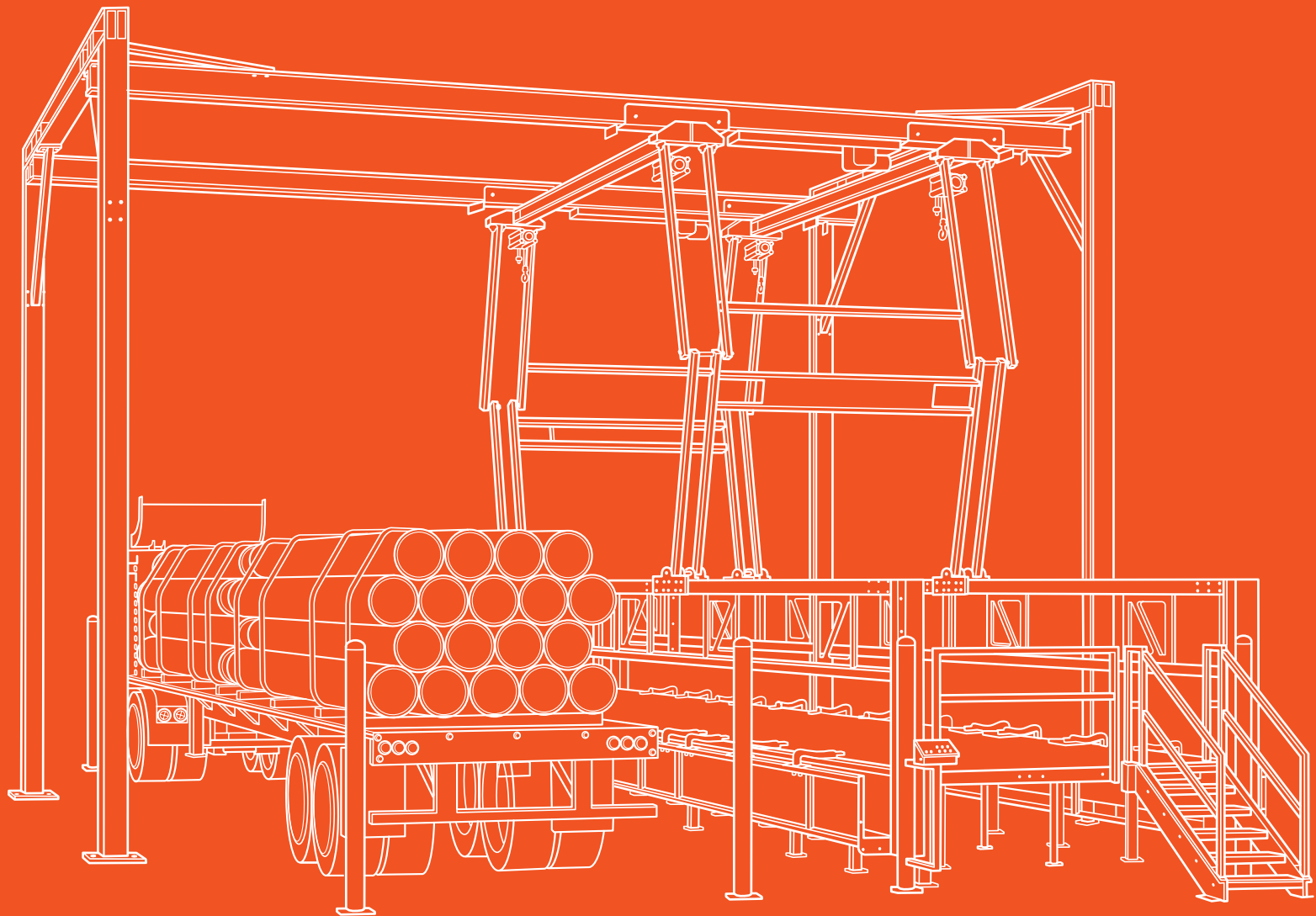




# INSTALLATION GUIDE

# TRUCK TARPING SYSTEM

The safest truck tarping system for your employees and customers

***SafeRackTF***



# CONTENTS



|                                                 |          |                                                                  |           |
|-------------------------------------------------|----------|------------------------------------------------------------------|-----------|
| <b>1.0 SAFETY</b>                               | <b>1</b> | <b>4.0 System Installation</b>                                   | <b>13</b> |
| <b>1.1: Safety Signal Words and Symbols</b>     | 1        | <b>4.1: System Delivery</b>                                      | 13        |
| <b>1.2: Safety Warnings</b>                     | 2        | <b>4.1.1 Onsite Storage</b>                                      | 13        |
| <b>1.3: Pinch Points</b>                        | 4        | <b>4.2: System Assembly</b>                                      | 14        |
| <b>2.0 Pre-Delivery Preparation</b>             | 5        | <b>4.2.1: Assemble the Framework</b>                             | 14        |
| <b>2.1: Customer Responsibilities</b>           | 5        | <b>4.2.2: Assemble the Rails and Bridges</b>                     | 15        |
| <b>2.2: Building Requirements</b>               | 6        | <b>4.2.3: Assemble the Flag Stops and laser Sensor</b>           | 18        |
| <b>2.2.1: Site Requirements</b>                 | 7        | <b>4.2.4: Assemble and Install the Scissor Arms</b>              | 20        |
| <b>2.2.2: Floor and Foundation Requirements</b> | 7        | <b>4.2.5: Install the Spreader Beam Assembly</b>                 | 23        |
| <b>2.2.3: Power Requirements</b>                | 7        | <b>4.2.6: Connect the Cables</b>                                 | 28        |
| <b>2.2.4: Environmental Considerations</b>      | 7        | <b>4.2.7: Attach the Spreader Beams to the Scissor Arms</b>      | 30        |
| <b>3.0 System Components</b>                    | 9        | <b>4.2.8: Check the Spreader Beam Upper and Lower Limits</b>     | 32        |
| <b>3.1 Control Box Overview</b>                 | 12       | <b>4.2.9: Install the Guide Bollards</b>                         | 34        |
|                                                 |          | <b>4.2.10: Assemble the Preparation Table</b>                    | 36        |
|                                                 |          | <b>4.2.11: Install the Preparation Table Entrance Assemblies</b> | 38        |
|                                                 |          | <b>5.0 Final Check</b>                                           | <b>39</b> |

# INTRODUCTION

This manual aims to provide steel erectors and electrical contractors with the essential knowledge to install and assemble the SafeRack TF Tarping System successfully and safely. It also presents information regarding safety precautions, equipment components, shipping and handling, and customer responsibilities.

## **Important!**

- The SafeRack TF Tarping System is designed so that the tractor-trailer drives directly through the truck lane of the system, with the Preparation Table located to the truck line's left (driver side). If this is not the case, do not proceed with installation & contact your SafeRack Sales Representative.
- Before starting assembly, confirm that foundations and anchor bolts meet the specifications noted in the General Arrangement drawings supplied by SafeRack.

## **Contact Information**

The SafeRack team is available if you have any questions, or needs, regarding the installation and assembly of the SafeRack TF Tarping System. You may contact us at the following:

**Phone:** 1-843-264-8096

**E-mail:** [info@saferack.com](mailto:info@saferack.com)

**Address:** 219 Safety Ave, Andrews, S.C. 29510

## **Disclaimer**

The information in this manual is provided without any warranty whatsoever, including any damages to personnel, equipment, or the system.



# 1.0 SAFETY

This section covers the following safety information:

- 1.1: Safety Signal Words and Symbols
- 1.2: Safety Warnings
- 1.3: Pinch Points
- 1.4: Location of Safety Labels on the System

## 1.1: Safety Signal Words and Symbols

Safety words and symbols are used in this manual to bring attention to potential physical, and material, hazards. All personnel engaged with operation, maintenance, and work around this system must read, and understand, all the safety warnings.

Safety signal words are used to indicate the severity of a hazard or unsafe practice. The following safety signal words explain the severity of a hazards or unsafe practices.

|                                                                                                  |                                                                                                                           |
|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
|  <b>DANGER</b>  | Indicates a hazard or unsafe practice that <b>will</b> result in severe injury or death.                                  |
|  <b>WARNING</b> | Indicates a hazard or unsafe practice that <b>could</b> result in severe injury or death.                                 |
|  <b>CAUTION</b> | Indicates a hazard or unsafe practice that <b>could</b> result in minor injury.                                           |
| <b>NOTICE</b>                                                                                    | Indicates a hazard or unsafe practice that <b>could</b> result in property damage and general safety related information. |

## 1.2 Safety Warnings

### WARNING



Failure to read and understand all the safety warnings, instructions in this manual, and OSHA requirements could result in serious injury or death. All personnel engaged with the operation, maintenance, and work around this system must read and understand all the safety warnings instructions in this manual and OSHA requirements. The owner of the Tarping System is responsible for authorizing, and properly training personnel involved with the system's operation, maintenance, and work around the system. Only authorized and properly trained personnel may operate the system.



Improper rigging and handling of the system components may result in unexpected movement and serious injury or death. Always keep unnecessary personnel outside installation area. Ensure the equipment and rigging used to move the system components can handle the load. Always move the load slowly to ensure the center of gravity has not shifted during transport. Use tag lines to control the load during movement.



Failure to inspect the tarping system for damage, worn parts, and working condition during operation, handling, or shipping could result in serious injury or death. Always inspect the tarping system after receiving shipment and before each shift for damage, worn parts, and ensure the tarping system is in proper working condition. Never operate the tarping system if there is any damage, worn parts, or the system is not in proper working condition. Do not alter or modify the system from its original design without consultation, and approval from SafeRack LLC.



Movement of the system may crush, or impact, personnel in the Work Area and cause serious injury or death. Ensure all personnel are removed from the Work Area before engaging movement of the system. Always engage the EMERGENCY STOP button on the Control Box if personnel enter the Work Area during operation of the system.



Movement of the system and system components may cut or pinch body parts and entangle items such as clothing or jewelry, which could cause serious injury or death. Always turn off the power to the system if a person becomes pinched or entangled with the system.

Ensure that all personnel are appropriately trained on and aware of the potential points on the system that may cause cuts or pinching. Ensure there are no personnel in the Work Area before operating the system. Ensure all personnel wear proper PPE and remove any loose items that may become entangled while working with the system.



## ⚠ WARNING



Exposure to high voltage may result in electrical shock and could cause serious injury or death. Always keep the electrical panel and control cabinet secured, except during installation and service. Do not reset a circuit breaker until the cause of the fault has been determined. Only trained personnel should troubleshoot and repair the equipment and only qualified electricians should have access to the control panel and service the equipment. Always ensure the power is turned off during maintenance and repairs.



The system includes class 2 laser beams

- Do not stare into the laser beam.
- Avoid exposure.
- Unplug connector to the extinguish laser beam.



Failure to wear appropriate personal protective equipment (PPE) could result in serious injury or death.

All personnel must wear appropriate head, hand, eye, ear, and foot protection when handling tarps and interacting with the system components.

## NOTICE

The rails must be level and parallel for the bridges to track properly. Operating the system when the rails are not level and parallel will damage bridges and void the warranty. Do not operate the system if the rails are not parallel.

The Bridges must be oriented and installed according to the hoist designations. Operating the system when the bridges are not installed properly will damage the system and void the warranty. Do not operate the system if the hoists are in the wrong orientation.

Operating the tarping system outside its environmental limits may damage the system. The tarping system is intended for indoor use only, shielded from windy conditions, and should only be operated in a temperature range between -4° F to 104° F with less than 85% humidity.

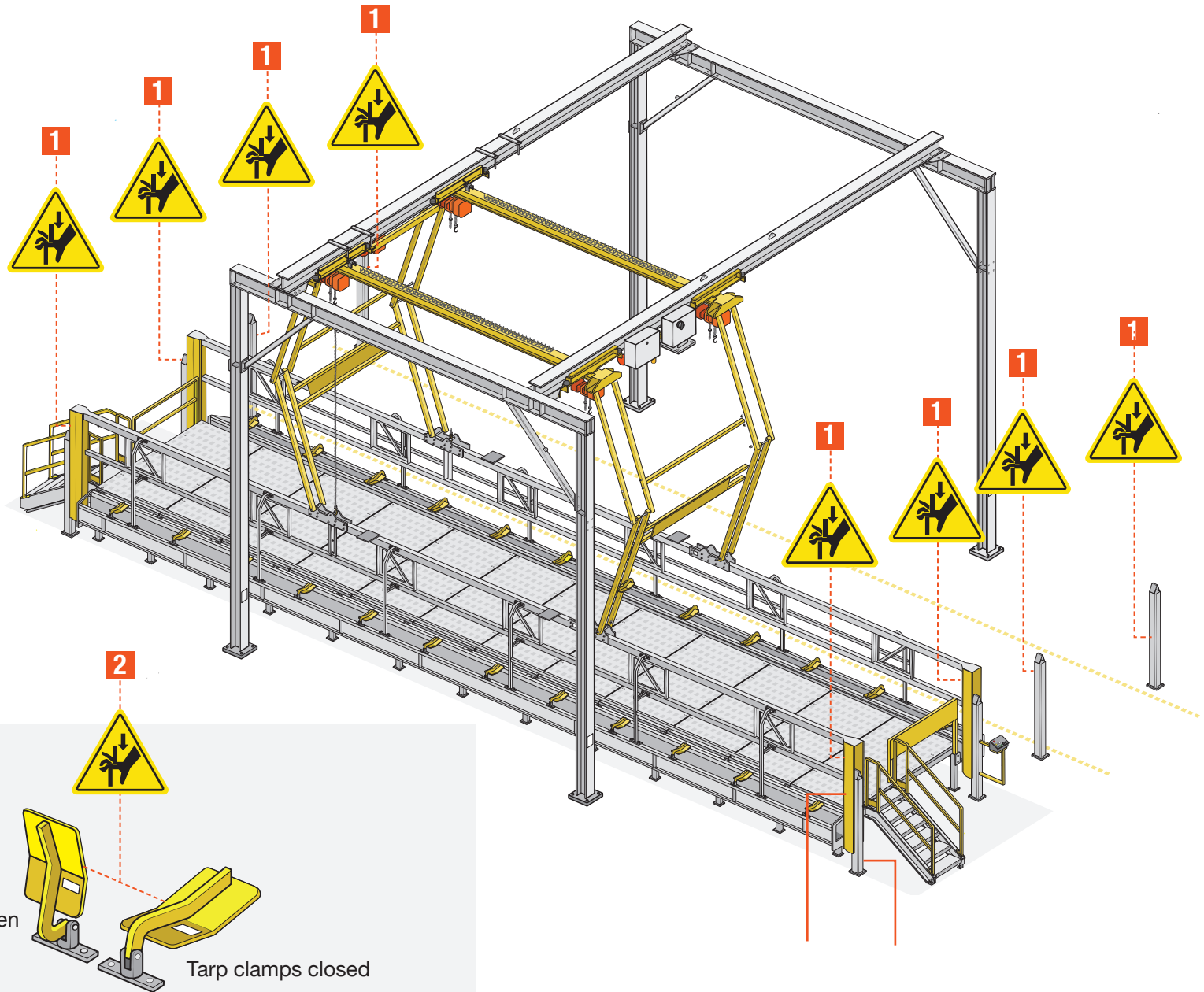
Incorrect spotting of the vehicle with the tarping system could result in damage to the system, load or vehicle. Always check the position of the vehicle in relation to the position of the tarping systems spreader bar assembly before lowering the tarp(s) onto the load. Before each shift, check the **spreader bar assembly** is correctly aligned with the **spotting/alignment bollards**.

Attempting to operate the system using a power source that does not meet the required specifications could cause damage to the system and will void the warranty.

### 1.3: Pinch Points

Be aware of the following pinch points:

1. **Spreader Guides and Spotting/Alignment Bollards** are located at the *spreader guides* and *spotting/alignment bollards*, while the spreader is in the down position and while the spreader is being lowered.
2. **Tarp Clamps** are located on the *spreader bar assemblies*. They are manually engaged, force is applied by gravity.





## 2.0 Pre-Delivery Preparation

The following section outlines the responsibilities and tasks the customer must complete before receiving the SafeRack TF Tarping System. Compliance is necessary to install the SafeRack TF Tarping System safely and efficiently.

### Section contents:

#### 2.1 Customer Responsibilities

#### 2.2 Building Requirements

### 2.1: Customer Responsibilities

Understanding and fulfilling the following customer responsibilities is essential. Neglecting these duties could lead to safety risks for on-site personnel and potential damage to the system.

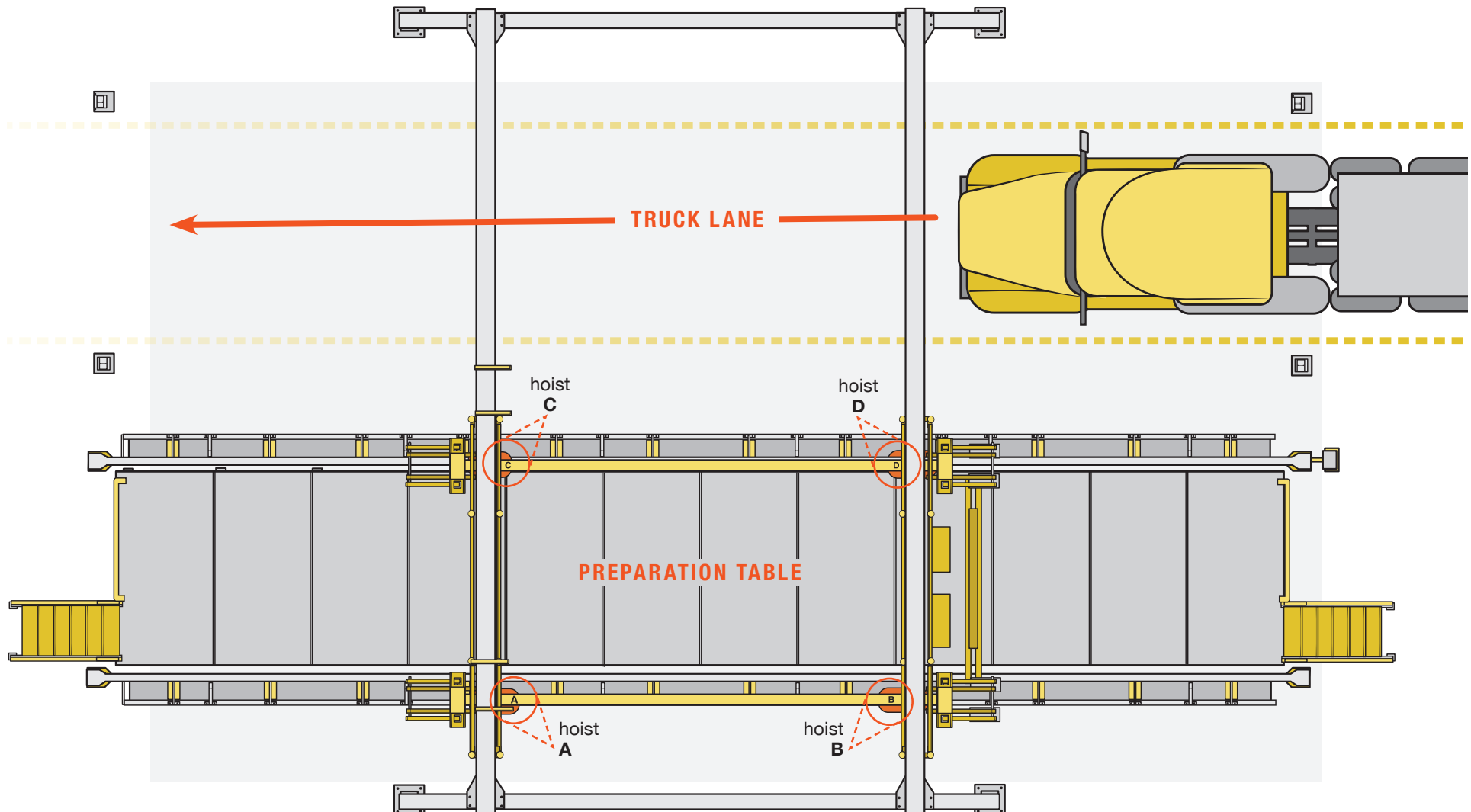
- It's of the utmost importance that the customer strictly adheres to all relevant safety regulations during the installation of the equipment. This is not just a responsibility, but a crucial step in ensuring a safe working environment.
- The customer is responsible for providing an indoor environment that meets the SafeRack TF Tarping System requirements (see Section 2.2 Building Requirements).
- The customer is responsible for ensuring there are no work site (i.e., overhead power lines) or building obstructions (i.e., doorways and passages) that would present a safety hazard or interfere with the delivery and installation of the system.
- The customer is responsible for infrastructure requirements, such as lighting and all other electrical services. The customer must supply the electrical power for the TF Tarping System, including all electrical supplies, wires, disconnects, and final termination unless otherwise agreed upon. The customer is responsible for making the final connection to the junction box supplied on the (front) rail from a disconnect box.
- Unless otherwise agreed upon, the customer is responsible for supplying riggers and rigging equipment for the placement and installation of the TF Tarping System and its related components. The customer should confirm the system delivery date four weeks before shipment and ensure the shipping company and riggers know the delivery date (see Section 4.1 System Delivery for additional information).
- Shipment of the TF Tarping System components has multiple deliveries. It is the responsibility of the customer to provide secure, well-protected storage areas to prevent theft of and damage to the system components.
- The TF Tarping System has oil in the hoists and tractor drives when shipped. However, the customer is responsible for supplying oil and other lubricants for scheduled maintenance procedures.
- The customer should appoint a project manager to oversee and coordinate delivery, unloading, storage, and all other system installation matters. The project manager should review the SafeRack TF Tarping System Operation manual before installation and provide SafeRack with the project manager's name, email address, and telephone number.

