ClearSpan
fabric structures and greenhouses

ClearSpan™ High Boy Buildings

Photo may show a model of a different length.

STK#	DIMENSIONS	STK#	DIMENSIONS
115402	26' W x 30' L	115405	26' W x 60' L
115403	26' W x 40' L	115406	26' W x 70' L
115404	26' W x 50' L	115407	26' W x 80' L

Important Information

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READ THIS DOCUMENT BEFORE YOU BEGIN

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 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 shelter or framing during or after construction.
- Do not occupy shelter during high winds, tornadoes, or hurricanes.
- Provide adequate ventilation if structure is enclosed.
- Do not store hazardous materials in shelter.
- Provide proper ingress and egress to prevent entrapment.

ANCHORING INSTRUCTIONS

Prior to assembly, read the *MUST READ* document included with the shipment.

WARNING: Anchor assembly is an integral part of shelter construction. Improper anchoring may cause shelter instability and failure of 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 important. The following suggestions and precautions will help determine whether the selected location is the best location.

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

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

WARNING: Individuals assembling this structure are responsible for designing and furnishing all temporary bracing, shoring and support needed during assembly.

For safety reasons, those who are not familiar with recognized construction methods and techniques *must seek the help of a qualified contractor.*

All construction to be completed in compliance with local and regional building codes and regulations. Enlist the services of a contractor familiar with the area before construction begins.

ASSEMBLY PROCEDURE

Following these instructions will help ensure proper shelter assembly. 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.

Assembly steps are as follows:

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

REQUIRED TOOLS

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

- Tape measure or measuring device.
- Fine point marker to mark tubing.
- Variable speed drill and impact driver (cordless with extra batteries works best) with 3/4" impact socket.
- Wrenches or ratchet and socket set (recommended).
- Scissors or utility knife to cut cover material and strap.
- Tool to trim cable to protect cover.
- Hammers and gloves.
- Rope (or straps) for cover installation.
- Ladders, work platforms, and other machinery for lifting designed to work safely at shelter height.

  ATTENTION: Height of assembled rafter is approximately twenty-two feet (22'). Lift must be capable of lifting and setting an assembled rafter. Review diagrams in frame assembly section for example.

UNPACK AND IDENTIFY PARTS

The following steps help ensure all necessary parts are present *before* you begin.

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

   NOTE: At this time, do not open plastic bags containing fasteners (if present) or small parts.

QUICK START GUIDE

For a quick overview of shelter components, consult the Quick Start Guide near the back of this guide.

The Quick Start Guide shows exploded views of all critical connections. Use the diagrams to assemble building frame.

Consult the remainder of these instructions for additional assembly details.

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

FA4484B
Tek Screw

100441
Nut Setter

QH1061
Ratchet

AS2162 Anchor Shackle

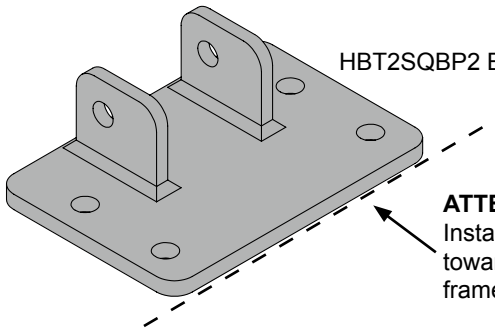
105350
Purlin Bracket

26HBT2SQ02PB
Bottom Plate

115131
Splice Connection Plate

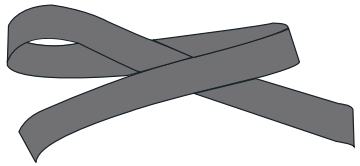
GW1172 Turnbuckle

106735 2" Square
Band Clamp



HBT2SQBP2 Base Plate

ATTENTION:
Install this edge toward inside the frame.



103620B
Tie Down Strap

ATTENTION: The 106735 square band clamps are included as part of the components list on page 1 of the MUST READ document. These clamps are used to secure the customer-supplied end wall columns to the end rafters. The customer-supplied end wall columns reinforce the assembled frame as described in the MUST READ document.

The 106735 square band clamps are not used in the assembly of the main frame for this building. Additionally, they are not needed when an end frame kit is purchased.

OVERVIEW

This section presents basic High Boy construction steps. Consult the Quick Start Guide and individual sections of this guide for details.

1. Mark building location and identify required parts for each assembly procedure.
2. Secure mounting feet to concrete slab or individual piers.
3. Assemble rafters. End rafters differ from interior rafters.
4. Assemble frame.
5. Install cable assemblies and tighten.
6. Install end frame, panel, and doors if present.
7. Prepare and install main cover.

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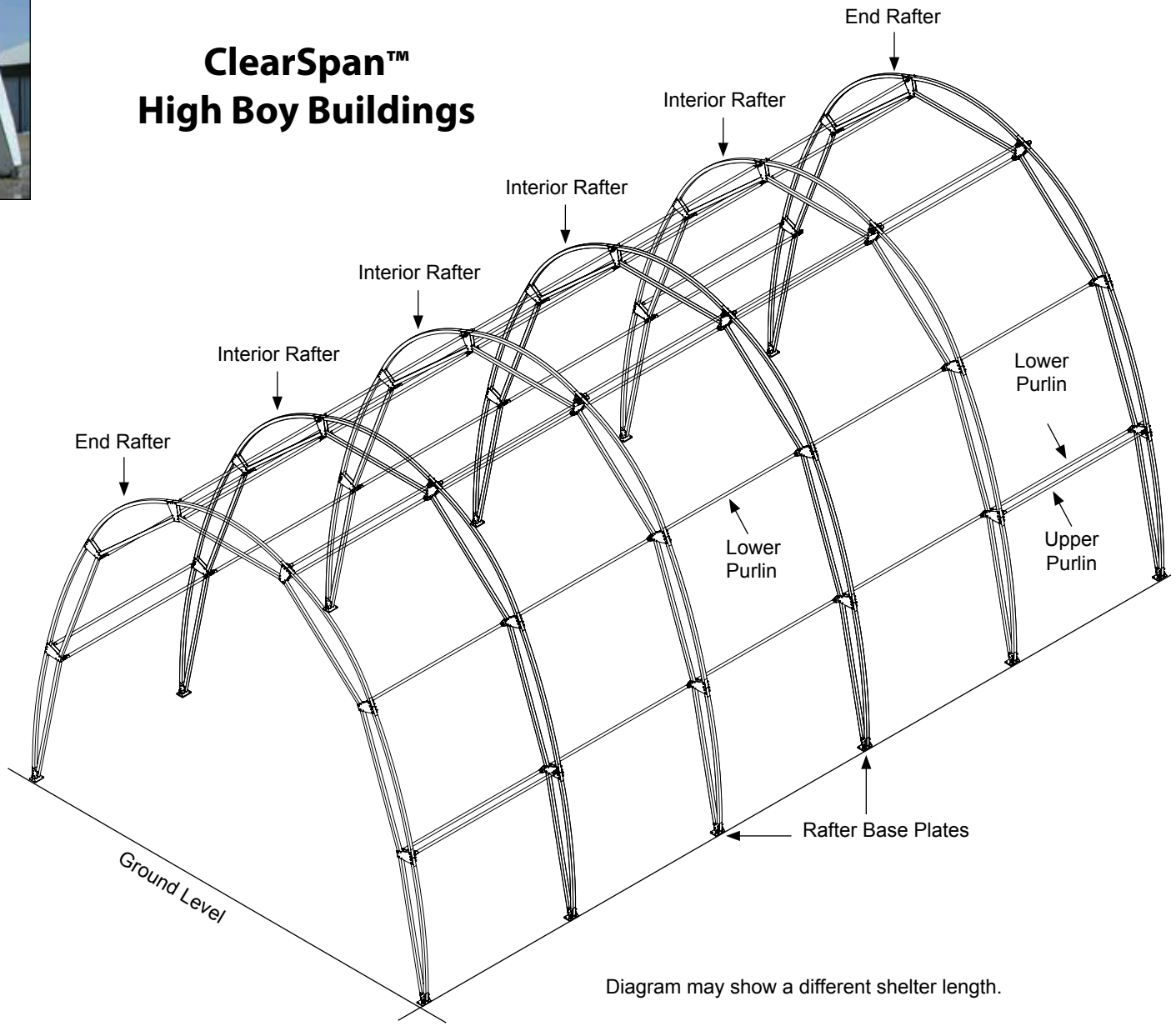
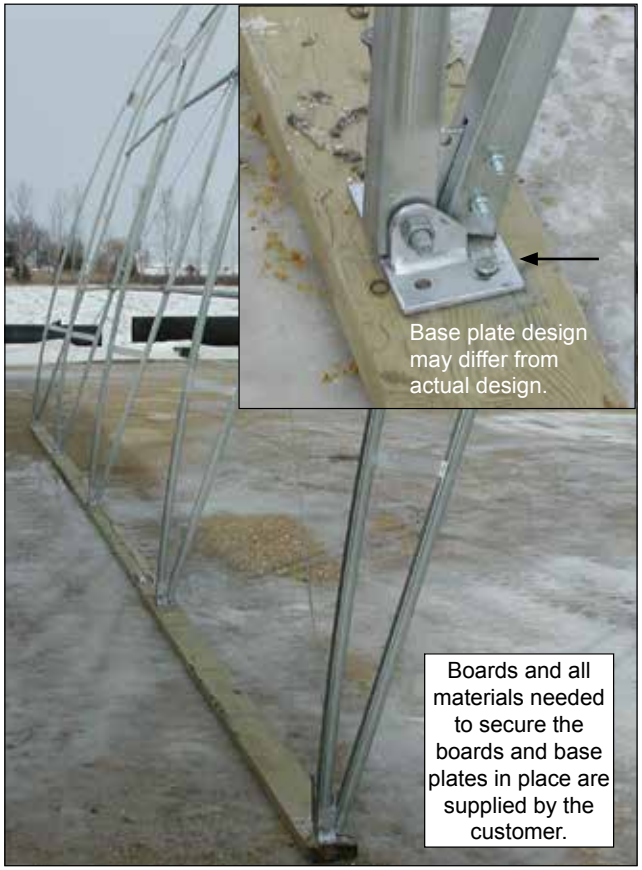


Diagram may show a different shelter length.

Layout of Building Site

LAY OUT THE BUILDING SITE

The High Boy building frame is designed to anchor to the ground or to a concrete foundation. If a concrete foundation or footing is not used, setting base of each rafter on treated planks or concrete pads is recommended.

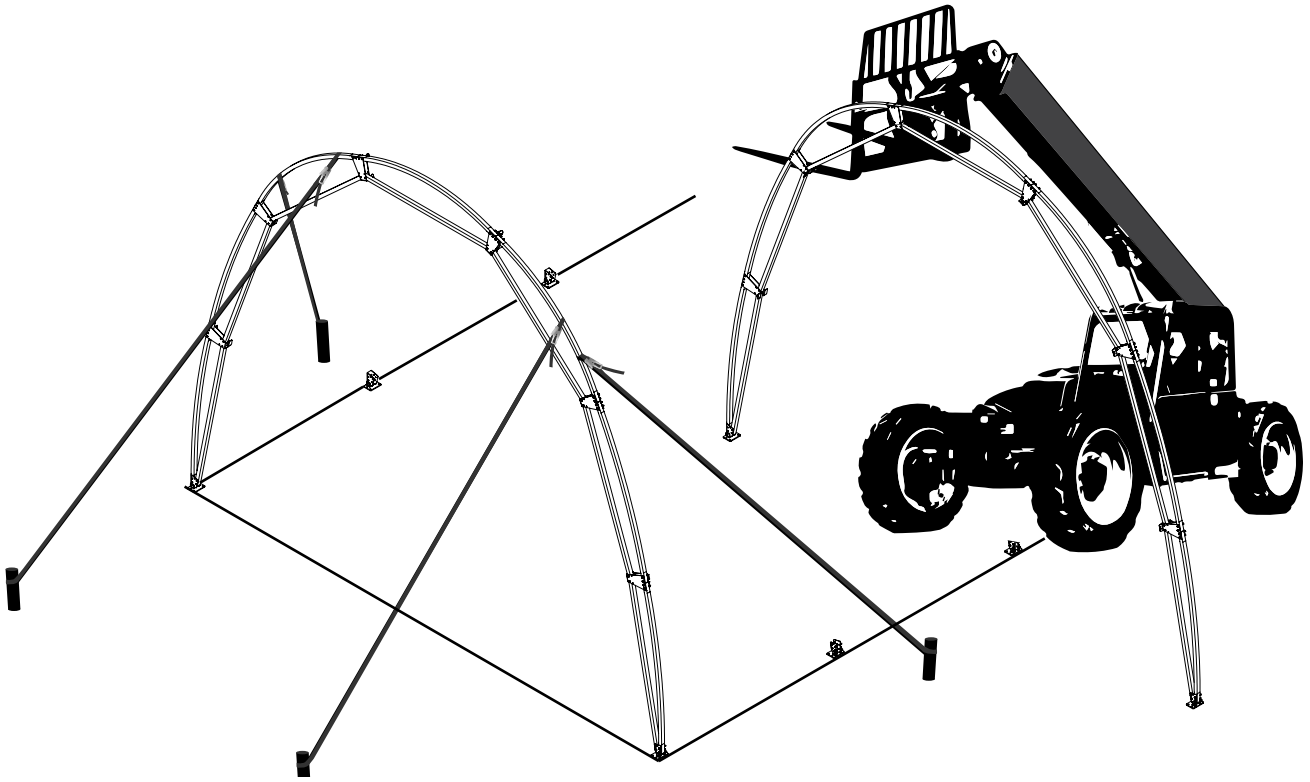


Frame shown above is used to illustrate setting a frame on treated boards for support. Frame may differ from actual frame. Read the MUST READ document for anchoring requirements and details.

If boards are used as shown to the left, boards must be staked in place at the proper width. Consult Quick Start Guide diagrams for *the on-center mounting base plate dimensions and details.*

ATTENTION: *Frame must be anchored to the site.* Securing frame to boards staked in place ***is not sufficient to anchor building.*** Consult the Must Read document for additional anchoring instructions.

If a concrete foundation or footing is used, anchor base plates to the foundation or footing before frame is assembled. Consult Base Details diagram in the Quick Start Guide of these instructions to properly space and attach base plates to foundation.



Consult a qualified professional contractor to properly anchor base plates to a concrete foundation.

IMPORTANT: Materials to anchor frame to the site or to secure base plates to the foundation ***are not included and must be supplied by the customer.***

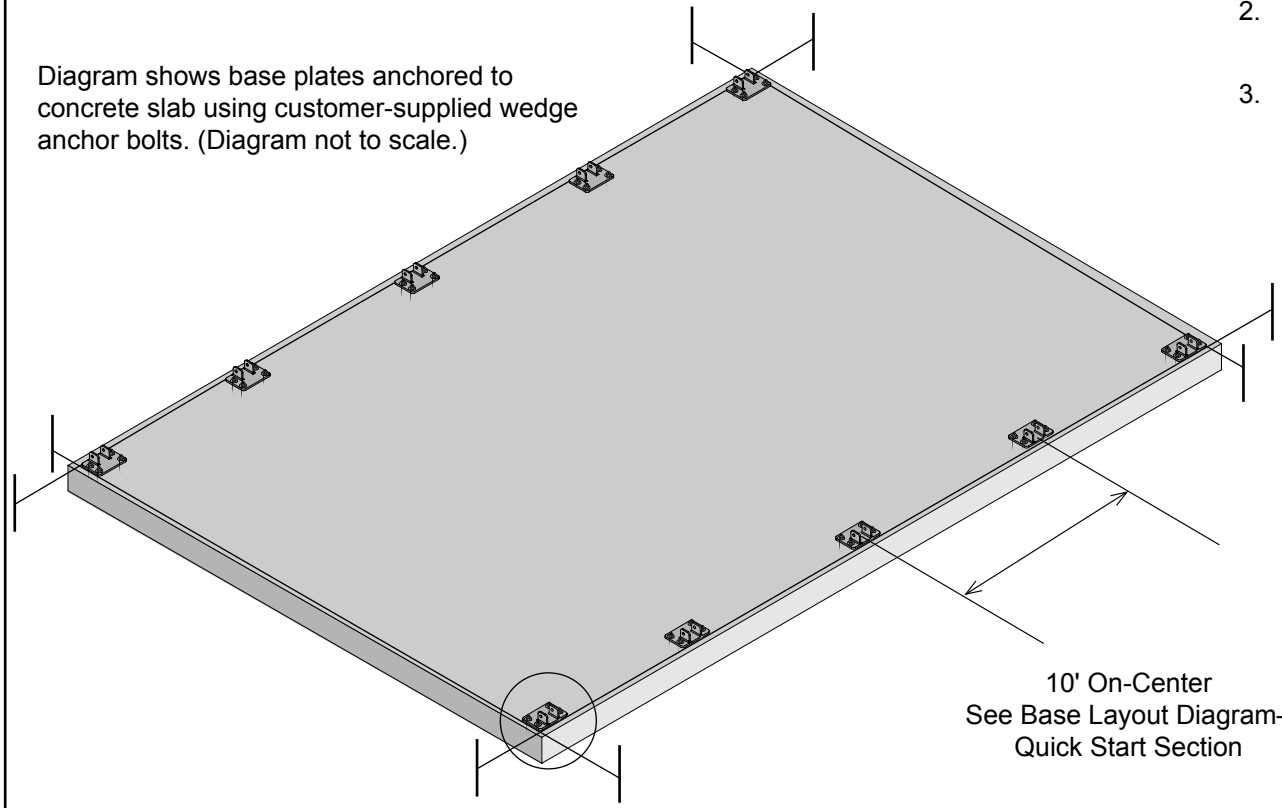
Anchor Base Plates

ANCHOR BASE PLATES TO CONCRETE

Example shows mounting base plates on a concrete pad. Plates can also be secured to concrete or wood-post piers. Once concrete has cured, attach base plates. Ensure base plates are aligned and spaced according to Quick Start diagrams. ***Additional purchase required for wedge anchor bolts; they are not included with building.***

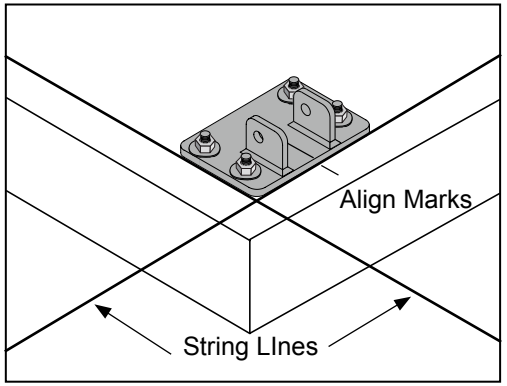
ATTENTION: Consult a qualified construction contractor familiar with wedge anchor bolt requirements and installation. If concrete is not used, anchor each rafter using ground anchors placed at each base plate as described in the MUST READ I document. If treated wood piers/posts are used, consult a knowledgeable contractor familiar with similar buildings and base plates, and for fastener type. ***Follow all local and regional building codes.***

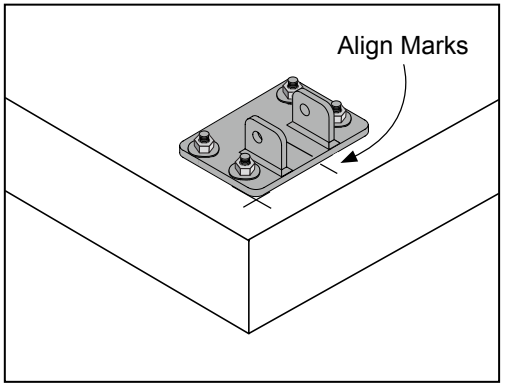
Diagram shows base plates anchored to concrete slab using customer-supplied wedge anchor bolts. (Diagram not to scale.)



General Steps:

1. Determine on-center position of base plates. ***See Base Plate diagram in Quick Start section.***
2. Mark center of plate and mark on-center positions of plates on foundation.
3. Square plates on foundation using a string line. Align marks of plates with layout marks and mark bolt hole locations using base as a template.





ANCHOR BASE PLATES TO CONCRETE (CONTINUED)

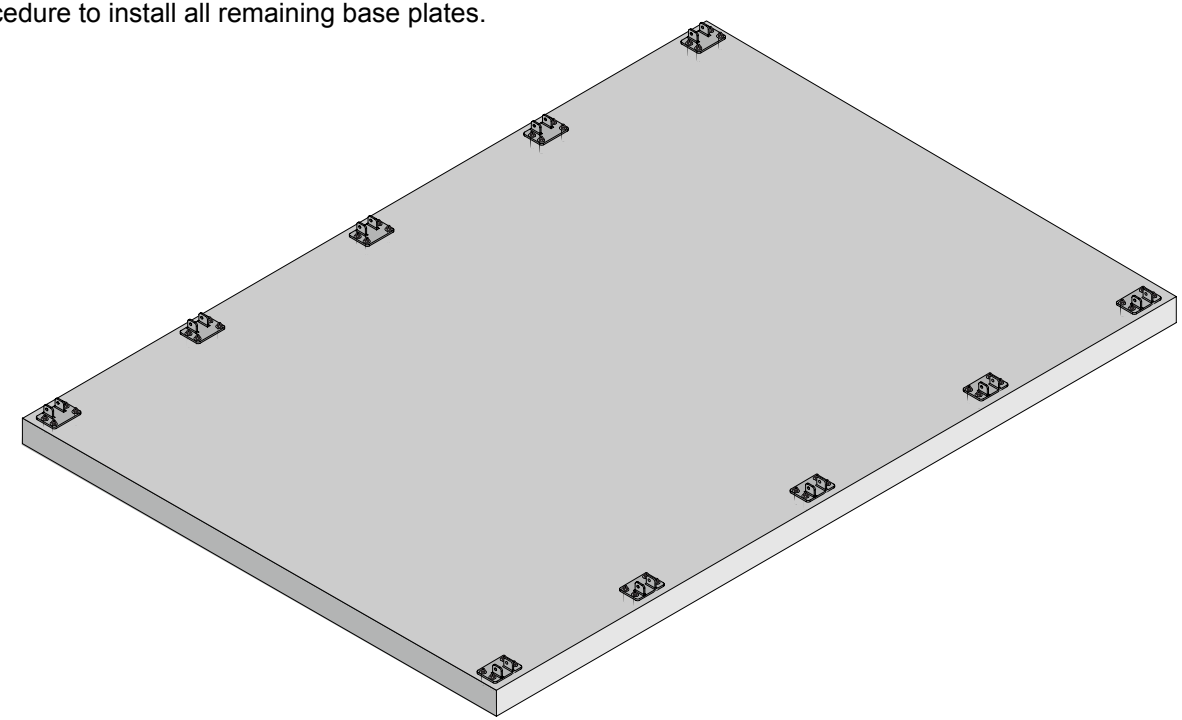
4. Drill mounting holes according to the depth requirements of wedge anchor bolts and clean bolt holes according to wedge anchor bolt specifications. ***Wear eye and ear protection if using compressed air to clear holes.***

5. Set plate in place and align with mounting holes.
6. Take wedge anchors (with nuts and washers installed) and carefully insert one into each bolt hole according to fastener instructions.
7. Drive into place to seat fastener according to fastener instructions.

