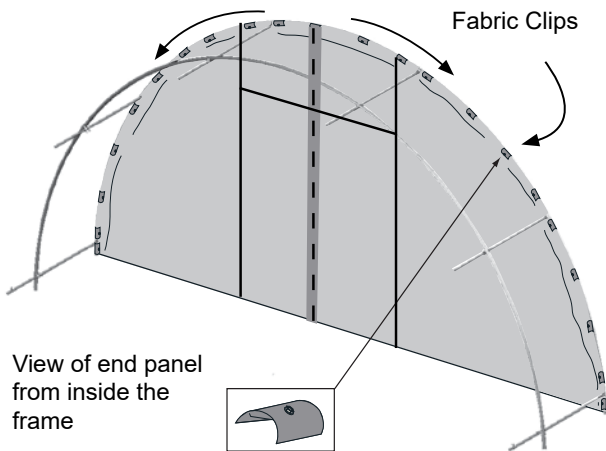
Required parts include:

- End panel and fabric clips
- FA4482B Tek screws
- FAMF01B Washers

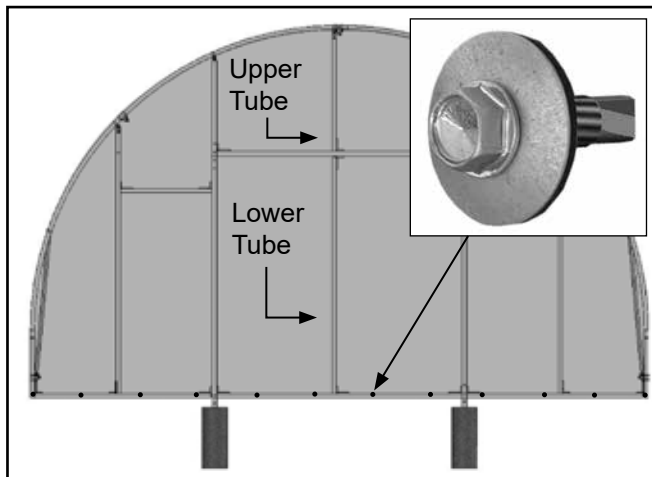
⚠ DO NOT ATTEMPT TO PULL THE END PANEL INTO POSITION ON WINDY OR STORMY DAYS!

Complete these steps to install a typical end panel:

1. Spread the end panel out on the ground (pocket side up) and center the end panel as needed.
2. With the proper lift positioned inside the frame and with assistance, pull the end panel up and over the top of the end rafter. Square end panel on end frame. Verify that the bottom edge is in line with the base rail.



3. Loosely secure top edge of panel to backside of end rafter using a few fabric clips. Clips temporarily hold end panel in place while securing the lower edge to the base rail. Do not stretch panel tight at this time. In most cases, clips will hold without installing Tek screws.
4. Move to the panel bottom outside the frame. Stretch and secure the lower panel edge to the base rail using Tek screws and washers. Space fasteners evenly along the base rail at 12" to 16" intervals. *Verify screw and washer counts before you begin.*



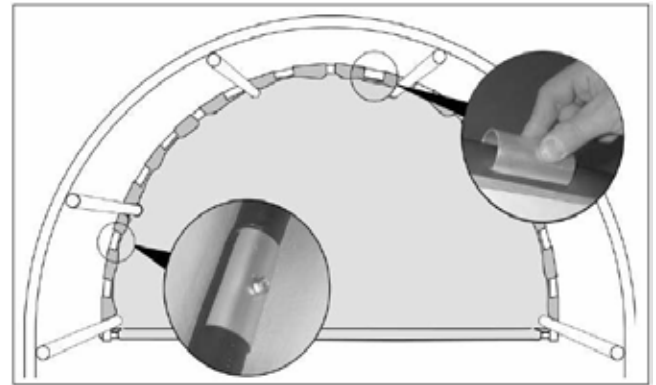
5. If equipped, remove the center end frame verticals of the end wall frame and slide pipe into center pocket of end panel. **Skip to Step 7 if end panel does not include a center vertical pocket.**
6. Reattach frame members to end wall frame. *May not apply to your frame or end panel.*

ATTENTION: DO NOT REMOVE END FRAME TUBES IF THESE ARE SUPPORTING WEIGHT!

In the diagram (left), shaded area (center) represents the center pocket of a typical end panel. Vertical dashed line indicates location of end frame members as installed inside end panel pocket.

NOTE: Trim pocket material as needed to reattach frame members to end rafter, header, and base rail. **DO NOT REINSTALL END FRAME LOWER TUBE IF YOU ARE INSTALLING AN OVERHEAD DOOR.**

7. With assistance, remove fabric clips (Step 3) and stretch end panel up and over end rafter.



8. Count fabric clips and evenly space these to secure panel to backside of end rafter using Tek screws. *Keep panel evenly and tightly stretched as you go.*
9. Install doors if equipped. See Page 13. (Additional door purchase required.)

