



ClearSpan™ Manure/Compost Building 38' Wide



Photo may show a model of a different length.

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

STK#	DIMENSIONS
PB00280R4/R5	38' W x 15' H x 40' L
PB00282R4/R5	38' W x 15' H x 60' L
PB00284R4/R5	38' W x 15' H x 80' L
PB00286R4/R5	38' W x 15' H x 100' L

Revision date: 04.27.23



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

Thank you for purchasing this ClearSpan™ shelter. 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 shelter. 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.
- Use a portable GFCI (Ground Fault Circuit Interrupter) when working with power tools and cords.
- Do not climb on the shelter or framing during or after construction.
- Do not occupy the shelter during high winds, tornadoes, or hurricanes.
- Provide adequate ventilation if the structure is enclosed.
- Do not store hazardous materials in the shelter.
- Provide proper ingress and egress to prevent entrapment.

ANCHORING INSTRUCTIONS

Prior to assembling this shelter, please read the anchoring precautions and instructions included with the kit. Anchoring instructions are included in the *MUST READ* document. *You must anchor the building after the frame is assembled and before the cover is installed.*

⚠️ WARNING: The anchor assembly is an integral part of the shelter construction. Improper anchoring may cause shelter instability and failure of the structure. Failing to anchor the shelter 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. *Always consult local and regional building codes before you begin.*

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 shelter where large loads such as snow and ice, large tree branches, or other overhead obstacles could fall.

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 to properly and safely erect and anchor the frame.
- If the site is not level, use footings to provide a secure base for the structure. Pre-cast concrete blocks, pressure-treated wood posts, or poured footings are all acceptable when properly used.

IMPORTANT: Some soil types and locations may require footings to properly support and anchor the building. Consult a qualified professional who is familiar with building similar structures to determine whether a footing or other foundation is required in your area.

- **Drainage:** Water draining off the structure and from areas surrounding the site should drain away from the site to prevent damage to the site, the structure, and contents of the structure.

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

ASSEMBLY PROCEDURE

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

The steps outlining the assembly process are as follows:

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

LIST OF WORDS AND PHRASES

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

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

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

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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 depending on the structure, location, and application.

- Tape measure or measuring device
- Marker
- Duct tape
- Magnetic nut setter (3/8" x 2-9/16")
- Variable speed drill and impact driver (cordless with extra batteries works best)
- Wrenches or ratchet and socket set (recommended)
- Scissors or utility knife
- Tool to cut cable to the required length
- Hammers, gloves, and eye protection
- Ladders, work platforms, and other machinery for lifting designed to work safely at the height of the shelter
- Rope (or straps) for cover installation

UNPACK AND IDENTIFY PARTS

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

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 shelter diagrams throughout these instructions for clarification, or contact Customer Service.

NOTE: At this time, you do not need to open the plastic bags containing the fasteners (if used).

QUICK START GUIDE

For a quick overview of this shelter and its components, consult the Quick Start Guide near the back of these instructions.

The pages of the Quick Start Guide show exploded views of all critical connections. Use the diagrams in the Quick Start section to assemble the frame of your building.

Consult the remainder of these instructions for important details that will help during the construction.

SPECIAL NOTE: Baseboards for Frame

These instructions recommend installing a baseboard under the mounting feet along each side of the frame. The baseboard runs from the front to the back of the building.

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.

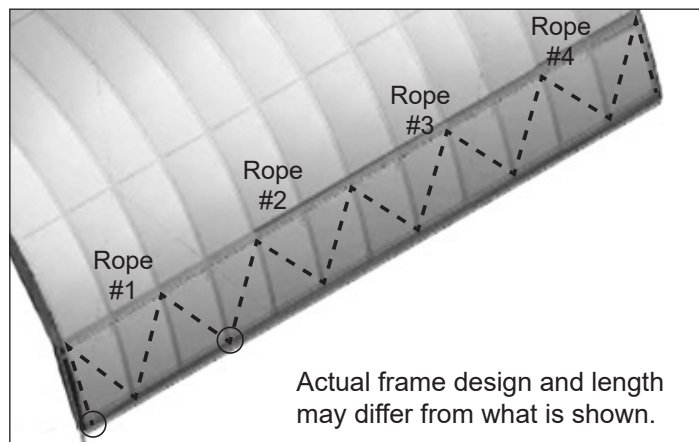
The baseboard, when installed properly, helps prevent the shelter from sinking into the ground when anchored. Baseboards also provide a surface to attach rafter feet or other building components.

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

ANTI-BILLOW ROPE INSTALLATION

TO PREVENT DAMAGE AND POSSIBLE INJURY, INSTALL THE ANTI-BILLOW ROPES IN SHORT LENGTHS ALONG EACH SIDE OF THE FRAME.

DO NOT INSTALL AS A SINGLE LENGTH TIED AT EACH END OF THE BUILDING. DOING SO WILL RESULT IN A LOOSE SIDE PANEL IF THE SINGLE ROPE BREAKS DURING STRONG WINDS.



Dotted line represents the anti-billow rope. Circles identify the ends of Rope #1. Actual number of individual ropes along the side may differ.

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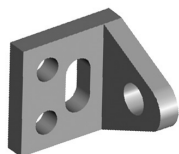
The following graphics and photos will help you identify the different parts of the building. Consult the Quick Start Guide for additional details and diagrams. (Some parts are not shown.)



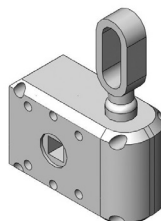
FA4482B
Tek Screw



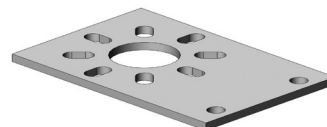
QH1061
1" Ratchet



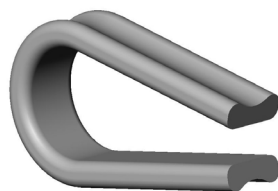
105350
Purlin Connection Bracket



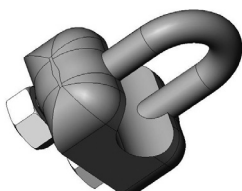
103496
Gearbox



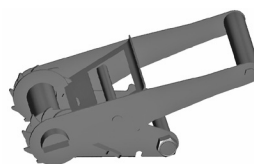
103544
Mounting Plate



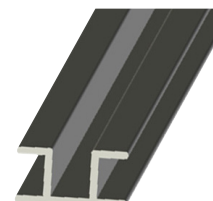
AS1083
3/16" Cable Thimble



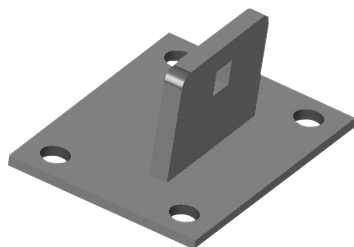
AS1003
3/16" Cable Clamp



QH1065
2" Ratchet



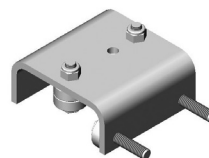
102570
U-Channel



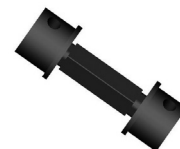
105241
Rafter Foot Base



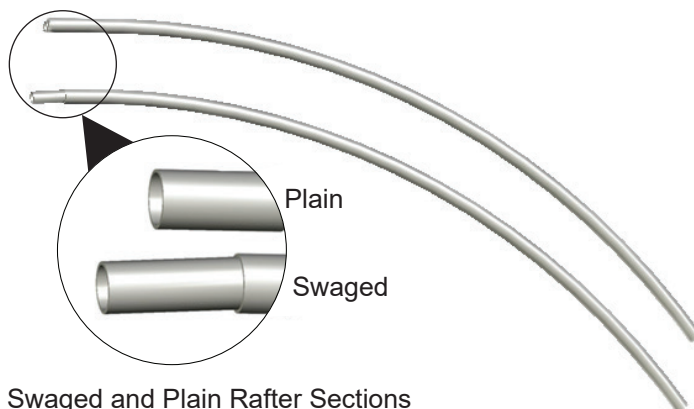
105092
3.25" Pipe Fitting



102569
Roller Bearing



102717
Double Drive Set



Swaged and Plain Rafter Sections



104189 Turnbuckle



ClearSpan™ Manure/Compost Building

The instructions that follow describe assembling all rafters and then constructing the frame. Depending on the number of individuals assisting with the construction, it may be best and more efficient to have someone assemble the rafters and others assemble the frame as rafters are completed.

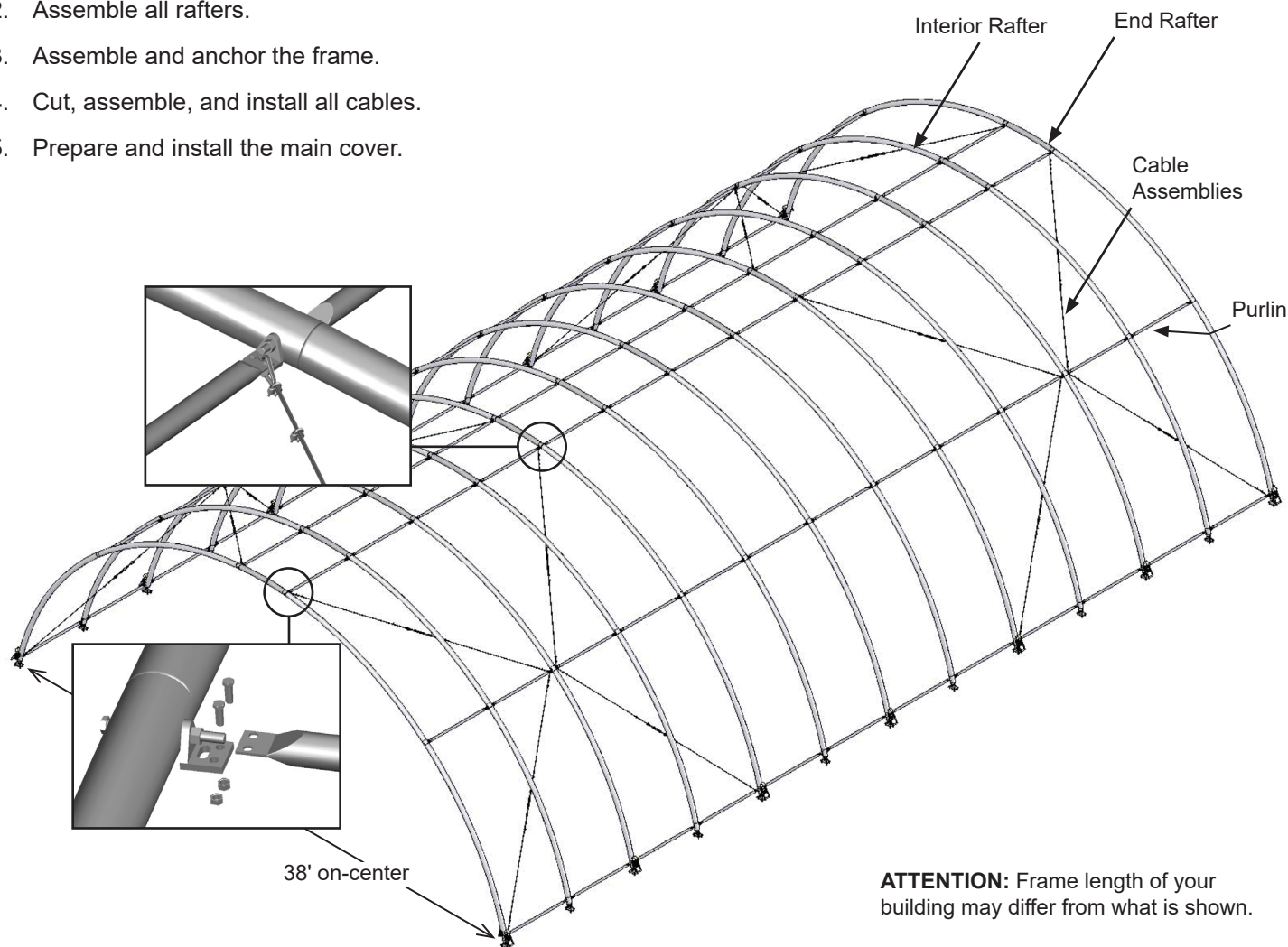
Other factors to consider during the assembly, especially for buildings longer than 60', include:

- Amount of working area
- Available lifts and work platforms
- Number of assistants

OVERVIEW

This section describes assembling your Manure/Compost building. For details of each assembly procedure, consult the Quick Start Guide and the individual sections of these instructions. See illustration below to identify main parts of shelter.

1. Layout the site and identify the required parts for each assembly procedure.
2. Assemble all rafters.
3. Assemble and anchor the frame.
4. Cut, assemble, and install all cables.
5. Prepare and install the main cover.



ATTENTION: Frame length of your building may differ from what is shown.

LAY OUT THE BUILDING SITE

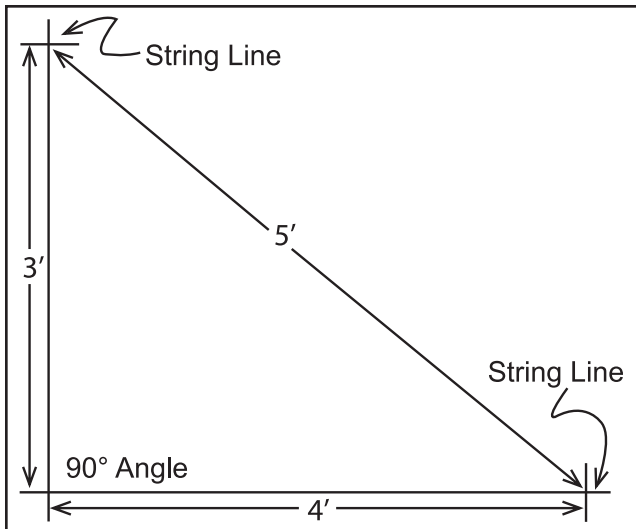
After the site is prepared, identify the location of the shelter corners helps to square the frame after it is assembled.

Taking these steps **before** assembling the shelter saves time and ensures that the structure is positioned as desired. The following procedure is a suggested method. Its use depends on the size of the shelter, shelter application, the footings, and the method used to anchor the shelter.

SQUARE THE SITE

1. Identify a corner where a building rafter will be positioned, drive in a stake, and string a line the exact width of the building and stake in place. (Width of the rafter is measured from center-to-center of the rafter legs.)
2. 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.



3. After squaring the position of the building and placing a stake at all corners, string a line between the stakes to mark the base of the building.
4. Next, mark a line on the ground using the strings between the stakes as guides.

NOTE: There is no need to mark the rafter spacing. The purlins, when installed correctly, will maintain even rafter spacing throughout the length of the shelter.

5. After marking the outline of the building, remove the strings and continue with the rafter assembly instructions.

ASSEMBLE THE MANURE/COMPOST BUILDING COMPONENTS

NOTE: Assistance is required to assemble the shelter.

RAFTER ASSEMBLY

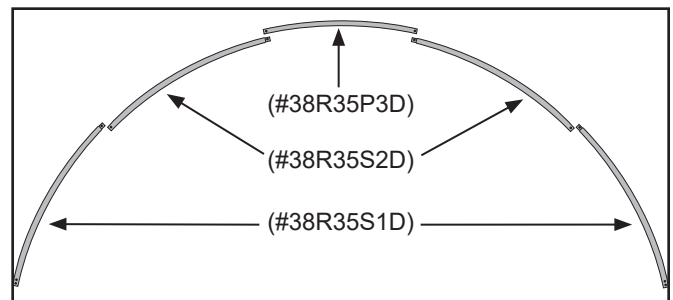
Gather the parts:

- Rafter pipe (#38R35S1D)
- Rafter pipe (#38R35S2D) & rafter pipe (#38R35P3D)
- Purlin connection bracket (#105350)
- Rafter foot base (#105241)
- 3.25" pipe fitting (#105092)
- ½" x 1½" Carriage bolt, nut, and washer
- ½" x 4½" Bolt and nut
- ½" x 5½" Bolt and nut

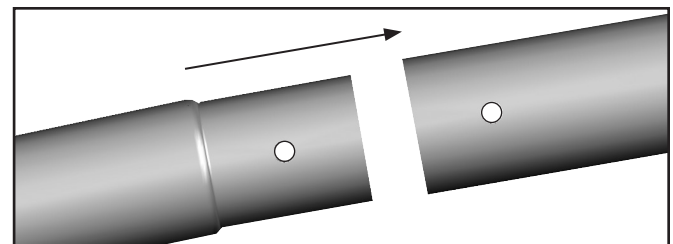
Each rafter assembly consists of five (5) pipes: 2 (#38R35S1D), 2 (#38R35S2D), and 1 (#38R35P3D). The #38R35S1D pipes include *two drilled holes near the bottom* to connect the rafter foot.