ANCHOR BASE PLATES TO CONCRETE (CONTINUED)

8. Tighten and torque wedge anchors according to instructions.

9. Repeat procedure to install all remaining base plates.

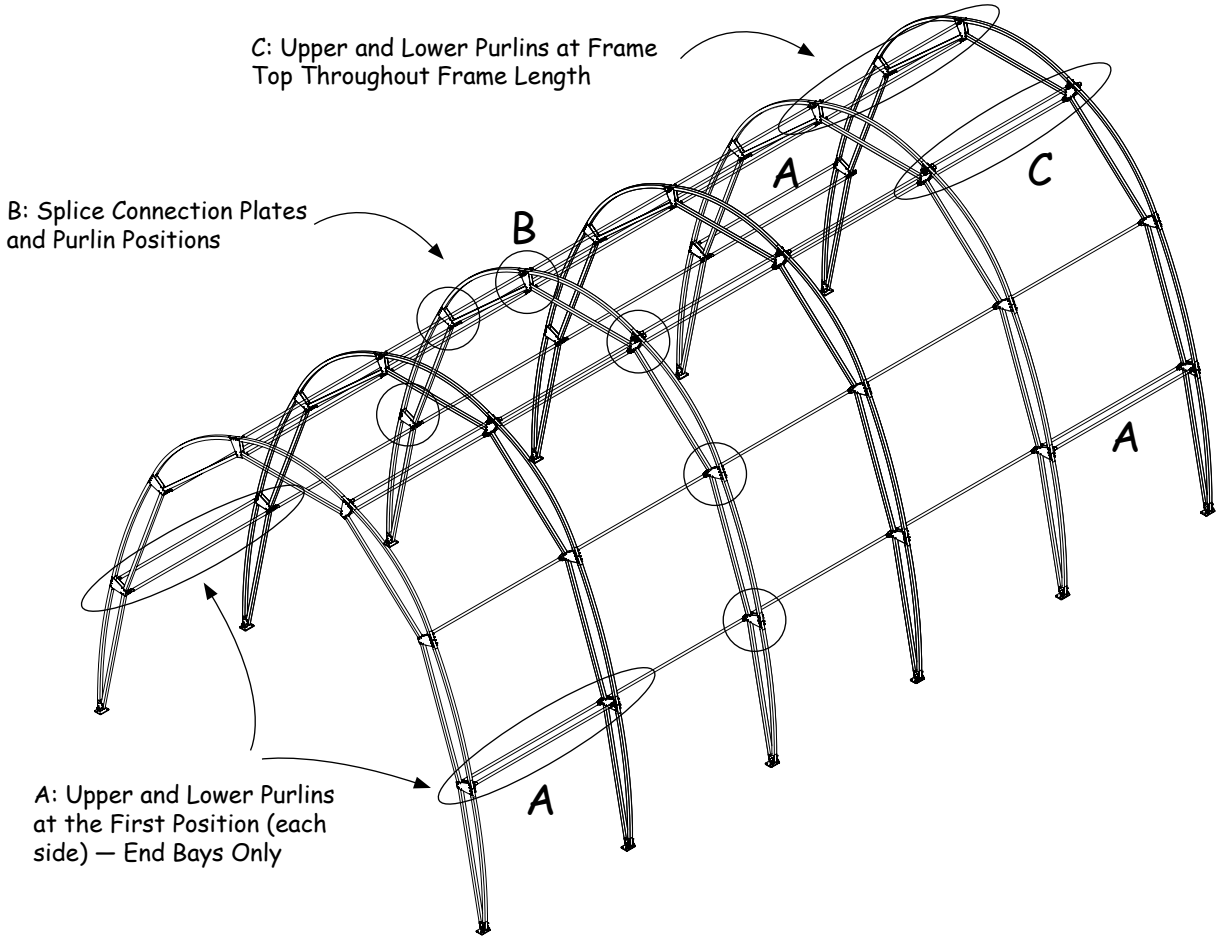


10. Continue by assembling rafters and frame.

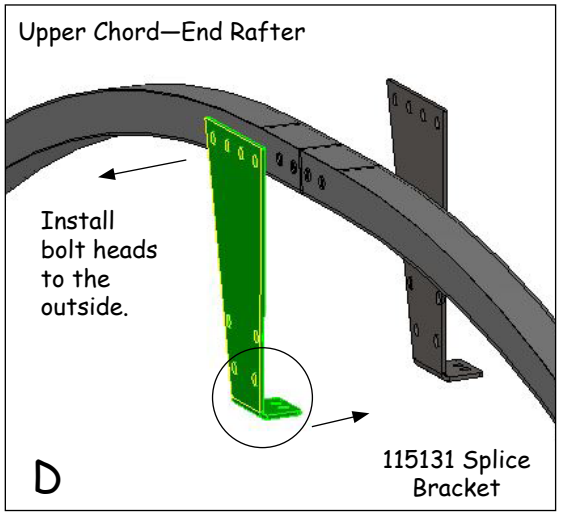
FRAME ASSEMBLY OVERVIEW AND TIPS

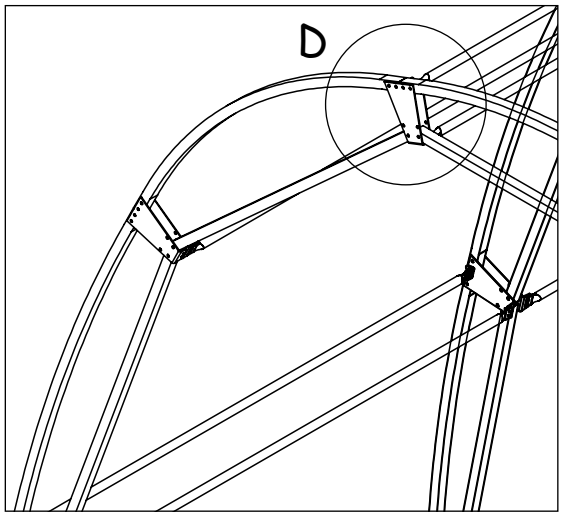
Use these tips to assemble rafters and building frame.

- A: For end bays only: all building frames include an upper and lower purlin at the two lower positions.
- B: There are six (6) splice connection plate and purlin positions *for each rafter*.
- C: All building frames include an upper and lower purlin *at the two top positions* throughout frame length.



- D: ***For end rafters only***, install splice connection bracket (115131) so mounting tab points toward inside the building. See also Connection – Details [View 2] detail in Quick Start section at the back of this guide and Diagram D that follows.

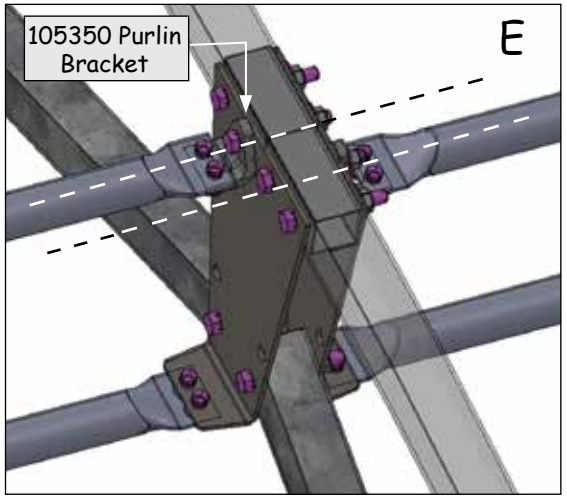




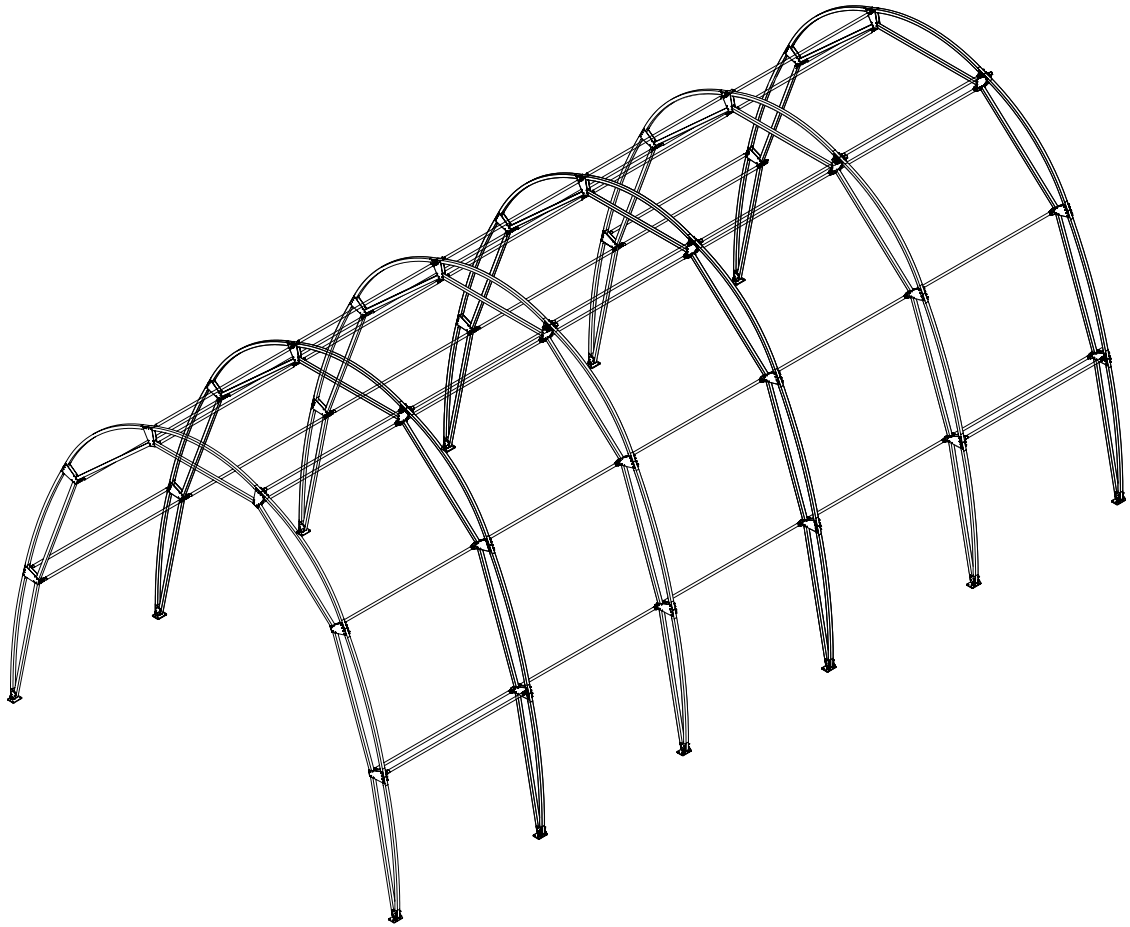
To protect main cover and end panel (if equipped), assemble *end rafters* so all bolt heads are toward the outside of the building when rafters are set in place.

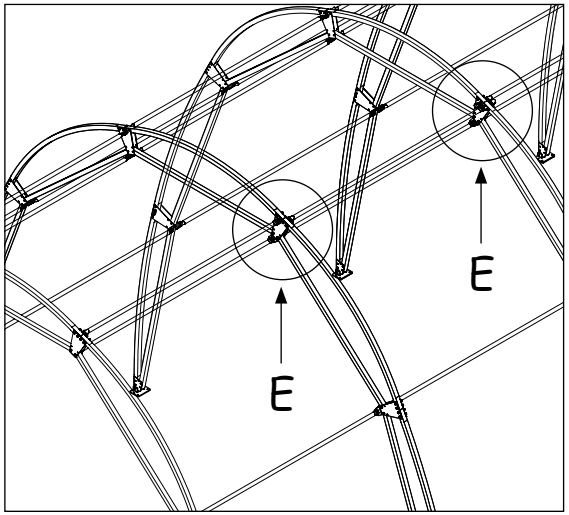
FRAME ASSEMBLY OVERVIEW AND TIPS — continued

- E: In upper purlin positions at top of frame, attach only one 105350 bracket to a 1/2" bolt. *Brackets on either side of rafter do not share the same mounting bolt.* Upper purlins will be staggered ***throughout frame length*** when installed correctly. See dashed lines in diagram below. See Quick Start section and E diagram below.



105350
Purlin Bracket





ASSEMBLY NOTE: The assembly example shown on the following pages describes assembling all rafters (end and interior) and then setting these in place to assemble frame. This procedure requires adequate space on the site to stage assembled rafters and then lift and move these to anchored base plates for frame assembly. This approach works best when site is large and only a few assistants are available.

There are different ways to assemble this building. This is one. Whichever procedure is chosen, adhere to these guidelines:

- Always bolt rafters to anchored mounting plates. Anchor mounting plates as previously described.
- Always brace end rafter and never remove bracing until next rafter is set and connected to first ***using all purlins***.
- Follow all diagrams for proper assembly.

Rafter Assembly

ASSEMBLE RAFTERS

Read through the steps that follow and assemble rafters. Stage assembled rafters in a location that allows easy access and lifting. Allow adequate clearance for moving. Do not mix end rafter with interior rafters or bury these in a stack during rafter assembly.

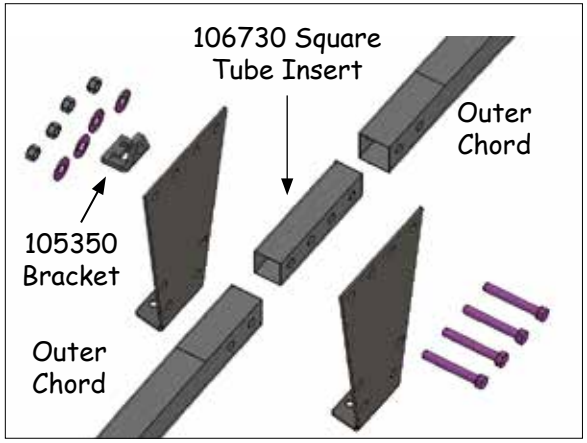
Tools:

- 3/4" wrenches or sockets and ratchets; use impact sockets if using power driver to tighten bolts.
- Tapered alignment bar (optional)
- Tape measure (greater than 25')
- Wood blocks to raise rafter off ground for assembly.

Rafter Assembly—End Rafters (one at each frame end)

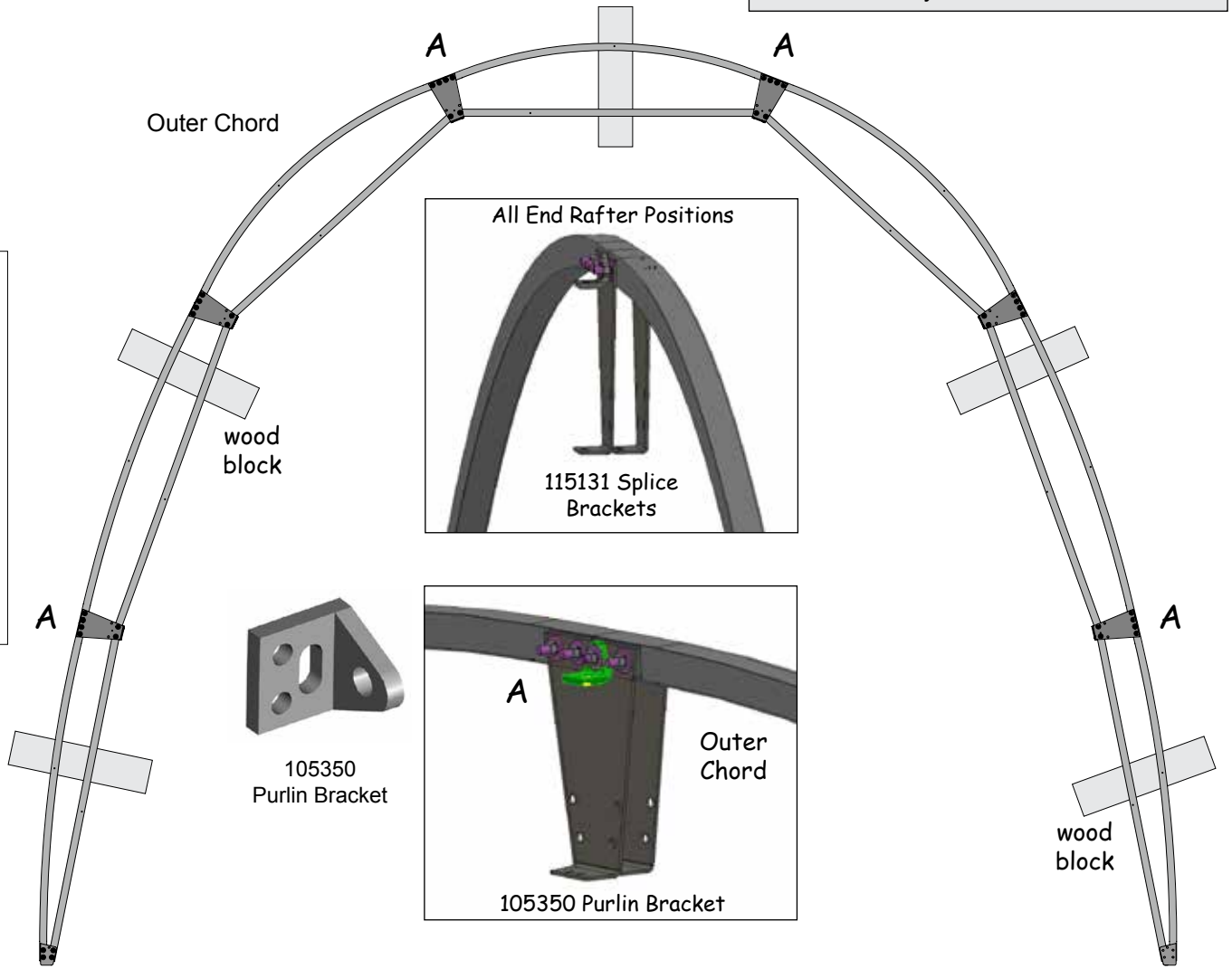
1. Using Quick Start diagrams and diagrams on previous pages, gather parts to assemble the first ***end rafter***.
2. Assemble outer chord and brackets first. See diagram at the right.

NOTE: Add purlin brackets (105350) in the required locations. Assemble end rafters so all bolt heads are to the outside ***when rafter is set in place***. All 105350 brackets are toward the next rafter (or on top when assembled on the ground as shown).



OUTER CHORDS ONLY: Install the 106730 square tube insert between the individual upper chord square tubes as shown in diagram above.

Use wood blocks to support rafter during assembly. ***Do not fully tighten bolts until entire rafter is assembled and the center-to-center dimension is set for mounting bolts.*** Procedure is shown on next page.



105350 Purlin Bracket

ASSEMBLE RAFTERS — continued

3. For ***end rafter only***, verify all 115131 splice connection plates are installed as shown. Tighten bolts until finger tight only.

   ATTENTION: Bolts used for the 105350 bracket can remain loose to orient bracket to install purlins. ***For end rafters these are toward inside the building once rafter is set in place.***

4. After all outer chords are connected to form rafter profile, attach inner chord tubes to complete rafter assembly.

5. With all bolts finger tight, move to bottom plates at each rafter end and tighten all bottom plate bolts. If rafter is an end rafter, ensure all bolt heads will be toward the outside once rafter is set in place during frame assembly.

6. Stretch a tape measure between the mounting bolt hole of each bottom plate. These are the only open holes that remain on rafter.

7. After setting on-center dimension, double-check rafter measurement against the on-center dimension of base plates anchored to the site. (Rafter may flex slightly when lifted into place.)

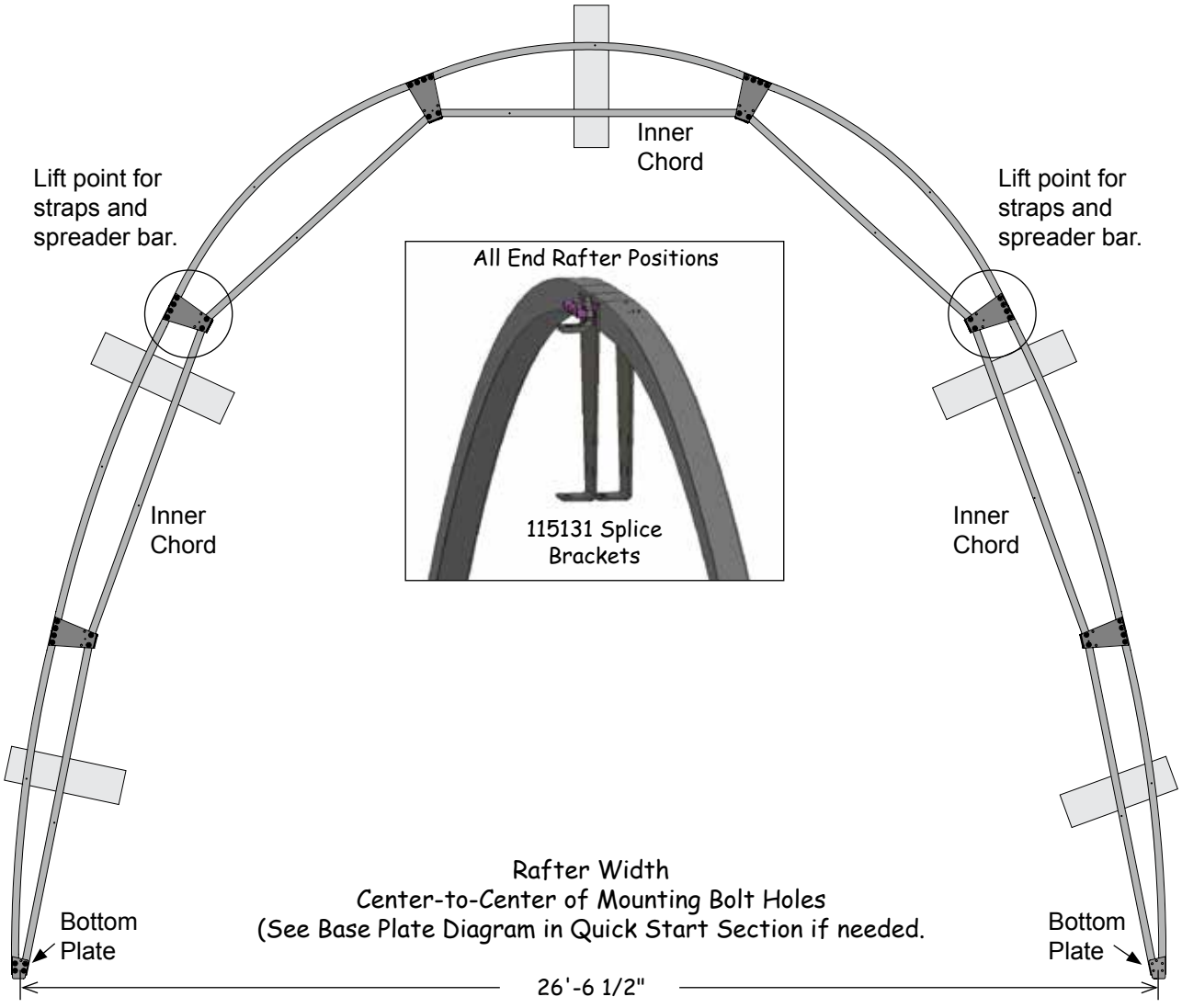
8. Once ***on-center mounting bolt hole dimensions*** are verified, tighten all rafter bolts.

   ATTENTION: Bolts used to secure the 105350 brackets can remain loose to orient brackets to install purlins. For end rafters, brackets are toward inside the building once rafter is set in place.

9. Using a proper lift, move rafter to the staging area in preparation for frame assembly.

10. Assemble the first interior rafter as described in the next procedure.

ASSEMBLY NOTE: Depending on site, lifts, and assistants, the first end rafter can be set, bolted to anchored base plates, and braced in place immediately after assembly and while the first interior rafter is assembled. ***See Frame Assembly procedure.***



ASSEMBLE RAFTERS — continued

Rafter Assembly—First Interior Rafter (This rafter style is adjacent to each end rafter.)

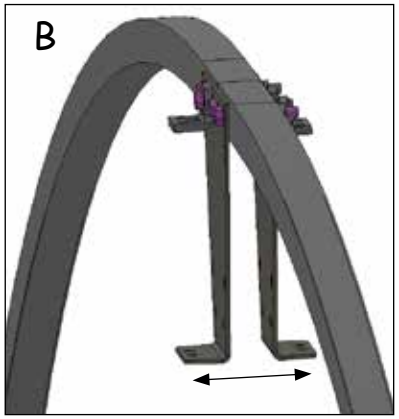
1. Using Quick Start diagrams and diagrams on previous pages, gather parts to assemble the first ***interior rafter***.
2. Assemble outer chord and brackets first.

   NOTE: Add the purlin brackets (105350) in the required locations. Install a 105350 bracket on each side of the rafter and align with the brackets on the end rafter. See dashed lines and remember that 105350 brackets are not installed using the same 1/2" bolt. Upper purlins between rafters are offset.