If you are not installing a door, reattach the bonnet ratchets of the main cover and tighten the main cover. See the procedure on Page 15.

END PANEL INSTALLATION (D-Rings)

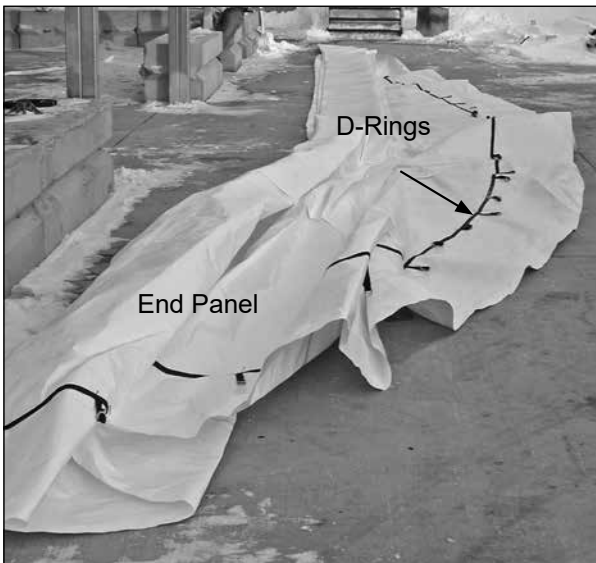
The following procedure describes installing an end panel that includes D-rings (Panel C & D on Pages 6 & 7) and vertical (Panel C) and horizontal pockets heat sealed to the inside surface of the panel.

Required parts include:

- End panel
- 131S075 pipe (kit)
- LJ2842 PVC pipe (depends on kit)
- QH1061 ratchets & 103620 1" strap (kit)
- Washers and FA4482B Tek screws (kit)

⚠ DO NOT ATTEMPT TO PULL THE END PANEL INTO POSITION ON WINDY OR STORMY DAYS!

1. Position panel flat on ground with long edge against bottom end wall frame member and pockets facing up. (Pockets and D-rings should be visible when panel is positioned properly.)
2. Locate D-rings near top edge of panel and tie a section of strapping (or customer-supplied rope) to the center-most D-ring. Tie two additional straps on each side of center D-ring, allowing a few feet to remain between.

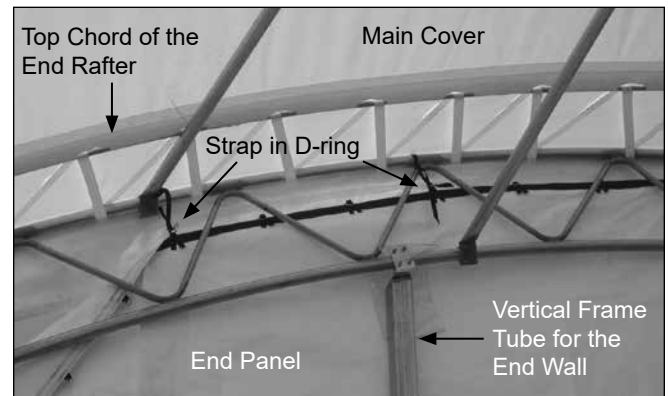


3. Next, pull end panel up to end rafter. Secure panel to rafter using small sections of strap. *Keep panel centered.*



NOTE: Pull top edge of end panel toward rafter. *End panel skirt must remain on the ground after top edge of panel is secured to rafter.*

Determine how much of end panel you want to remain on the ground. Horizontal pocket of end panel will remain above base rail of end wall frame. Adjust panel and strap as needed to achieve desired results.



View (above) is from inside the shelter looking at end panel. Frame and rafter shown are different from your frame. Technique used to secure end panel is the same however. Photo shows installed main cover.

CLEARSPAN™ END PANEL INSTALLATION

END PANEL INSTALLATION (continued)

- Once end panel is temporarily secured, take the roll of 1" strapping and weave end of strap through D-rings and around rafter pipe as shown below. If rafter has an upper and lower chord, attach end panel D-rings to *upper chord* as shown in the photo below.

