Component 3: Shade and Planting House for Soursop Trees

Project Type: **Agricultural Infrastructure and Plant Propagation**

Overview:

The SPA (Soursop Producers Association) employs advanced technologies and techniques for cultivating soursop crops, which is a demanding task requiring meticulous operational planning and care. Two members have been enlisted to participate in the association, acting as primary suppliers of new soursop plants using established and effective growing methods. The SPA members are trained in techniques that ensure faster-growing, more resilient crops that are resistant to pests and damages.

Objective:

In 2024, our team aims to establish two shade and planting houses for soursop crops. These controlled environments will enhance the growth and hardening process of young plants, preparing them for immediate planting and ensuring a continuous supply of robust soursop plants.

Project Scope:

- **Establishment of Two Shade and Planting Houses: Each house will be designed to optimize the growth conditions for new soursop plants.**
- **Operational Planning: The planting houses will implement a rotation system to ensure a steady supply of plants, first servicing SPA members, then opening to other planters (non-members).**
- **Training and Techniques: SPA members are equipped with specialized training to accelerate growth and improve plant resilience, ensuring higher-quality crops.**

Project Estimate:

- **Cost per Planting House: USD 15,000 (includes all associated work for installation and operation)**
- **Total Project Cost: USD 30,000 for two fully operational planting houses dedicated to soursop crops.**

Target Locations:

- **St. John, Grenada**
- **St. Andrew's, Grenada**

Goals:

- **Establish a dedicated rotation of soursop plants, hardened and ready for immediate planting.**
- **Prioritize supplying plants to association members, with the capacity to extend sales to non-members in the future.**
- **Support the sustainability and growth of the soursop industry in Grenada through innovative cultivation methods and infrastructure.**

Our Full detail design and request is found here: https://agro.azits.net/our-shade-house-designs/

Not for Profit:

Plant will be sold at the rates established for tree crops by the Government of Grenada, or to be determined by the market rates. However, the cost of planting materials and operational equipment, labor and functional charge must be a factor in this venture. This cost will be priced into the sales of fruit in the future. SPA is seeking also carbon credit swaps for tree crops.

SPA Sour Sop, Grenada W.I. Epigenetic Grow Houses. #Project24

As part of Project 24 (SPA Work Plan) we are seeking support toward the establishment of three grow houses.

Call for Funding: Establishing Grow Houses in Grenada

Simply Pure Agroprocessing (SPA) is seeking funding to establish **three grow houses** in Grenada to enhance soursop crop production. This project will employ advanced **epigenetic growing methods**, a groundbreaking approach to stock planting that replicates the best-performing mother plants to produce high-quality offspring within the same locality. This ensures optimal crop resilience, productivity, and quality by leveraging plants that have already demonstrated superior growth and yield under local conditions.

Why Support This Initiative?

- **Innovative Agricultural Practices:** SPA will utilize **epigenetic restocking methods**, selecting the best mother plants to generate offspring with superior traits such as pest resistance, higher yields, and better adaptability to the local environment. This method guarantees consistent, high-quality planting stock for farmers.
- **Boosting Local Agriculture:** Grenada's soursop industry has significant potential to grow into a global leader in soursop product development. By supporting this project, you contribute to empowering local farmers, enhancing their livelihoods, and strengthening the region's agricultural sustainability.
- **Economic and Health Benefits:** Soursop is not only a sought-after fruit in international markets but also recognized for its health benefits. SPA's efforts will bolster Grenada's economy and promote health-conscious consumption globally.

How Will Funding Be Used?

- **Construction of Three Grow Houses:** Materials, equipment, and facilities to establish climate-controlled environments.
- **Land Preparation:** Preparing the selected sites in **St. Andrew and St. John's, Grenada**.
- **Propagation and Training:** Implementing epigenetic growing methods and training farmers to adopt and maintain these practices.
- **Distribution and Monitoring:** Efficiently supplying planting stock and tracking its performance to continuously refine techniques.

Join Us in Transforming Agriculture in Grenada

We invite you to support SPA in this transformative initiative. Your funding will directly impact Grenada's agricultural landscape, enabling the country to harness innovative methods for sustained crop production and economic growth.

For more details, including our detailed project plan, please visit our website or contact us directly. Together, we can cultivate a thriving future for Grenada's soursop industry.

Grow Houses Project Checklist

Phase 1: Planning and Preparation (Completed)

- Identify strategic locations for three grow houses (access to water, sunlight, and security). (Comp
- Conduct feasibility studies for site suitability. (Completed)
- Design climate-controlled grow house facilities with advanced propagation technology. (Complete
- Secure necessary permits and approvals for construction and operations. (Completed)

Phase 1.1: Funding and Procurement

- Develop a detailed budget and financial plan for the project. (Completed)
- Identify potential funding sources (e.g., grants, loans, investors, or partnerships).
- Prepare and submit funding proposals or applications to secure financing.
- Allocate funds to various project components (construction, equipment, operations).
- Procure required materials, equipment, and technology for grow house setup.
- Establish contracts with reliable suppliers for long-term support and delivery.

Project Note:

Note: Three (3) locations within St. Andrew and St. John's, Grenada, have been i
dentified, and land preparation and construction are ongoing. Funding is currently being sought to

Farmers FRIEND

The Haven

HIGH TUNNEL

ASSEMBLY AND INSTRUCTION MANUAL

FF-7261

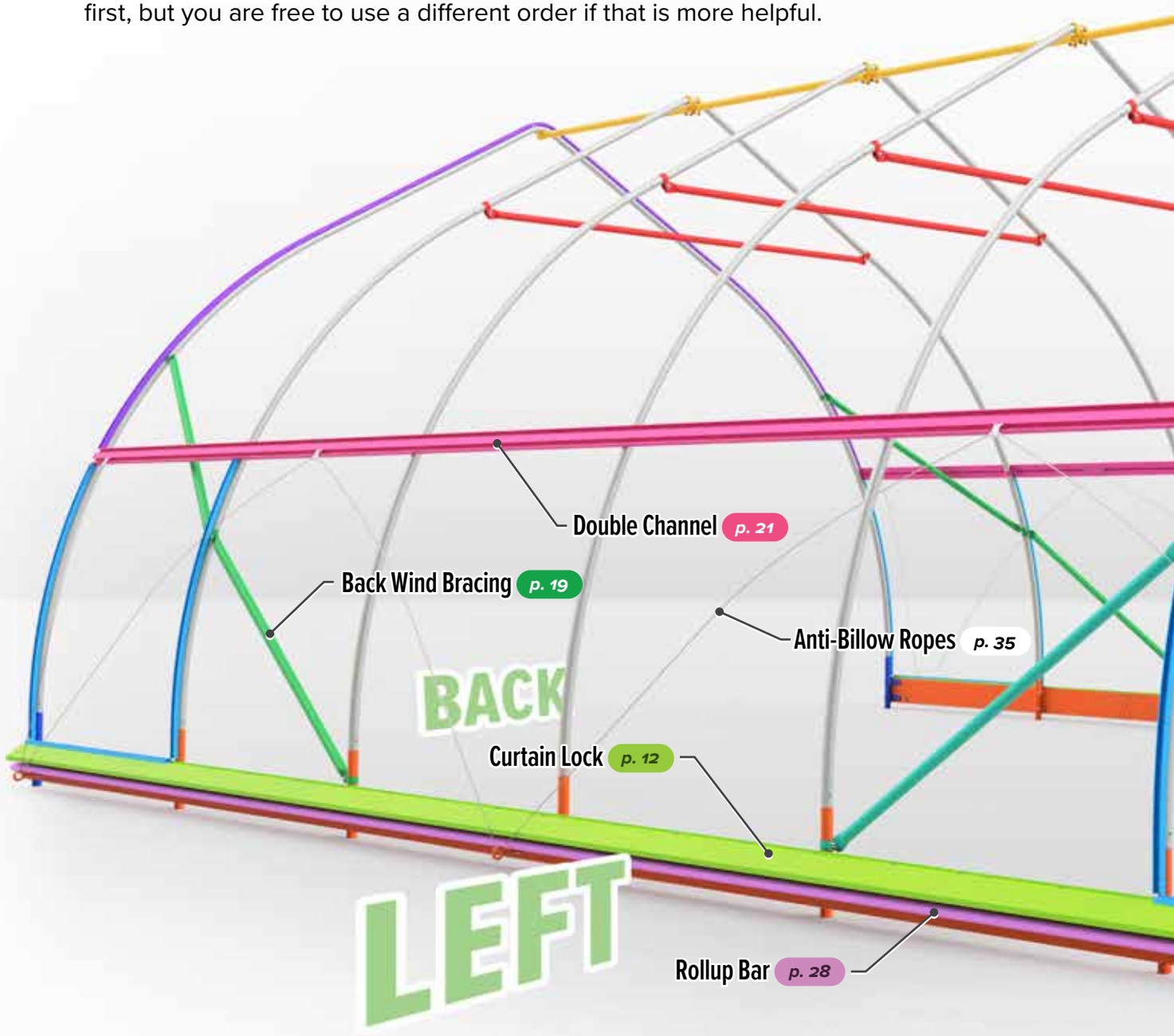
Watch the video!

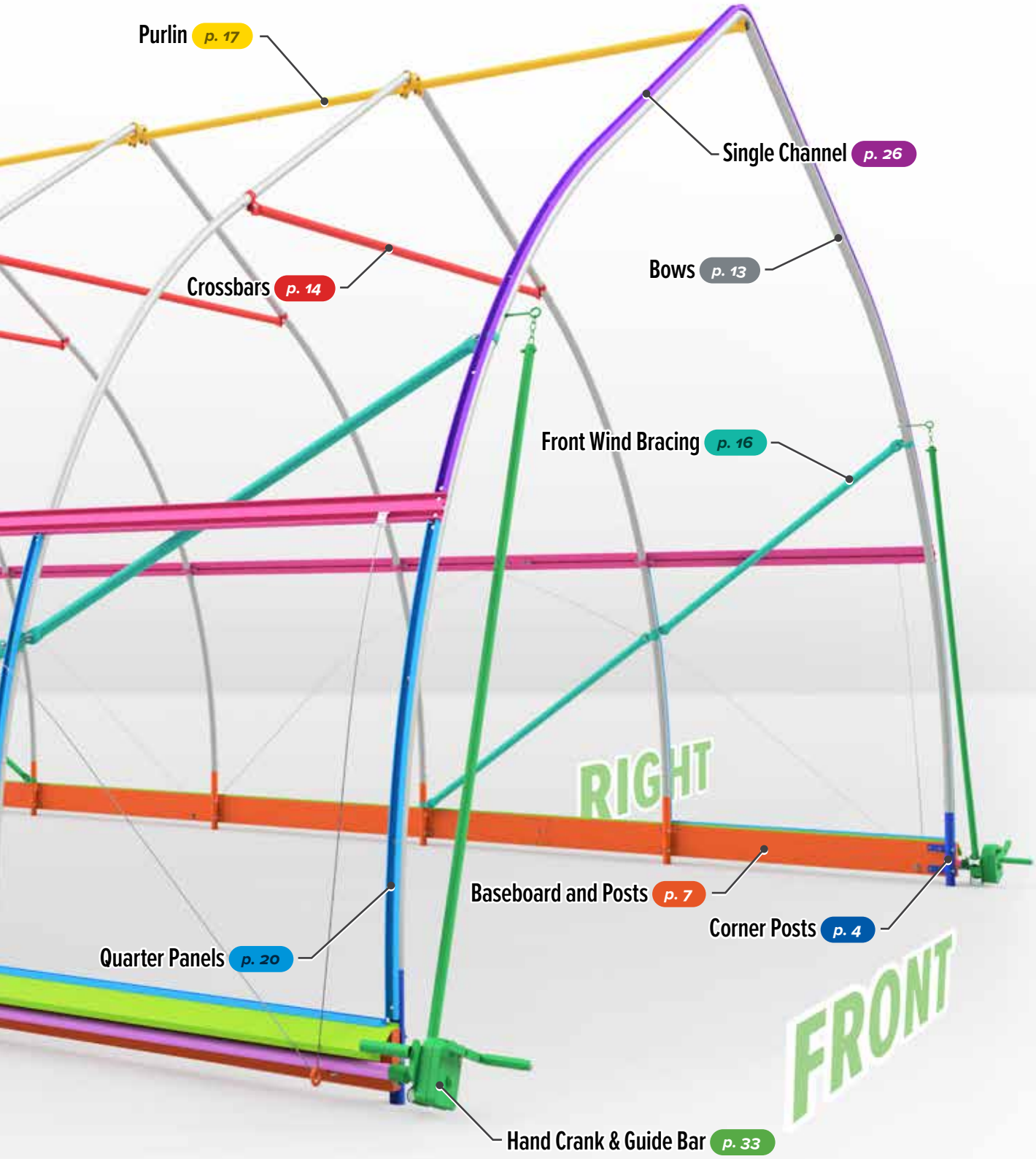
Scan the code or visit: **fmfr.io/haven/v**

Farmers FRIEND

Overview

Before you begin assembling your new Haven High Tunnel, take a moment to acquaint yourself with the installed location of the major parts. The instructions on the following pages will be specific about which sides and ends to install first, but you are free to use a different order if that is more helpful.