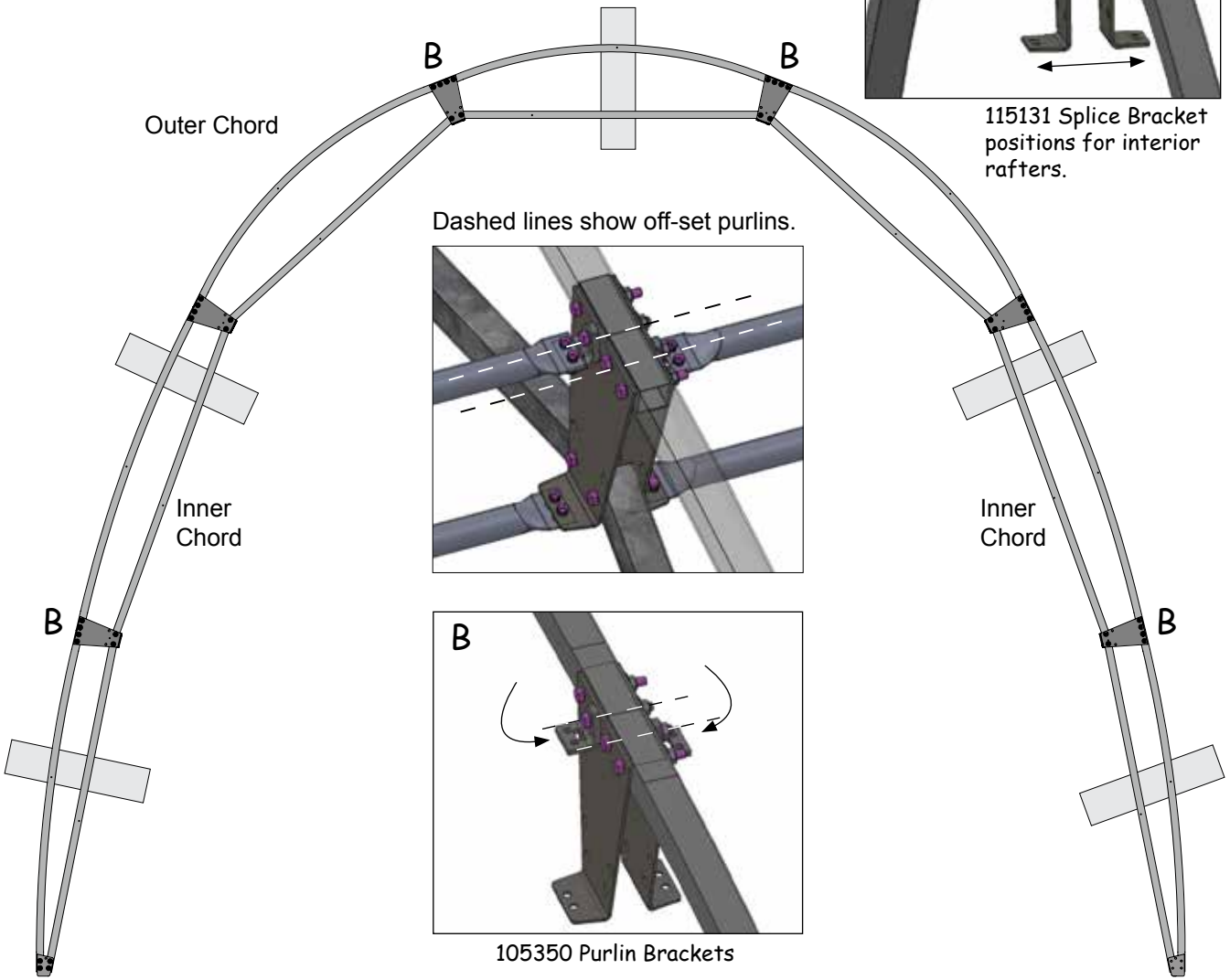
   Use wood blocks to support rafter during assembly. ***Do not fully tighten bolts until entire rafter is assembled and the center-to-center dimension is set for mounting bolts.*** See previous page diagram.
3. Repeat Steps 4-9 of the End Rafter Assembly to complete the assembly of the first interior rafter.
4. Continue with the Frame Assembly procedure on the next page.

   NOTE: If sufficient space around the building site exists and additional assistants are present, assemble remaining rafters while frame is constructed. Review these instructions to identify rafter differences before continuing.

   There are two (2) identical end rafters. All rafters between the end rafters are identical. (Bracket positions may differ depending on purlin alignment.) See previous diagrams in this guide and those in the Quick Start section for additional details.



115131 Splice Bracket positions for interior rafters.



105350 Purlin Brackets

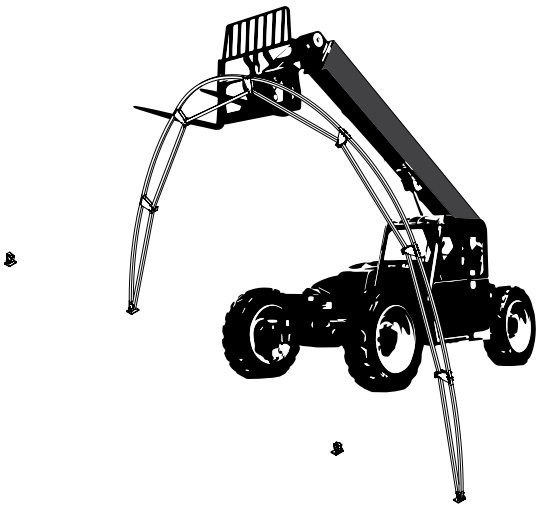
FRAME ASSEMBLY

1. Using an appropriate lift, lift the first end rafter and attach it to the first set of mounted base plates at one end of the building site. *Ensure installed purlin brackets are oriented correctly to continue the frame assembly.* Set rafter at the end that will allow setting of next rafter during assembly.

   ATTENTION: Rafter will not stand unsupported! ***Do not set end rafter if you are unable to set the next rafter—the first interior rafter—and install all lateral bracing between the two.***

   Example shows setting first rafter and securing it to the site.

   Secure rafter to lift when using straps for lifting.



Tools & Equipment:

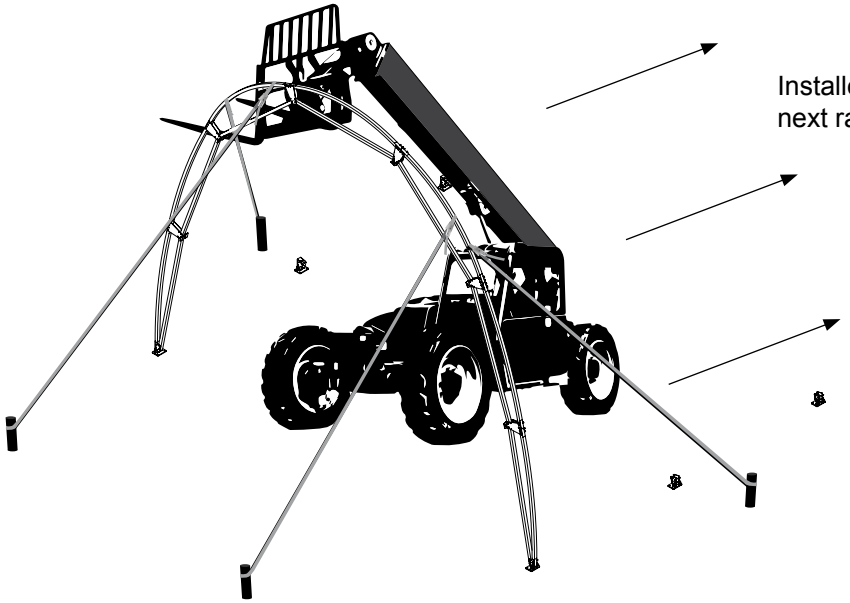
- 9/16" wrenches or sockets and ratchets; use impact sockets if using power driver to tighten bolts.
- Tapered alignment bar (optional)
- Lift for moving and holding assembled rafters;
- Straps or spreader bar for lifting.
- Straps to secure rafter to lift and for bracing end rafter to site.
- Lift for workers when installing all purlins. Must reach top of frame.

2. Use straps, rope, solid braces, or similar means to prevent rafter from tipping. If two lifts are available, support rafter with one and set next rafter using a different lift. ***(This option is not shown. See WARNING note that follows.)***

WARNING: Rafter will not stand alone. Secure to site as shown or use another lift to set the second rafter.

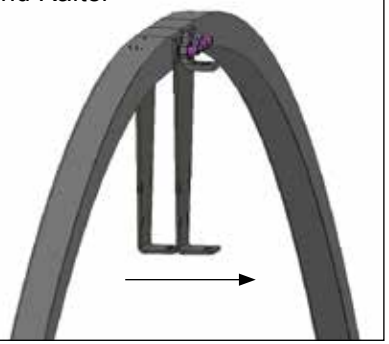
If using two lifts, change position of first so second lift can set second rafter.

Orient end rafter so brackets are pointing toward next rafter. Verify bracket positions!



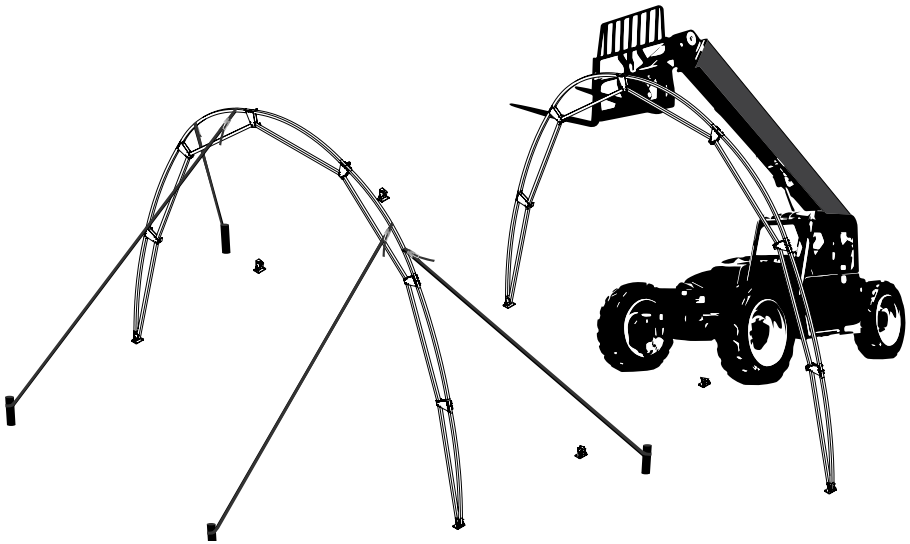
Installed splice brackets facing next rafter of frame.

End Rafter

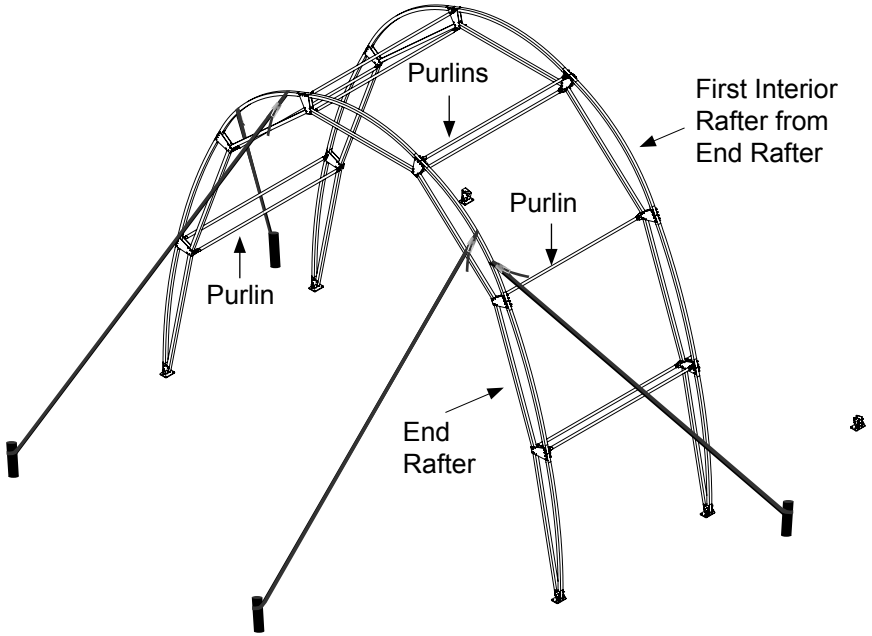


ASSEMBLE FRAME—continued

3. With first end rafter supported (or held by a lift), set the *first interior rafter* and ***secure it to the next set of mounted base plates***.



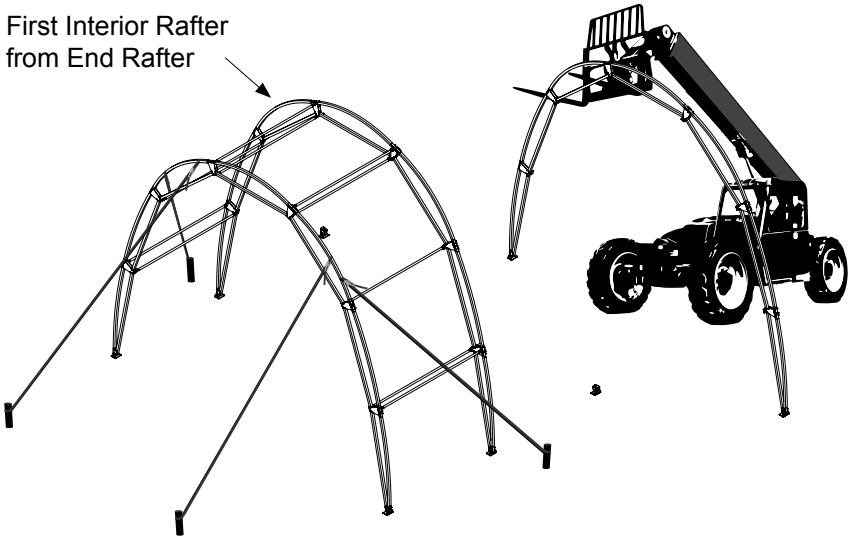
4. With lift still supporting first interior rafter (second rafter), install all purlins between end rafter and first interior rafter.



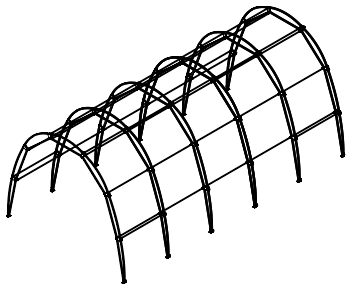
5. Tighten all end rafter purlin bolts.

   ATTENTION: Do not tighten the 1/2" x 3 1/2" purlin bracket bolts ***on first interior rafter*** until purlins are installed when ***next rafter is set in place***.

6. Take next rafter and continue with frame assembly.



7. Install purlins between the two interior rafters and tighten all bolts on the ***first interior rafter***.
8. Continue to assemble and set rafters until entire frame is assembled.
9. Check all bolts to ensure all are tight.
10. Remove bracing from first end rafter if still present.
11. Continue by installing and tightening all cables.



INSTALL CABLES

Cable Layout diagrams (top and side views) for *each standard building length* are located in the Quick Start section near back of this guide. Cable connection details are also present in Quick Start section. Review the diagrams for your building length to determine cable positions and patterns.

Cable Lengths

There are two different cable lengths for the High Boy building: CAB18G1003 (10' 3") and CAB18G1007 (10' 7"). For details, consult the Cable Assembly SKU'S @ Locations table on the SIDE PROFILE and TOP PROFILE pages for your building length.

DO NOT INSTALL A CABLE IN THE WRONG POSITION. MEASURE LENGTHS BEFORE INSTALLATION. SORT CABLES INTO LIKE GROUPS BEFORE YOU BEGIN.

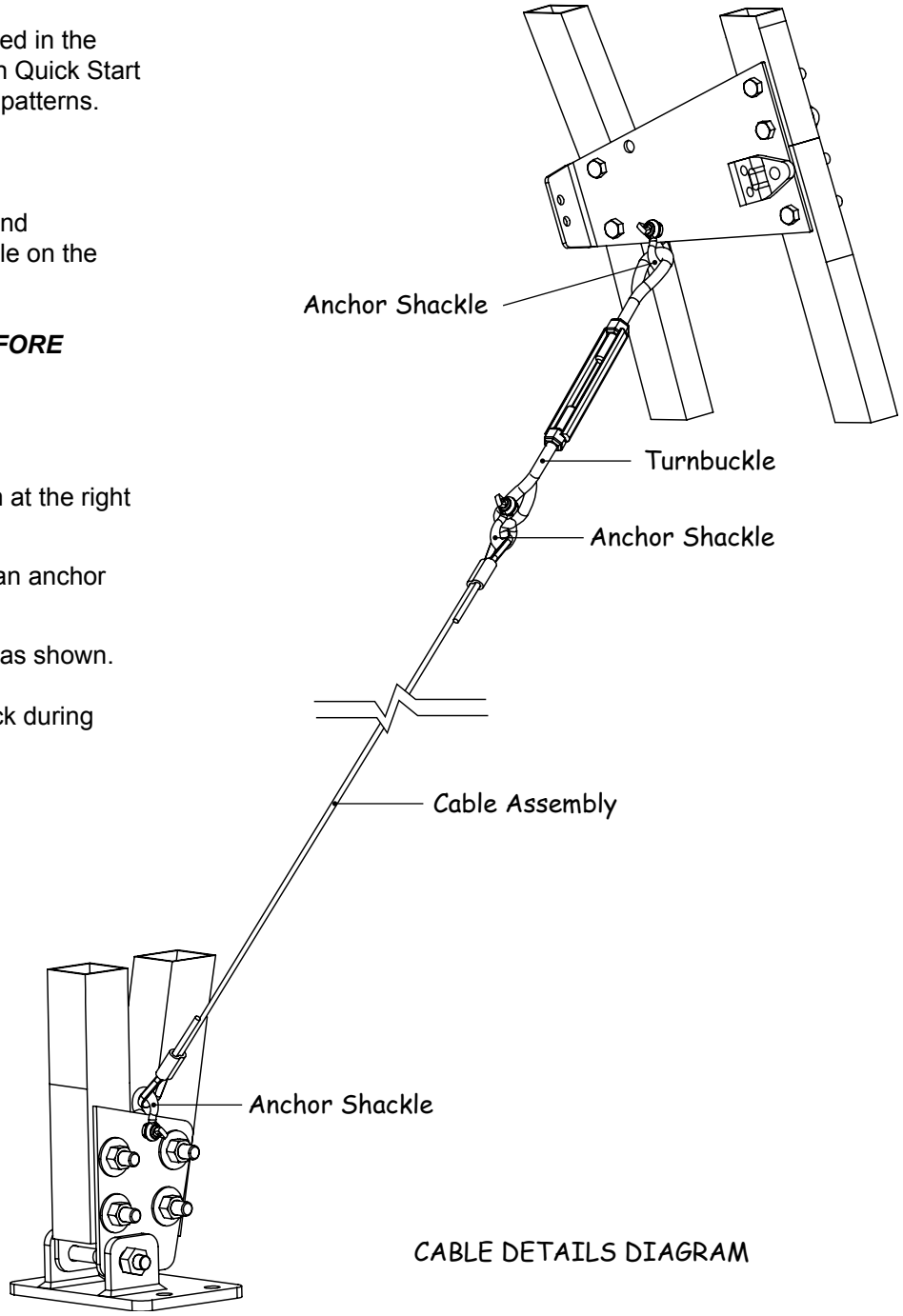
Attach Cables to Frame

Secure each cable assembly using three (3) AS2162 anchor shackles. Review diagram at the right and follow these basic steps:

1. Fully open each turnbuckle. Attach one cable to one end of each turnbuckle using an anchor shackle. Reinstall screw pin in anchor shackle and tighten.
2. Review Cable Details diagram (right) and secure shackle to frame using screw pin as shown.

   ATTENTION: Position turnbuckle where adjustments are easiest to make and check during routine care and maintenance.
3. Tighten turnbuckle just enough to remove cable slack. *Do not fully tighten until all cables are installed and snug tight*. Final adjustment occurs later.
4. After installing all cables, return to ***each end bay*** and plumb the end rafter by tightening the end bay cables as needed.

   ATTENTION: Consult the services of a qualified contractor as needed to plumb the end rafter. Square end bay and plumb end rafter before installing end frame if equipped.
5. After plumbing both end rafters using end bay cables, return to all remaining cables and tighten until snug and all cable slack is removed. ***Do not overtighten!***
6. Recheck end rafters to ensure each has remained plumb.
7. Continue with the next procedure.



CABLE DETAILS DIAGRAM

FINAL FRAME CHECK

Before installing main cover, check these frame areas to prevent cover damage and premature wear.

Complete these steps for a final frame inspection:

1. Verify all fasteners used to secure braces to frame are tight.
2. Recheck entire frame assembly for sharp edges or fasteners that may interfere with cover installation.
3. Use the supplied duct tape to tape over any frame areas that may damage the cover.
4. Continue by wrapping vinyl stripping around all splice connection plates at *each end rafter*.

Required tools and parts:

- Duct tape and tools to tighten fasteners
- Lift or ladders to work safely at height of the frame
- Head and eye protection

ATTACH PROTECTIVE VINYL MATERIAL

Protective vinyl material is used at *each end rafter* to protect cover when installed.

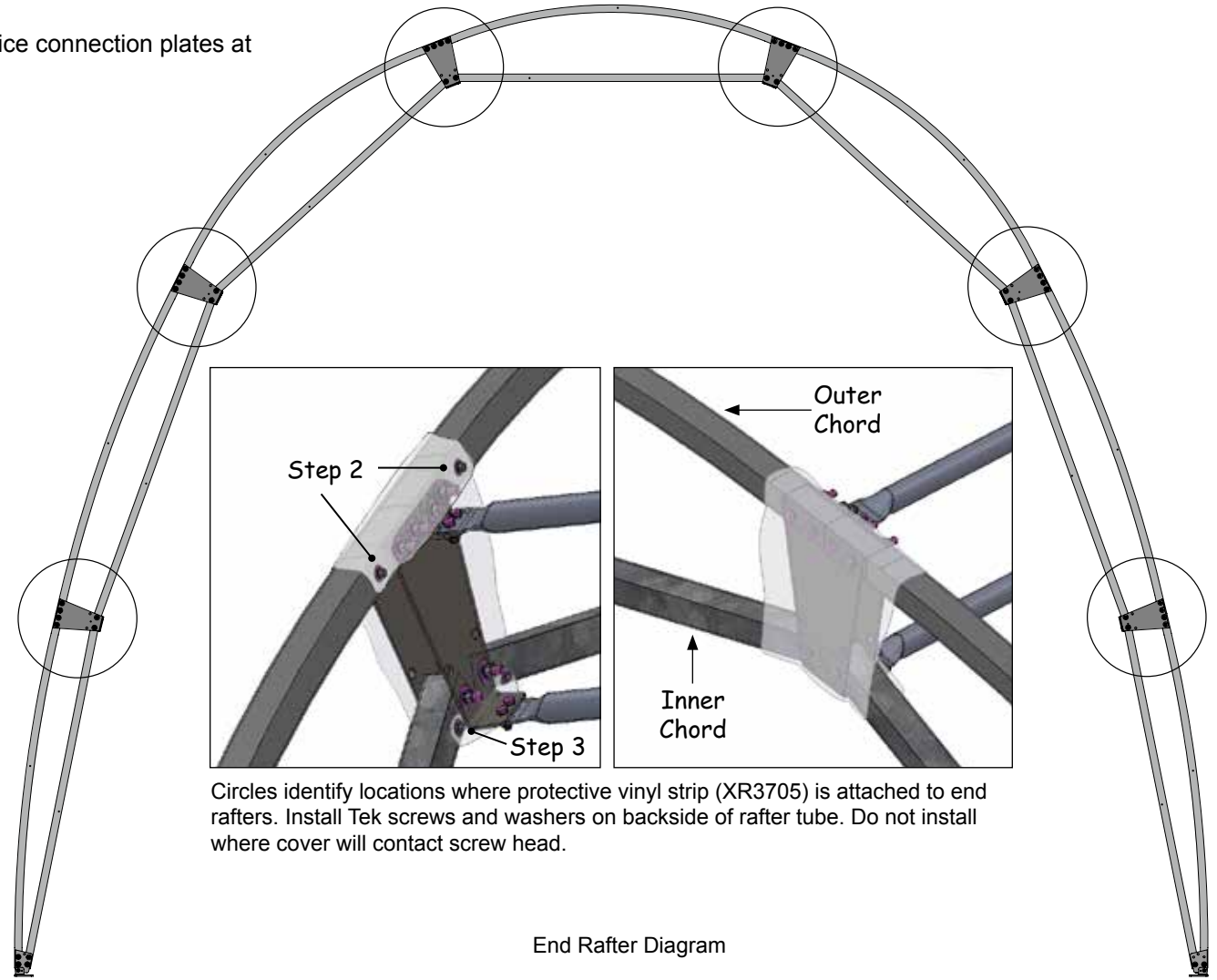
Required parts and tools:

- Vinyl material (XR3705)
- FA4484B Tek screws, 102921 neo-bonded washers, and 100441 nut setter
- Power driver to install Tek screws

Complete these steps to attach vinyl material:

1. Cut an 18"- 20" piece of XR3705 vinyl from roll for each splice.

   ATTENTION: Do not exceed 20" for each piece. ***Measure the roll of XR3705 to ensure there is enough for 12 pieces at the length needed.***
2. Attach vinyl edge to top, backside of end rafter.
3. Wrap vinyl around front and under brackets and secure to backside of lower/inner chord.
4. Repeat to install all remaining vinyl protectors.
5. Continue with ratchet installation to secure main cover.