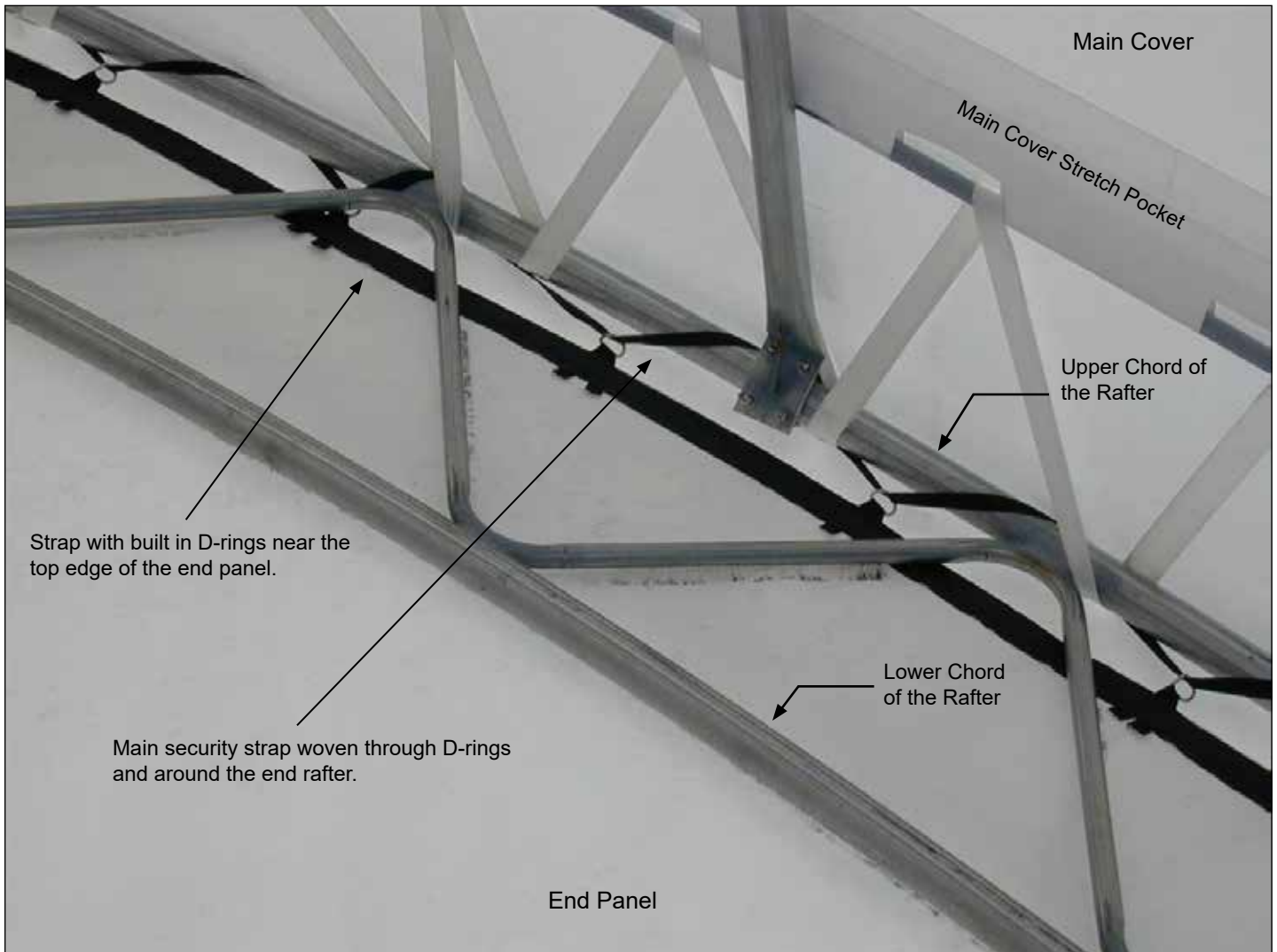


Photo above shows a building with main cover already installed. *View is from inside looking up at rafter and main cover. Rafter design may differ from actual rafter.*

NOTE: Maintain an even space between rafter and top of end panel. *End panel flap* that extends beyond the D-rings is tucked *between the rafter and main cover. DO NOT attach flap to end rafter at this time.*

- Stretch bottom edge of end panel evenly out on the ground along the end wall. Determine how much of the end panel skirt you want to remain on the ground and tighten the D-rings strap.

NOTE: Lower edge of end panel can be attached to end wall base rail (if present), buried, or allowed to remain loose on top of the ground to direct water away from the building.

- With panel in desired position and upper strap adjusted as needed, continue by installing the end panel conduit.

END PANEL INSTALLATION (continued)

End Panel Horizontal Conduit Installation

Panels C & D include vertical, horizontal, or both pocket styles. PVC tubes (vertical) and metal pipe (horizontal) are inserted into these pockets. Conduit is then secured to end wall vertical frame members using straps and to the base rail (if present) using ratchets and straps.