## 2.2: Building Requirements

The SafeRack TF Tarping System is only intended to be operated in an indoor environment, protected from any type of wind and/or precipitation.

The system is designed for the tractor trailer to drive directly through the truck lane of the system. The preparation table is located to drivers left side in the truck lane. If this is not the case, do not proceed with installation and contact your SafeRack Sales Representative.

**Note:** The hoists are labeled on the bridge rail above each hoists (**A–B** and **C–D**). Positions around the system mentioned in this manual are based on the hoist label/locations.





### 2.2.1: Site Requirements

The following provides information on the site requirements for the SafeRack TF Tarping System.

- It's essential that the site for the SafeRack TF Tarping System is completely free of obstructions and has the capacity to handle the delivery and movement of the system components.
- The site must have access to a power source capable of providing the necessary power to operate the system. Electrical panels should not be near the equipment control panel & meet local clearance requirements.
- The selected area must allow straight entry of the tractor-trailer into the building housing the equipment.

### 2.2.2: Floor and Foundation Requirements

The following provides information on the floor and foundation requirements for the SafeRack TF Tarping System.

- The floor area (concrete slab) is the responsibility of the owner and building designer. The slab design should reference the General Arrangement drawing to incorporate any drainage grade. Note: The minimum slab thickness is 6 inches.
- The design of the truck bay area floor must support continuous tractor-trailer traffic.
- Four foundations are required to support the system at each vertical column. The foundations should be level with the surrounding grade and grouting under the base plates of the columns is required after leveling of the rails. GROUT MATERIAL FOR BASE PLATES SHALL BE NON-METALLIC, NON-SHRINK, PRE-PACKAGED GROUT CONFORMING TO ASTM C 1107.
- Before starting assembly, confirm foundations and anchor bolts meet the specification's noted in Detail 1 of the General Arrangement drawing. Anchor bolts require 6 inch minimum project above the foundation.

### 2.2.3: Power Requirements

The following provides information on the power requirements for the SafeRack TF Tarping System.

**Important!** Lockout/tagout (LOTO) procedures must be followed during the installation of electrical connections and system components.

- The SafeRack TF Tarping System requires 480 Volts, 3-phase, 60 Hz, 30 amp service.
- The electrical supply line, including the ground wire, should be close to the equipment location include a disconnect box.
- Actual location around the system is customer preference but note that the power will be ran up the *hoist D* column.

### 2.2.4: Environmental Considerations

The following section provides information regarding the necessary environment for the tarping systems.

- The tarping system is intended for indoor use only. The structure should be protected from windy conditions and operate only in a temperature range between -4° F to 104° F with less than 85% humidity.
- The inside dimensions of the structure housing the system must be at least: 40 ft. (W) x 90 ft. (L) x 32 ft. (H)

**Table 3.1** Crane Specifications

| CRANE SPECIFICATIONS  |                                |
|-----------------------|--------------------------------|
| Crane Capacity        | 1 ton                          |
| Crane Type            | Single Girder Under Hung       |
| CMAA Crane Class      | Class C                        |
| Span                  | 20' 0"                         |
| Crane Weight          | 3,500LBS                       |
| Runway                | W 12x58; 10" Flange Width      |
| Hoist                 | (4) NER2010S                   |
| Hoist Speed           | 28FPM; 1 speed; 1HP            |
| Endtruck Data         | 55FPM; VFD; 2 at 1/3HP         |
| Main Voltage          | 480V / 3PH / 60HZ              |
| Control Voltage       | 115V / 1PH / 60HZ              |
| Controls              | Pedestal Mount Control Station |
| Bridge Color          | Crane Yellow                   |
| Atmospheric Condition | Void of wind and rain          |



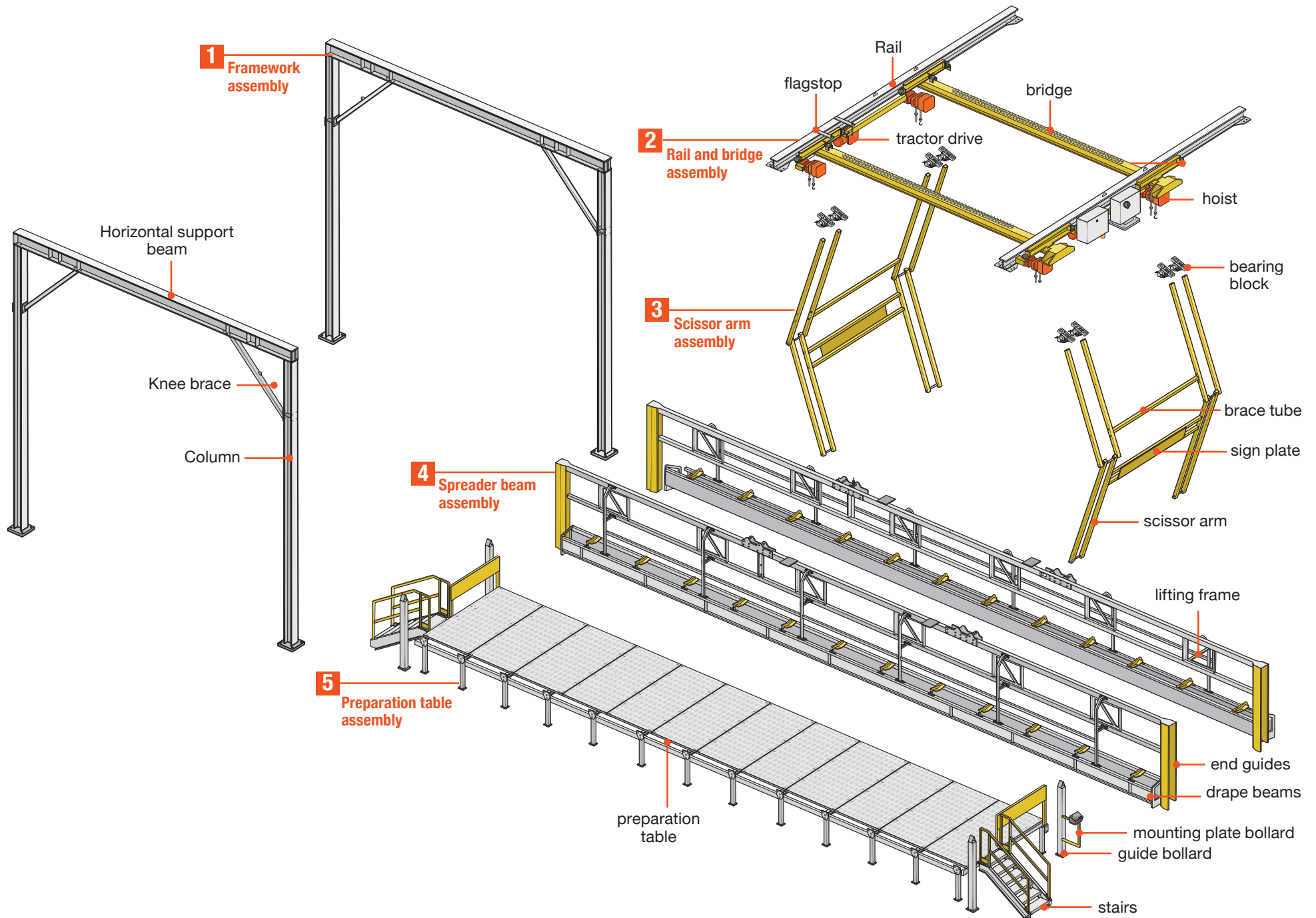
## 3.0 System Components

This section explains the system assemblies and components needed to assemble the SafeRack TF tarping system.

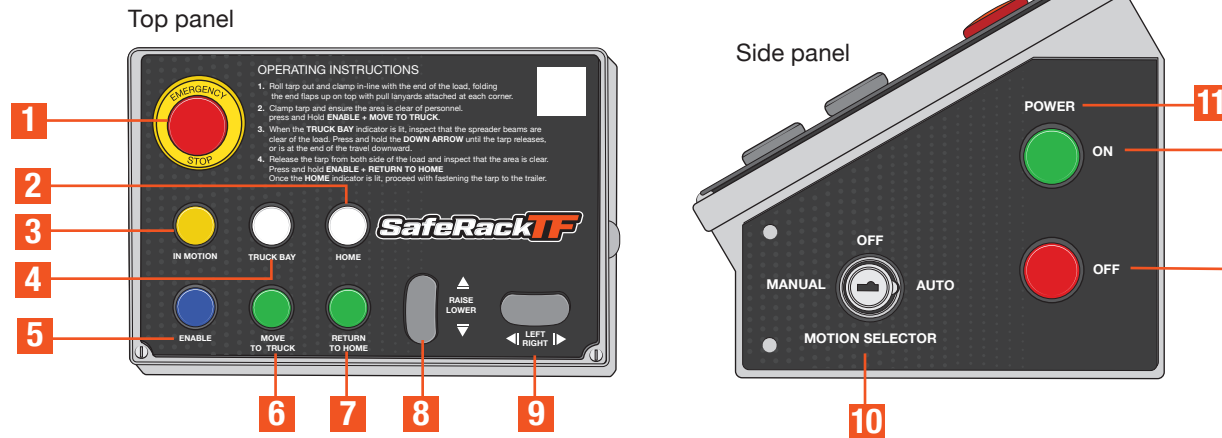
**Table 3.2: System Components** (see page 11 for assembly diagrams)

| ASSEMBLY                                                                                                                                                                              | COMPONENTS                          | QUANTITY | DESCRIPTION                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. Framework</b><br><br>This assembly is the structural base of the SafeRack TF Tarping System.                                                                                    | Columns                             | 4        | Secured to the four concrete foundations.                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                       | Trolley stop gussets                | 4        | Attaches to the top corners of the support beams. Used to support the rails.                                                                                                                                                                                                                                                         |
|                                                                                                                                                                                       | Horizontal support beams            | 2        | Attaches to the <i>columns</i> .                                                                                                                                                                                                                                                                                                     |
|                                                                                                                                                                                       | Knee Braces                         | 4        | Diagonal brace connects to the <i>columns</i> and <i>horizontal support beams</i> .                                                                                                                                                                                                                                                  |
| <b>2. Rail and Bridge</b><br><br>This assembly attaches to the <i>framework assembly</i> .<br><br>The bridge is used to move the tarp from the <i>preparation table</i> to the truck. | Bridges and hoists                  | 2        | <ul style="list-style-type: none"> <li>• <b>Bridge</b> is attached to the underside of the <i>end trucks</i>.</li> <li>• <b>Hoists</b> are pre-installed on the <i>bridges</i>.</li> </ul> <b>Important!</b> The <i>bridges</i> must be installed per the <i>hoist</i> designations <i>A–B</i> , <i>C–D</i> (see diagram on page 6). |
|                                                                                                                                                                                       | Rails                               | 2        | Attach to the top of the <i>horizontal support beams</i> . <b>Important!</b> The <i>rails</i> must be installed level to each other.                                                                                                                                                                                                 |
|                                                                                                                                                                                       | Tractor drives                      | 2        | Pre-installed on the <i>rails</i> .                                                                                                                                                                                                                                                                                                  |
|                                                                                                                                                                                       | Tractor and hoist Power connections | N/A      | The hoists and tractor drives are pre-wired with multi-pin plugs that connect to the designated receptacle on the electrical enclosures. Each plug is marked to the mating receptacle and have fail safe devices so they can only be connected to the appropriate receptacle.                                                        |
|                                                                                                                                                                                       | Main power connection               |          | Are pre-connected to the B–D Rail and runs down a cable tray to the main power junction box, the customer will terminate the main power feed here.                                                                                                                                                                                   |
|                                                                                                                                                                                       | Flag stops                          | 4        | The <b>flag stops</b> set the side motion stop positions for the truck lane and <i>preparation table</i> .                                                                                                                                                                                                                           |
|                                                                                                                                                                                       | Optical sensors                     | 4        | Used to set the upper and lower limits, and are pre-set. The <b>lasers</b> are attached to the <i>bridges</i> and control the <i>spreader beams</i> upper and lower limits.                                                                                                                                                          |

| ASSEMBLY                                                                                                                                                                       | COMPONENTS                         | QUANTITY | DESCRIPTION                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>3. Scissor Arms</b>                                                                                                                                                         | Bearing blocks                     | 8        | Attaches to the top end the upper <i>scissor arms</i> . They are mounted to the underside of the the <i>briges</i> .                                                                                                                                                                                                  |
|                                                                                                                                                                                | Scissor arms                       | 8        | Used for both upper and lower scissors arms and are connected with cotter pin hardware.                                                                                                                                                                                                                               |
|                                                                                                                                                                                | Brace tubes                        | 6        | Attaches to the lower <i>scissor arms</i> . They provide stability to the <i>scissor arm assembly</i> .                                                                                                                                                                                                               |
|                                                                                                                                                                                | Sign Plate                         | 2        | Attaches to the two lower braces.                                                                                                                                                                                                                                                                                     |
| <b>4. Spreader beams</b><br><br>This assembly attaches to the <i>scissor arms</i> .<br><br>The <i>tarps</i> are clamped to the <i>spreader beams</i> during use of the system. | Drape beams                        | set of 2 | Attaches to the lifting beam. Includes three pieces per set. Each set includes right and left end sections and one center section.                                                                                                                                                                                    |
|                                                                                                                                                                                | End guides                         | 4        | Attaches to the <i>drape beams</i> and guide the <i>spreader beam assembly</i> into the <i>guide bollards</i> .                                                                                                                                                                                                       |
|                                                                                                                                                                                | Lifting frames                     | set of 2 | Three pieces per set. Attaches to the top of the <i>end guides</i> .                                                                                                                                                                                                                                                  |
|                                                                                                                                                                                | Lifting brackets                   | 8        | Four per spreader beam.                                                                                                                                                                                                                                                                                               |
|                                                                                                                                                                                | Beam connector brackets and braces | set of 2 | 6 pieces per set                                                                                                                                                                                                                                                                                                      |
|                                                                                                                                                                                | Tarp clamps                        | set of 2 | Clamps the tarp to the <i>spreader beam assembly</i> during transfer of the tarp to the vehicle. Twelve pieces per set.                                                                                                                                                                                               |
| <b>5. Preparation table</b>                                                                                                                                                    | Stair assembly                     | 2        | Provides access to the tarp platform                                                                                                                                                                                                                                                                                  |
|                                                                                                                                                                                | Bollard guides                     | 4        | There are two different heights of <i>guide bollards</i> . The shorter of the two are positioned at the corners of the truck lane and the taller guide bollards are positioned at the corner of the preparation table. One of the taller preparation table bollards include the mounting stand for the control panel. |



### 3.1 Control Box Overview



1. **EMERGENCY STOP button:** Used to de-energize the control voltage and stop all movement of the tarping system.
2. **HOME light:** Illuminates (white) when the spreader bar assembly has reached the *home position*.
3. **IN MOTION Light:** Illuminates (yellow) when the spreader bar assembly is moving to or from the vehicle, and when the tarp(s) are being lowered onto the load.
4. **TRUCK BAY light:** Illuminates (white) when the spreader bar assembly has reached the *truck bay position*.
5. **Enable button:** Used in conjunction with MOVE TO TRUCK or the MOVE TO HOME buttons to move the *spreader bar assembly* to either the *truck bay* or *home positions*.
6. **MOVE TO TRUCK button:** Used in conjunction with ENABLE button to move the *spreader bar assembly* to the *truck bay position*.
7. **RETURN TO HOME button:** Used in conjunction with ENABLE button to move the *spreader bar assembly* to the *home position*.
8. **RAISE/LOWER Toggle:** Used in conjunction with the ENABLE button to lower the spreader bars down unto the load and trailer.

9. **LEFT/RIGHT Toggle:** Used to make minor left or right adjustments to position the *spreader bar assembly*.  
**Important!** The LEFT/RIGHT toggle should only be used for maintenance and initial setup of the system.
10. **MOTION SELECTOR:** Includes three settings; *manual*, *off*, and *auto*.
  - **MANUAL** selector: allows up/down and left/right movement for maintenance and system setup only.
  - **OFF** selector: Used to turn the tarping system off to allow personnel to enter the work area.
  - **AUTO** selector: Used for normal operation.
11. **POWER button:**
  - **ON:** Used to turn the tarping system *on*.
  - **OFF:** Used to turn the tarping system *off*.  
**Important!** Power should always be turned off when the system is unattended and/or during maintenance. Always follow lockout/tagout (LOTO) procedures.



## 4.0 System Installation

This section provides information regarding delivery, assembly, and installation of the SafeRack TF Tarping System.

### Section contents:

- 4.1 System Delivery
- 4.2 System Assembly

### 4.1: System Delivery

#### WARNING

Improper rigging and handling of the system components may result in unexpected movement and serious injury or death. Always keep unnecessary personnel outside the loading exclusion zone. Ensure the equipment and rigging used to move the system components can handle the load. Always move the load slowly to ensure the center of gravity has not shifted during transport. Use tag lines to control the load during movement.

**Important!** Upon receipt, the system components should be inspected closely for any damage incurred during transport. If damage is found, photographs should be taken, and a damage report submitted. The transport driver should also sign a damage report. The transporter and SafeRack immediately notified.

The delivery of the SafeRack TF Tarping System will arrive in a minimum of two shipments. One shipment will include the **framework assembly** (i.e., **columns**, **horizontal support beams**, and **knee braces**) along with components for the spreader beam assembly (i.e., individual tarp handling components).

A second shipment will include components for the **rail and bridge assembly**. This includes the **hoist system** (i.e., the **bridges**, **hoists**, and **rails**). **Note:** This is shipped on a shipping cradle and, if possible, should be unloaded as one piece.