End Rafter Assembly Procedure

1. Select the five (5) pipes needed to assemble a rafter and arrange these on a flat surface as shown below for assembly.



2. Slide the swaged portion of each rafter pipe into the plain end of the pipe and align the 9/16" holes.

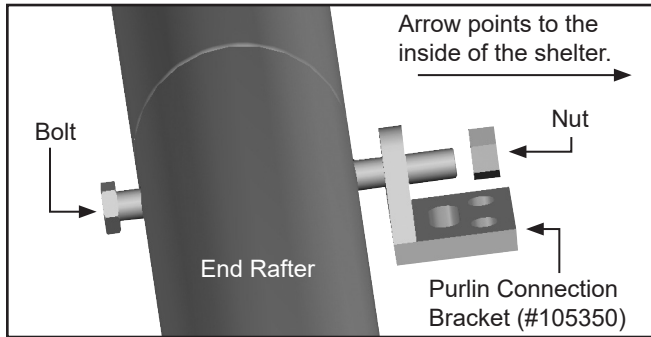


ATTENTION: All pipe connections for the two (2) end rafters are secured using the ½" x 4½" bolts (105370B). During the rafter assembly, insert the bolts so the bolt head is toward the outside of the rafter when the rafter is set in position. The nuts will face to the inside of the assembled frame. See diagrams on the next page.

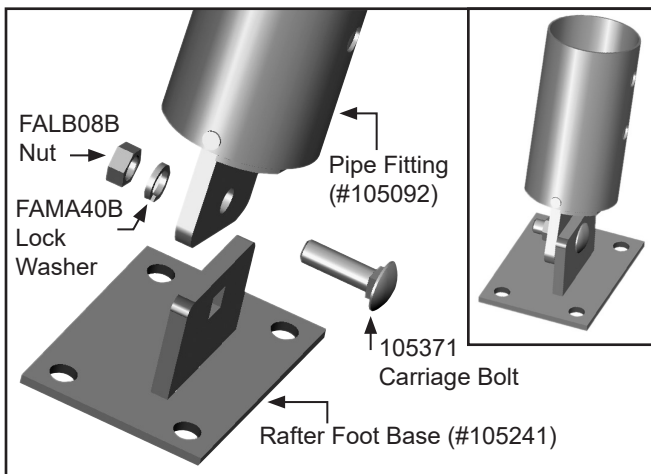
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RAFTER ASSEMBLY (CONTINUED)

- Secure each pipe joint using one ½" x 4½" bolt, a single purlin connection bracket (#105350), and nut. *Install the nut against the purlin bracket as shown.*

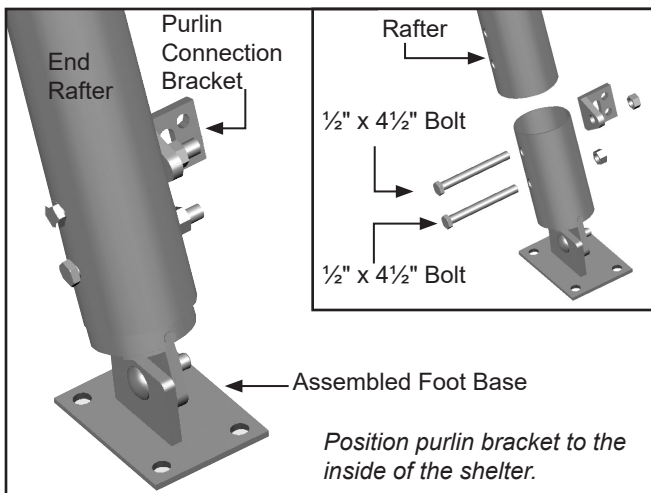


- Assemble a rafter foot using one (1) 3.25" pipe fitting (#105092) and one (1) base (#105241). Connect the pipe fitting and base using a carriage bolt, nut and washer as shown below. *Do not tighten at this time.*



NOTE: Align the pipe fitting with the foot base as shown in the insert above. This will maintain the on-center rafter spacing during frame assembly.

- Insert one (1) assembled rafter foot into the bottom of the rafter and secure using one ½" x 4½" bolt and a single purlin connection bracket in hole furthest from foot base as shown below.



- In the hole closest to the foot base, secure foot to rafter using a ½" x 4½" bolt. See previous photo insert.

ATTENTION: Install all brackets and bolts so they do not interfere with the installation of the main cover. *To protect the cover, tape all end rafter joints and mounting bolts with duct tape.*

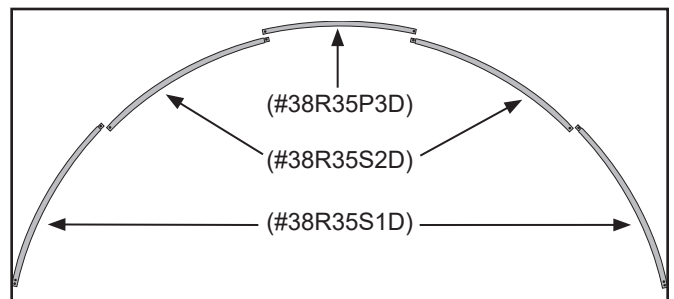
- Repeat Step 4-5 for the remaining rafter foot.
- Repeat the above steps to assemble a second end rafter.
- Set both end rafters aside and assemble the interior rafters.

Interior Rafter Assembly Procedure

In addition to the steps in the previous procedure, complete the following steps *for the interior rafters only*.

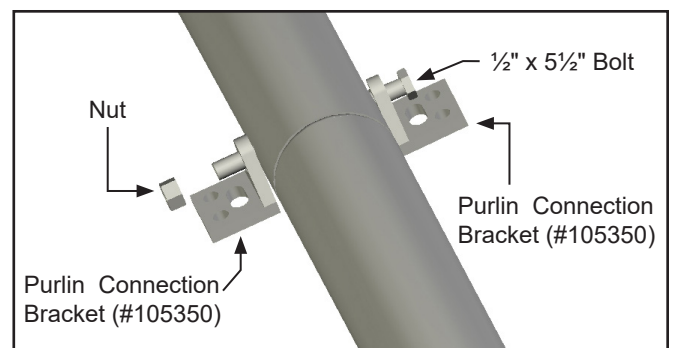
NOTE: The length of the shelter and the on-center spacing of the rafters determine the number of interior rafters. Locate the Quick Start Guide near the end of these instructions to view the frame for your shelter.

- Select the five (5) pipes needed to assemble a rafter and arrange these on a flat surface as shown below for assembly. See Page 6 for assembly suggestions.



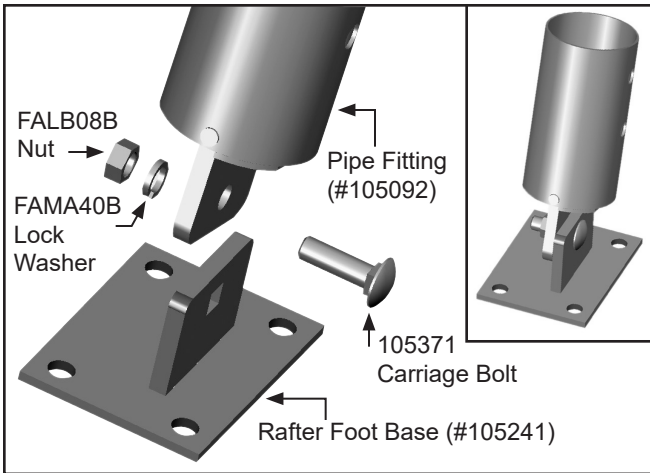
NOTE: For longer shelters, assemble and place the interior rafters in an accessible position that will not interfere with the frame assembly.

- Slide the swaged portion of each rafter pipe into the plain end of the pipe and align the 9/16" holes.
- Secure each pipe joint using one ½" x 5½" bolt and two (2) purlin connection brackets (#105350).



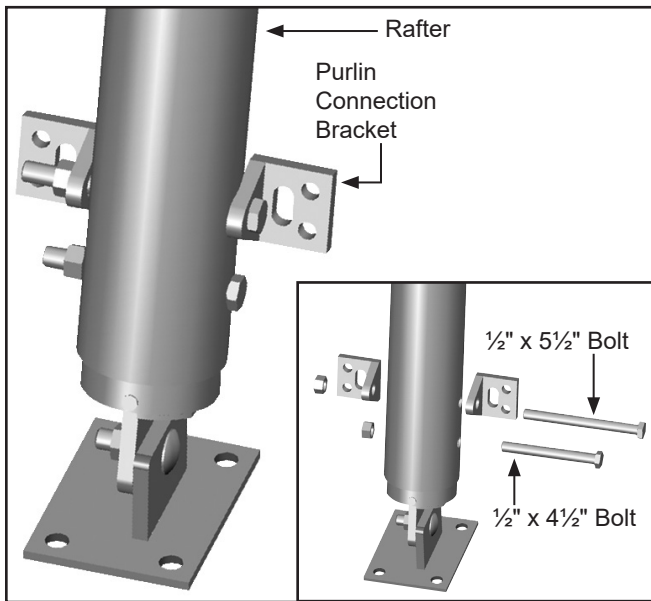
RAFTER ASSEMBLY (CONTINUED)

- Assemble a rafter foot base using one (1) 3.25" pipe fitting (#105092) and one (1) base (#105241). Connect the pipe fitting and base using carriage bolt, nut, and washer. *Do not tighten at this time.*



NOTE: Align the pipe fitting with the foot base as shown in the insert above.

- Insert one (1) assembled rafter foot into the rafter and secure it using (1) one 1/2" x 5 1/2" bolt and two purlin connection brackets positioned as shown.



- In the hole closest to foot base, secure the foot to rafter using a 1/2" x 4 1/2" bolt. See insert above.

ATTENTION: Install all brackets and bolts so they do not interfere with the installation of the main cover. *To protect the cover, tape all rafter joints with duct tape.*

- Repeat Step 4-5 for the remaining rafter foot.
- Complete this entire procedure to assemble all remaining interior rafters. (See Page 6 for assembly suggestions.)

FRAME ASSEMBLY

Gather the parts:

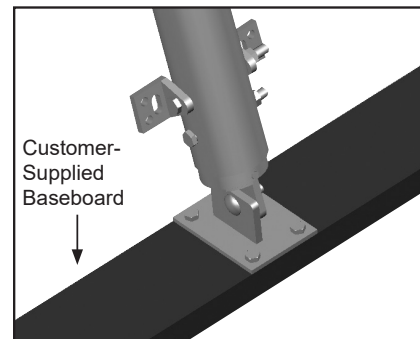
- All rafter assemblies
- Purlins: 4' spacing use purlin #105118; 5' spacing use purlin #105576
- 3/8" x 1" bolts and nuts

Frame Assembly Procedure

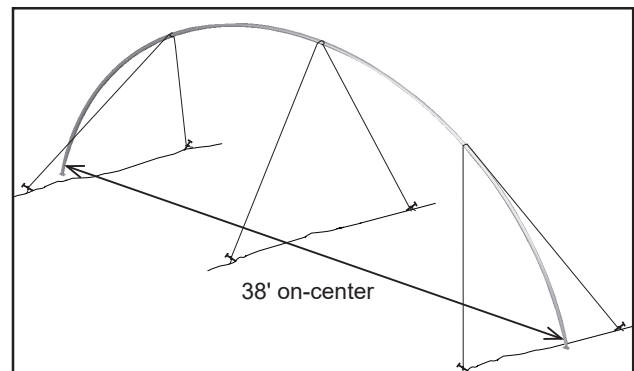
After all rafters are constructed and placed in an orderly fashion for frame assembly, proceed with standing the first end rafter. Forklifts and personnel booms are recommended for lifting and setting the rafters. Consult a construction professional if you are not familiar with construction techniques and erecting similar structures.

ATTENTION: Use the proper lifts. Rafter assemblies are heavy and awkward to handle.

Placing a baseboard beneath the feet of the rafters is strongly recommended. The feet then can be secured to the baseboard using the customer-supplied lag screws or similar fasteners. Baseboard can be treated or recycled plastic lumber. Contact Customer Service at 1.800.245.9881 for additional information.



- Stand the first end rafter and stabilize it using rope, cable, or some other form of temporary bracing. Use a level (or other leveling device) to plumb the end rafter. Use a lift to support the rafter as it is set in place.

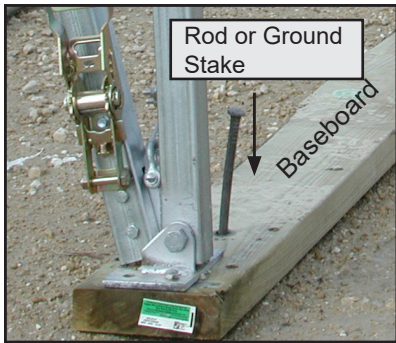
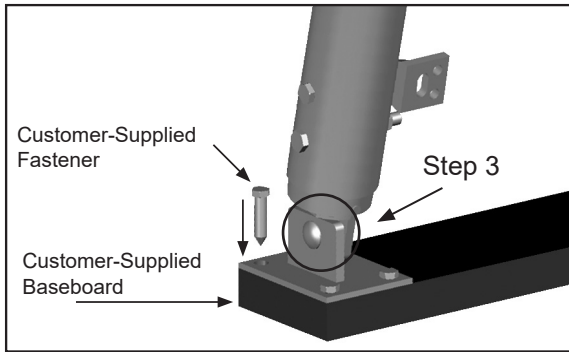


NOTE: Verifying that the end rafter is level and straight at this stage assists in setting and connecting the remaining rafters.

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FRAME ASSEMBLY (CONTINUED)

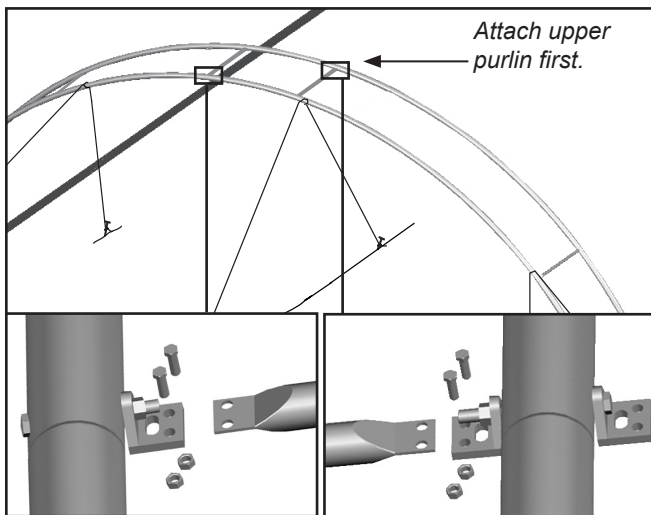
- Verify that the on-center rafter width is 38' and secure the rafter feet to the customer-supplied baseboards (if used) to prevent the rafter from shifting.



NOTE: If a baseboard is used, drill holes through the board at evenly-spaced intervals along the length of the board. Drive a rod through each hole and into the site to prevent the boards from shifting and to maintain the on-center width of the building.

Actual rafter is not shown.

- Tighten the rafter base mounting bolts. See above.
- With the first end rafter set and width at 38' on-center, set the first interior rafter in place.

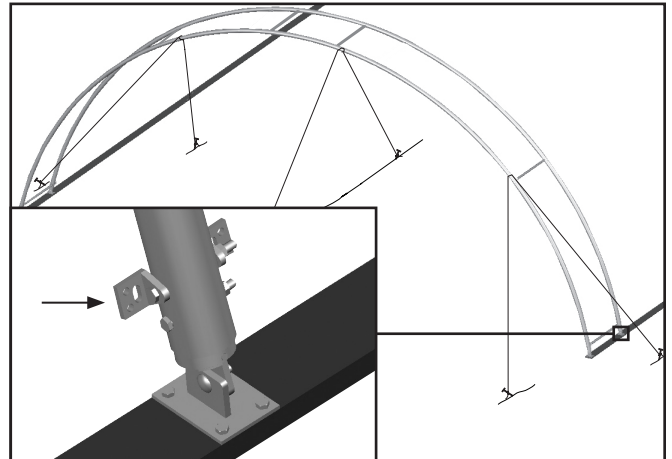


Purlin positions shown may differ slightly from actual frame.