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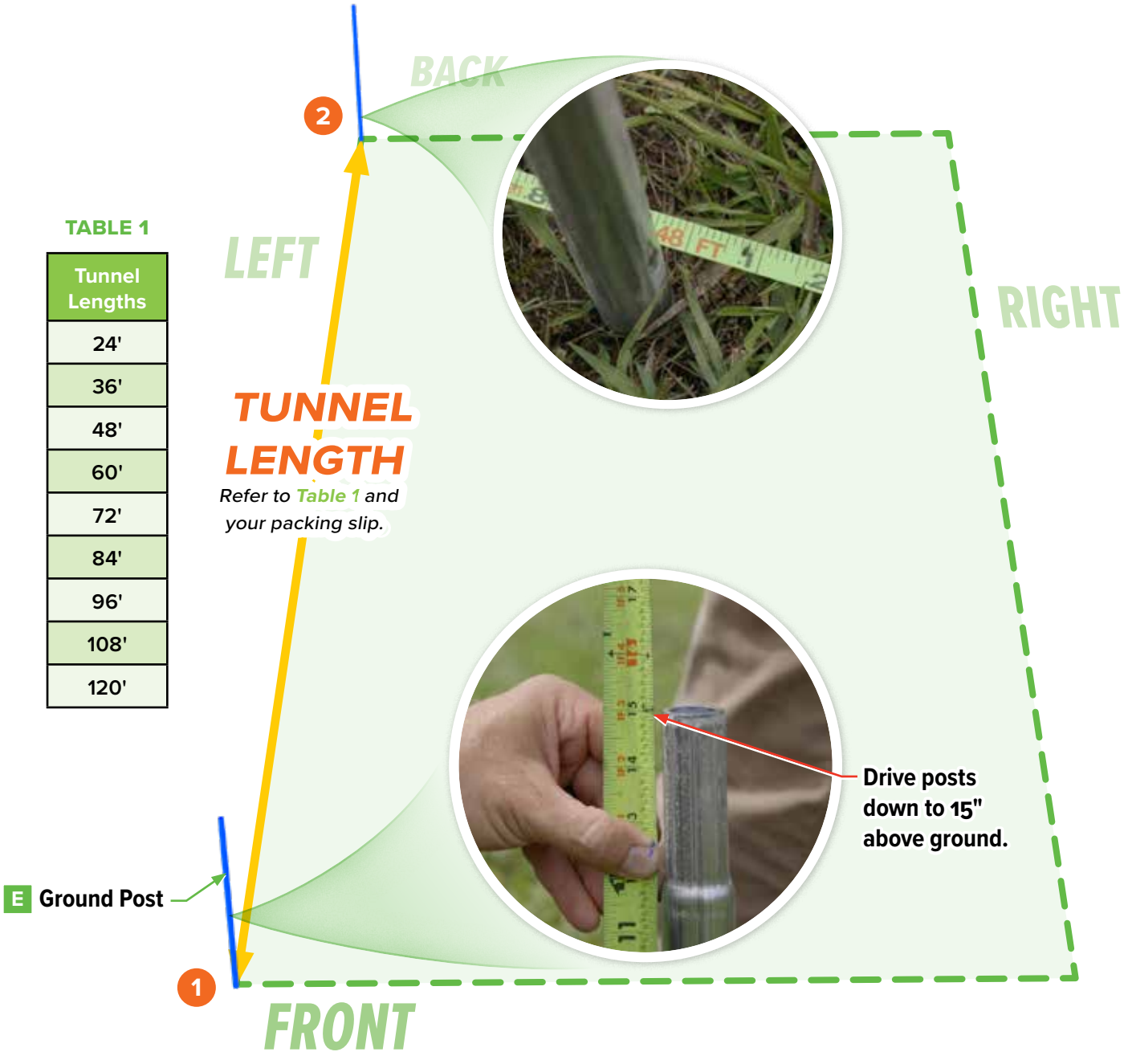
STEP 1

Left-side Corner Posts

1. Begin by determining your desired site and orientation of your high tunnel.
2. Starting at the **front-left** corner 1, drive a **ground post** in with the **swage facing upward** until there is **15 inches** left out of the ground. Post can be driven in with a sledge and driver or jack hammer attachment.
3. Measure down the length of your tunnel and drive another post in 2, just inside your tunnel-length measurement. **Be sure to measure from outside to outside of ground posts while keeping tape measure tight.**

TABLE 1

Tunnel Lengths
24'
36'
48'
60'
72'
84'
96'
108'
120'



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STEP 2

Right-side Corner Posts

1. To determine the location of the **front-right** corner post 1, measure over 16' from outside of the **front-left** corner post and place a mark here.
2. Measure your tunnel's **diagonal length** *(SEE TABLE 2)* from the outside of the **back-left** corner post 2 to the outside of the mark for the **front-right** corner post 1.
3. Drive the **front-right** post at mark 1. Now your tunnel is square.
4. Measuring outside-to-outside, install the **back-right** corner post 3 16' directly across from the **back-left** corner post 2 and your **tunnel-length** back from the **front-right** corner post 1.

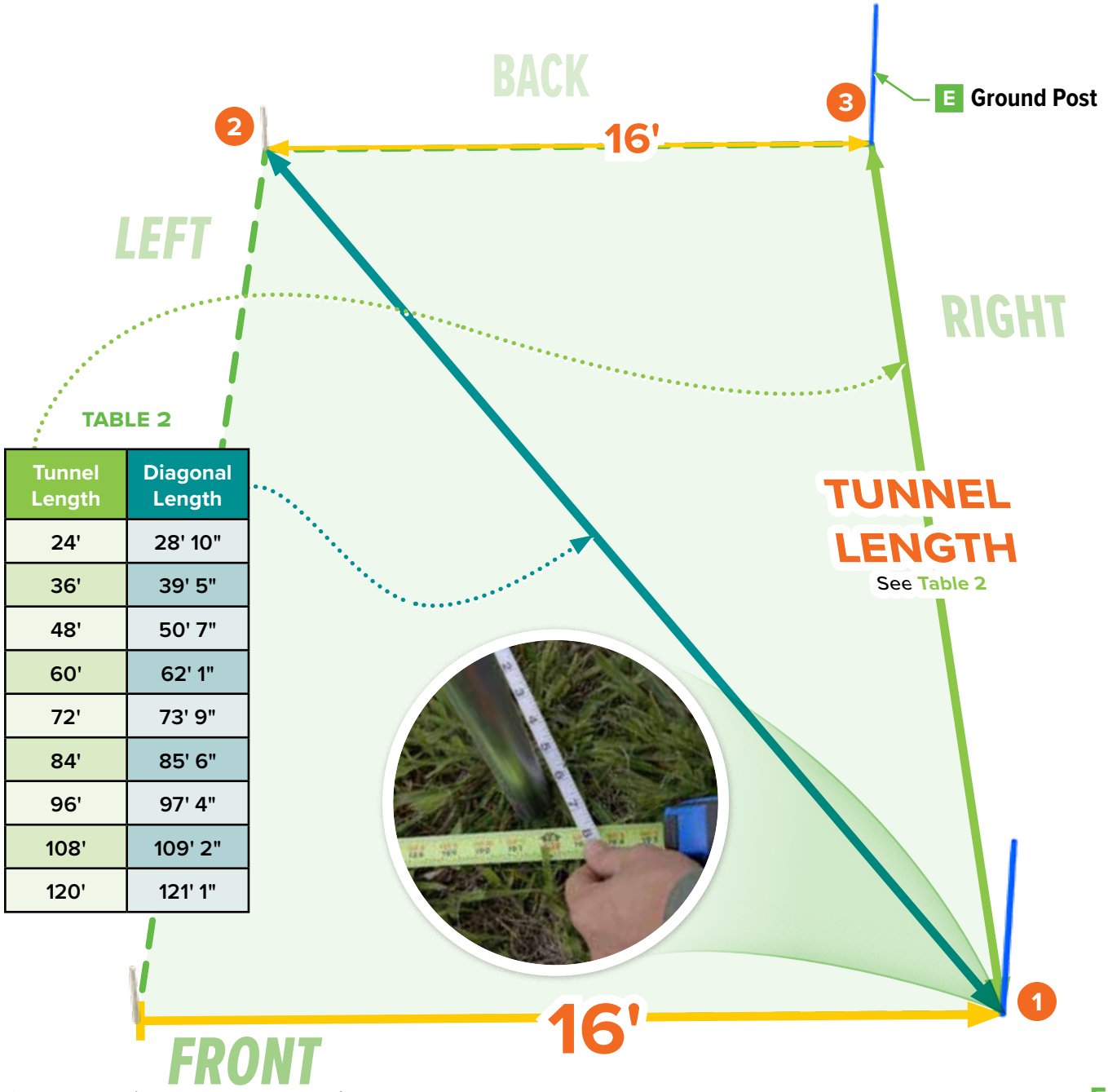

TABLE 2

Tunnel Length	Diagonal Length
24'	28' 10"
36'	39' 5"
48'	50' 7"
60'	62' 1"
72'	73' 9"
84'	85' 6"
96'	97' 4"
108'	109' 2"
120'	121' 1"

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STEP 3

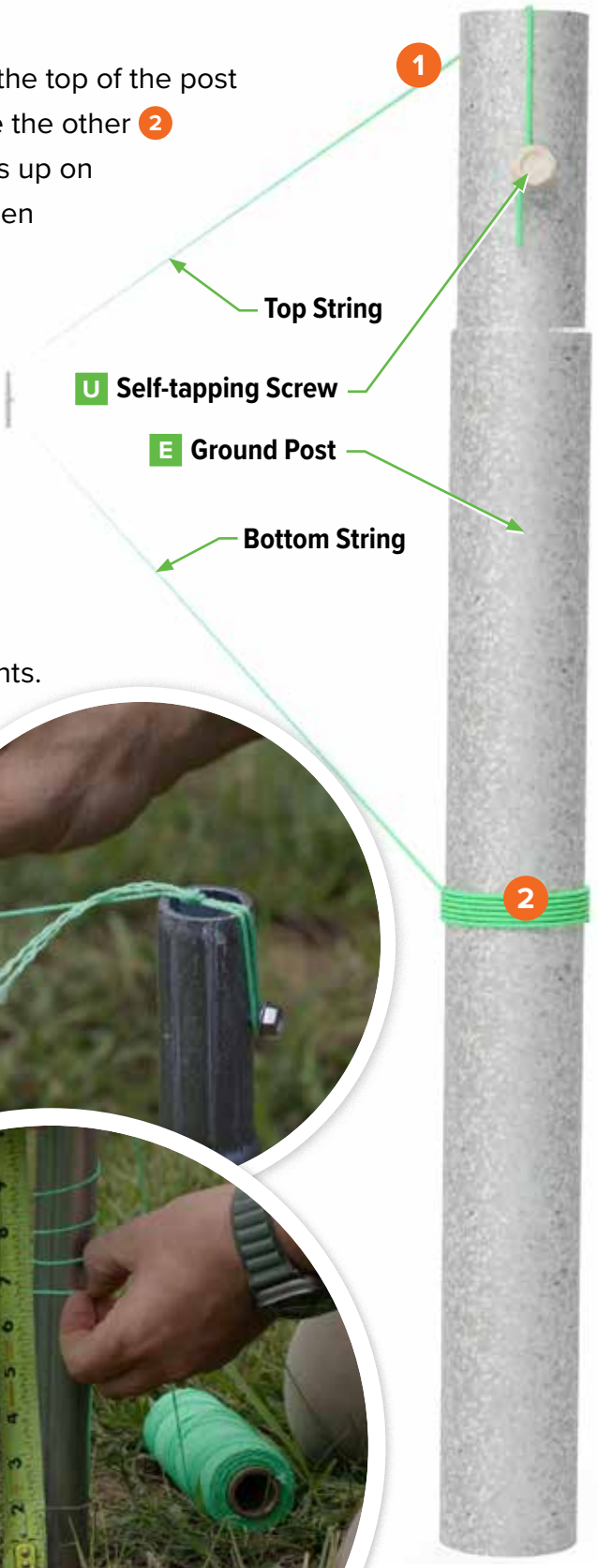
Alignment Strings

1. Partially set a **self-tapping screw** in the swaged section of each post toward the ends of the tunnel.
2. Tie two strings to the screws. Take one string 1 over the top of the post and pull tight down to the screw at the other end. Take the other 2 and wrap around the post 3–4 times so the string ends up on the **outside** of the tunnel about 6–7" off the ground, then run it down tight to the other end.

* *The* **top string** *will be your guide for how far to drive the remaining posts into the ground.*

** *The* **bottom string** *will be your guide for keeping the posts in a straight line and also a guide for the top of your baseboard.*

3. Measure down from the bottom string to the ground along the length of your tunnel and adjust the string height until you have **at least 5½" of clearance** to ensure the base is above the ground at all points. *Some grading of the dirt might be necessary.*



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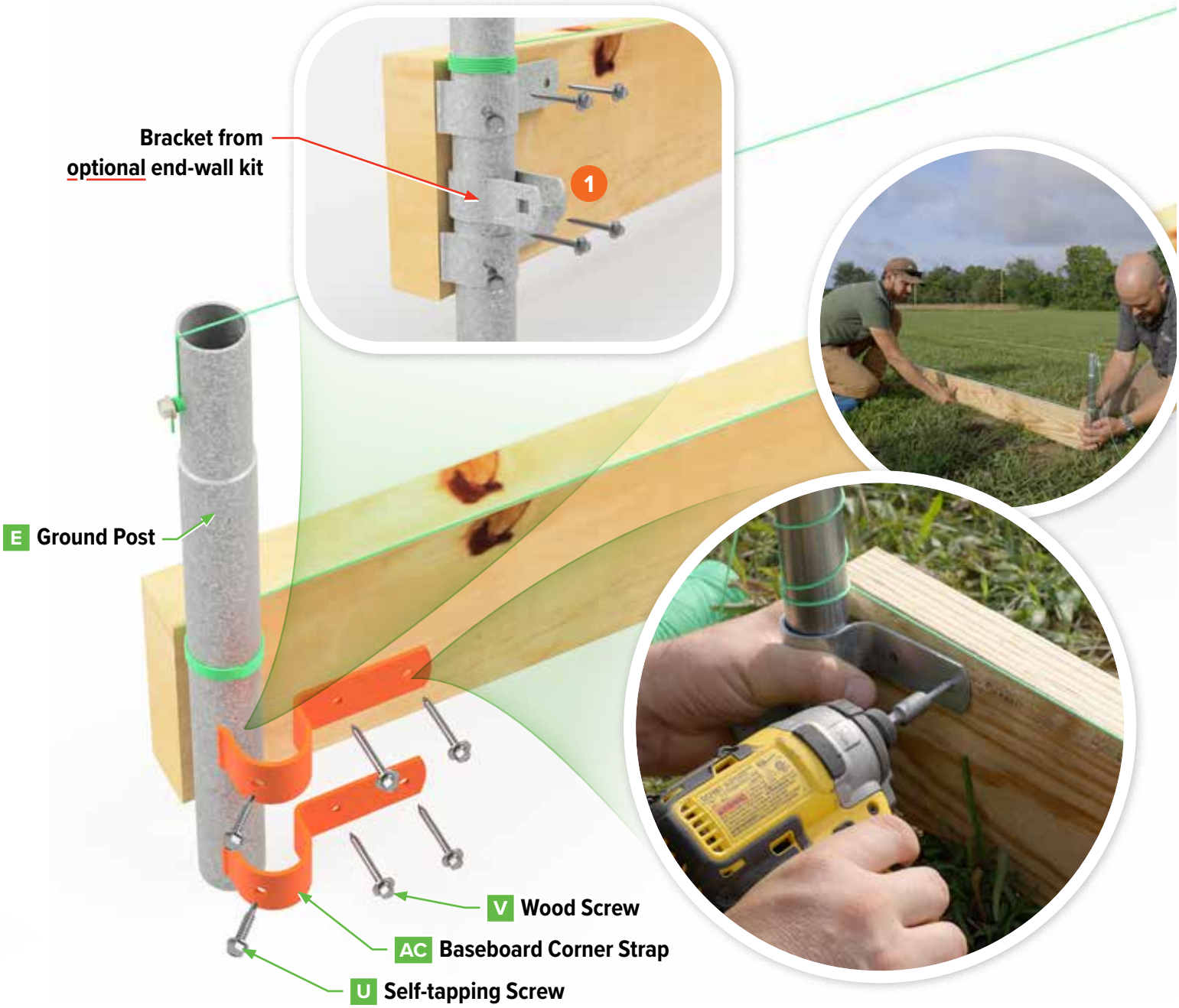
STEP 4

Front, Left Corner Baseboard

1. Attach a **baseboard** flush with the outside of the **front-left corner post** and just under the bottom string using two of the **baseboard corner straps**, four **wood screws**, and two **self-tapping screws**. It can be helpful to have someone hold the other end of the baseboard.