As noted in **Section 2.1 Customer Responsibilities**, unless otherwise agreed upon, it's the customer's responsibility to supply riggers and rigging equipment for the placement and installation of the TF Tarping System and its related components. At a minimum, the material handling equipment must be capable of lifting, and moving, the following weights.

**Table 4.1** Moving and lifting weight minimums

| COMPONENT                   | Approximate Weight (lbs) |
|-----------------------------|--------------------------|
| Column                      | 1,400                    |
| Horizontal support beam     | 1,760                    |
| Rail assemblies             | 3,530                    |
| Bridge and hoist assemblies | 950                      |

#### 4.1.1 Onsite Storage

Shipment of the TF Tarping System components has multiple deliveries. It is the responsibility of the customer to provide secure, well-protected storage areas to prevent theft of and damage to the system components. Always store the system components in a manner that will allow easy access as components are needed for installation, starting with the structural steel and drive/rail assemblies.

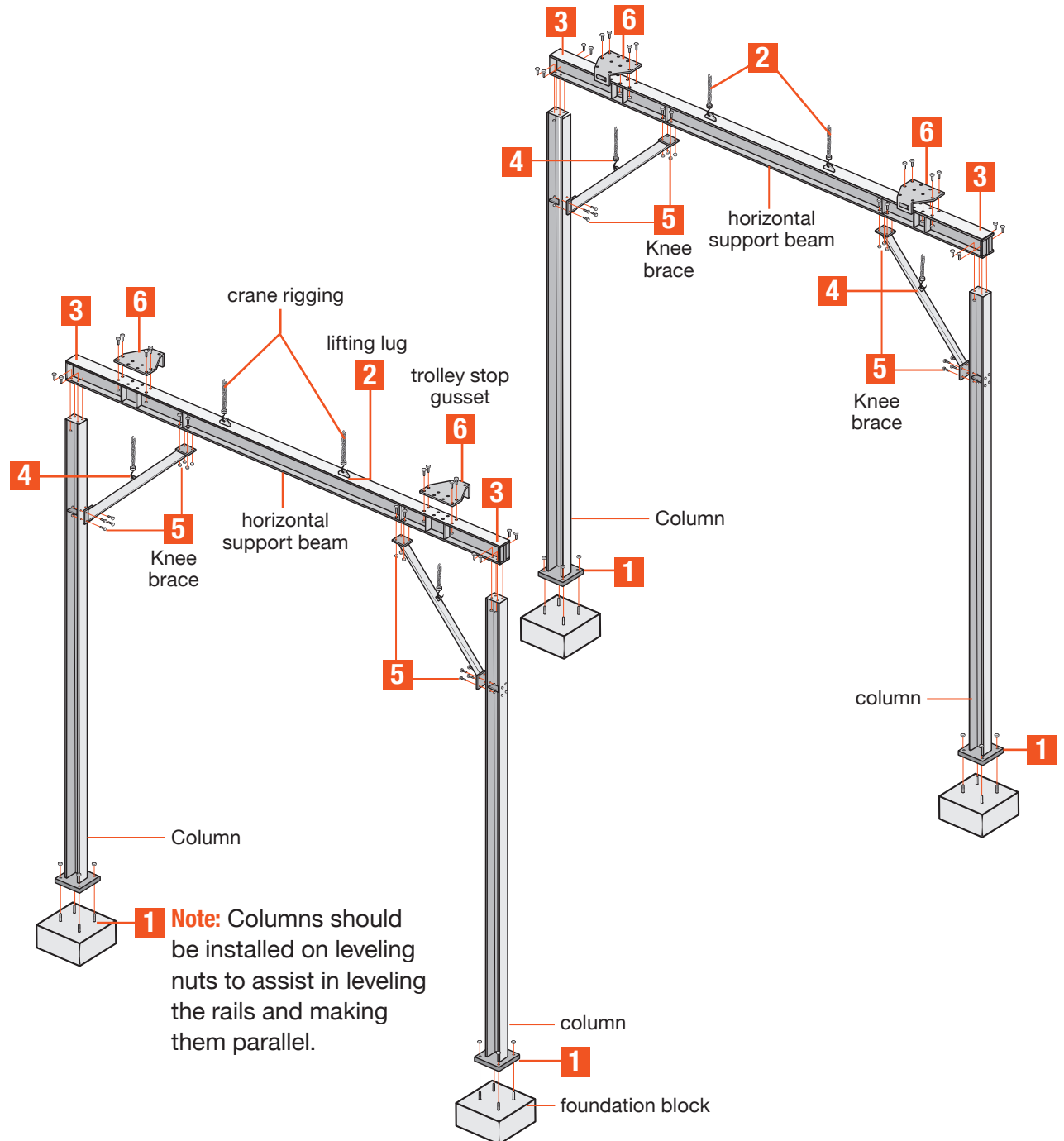
Any individually boxed items such as hardware and any fasteners should be transported directly from the delivery truck indoors to the installation site with a suitable forklift. The hoist and drive system will arrive on shipping cradles and have electrical components that must remain dry and clean. If these are not able to be stored indoors, it is the responsibility of the customer to supply appropriate coverage until installation.

## 4.2: System Assembly

The following section describes how to assemble the TF Tarping System using the five main assemblies described in the previous section.

### 4.2.1: Assemble the Framework

1. Place each **column** (4) onto a **foundation block** (4). Fasten the column base to each foundation block with the customer supplied anchor nuts.
2. Attach the crane rigging to the **lifting lugs** on the **horizontal support beams**. Carefully place each **horizontal support beam** onto the **column** tops.
3. Fasten the **horizontal support beam** to each **column** tops with the provided hardware.
4. Attach the crane rigging to the **lifting lugs** on the **knee braces**.
5. Slowly maneuver each **knee brace** into the top corners of the **column** the **horizontal support beam**. Fasten the top of the **knee brace** to the **horizontal support beam**, and the bottom of the **knee brace** the side of the **column** using the provided hardware.
6. Attach the four **trolley stop gusset** (with rail bumpers) to the OUTSIDE holes only on the **horizontal support beam**.



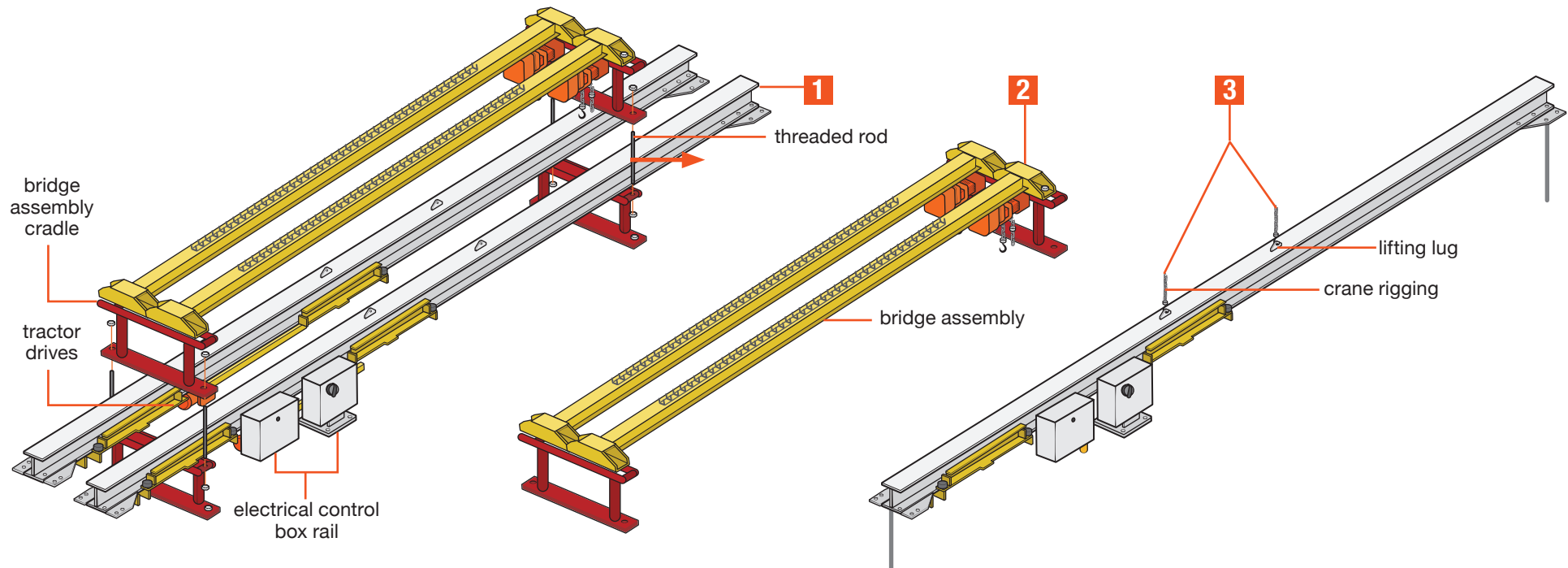
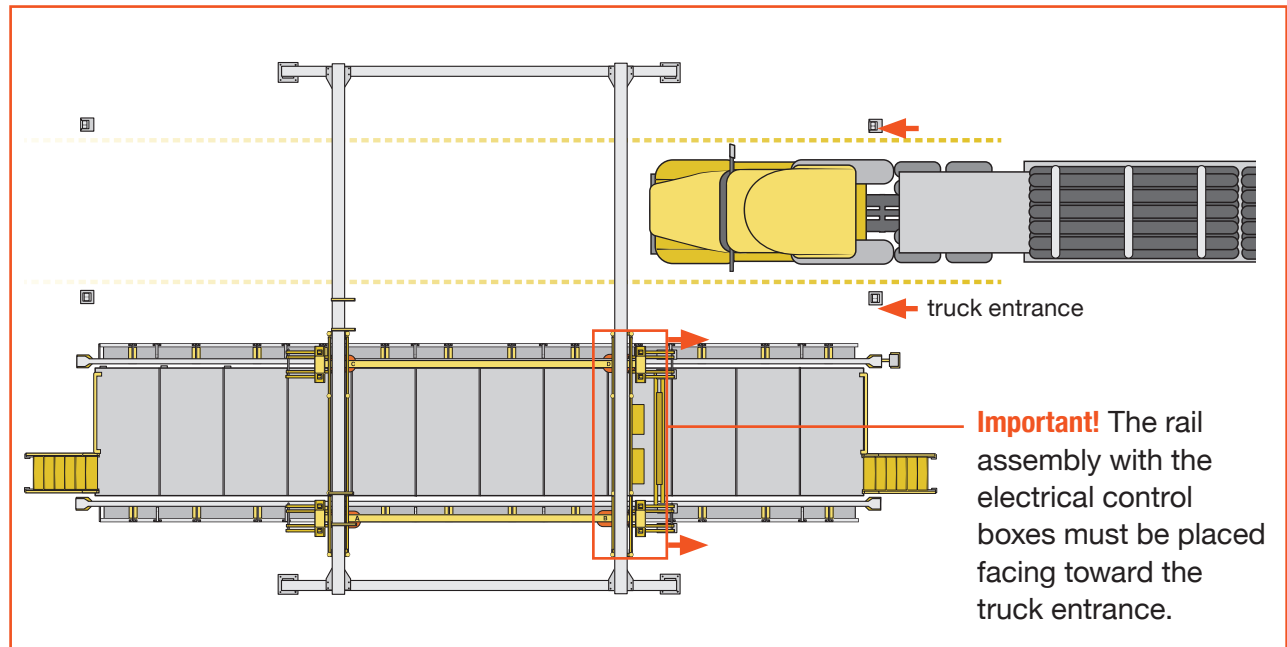


## 4.2.2: Assemble the Rails and Bridges

### Install the rails

**Note:** There are two *rails*, both have tractor drives preinstalled. One of the two rails has the control boxes pre-installed.

1. Remove the **threaded rod** holding the bridge assembly **cradle** to the **rail assembly**.
2. Carefully move and place the **bridge assemblies** in a safe, dry location.
3. Attach the crane rigging to the **lifting lugs** on top of the **rail** with the electrical control boxes. **Note:** We recommend that tag lines be attached to each end of the rail to control unexpected movement and assist in placement.



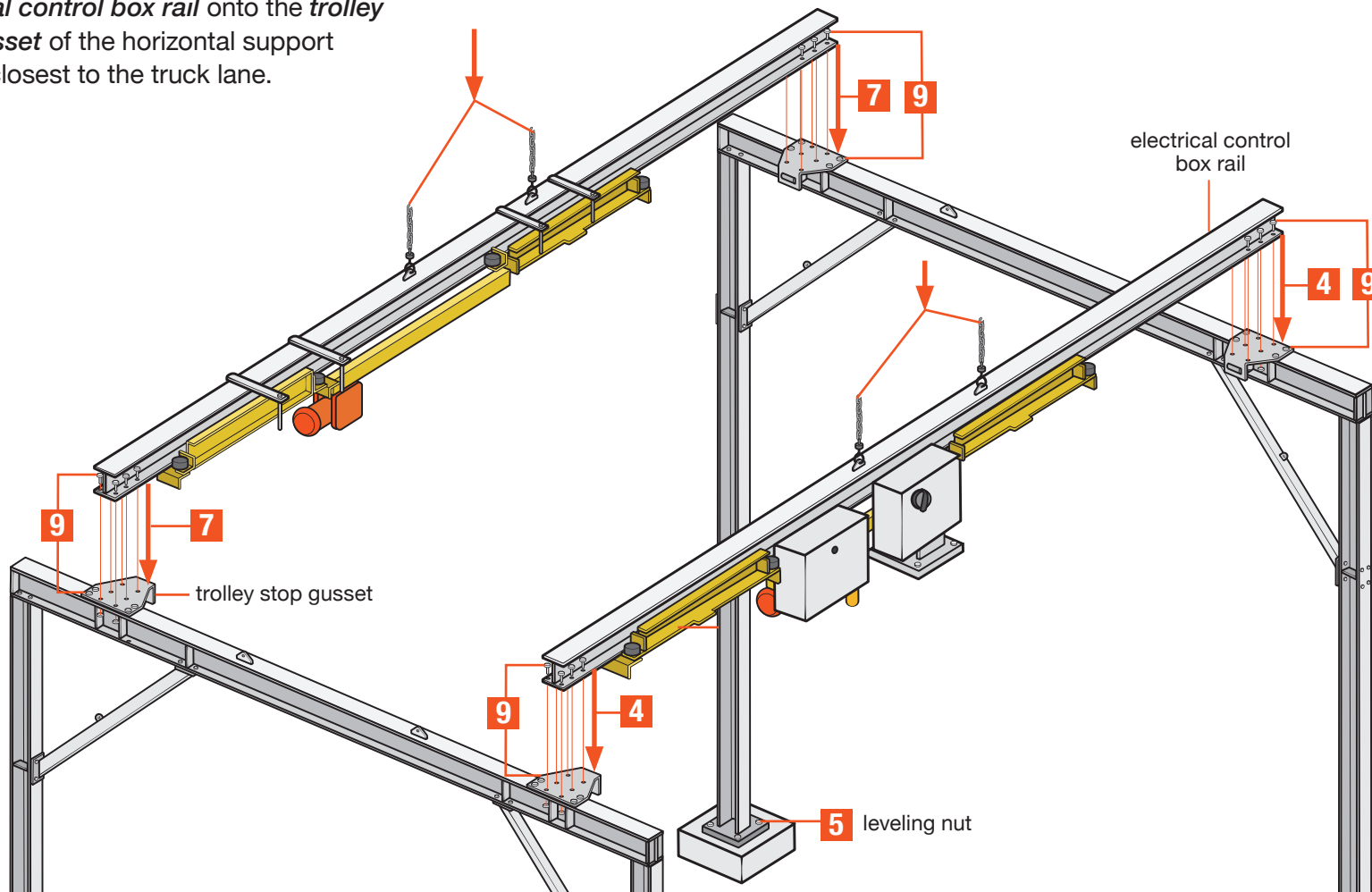
### Notice

The **rails** must be level and parallel for the **bridges** to track properly. Operating the system when the rails are not level and parallel will damage **bridges** and void the warranty. Do not operate the system if the **rails** are not parallel.

4. Using the crane rigging carefully place the **electrical control box rail** onto the **trolley stop gusset** of the horizontal support beams closest to the truck lane.

5. Ensure the **rail** is level. If necessary, use the **leveling nuts** underneath the column to adjust until the **rail** is level. **Note:** There should be a **minimum projection** above the anchor bolt nut of one additional nut thickness.
7. Using the **crane rigging** and **lifting lugs** carefully place the remaining rail onto the opposite horizontal beam **trolley stop gussets**.

8. Ensure the **rails** are parallel to each other. Do not proceed until the **rails** are **level and parallel**. Adjust if necessary.
9. After confirming the **rails** are level and parallel, securely fasten the **rails** to the **trolley stop gussets**.





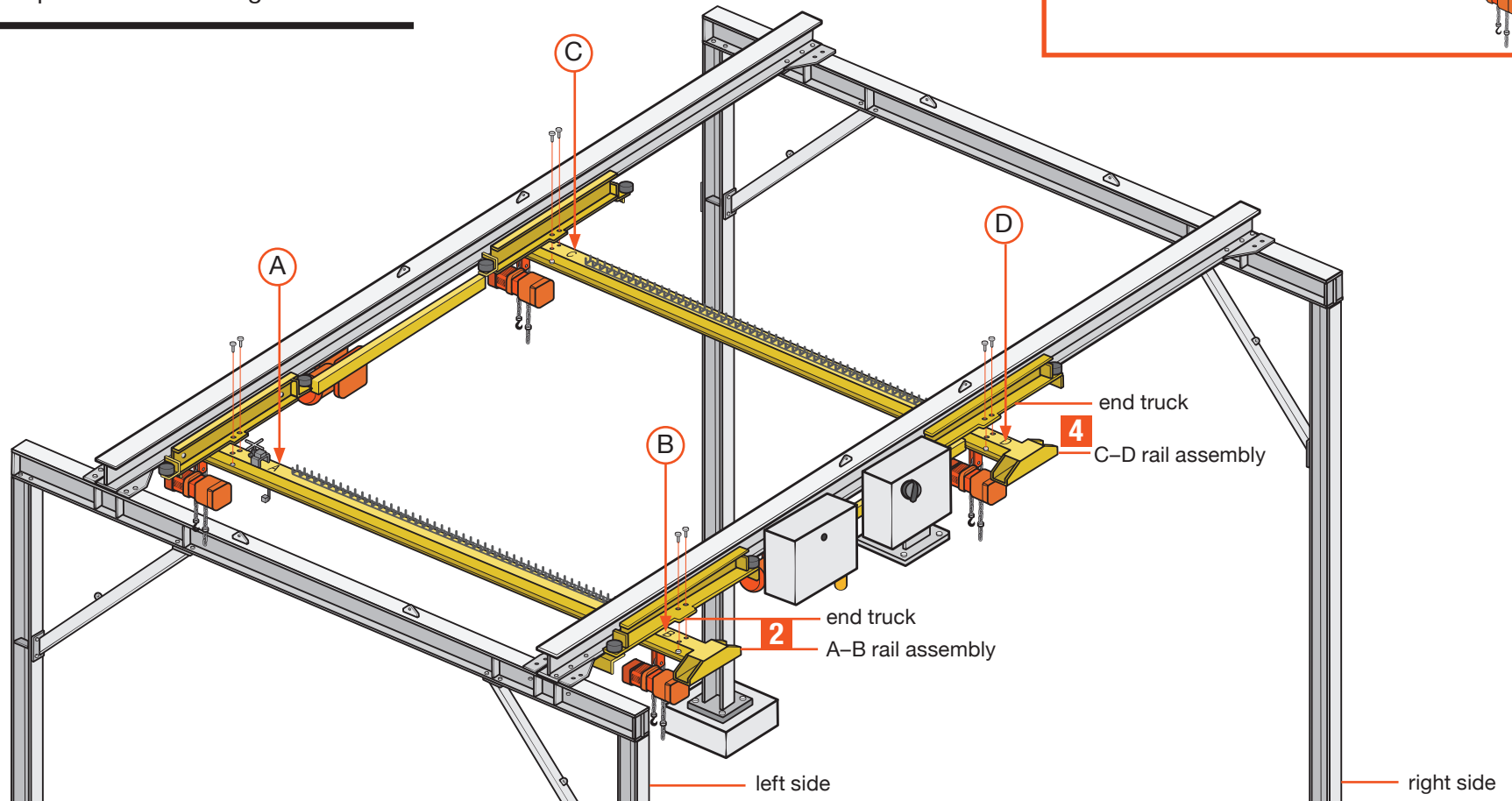
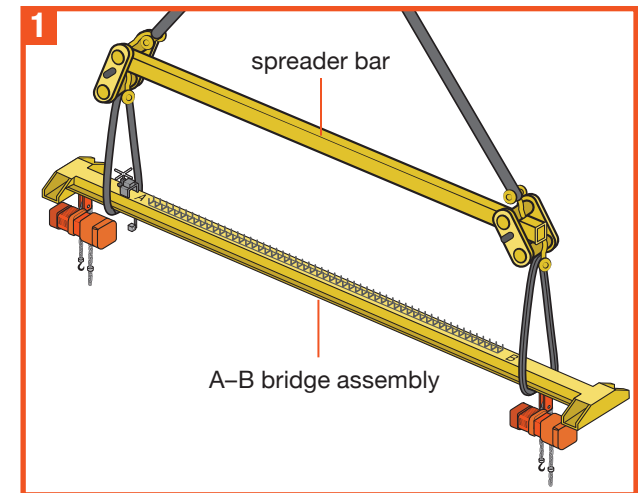
## Installing the Bridges

**Note:** The *hoists* are *preinstalled* on both bridge assemblies.

### Notice

The *bridges* must be oriented and installed according to the *hoist* designations (A-B, C-D). Operating the system when the bridges are not installed properly will damage the system and void the warranty. Do not operate the system if the *hoists* are placed in the wrong orientation.