Required Pipe: 1.315" x 75" swaged pipe (#131S075) (kit)

ATTENTION: Pipe is inserted into *horizontal pocket* on inside surface of end panel. *If door is to be installed, remove pipe from between door jambs after stretching the end panel and securing it with ratchets.*

1. Locate the 1.315" pipes and assemble. Cut overall length as needed to fit inside horizontal pocket.

NOTE: As pipes are connected, secure each joint with a Tek screw. Wrap screw and joint using duct tape to protect end panel.

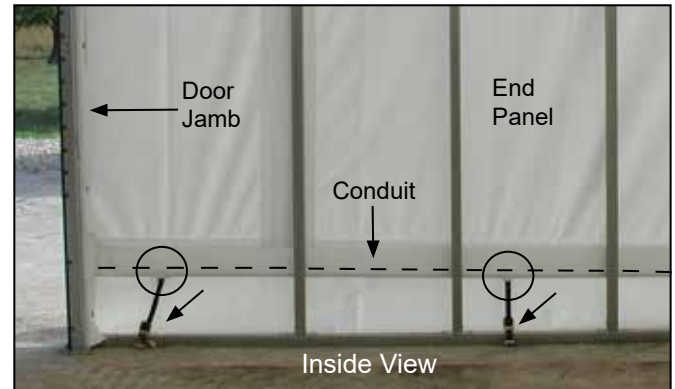
2. Insert assembled conduit into end panel horizontal pocket. End wall and panel shown are used for illustration only. These may differ from actual items in design and size.



3. Take the QH1061 ratchets that shipped with the installation kit and attach these to end wall base rail on the inside surface using FA4482B Tek screws. If no base rail is present, take the necessary steps to attach ratchets to the end wall frame or concrete slab if present. Space ratchets evenly along base rail in locations that will not interfere with installation of doors (if equipped).

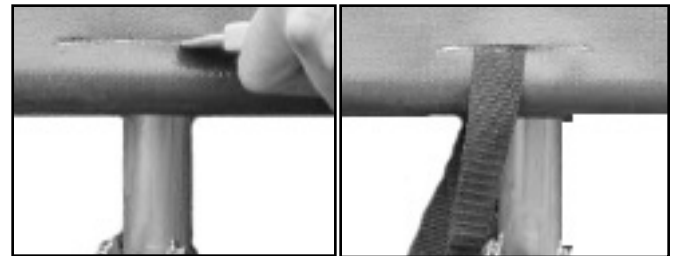
NOTE: For end walls with door openings, attach ratchets in locations that will best secure and stretch the end panel. This may or may not be evenly spaced. See arrows in the next photo.

4. After attaching ratchets, make a horizontal cut (3"– 4") in the horizontal pocket (containing the conduit) directly above each ratchet. See circles in photo below.



⚠ WARNING: Cut only the end panel pocket. *DO NOT* cut through the end panel.

5. Locate the 1" strapping and cut a section that reaches from the ratchet (#QH1061), around the horizontal conduit in the end panel pocket, and back to ratchet.



NOTE: Allow enough extra strap so you can insert both ends of the strap into ratchet.

6. Thread one strap end through the cut, around conduit, and back to ratchet.
 7. Align strap ends and insert both ends into slot in the center hub of ratchet.
 8. Tighten slightly and repeat steps for remaining straps and ratchets.
- ATTENTION:** If strap builds up around ratchet, loosen ratchet, remove excess strap, and retighten.
9. Return to all horizontal conduit ratchets and tighten.
 10. Continue by removing conduit from within the door panel and cutting the door opening from the end panel (Page 13).

NOTE: If you are not installing a door, continue by installing the vertical PVC conduit as described on the next page.

If panel is without vertical pockets and you are not installing a door, continue with Page 15.

CLEARSPAN™ END PANEL INSTALLATION

END PANEL INSTALLATION (continued)

Install Vertical PVC End Panel Conduits (Kit Components)

ATTENTION: DO NOT ATTACH VERTICAL PVC CONDUIT TO THE DOOR FRAME. Doing so may interfere with the installation of some doors.

1. Take PVC conduit from the installation kit and connect the separate conduit sections to achieve the required length. In some instances, a single section of conduit may be long enough. Secure the joint with a Tek screw, wrap connection using duct tape, and slide the assembled conduit into one vertical pocket. Cut to length as needed.

NOTE: PVC glue can be used to secure each PVC joint. PVC glue *is not included*. PVC is flexible enough to feed up from bottom and into end panel pocket.