* *If installing an end wall, now is the time to use the brace bands from the end wall kit* ***(not included with the Haven)*** *to* ***secure the end wall brackets 1 between the two baseboard end straps.***



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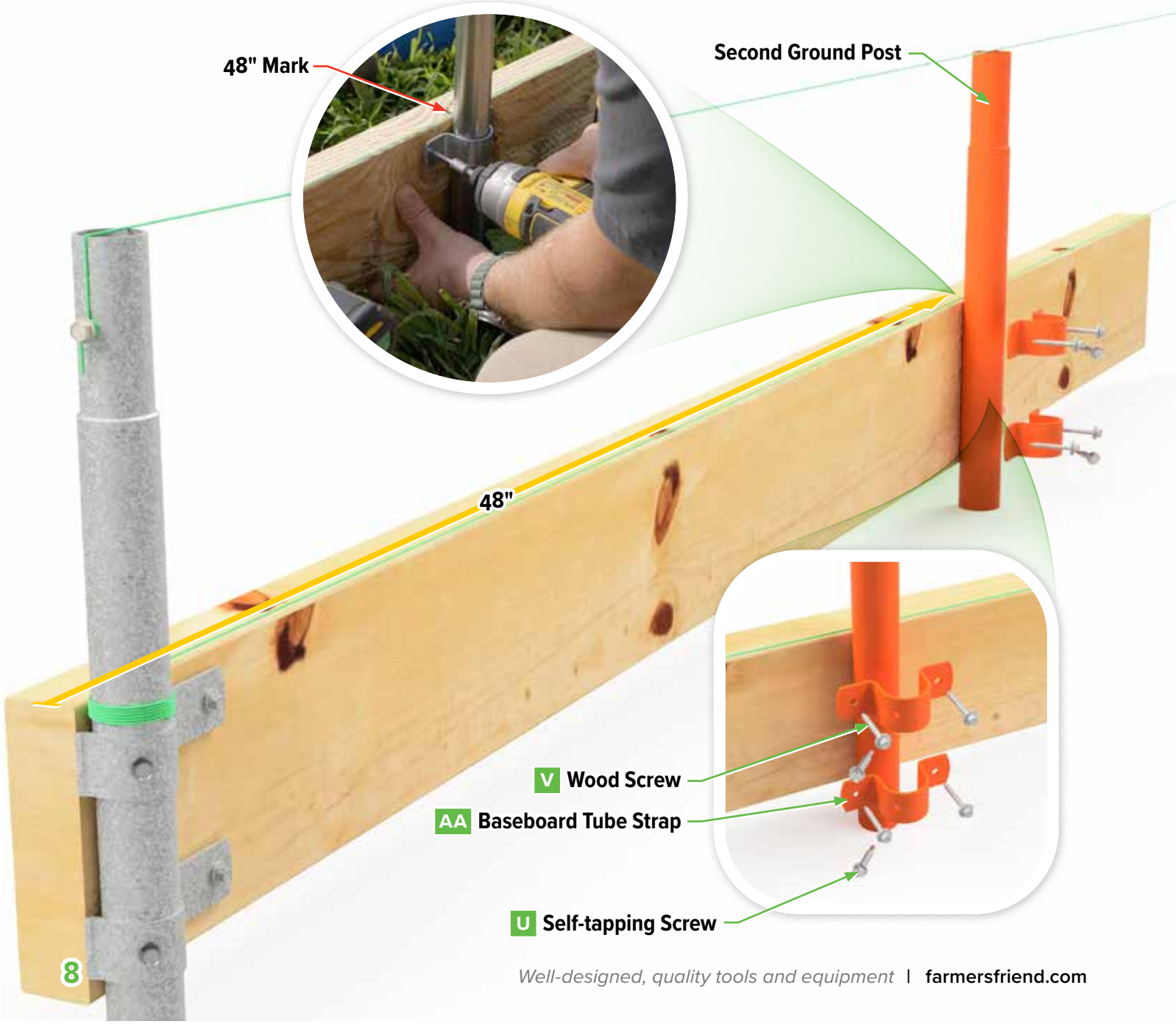
STEP 5

Second Ground Post

1. Measure and mark **the top of the board** at 48" from the corner-end of baseboard.
2. Align the **center of the second ground post with the 48" mark** and just adjacent to the lower string, **but without touching it**. A post in contact with the lower string will skew the alignment of subsequent posts.
3. Drive this post into the ground until the top is just under the top string.
4. While holding the baseboard up just under the bottom string, attach the post to base board using two **baseboard tube straps**, four **wood screws**, and two **self-tapping screws**.



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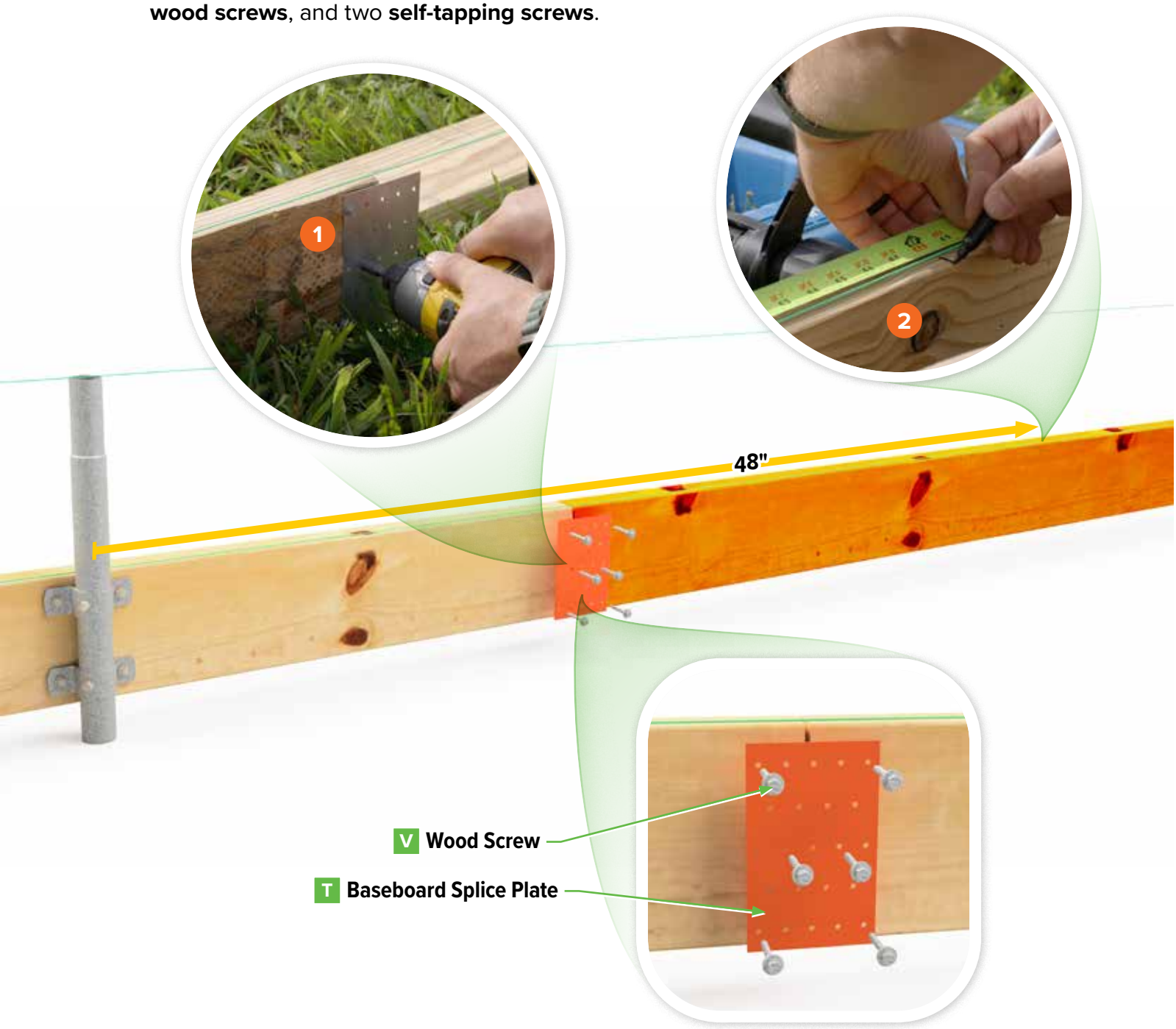
STEP 6

Baseboard Joints

1. Now, join the next baseboard together with the first, end-to-end, using a **baseboard splice plate** and six **wood screws** 1.
2. Again, measure 48" from the center of the previous post and mark on baseboard 2.
3. Drive the next post and attach the next ground post to **baseboard** using two **tube straps,** four **wood screws**, and two **self-tapping screws**.



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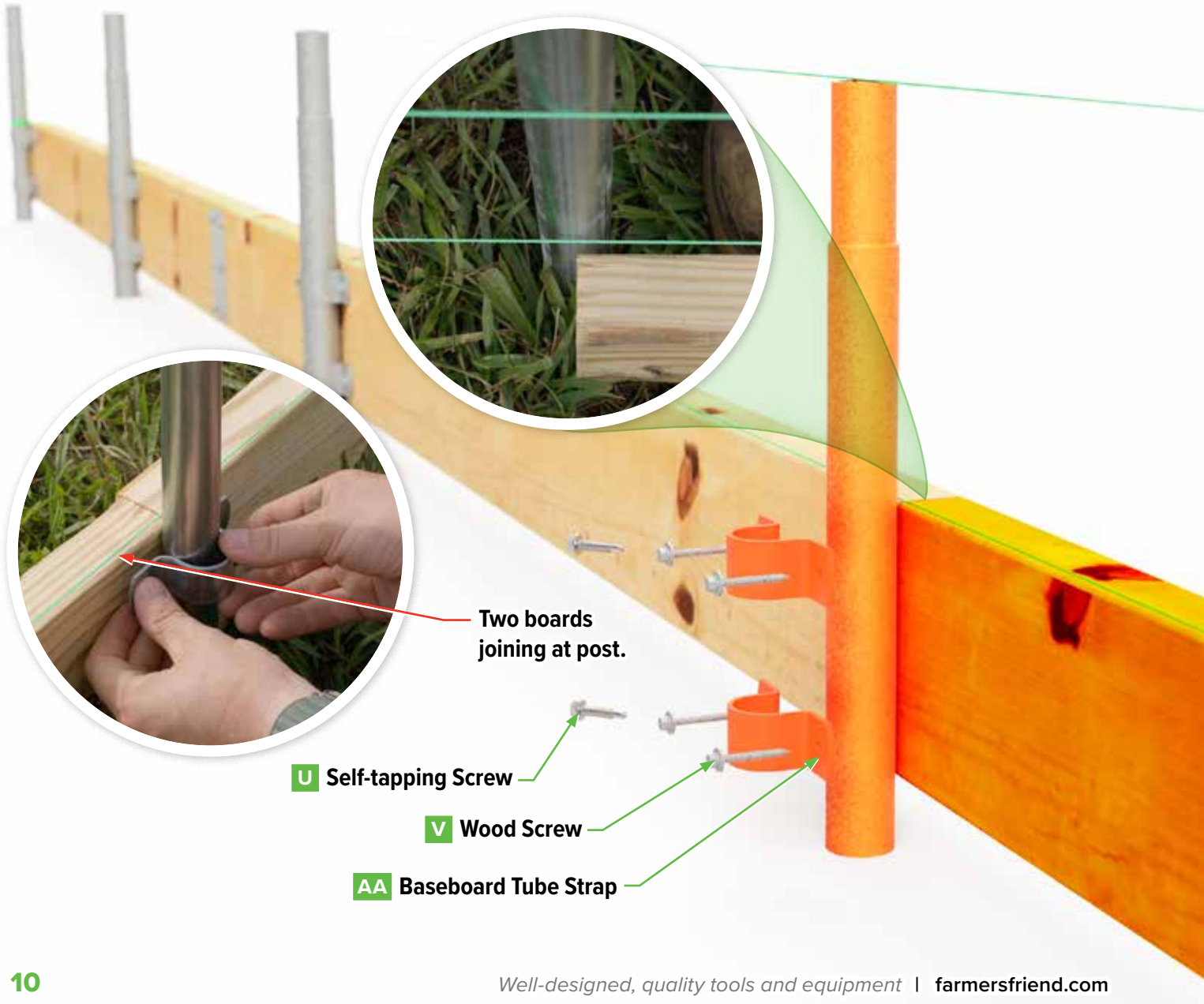
STEP 7

Fourth Post

1. Going forward, at **every third post** there will be a joint where two boards meet. **No splice plate is needed, only two tube straps**.
   * *Installing the baseboards and posts at the same time ensures that they land right at the center of the post. This allows you to join it to the next baseboard with the tube straps.*
2. Place the fourth post so that the end of the baseboard is centered on this post.
3. Drive the post and fasten to **baseboard** using two **tube straps,** four **wood screws**, and two **self-tapping screws**.
4. Continue adding ground posts, baseboards, and baseboard splice plates in alignment with the strings, ending with **baseboard corner straps** at the back-left ground post.