1. Attach a spreader bar to the *A-B bridge assembly*.
2. Position the *A-B bridge assembly* on the *left side* (when facing the electrical control boxes) under the rail end truck. Align the mounting holes on the *A-B bridge assembly* with the mounting holes on the *end truck*.
3. Using the provided hardware securely fasten.
4. Repeat step 2–3 for the *C-D bridge assembly*.



### 4.2.3: Assemble the Flag Stops and laser Sensor

The **flag stops** set the side motion stops positions for the truck lane and **preparation table**. They are mounted to the top of the rail of the **non-electrical control box rail**.

The **laser sensors** are used to indicate the upper and lower lifting limits. There are two **laser sensors** on each bridge (four total).

#### Attach the flag stops:

1. With the **flag rod** positioned inside, between the **rails**, place the **flag stops** on top of the **rail** without the electrical control boxes.

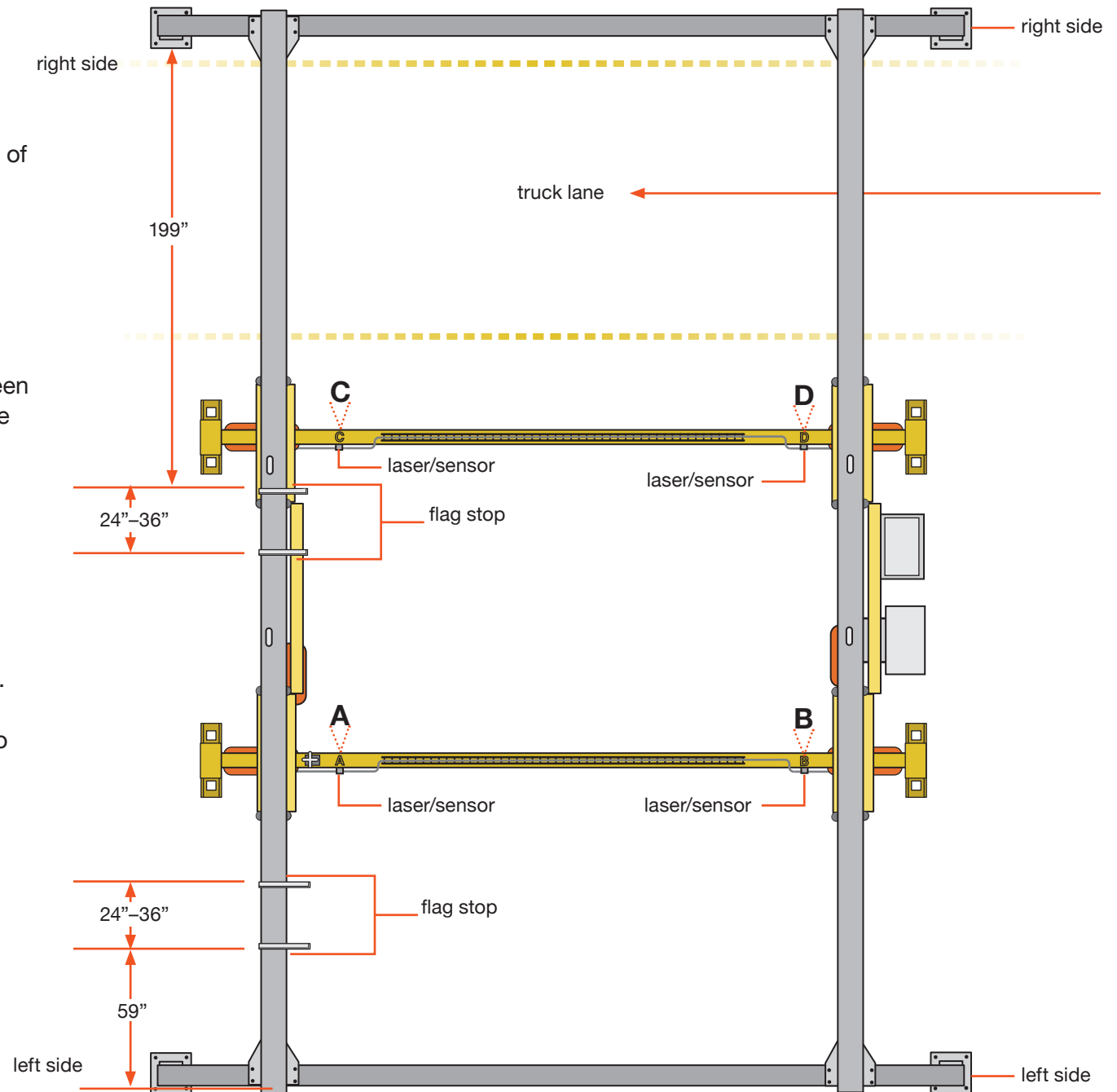
Place the **flag stops** at the following locations:

- **First Flag Stop:** 59" from the left end of the rail.
- **Second flag stop:** 199" from the right end of the Rail.
- **Acceleration/deceleration flags:** 24"–36" in. from the **flag stops**. The two outer flag stops set the stop positions and the two inner flag stops set the deceleration points.

2. Fasten the **flag stops** to the **rail**.

**Important!** The **flag rods** must contact the **cross-limit switch** mounted on the **A-B bridge**.

3. Adjust the position of the **flag stops** if necessary.





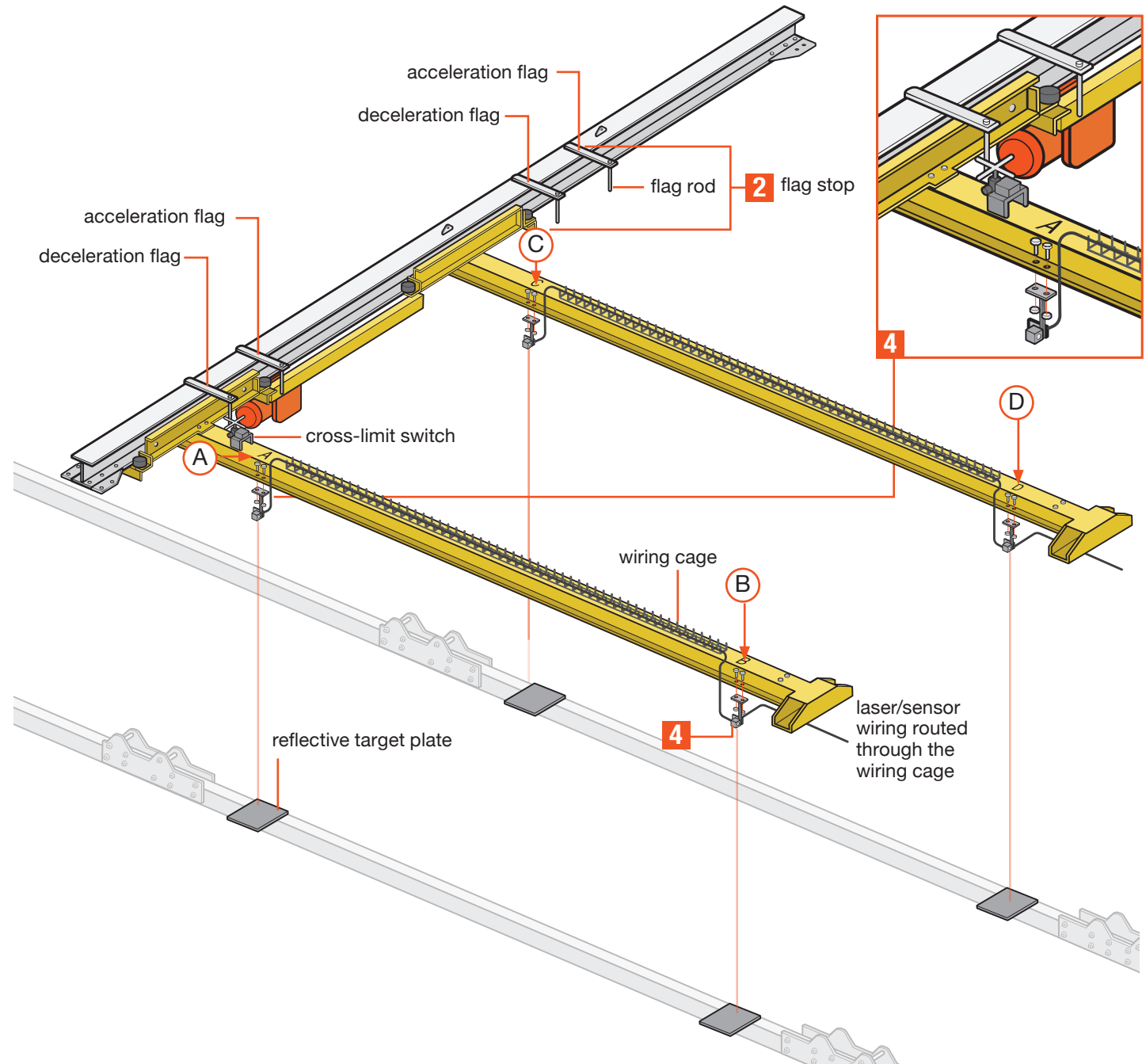
## Attach the Lasers

**Important!** The *laser sensors* are shipped unattached for their protection. **Do not attach the laser sensors until the bridge assemblies have been installed.**

**Note:** The cables for the *lasers* are pre-wired into the electrical enclosures. They have an **M12 connector** that connects to the optical *laser/sensors*. Each is labeled to the corresponding *Hoist A, B, C, D* (A–B and C–D) and will need to be routed through the wiring cages running across the top of the *bridges*.

4. Using the provided hardware, properly orient and mount the *laser sensor brackets* to the bridges.

**Note:** The lasers will target the *reflective target plates* on the *spreader beams* when the system is completely assembled.



#### 4.2.4: Assemble and Install the Scissor Arms

The scissor arms consist of the following sub-assemblies:

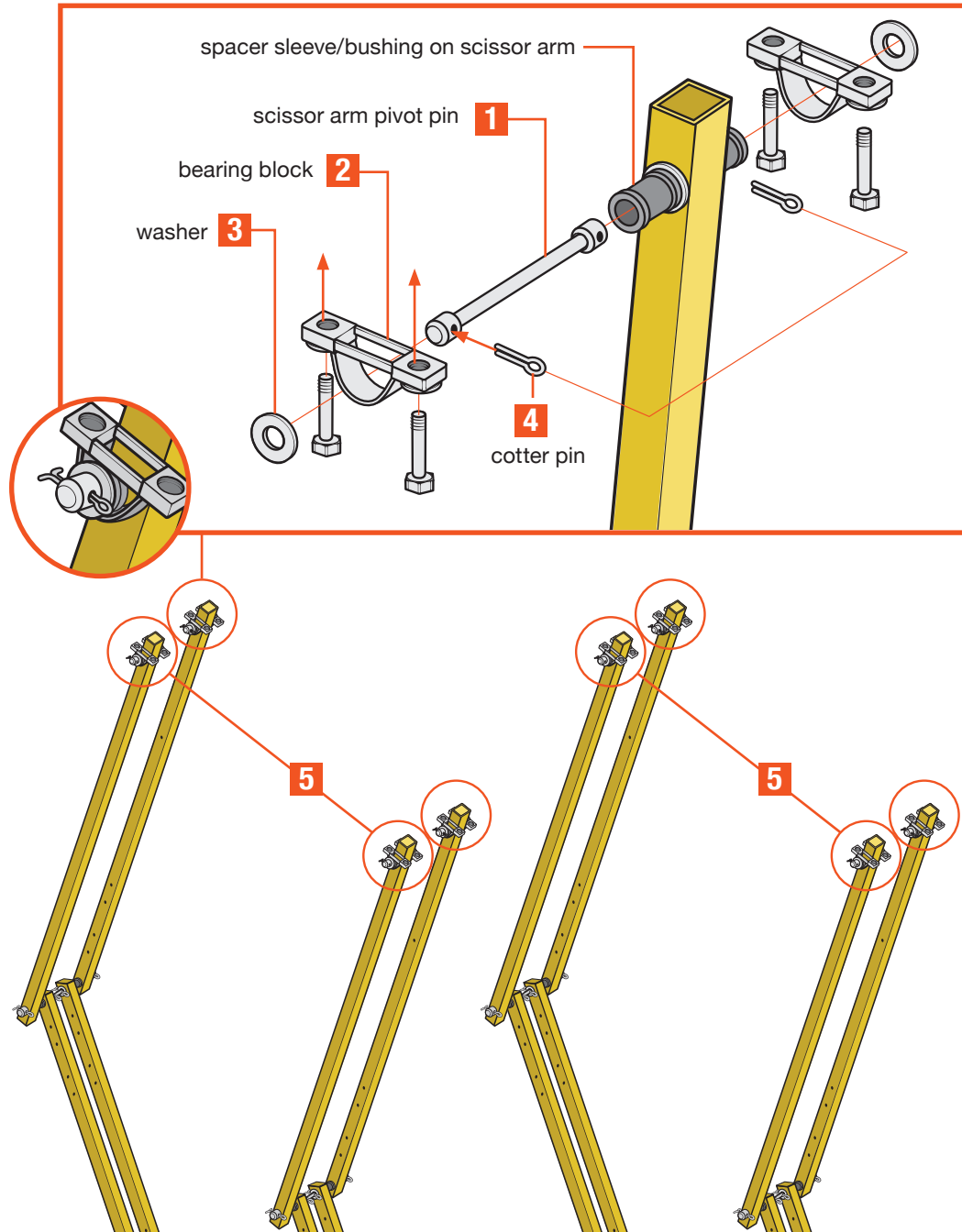
- Bearing blocks
- Scissor arms (wider than brace arms)
- Brace tubes
- Sign plate

This section describes how to assemble the components and install the scissor arms onto the bridges.

##### Attach the Bearing Blocks

**Note:** Each *scissor arm* requires two *bearing blocks* used to attach to the bridge. The *scissor arms* have a *spacer sleeves* and *bushings* pre-installed at the top of the *scissor arm*.

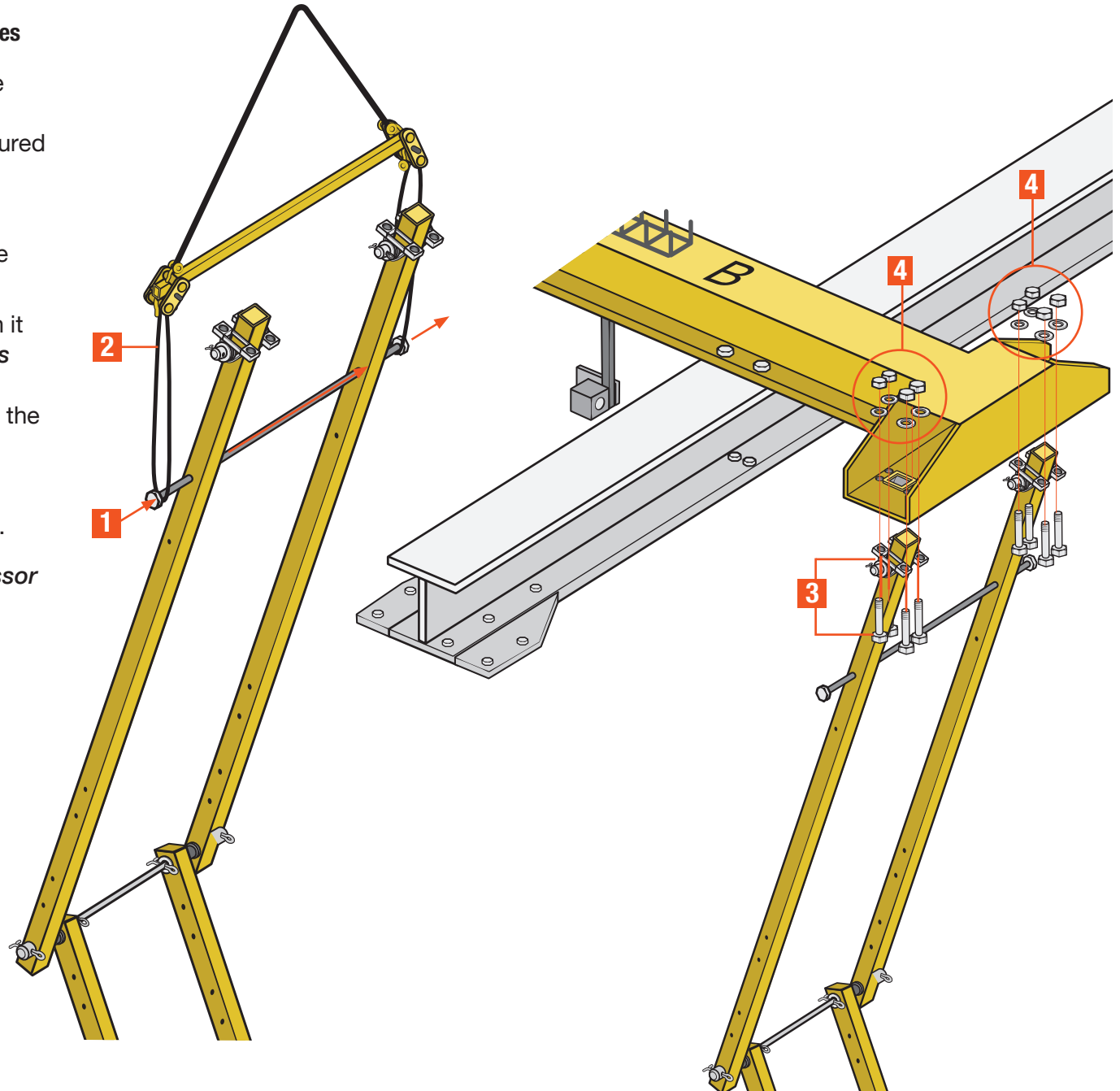
1. Insert a *scissor arm pivot pin* through the *spacer sleeve* and *bushings*.
2. Place a *bearing block* onto both sides of the *scissor arm pivot pin*. **Important!** The *set screw* on the *bearing block* inner-ring should be facing up from the *scissor arm*.
3. Place the provided flat washer onto both sides of the *scissor arm pivot pin*.
4. Insert the provided *cotter pin* through both ends of the *scissor arm pivot pin*. Bend the ends of the *cotter pin* back to secure.
5. Repeat steps 1–4 for the remaining *scissor arms*.