Circles identify locations where protective vinyl strip (XR3705) is attached to end rafters. Install Tek screws and washers on backside of rafter tube. Do not install where cover will contact screw head.

End Rafter Diagram

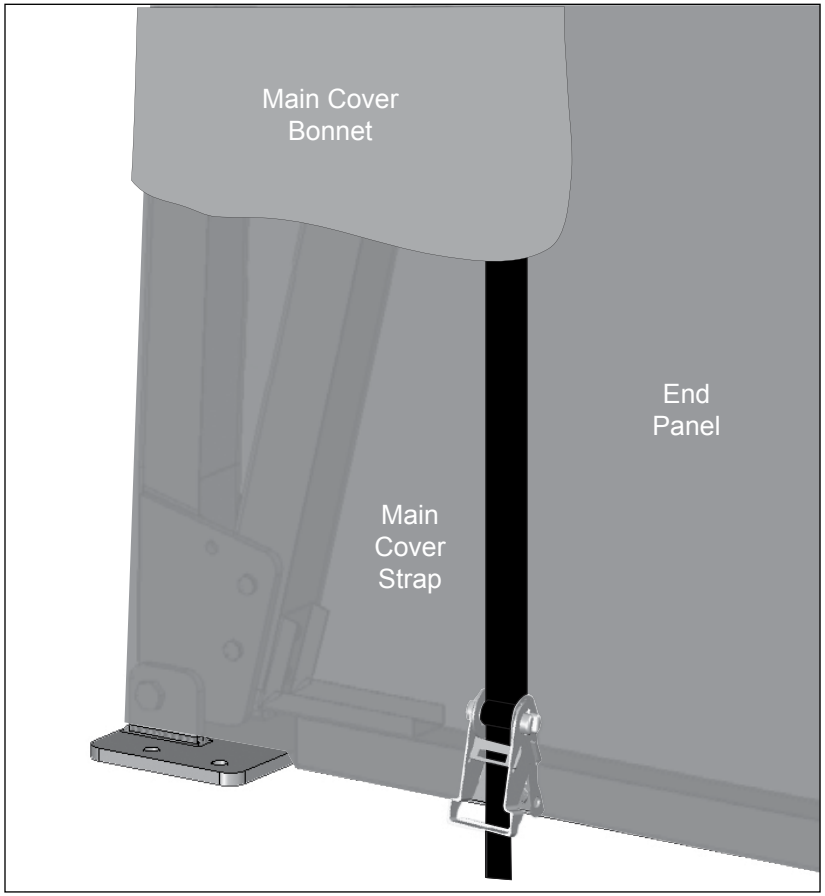
Optional End Framing Kits: 115408 & 115409

If optional end framing kits (115408 and/or 115409) were purchased, install those now before continuing. Consult the documentation and diagrams provided with those framing kits before you continue with this guide.

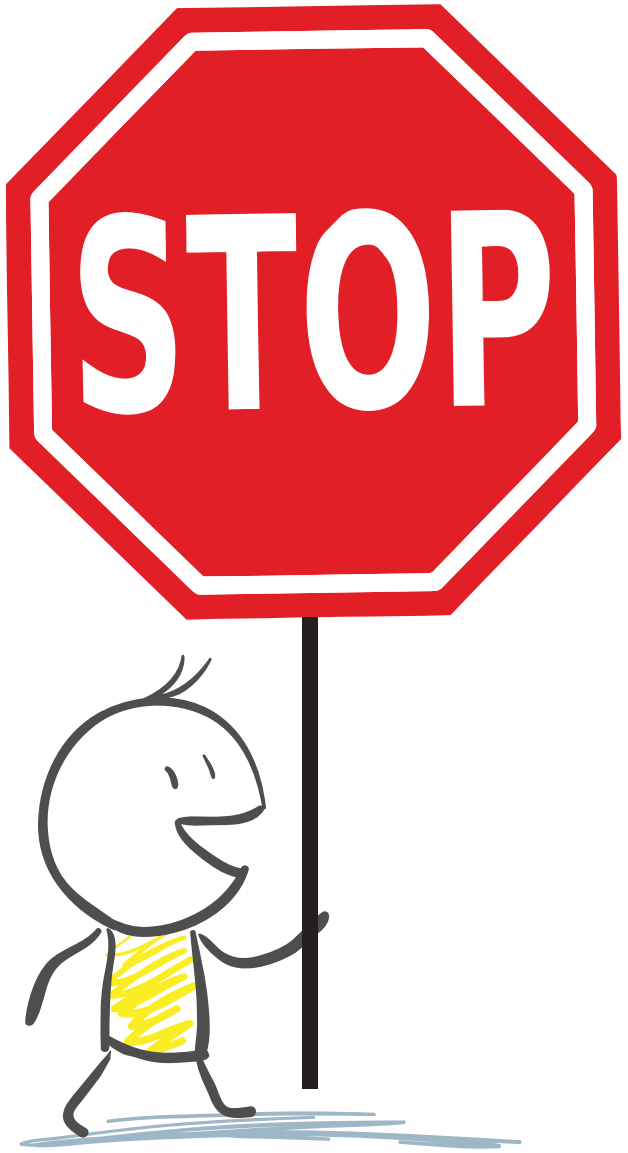
After end frame installation, return to this guide and continue. If no end framing kits were purchased, continue with the next page of this guide.

ATTENTION: If end frame and end panels have been purchased, do not attach ratchets to the end rafters as described in the procedure on the next page.

Consult the instructions sent with the end frame kit to install ratchets after end panel installation.



End rafter ratchet location when end frame and end panel are present. Install ratchet after installing end panel. ***Does not apply when building is without end panel and end frame.***



Install Ratchets

INSTALL END AND SIDE RATCHETS

Install ratchets to secure main cover to frame; end ratchets secure bonnet of main cover while side ratchets secure cover sides. ***See note on previous page regarding end panels and installation of end ratchets.***

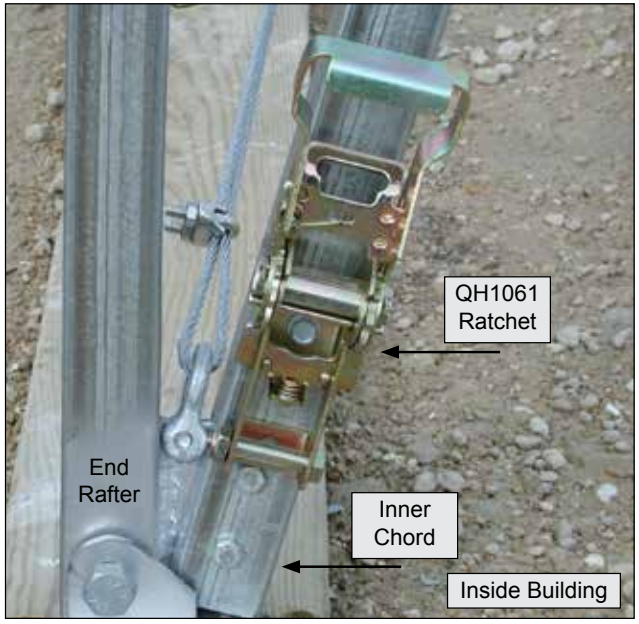
Ratchets attach to frame **using FA4484B Tek** screws.

NOTE: Consult Front Profile diagram and Side Profile diagram for your building to identify ratchet locations.

Install end ratchets on outside surface of each end rafter inner chord (see photo below); attach ratchets (to secure cover sides) to inner rafter chord of each rafter along frame side. See diagrams in next column.

Complete these steps to attach ratchets:

1. Take one ratchet and attach it to the outside of end rafter inner chord as shown below.
2. Move to other leg of same end rafter and repeat Step 1.

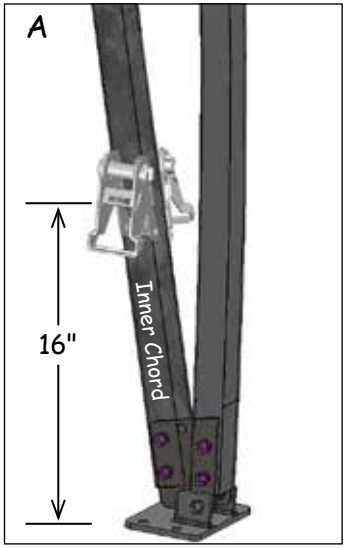


Rafter design shown may differ from actual rafter. Cable design and connection point also may differ.

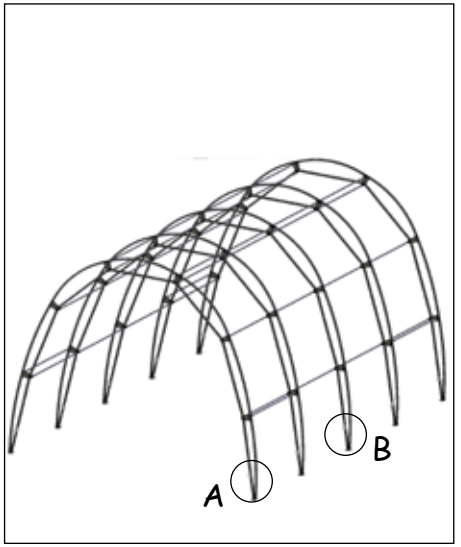
3. Move to the other end rafter and install a ratchet on each leg of that end rafter.
4. After installing four (4) end ratchets (Steps 1-3), take the remaining ratchets. Place one at the base of each rafter along each side of the frame.
5. Using a Tek screw for each ratchet, secure one ratchet to the inner chord of each rafter in location shown (B).

Required parts and tools:

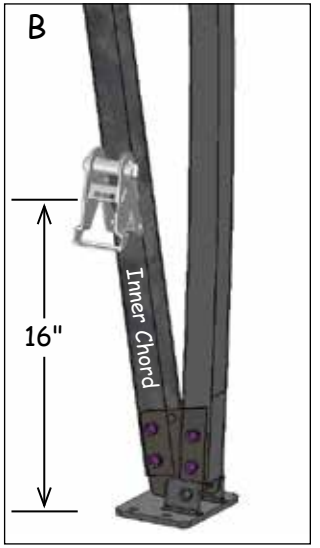
- QH1061 ratchets
- FA4484B Tek Screws
- 100441 nut setter and power driver to install screws



All End Rafter Ratchets



Sample Frame



All Mid Rafter Ratchets

NOTE: Attach ratchets in a position close to rafter base plate that still allows ratchets to operate freely. Mount where operation of ratchet is unobstructed. ***Mount so ratchet does not touch cover when it is installed.***

6. Continue by installing main cover.

NOTE: Differences in frame assembly and site variables may make it necessary to reposition ratchets once main cover is installed.

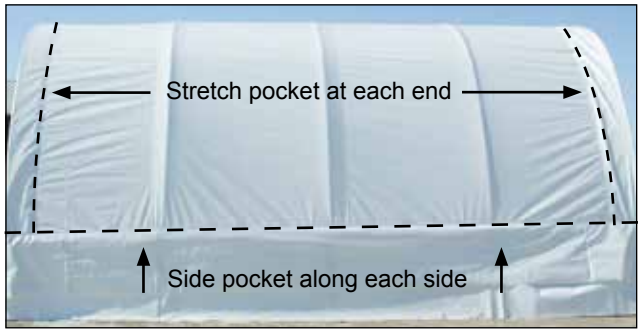
If it appears that the supplied straps for the side ratchets are too short to reach the ratchet after wrapping strap around cover conduit (installed in next procedure) simply remove Tek screw from ratchet, reposition ratchet, and reinstall Tek screw.

Main Cover Installation

MAIN COVER: GENERAL OVERVIEW

The High Boy main cover consists of two pockets that run along cover sides and two stretch pockets approximately 50" in from each end (front and back). Side pockets secure cover along sides while stretch pockets stretch cover end-to-end.

Cover ends (front and back) also include a pre-installed strap in the bonnet portion. Cover bonnet folds over rafter at each end. Bonnet strap is secured using end ratchets installed earlier. (See photo in right column on previous page.)



ANCHORING INSTRUCTIONS — MUST READ

Prior to pulling cover, read ***MUST READ*** document included with the shipment.

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

Do not install cover without first anchoring the assembled frame. Anchor the frame now if needed then continue with cover installation.

Never install cover during windy or stormy conditions or when such conditions are expected.

MAIN COVER CONDUITS ASSEMBLY

This procedure describes assembling the two side conduits and then inserting these into main cover side pockets.

ATTENTION: For shelters longer than 40', it may be easier to assemble conduit in short sections. Insert one section into the pocket and secure another section to the first conduit. Continue until entire conduit is assembled. Either procedure works.

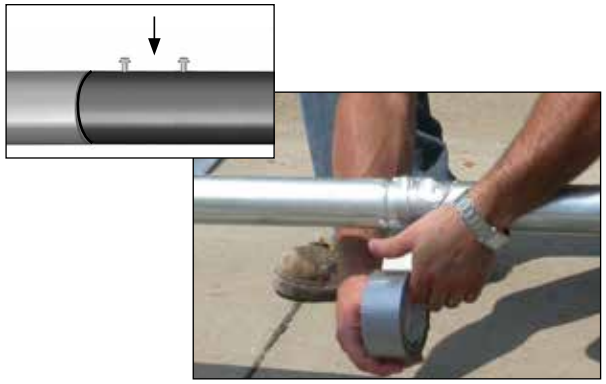
1. Assemble two main cover conduits. Start each conduit assembly with one plain pipe (166P0XXX) and add swaged pipes (166S099) to arrive at the correct length for your building. *Swaged pipes have a plain end and a swaged or tapered end.*

   Length of 166P0XXX plain pipe differs for various frame lengths. ***There are only two (2) plain pipes for the building***; one is used for each main cover side conduit.

   a. Locate all sections of pipe needed to assemble the cover conduit.

   b. Insert swaged end of each pipe into plain end of another until conduit is assembled.

   c. Secure each pipe joint with a Tek screw.



NOTE: After installing a Tek screw to secure the joint, tape over the screw and pipe joint with duct tape to prevent cover damage.

Required parts and tools:

- Pipe 1.66" x XXX" plain (166P0XXX)
- Pipe 1.66" x 99" swaged (166S099)
- Duct tape and FA4484B Tek screws
- Power driver and 100441 nut setter for screws

2. After assembling cover conduits, unfold main cover on a clean, smooth surface along and near one side of the frame. If possible, cover site with plastic to protect cover and keep it clean.

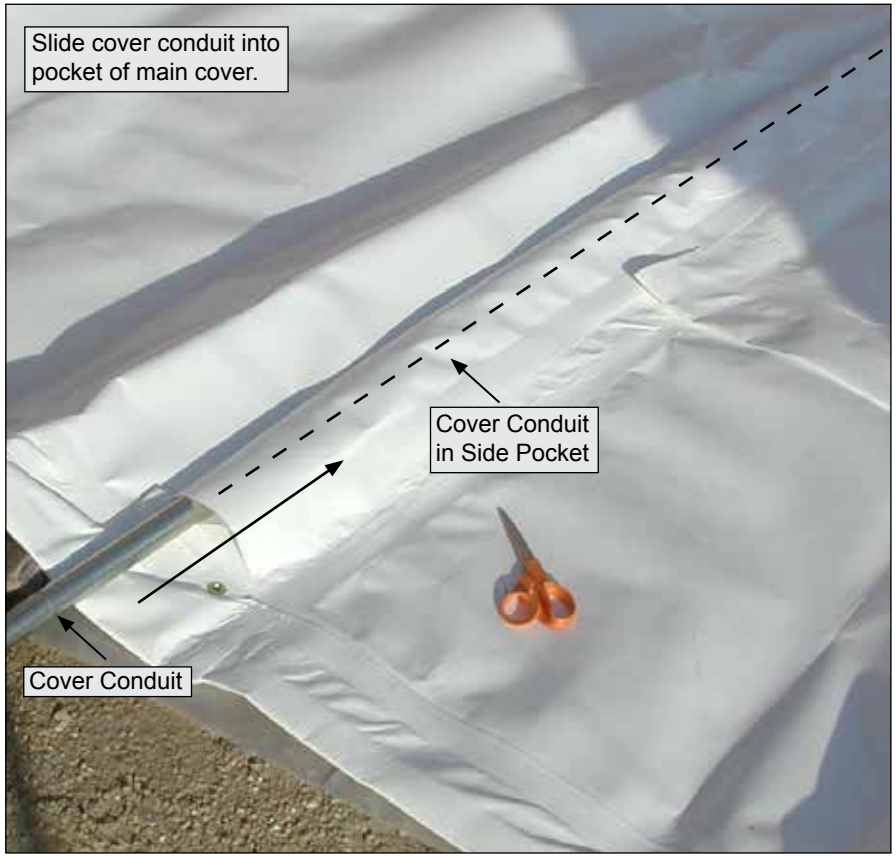
NOTE: Unfold main cover with inside surface facing up. All cover pockets (side and end) will be visible.

Unfold cover only enough to gain access to both side pockets. These run the length of the cover and are without installed straps.

3. Align main cover ends (which include the pre-installed 1" strap) with the front and back of the High Boy frame. *Do not pull on bonnet strap during cover installation; it will pull out of bonnet.*

MAIN COVER CONDUITS ASSEMBLY (continued)

4. Insert one cover conduit into a side pocket until entire conduit is installed end-to-end.



5. After installing the first side cover conduit, repeat the steps to install remaining side conduit.

   ATTENTION: Unfold cover only enough to gain clear access to remaining side pocket. ***Pockets with conduits installed are on the underside of cover once it is pulled over frame.***

6. Continue with the next procedure.

ATTACH MAIN COVER

Required parts and tools:

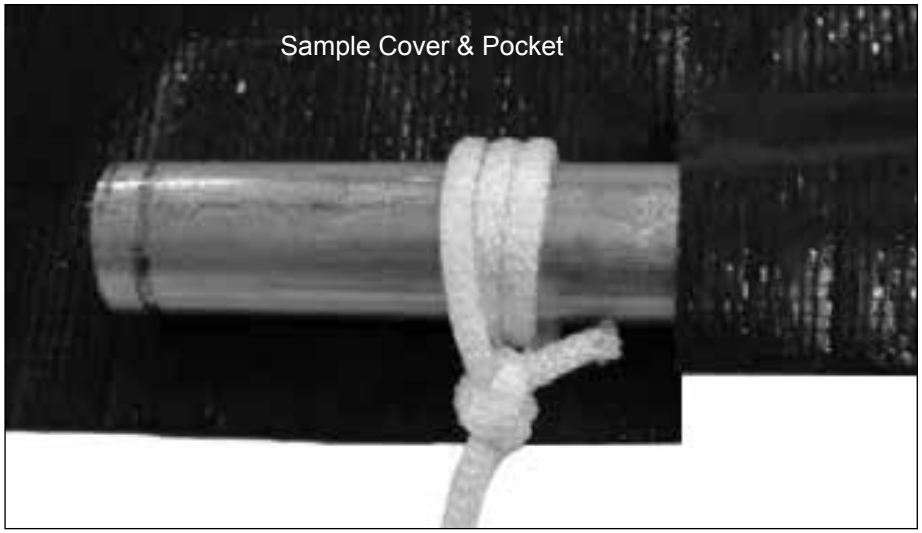
- Main cover (with conduits already inserted)
- Ropes (or straps) long enough to reach over the frame (provided by customer)
- Box cutter, scissors, or utility knife
- Lifts or ladders to reach top of frame
- Assistants

Installation Procedure

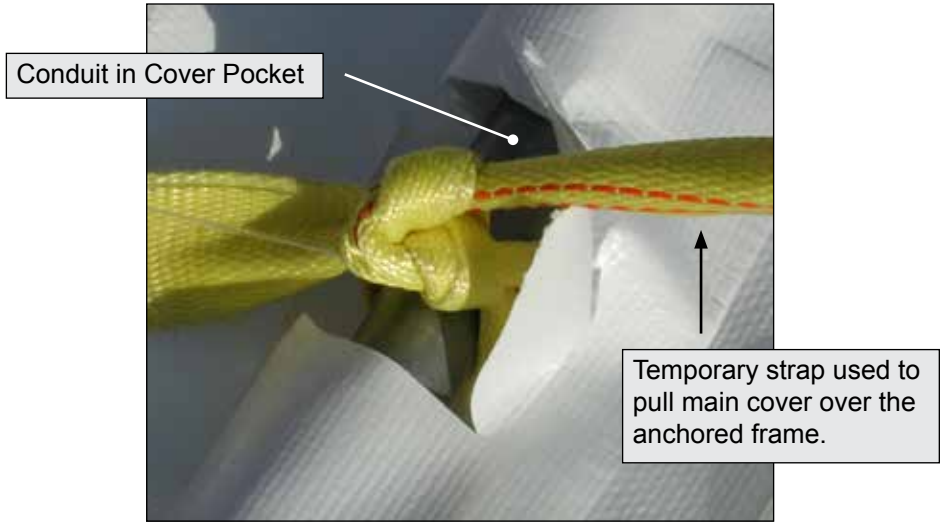
1. Spread cover out along side so conduit that will be pulled over frame is positioned on top. Arrows show direction cover will be pulled.

MAIN COVER CONDUITS ASSEMBLY (continued)

2. Attach ropes to both ends of cover conduit shown in previous step.
3. Wrap around conduit a few times to prevent it from slipping off.



NOTE: Depending on cover length, it may be necessary to attach additional ropes or straps to conduit between end ropes. To do this, cut a small opening ***in the cover pocket*** to gain access to conduit. Tie rope around conduit.