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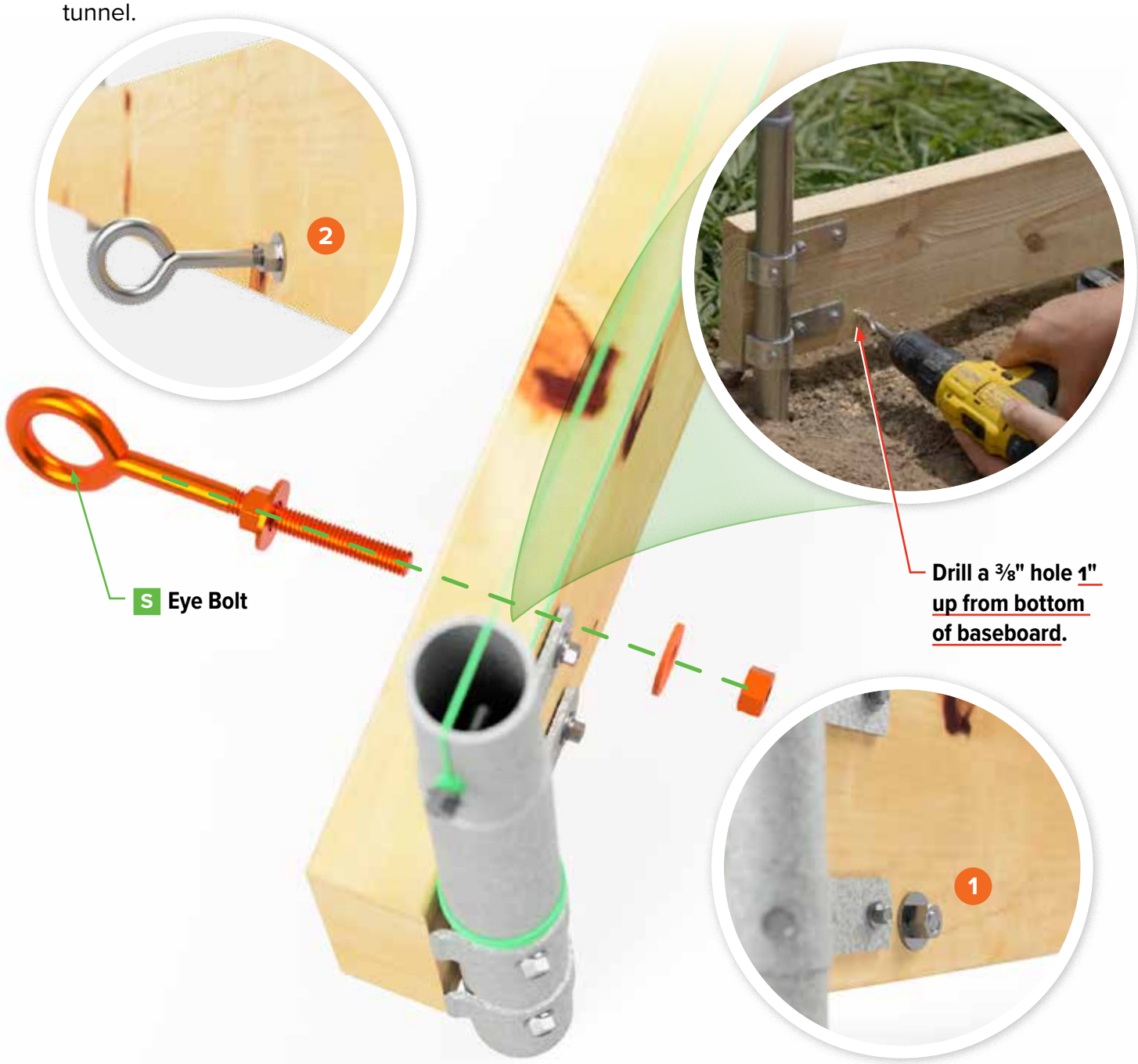
STEP 8

Eye Bolts

1. Drill a ⅜" hole **1" up from bottom of baseboard**, just to the side of the first post.
2. Install **eye bolts** as pictured below.
3. Ensure that the nut is flush with end of the bolt on the inside of the tunnel 1. Then finger-tighten the outside nut up against the baseboard 2.
4. While keeping the **eye bolt** vertical, use a ⅝" socket to tighten the inside nut.
5. Repeat, attaching eye bolts **next to every third post** (every 12 feet) down the length of the tunnel.



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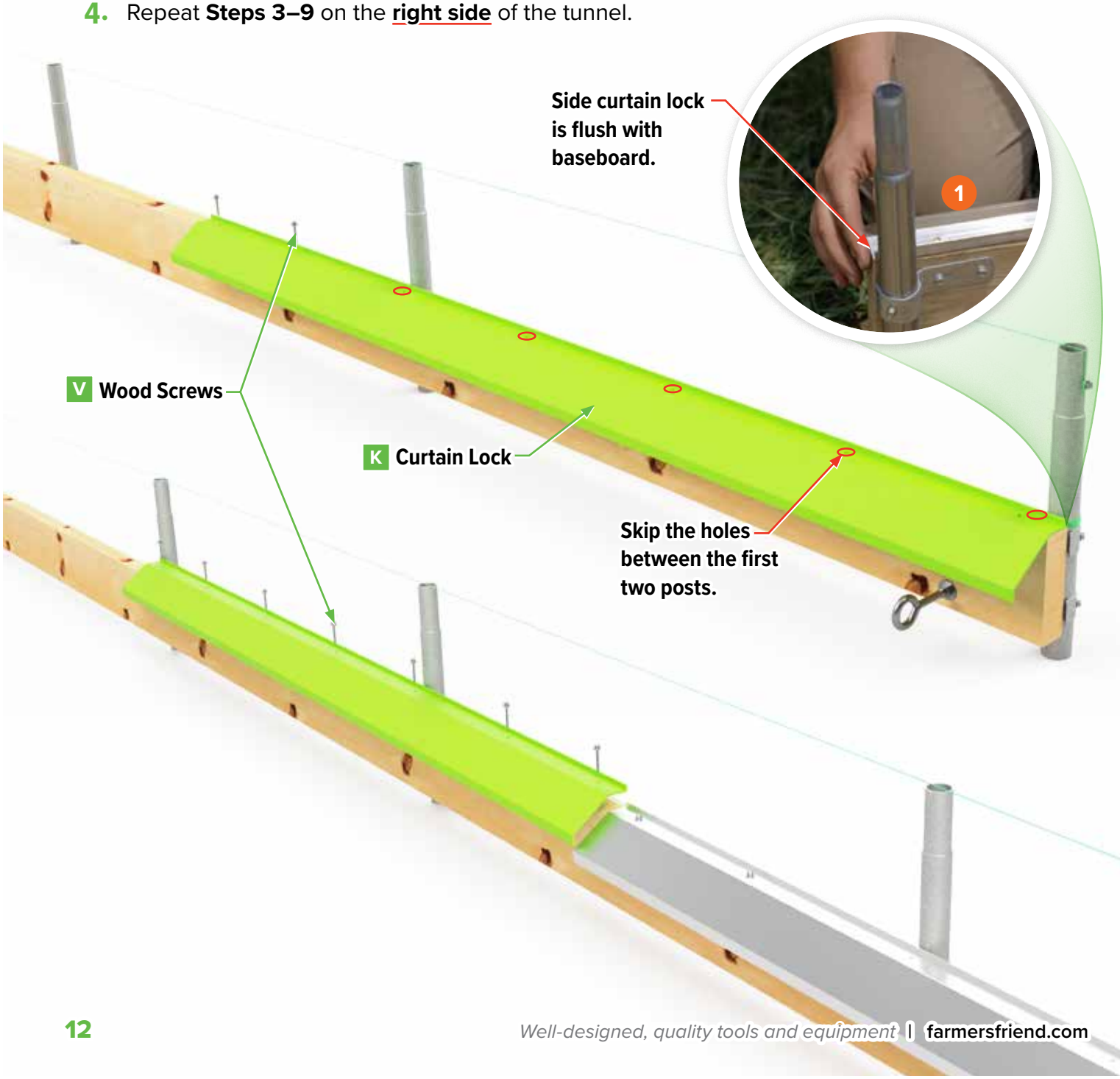
STEP 9

Curtain Lock

1. Start by ensuring the **curtain lock** is flush with the end of the first baseboard 1.
2. Attach the the **curtain lock** on top of the baseboard using the **woods screws,** starting **after the second post. The holes that are skipped between the first two posts will be used in a later step.**
3. Attach the remaining curtain lock pieces end-to-end with screws in every hole, continuing to the end of the tunnel. **Skip holes again between the final two posts**.
4. Repeat **Steps 3–9** on the **right side** of the tunnel.



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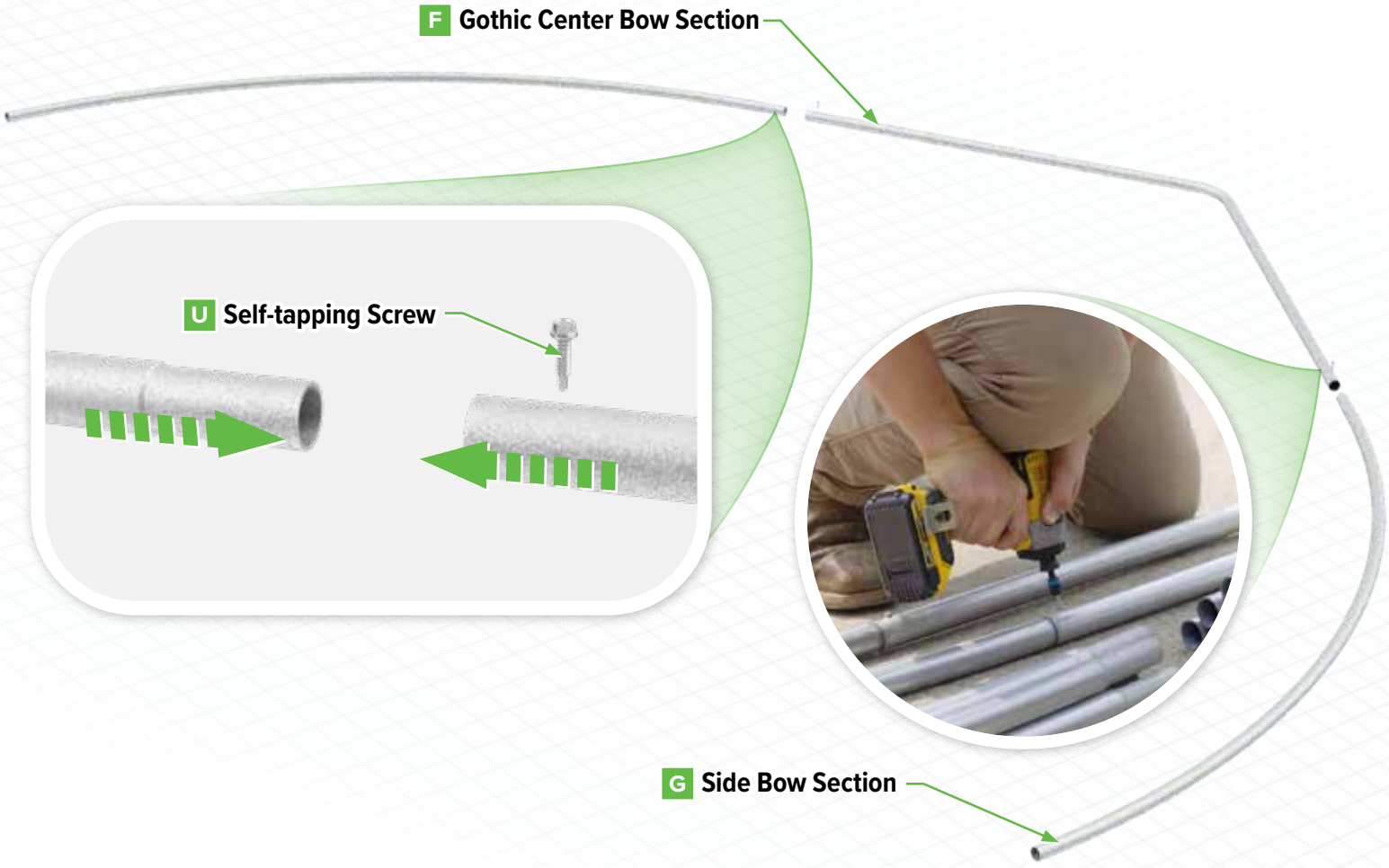
STEP 10

End Bow Assemblies

1. Find a **level surface** to assemble bows.
   Classic Tunnel: Assemble all bows following the instructions below, then go to **Step 12**.
   Gothic Tunnel: Assemble the two end bows without crossbars following the instructions below, then set aside.
2. Connect each bow section with one self-tapping screw in the side of each bow joint. Two classic sections plus one gothic section to form one complete bow assembly. **Be sure to face screw heads down and away from where the plastic will be resting on the bow.**



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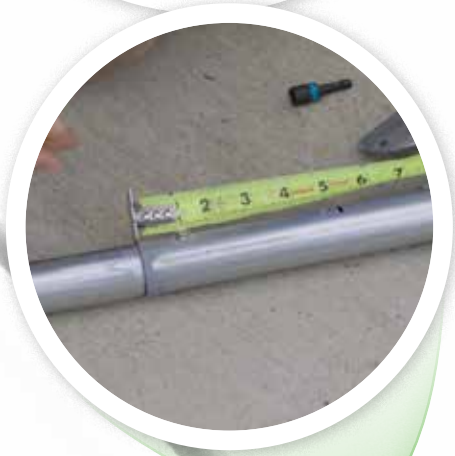
STEP 11

Center Bow Assemblies

1. Slide **brace band** over one side of the gothic section. You may need to use two pairs of pliers to slightly open brace bands to fit over the bow. Brace band may need to be squeezed back together.
2. Position this **brace band 5 inches up from the the joint of the bow**.
3. Attach **crossbar** to **brace band** with **bolt** and **nut,** then tighten down with socket or wrench.
4. Next, slide brace band on opposite side of gothic section to where it meets the end of crossbar. Attach and tighten with bolt and nut. **Be sure this brace band also is set at 5 inches from the joint**. *(Compressing or expanding the bow base will allow you to slide the band up or down to the desired position.)*
5. Now connect each bow section together with one self-tapping screw in the side of each bow joint.
6. Repeat this on all remaining bows.



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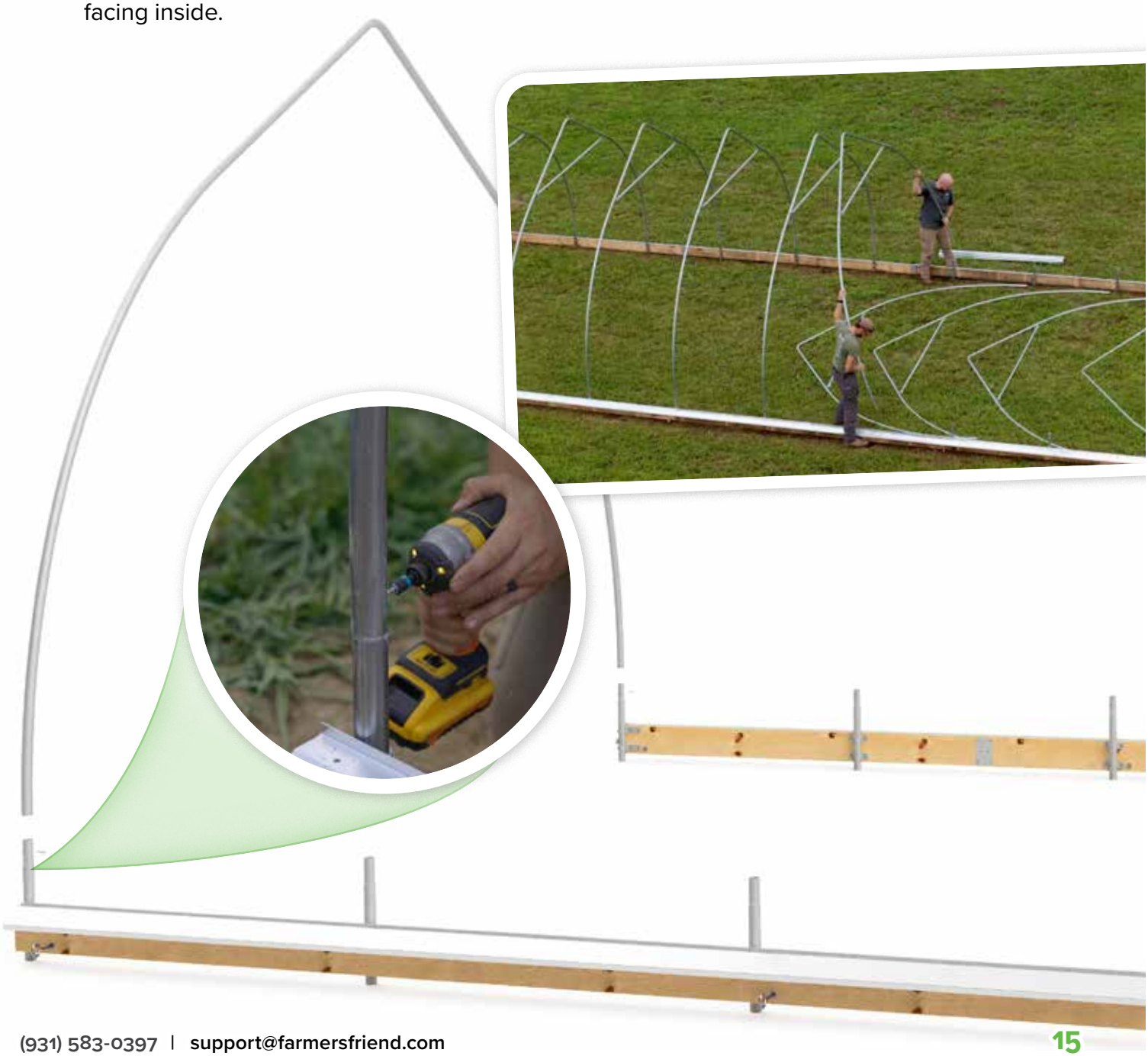
STEP 12

Bow Installation

1. Install completed bow assemblies onto ground posts starting with an end bow *(without a crossbar)*. Be sure to face self tapping screws in toward the inside of the tunnel.
   * **Start by installing bows at the end of tunnel that is the furthest away from where your bows were assembled.** *Doing this give you an unobstructed path to installing the next bow.*
2. Continue installing bow assemblies down the length of the tunnel with the last bow having no crossbar.
3. Lastly, install one **self-tapping screw** into the base of each bow section through the joint facing inside.