### Attach the Scissor Arm Assemblies to the Bridges

1. Insert a 1" pipe or lifting bar through the lifting holes in the *upper scissor arms*.  
**Important!** Ensure the pipe, or bar is secured properly to avoid slipping.
2. Securely attach the rigging to the pipe.  
**Note:** Riggings vary in type and style, the illustration is for visual purposes only.
3. Lift the *scissor arm assembly* and align it with the *bearing blocks mounting holes* located at the end of each bridge.  
**Note:** the *scissor arms* should fit up into the openings in the *bridge assembly*.
4. Using the supplied hardware, securely fasten the *bearing blocks* to the *bridge*.
5. Repeat steps 1–4 for the remaining *scissor* 3 sets of arm assemblies.



### Attach the Brace Tubes to the Scissor Arms

**Note:** There are three *brace tubes* for each *scissor arm assembly*:

1. Align the mounting holes of the *upper brace tube* mounting plate with the mounting holes of the *upper scissor arms*.
2. Using the provided hardware, securely fasten the shorter upper *brace tube* to the upper *scissor arms*.
3. Attach the longer *middle and lower brace tube* to the *lower scissor arms*.

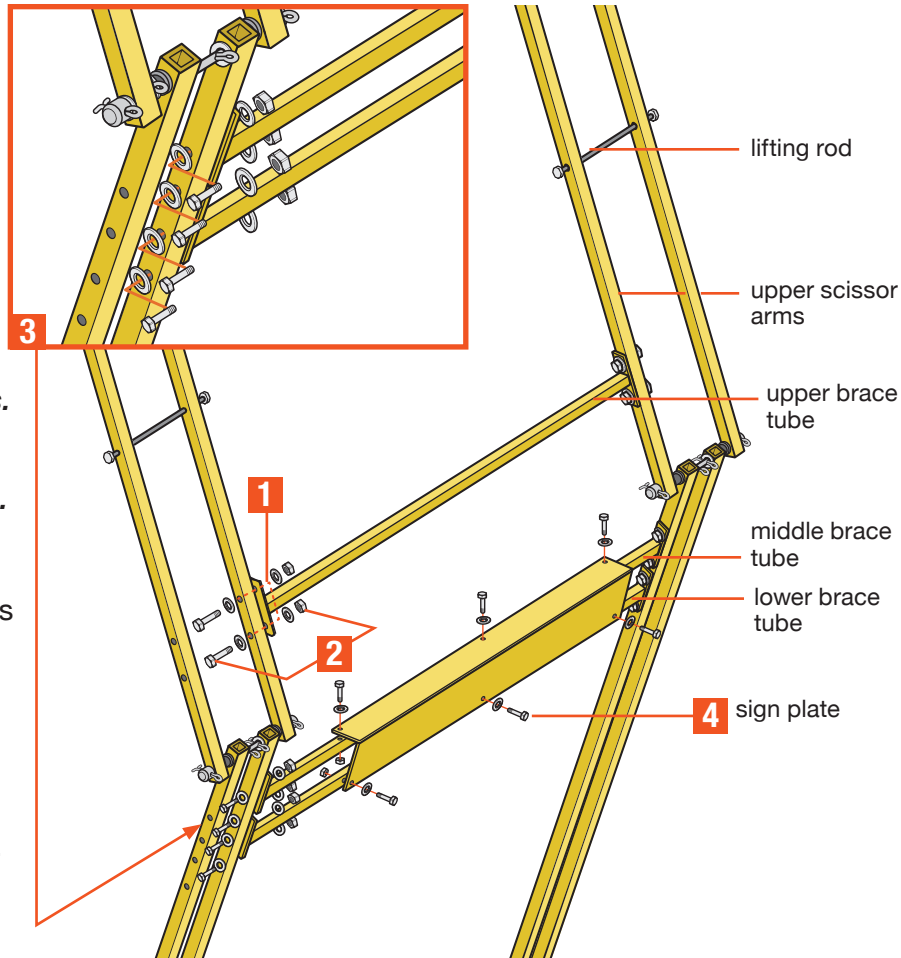
### Attach the Sign Plates

**Note:** Each scissor arm assembly includes one *sign plate*.

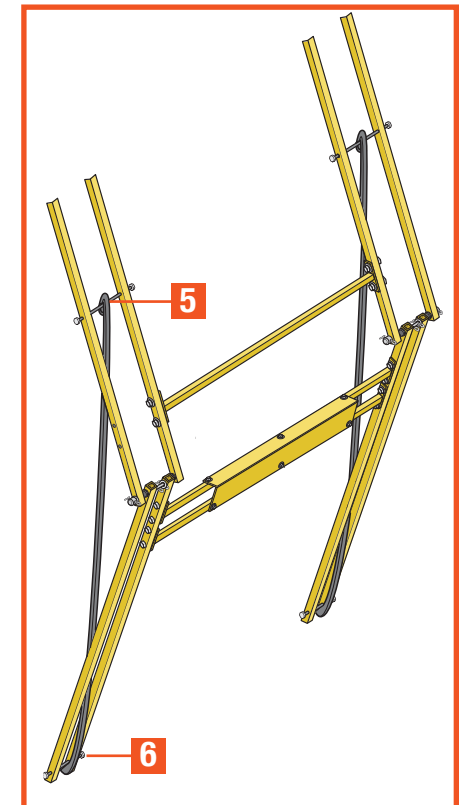
4. Using the provided hardware attach the sign plates to the brace tubes on both scissor arm assemblies.
- Note:** The sign plate should be facing towards the outside of the framework.

### Stabilize the Scissor Arm Assembly

To keep the *scissor arm assembly* in a bent position and out of the way during the spreader beam assembly the *scissor arms* should be stabilized. This makes aligning the lower pivot rod to the *spreader beams* easier.



5. Using the lifting rod and a 10–12 ft. strap. Loop one end of the strap around the lifting rod or pipe, raising the scissor arm assembly so that the elbow bends outward.
6. Insert an additional lifting rod or pipe in the 1" hole in the bottom of the lower scissor arms, running it through the loop on the opposite end of the strap.





#### 4.2.5: Install the Spreader Beam Assembly

The spreader beam assembly is used to support the tarp during the transfer from the preparation table to the vehicle. The spreader beams assembly includes the following sub-assemblies:

- Drape beams
- Lifting beams
- Connection posts with support brackets
- Braces

#### Assemble the Drape Beams

**Important!** The drape beams should be assembled under their respective hoist as the hoist is used to attach the *spreader beams* to the *scissor arms*

**Note:** There are *two drape beam assemblies*, each consisting of a left, right, and center section.

1. On a flat surface, layout the three *drape beam* sections.

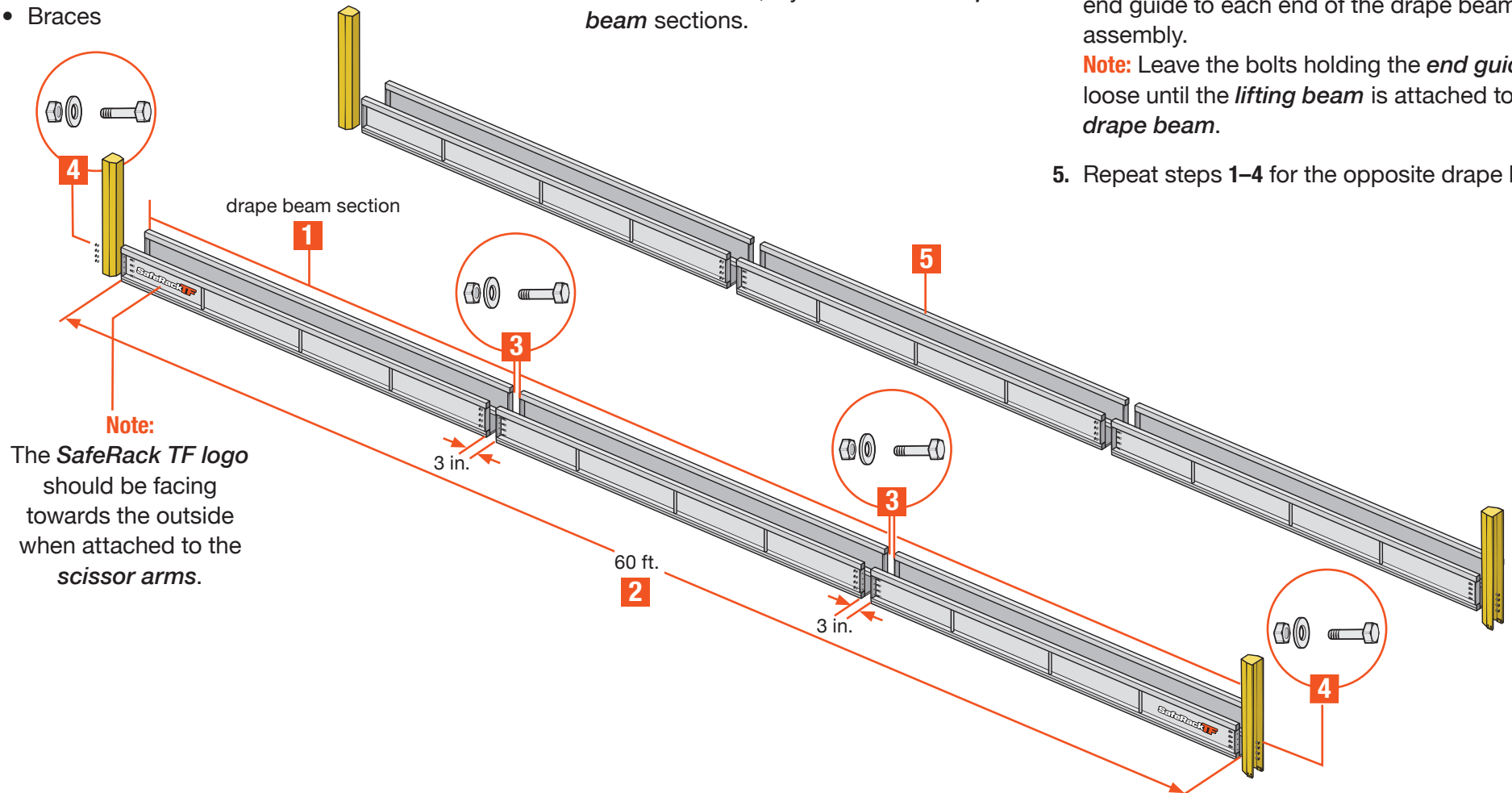
2. Arrange the three *drape beam* sections in a straight line along the 60 ft. length.

3. Using the provided hardware, attach the three sections together. Check the alignment and, if necessary, use shims to align the sections straight within 3" along the 60 ft length.

4. Using the provided hardware, attach an end guide to each end of the drape beam assembly.

**Note:** Leave the bolts holding the *end guide* loose until the *lifting beam* is attached to the *drape beam*.

5. Repeat steps 1–4 for the opposite drape beam.



## Attach the Lifting Beam Sections

**Note:** There are two *lifting beam assemblies*, each consists of three identical sections.

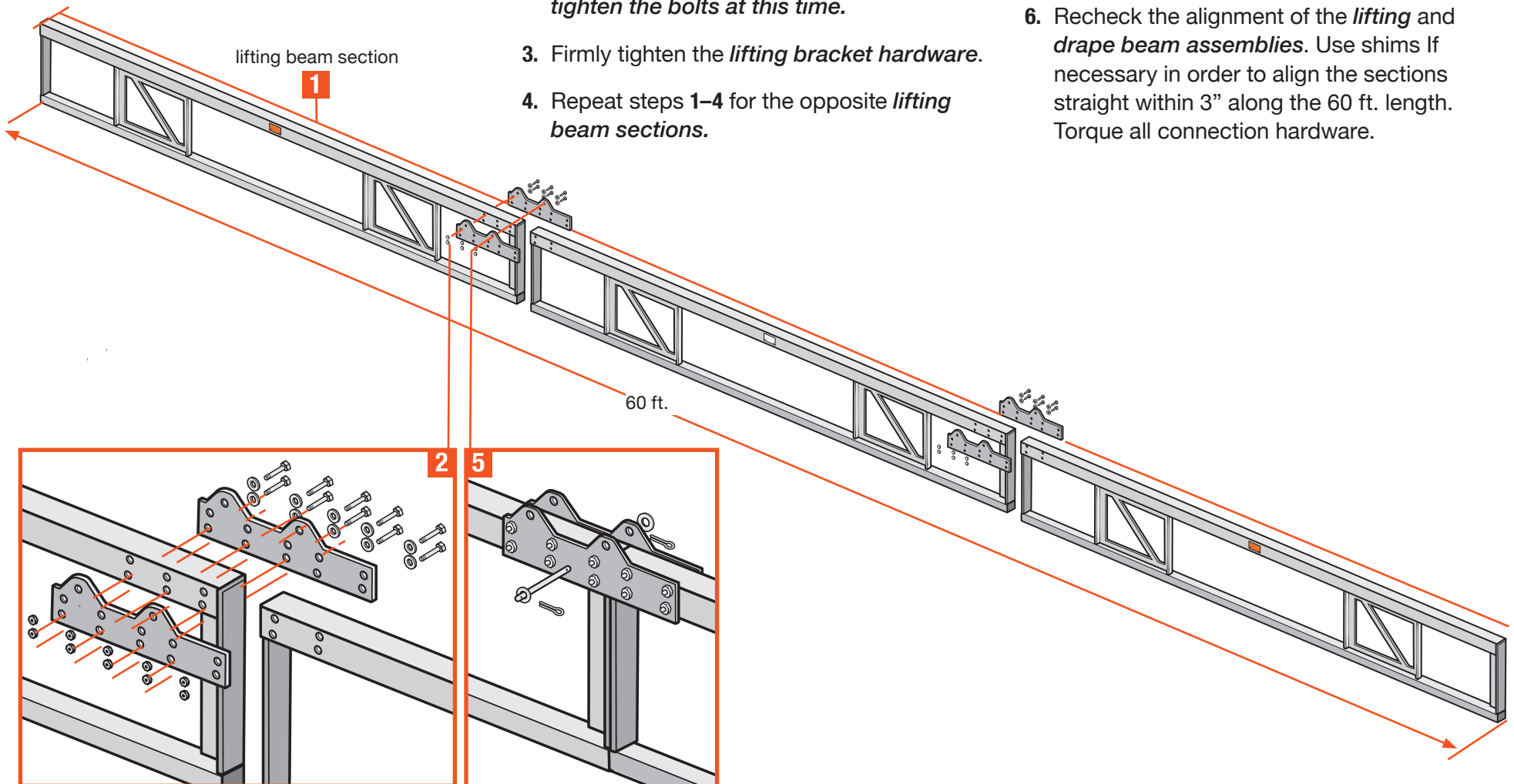
1. On a flat surface, arrange the three *lifting beam* sections along a straight 60 ft. line. Align the section straight within 3" along the 60 ft length. If necessary, use shims to align the sections.

**Note:** Safety warning labels are on each side of the *lifting beam sections*. The side with these warning labels that are lower than the opposite side should face outward to the system. Ensure the sections are oriented so the labels on each side match.

2. With the provided hardware, connect the sections using the lifting brackets. **Do not tighten the bolts at this time.**
3. Firmly tighten the *lifting bracket hardware*.
4. Repeat steps 1–4 for the opposite *lifting beam sections*.

## Attach the Lifting Beams to the Drape Beams

5. On each *lifting bracket*, insert a *lifting pin* through the top, middle hole of the *lifting bracket*. Place a washer on each end and secure with two *cotter pins*.  
**Important!** The holes towards the outside of the *lifting bracket* are for *scissor arm pivot pins*. Do not install at this point.
6. Recheck the alignment of the *lifting* and *drape beam assemblies*. Use shims if necessary in order to align the sections straight within 3" along the 60 ft. length. Torque all connection hardware.





7. Attach the proper rigging to the *lifting pins* on the *lifting bracket*.

**Note:** If the *spreader beam assemblies* are assembled directly under the hoists, the *Hoists* can be lowered using the **MANUAL** function on the *control box*.

8. Using the hoists or rigging, position the *lifting beam* between the *end guides* on the *drape beam*.

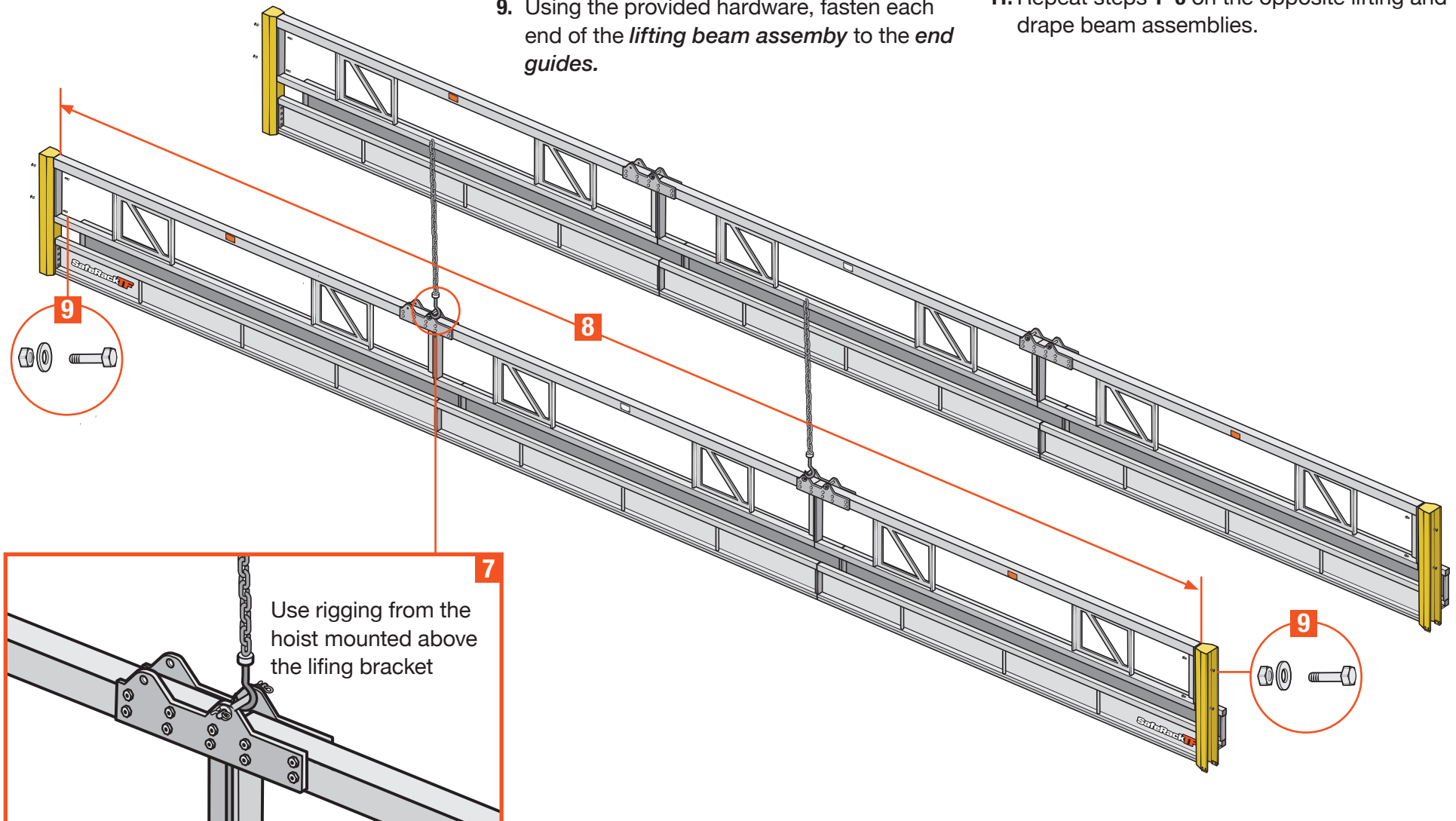
**Note:** The entire *spreader beam* can be lifted for the *scissor arms* connection later in the process.