- While bracing the interior rafter in position, start at a purlin connection near the top and install a purlin. Attach each purlin using two 3/8" x 1" hex cap bolts and nuts per connection point. See inserts above.

NOTE: Align the rafter feet with the lines previously marked on the site (Page 7), or use the baseboards if these were placed under the feet as recommended.

- With center purlin in position, move to the purlin position above each rafter foot, adjust the on-center rafter spacing as needed, and install those purlins.



ATTENTION: As the purlins are attached, tap the purlin brackets with a hammer to align the brackets with same brackets on the next rafter if needed.

- Secure the mounting feet to the baseboard (if used).
 - Attach the purlins that remain between these first two rafters.
 - Verify that all bolts, including those that secure the rafter foot base to the pipe fitting (Step 4, Page 9), are tight.
 - Repeat the process to set and attach the remaining interior rafters and purlins.
 - After all interior rafters are in place, aligned, and secure, set and attach the final end rafter.
- NOTE:** When setting the last end rafter, verify that the purlin brackets are positioned to the inside of the frame.
- With the basic frame assembled, read the **MUST READ** document to anchor the frame. *You must anchor the assembled frame before continuing.*

ANCHOR THE SHELTER

At this point, anchor the frame. Once the frame is anchored properly, continue with these instructions.

WARNING: Securing the rafter feet to baseboards set on the site is not a substitute for properly anchoring the shelter. You must anchor the shelter as described in the MUST READ document.

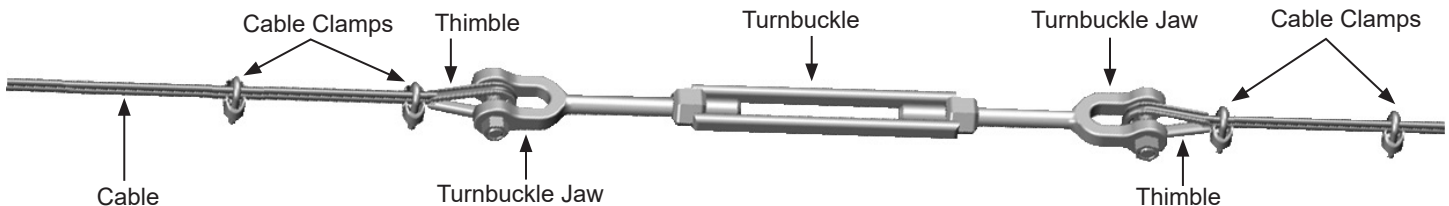
FAILING TO PROPERLY ANCHOR THE SHELTER WILL RESULT IN DAMAGE TO THE SHELTER AND MAY CAUSE PERSONAL INJURY.

READ THE MUST READ DOCUMENT TO PROPERLY ANCHOR THE SHELTER.

CABLE ASSEMBLY

Cable assemblies provide diagonal bracing for the building. Each cable assembly includes the following items:

- Two (2) lengths of cable: Measure from point-to-point on the frame and cut as needed.
- Turnbuckle (1)
- Cable thimbles (4) and cable clamps (4)

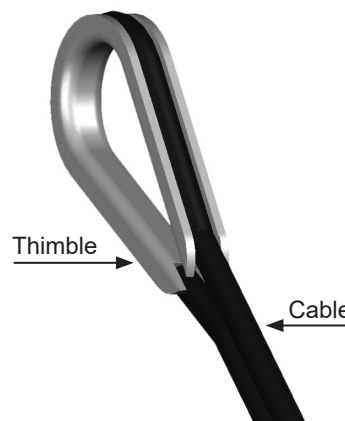


Typical Turnbuckle Assembly

NOTE: For each cable assembly, two (2) additional thimbles and four (4) additional cable clamps are used to attach the cable assembly to the purlin clamps. Consult the Cable Diagram on the following page and the Side Profile Diagram in the Quick Start section for clarification and cable locations.

Cable Assembly Procedure

1. Using the Side Profile Diagram in the Quick Start section (and others) as guides, measure the distance needed on the frame and cut the cable to the proper length for each assembly. Remember to account for the turnbuckle and the cable length needed to attach the thimbles at each end. (Extra cable has been sent for the cabling.) Make a single assembly *before* making them all. This allows a check to be sure the correct length has been cut. Make the necessary length adjustments as needed before making additional assemblies. Always measure before cutting the cable.
2. Place one cable thimble approximately twelve inches (12") from the end of a cable section and wrap the cable around the thimble as shown in the figure to the right.



3. Grasp both sections of the cable near the thimble and position one cable clamp one inch away from the thimble as shown above.

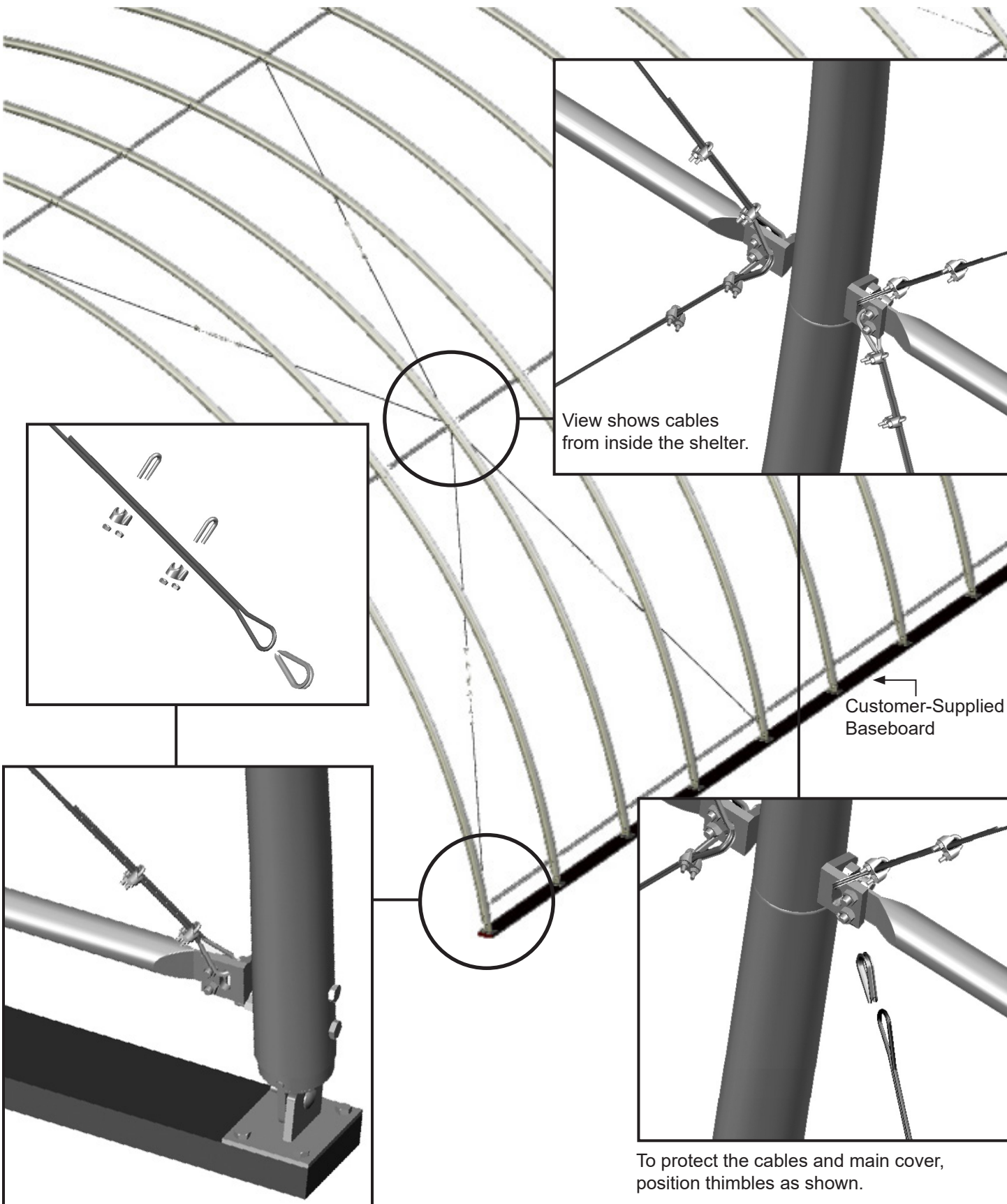
NOTE: Position the clamp on the cable with its U-bolt portion over the short/dead section of the cable.

4. With the saddle portion of the cable clamp in position on the "live" section of cable, thread the nuts onto the U-bolt section of the clamp and tighten slightly to maintain the position of the clamp on the cable.
5. Install a second cable clamp on the cable six to eight (6"-8") inches from the first clamp and tighten both clamps.
6. Remove the bolt from the jaw of the turnbuckle and position the cable end with the thimble into the turnbuckle jaw.
7. Insert the bolt through the turnbuckle jaw and the cable thimble, thread the nut onto the bolt, and tighten to secure the cable to the turnbuckle.
8. Repeat Steps 2-7 for the remaining length of cable for this assembly.
9. Open the turnbuckle to its longest position and set the assembly aside.
10. Repeat the above procedure for all remaining side and upper cable assemblies. Length of upper cables may differ from the side cables. *Always measure length on the frame before cutting the cables.*
11. Attach the cables to the assembled frame. See the diagrams on the next page. Do not tighten turnbuckles at this time.

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CABLE PLACEMENT

The diagram and inserts below identify the placement and proper way to attach the cable assemblies to the building. Anchor the assembled frame before you tighten the cables. Consult the Side Profile Diagram in the Quick Start section.



PREPARE MAIN COVER

Gather the parts:

- Ratchets (QH1061) & (QH1065)
- Cover conduit pipe (see chart)
- Cover
- Tek screws
- Duct tape (supplied by customer)

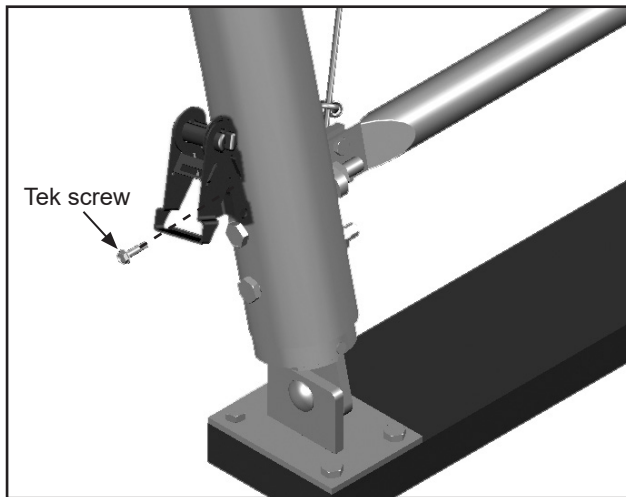
The sides of the cover are attached to the inside rafters using ratchets with straps. The ends of the cover (front and back) are attached to the end rafters using ratchets from the outside. The straps to secure the ends of the main cover are pre-installed in the cover.

NOTE: When handling the main cover and setting it in position, do not pull on the end straps. They will pull out of the cover.

⚠ WARNING: To prevent damage to the cover and to prevent serious personal injury, DO NOT attempt to install the main cover on a windy day.

Assembly Procedure

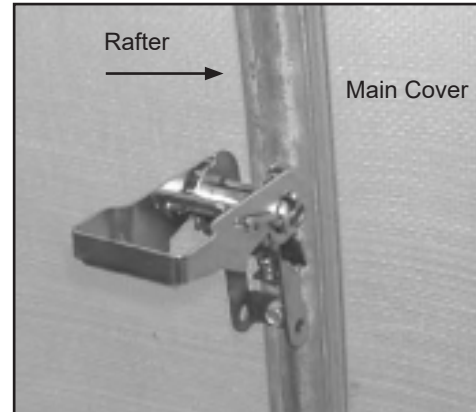
1. Fasten a ratchet to the outside of each end rafter using a Tek screw in the bottom hole of the ratchet as shown below.



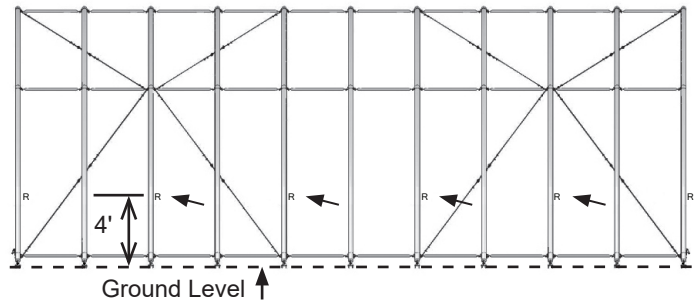
NOTE: Ratchet design may differ from actual ratchet.

2. Repeat this step at the remaining three corners.

3. Attach the remaining ratchets to the inside surface of the interior rafters using a Tek screw. Install the ratchets approximately 4' up from the ground.



NOTE: Consult the Side Profile diagrams in the Quick Start section for ratchet location for your frame.



Arrows show ratchet locations. Actual frame may be different from the frame shown. Consult the Side Profile diagrams.

4. Assemble two (2) cover conduits. These conduits are the same length. Start each conduit with one plain pipe and add swaged pipes to arrive at the correct length.

NOTE: Conduits can be pre-assembled, or they can be assembled as they are inserted into the cover pockets. (The latter works best for longer frame lengths.)

Consult the table that follows to select the correct pipe for your frame length. Each main cover conduit consist of these pipes:

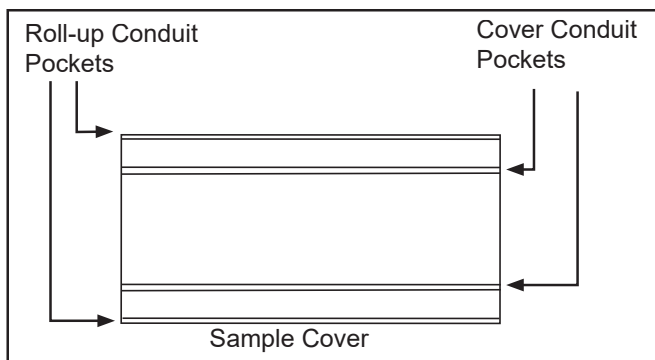
Cover Conduit Pipe Lengths	
Building Length	Pipe Lengths
40'	(4) 99" & (1) 96"
60'	(7) 99" & (1) 48"
80'	(9) 99" & (1) 96"
100'	(12) 99" & (1) 48"

5. Secure each conduit pipe joint using a Tek screw. Wrap two layers of duct tape over the pipe joint and Tek screw head to protect the cover.

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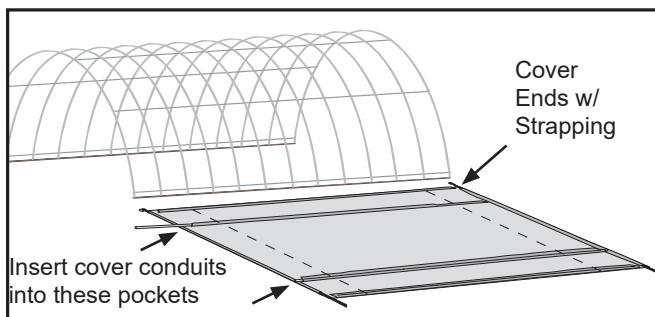
PREPARE MAIN COVER (CONTINUED)

6. After assembling the cover conduits, unfold the main cover on a clean, smooth surface near the frame.



NOTE: Unfold the main cover with the inside surface facing up.

7. Locate the cover ends with strapping and align with the front and back of the shelter.
8. Insert one cover conduit into each of the pockets nearest the center of the main cover as shown below.



Frame shown may differ from actual frame.

NOTE: Stretch pockets are found on covers for buildings longer than 48'. See dashed lines above.