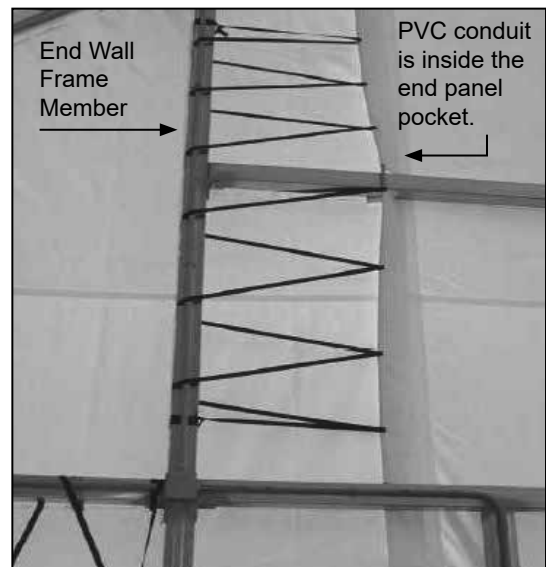
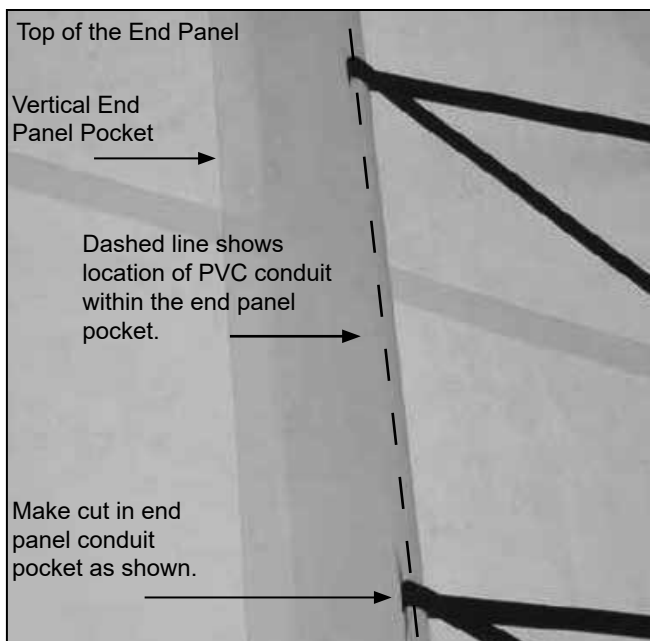
2. At approximately every two (2) feet, make a 2"- 4" vertical cut in the end panel vertical conduit pocket.

ATTENTION: *DO NOT cut end panel*. Cut only the conduit pocket.

3. Beginning at the bottom of conduit pocket, take 1" strap and weave strap through the cut, around PVC conduit, and around closest vertical end wall frame member *that is not part of the door frame*. Frame member must allow panel to be stretched toward outside of end wall.

NOTE: Frame shown differs from actual frame. End panel is attached in a similar manner however. Frame is shown from the inside the shelter.

4. Move to the next cut and repeat the process. Move up the conduit and pocket toward the top.



5. Once strap is in place, tie the upper end to the vertical end wall frame tube.
6. Slightly tighten end panel by tightening vertical strap between conduit and end frame tube. *See Fig. 3 on Page 14 for an example.*

NOTE: Do not tighten completely at this time. Straps should be snug.

7. Cut strap (if needed) and tie end to frame.
8. Repeat steps to install strap for remaining vertical end wall PVC conduits.
9. With all PVC vertical conduits in place, tighten all straps for the vertical end panel conduits. *Do not overtighten the strapping. Straps should be snug.* Tighten as needed to achieve the best end panel appearance.
10. Next, move to the top of end rafter and tuck end panel flap over top of rafter. End panel flap is tucked between the end rafter and main cover.

NOTE: Flap can be secured in place by using Tek screws and washers. *Attach the screws to the backside of the end rafter so they do not touch the main cover after it is pulled back over end rafter.*

11. Return to each strap end and drive a screw with washer through the strap and into the end frame member to keep strap tight.
12. With end panel secured, continue by installing ratchets for main cover bonnet. Tighten main cover bonnet. See the steps on Page 15.

May not apply to all end frame applications.

Cut Door Openings (additional door purchase required)

ATTENTION: For best results and to keep panel stretched, install Tek screws and washers *from the outside* through the panel and into door jambs and header. (See dashed lines Fig. 1.) *Do this before cutting the opening in the end panel.* If you do not want to install screws through the panel, continue with Step 1.

IMPORTANT! Consult instructions for all gathering doors before installing Tek screws and washers to secure end panel.