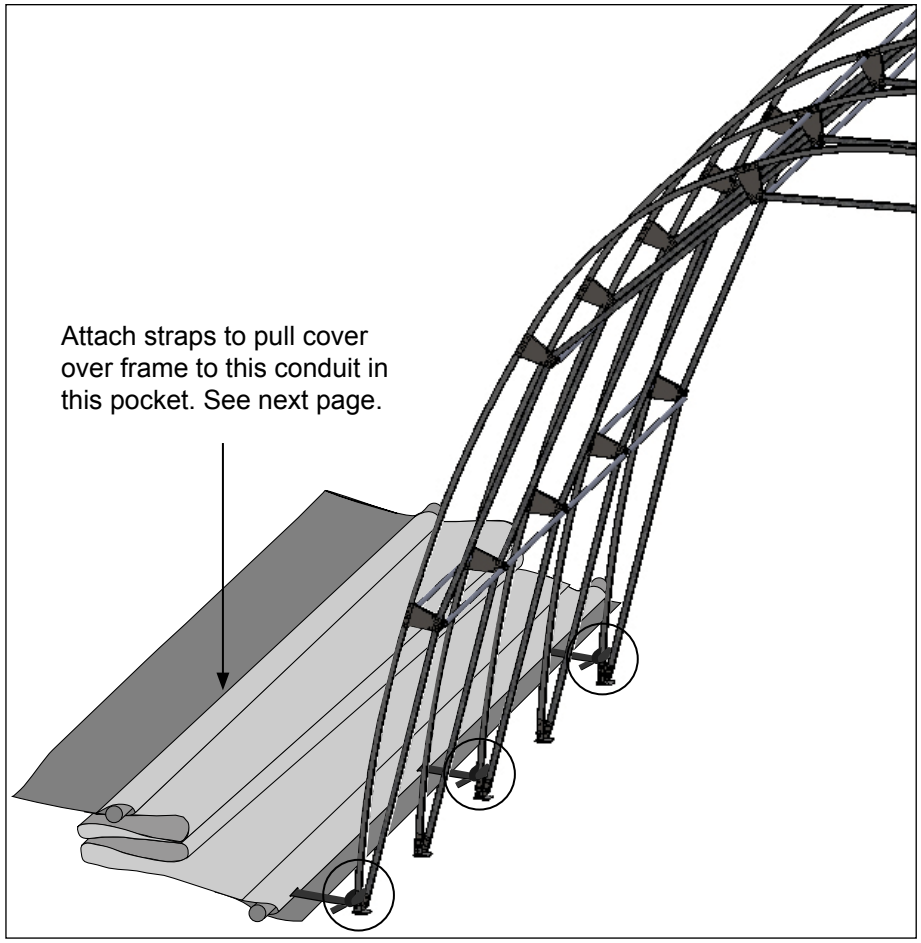


DO NOT cut through main cover. Cut through conduit pocket only. See photo above.

Photo (lower left column) shows a strap tied around cover conduit in a location *between conduit ends*. Strap is used to pull cover over frame.

To prevent cover damage and possible injury, use additional straps for frame lengths 40' or longer.

4. Move to other cover conduit and tie it to end rafters using short sections of strap or rope. This helps prevent cover from blowing off frame when other conduit is pulled over frame. *Do not pull cover without securing conduit.*



NOTE: Diagram shows temporary straps used to secure cover conduit to frame during cover installation. See circled areas above. Tie straps so these can slide up rafters to better center cover on frame side-to-side.

MAIN COVER CONDUITS ASSEMBLY (continued)

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

5. With all ropes attached to cover conduit, lift and carry conduit and cover toward frame base.

6. Toss ropes over frame and pull cover into position. One person is required at each rope.

NOTE: Use lifts and additional assistants (if needed) to help pull cover up and over frame. Shelter shown may differ in length and design. Dashed line shows location of cover conduit inside main cover side pocket.

MAIN COVER CONDUITS ASSEMBLY (continued)

7. Once in place, center main cover on frame. Center cover side-to-side and end-to-end. Pull bonnet portion over each end rafter to move cover into position on frame.

WARNING: To prevent damage and injury, ***DO NOT leave cover unattended*** if it has not been properly secured. Use ropes to temporarily prevent cover from blowing off frame.

If needed, temporarily loosen straps (Step 4) or reposition. Do not allow cover to remain unsecured regardless of weather conditions.

8. Locate black straps at front and rear hems and feed them through center slot in end ratchets located on each end rafter (or end wall base rail).

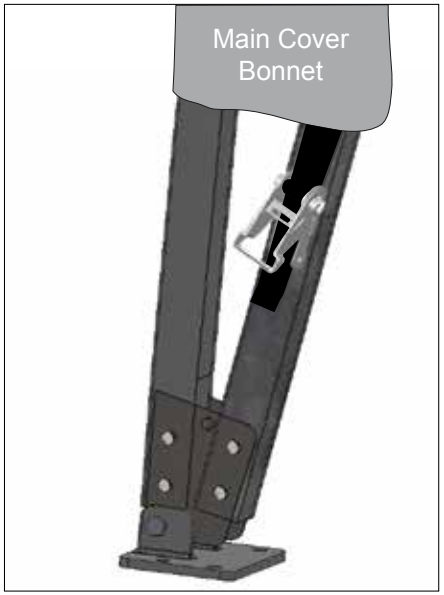


Photo shows end ratchets attached to end rafter—no end panel.

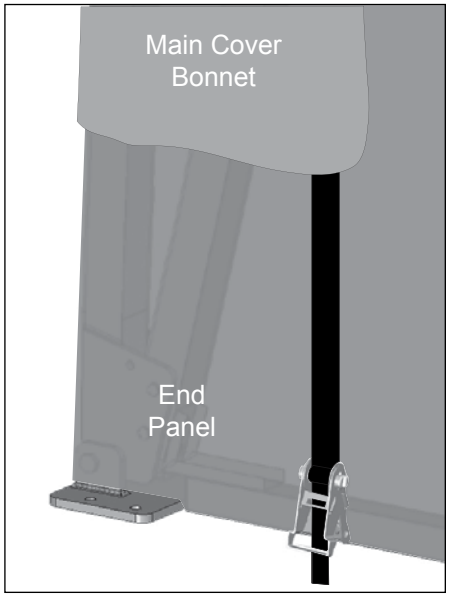


Photo shows end ratchets attached to end wall base tube with installed end panel.

NOTE: Do not tighten completely at this time. This helps to temporarily secure cover.

9. Tie ropes (or straps), used to pull cover into position, to frame to hold cover.
10. Move to the other side conduit and ensure those straps (Step 4) are secure.
11. Continue with side strap installation.

INSTALL MAIN COVER SIDE STRAPS

Side straps wrap around slits created in the side conduit pocket. Strap ends of each strap are then fed into each side ratchet attached to a rafter chord. Slightly tightened straps to keep cover in position.

Required parts and tools:

- 103620B (1" black strap)
- Tool to cut slits in cover conduit pockets

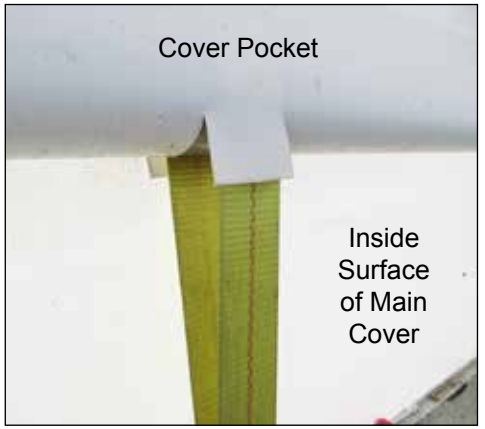
Complete these steps to install the side straps:

1. Working from inside the frame, move to one side ratchet position and remove cover pocket material in line with a ratchet.

Photo above shows using a utility knife to cut access to cover conduit in pocket of main cover. Cover is used for an example only. Actual cover differs in design. Procedure is the same.

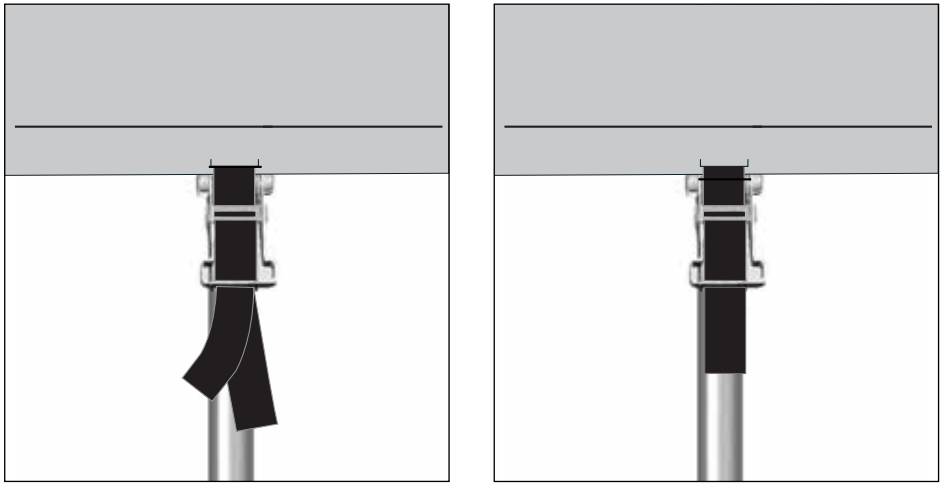
When creating access to conduit for the strap, do not cut the main cover. Cut only the pocket material.

2. Select one tie down strap (103620B) and insert strap end through slit, around cover conduit, and back out the other side.



NOTE: Depending on where ratchet was attached to rafter, strap may need cut to length. Actual strap may differ from examples shown.

3. Feed both ends of strap through slot in ratchet and slightly tighten strap.



4. Repeat previous steps to install and slightly tighten remaining straps.
5. After installing all side straps, install the PVC conduit at each end of main cover. Do not tighten side straps at this time. Cover must be allowed to move end-to-end during stretching.

INSTALL PVC CONDUIT FOR MAIN COVER ENDS

PVC conduit is inserted into a stretch pocket at each end of main cover. Strap is then threaded around the conduit and end rafter. Strap is then evenly tightened to stretch main cover end-to-end.

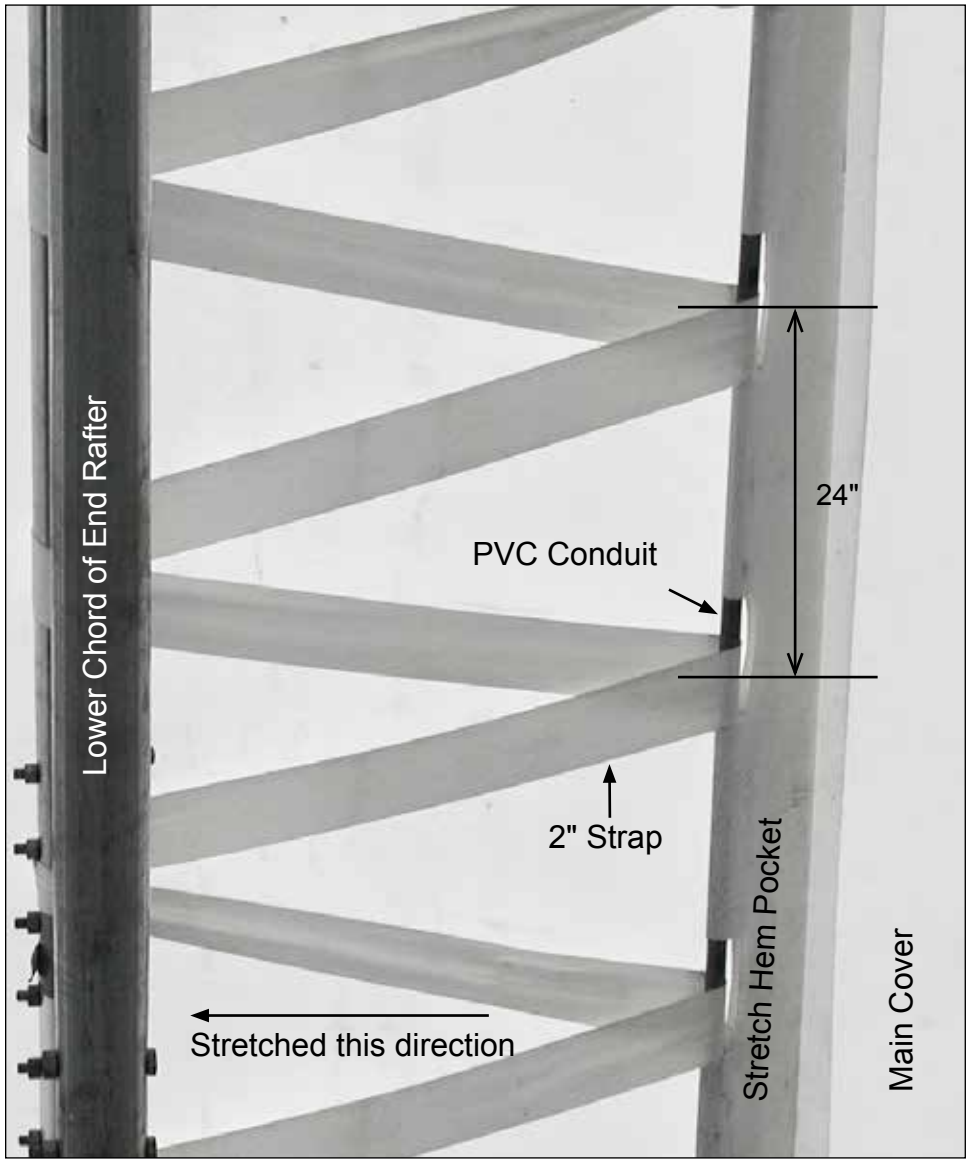


Photo shows stretch pocket, conduit, and strap as installed for a similar main cover. View shows cover as seen when standing inside frame looking up at end rafter and the underside of main cover.

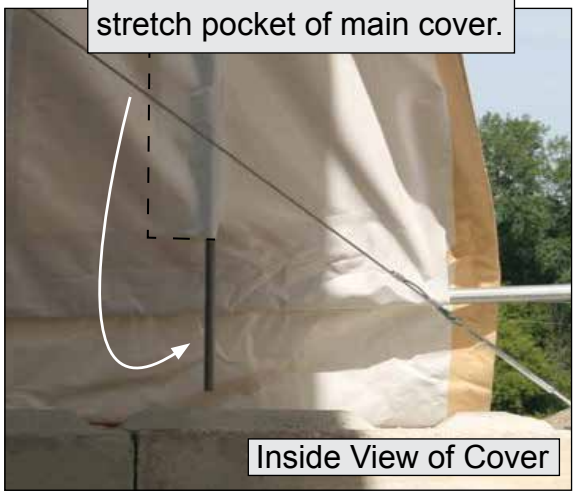
Photo above shows a similar cover and location of stretch pocket. Underside of cover is shown, which is visible from inside building when cover is installed.

Complete these steps to install conduit and strap for main cover stretch pockets.

1. Take first section of PVC conduit and feed it into stretch pocket from bottom at one end of cover. *Insert plain end of conduit into pocket so next section can connect to the first.* ***Do not insert into pocket that includes a strap!***
2. Once bell end reaches pocket, take another section of PVC conduit, coat end with PVC glue, and insert plain end into bell end of previous section.

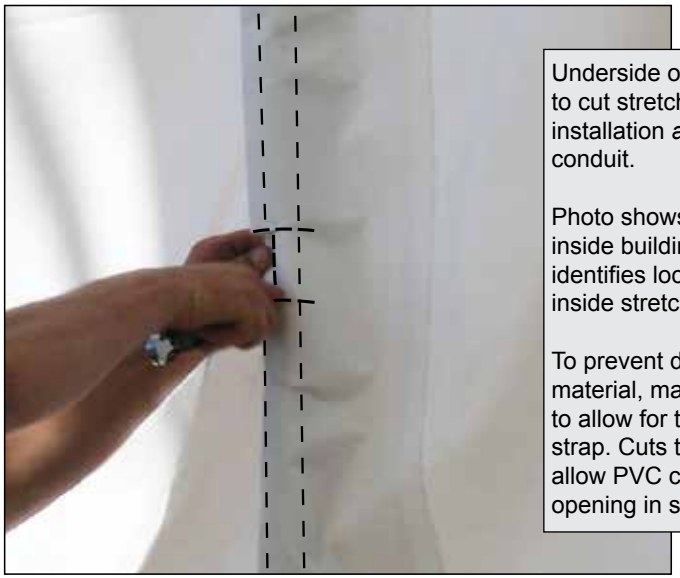
Required parts and tools:

- LJ2842 (3/4" PVC conduit) and 102925 (2" 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



3. Repeat steps and continue to assemble and feed PVC conduit into stretch pocket until it extends out other end of pocket.
4. Once PVC conduit is fully assembled, secured at the joints, and inserted into pocket, repeat steps to install PVC for remaining end of main cover.
5. With both PVC conduits assembled and installed, verify that cover is centered on frame and move to one end rafter.
6. Mark strap locations on stretch pocket at 24" on-center spacing. ***See photo on previous page for spacing and prepared stretch pocket.***
7. At each 24" on-center mark, cut out a small section of stretch pocket material to gain access to PVC conduit. See photo at right and read note.

   NOTE: Cutout should be just enough to feed a section of 2" strap around PVC conduit.
8. Repeat Steps 6 & 7 to cut stretch pocket at opposite end of cover/frame.



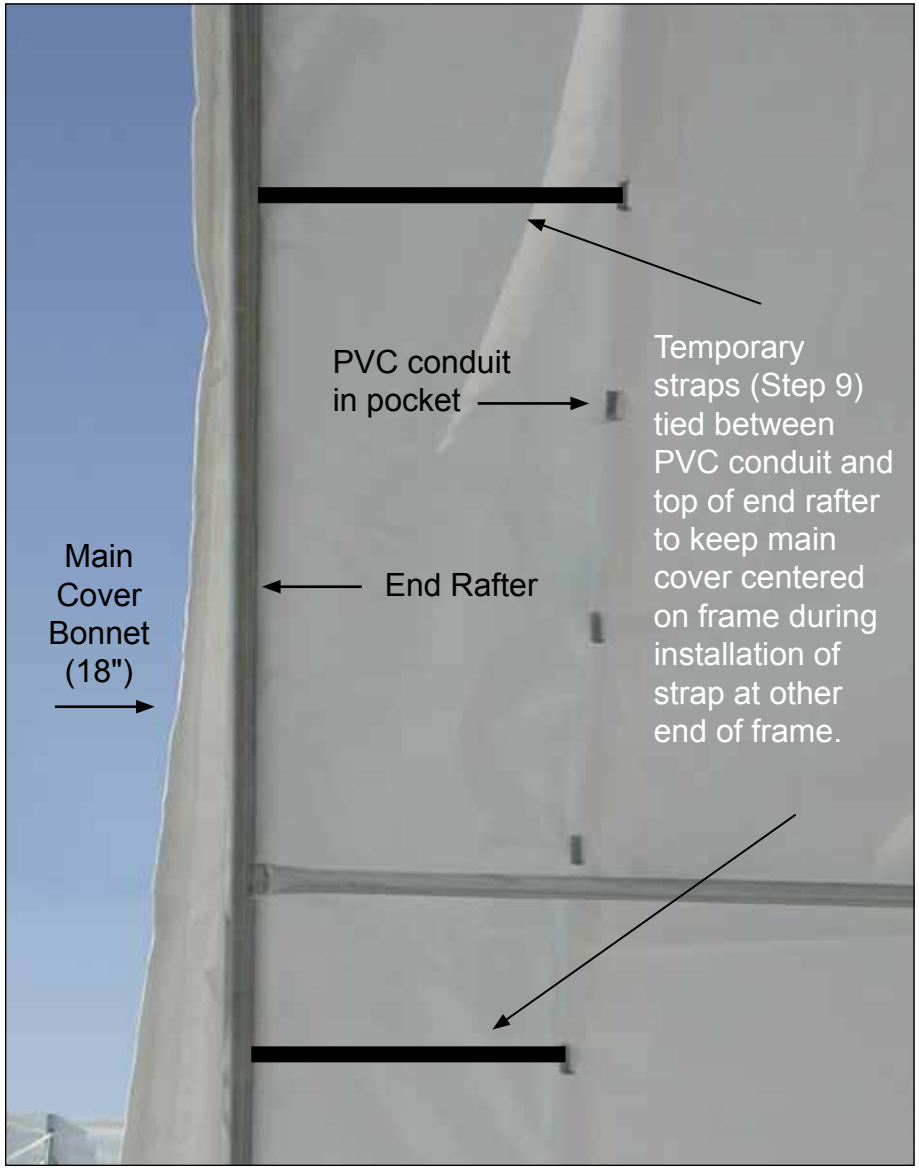
Underside of cover showing how to cut stretch pocket for strap installation *after inserting* the PVC conduit.

Photo shows cover as seen standing inside building. Vertical dashed line identifies location of PVC conduit inside stretch pocket of main cover.

To prevent damage to PVC or cover material, make cuts just long enough to allow for the installation of the 2" strap. Cuts that are too long may allow PVC conduit to pull through opening in stretch pocket.

INSTALL PVC CONDUIT (CONTINUED)

9. Cut six (6) sections of 2" strap from bulk roll long enough to tie PVC conduit to outer chord (top) of end rafter in evenly spaced locations.



NOTE: Straps are temporary and will hold cover in place while strap at opposite end is installed. Actual frame differs from example shown.

10. Move to frame end opposite the temporary straps.
11. Take one end of bulk roll of 2" strap and weave it around ***end rafter outer chord*** and PVC conduit. *Weave strap around top or outer tube of end rafter*
12. Continue weaving strap around end rafter outer/top chord and PVC conduit working up and over the rafter and down to other end of PVC conduit.

NOTE: Keep strap snug during this step, but do not over tighten. Also, maintain a even distance between top of end rafter and PVC conduit. Photo shows installed strap. Distance between conduit in pocket and end rafter is uniform. ***Photo above shows underside of main cover as seen standing inside building.***

INSTALL PVC CONDUIT (CONTINUED)

13. After weaving strap, cut and tie strap end to end rafter to secure it.
14. Take remainder of bulk strap roll, move to the other end and repeat the steps to weave strap between PVC conduit and outer chord of end rafter.

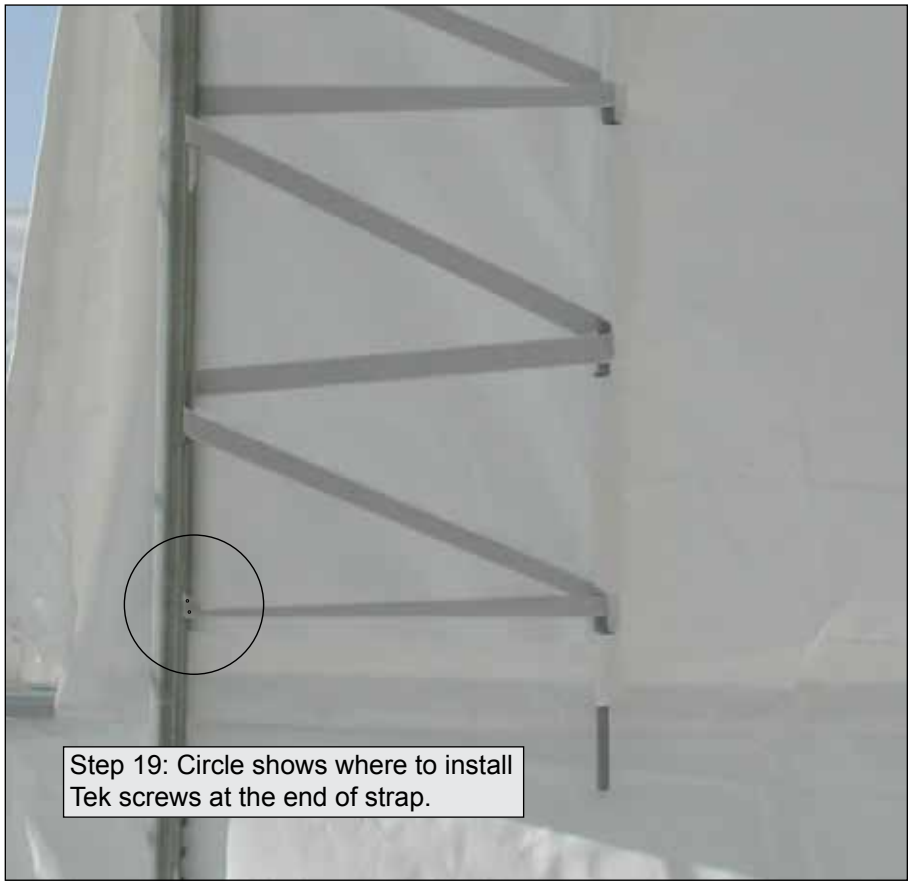
NOTE: Remove temporary straps at this end (Step 9) once main strap is installed.

15. After strap is completely installed at this end, cut strap to length and tie it to the end rafter.
16. Tighten strap to stretch main cover end-to-end. Strap will pull against strap at the opposite.

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

    Also check that bonnet portion of main cover overlaps each end rafter evenly before stretching the cover. Same amount of cover should overlap end rafter at each end.

    If side straps are too tight to stretch cover end-to-end, loosen side straps as needed and continue.
17. Once strap is tight, cut it to length and tie it to the other leg of the same end rafter.
18. Return to other end of frame and tighten that strap (if needed) to complete stretching main cover end-to-end.
19. Drive two FA4484B Tek screws into end rafter through each strap end where strap is tied to end rafter. This prevents strap from coming loose.