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STEP 13

Front Wind Bracing

1. Using two pairs of pliers, pry **brace band** open enough to slide over the base of the third bow from end 1, just above the curtain lock.
2. Squeeze brace band back together with pliers.
3. Attach **wind brace** to **brace band** using **galvanized bolts** and **nuts** with a ½" socket or wrench. **Make sure bolts face to the inside of the tunnel to avoid puncturing the plastic**.
4. Starting on the **front-right** corner of the tunnel, attach **wind brace** from 1 to **brace band** on 2 at its natural connecting height.
5. Repeat these steps for the second **wind brace** between 2 and 3.
6. Ensure these bows are visually plumb. A level can help with this. Then tighten **nuts**.
7. Repeat process on the **front-left** of the tunnel. **The wind bracing on the back end of the tunnel will be installed on a later step.**

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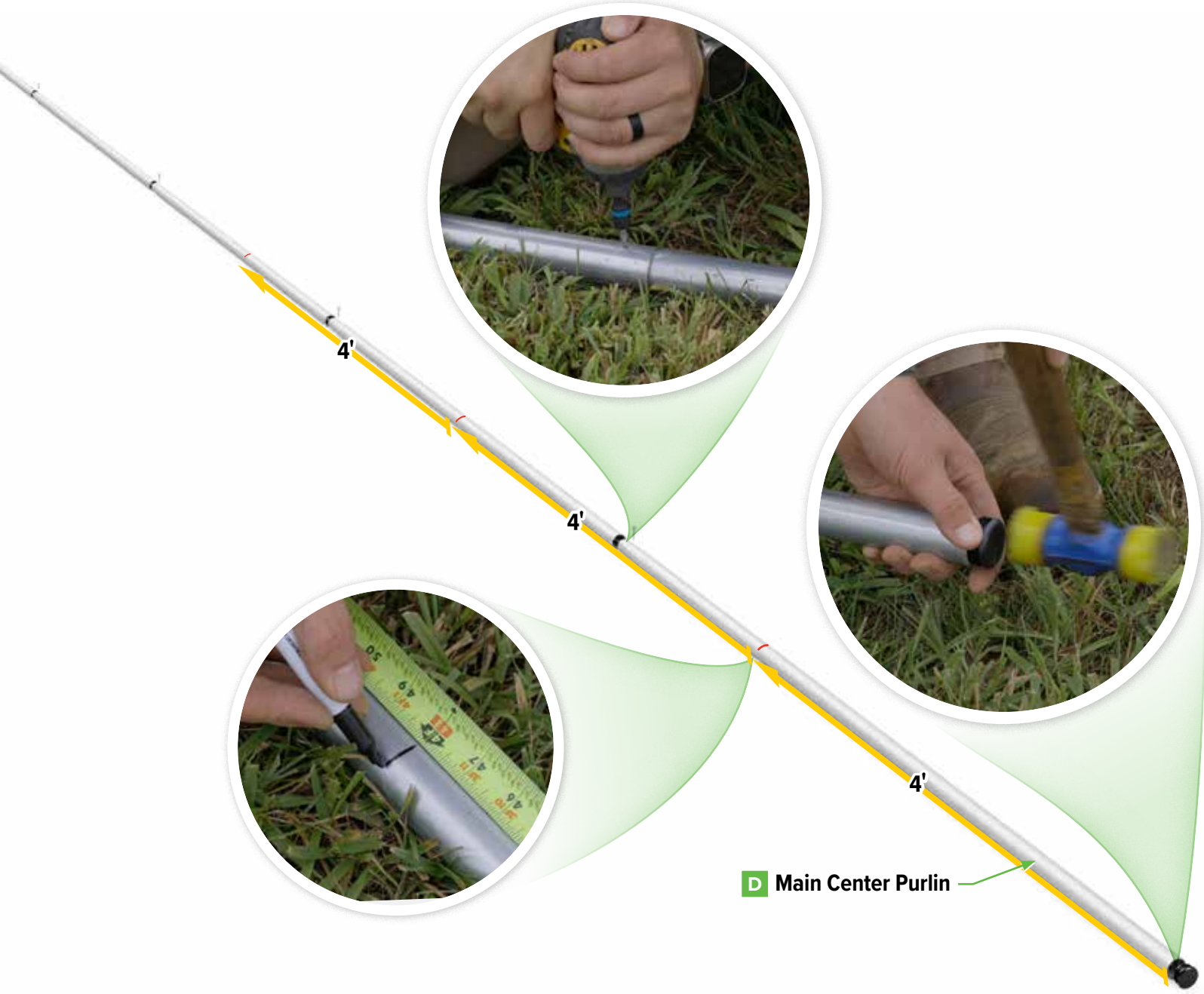
STEP 14

Center Purlin Assembly

1. Assemble and secure **center purlin** on the ground using **self-tapping screws** facing all the same direction.
2. **Mark the purlin every 4 feet** on the same side as the screws face. These marks will help ensure the bows are spaced evenly at the peak when you attach the cross connectors in the next step.
3. Add a **black finishing cap** to each end with a hammer.



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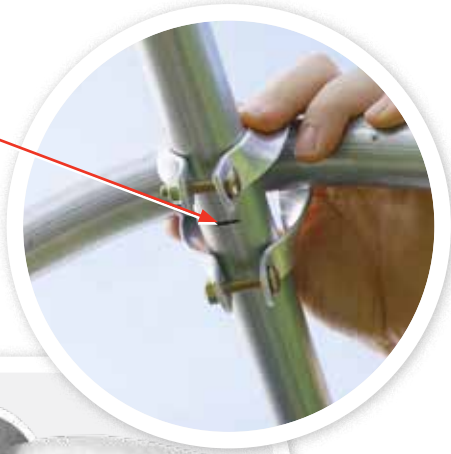
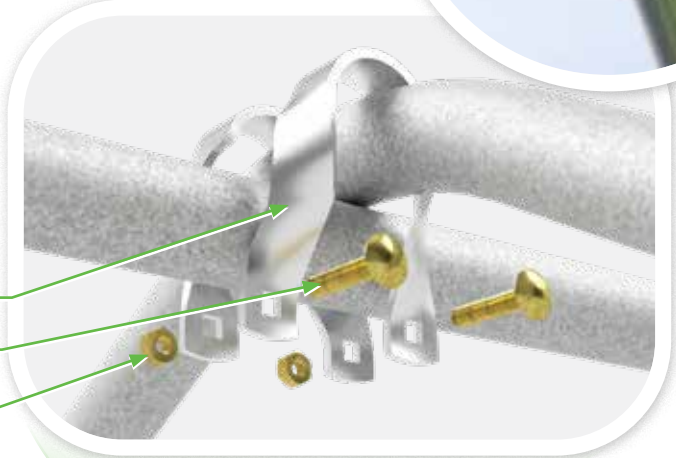
STEP 15

Center Purlin Installation

1. Slide the assembled purlin on top of the crossbars, guiding it over each crossbar down the length of the tunnel. **Be sure that screw heads are facing down.**
2. Using a 7⁄16" socket or wrench, attach the purlin with a pair of **cross-connectors** using two **gold bolts** and **nuts** at **every third or fourth bow** at each 4-foot mark, while a second person holds the purlin up to the peak of the bows to take the extra weight off. Continue this to the end of the tunnel. Now it will be easier to attach the **remaining cross-connectors**.
3. Install one **gothic tube strap** with three **self-tapping screws** to attach the purlin tube flush with the two end bows. **Be sure to use safety glasses**.



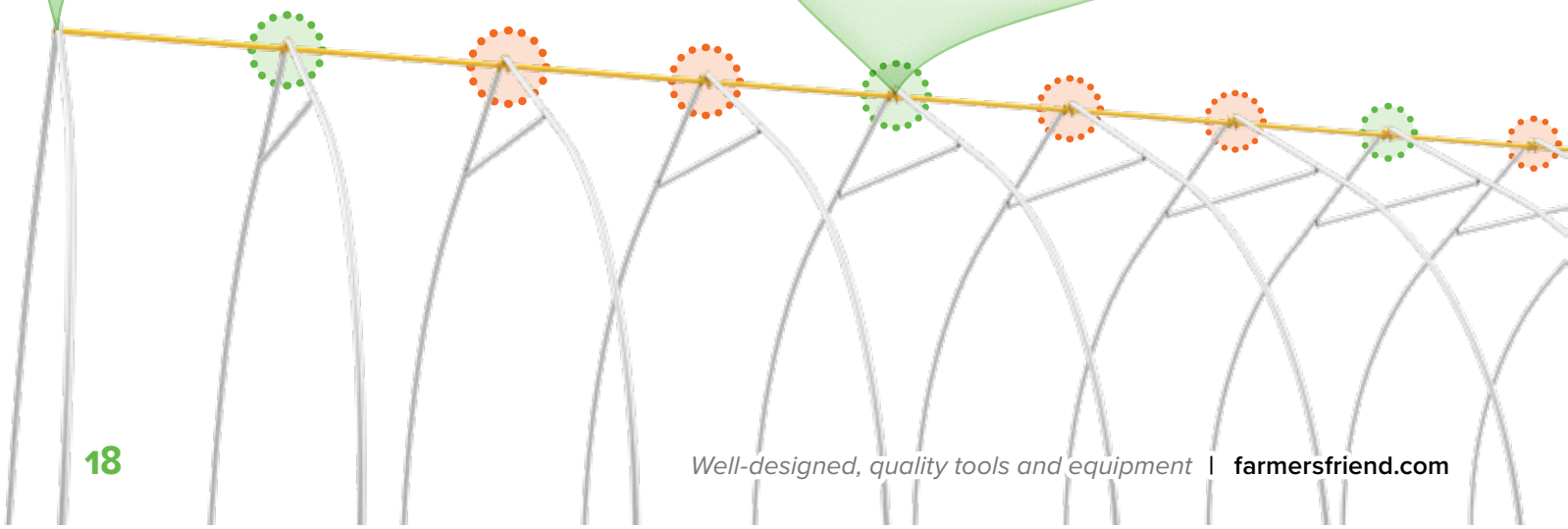
Line up 4-ft marks with center of bow before securing cross connector.



AN Cross Connector

AO Gold Bolt

AP Gold Nut



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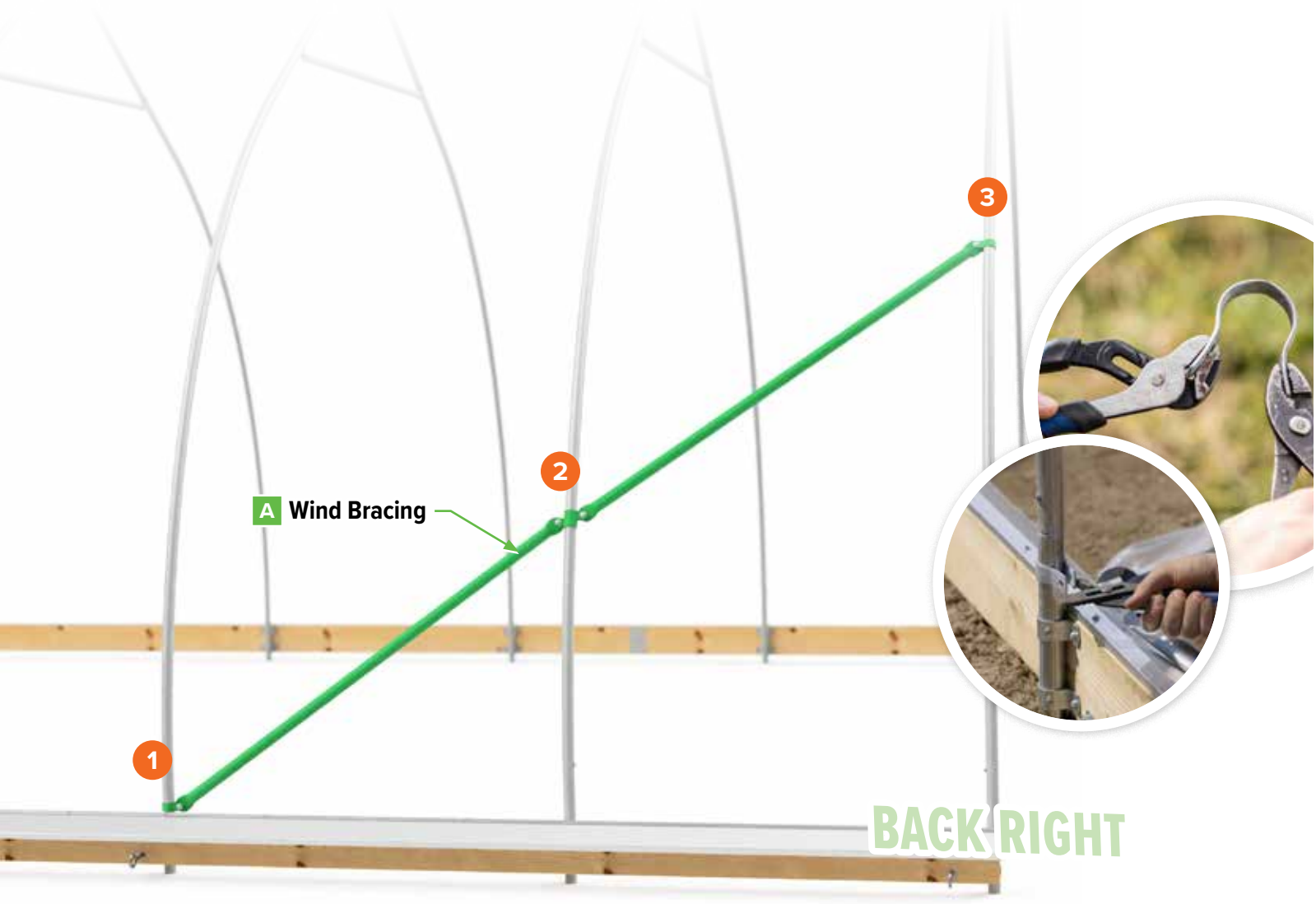
STEP 16

Back Wind Bracing

1. Using two pairs of pliers, pry **brace band** open enough to slide over the base of the third bow from end 1, just above the curtain lock.
2. Squeeze brace band back together with pliers.
3. Attach **wind brace** to **brace band** using **galvanized bolts** and **nuts** with a ½" socket or wrench. **Make sure bolts face to the inside of the tunnel to avoid puncturing the plastic**.
4. Attach **wind brace** from 1 to **brace band** on 2 at its natural connecting height.
5. Repeat these steps for the second **wind brace** between 2 and 3.
6. At this point all bows should be plumb. Finish by tightening the **nuts**.
7. Repeat process on the **back-left** of the tunnel.