9. Using the provided hardware, fasten each end of the *lifting beam assembly* to the *end guides*.

**Important!** Ensure the final assembly is properly supported and will not topple over. **Do not stand on the Drape Beam.**

10. Ensure the bolts are firmly secured on the *lifting beam*, *drape beam* and *end guides*.

11. Repeat steps 1–6 on the opposite lifting and drape beam assemblies.



## Attach the Connector Posts, Braces, and Support Brackets

The *connector post* assembly consists of:

- Connector posts (6)
- Braces (5)
- Support brackets (12)

1. Align the *connector post* holes with the mounting holes on the *lifting* and *drape beams*.

**Note:** The mounting holes on the base of the *connector post* are identical to the mounting holes used for the tarp clamps. Check that you are *not using the tarp clamp holes*.

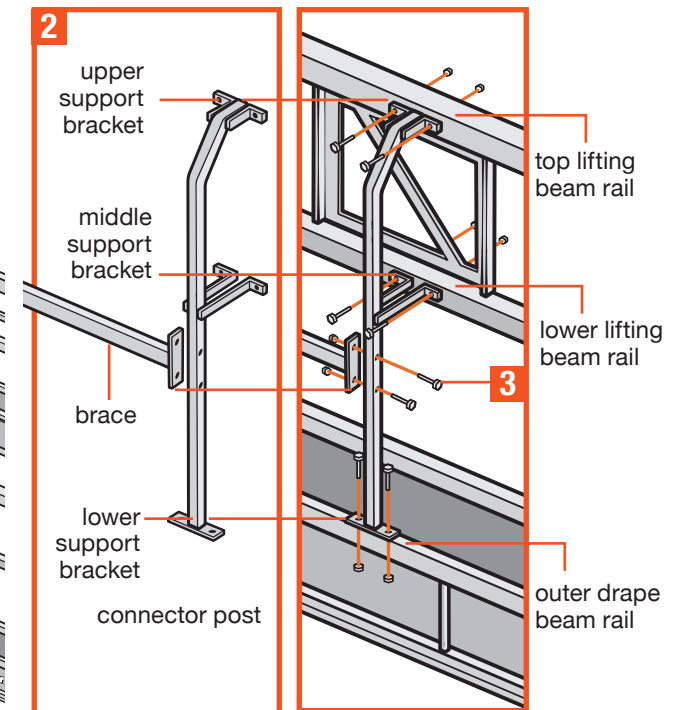
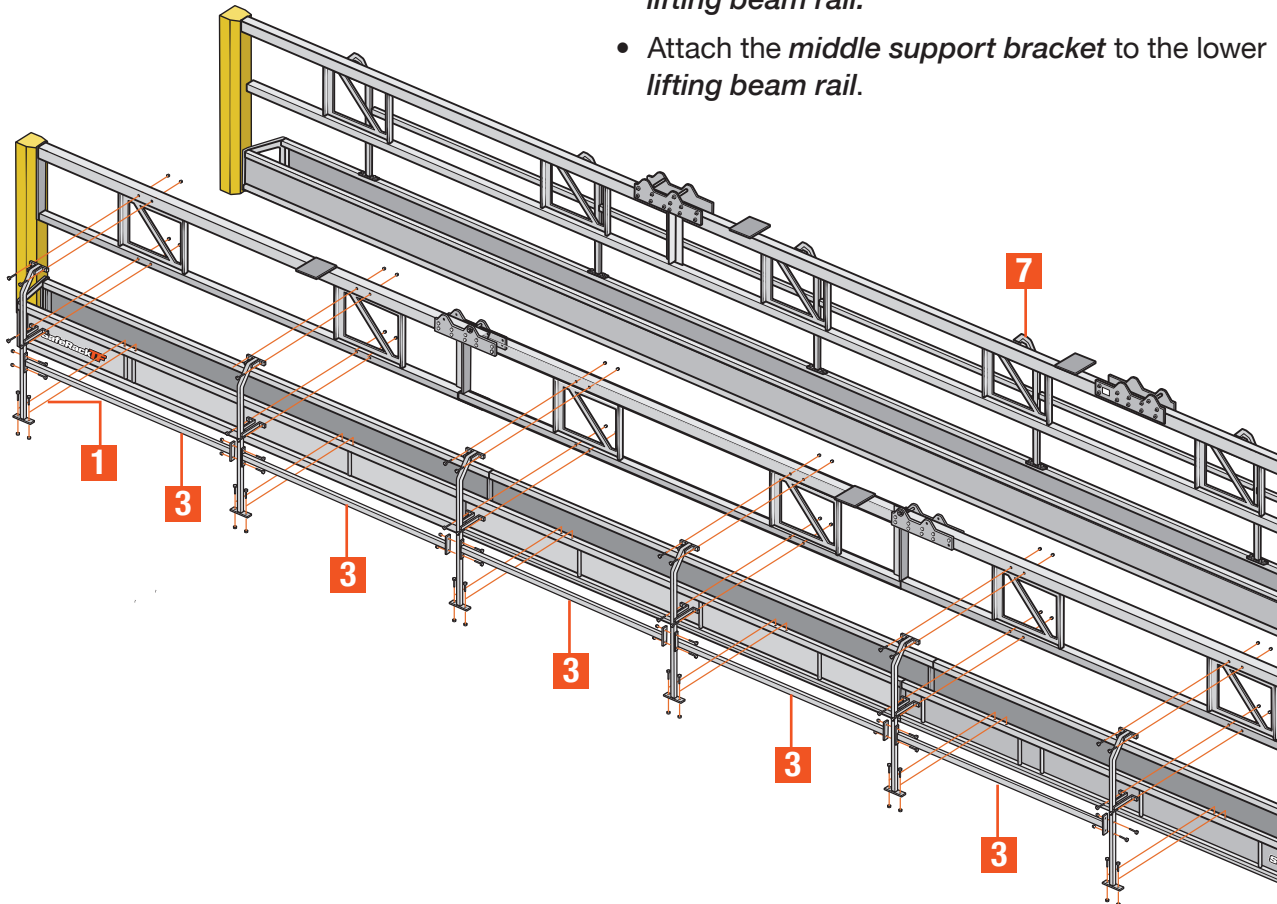
**Note:** Do not tighten the *connector posts, braces* and *bracket hardware* until they are *all* attached.

2. Each *connector post* includes three *support brackets* (upper, middle and lower). Using the provided hardware:

- Attach the *upper* support bracket to the *top lifting beam rail*.
- Attach the *middle support bracket* to the lower *lifting beam rail*.

- Attach the *bottom support bracket* to the *outer drape beam rail*.

- Using the provided hardware, attach the braces between each of the *connector posts*.
- Recheck the alignment of the *lifting and drape beam assemblies*. If necessary, use shims to align the sections.
- Firmly tighten all *posts, braces, and support brackets* hardware at this time.
- Repeat steps 1–6 for the opposite set of connector posts.



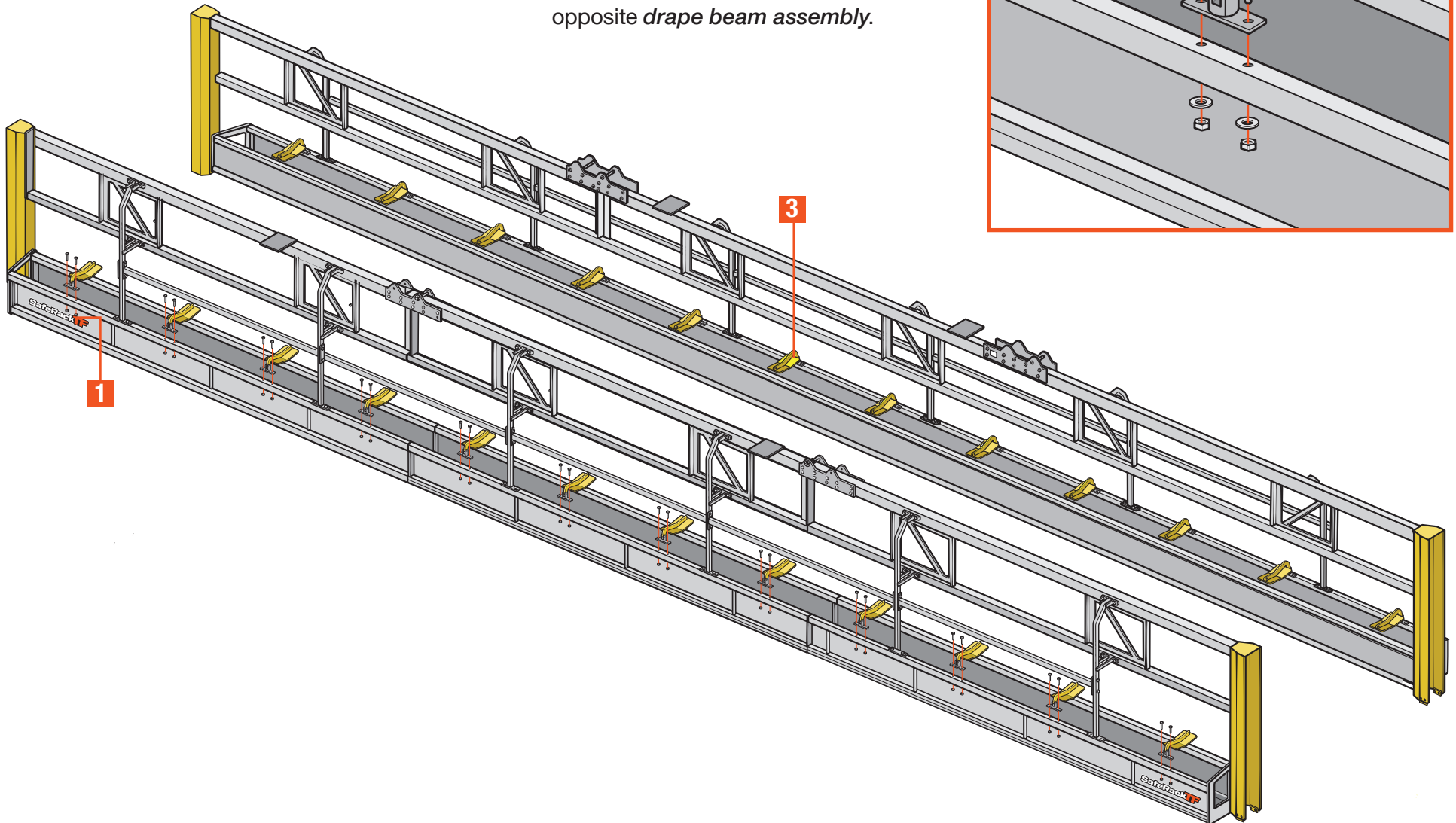


### Attach the Tarp Clamps to the Spreader Beam Assembly

There are twelve *tarp clamps* per *spreader beam assembly*. The spreader beam assembly has additional tarp clamp location options if desired.

**Note:** The configuration shown provides the most flexibility for loads up to a 52 ft. length.

1. Place the *tarp clamps* over the mounting holes on the *outer drape beam rail*.
2. Using the provided hardware attach the *tarp clamp base* to the *outer drape beam rail*. Securely fasten.
3. Install the remaining *tarp clamps* on the opposite *drape beam assembly*.



#### 4.2.6 Connect the Cables

### WARNING



Exposure to high voltage may result in electrical shock and could cause serious injury or death. Ensure the power is turned off and lock-out procedures are followed when power is not needed during installation. Only qualified electricians should have access to the power supply.

The following section describes the routing and connection of the *power*, *hoist*, *control box*, and *cross-limit switch cables*.

**Note:** All cables should:

- Be carefully routed and secured with wire ties to the *bridge wire cage*, *columns* or *rail flanges*.
- Must be able to move freely during operation to avoid becoming tangled or caught on objects during operation.

#### 1. Power Cable:

**Important!** Turn the power supply **off** before connecting the power cable to the system.

**Note:** A *junction box* is pre-installed for termination from shop power supply disconnect. This is located at the D hoist end of the B-D rail.

- a. Connect the power supply to the to the *junction box*.

#### 2. Hoist Cables:

**Note:** Each *hoist* is labeled *A, B, C & D* and has a pre-wired cable with a multi-pin connect at the end of each cable.

- a. Starting with the *hoists*, route the cable through the *bridge wire cage* across to the bridge and over to the electrical enclosures.
- b. Connect to the designated multi-pin outlet on the electrical *control boxes* (or receptacle). For example, hoist “A” plug to electrical enclosure outlet designated “A”. B to B and so on.

#### 3. Control Box Cable:

Is hard wired into the control panel with a multi-pin plug on the opposite end. and will be set a side in a safe location.

**Note:** At this stage, the *control box* (operations stations) is not yet mounted to the *guide bollard mounting plate*.

- a. Starting at the *control box panel*, run the plug end of the cable up the column closest to the operators station.
- b. Run the cable from the column to the rail.
- c. Connect the cable to the *electrical control boxes* or receptacle.

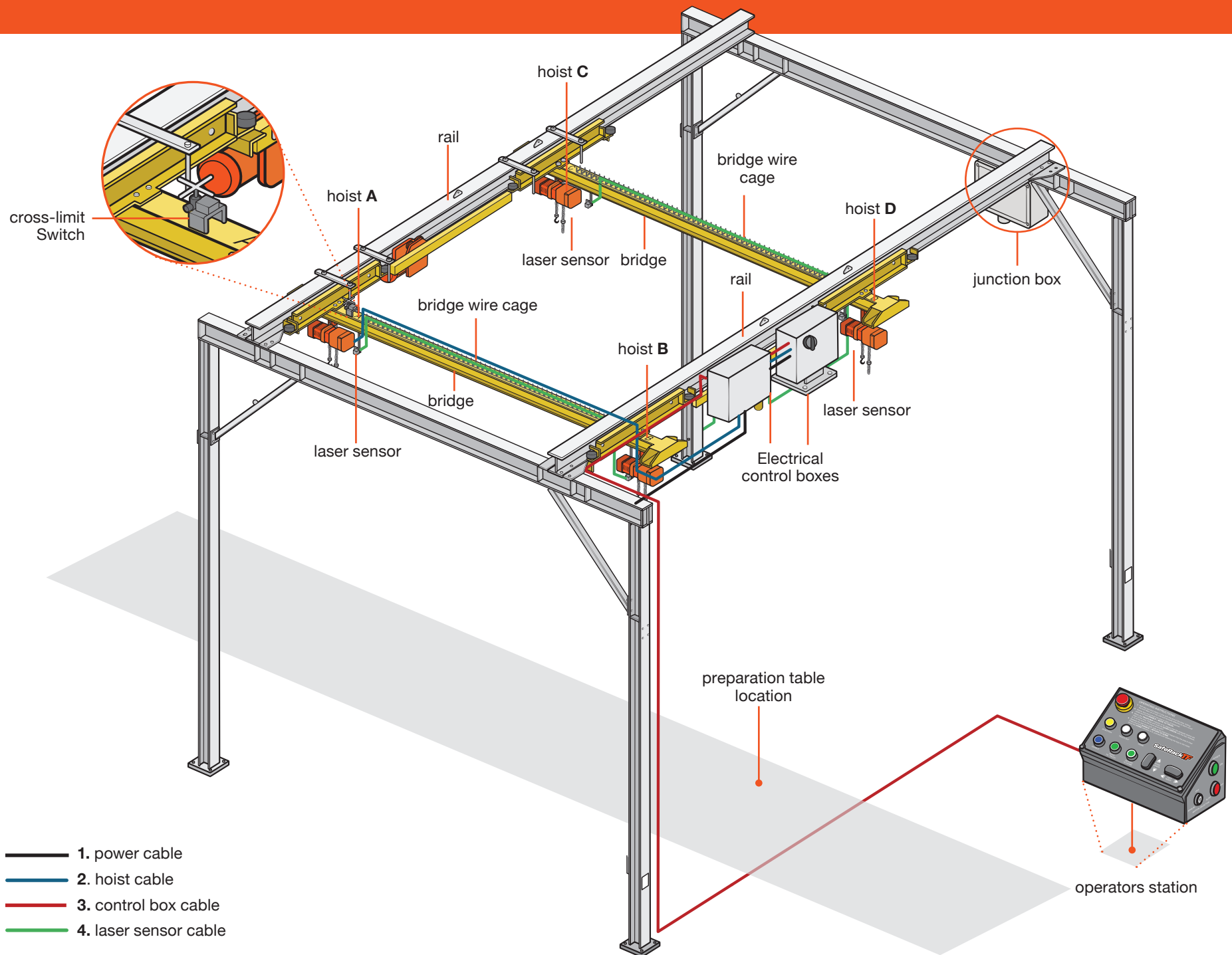
#### 4. Laser (Optical Sensor) Cable:

**Important!** Each cable is label for it's corresponding hoist. Ensure that cable “A” is ran to the sensor at hoist “A”. Cable “B” to sensor at hoist “B” & so on for “C” & :”D”.

- a. Starting at the *electrical enclosure*, route the cable through the *bridge wire cage*.
- b. Continue routing the cable across the bridge to the corresponding *sensor*.

#### 5. Cross-limit Switch Cable:

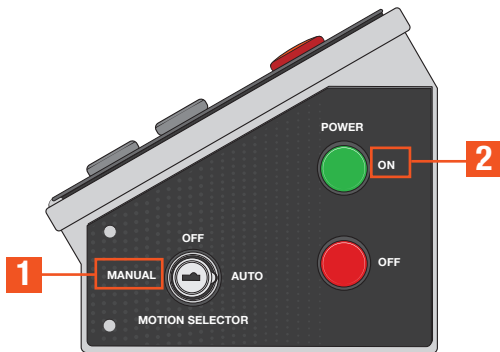
Mount the pre-wired *cross-limit switch* to the top of the bridge above *hoist A*. Ensure the arms on the *cross-limit switch* connect with the *flag stops*.



#### 4.2.7: Attach the Spreader Beams to the Scissor Arms

**Note:** The *spreader beam assembly* and *drape beam tarp trough* must be oriented facing *out* from the system (see **Attach the Tarp Clamps to the Spreader Beam Assembly**, page 27).

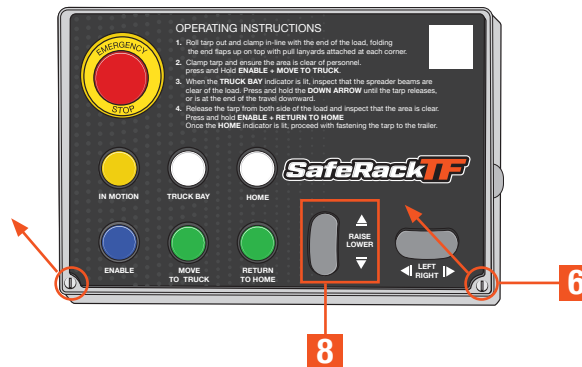
1. Place the *motion selector switch* to manual & temporarily turn power **ON**.
2. Press enable & the *down button* to lower the hoists to the lifting pins on the *spreader beams* and attached the *hoist hooks*.