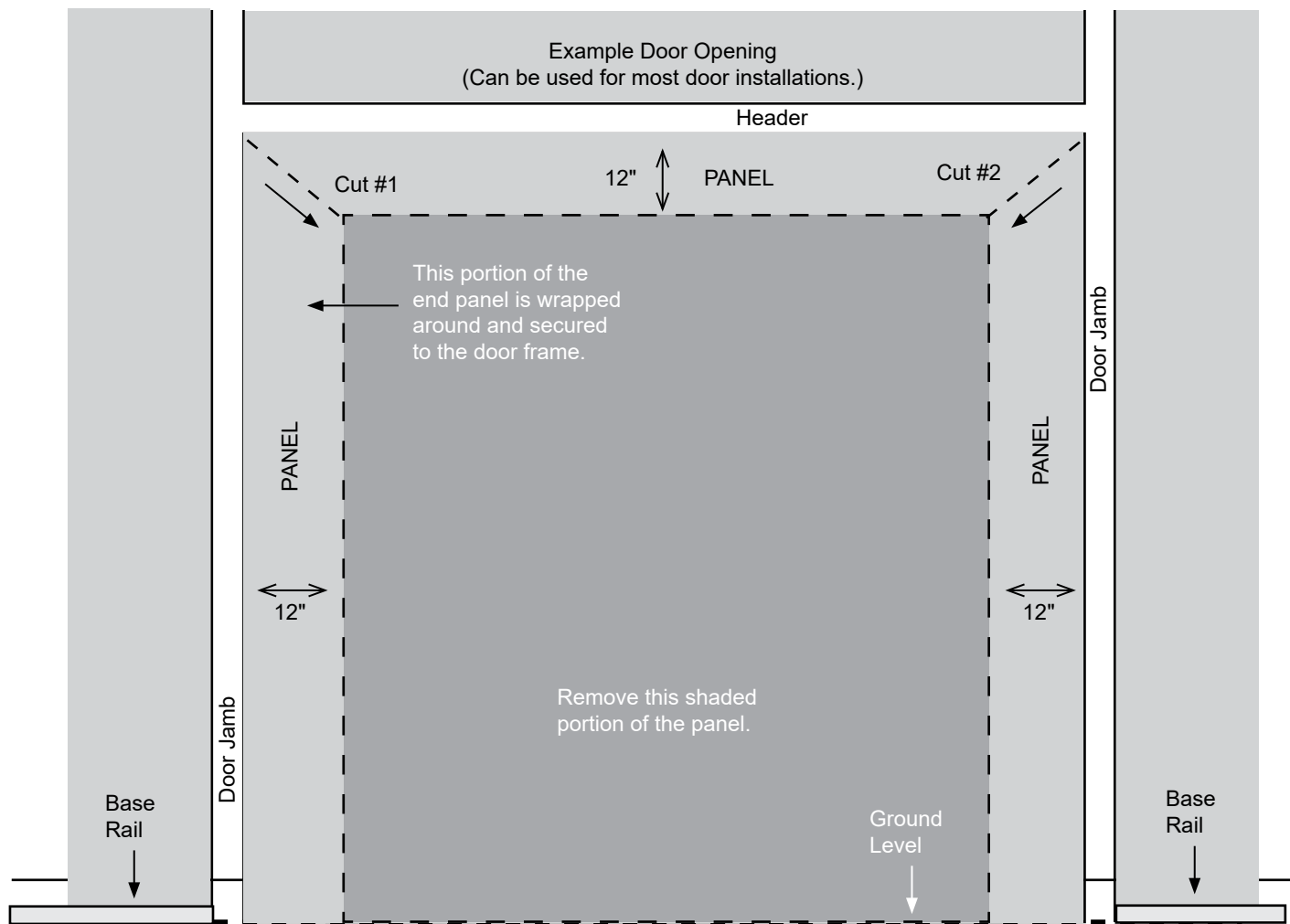
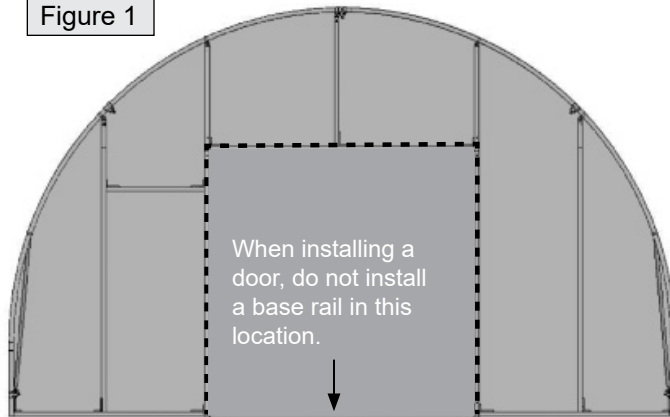
Do not cut a door opening in the end panel if you are not installing a door!

These steps describe one way to cut a door opening:

1. From inside the building, mark a 12" border along the door jambs and below header. (Consult diagram below.) Once cut, the 12" flaps are wrapped around door frame and secured to the inside of the *door frame*.
2. Cut end panel to remove the darker shaded section as shown in the diagram below.