9. Continue by pulling the main cover onto the frame.

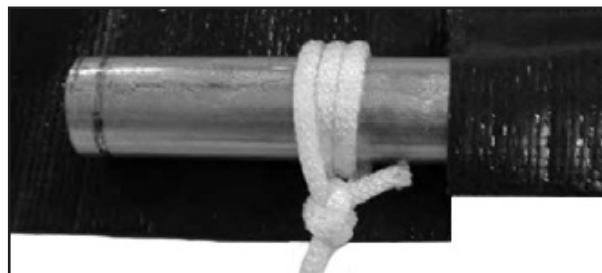
ATTACH MAIN COVER

Gather the parts:

- Main cover (with conduits already inserted)
- Ropes long enough to reach over the frame (provided by customer)
- 2" strap (#CC5390)
- Tek screws
- Box cutter or utility knife

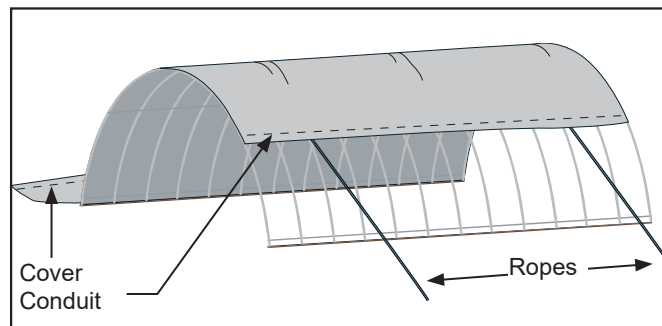
Assembly Procedure

1. To pull the cover over the frame, attach a rope to each end of the cover conduit farthest from the frame. Wrap the rope around the conduit a few times to prevent it from slipping off. *May not be required for small covers.*



NOTE: Depending on the length of the cover it may be necessary to attach additional ropes to the roll-up conduit between the end ropes. Cut a small opening in the cover pocket and tie the rope around the conduit. **DO NOT** cut through the main cover. *Cut through the conduit pocket only.*

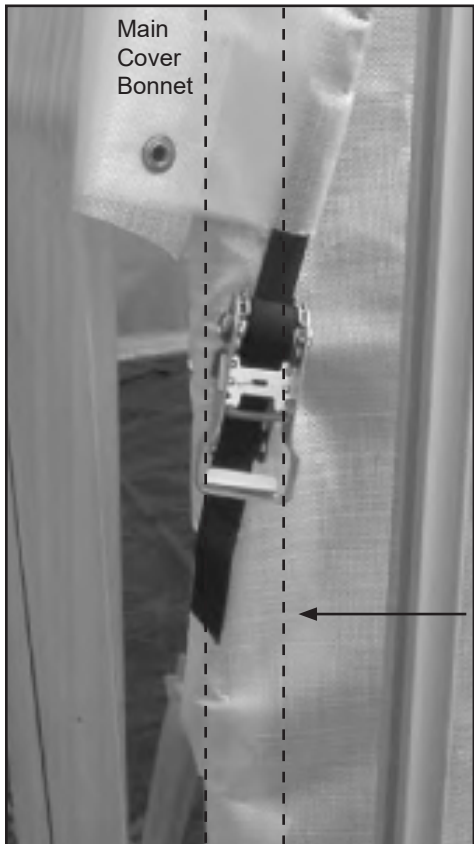
2. With all ropes attached to the cover conduit, lift the conduit and rope and carry it toward the base of the frame.
3. Toss the ropes over the frame and pull the cover into position. One person is required at each rope.



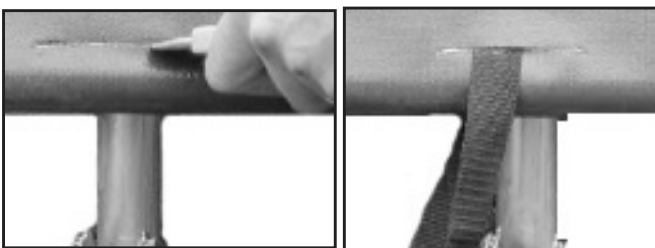
4. Once the main cover is pulled into position, center the cover on the frame and remove the ropes.

ATTACH MAIN COVER (CONTINUED)

5. Feed the bonnet straps through the four (4) ratchets attached to the corners of the frame and tighten only enough to hold the cover in place.



6. Move to the inside of the building and make sure the cover is centered front-to-back and side-to-side.
7. Slit or notch the cover conduit pocket at each rafter where a ratchet is attached.



NOTE: Do not cut the cover, cut only the pocket containing the cover conduit.

8. Cut a section of 2" strap from the bulk roll (some straps come pre-cut for some buildings) and insert one end of the section through the sleeve opening, around the cover conduit, and back through the opening.

NOTE: To reduce strap waste, measure the strap length (and adjust if needed) *before* cutting additional straps.

9. Feed both ends of each strap into a ratchet and tighten the ratchet only enough to hold the cover snug.



10. Verify that the cover is centered on the frame then tighten all side ratchets evenly until snug.

NOTE: To remove excess strap that binds up in the ratchet, loosen the ratchet, shorten the strap, and retighten. Do not over-tighten straps.

11. Move to the end rafters and slightly tighten the corner ratchets. Do not over-tighten.



12. After all side security straps are in place and *slightly tightened* and the cover is centered evenly on the frame, complete the following steps to install the roll-up conduit.

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INSTALL THE ROLL-UP CONDUIT

The roll-up conduit is inserted into the pocket at the edge of the main cover on both sides. The rollup conduit is attached to the twist-of-the-wrist assembly, which rolls up the lower section of the main cover.

Complete the following steps:

These conduit assemblies consist of the following pipes:

Roll-up Conduit Pipe Lengths	
Building Length	Pipe Lengths
40'	(6) 75" & (1) 49.5"
60'	(9) 75" & (1) 73.5"
80'	(13) 75" & (1) 25.5"
100'	(16) 75" & (1) 49.5"

NOTE: The conduits can be assembled at once or in short sections. Secure each joint with a Tek screw and use duct tape to tape the joint and screw to protect the cover.

1. Locate the required 1.315" pipes and assemble the two lengths as previously described.
2. Secure each joint with a Tek screw and tape the joint to protect the cover pocket.
3. Insert one assembled conduit into one of the remaining pockets of the main cover.
4. Repeat for the remaining conduit.
5. After both roll-up conduits are installed, all side security straps are in place and slightly tightened, and the cover is centered evenly on the frame, complete one of the following:
 - If your building is 40' long (skus: PB00280R4 or PB00280R5), skip the next procedure and tighten the side ratchets as described on page 19.
 - If your building is longer than 48', complete the following procedure to install the PVC cover conduit.

INSTALL THE PVC CONDUIT FOR MAIN COVER ENDS

Complete this section if the building is longer than 48'. The PVC conduit is inserted into notched pockets at each end of the main cover. Strapping is then threaded around the conduit and the end rafters. This strapping is evenly tightened to stretch the main cover end-to-end.

Required parts and tools:

- LJ2842 (3/4" PVC conduit) and 103620E (1" strap)
- Duct tape, Tek screws, and driver for Tek screws
- Tool to cut strap, a lift or ladders to reach top of frame, and assistants to install and tighten strap

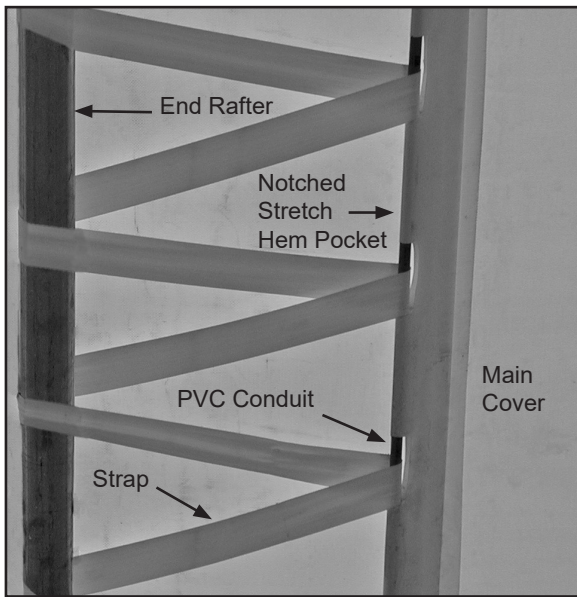


Photo shows the stretch pocket and the conduit and strapping as installed for a similar main cover. View shows the cover as seen when standing inside the frame looking up at the end rafter.

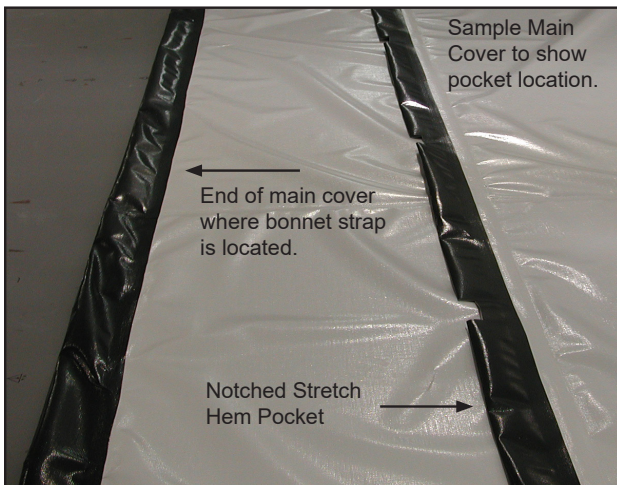


Photo above shows a similar cover and the location of the stretch pocket. Cover is shown with the underside facing up, which is the side visible from inside the frame when the cover is installed.

PVC conduits are installed near the ends of the main cover to provide an additional tie-down position. Complete these steps to install the conduit and strapping for the stretch pockets of the main cover.

1. Take the first section of PVC conduit and feed it into the stretch pocket from the bottom at one end of the cover. *Insert the plain end of the conduit into the pocket so the next section can be joined to the first.*

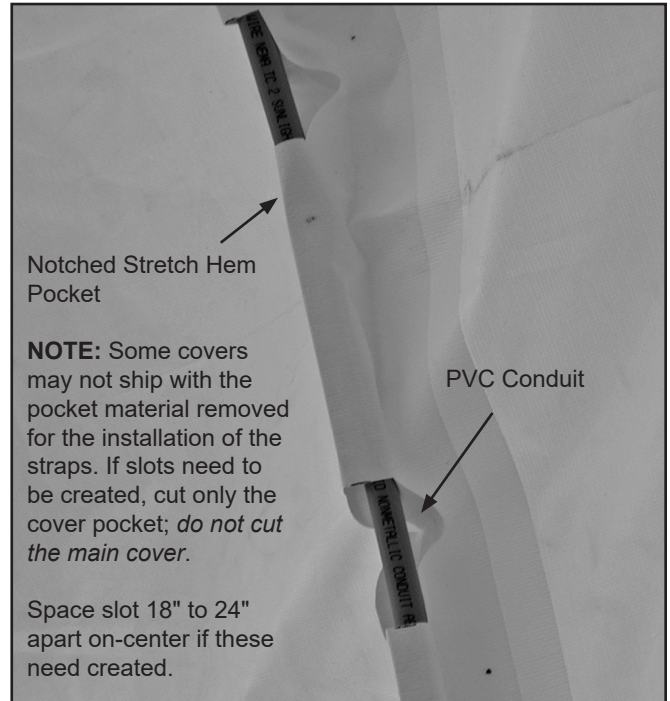


Photo shows the notched stretch pocket and the installed PVC conduit at the end of a similar main cover.

2. Once the bell end reaches the pocket, take another section of PVC conduit, insert the plain end into the bell end of the previous section and secure the joint using a Tek screw or customer-supplied PVC glue.



NOTE: Wrap the Tek screw and joint using duct tape.

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INSTALL PVC CONDUIT (CONTINUED)

3. Repeat the steps and continue to assemble and feed the PVC conduit into the pocket.
4. Once the PVC conduit is fully assembled, secured at the joints, and inserted into the pocket, repeat the steps for the remaining end of the main cover.
5. With both PVC conduits assembled and installed, verify that the cover is centered on the frame (side-to-side and end-to-end) and move to one end rafter.
6. Take the rope or strap used to pull the cover and cut a few sections long enough to tie the PVC conduit to the end rafter in evenly spaced locations. See example in the photo below.

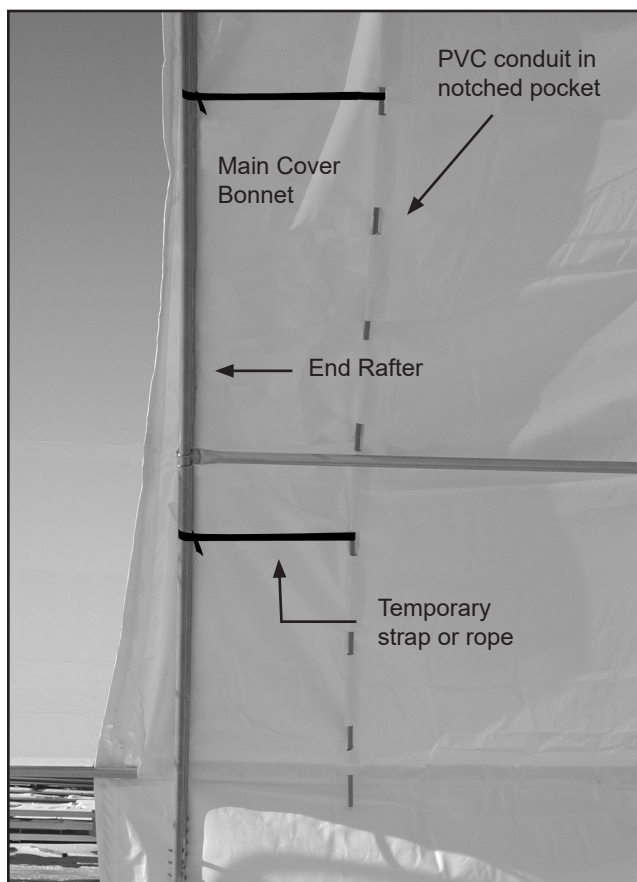


Photo shows temporary straps tied between the PVC conduit and the end rafter to keep the main cover centered on the frame as the strapping at the other end of the frame is installed. Cover used for illustration only. Actual cover may differ from what is shown.

7. Move to the end of the frame opposite the end where the temporary straps were tied, take one end of the bulk roll of 1" strapping, and weave it around the end rafter and PVC conduit.

8. Continue weaving the strap around the end rafter and PVC conduit working up and over the rafter and down to the other end of the PVC conduit.

NOTE: Keep the strapping snug during this step, but do not over tighten. Also, maintain an even distance between the top of the end rafter and the PVC conduit.



Photo shows how to weave strap around the conduit inside the main cover pocket and the end rafter. (Cover and rafter shown differs from actual cover.) Distance between the conduit in the pocket and the end rafter is even.

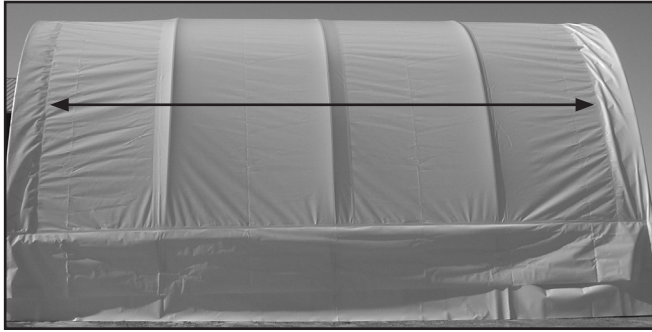
9. After weaving the strapping, cut the strap and tie it to the end rafter to temporarily secure it.
10. Take the remainder of the bulk strap roll, move to the other end of the frame, and repeat the steps to weave the strap between the PVC conduit and the top of the end rafter.

NOTE: The temporary rope or straps at this end can be removed once the main strapping is in place.

11. After the strap is completely installed at this end, cut the strap to length and tie it to the end rafter.

INSTALL PVC CONDUIT (CONTINUED)

- Beginning at either end of the cover, tighten the strap. The strapping will pull against the strapping installed at the other end of the frame.



Shelter shown above may be a different model and length. Photo used for illustration purposes only.

NOTE: Maintain an even distance between the end rafter and the PVC conduit as the strap is tightened.

Also check that the bonnet portion of the main cover overlaps the end rafters evenly at both ends *before* stretching the cover. Check this periodically as the cover is stretched.

If the side straps are too tight and prevent the cover from stretching end-to-end, loosen but do not remove the straps as needed and continue.

- Once the strap is tight at one end, cut it to length (if needed) and tie it to the other leg of the same end rafter.
- At each end of the stretch hem strap, drive a Tek screw through the strap and into the back side of the rafter to secure the strap to the rafter. This helps keep the strap tight and in position.
- Return to the other end of the frame and tighten that strapping (if needed) to complete the stretching of the main cover from end-to-end. Secure the strap using a Tek screw at each end (Step 14).
- Continue by tightening the side ratchets.

TIGHTEN THE SIDE RATCHETS

Verify that the cover is in the desired position and centered on the frame. (Loosen and reposition if needed.) Continue with these steps to tighten the side ratchets.