3. *Raise* the spreader beams until they are close to the *scissor arm connector plates*.
4. Carefully insert the *scissor arm pivot rods* through the lifting beam *connector plates*. Secure each pivot rod with a *cotter pin*.  
Once connected *raise* the spreader beam enough to remove the straps keeping the scissor arms stabilized.

**Important!** Do not lower the spreaders beams before removing the straps as the scissor arms are not rated to support the weight of the spreader beams.

5. The hoists may require leveling. Follow steps 6 through 10 to level the spreader beam.
6. Loosen the *two lower, corner screws* on the control box.
7. Lift the control panel exposing the *hoist selector switch*. Turn the hoist selector switch to the hoist (*A, B, C* or *D*) that needs adjustment.



8. Using the *raise/lower toggle* move the hoist *up* or *down* as needed to level the spreader beam. Repeat until both spreader beams are level within 6 inches of each other.

9. After the *spreader beams* are level and secure, turn the hoist selector switch back to *ALL* and replace the control box cover.

**Important!** Do not remove the hoist hooks from the *spreader beams*. The scissor arms are not rated to support the weight of the spreader beams.

10. Using the *raise/lower toggle* on the control box, *lower* the spreader beams until they contact the floor.

**Important!** the power supply should be turned **OFF** after attaching and testing the spreader beam upper and lower limits.

#### ⚠ WARNING

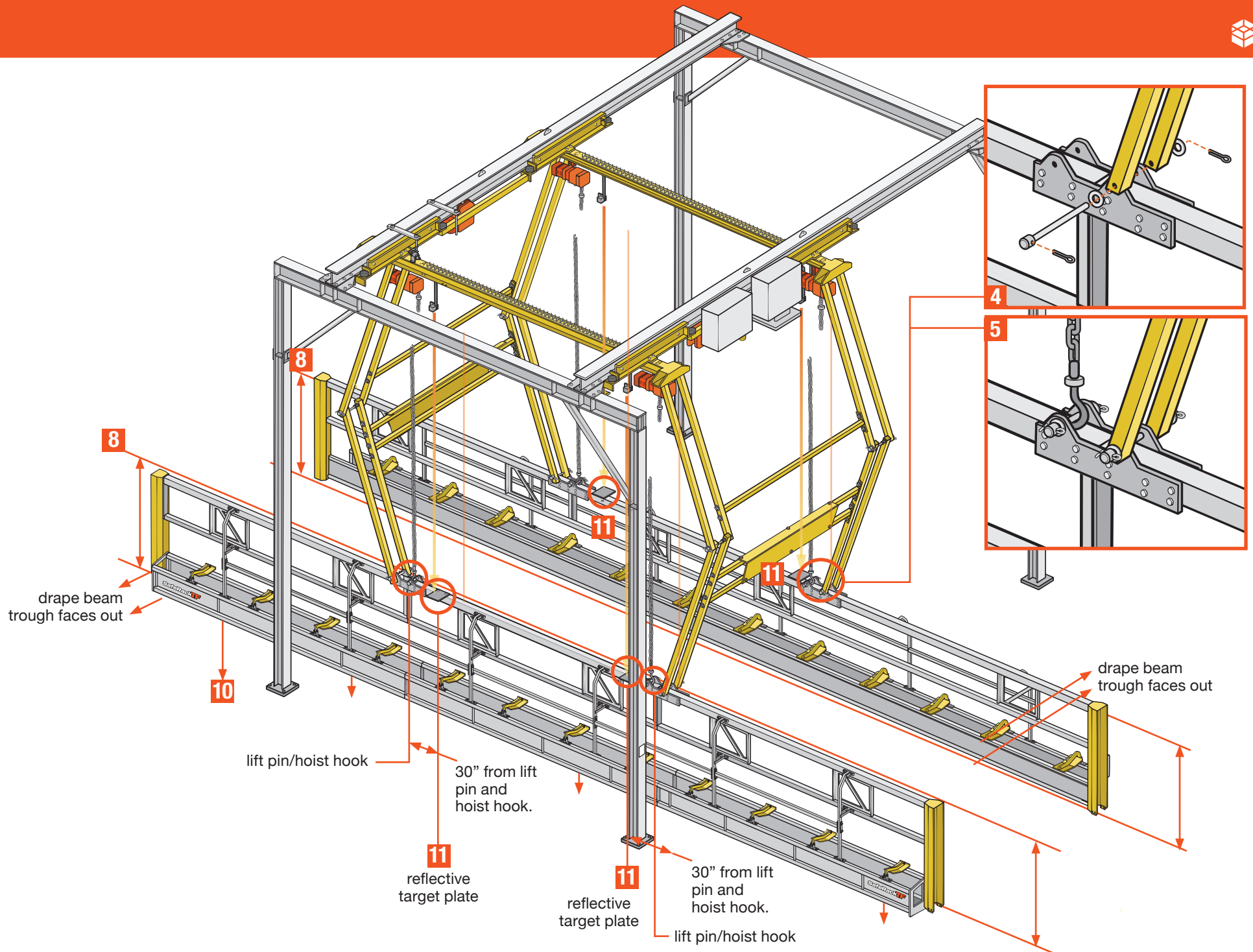


The laser sensors include class 2 laser beams

- Do not stare into the laser beam.
- Avoid exposure.
- Unplug connector to the extinguish laser beam.

11. Using  $\frac{1}{4}$ " *self-tapping screws*, mount the four *reflective target plates* to the spreader beam so that the lasers mounted above on the bridge will target the center of the plates.

**Note:** The center of the plate should be approximately 30" from the lift pin / hoist hook and flush to the inside edge of the *spreader beam*.



#### 4.2.8: Check the Spreader Beam Upper and Lower Limits

##### ⚠ WARNING

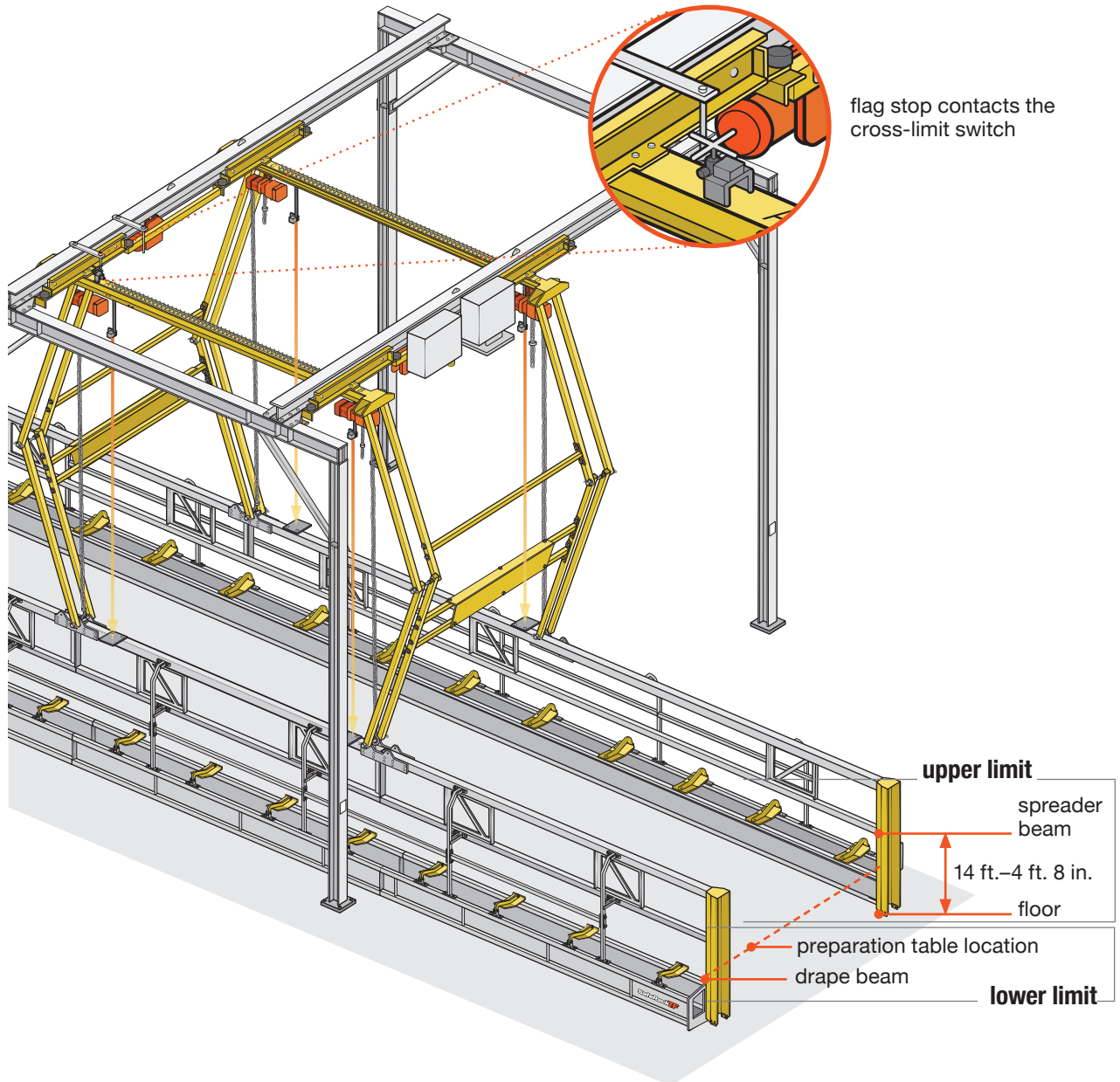


- Movement of the machine may crush, or impact, personnel in the work area and cause serious injury or death.
- Never stand or work under any load including the spreader beams.
- Ensure there are no personnel under spreader beams before proceeding.

##### Upper and Lower Spreader Beam Limit Specifications

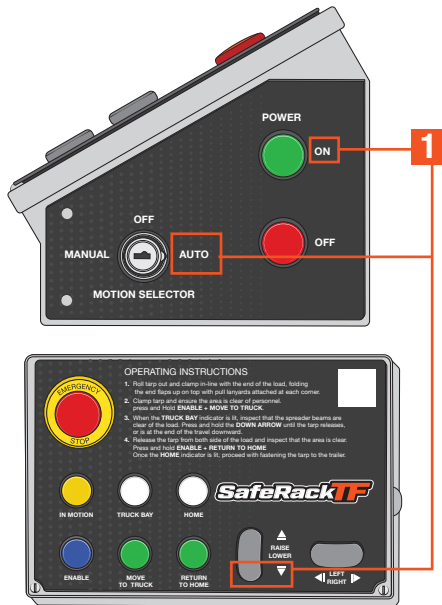
|                     |                                                                    |
|---------------------|--------------------------------------------------------------------|
| <b>Upper limit</b>  | floor to the bottom of the spreader is 14 ft.–4 ft. 8 in.          |
| <b>Lower limit:</b> | drape is level with the preparation table by plus or minus 3–4 in. |

**Important!** The *control box hoist selector switch* must be set to **ALL** before checking the *spreader beam* upper and lower limits review *section 4.2.5 attach the spreader beams to the scissor arms*.





## To check the upper and lower limits:

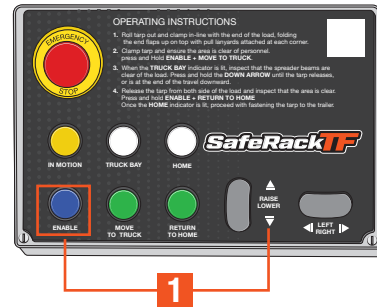


1. With the power **ON** and the motion selector switch set to **AUTO**, raise the spreader beams to the upper limit using the **raise/lower toggle** on the control box.

**Note:** Once the system is placed in **AUTO** mode and raised or lowered, it should self-level. Do not attempt this step if you have not yet installed reflective targets plates described in step 11, page 30.

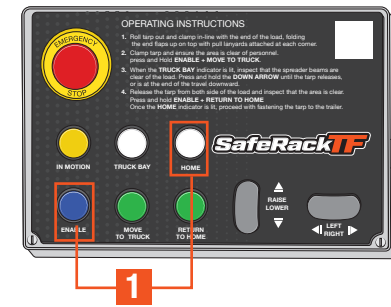
2. Once the hoists stop, check the spreader beam **lower limit** by pressing the **DOWN** button.

## To check the lower limit:



1. Press the **ENABLE** button and **DOWN** button on the control box simultaneously.
2. Lower the spreader beams until the hoists stop. Check that the top of the drape beam is approx. 42" above the floor.

## To check the upper limit:



1. Press the **ENABLE** button and **UP** button on the control box simultaneously. Raise the spreader beam until it stops & check that the bottom of the spreader beam is 14 ft to 14 ft 8 inches off the floor.

#### 4.2.9: Install the Guide Bollards

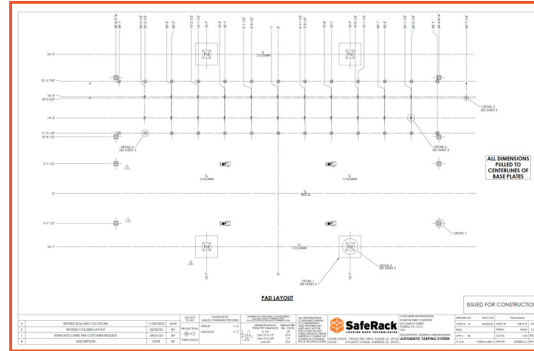
The *guide bollards* help align and support the *spreader beams* while in the lower limit position(s).

To layout the bollard locations:

1. Locate the *center line* of the truck lane

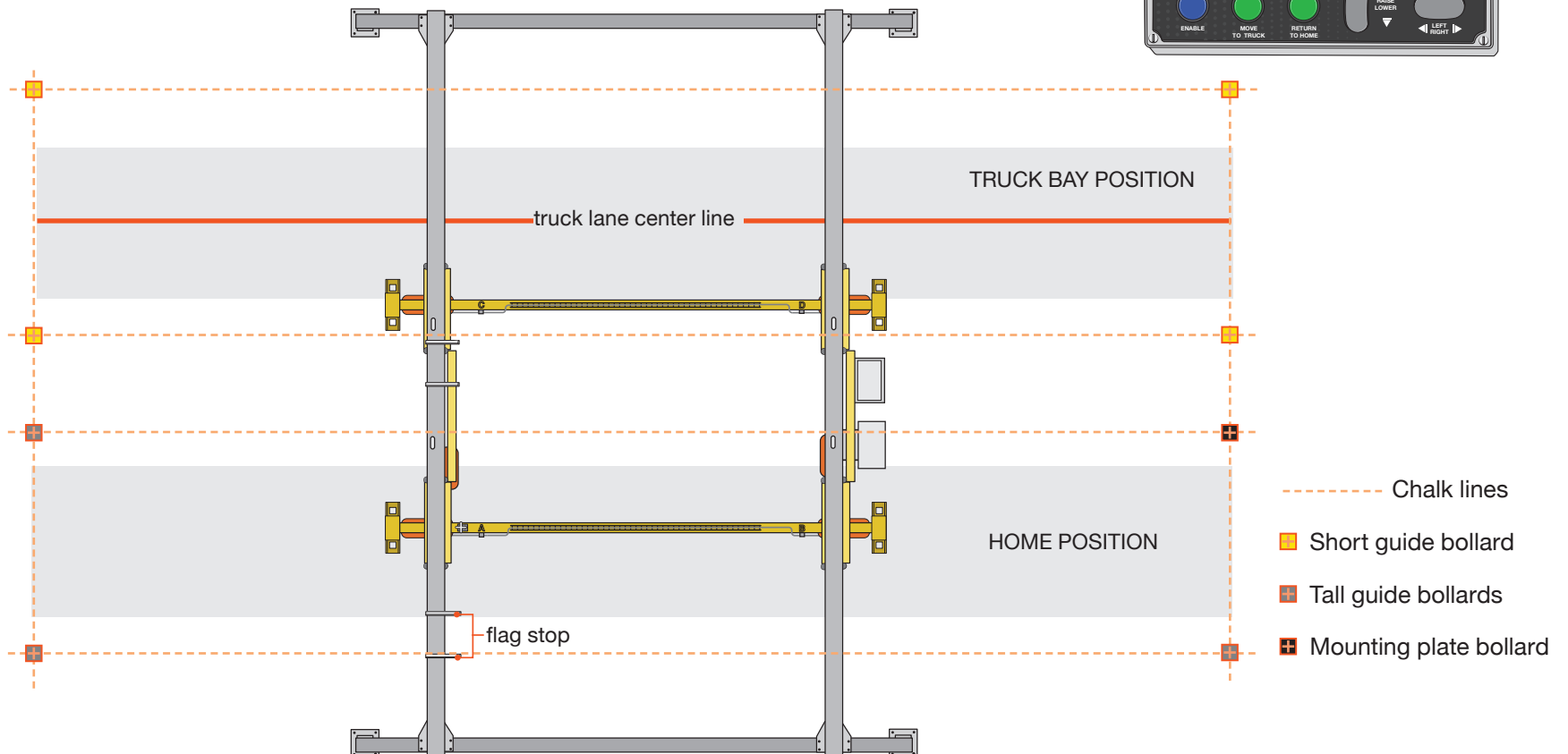
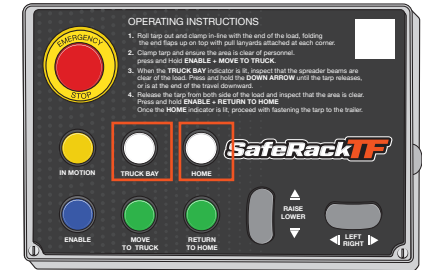
**Note:** If a dedicated building is being used it is recommended to find the center of the two bay doors, this center line should be parallel to the system.

2. Using the *general arrangement drawing sheet 2*, snap chalk lines for the *guide bollard* locations (see appendix a).



3. Using the control box, move the system to the *HOME* and *TRUCK BAY* position. Check the *guide bollard* layout.

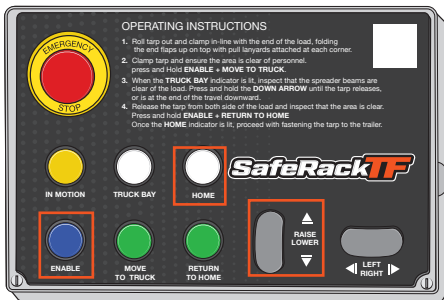
**Note:** During this process, check that the *cross-limit switch* contacts the *flag stop*. As the *cross-limit switch* connects the first *flag stop* you should see a deceleration in the traverse speed until the system comes to a stop.



- Do not anchor the bollards until these positions have been verified. The flag stops should be adjusted for the best alignment of the **end guides** to the **guide bollards**.

**Note:**

- When moving to either the **HOME** or **TRUCK BAY** positions the spreader beams will first rise to the upper limit.
- When moving to the **HOME** position the system will raise, move to the home position and lower as long as the **ENABLE** and **HOME** buttons are held.

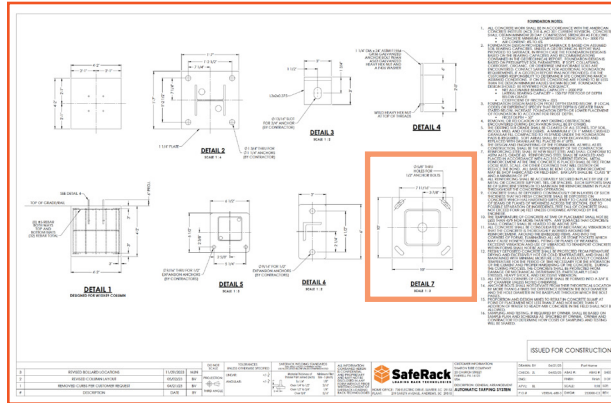


- After the **spreader beams** reach the truck bay position, **lower** the **spreader beams** to the lower limit using the **Raise/Lower Toggle** on the control box.