Step 19: Circle shows where to install Tek screws at the end of strap.

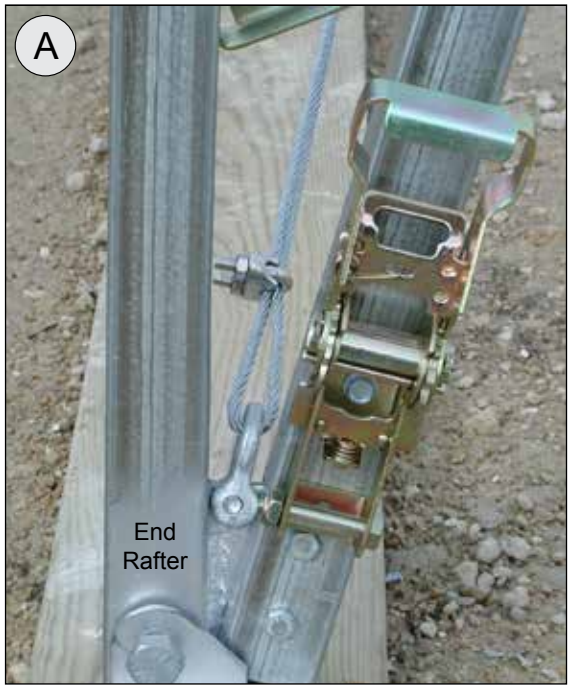
20. With cover properly stretched, tighten side ratchets.

TIGHTEN SIDE RATCHETS

Tighten side ratchets *after* cover is stretched end-to-end. Before continuing, verify cover is in the desired position and centered on frame. (Loosen and reposition if needed.) Continue with these steps to tighten side ratchets.

1. Move to side ratchets attached to each leg of the same rafter. Begin at an inside rafter near center of frame.
2. With an assistant at one side ratchet and someone at the other on *the same rafter*, tighten ratchets to secure cover. Tightening ratchets at the same time on the same rafter keeps cover centered and results in a more uniform appearance.
3. Move to another rafter and repeat steps to tighten side ratchets attached to that rafter.

   NOTE: If strap builds up in the ratchet, loosen ratchet, remove some strap, and retighten.
4. After all side ratchets are tight, position someone at each ratchet attached to end rafter (or end frame base tube) where cover bonnet straps were previously inserted into ratchet.



5. Tighten end ratchets to secure bonnet portion of main cover.
6. Move to other end of the building and secure bonnet at that end.
7. Read information on next page.

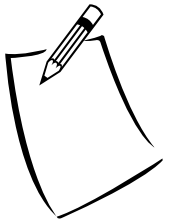
SHELTER CARE AND MAINTENANCE

Proper care and maintenance of your High Boy building is important. Check these items periodically to properly maintain your shelter:

- Regularly check main cover and end panels (if equipped) to see that these remain tight and in proper repair.
- Check connections, straps, ratchets and all fasteners to verify they remain tight and in good repair.
- Never climb or stand on shelter.
- Remove debris and objects that accumulate on shelter. Use tools that will not damage cover when removing debris.
- Remove snow to prevent excess accumulation. Use tools that will not damage cover when removing snow.
- Check contents of shelter to verify nothing is touching cover or end panels (if equipped) that could cause damage.
- Check anchoring system to ensure all components are tight and in good repair.
- Check all mounting feet anchor bolts and fasteners to ensure these remain tight.
- If shelter is moved, inspect all parts and connections before reassembly.
- For replacement or missing parts, call 1-800-245-9881 for assistance.

NOTE: With the exception of truss arch buildings and engineered buildings, ClearSpan™ shelters and greenhouses *do not have any tested loading criteria.*

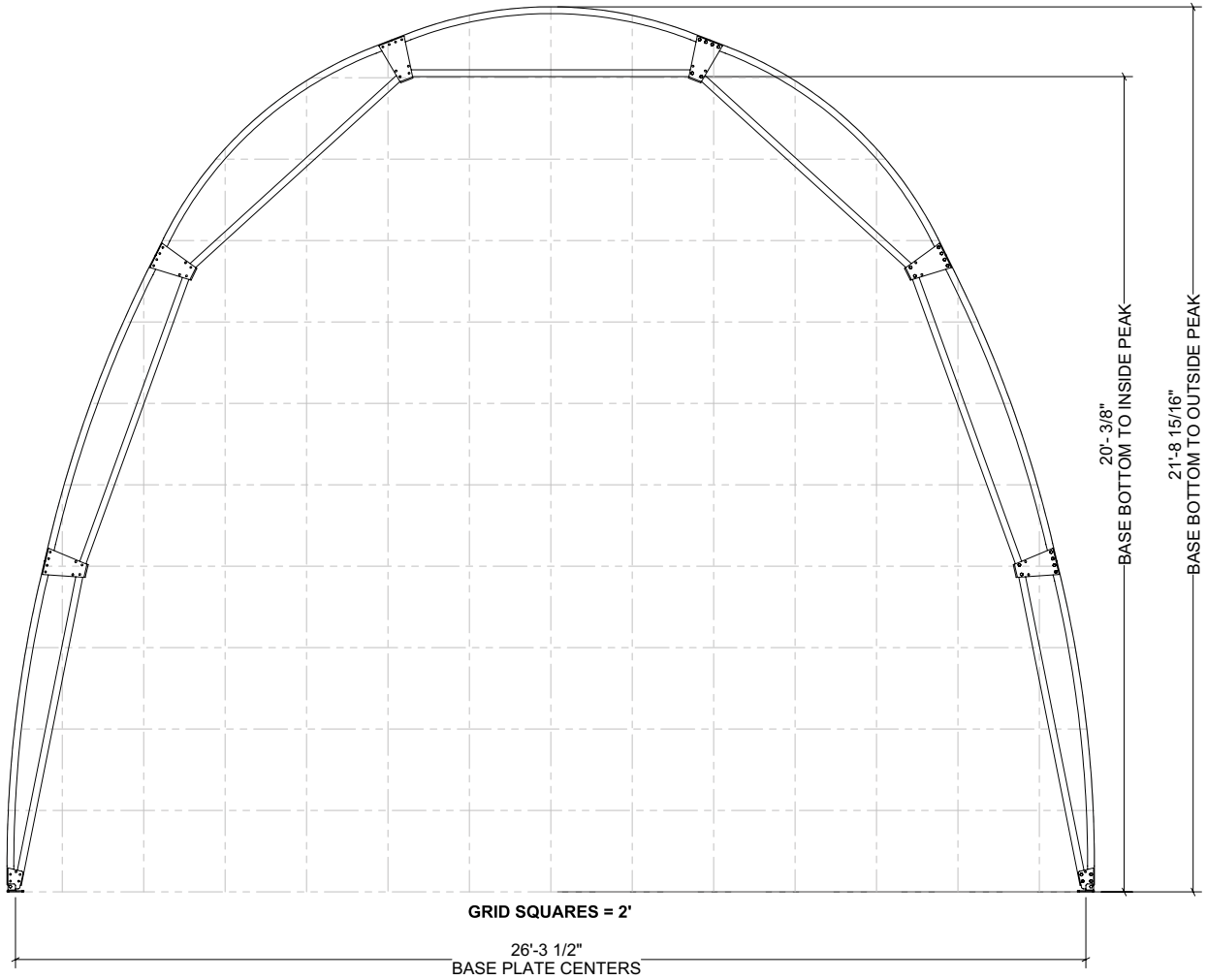
Contact your sales representative for additional information regarding our comprehensive line of engineered buildings.

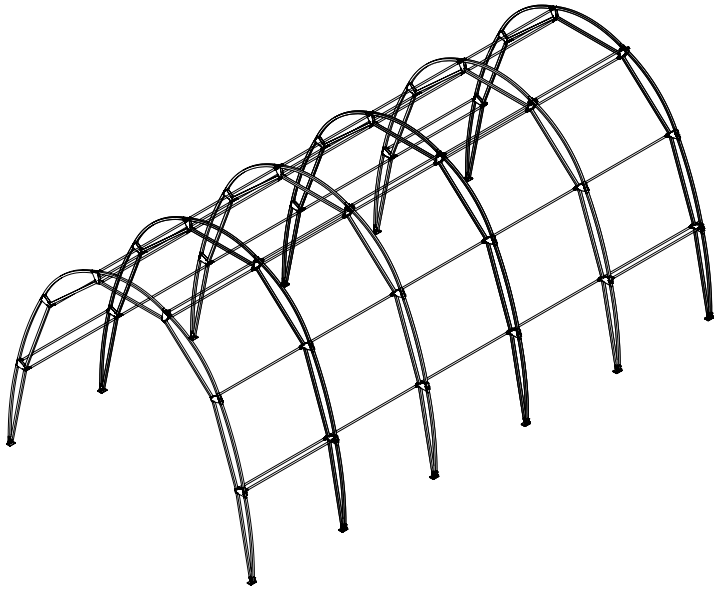


ClearSpan
fabric structures and greenhouses

QUICK START GUIDE

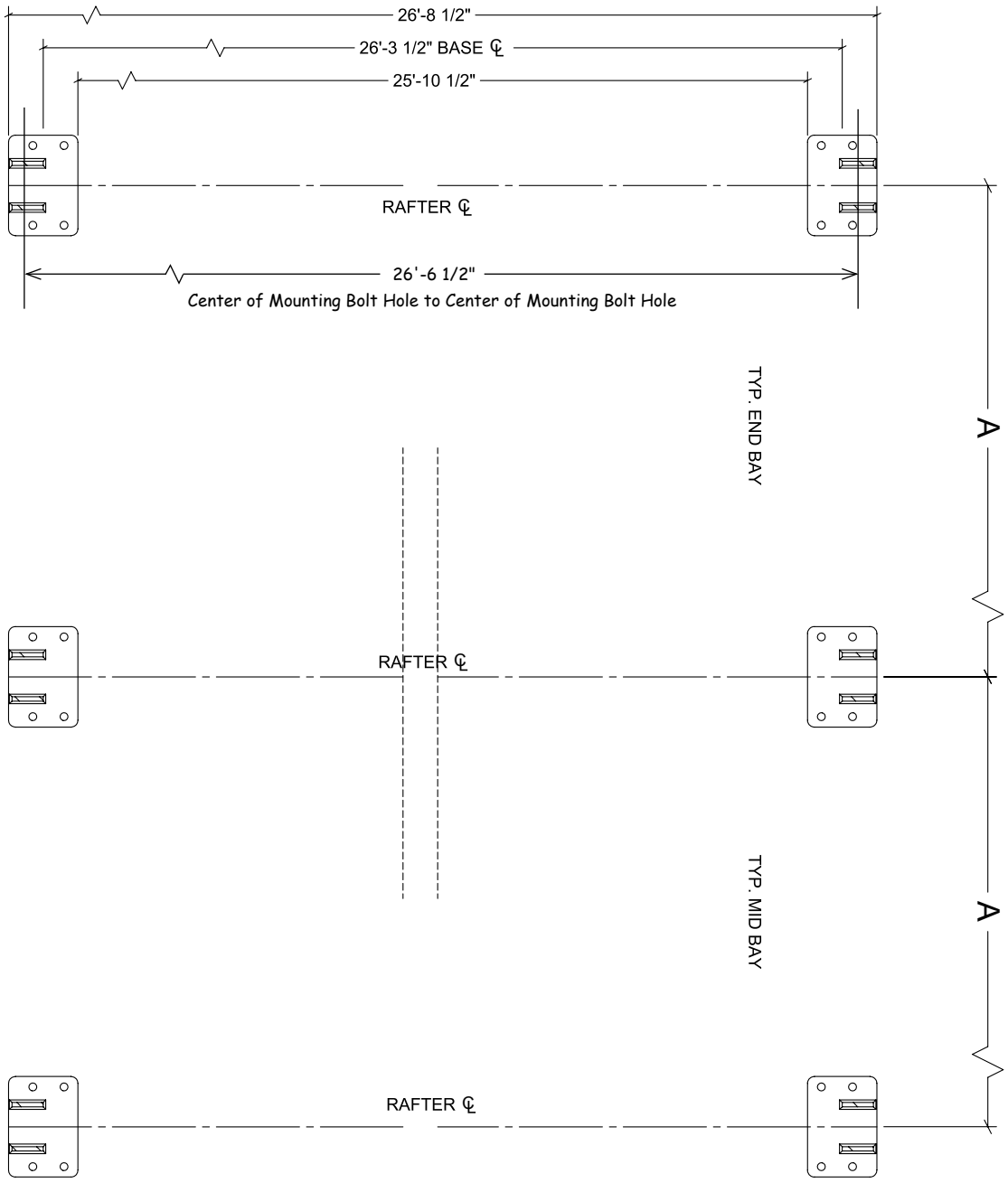
ClearSpan™ High Boy Buildings





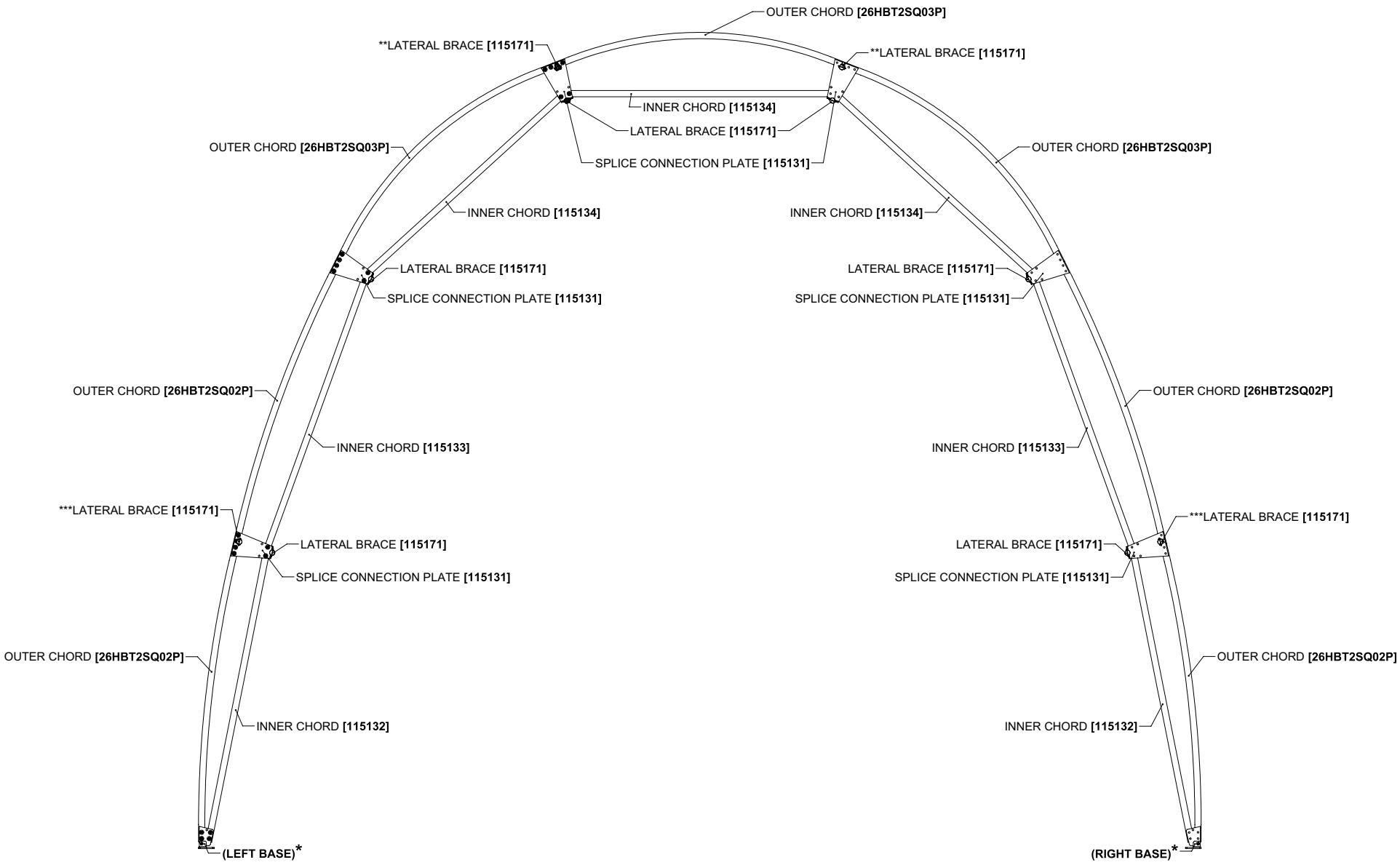
Actual frame may differ from above example.

BASE PLATE LAYOUT



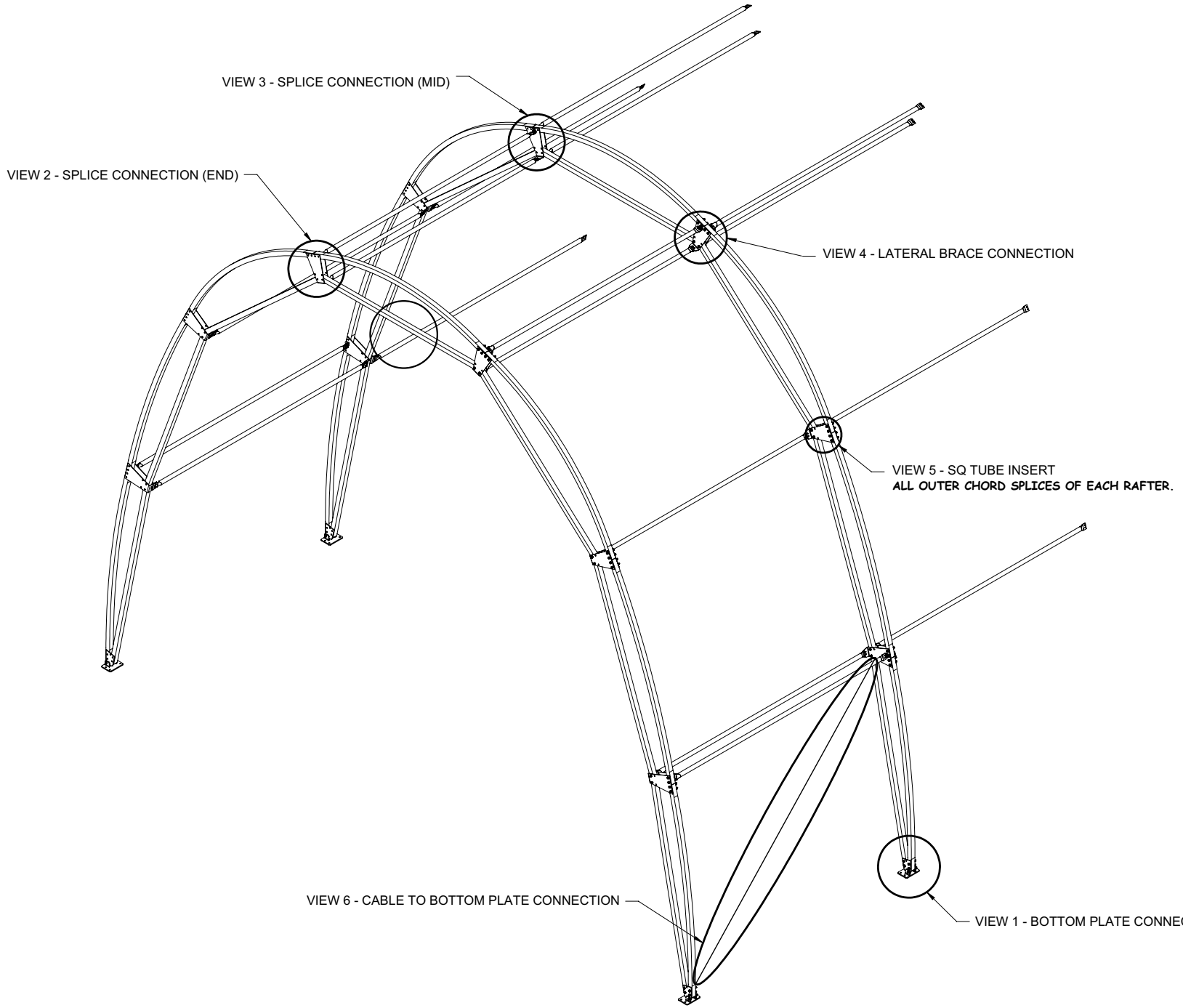
Letter A represents the 10' on-center spacing of rafters.

FRONT PROFILE

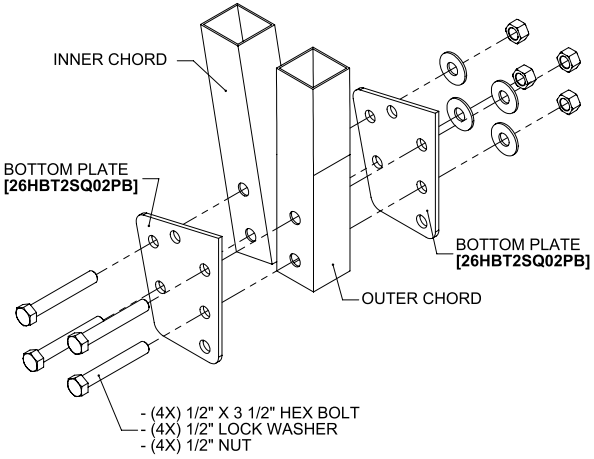


*NOTE: BASE PLATE SKU# HBT2SQBP2.
**NOTE: STAGGER LATERAL BRACING DOWN LENGTH OF BUILDING.
***NOTE: END BAYS ONLY. SEE DIAGRAM ON NEXT PAGE.