- Move to the side ratchets attached to each leg of one rafter. Begin at an inside rafter near the center of the frame.
- With an assistant at one side ratchet and someone at the other side ratchet on the same rafter, tighten the ratchets to secure the cover.

Tightening the ratchets at the same time on the same rafter helps keep the cover centered and results in a more uniform appearance.

- Move to another rafter and repeat the steps to tighten the side ratchets attached to that rafter.

NOTE: If the strap builds up in the ratchet, loosen the ratchet, remove some of the strap, and retighten.

- After all side ratchets are tight, position someone at each ratchet attached to the end rafter where the bonnet straps of the cover were previously inserted.

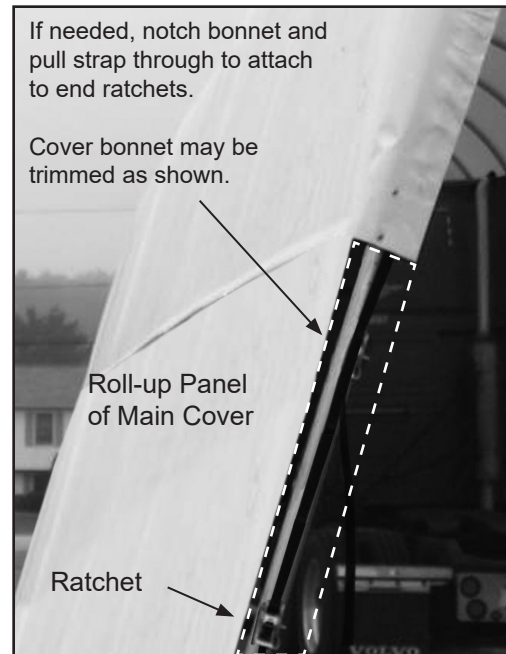


Photo shows the ratchet attached to the end rafter. This ratchet is used to secure the bonnet portion of the main cover.

- Tighten the end ratchets to secure the bonnet portion of the main cover.
- Move to the other end of the building and secure the bonnet at that end.
- Continue by installing the Twist-of-the-Wrist Assembly.

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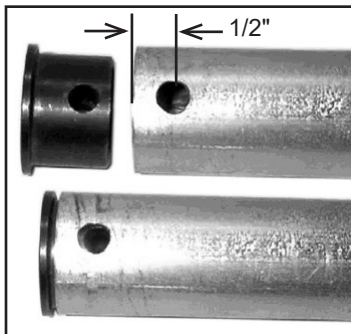
TWIST-OF-THE-WRIST ASSEMBLY

Gather the parts:

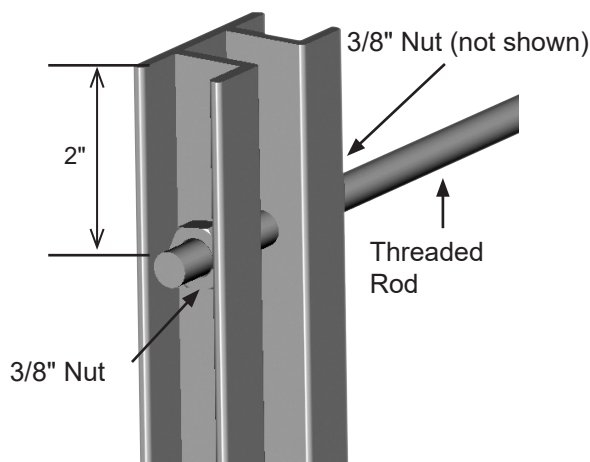
- Aluminum channel (#102570) and drive handle (#102480)
- Gearbox (#103496) and gearbox double drive (#102717)
- Mounting plate (#103544) and bearing assembly (#102569)
- Threaded rod (#FAK26), 3/8" nuts (#FALB04B) and washers (#FAME08B)
- CC6212 fabric clips (Use half for each side.)
- 5/16" machine bolts (FAG336B) and 5/16" nuts
- Drill and drill bits

The Twist-of-the-Wrist Assembly is designed to roll up a portion of the sides of the cover. The following steps describe the installation of one assembly.

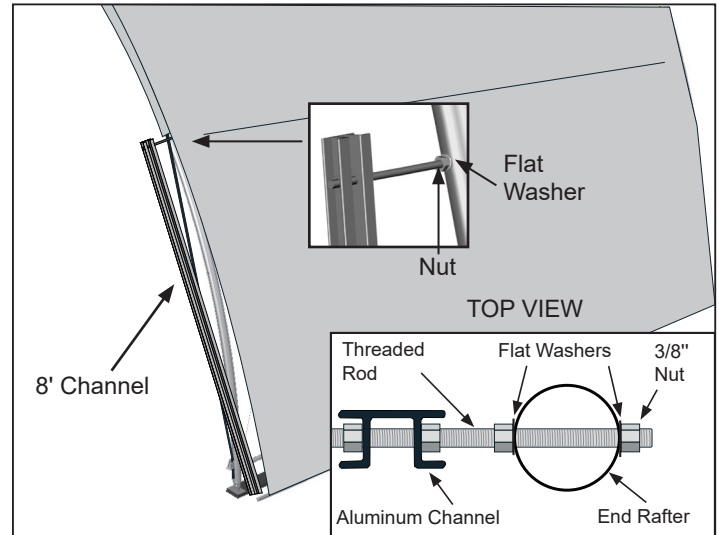
1. At the end where you will attach the gearbox, drill a 5/16" hole through the cover conduit 1/2" from the end of the conduit.
2. Insert a tubing adapter into the conduit and align the holes of the adapter with the drilled holes in the conduit.



3. Select one aluminum channel and drill a 3/8" hole through the channel approximately 2" from the end and attach a threaded rod to the channel using a 3/8" nut on each side of the channel.



4. Position the channel along the rafter at the desired end of the building where the Twist-of-the-Wrist assembly will be located. Place the lower end of the channel an inch off the ground to allow free movement of the channel during the operation of the roll-up cover.
5. Secure the upper end of the channel by drilling a 3/8" hole through the end rafter and attach as shown. The lower end of the channel will "float" and is not attached.



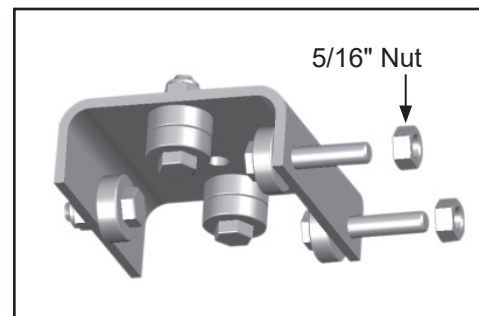
NOTE: Install a 3/8" flat washer between the 3/8" nut and the end rafter. *Frame shown for illustration.*

6. Select the bearing bracket and attach the bearings as needed. (In some instances, the bearings may come already attached.) Assemble as follows if needed:

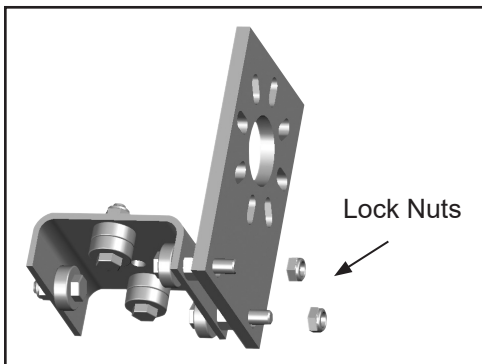
Single bearings are attached to the sides of the bracket and double bearings to the middle portion of the bracket. Use 1/4" hex bolts and locknuts as needed. Install a flat washer on both sides of each bearing to insure proper operation of bearings and the assembly.

Install the longer bolts with bearings on the side of the bracket that has the two holes. Install these *before* installing the double bearing assemblies. See the figures below.

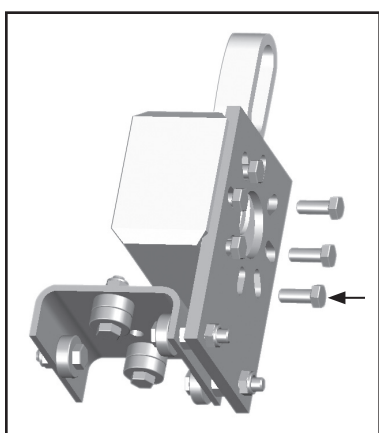
7. For the spacers on the long bolts, insert a 5/16" nut over each bolt. *These nuts are used as spacers only.*



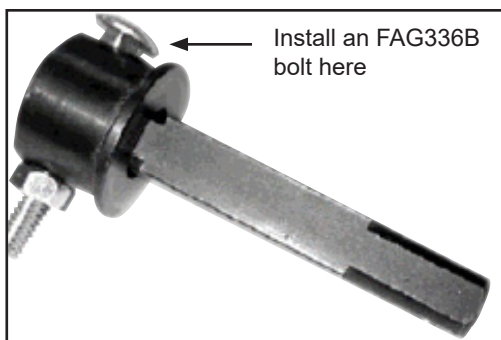
8. Slide the Twist-of-the-Wrist mounting plate over the long bolts and secure the plate with two lock nuts.



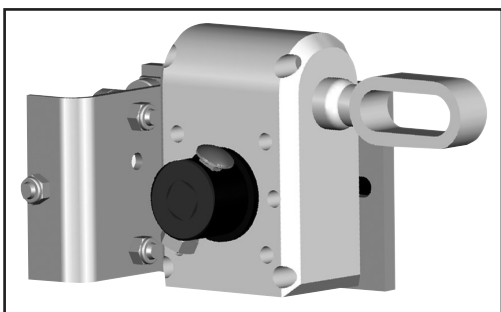
9. Attach the Twist-of-the-Wrist gearbox to the mounting plate using hex head bolts.



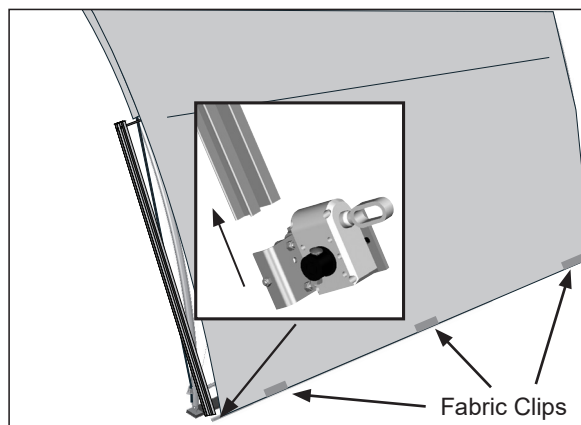
10. Using a 5/16" machine bolt and 5/16" nut, attach the square shaft to a tubing adapter. (Carriage bolt is shown for illustration. Use an FAG336B machine bolt.)



11. Slide the square shaft through the Twist-of-the-Wrist gearbox.

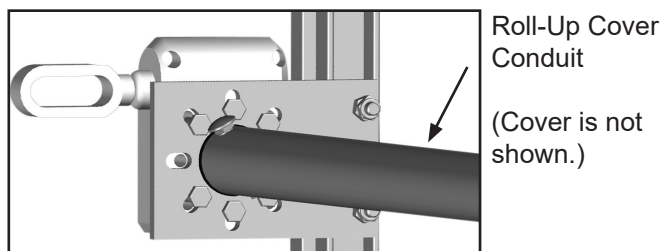


12. Slide the Twist-of-the-Wrist assembly onto the aluminum channel from the ground end. (This is the free end of the channel.)

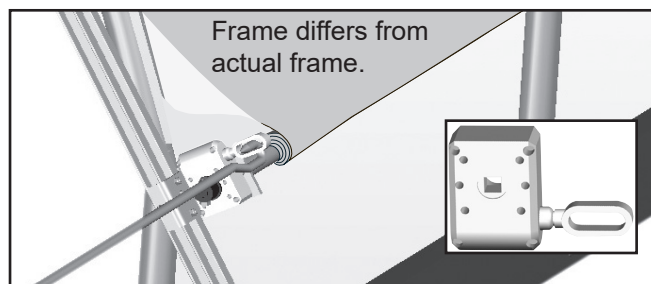


13. Adjust the roll-up cover conduit so that it reaches the gearbox and *secure the cover to the conduit* using half of the CC6212 fabric clips and Tek screws.
14. Roll the conduit toward the frame and up to the gearbox to wrap the excess cover onto the conduit.
15. Attach the rolled conduit to the square shaft of the assembly by inserting a 5/16" x 2-1/2" bolt through the hole in the conduit and tubing adapter. Tighten the nut.

NOTE: It may be necessary to trim the conduit and cover to the proper length so that it aligns with the gearbox. Adapt these instructions to your application.



16. Attach the crank handle to the Twist-of-the-Wrist assembly. (Cover is not shown in the above diagram.)



17. Test the operation of the Twist-of-the-Wrist assembly.

NOTE: If the cover rolls in the desired direction, but you want to turn the crank in the opposite direction for the same result, unbolt, reposition the gearbox, and remount it on the same side of the mounting bracket.

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INSTALL ANTI-BILLOW ROPES

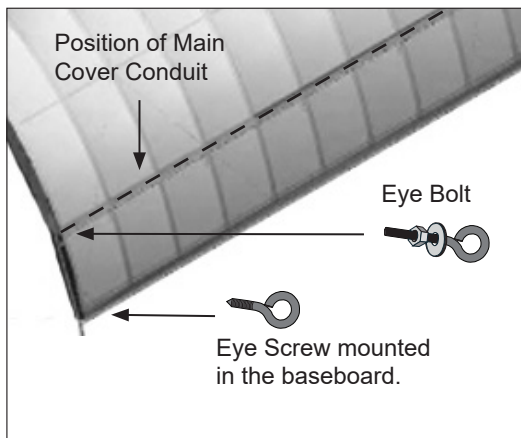
Gather the parts:

- Anti-billow rope (#CC5310)
- 5/16" Eye screws (#FA2160) (Use with baseboard.)
- 3/8" Eye bolts (#FA2083) and 3/8" nuts and washers

Install anti-billow rope in short sections along each side. **Do not install as a single length tied at each end.** Complete the following steps to install the ropes.

ATTENTION: The procedure that follows is applicable when the building was constructed using wood boards under each rafter foot. If the building was constructed on concrete footings, a concrete slab, or on bare ground, alternative steps must be taken *by the owner* during the following procedure to anchor the lower ends of the anti-billow ropes.

1. Using the Twist-of-the-Wrist assembly, roll up the sidewall so that it is a few inches above the ground.
2. Move to the bottom of the end rafter and install an eye screw into the baseboard under the rafter feet. These instructions recommend using a baseboard under the rafter feet; *if no baseboard is present to use the supplied eye screws, you must devise another way to provide a mount for the anti-billow rope installation.*



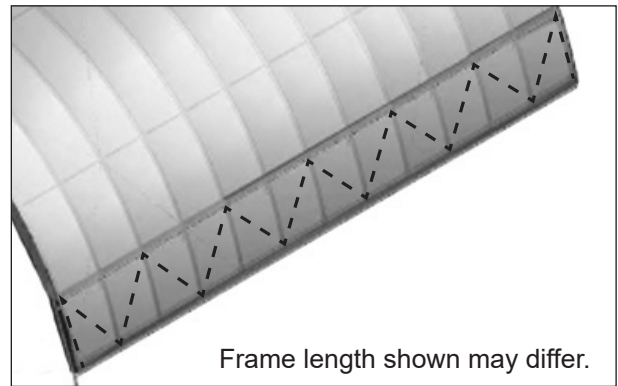
Cover and end panel are not shown for clarity.

3. Move up the same end rafter and drill a 3/8" hole in the *main cover conduit* a few inches in from the end rafter. Align the upper eye bolt with the eye screw in the baseboard.

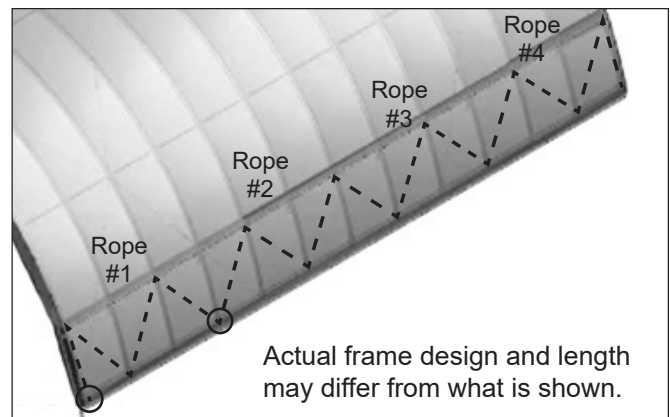
NOTE: Do not drill through the end rafter or the strap used to secure the conduit to the rafter.