NOTE: If a conduit is installed in the horizontal end panel pocket, cut and remove it.

Figure 1



View above shows end panel as seen from inside the frame.

3. Make two (2) diagonal cuts in end panel as shown above (Cut #1 and Cut #2) to create the 12" flaps.
4. Continue with the procedure on the next page.

CLEARSPAN™ END PANEL INSTALLATION

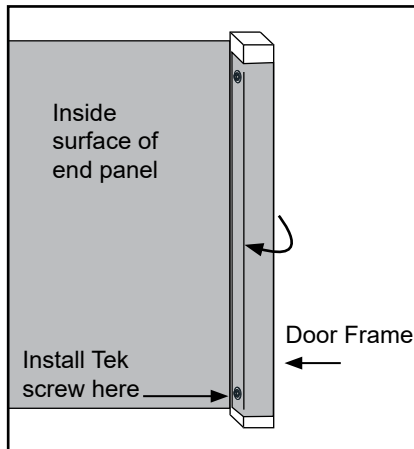
Secure End Panel to End Frame (Optional Door Installation Only!)

The frame shown in the following diagrams may differ from actual frame. Installation steps are similar.

1. With door opening cut, secure end panel to door frame using Tek screws and washers. See diagram below.

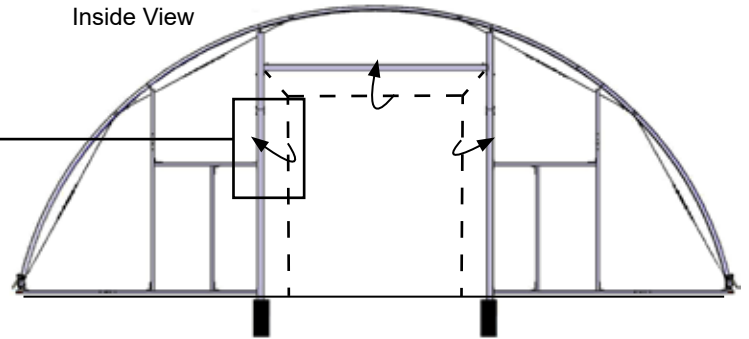
NOTE: For exposed corners of the door frame that remain, cut a 16" x 16" piece of material *from scrap end panel material* and secure it to the exposed corners using Tek screws and washers (if desired).

Secure end panel to the inside surface of the frame tube using a Tek screw and washer.



Sample frame is shown in the diagram below.

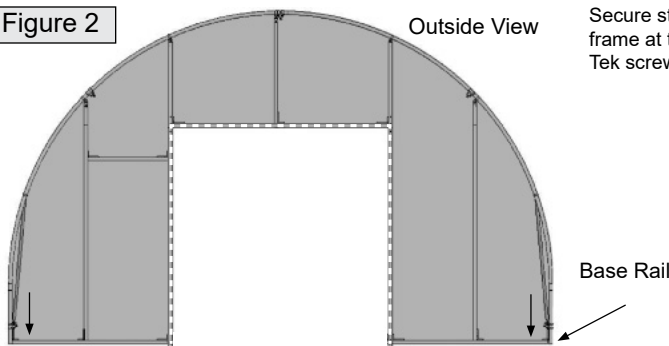
Inside View



ATTENTION: DO NOT secure end panel to the inside or backside of the door jambs or header. Some doors kits use this surface for tracks and brackets. **Check instructions that shipped with the door for additional details.**

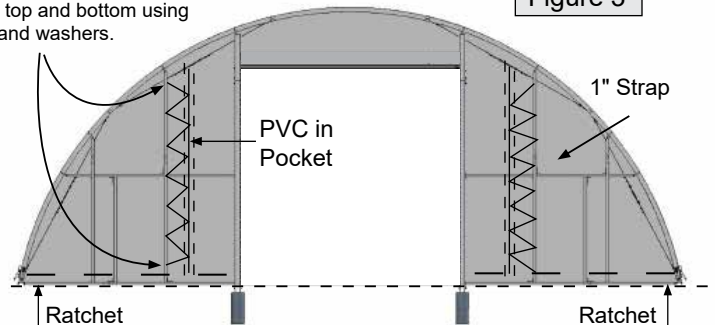
2. Install the door according to the instructions included with those components.

Figure 2



Secure strap to the end wall frame at the top and bottom using Tek screws and washers.

Figure 3



Example A: Typical end panel without vertical or horizontal pockets. Opening has been cut to install an optional door.

In some instances and depending on width of end wall, the vertical pockets (Example B) of some panels may not be used when an optional overhead door is installed.

Example B: Typical end panel with vertical and horizontal pockets for conduit installation. Opening has been cut to install an optional door.