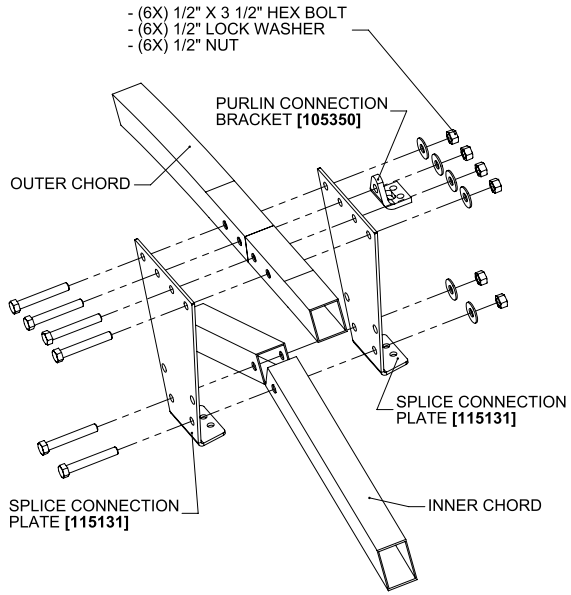
CONNECTIONS



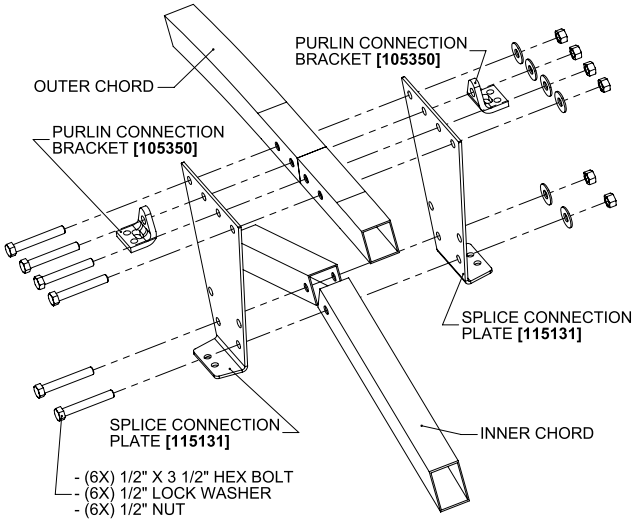
CONNECTIONS - DETAILS



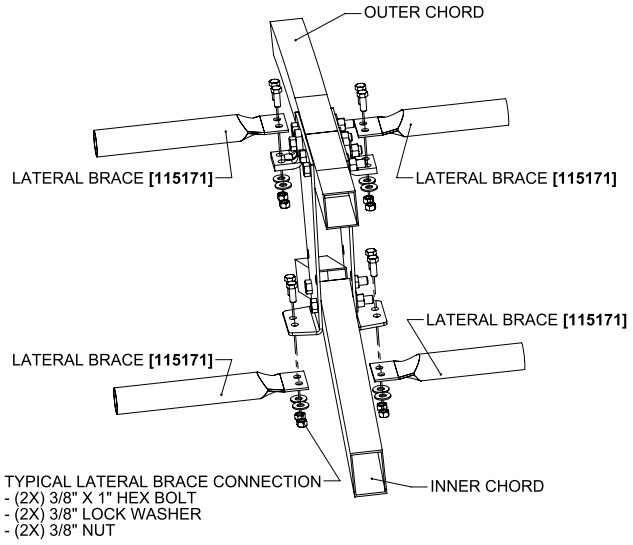
VIEW 1 - BOTTOM PLATE CONNECTION



VIEW 2 - SPLICE CONNECTION (END)

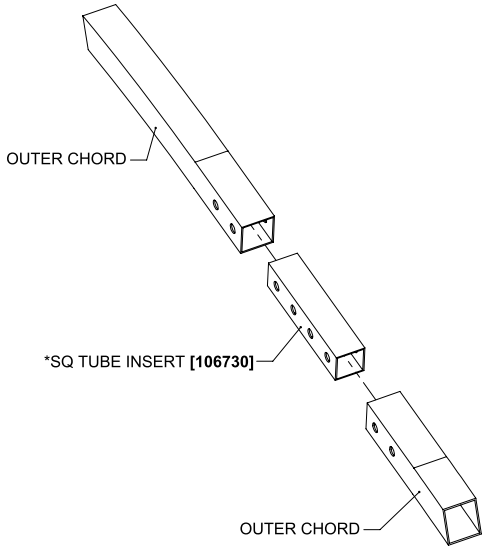


VIEW 3 - SPLICE CONNECTION (MID)

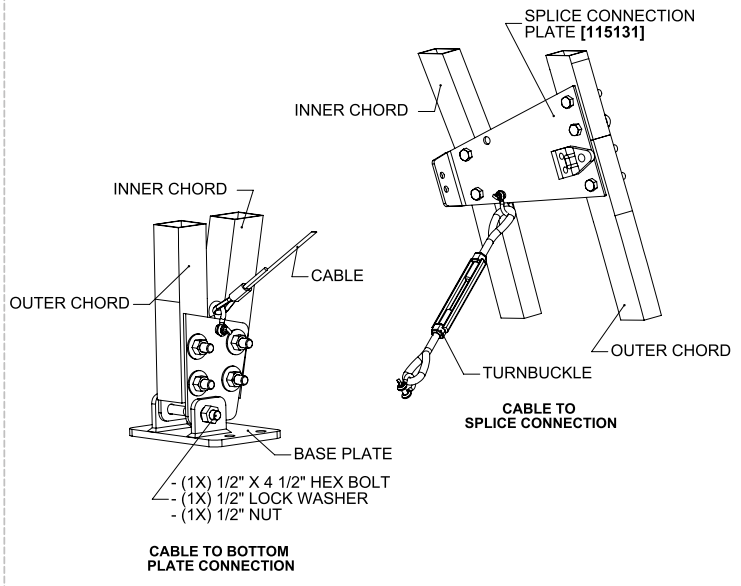


VIEW 4 - LATERAL BRACE CONNECTION

***NOTE:** USED AT EVERY SPLICE CONNECTION PLATE LOCATION.

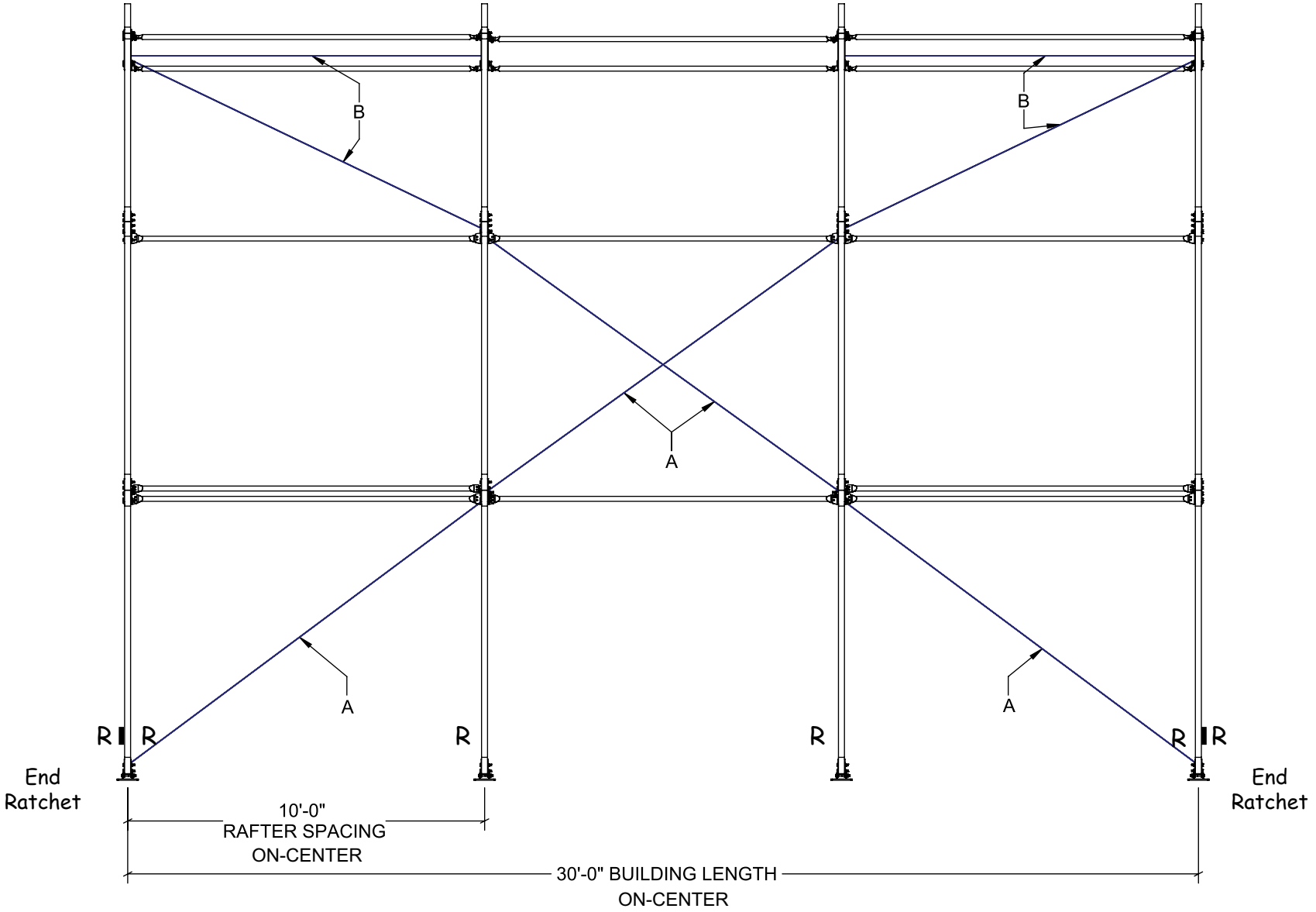


VIEW 5 - SQ TUBE INSERT



VIEW 6 - CABLE DETAILS

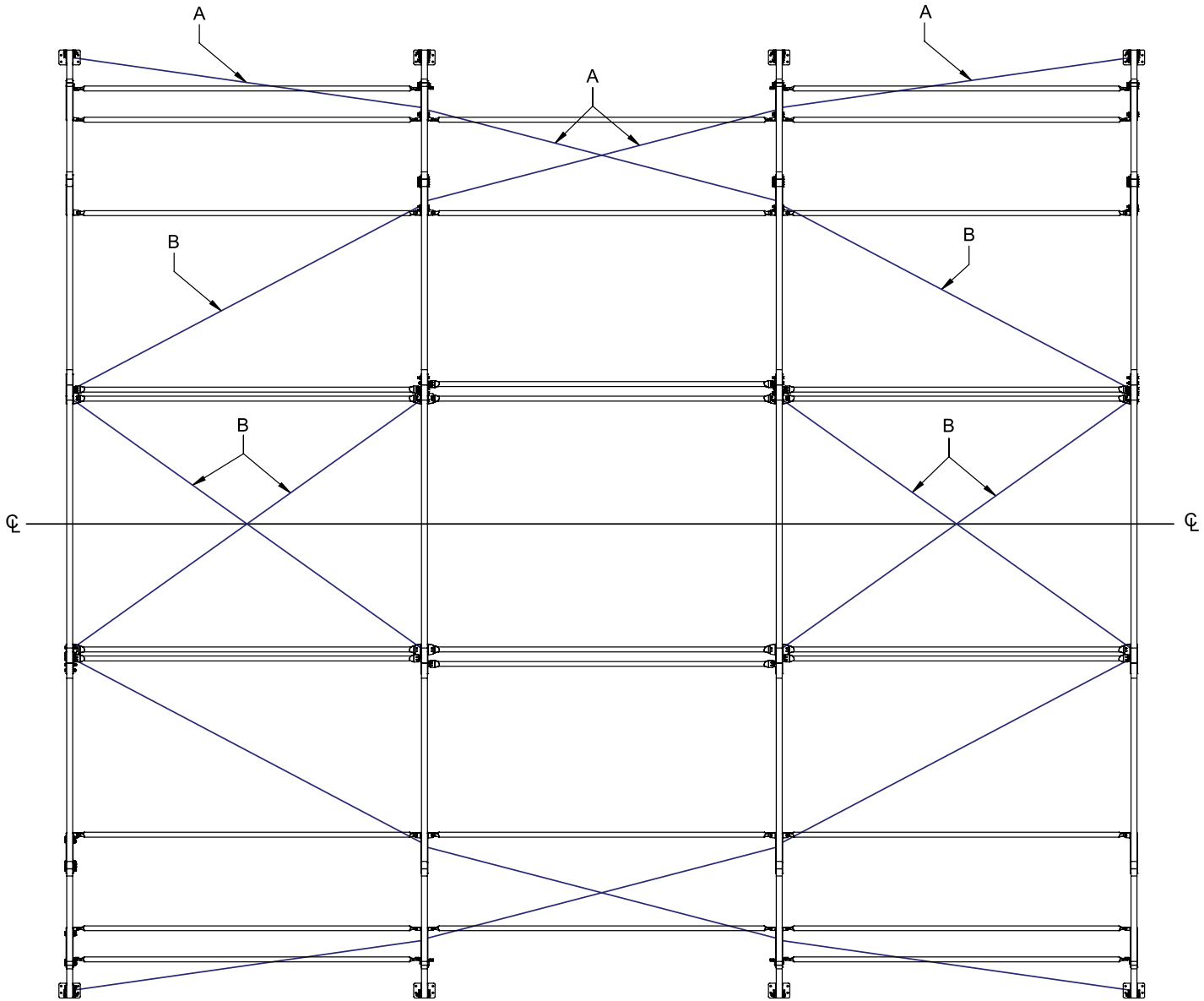
SIDE PROFILE w/ CABLES - 115402



CABLE ASSEMBLY SKU'S @ LOCATIONS	
CALLOUT	**CABLE SKU**
A	CAB18G1007
B	CAB18G1003

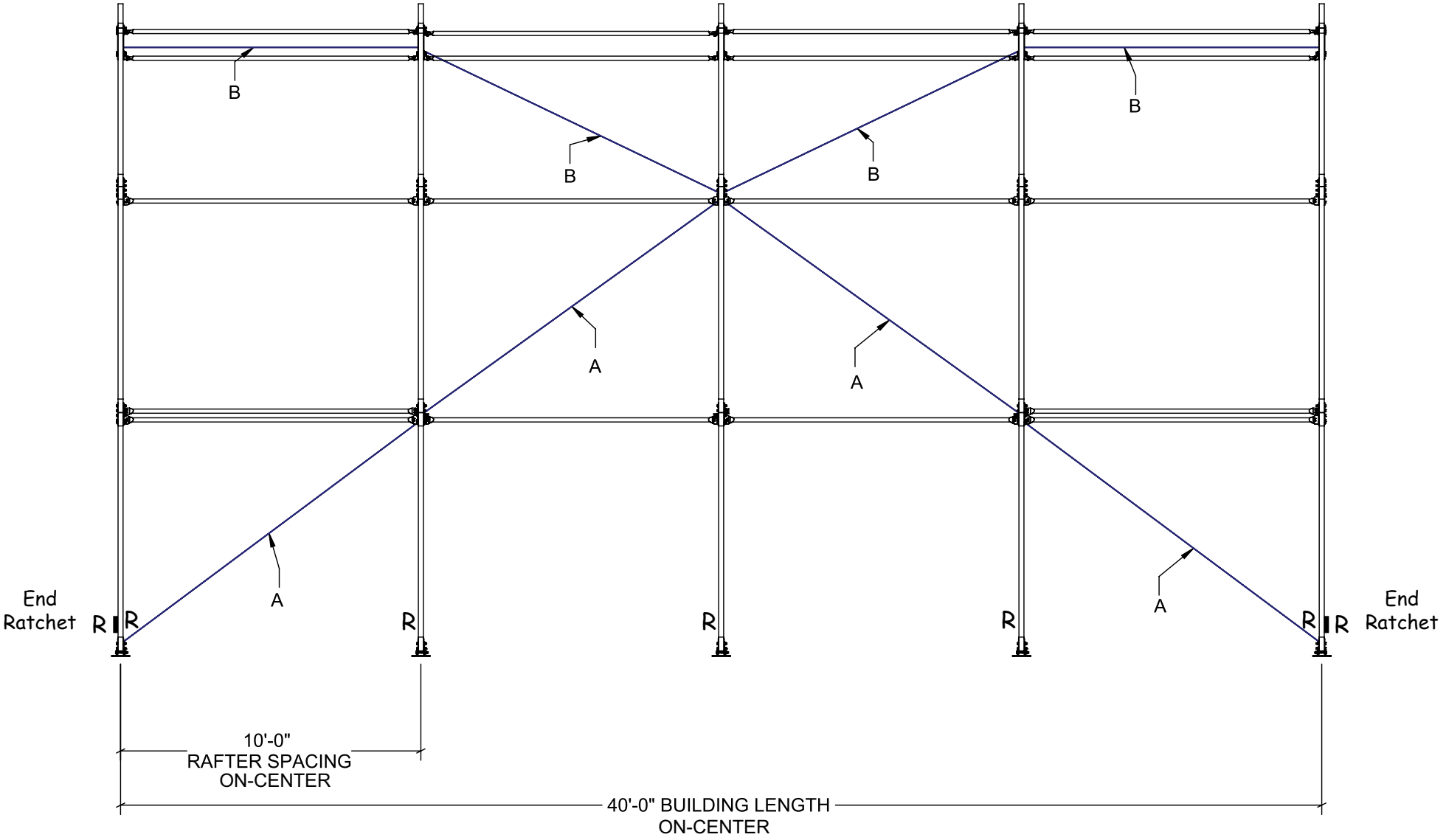
R = Ratchet Location
See "Install Ratchet" Procedure.

TOP VIEW w/ CABLES - 115402



CABLE ASSEMBLY SKU'S @ LOCATIONS	
CALLOUT	**CABLE SKU**
A	CAB18G1007
B	CAB18G1003

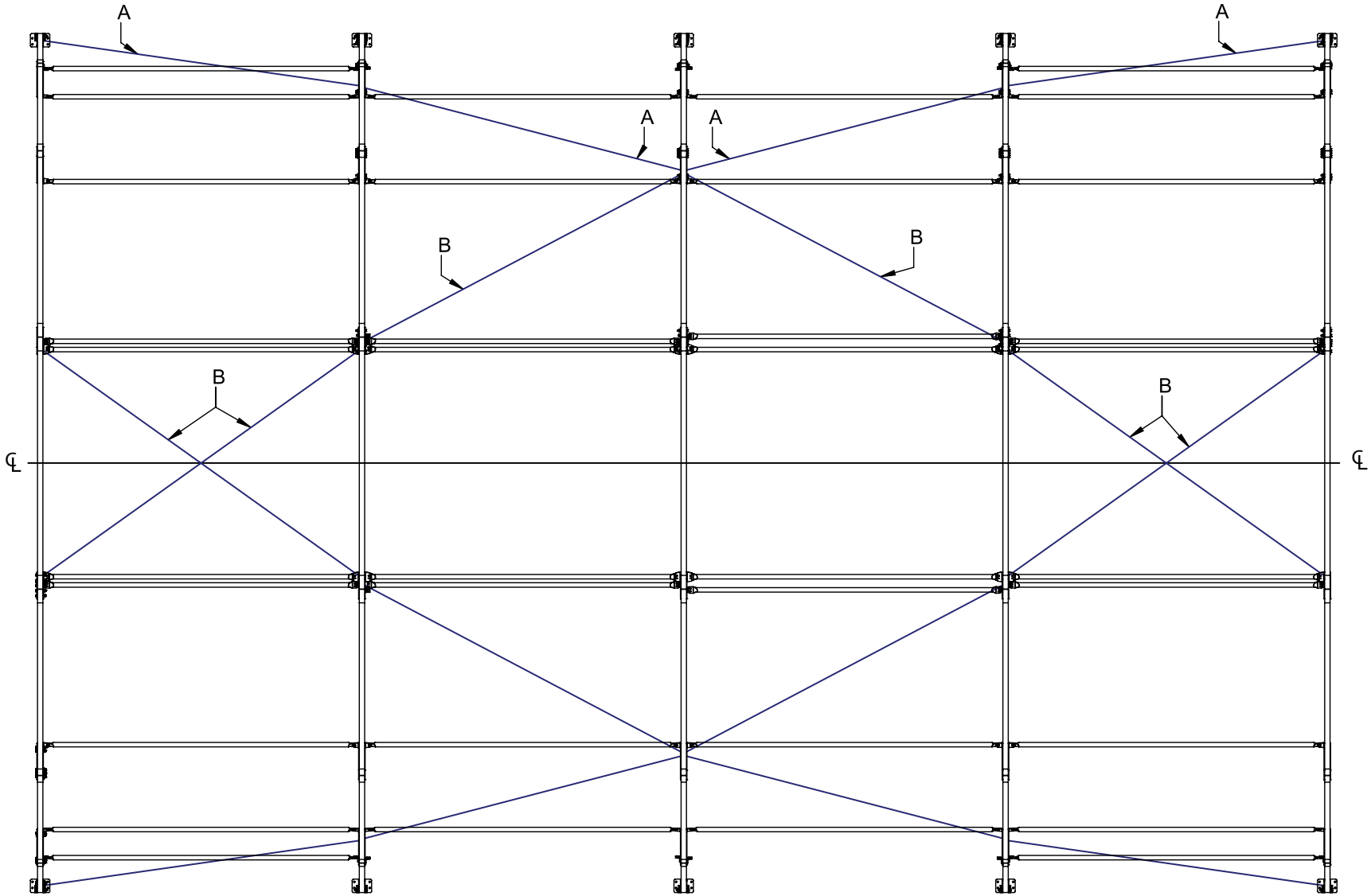
SIDE PROFILE w/ CABLES - 115403



CABLE ASSEMBLY SKU'S @ LOCATIONS	
CALLOUT	**CABLE SKU**
A	CAB18G1007
B	CAB18G1003

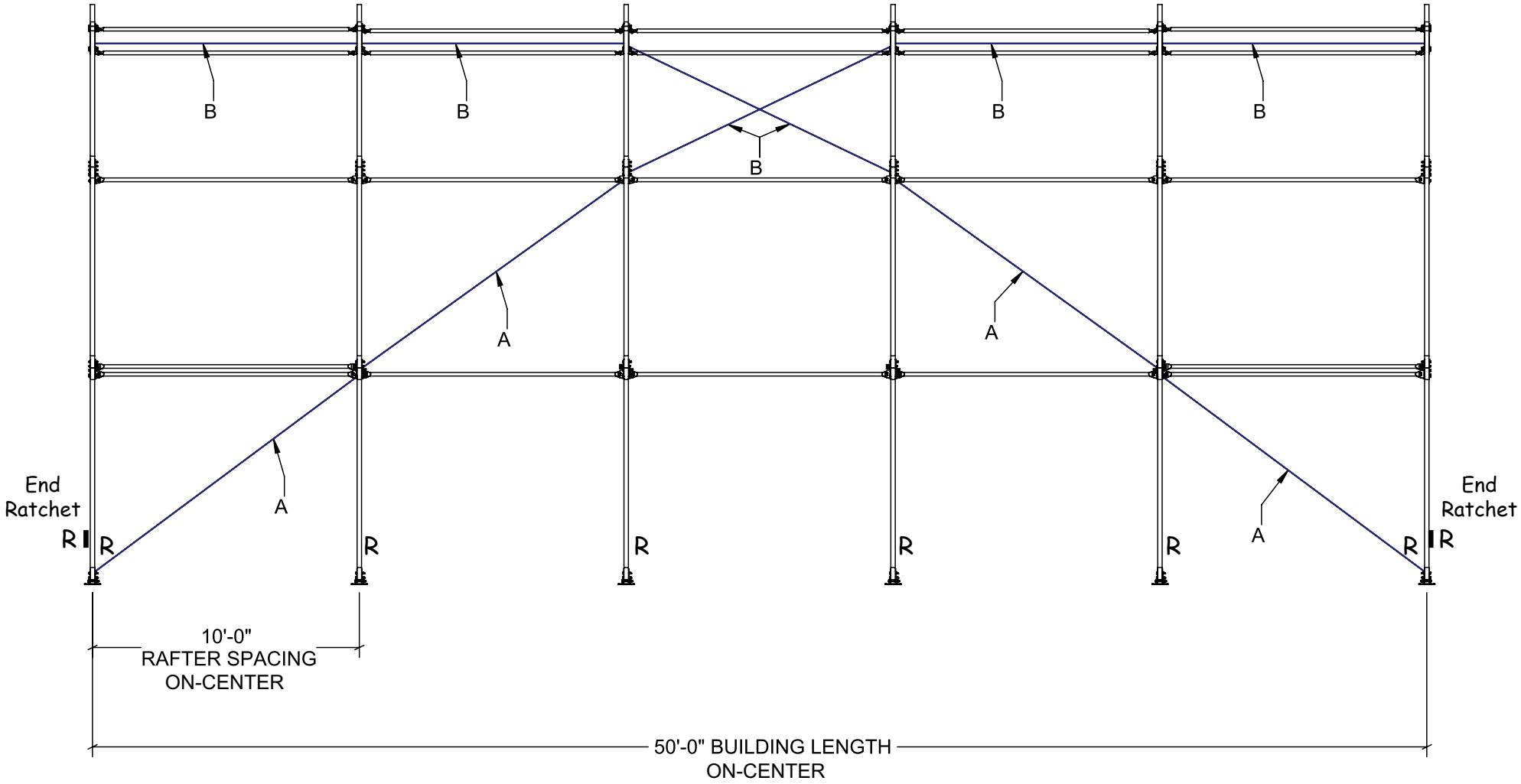
R = Ratchet Location
See "Install Ratchet" Procedure.