4. Insert an eye bolt and washer through the hole and secure the eye bolt with a nut and washer to the cover conduit.

5. Repeat Steps 2-4 using the following photo as a pattern guide. Dashed line shows the rope location.



6. Once all eyebolts/eye screws are installed in the proper locations, install the anti-billow rope **in short lengths along each side**. Thread the free end of the rope through the end rafter eyebolts/eye screws and the eyebolts/eye screws at two to three interior rafters.
7. Cut the rope and tie one end to the eyebolt/eye screw.
8. Pull the rope tight and tie the remaining end to secure.



Circles identify the ends of Rope #1. Actual number of individual ropes along the side may differ.

9. Repeat the steps to install another section of anti-billow rope. Continue this pattern until all ropes are tied along one side and repeat the steps to install the anti-billow ropes for the remaining side.

NOTE: The number of individual ropes along any one side depends on the length of the building, rafter spacing, and the length of the rope sections.

10. Check the roll-up side operation.
11. Read the shelter care and maintenance information that follows.

SHELTER CARE AND MAINTENANCE

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



Space below is reserved for customer notes.

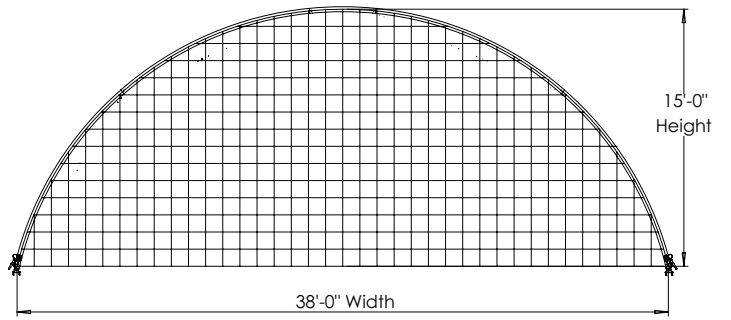
- Regularly check the main cover and panels (if equipped) to see that these remain tight and in proper repair.
- Check the cable turnbuckles and cable clamps to see that these remain tight. Tighten as needed. Check the cable to verify that it is not worn, wearing on a frame member, or touching the main cover or end panels (if equipped).
- Check connections and all fasteners to verify that they remain tight.
- Do not climb or stand on the shelter 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. Do not allow snow to accumulate on the cover.
- Check the contents of the shelter to verify that nothing is touching the cover or the side panels that could cause damage.
- Check the anchoring system to ensure that all components are tight and in good repair.
- Replace all worn or damaged parts promptly.
- If the shelter is moved, inspect all parts and connections before reassembling.
- For replacement or missing parts, call 1.800.245.9881 for assistance.

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

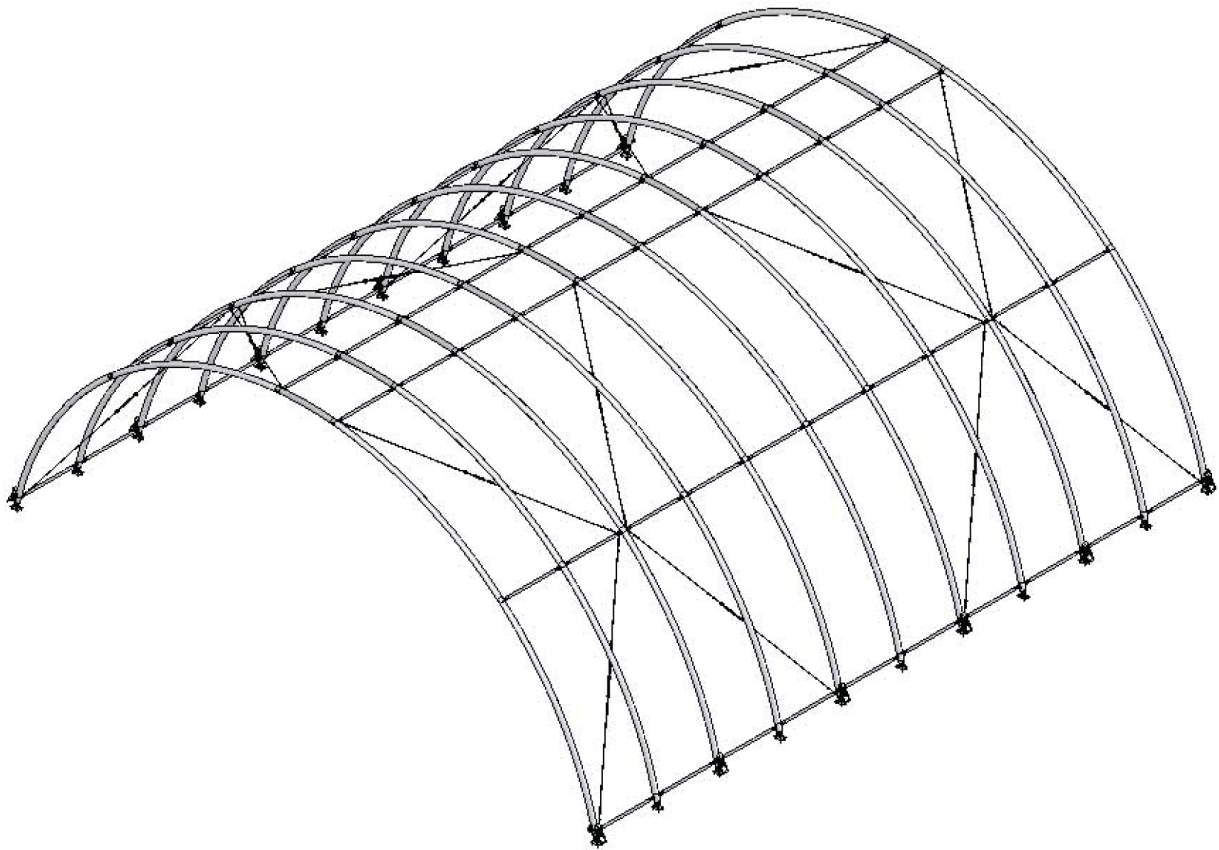


QUICK START GUIDE

38' Wide Manure/Compost Building

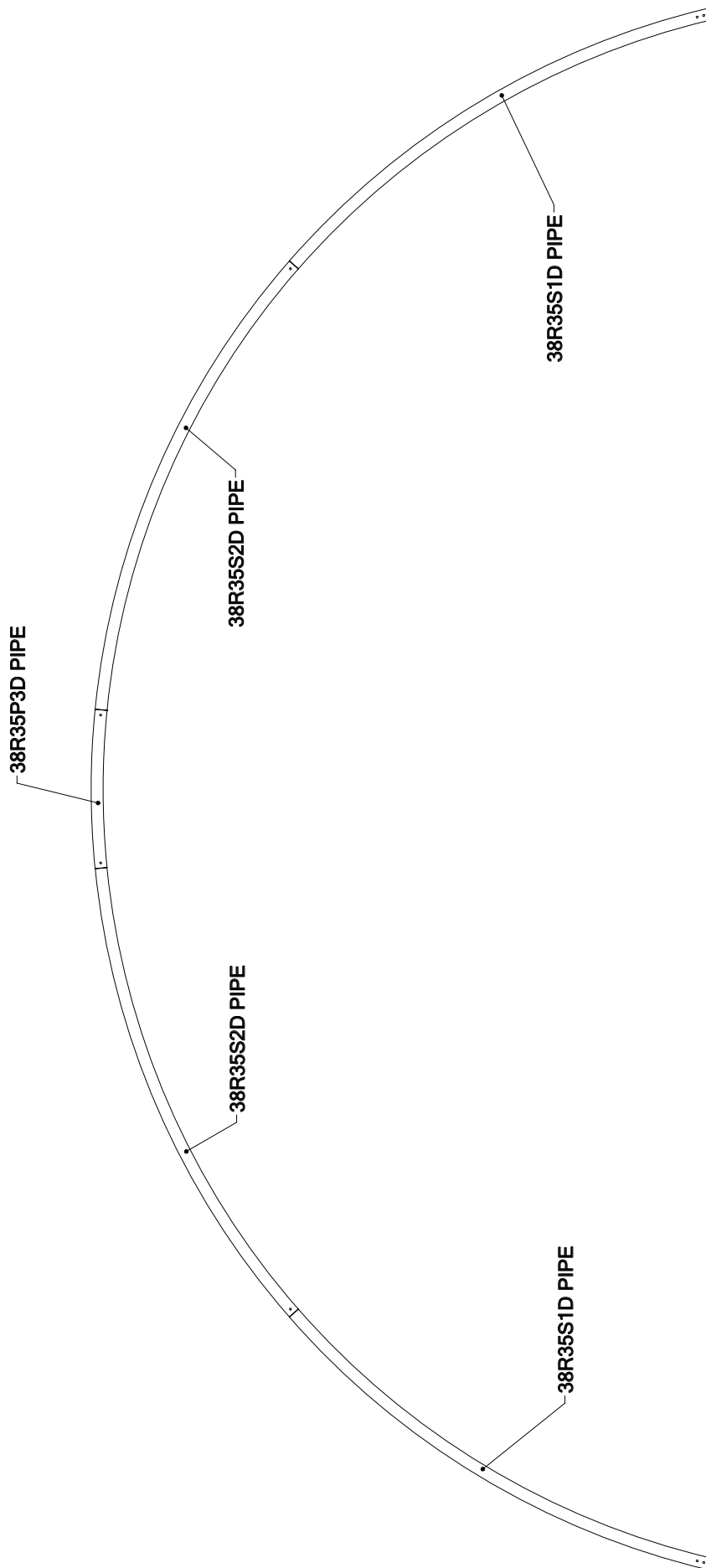


FRONT
Grid Represents 12" Squares

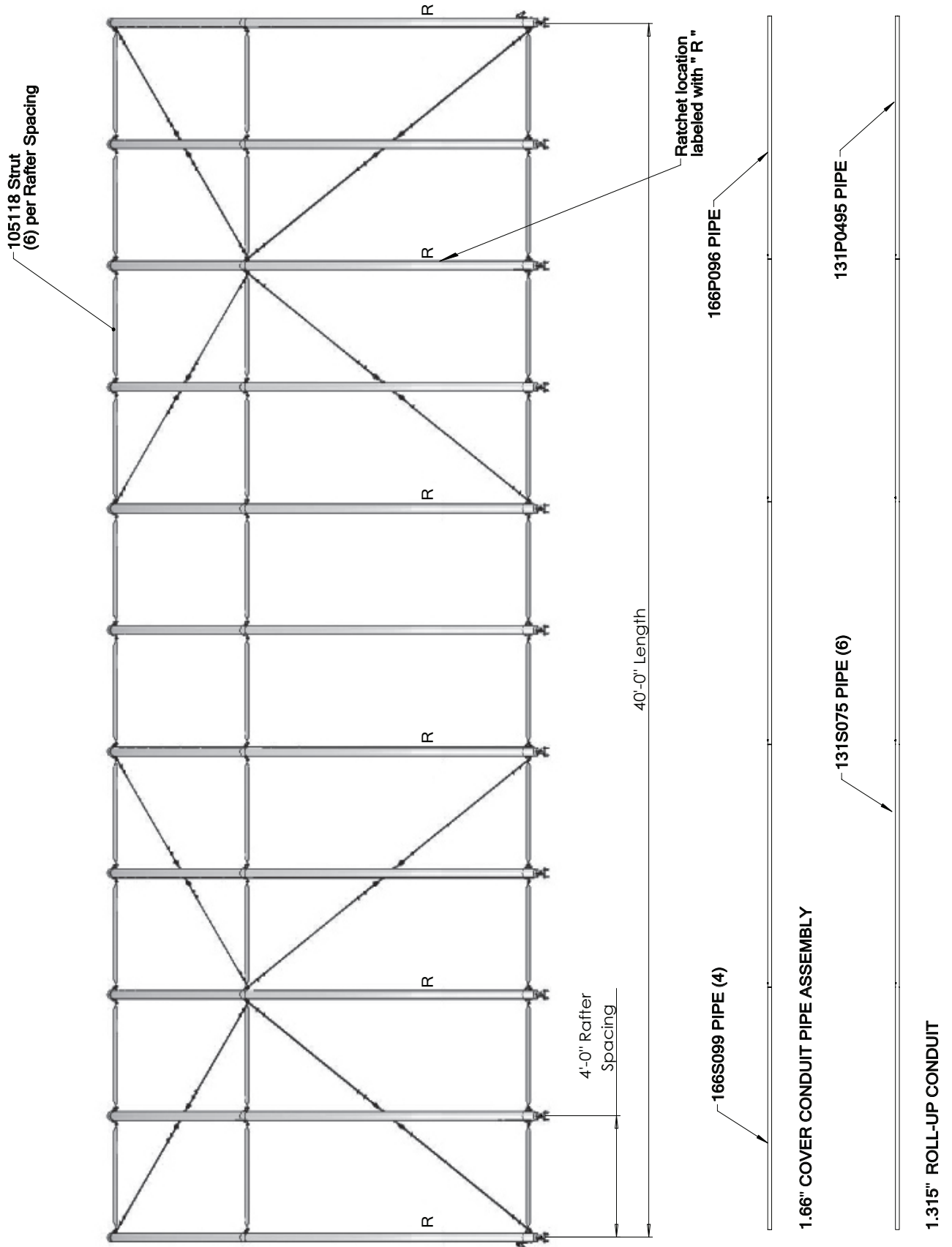


Frame shown may differ in length from actual frame.