**Note:** If adjustment is needed, move the **flag stops** until you have the best alignment of the **end guide** to the four **guide bollards** at both the **HOME** and **TRUCK BAY** positions. This does not need to be exact but should allow the tapered bollard cap to easily enter the **end guide** channel.

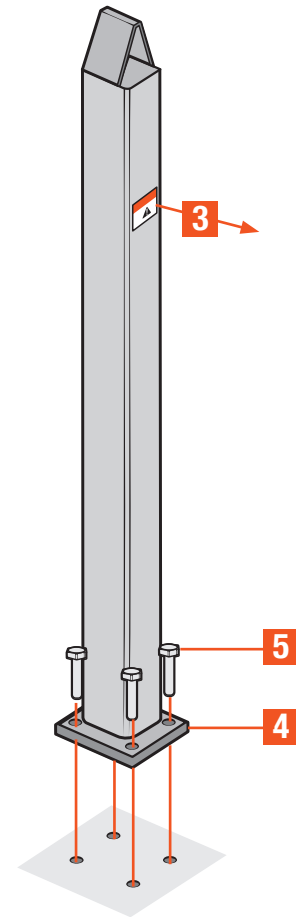
### Install the Guide Bollards

- Drill the holes for the anchor bolts,
- Insert the anchor bolts into the drilled holes.  
(see **appendix a, general arrangement drawing, sheet 3, detail 7**).



- Position each **guide bollard** so the safety warning labels face outwards and are visible to personnel working in the area.
- Place the **guide bollards** over **anchor bolt holes** according to the following bollard size and location.
  - Short guide bollards:** place over the anchor bolts around the **truck position**.
  - Tall guide bollards:** place over the anchor bolts around **preparation table**.
  - Mounting plate bollard:** Install the control box **mounting plate** to the bollard at the corner of the preparation table closest to the truck bay and entrance.

- Place the **guide bollards bolts into the bolts holes**, and firmly tighten the **guide bollards bolts**. Use shims if necessary to plumb the bollards vertically.



#### 4.2.10: Assemble the Preparation Table

This section will explain how to assemble these components and install the *preparation table*

The preparation table includes the following components:

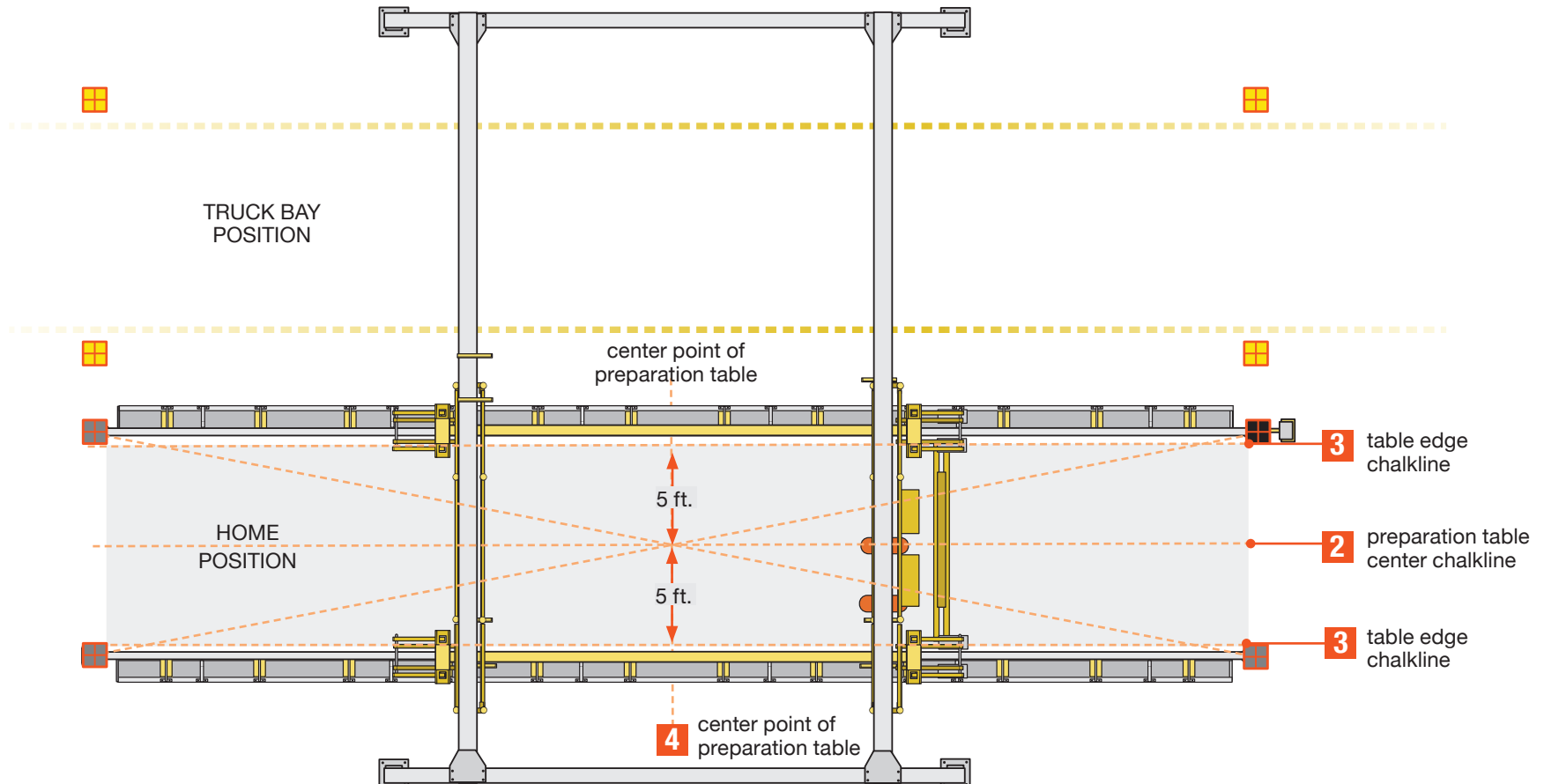
- Table posts (26)
- Table post connection rails (24)
- Brace rails (52)
- Table tops (12)

#### Layout the Table Post Locations

1. Establish the horizontal center line for the preparation table by snapping a chalkline from the corners of the guide bollards
2. Snap another chalk line perpendicular to the horizontal lines marking the center point of the *preparation table*.

**Important!** When the system is in the *HOME* position, the *preparation table* should be parallel and centered equally between the *spreader beams*.

3. The side edges of the *preparation table* are established by snapping chalklines 5 ft. from the sides of the center point.
4. Begin to assemble the table sections starting at the established center point.





5. Begin by installing four posts to one table top.

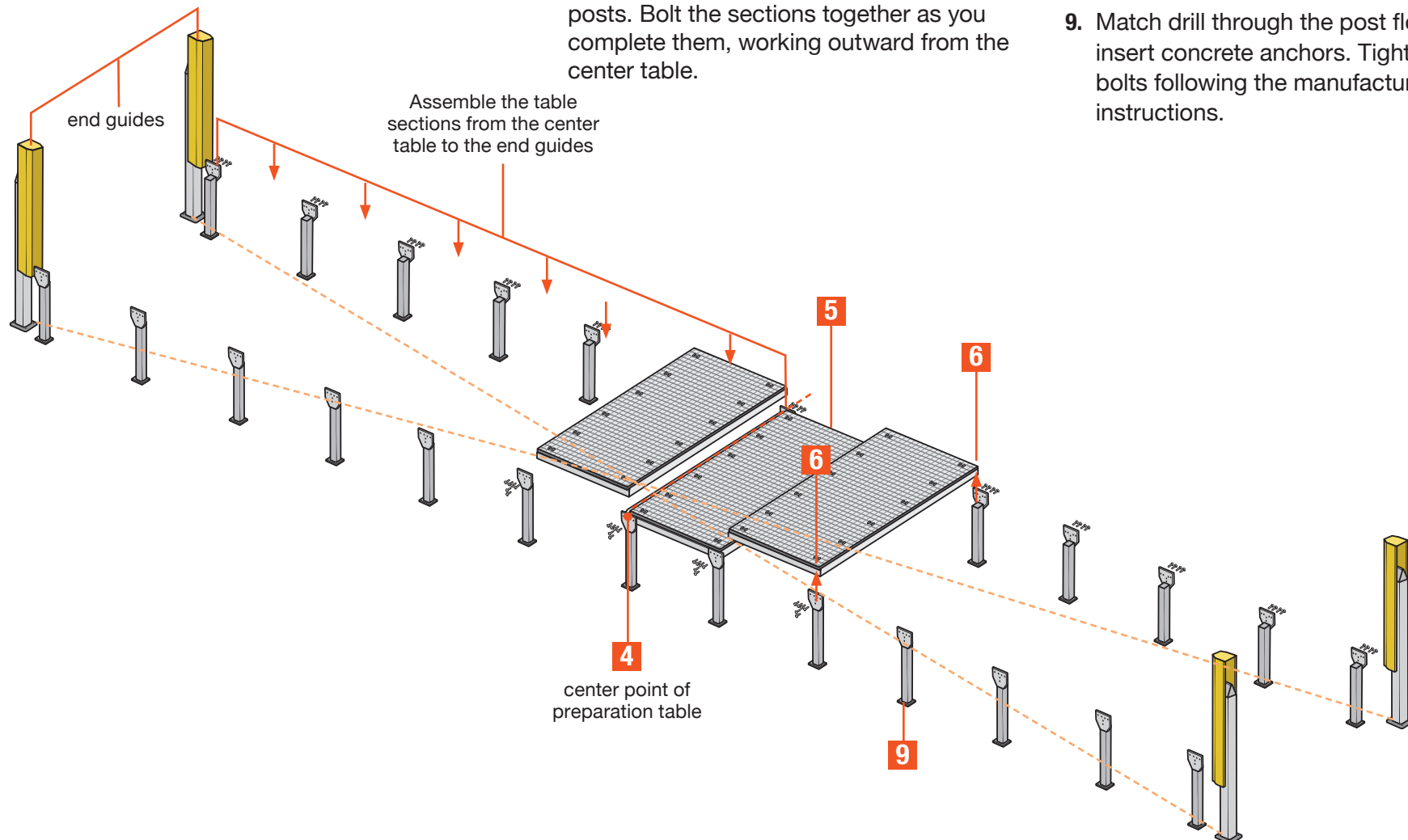
**Note:** The center table tops share posts with the consecutive table tops. Place the edge of this table and post assembly at the vertical center line and with the side edges aligned with the horizontal chalk lines.

6. Add **two table posts** to one side of the next table top, so that the table top is half on the post. Place this table against the first table section and on its post.

Continue working towards each end of the complete **preparation table**. Use the supplied fasteners to connect the table tops to one another & attached them to the posts. Bolt the sections together as you complete them, working outward from the center table.

**Note:** There will be six table sections from the **preparation table center line** to the **guide posts**.

8. Verify the spacing is consistently equal between both sides of the table and **spreader beams**. If necessary, adjust before anchoring the table legs.
9. Match drill through the post floor pads and insert concrete anchors. Tighten all anchor bolts following the manufacturers instructions.



#### 4.2.11: Install the Preparation Table Entrance Assemblies

- Table end rails (2)
- Table stairs (2 sets)
- Control box (1)

##### Attach the Table End Rails

1. The **table end rails** are offset towards the truck bay. Using the provided hardware, attach the **table end rails** to the **preparation table end frames**.

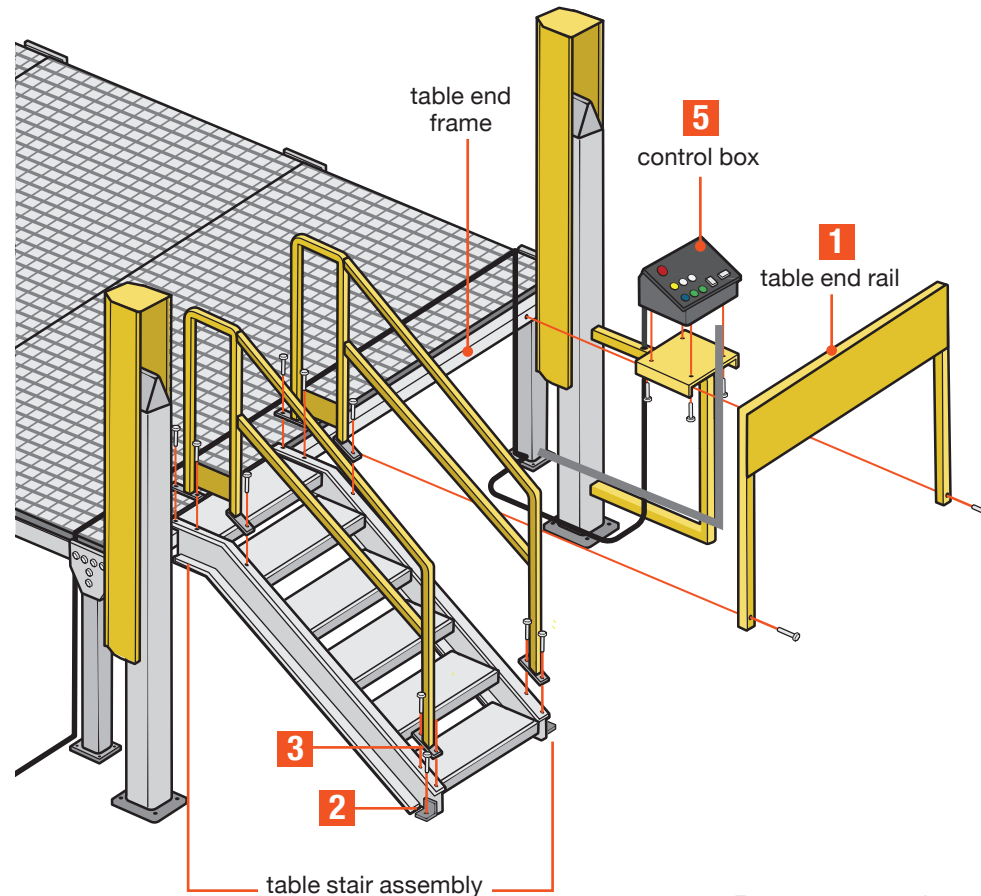
**Note:** If the optional visual instruction poster has been purchased this will be installed on the handrail closest to the control panel.

##### Attach the Table Stairs

2. The **table stairs** are located to the left of the **table end rails**. Match drill holes for the anchors on the stairs and install the required anchor bolts. Using the provided hardware, attach the **stair assembly** to the **table end frame**.
3. Using the provided hardware attach the **stair rails** to the **stairs**.
4. Match drill holes for the anchors on the stairs and install the required anchor bolts.

##### Mount the Control Box

5. The **control box** is mounted to the **guide bollard** with the **mounting plate**. Using the provided hardware attach the **control box** to the **mounting plate**.
6. See the **cable routing path guide** to route control box cables.  
**Important!** Ensure that the cables do not interfere with the **end guides** during movement.



**6**

##### Cable routing path guide:

- Where the **control box cable** has been routed down the column, run the cable across the floor to the closest preparation table post.
- Note:** The customer is responsible for installing the appropriate cable covers.
- Route up the table leg to the underside of the table frame (secure the cable to the table frames).

- Route across the underside of the table frames to the opposite side of the table and to the corner post closest to the **control box**.
- Route the cable down the corner post to the floor so that a loop is formed and place the **control box** on the mounting plate. Secure the **control box** with the supplied fasteners.  
**Important!** Take special care that the looped cable can not be snagged by the **end guides** while the **spreader** is in motion.



## 5.0 Final Check

Conduct these checks before authorizing use of the TF Tarping System.

| ✓ | Assembly                                                                                                                                                                                                                                                                                                                                                                                |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | General                                                                                                                                                                                                                                                                                                                                                                                 |
|   | Verify all safety labels are positioned correctly and are visible to the operator and loading personnel                                                                                                                                                                                                                                                                                 |
|   | Confirm operators and loading personnel are trained and understand how to use the system                                                                                                                                                                                                                                                                                                |
|   | Verify all fasteners are properly torqued and tightened                                                                                                                                                                                                                                                                                                                                 |
|   | Verify all cables are routed and carefully secured with wire ties in the wire cage tray or on column or rail flanges.                                                                                                                                                                                                                                                                   |
|   | Verify all cables move freely during operation and cannot become tangled or caught on objects during operation.                                                                                                                                                                                                                                                                         |
|   | Verify after 20 to 30 cycles the system operates without faults                                                                                                                                                                                                                                                                                                                         |
|   | Document final sign-off by the customers project lead or designated person.                                                                                                                                                                                                                                                                                                             |
|   | As cables are routed they must be carefully secured with wire ties in the wire cage tray or column or rail flanges. It is important to route and secure all cables so that they do not interfere or become entangled with any moving parts.<br><br>The customer is responsible for installing a facility approved cable cover/protectors where the control cable runs across the floor. |
|   | Frame assembly                                                                                                                                                                                                                                                                                                                                                                          |
|   | Verify the rail stop bumpers are installed                                                                                                                                                                                                                                                                                                                                              |
|   | Verify the rails are level and parallel                                                                                                                                                                                                                                                                                                                                                 |
|   | Verify the flag stops are installed, contact the cross-limit switch, and align/position the end guides with the guide bollards.                                                                                                                                                                                                                                                         |
|   | Verify the bridges are installed according to the hoist designations                                                                                                                                                                                                                                                                                                                    |
|   | Verify the laser sensors are properly oriented to target the reflective target plates on the spreader beams                                                                                                                                                                                                                                                                             |

| ✓ | Assembly                                                                                                                                                                                |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <b>Scissor Arms</b>                                                                                                                                                                     |
|   | Verify the bearing blocks are greased                                                                                                                                                   |
|   | Verify all cotter pins are wrapped around the pivot rods                                                                                                                                |
|   | Verify the scissor arms movement is synchronized and move evenly                                                                                                                        |
|   | <b>Spreader Beams</b>                                                                                                                                                                   |
|   | Verify the spreader beam upper and lower limits                                                                                                                                         |
|   | Verify the laser sensors target the reflective target plates                                                                                                                            |
|   | Verify the lifting and drape beam assemblies are straight within 3 inches over 60 feet.                                                                                                 |
|   | Verify all connector posts are securely attached to the lifting and drape beam assemblies.                                                                                              |
|   | Verify all tarp clamps are in place and function properly                                                                                                                               |
|   | <b>Preparation Table</b>                                                                                                                                                                |
|   | Verify the preparation table is parallel and centered to the spreader beams.                                                                                                            |
|   | <b>Controls</b>                                                                                                                                                                         |
|   | Verify the e-stop works properly                                                                                                                                                        |
|   | Verify all control panel indicators and switches are functioning.                                                                                                                       |
|   | Inspect and test that the move to truck and return to home operation buttons only operate when the enable button is depressed and that if either is released the system movement stops. |
|   | Verify the truck bay and home position indicators illuminate when the system reaches each position and that these positions align with the guide bollards.                              |
|   | Hoist braking system for proper operation.                                                                                                                                              |

version  
103123

# INSTALLATION GUIDE

***SafeRack*TF**



For more information, please scan the  
QR code and visit our site.



219 Safety Avenue, Andrews, SC 29510 \ 866.761.7225 \ [SafeRack.com](http://SafeRack.com)