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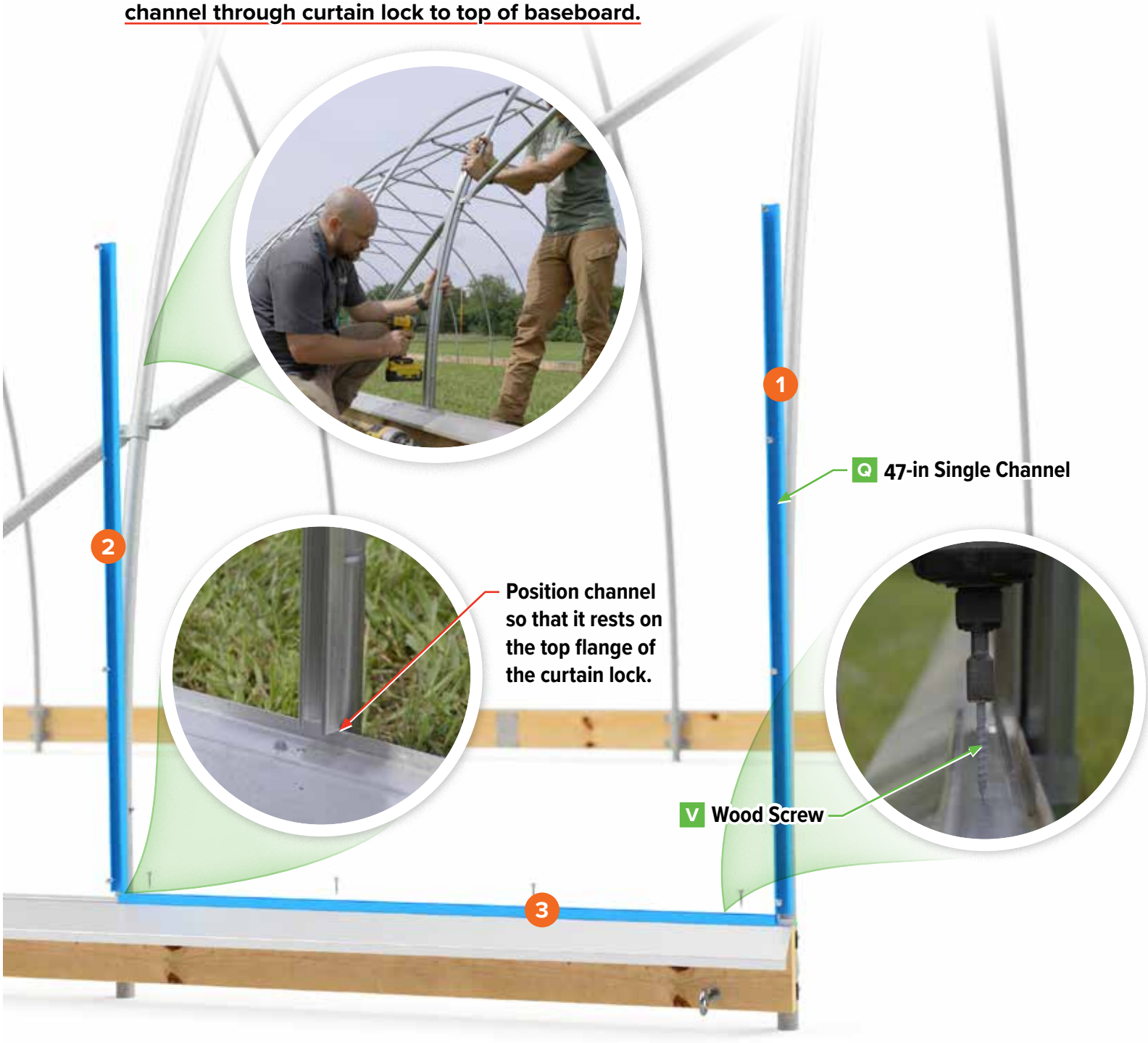
STEP 17

Single Channel for Quarter Panels

1. On each corner, install two **47-in single channel** pieces, one on the first 1 and one on the second bow 2 using **self-tapping screws**. Position the channel so that it rests **on the top flange of the curtain lock**. It can be helpful to have someone assist with the bending of the channel to the bow.
2. Install a third **47-in single channel** on top of the curtain lock 3. **Use wood screws to attach channel through curtain lock to top of baseboard.**



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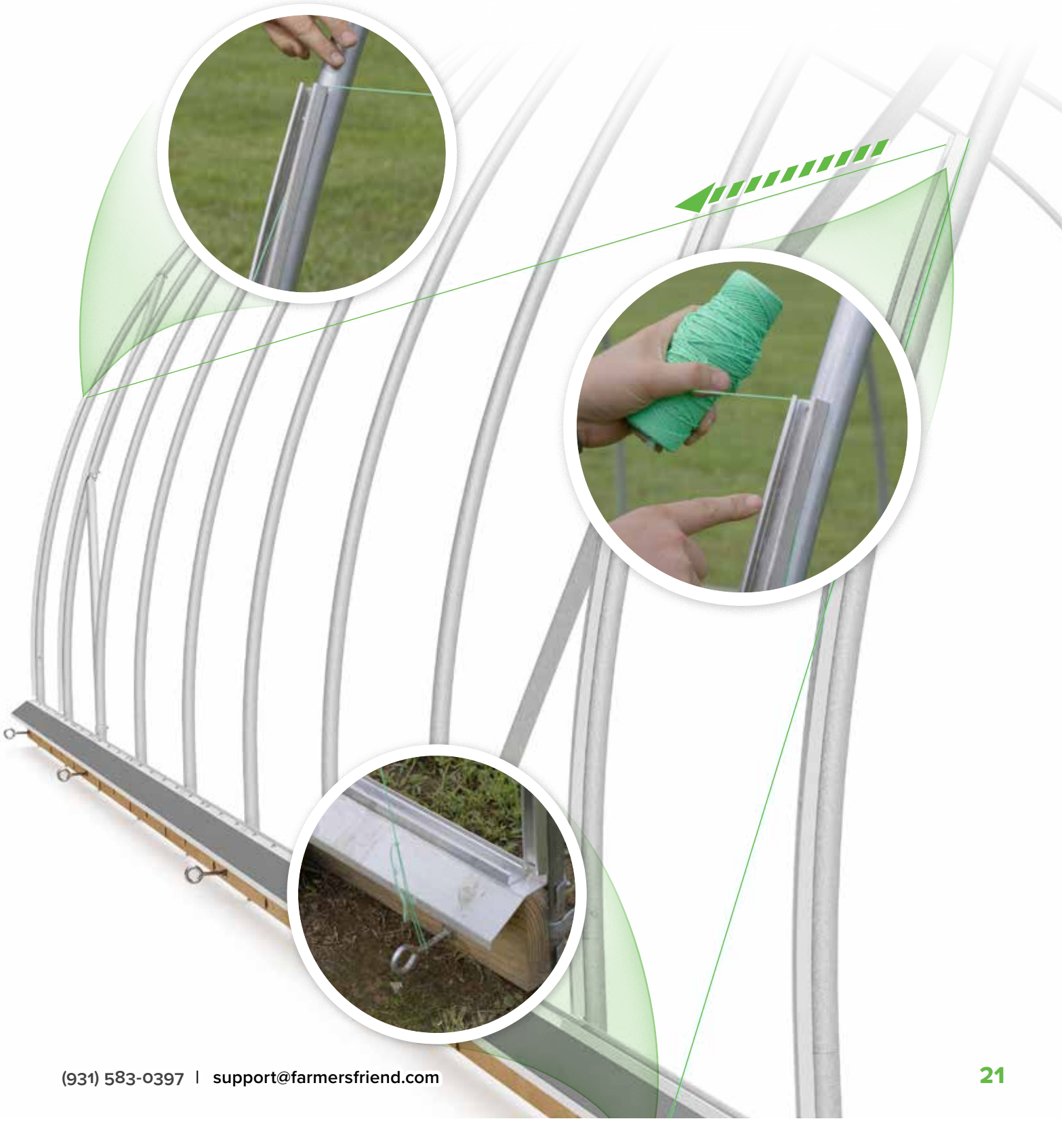
STEP 18

Alignment String for Double Channel

1. Install a string pulled tightly across the top of the single channel down the length of the tunnel, and also, across the top of the single channel on the opposite end; then tie it off.



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STEP 19

First Double Channel

1. Secure the first piece of **double wire channel** with two **self-tapping screws** flush with the bow, after setting it on top of the short single channel.

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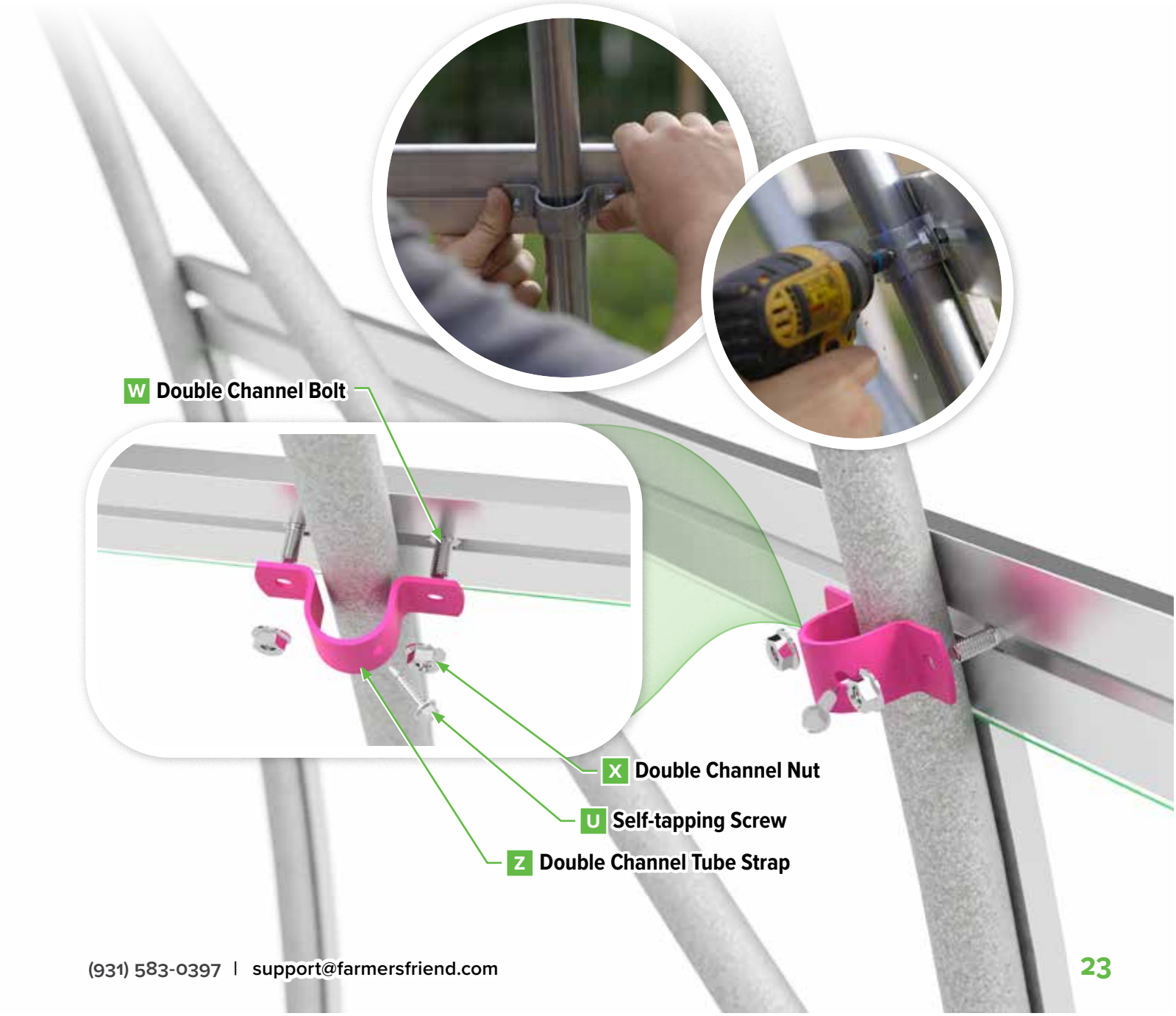
STEP 20

Double Channel Assembly

1. Slide one **double-channel bolt** into channel on the back of the double wire channel to the other side of the bow.
2. Loosely assemble a bolt and flange nut into one side of a **double-channel tube strap** and slide it into the channel, taking the tube strap around the bow to attach to the first bolt.
3. Ensure the channel is just above the string, but not touching it, before tightening nuts down.
4. Secure tube strap on to bow using a **self-tapping screw**.



