

Freestanding Enclosed Track

Installation and Maintenance Manual





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! WARNING

SPANCO FREESTANDING ENCLOSED TRACK WARNINGS STATEMENT

1. Read, understand, and follow the manual, assembly drawings, and warnings provided with your system before beginning installation, use, or disassembly. Follow all instructions carefully. Mistakes made during assembly, use, or disassembly may result in injury or death.
2. Adjustments and repairs must be made in an area that does not interfere with operation. Only adjust or disassemble using the instructions in this manual.
3. Do not stand under the enclosed track system during assembly or disassembly, as any collapse of the system during either may cause injury or death.
4. Do not disassemble the enclosed track system when the system is under load. This can cause the system to collapse and drop the load, possibly causing injury or death to those nearby.
5. Per OSHA law, load testing must be performed before the system can be placed into service.
6. Thoroughly inspect the system annually per OSHA law.
7. Before each use, inspect the system for bent, broken, cracked, worn, eroded, or missing components. Worn, broken, or missing components may cause equipment failure or crane collapse which may result in injury or death.

! WARNING

8. Do not stand or walk under a suspended load. If there is failure of the hoist or securement, it could result in injury or death.
9. Do not stand near a suspended load. If there is failure of the hoist or securement, it could result in injury or death.
10. Do not allow the hoist trolley to strike the end stops or workstation supports at any time. Repetitive strikes against the end stops could damage them and enable the trolley to fall off the system.
11. Do not lift more than the rated crane capacity. This could result in system failure and damage to your crane, load, and personnel.
12. Exceeding the capacities displayed on labels can result in serious injury or death.
13. There should never be any type of loading past the end stops for any reason. The crane was designed for the load to be directly underneath it, if you load past the end stop it could cause system failure and collapse which could result in injury or death.
14. Never apply an off-plumb load to the system. The crane was designed to only lift straight up and down. Pulling sideways on a crane may cause component failure which may result in injury or death.
15. Never use this system as fall protection or for lifting, hoisting, or carrying personnel. This system was designed for material handling and not fall protection. Use of this system on personnel may result in injury or death.
16. Never use a hoist with a higher capacity rating than the workstation bridge crane. If you try and lift a load that has a higher capacity than the workstation bridge crane, it can cause the crane to collapse and cause injury or death.
17. Never deviate from the above, or modify the crane in any way, unless you have written permission and authorization from Spanco.

SYSTEM APPLICATIONS

The Spanco System is used for material handling applications. This material handling system is labeled with a maximum rated capacity and is designated for Class C service as defined by the CMAA; follow all limitations as noted on system labels.

STANDARDS AND COMPLIANCE

Please refer to local, state, and federal (OSHA) requirements governing occupational safety for additional information regarding material handling. The Spanco system meets or exceeds the requirements set forth in OSHA 1910.179, ANSI B30.2, and CMAA 70.

REQUIRED TRAINING

This system is intended to be used by people who are trained in its correct application and use. It is the responsibility of the users and the users' management to ensure that they are familiar with OSHA law and these instructions, and that they are trained in the correct use and care of this equipment. Authorized users must also be

aware of the operating characteristics, application limits, and the consequences of improper use, which can result in serious injury or death. All users must read and understand CMAA 79 Crane Operator's Manual.

WARNING: Failure to use, assemble, disassemble, or inspect crane properly may result in injury or death.

Every material handling application must be OSHA compliant. Safety and training measures may include, but are not limited to:

- Operator certification training.
- Operator evaluation program.
- Hand signal protocols if required.
- Lock-out/Tag-out training.

The above list is not a comprehensive list. Specific applications may need to include additional protocols. For more information on how to create a comprehensive lift plan within your facility, follow CMAA 79 **Crane Operator's Manual**.

DESIGN FACTORS

Nameplate bridge capacity represents the rated load on the hoist hook. The load rating of a hoist shall not exceed the bridge rating. SPANCO's design includes an allowance of 15% of nameplate capacity for dead weight of the trolley and hoist. An additional 25% of nameplate capacity is also included for impact.