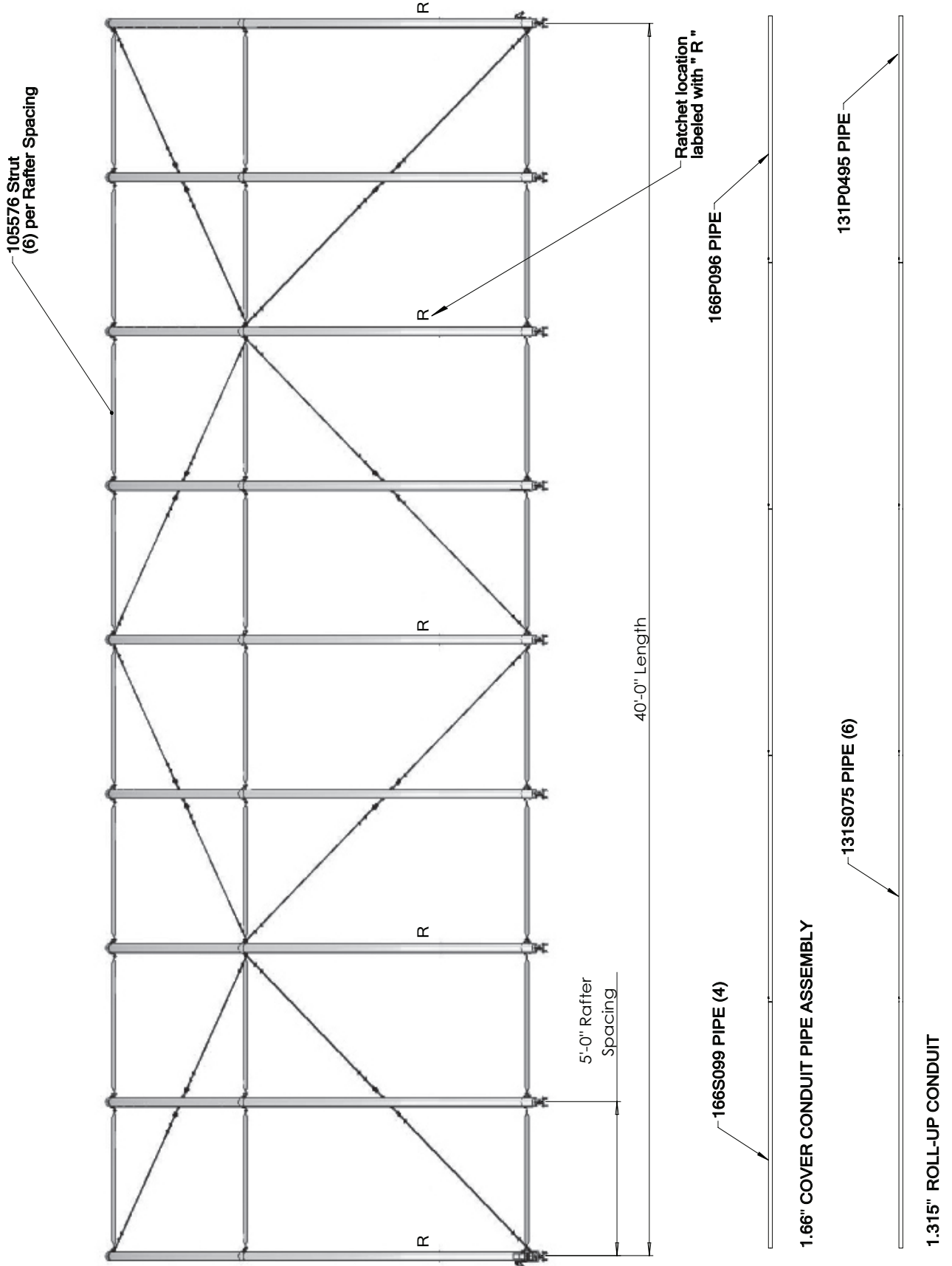
FRONT PROFILE



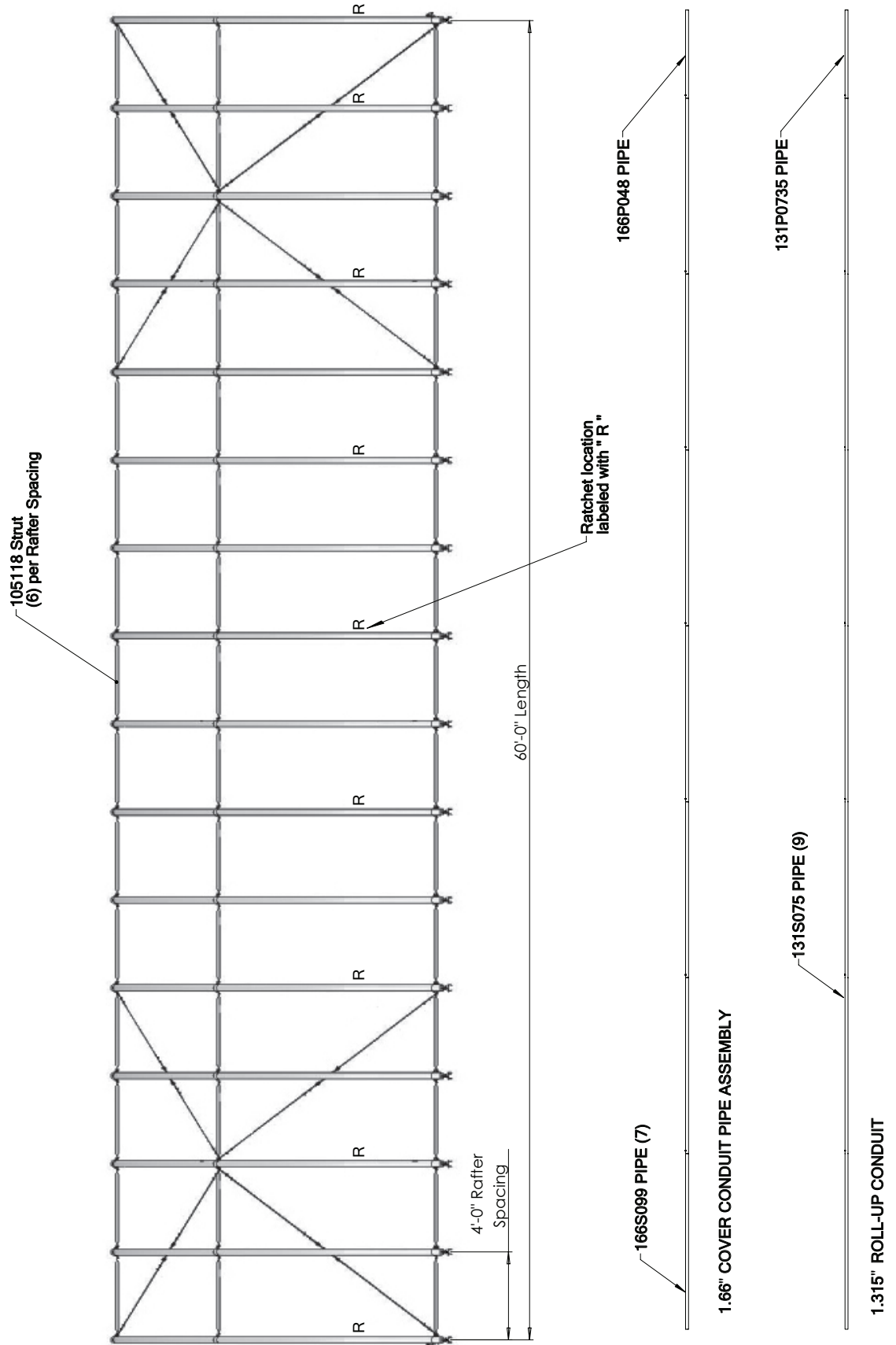
SIDE PROFILE - PB00280R4



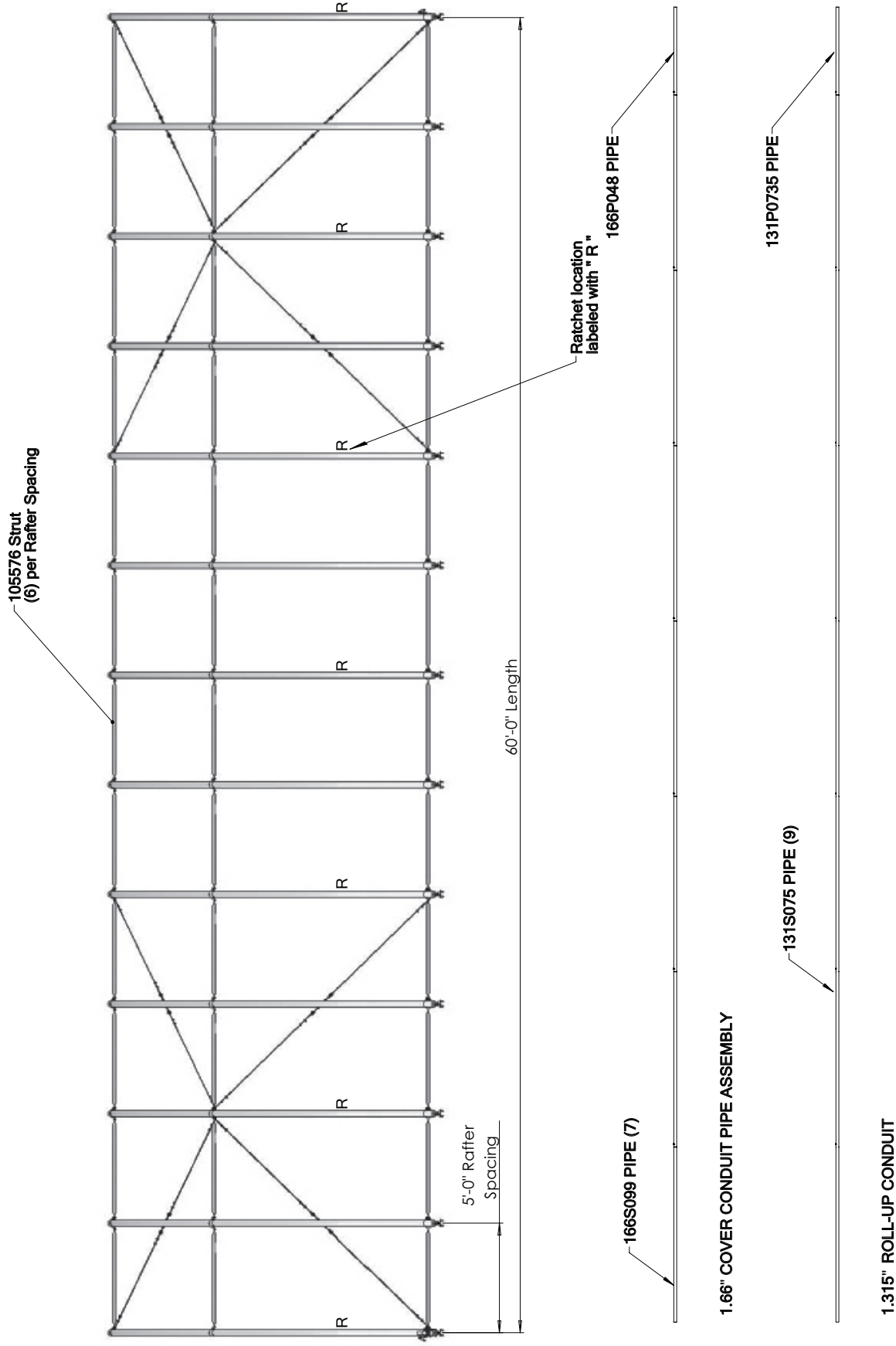
SIDE PROFILE - PB00280R5



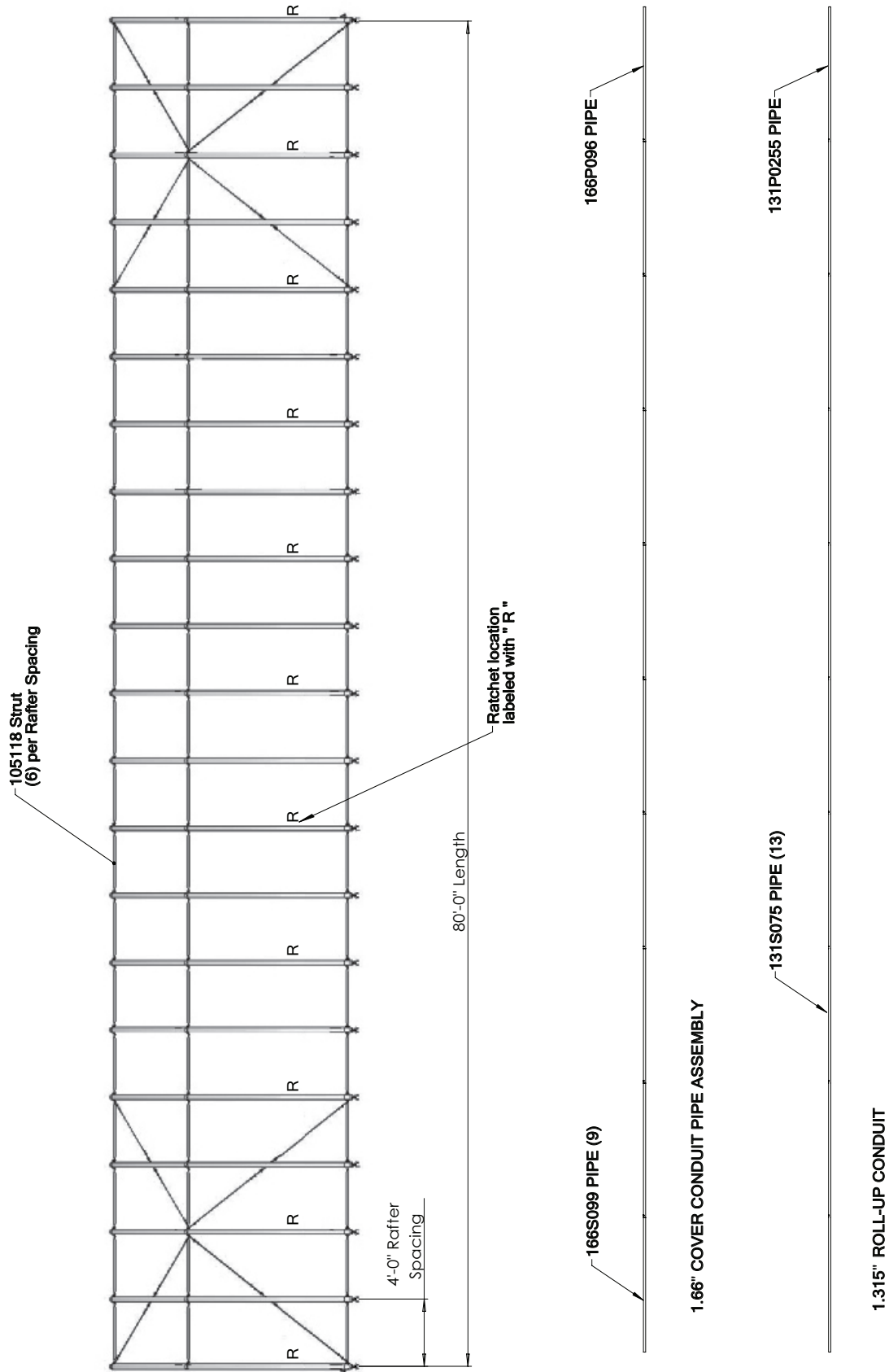
SIDE PROFILE - PB00282R4



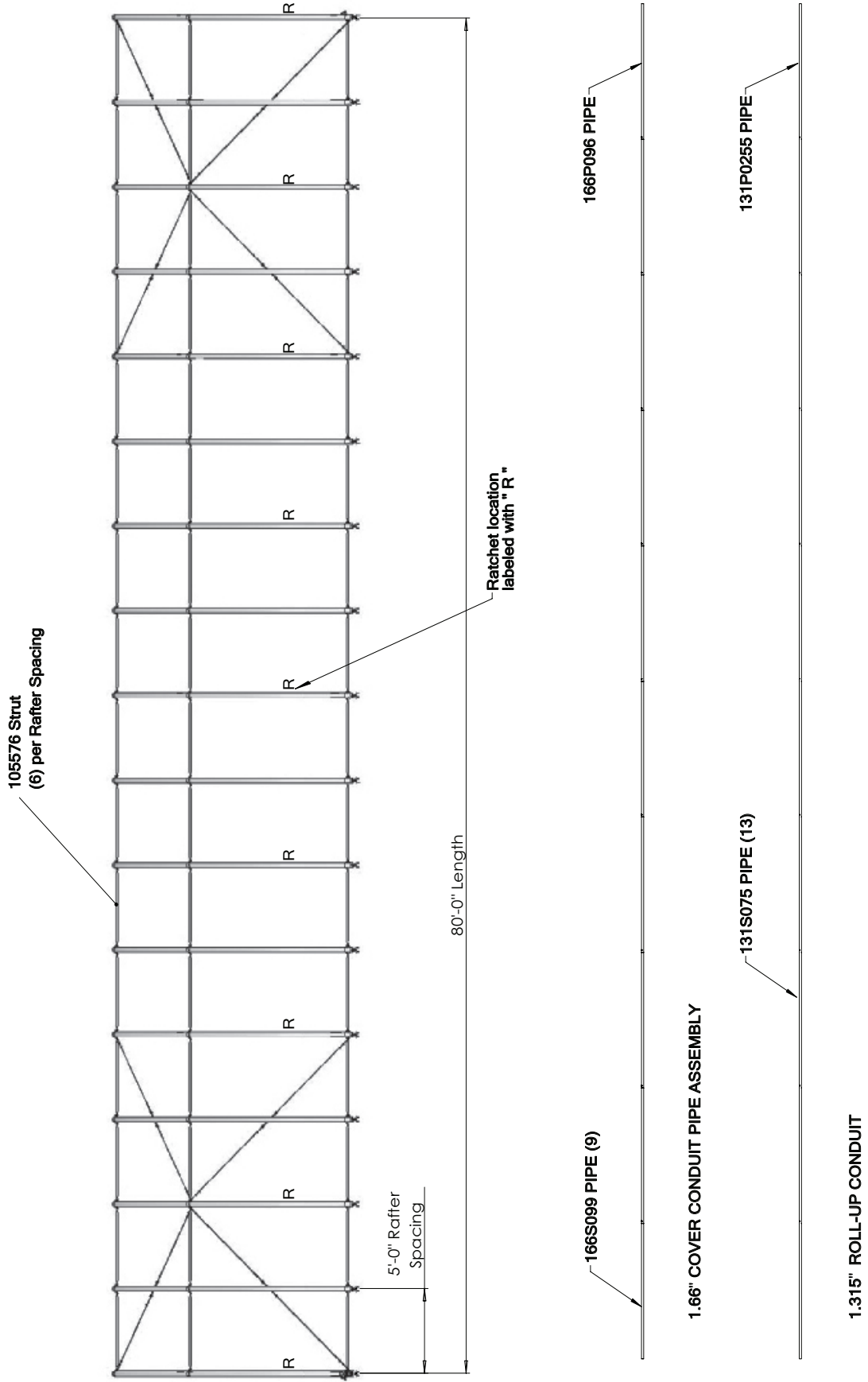
SIDE PROFILE - PB00282R5



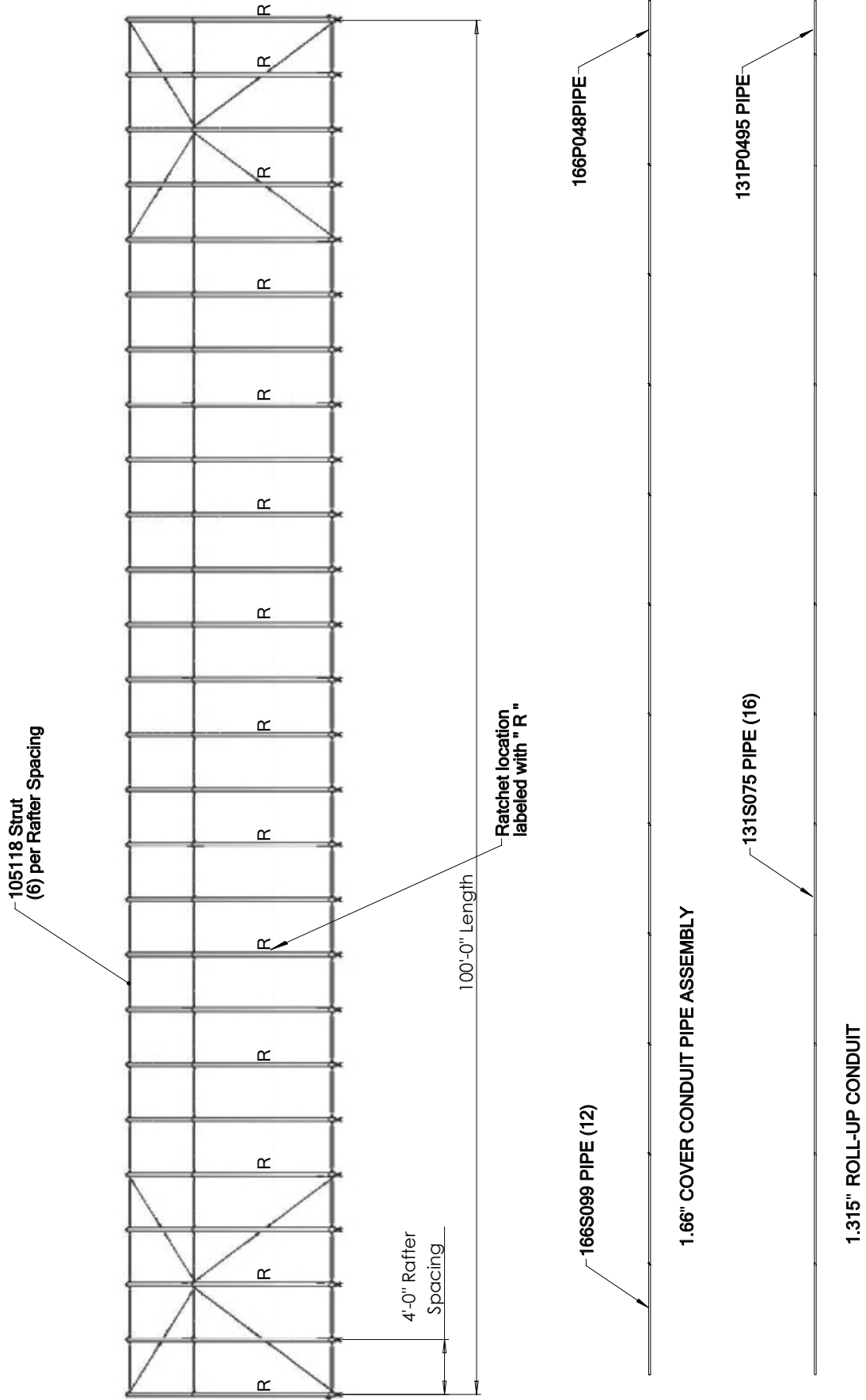
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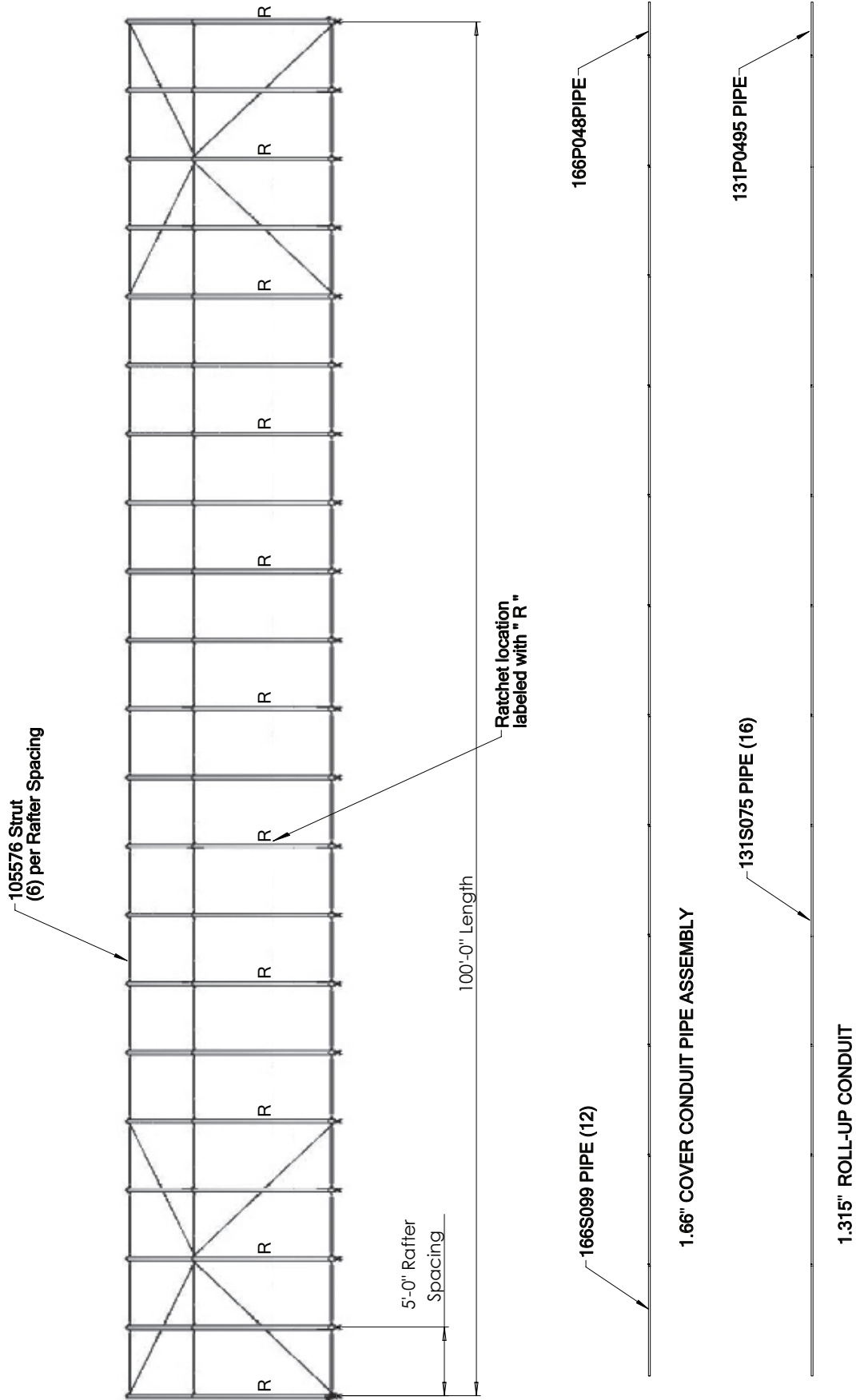