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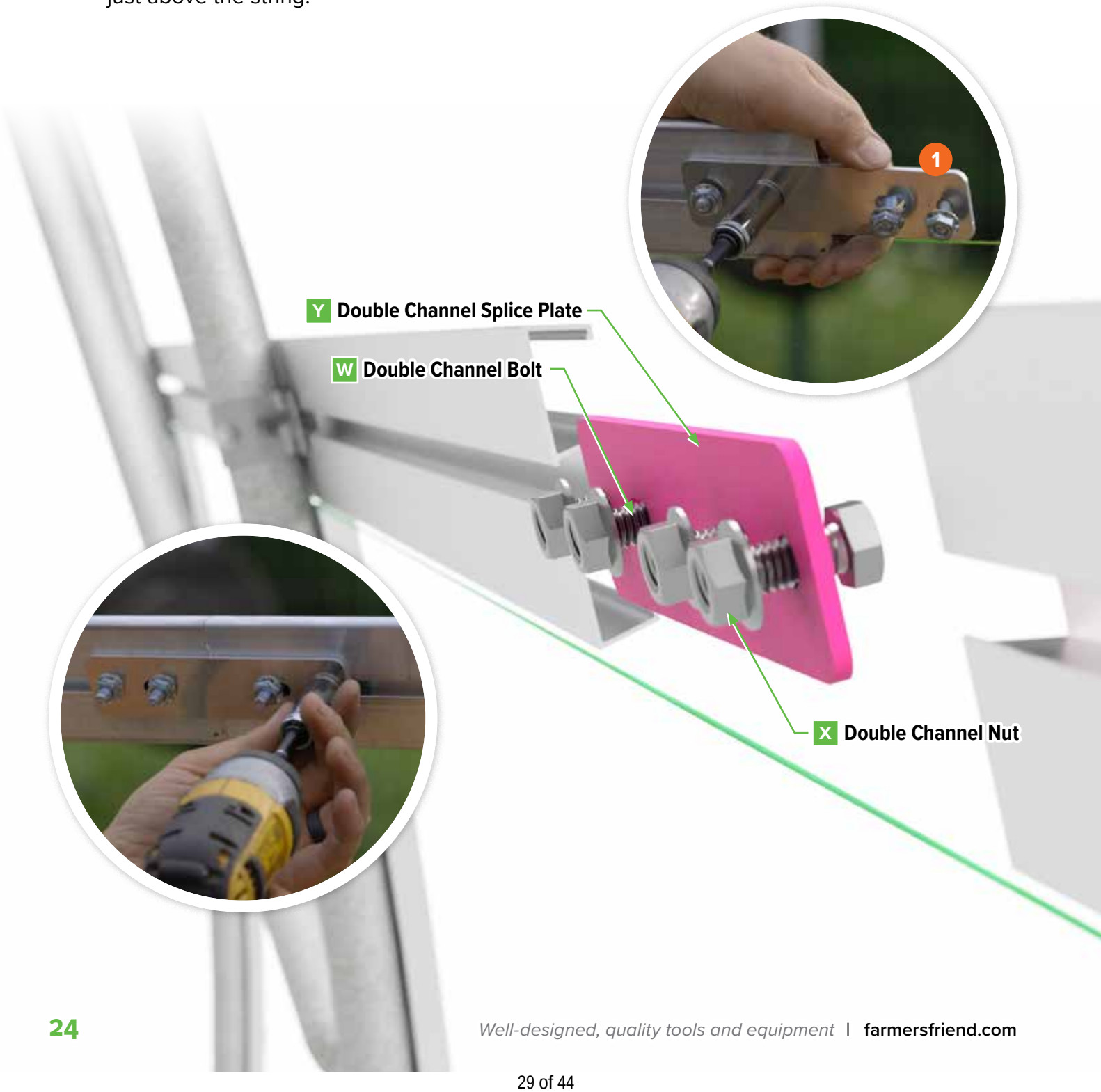
STEP 21

Double Channel Joints

1. Loosely pre-assemble 4 bolts and nuts into the **double-channel splice plate**.
2. Next, slide the bolt heads into the double channel; then center and tighten the first two nuts 1.
3. Now, slide the next double-channel in the splice plate.
4. Before tightening the last two nuts, ensure that the two double channels are aligned and still just above the string.



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STEP 22

Fourth Bow

1. On the fourth bow, make sure the end of the channel lands on the center of the bow, and attach a tube strap with preassembled bolts and nuts, sliding it in together with the next channel.
2. Repeat steps 19–22 to the end of the tunnel.
3. Secure **double channel** to final bow with two **self-tapping screws**.

Ensure the end of the channel lands on the center of the bow. Adjust bow if needed.

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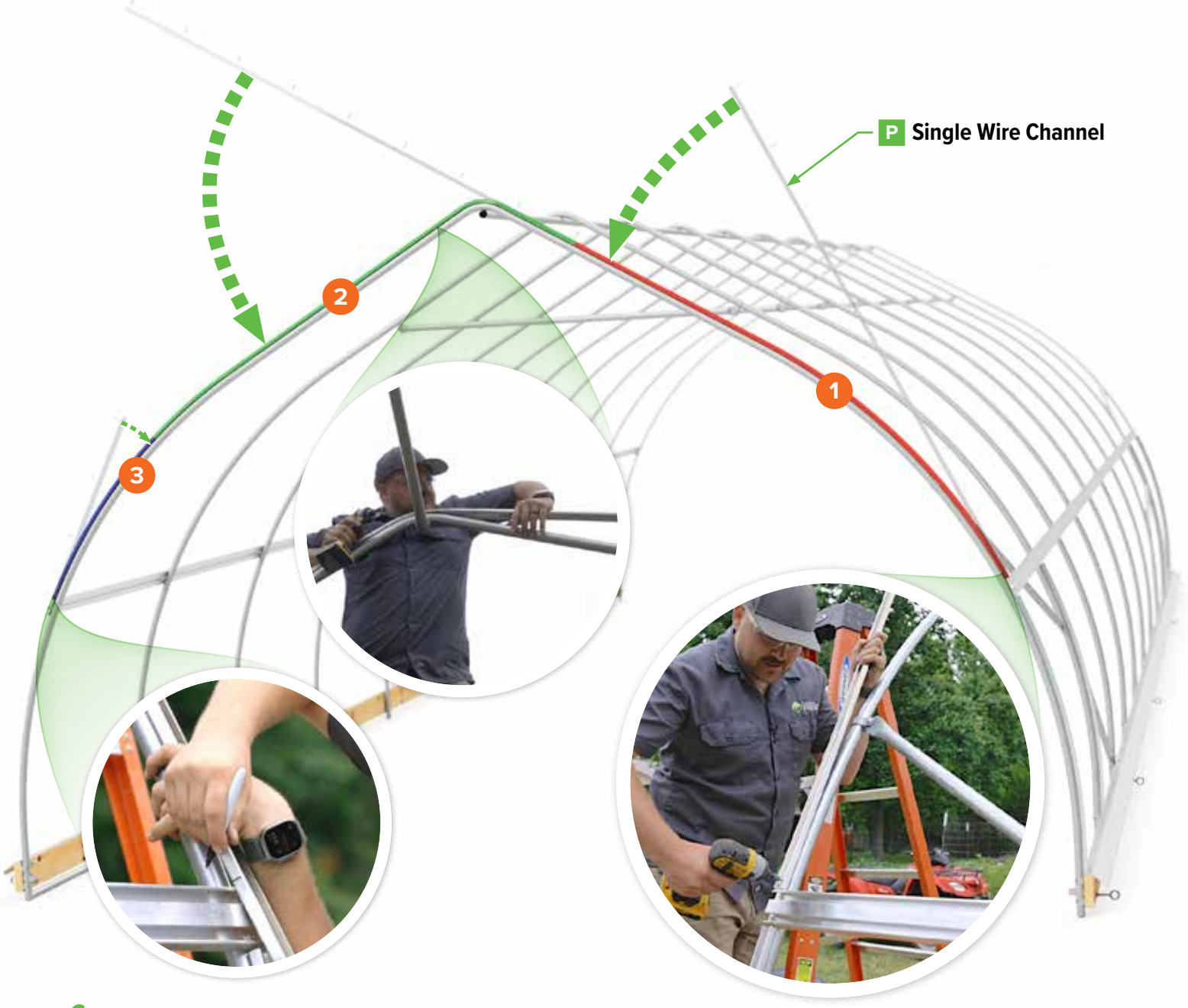
STEP 23

End Bow Single Channel

If you plan on installing a DIY or a Dutch-Door end wall, now is the time to attach the brace bands for the end wall brackets before continuing.

1. Attach **single wire channel** 1 to the top of your tunnel with **self-tapping screws** starting at the top edge of the double channel, and working your way over the end bow.
2. Fasten channel 2 every 12–18 inches with **self-tapping screws**, pressing the channel against the bow, until you have reached the double channel on the other side. Cut off any excess channel 3.
3. Repeat on the other end of the tunnel.



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STEP 24

Plastic Quarter Panels

1. Install a 5' × 5' **corner plastic panel** with **spring wire**.
2. Start by adding spring wire on top (1), then add wire down the sides (2) as two people keep it pulled tight.
3. Install the bottom wire (3).
4. Trim off excess plastic (4). Also, trim any overhaning wire with a pair of wire cutters (5).
5. Repeat on the remaining three corners of the tunnel.

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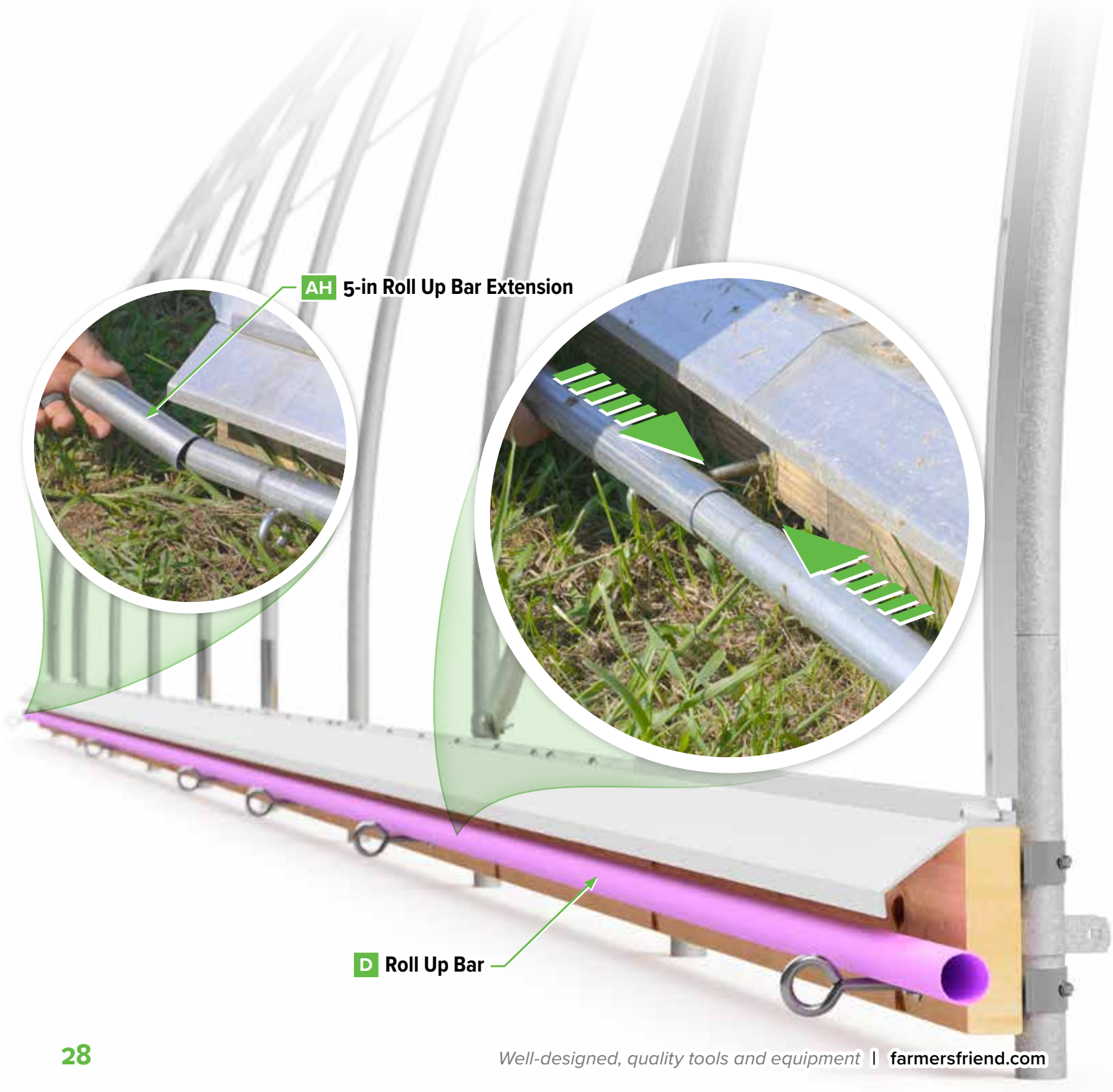
STEP 25

Roll-up Bar Assembly

1. Slide **roll-up bar** pieces together ending with the **5-in roll-up bar extension** and place on top of the eyebolts along the baseboard. **No screws are needed at this point.**
2. Center the bar on the tunnel leaving 2–3 inches sticking out at each end of the tunnel for later attaching the hand cranks.



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STEP 26

Greenhouse Plastic

1. **Open up roll of plastic carefully. Any damage to the end of the roll can ruin the entire roll.**
2. Roll out the plastic down one side of the tunnel and cut to length, leaving 2–3' extra on each end.
3. Pull plastic over the tunnel. **Be sure the "inside" printed marks are facing the inside.** Tying the edge of the plastic to a tennis ball or rock can make it easier to pull over with only a few people.
4. Once the plastic is pulled over, align the middle crease with the center purlin.

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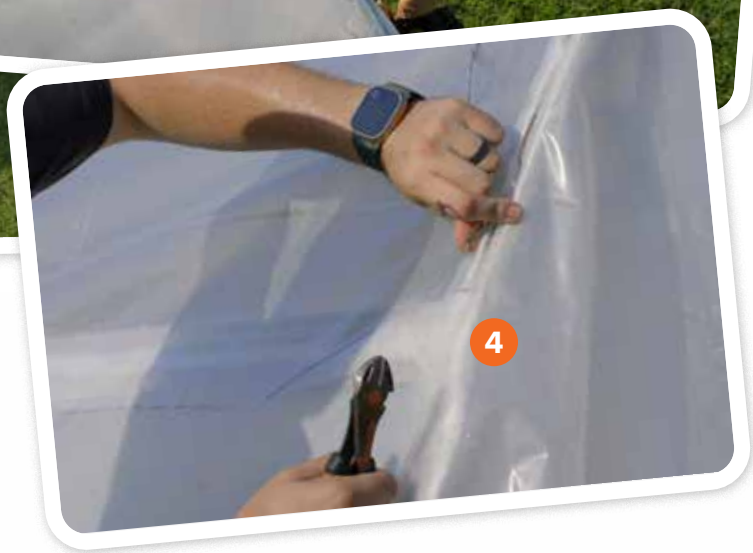
STEP 27

Securing Plastic

1. Partially secure plastic with **spring wire** on one end, beginning at the peak 1.
2. Pull plastic tight and partially secure it with **spring wire** on the opposite end at the peak 2.
3. Completely secure both ends after the plastic is in position, working your way down from the top 3 **on both ends at the same time**, while keeping plastic snug.
4. Trim spring wire that extends past double channel 4 with a pair of wire cutters.



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STEP 28

Securing Sides of Tunnel

1. Align the plastic from left to right in the middle of the tunnel to reduce wrinkles 1.
2. Secure the plastic into the bottom slot 2 of the double channel with **spring wire** beginning at one end and working your way to the other end. **Be sure to not pull the plastic down too tight**, try to simply keep it straight.
3. Lastly, install spring wire into top slot 3 of the double channel.
4. Repeat previous steps for other side.
5. Cut off excess plastic on each end 4.

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STEP 29

Batten Strips

1. Secure plastic to roll-up bar with **6-ft batten strips**, starting with one **3-ft batten strip** and **self-tapping screws**.
2. Drill an extra **self-tapping screw** into each joint (1) of the roll up bar through the batten strip.
3. End with a second piece of **3-ft batten strip** on the other end of the tunnel.
4. Cut off excess plastic.
5. Add a **finishing cap** (2) to the roll up bar at the **opposite end** of where you will be installing the hand crank.