Dashed lines show approximate locations of end panel vertical and horizontal pockets. Diagram shows the installed PVC for vertical pockets and strapping.

3. After doors are installed according to the door manufacturer's instructions, install the vertical PVC conduit as described on Page 12, and reattach bonnet ratchets for main cover. See steps on next page for ratchet installation.

NOTE: Arrows in the above diagrams (base rail) show where to reattach end ratchets to secure main cover bonnet. Ratchets are typically reattached through end panel and to end wall base rail. Pull main cover bonnet back over end rafter and use bonnet straps as a guide to properly position each ratchet. *These ratchets are not included in the installation kits.* They are from the original building if that building included a main cover with a bonnet. May not apply to all end walls.

If no base rail is present, reattach ratchets to end rafter, or to a concrete slab if present. Consult a contractor for additional suggestions based on the specifics of your building.

INSTALL THE END RATCHETS FOR THE MAIN COVER

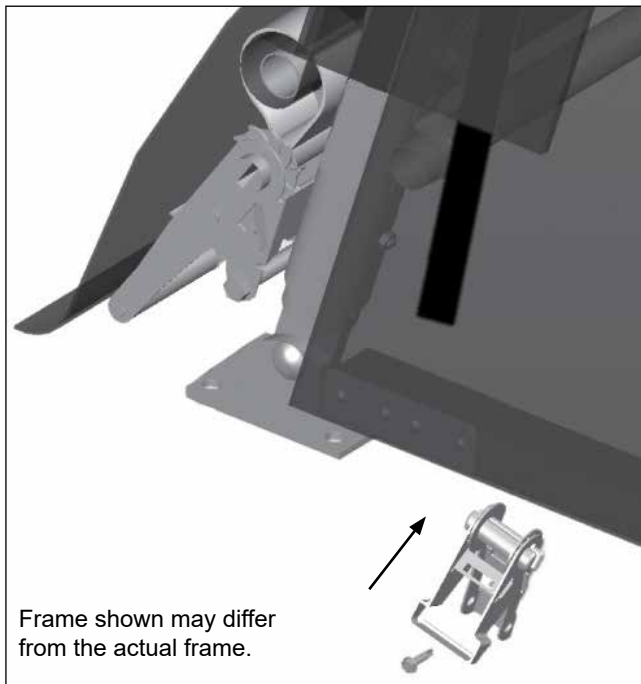
After end panel is fully stretched and all doors are installed (if equipped), reattach end ratchets for main cover bonnet. These ratchets remain from the original building if the main cover of that building included a bonnet. *These ratchets are not included with any end panel installation kit.* May not apply to some shelters and end panels.

Gather the parts:

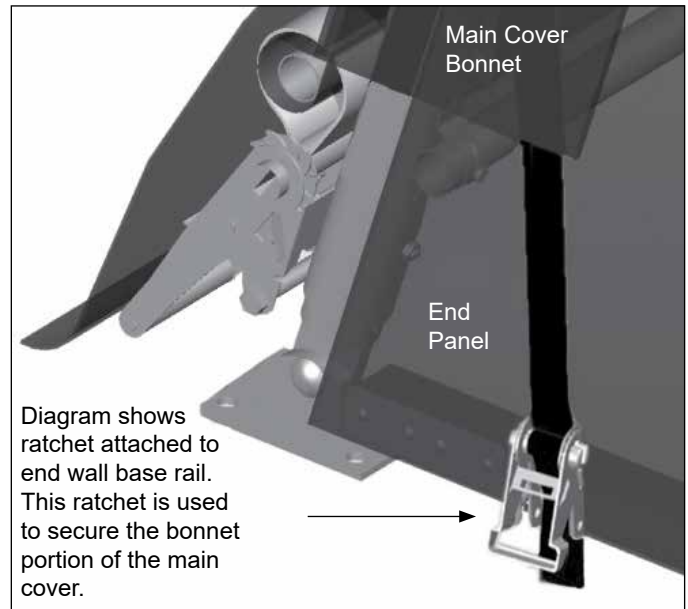
- Ratchets
- Tek screws (#FA4482B)

Complete these steps to reattach ratchets to base rail (if present). Attach ratchets to building end rafter or concrete slab if base rail is not present.

1. Pull bonnet portion of main cover back over end rafter.
2. Locate the four (4) ratchets and attach each ratchet to the outside of end frame base rail (if equipped) using a Tek screw (FA4482B). *Use cover strap to position ratchet.*



3. Locate straps at front and rear of main cover and feed straps through center slot in each end ratchet.



4. Tighten end ratchets to secure main cover bonnet.
5. Move to the other end of the building and secure main cover bonnet at that end.
6. After securing main cover bonnet, read the care and maintenance information section near the beginning of this guide.