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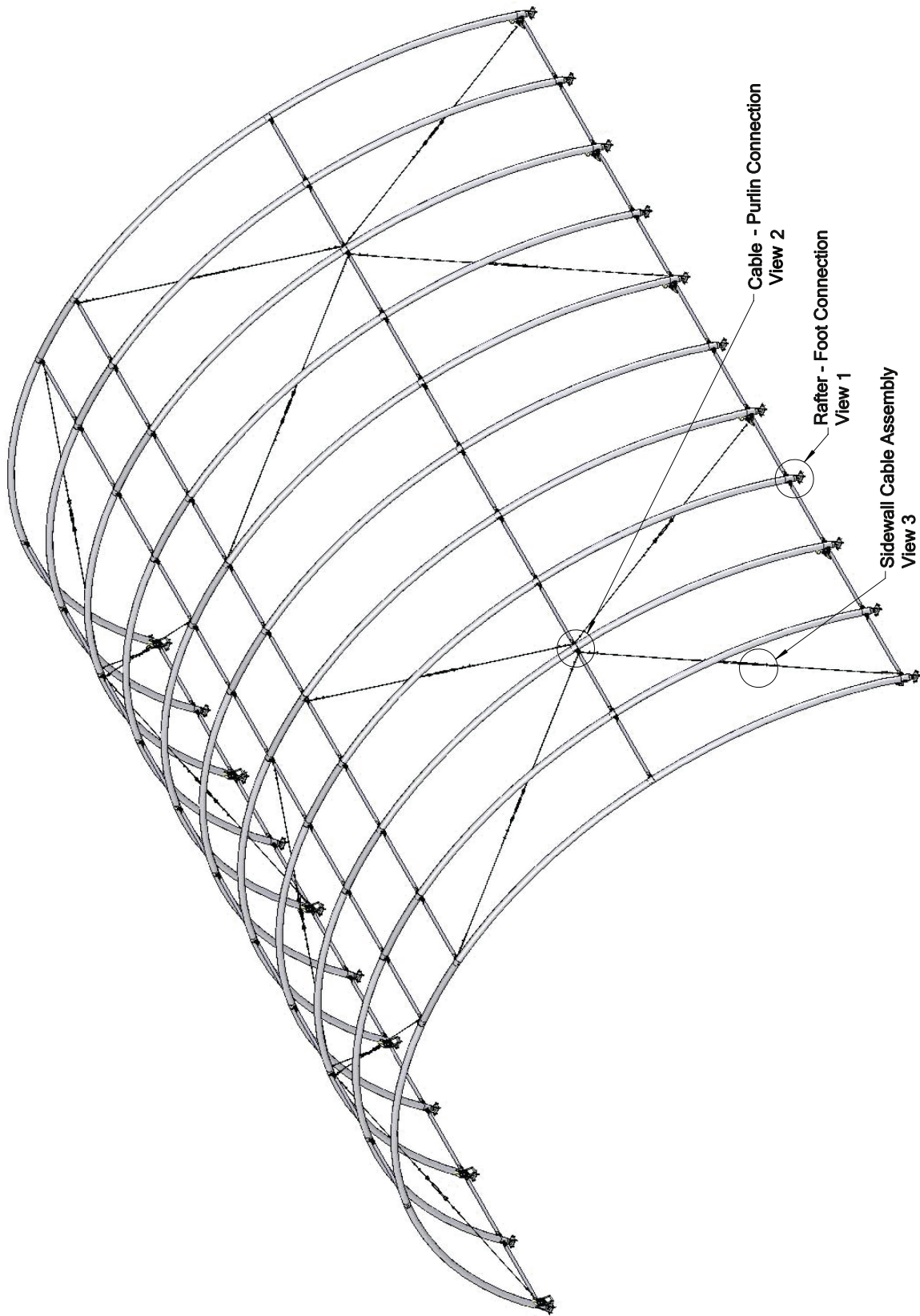
SIDE PROFILE - PB00286R4



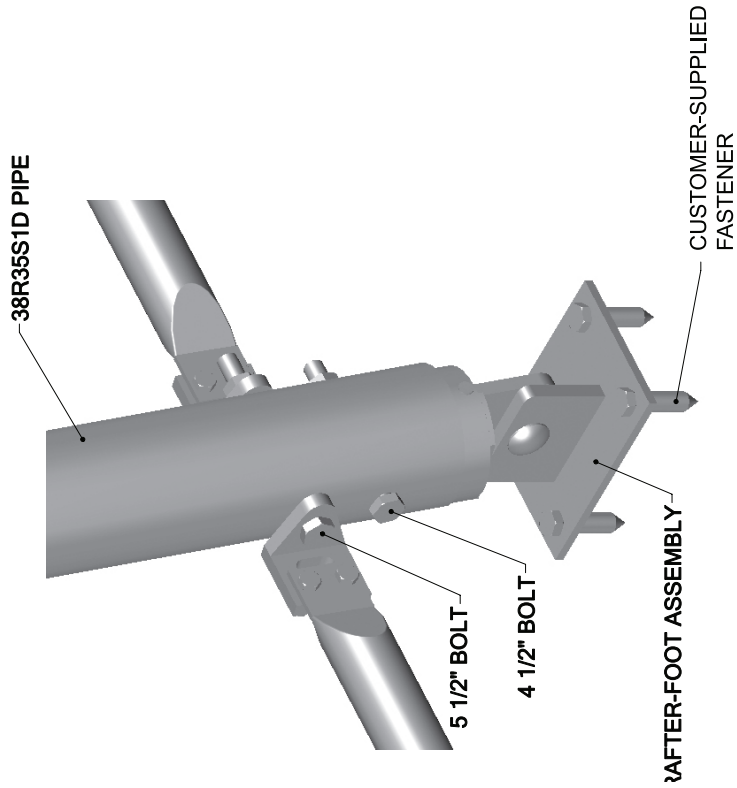
SIDE PROFILE - PB00286R5



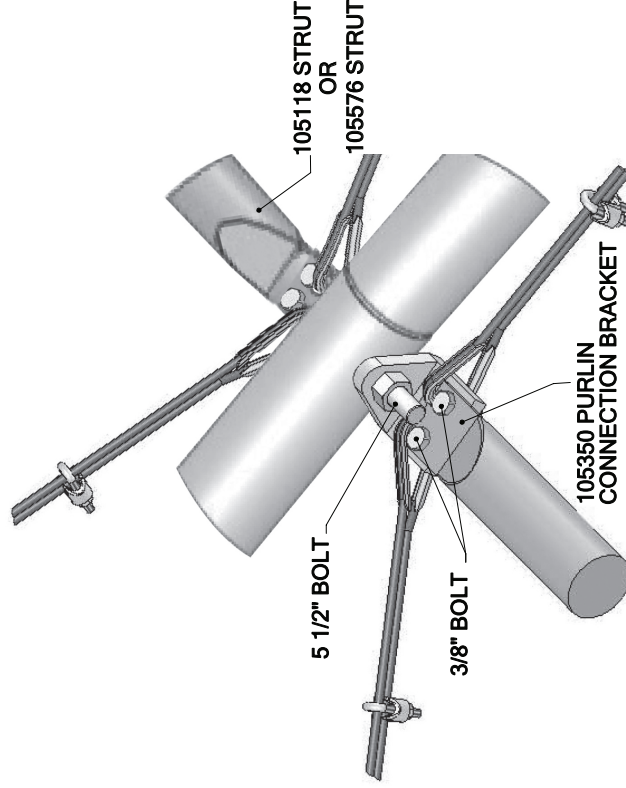
CONNECTIONS



CONNECTION - DETAILS 1-2

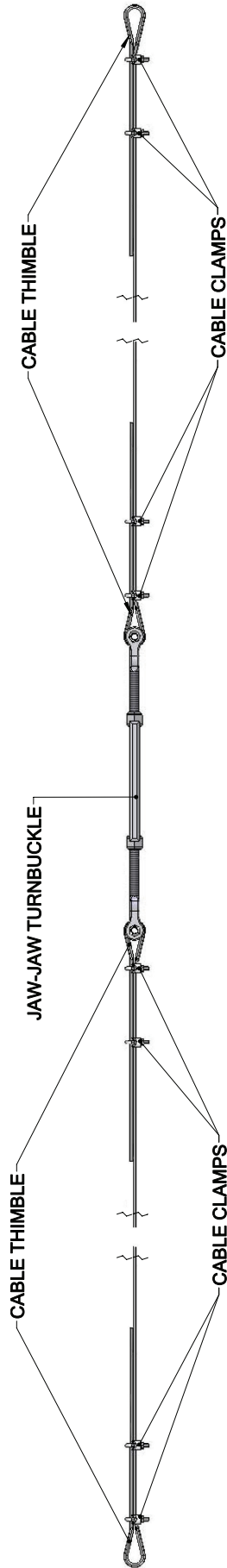


VIEW 1
RAFTER-FOOT CONNECTION



VIEW 2
CABLE TO PURLIN CONNECTION

CONNECTION - DETAILS 3



VIEW 3
SIDE WALL CABLE ASSEMBLY



Space below is reserved for customer notes.