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STEP 30

Hand Cranks

1. Slide **hand crank** on tube and drill 5⁄16" hole using the holes in hand crank as a guide.
2. Attach crank handle using 10mm socket onto the center position.
3. Repeat on opposite side of tunnel.

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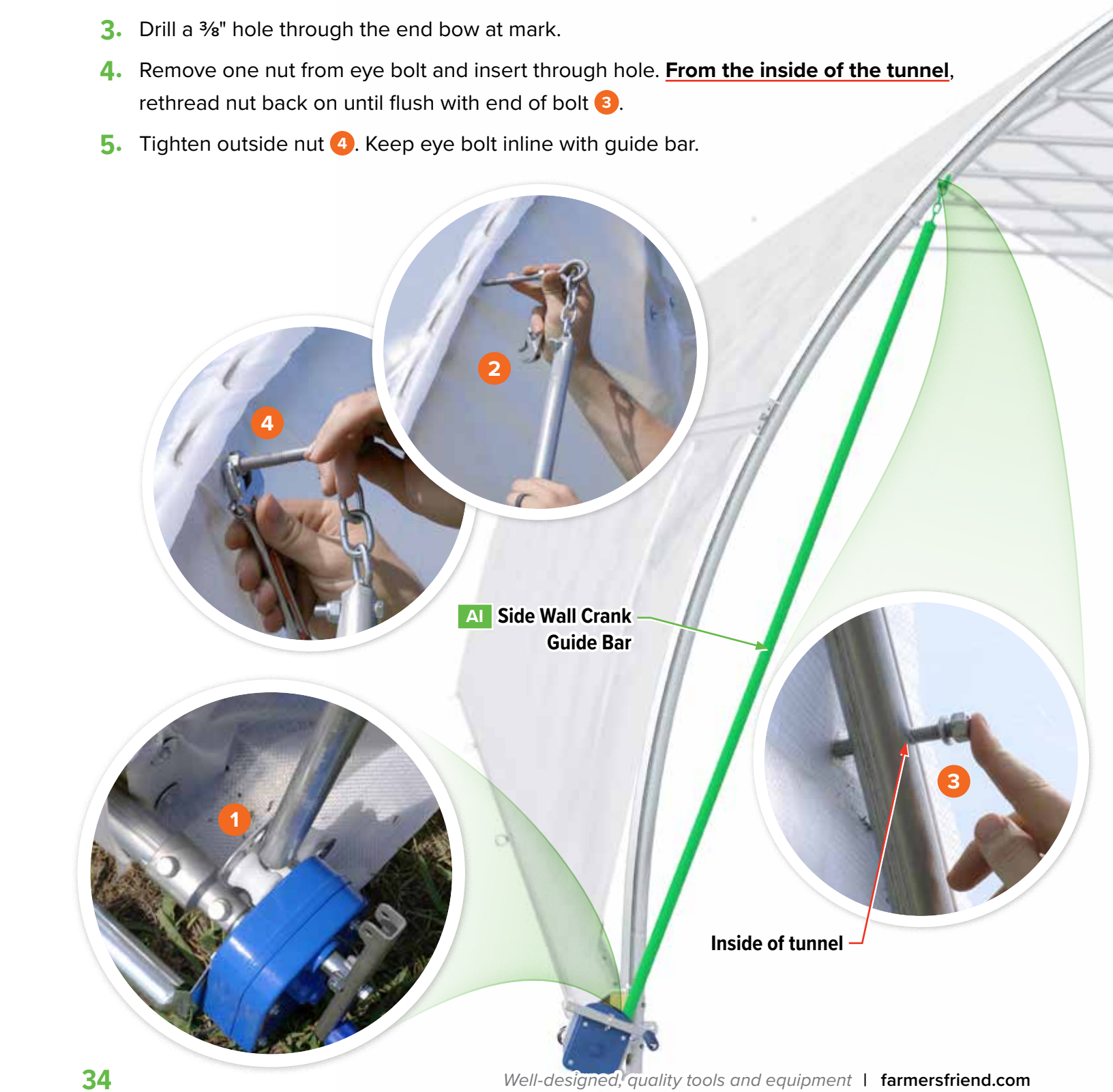
STEP 31

Guide Bars

1. Position the **guide bar** in the crank guide-rollers 1 and let the guide bar rest on the ground.
2. Then, with the chain fully extended, position the eye bolt against the bow 2 and make a mark for drilling.
3. Drill a ⅜" hole through the end bow at mark.
4. Remove one nut from eye bolt and insert through hole. **From the inside of the tunnel**, rethread nut back on until flush with end of bolt 3.
5. Tighten outside nut 4. Keep eye bolt inline with guide bar.



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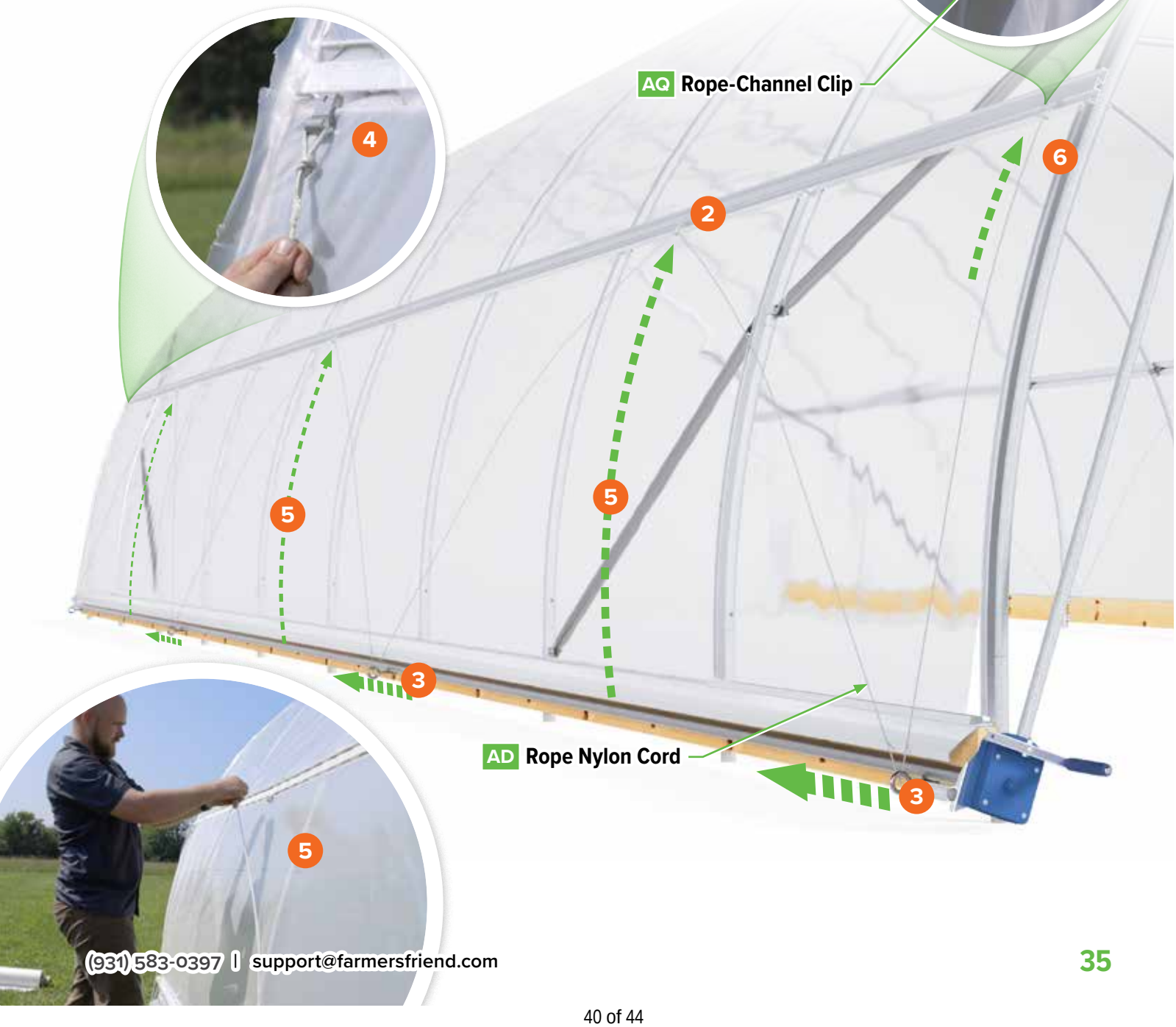
STEP 32

Anti-billow Ropes

1. Install one **rope clip** into the top slot of the double channel next to the first bow 1.
2. Install remaining **rope clips** 2, centered above and between the eye bolts. Install last rope clip next to the last bow.
3. Run **anti-billow rope** through eye bolts 3 and secure to the last **rope clip** at the other end 4.
4. Pull **anti-billow rope** up to each rope clip 5 in the double channel down the length of the tunnel.
5. Pull slack in rope out and tie to the first **rope clip** 6.



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STEP 33

Rubber Bolt Caps

1. The final step is to press on a black **bolt cap** on to every double channel and wind bracing bolt for protection while working in the tunnel.

This Kit Includes

			TUNNEL LENGTH IN FEET								
			24	36	48	60	72	84	96	108	120
A	FF-3135	57-in Wind Bracing	8	8	8	8	8	8	8	8	8
B	FF-9059	◆ 88-in Crossbar	5	8	11	14	17	20	23	26	29
C	FF-5442	72-in Center Purlin End Piece	1	1	1	1	1	1	1	1	1
D	FF-8861	75-in Main Center Purlin	3	5	7	9	11	13	15	17	19
	FF-9350	Roll Up Bar	8	12	16	20	24	28	32	36	40
E	FF-8309	Ground Post, 14-gauge	14	20	26	32	38	44	50	56	62
F	FF-8529	◆ Gothic Center Bow Section, 14-gauge (NS)	7	10	13	16	19	22	25	28	31
G	FF-1917	Side Bow Section, 14-gauge	14	20	26	32	38	44	50	56	62
H	FF-4213	● Classic Center Bow Section, 14-gauge (NS)	7	10	13	16	19	22	25	28	31
I	VP-9581	Wood Baseboard, 72-inches	8	12	16	20	24	28	32	36	40
J	—	Greenhouse Plastic	1 × FF-3083			1 × VP-2202			1 × VP-5799		
K	FF-4385	Curtain Lock	8	12	16	20	24	28	32	36	40
L	FF-3420	6-ft Batten Strip	6	10	14	18	22	26	30	34	38
M	FF-8446	3-ft Batten Strip	4	4	4	4	4	4	4	4	4
N	VP-2733	Spring Wire	48	60	72	84	96	108	120	132	144
O	FF-8942	Double Wire Channel	8	12	16	20	24	28	32	36	40
P	VP-6566	Single Wire Channel	5	5	5	5	5	5	5	5	5
Q	FF-8578	Single Wire Channel, 47-in	12	12	12	12	12	12	12	12	12
R	FF-1968	Plastic Corner Panel (5-ft x 5-ft Plastic)	4	4	4	4	4	4	4	4	4

This Kit Includes *(continued)*

			TUNNEL LENGTH IN FEET								
			24	36	48	60	72	84	96	108	120
S	FF-1072	Eye Bolt (with Nuts and Washers)	6	8	10	12	14	16	18	20	22
T	VP-6885	Baseboard Splice Plate	4	6	8	10	12	14	16	18	20
U	VP-6111	Self-Tapping Screw	217	277	337	397	457	517	577	637	697
V	VP-4936	½-in Galvanized Wood Screw	136	200	264	328	392	456	520	584	648
W	VP-5107	Double-Channel Bolt	36	56	76	96	116	136	156	176	196
X	VP-8850	Double-Channel Nut	36	56	76	96	116	136	156	176	196
Y	FF-3916	Double-Channel Splice Plate	4	6	8	10	12	14	16	18	20
Z	FF-2587	Double-Channel Tube Strap	10	16	22	28	34	40	46	52	58
AA	FF-2783	Baseboard Tube Strap	20	32	44	56	68	80	92	104	116
	FF-2464	● Classic Center Purlin Tube Strap	2	2	2	2	2	2	2	2	2
AB	FF-6550	◆ Gothic Center Purlin Tube Strap	2	2	2	2	2	2	2	2	2
AC	FF-2029	Baseboard Corner Strap	8	8	8	8	8	8	8	8	8
AD	VP-3102	Rope Nylon Cord, 375-ft Spool	—	—	—	—	1	1	1	1	1
	VP-3775	Rope Nylon Cord, 200-ft Spool	1	1	1	1	—	—	—	—	—
AE	FF-4961	Right Side Wall Hand Crank	1	1	1	1	1	1	1	1	1
AF	FF-6235	Left Side Wall Hand Crank	1	1	1	1	1	1	1	1	1
AG	VP-1583	Finishing Cap	4	4	4	4	4	4	4	4	4
AH	FF-1802	5-in Roll Up Bar Extension	2	2	2	2	2	2	2	2	2
AI	FF-1489	Side Wall Crank Guide Bar	2	2	2	2	2	2	2	2	2

This Kit Includes *(continued)*

			TUNNEL LENGTH IN FEET								
			24	36	48	60	72	84	96	108	120
AJ	VP-9764	Galvanized Brace Band Clamp	26	32	38	44	50	56	62	68	74
AK	VP-3224	Galvanized Bolt	26	32	38	44	50	56	62	68	74
AL	VP-8210	Galvanized Nut	26	32	38	44	50	56	62	68	74
AM	VP-5134	Bolt Cap	52	72	92	112	132	152	172	192	212
AN	VP-2421	Cross Connector	10	16	22	28	34	40	46	52	58
AO	VP-3858	Gold Bolt	10	16	22	28	34	40	46	52	58
AP	VP-9894	Gold Nut	10	16	22	28	34	40	46	52	58
AQ	VP-2676	Rope-Channel Clips	8	10	12	14	16	18	20	22	24
AR	FF-1556	Ground Post Driver	1	1	1	1	1	1	1	1	1
AS	VP-7339	¼-in Hex Driver Bit	1	1	1	1	1	1	1	1	1
AT	VP-4572	5⁄16-in Magnetic Driver	1	1	1	1	1	1	1	1	1
AU	VP-8250	Mason Line	1	1	1	1	1	1	1	1	1
	—	Greenhouse Extra Parts Kit	1 × FF-1390				1 × FF-5588				

Tools Needed

- Ground post driver *(included)*
- 5⁄16-in driver bit *(included)*
- ¼-in driver bit *(included)*
- Deep socket ½-in
- Deep socket 7⁄16-in
- Deep socket 9⁄16-in
- Long tape measure (100-ft or 300-ft)
- Tape measure
- Socket drill adapter
- Drill bit ⅜-in
- Wire cutters
- Channel locks
- Tin snips
- Impact drill
- Conventional drill
- Ladder
- Safety glasses
- Sledge hammer
- Level
- Knife
- Marker