TOP VIEW w/ CABLES - 115403



CABLE ASSEMBLY SKU'S @ LOCATIONS	
CALLOUT	**CABLE SKU**
A	CAB18G1007
B	CAB18G1003

SIDE PROFILE w/ CABLES - 115404



CABLE ASSEMBLY SKU'S @ LOCATIONS	
CALLOUT	**CABLE SKU**
A	CAB18G1007
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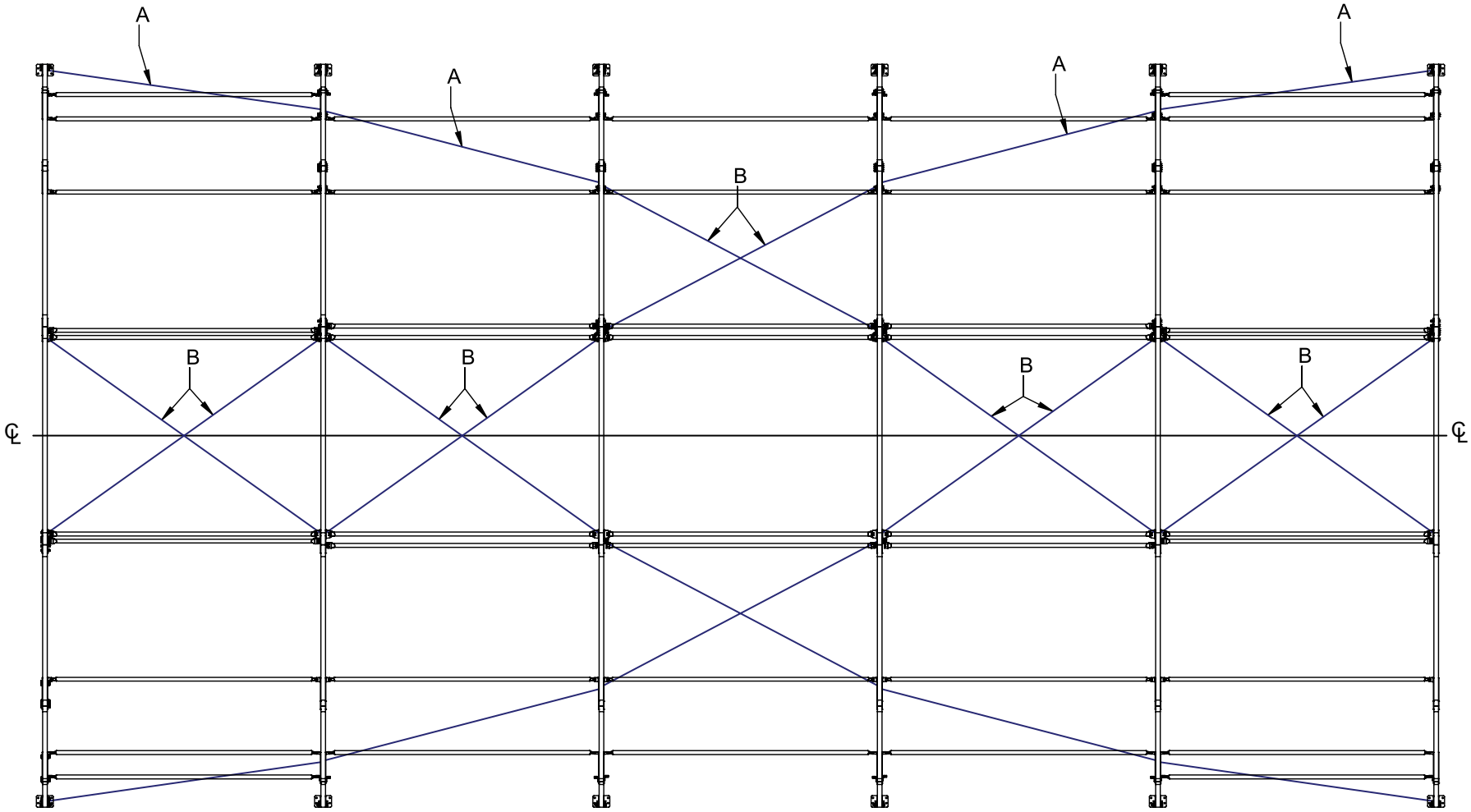
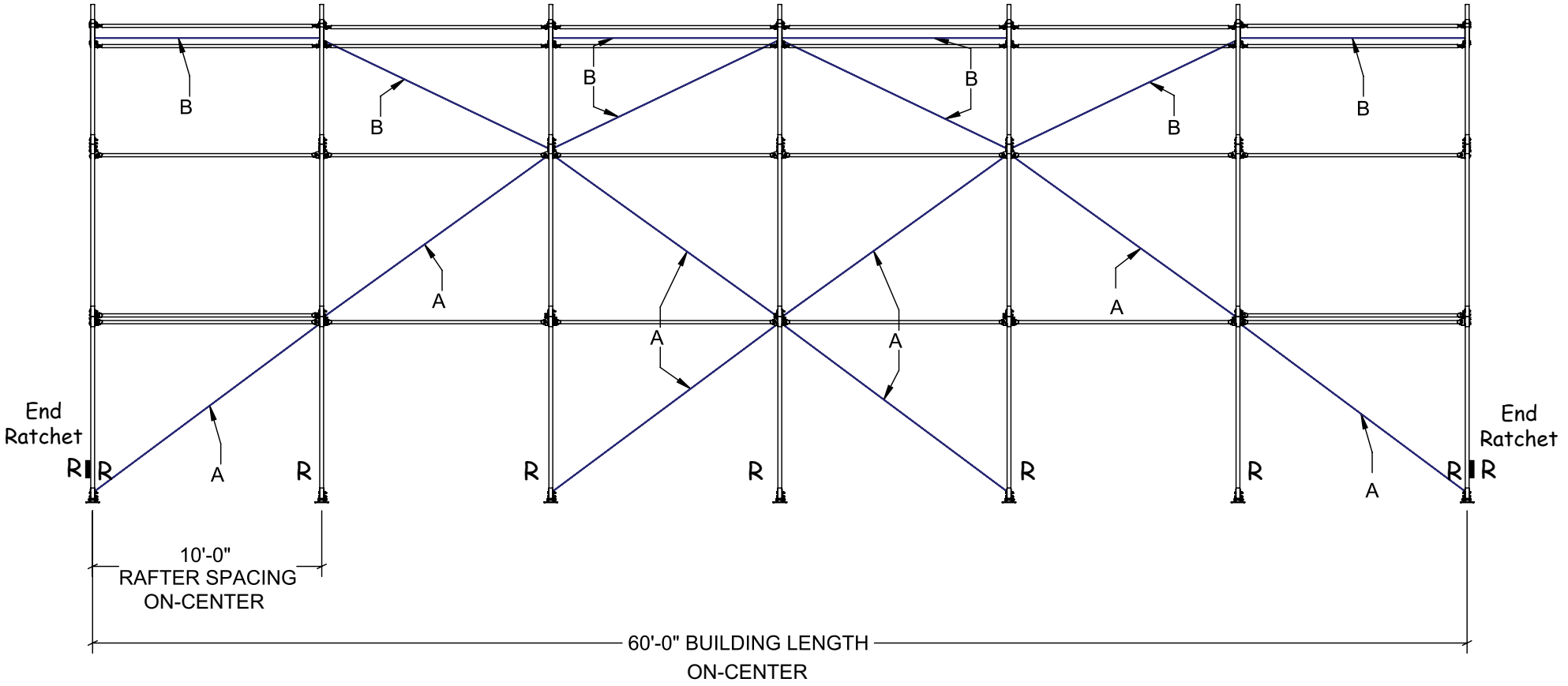
See "Install Ratchet" Procedure.

TOP VIEW w/ CABLES - 115404



CABLE ASSEMBLY SKU'S @ LOCATIONS	
CALLOUT	**CABLE SKU**
A	CAB18G1007
B	CAB18G1003

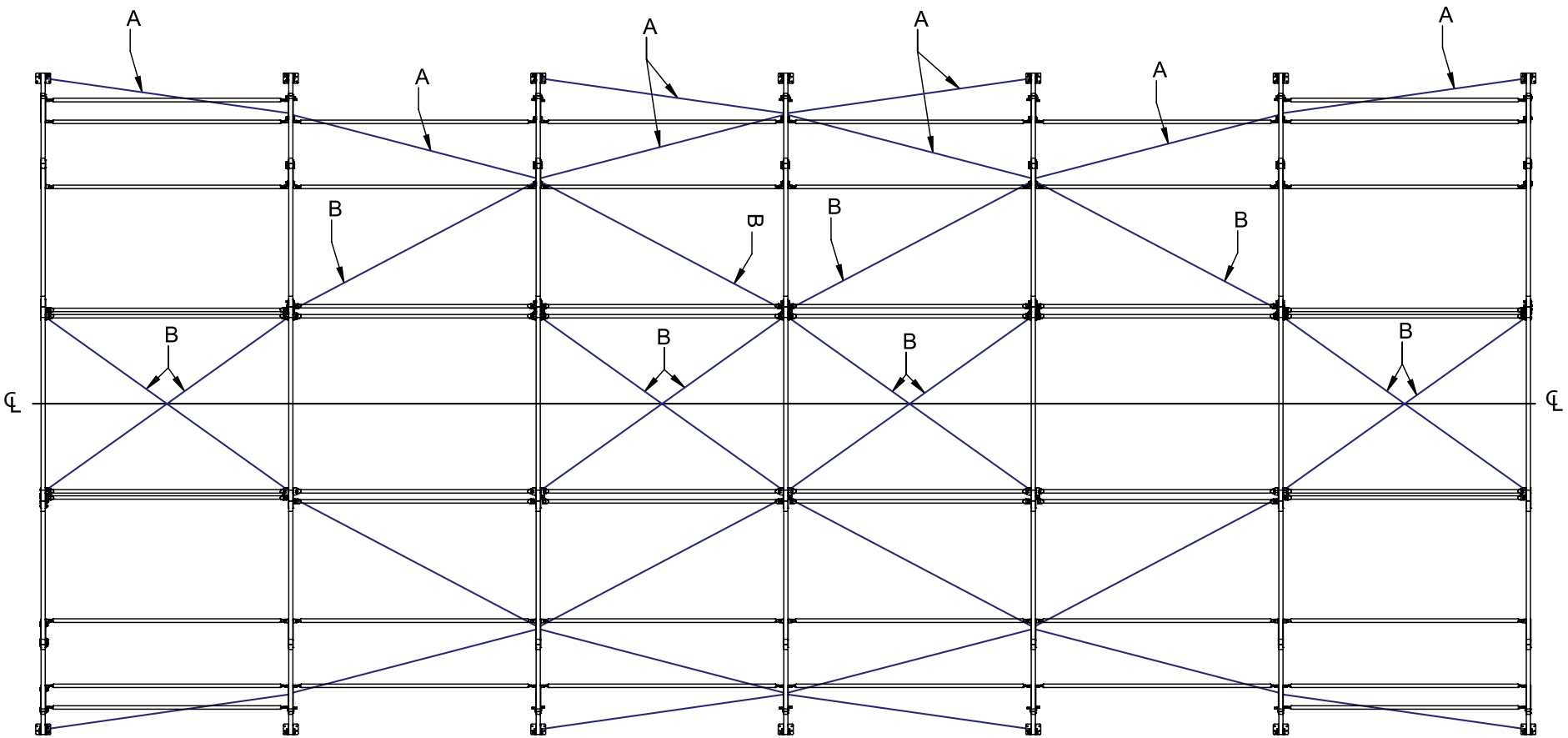
SIDE PROFILE w/ CABLES - 115405



CABLE ASSEMBLY SKU'S @ LOCATIONS	
CALLOUT	**CABLE SKU**
A	CAB18G1007
B	CAB18G1003

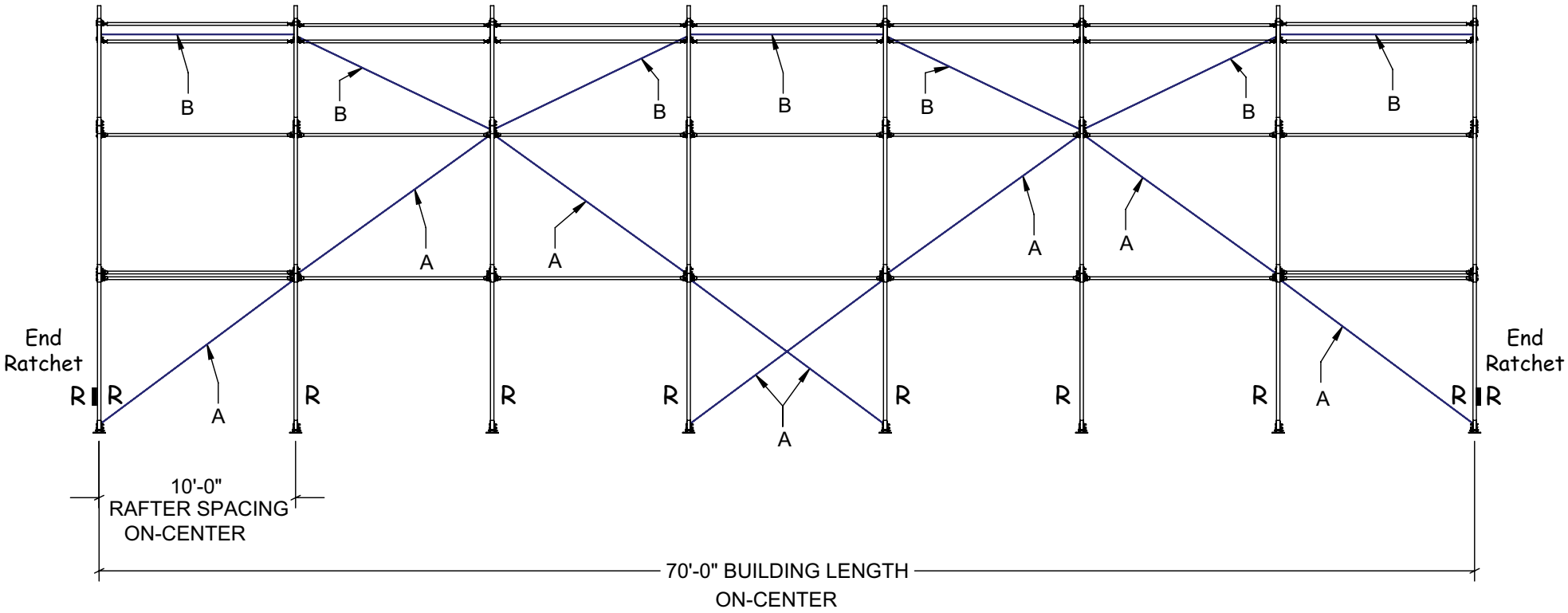
R = Ratchet Location
See "Install Ratchet" Procedure.

TOP VIEW w/ CABLES - 115405



CABLE ASSEMBLY SKU'S @ LOCATIONS	
CALLOUT	**CABLE SKU**
A	CAB18G1007
B	CAB18G1003

SIDE PROFILE w/ CABLES - 115406



CABLE ASSEMBLY SKU'S @ LOCATIONS	
CALLOUT	**CABLE SKU**
A	CAB18G1007
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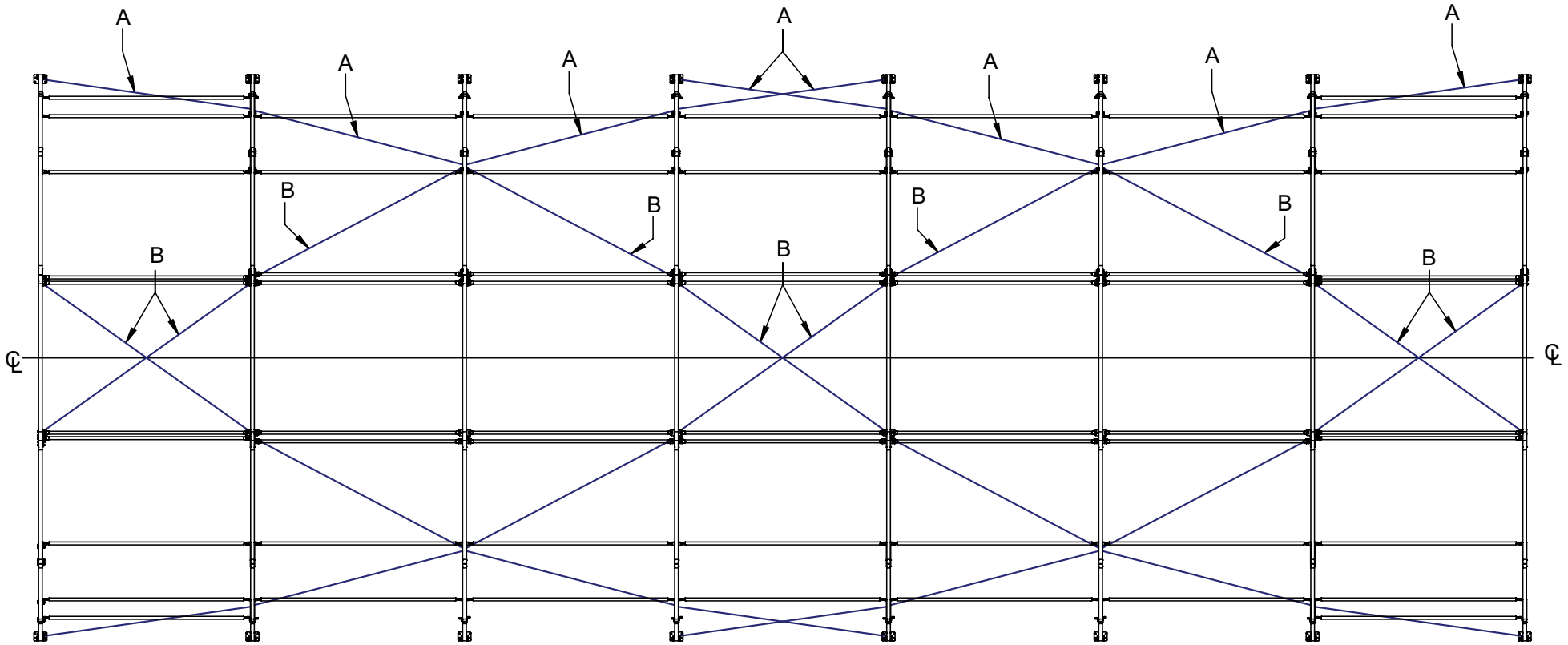
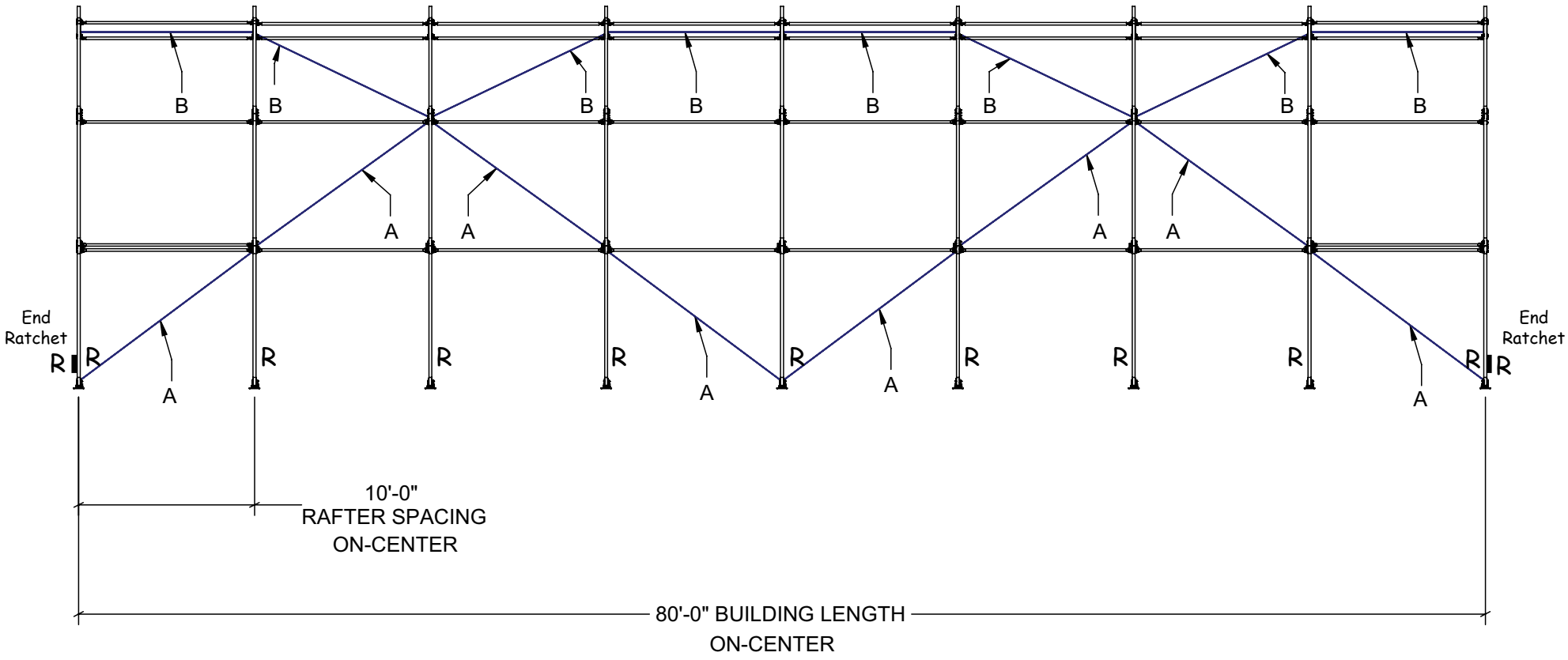
R = Ratchet Location
See "Install Ratchet" Procedure.

TOP VIEW w/ CABLES - 115406



CABLE ASSEMBLY SKU'S @ LOCATIONS	
CALLOUT	**CABLE SKU**
A	CAB18G1007
B	CAB18G1003

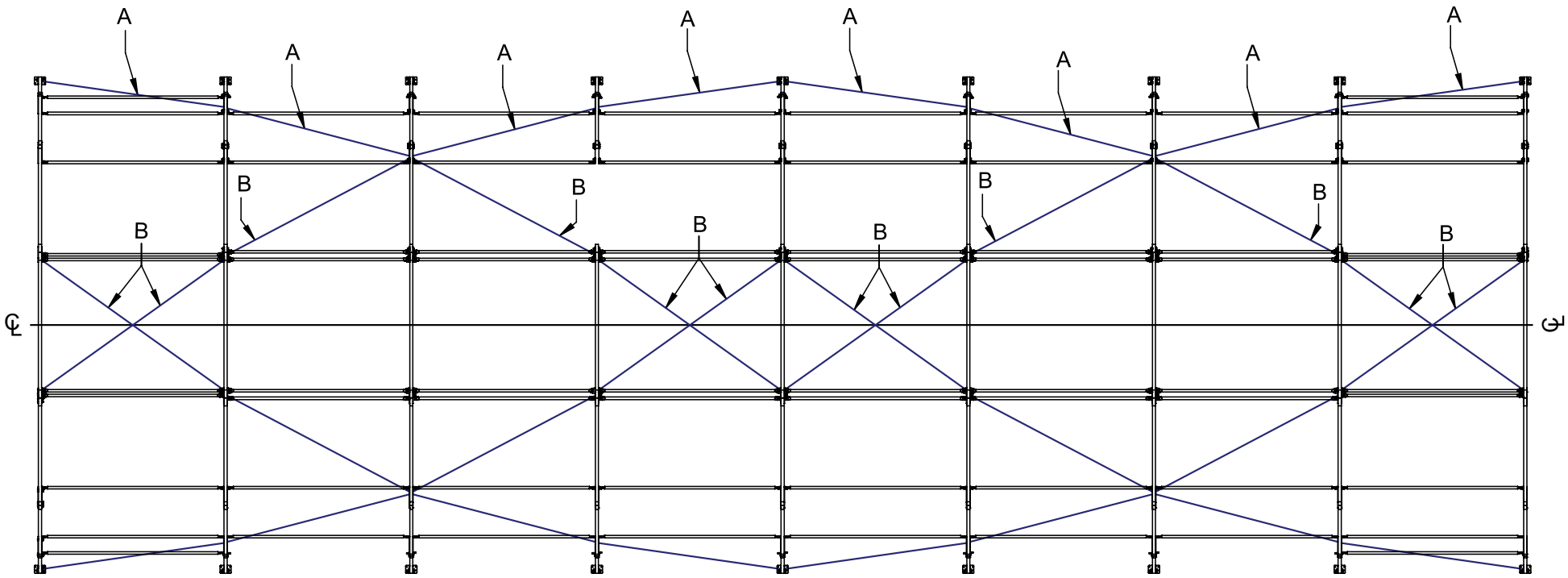
SIDE PROFILE w/ CABLES - 115407



CABLE ASSEMBLY SKU'S @ LOCATIONS	
CALLOUT	**CABLE SKU**
A	CAB18G1007
B	CAB18G1003

R = Ratchet Location
See "Install Ratchet" Procedure.

TOP VIEW w/ CABLES - 115407



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