SEISMIC DESIGN RATING

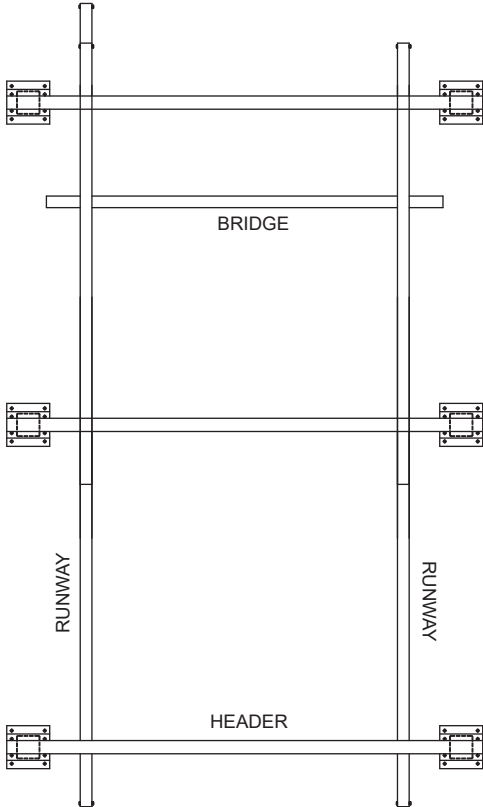
All SPANCO workstation bridge cranes meet design requirements for installation and use in seismic zone 4, of the uniform building code, the worst earthquake prone areas in North America.

SERVICE FACTOR

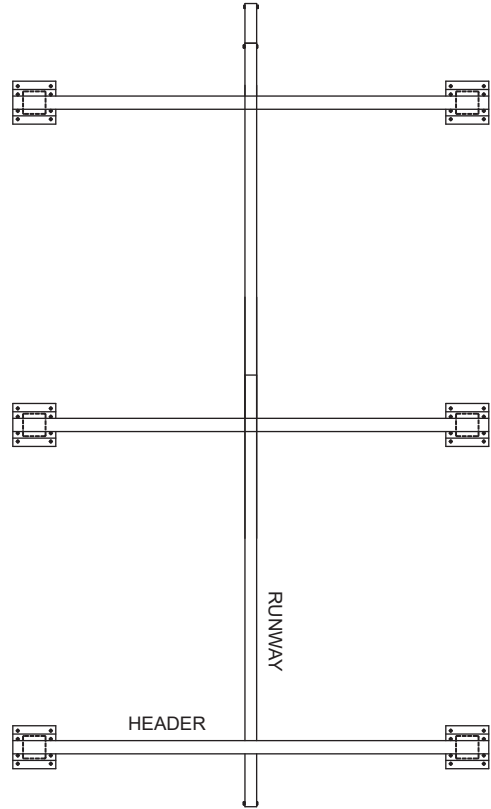
All SPANCO workstation cranes are designed for frequent usage (heavy service) as defined:

1. System or equipment is used where operational time is up to 100% of the work period and lifted load is at 50% or below rated capacity.
2. System or equipment is used where operational time is less than 50% of work period and lifted load is greater than 50% of rated capacity.
3. Applications involving vacuums, magnets, or other high impact lifters are considered severe usage and require special design considerations. Please contact factory for special design pricing.
4. Consult factory for usage other than moderate and all instances of high cycle rates or high impact applications such as high speed air or electric hoists, vacuum lifters, or magnets.

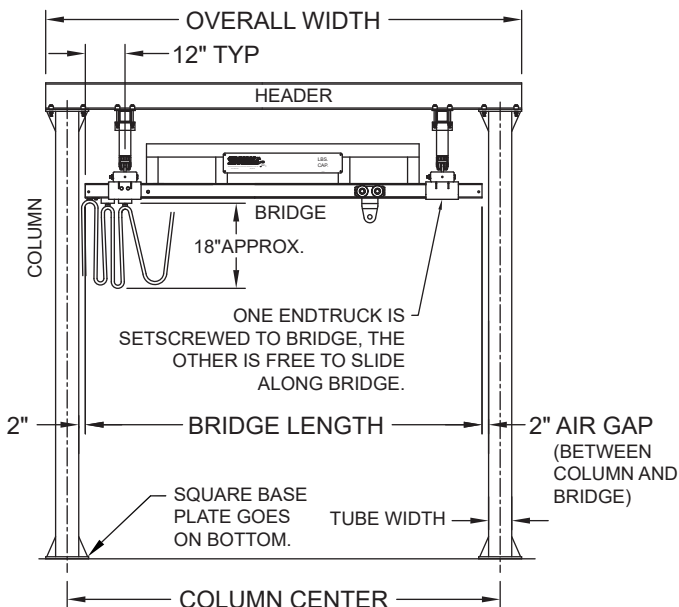
**IMPORTANT DIMENSIONS FOR TYPICAL ENCLOSED TRACK
CRANE INSTALLATIONS**



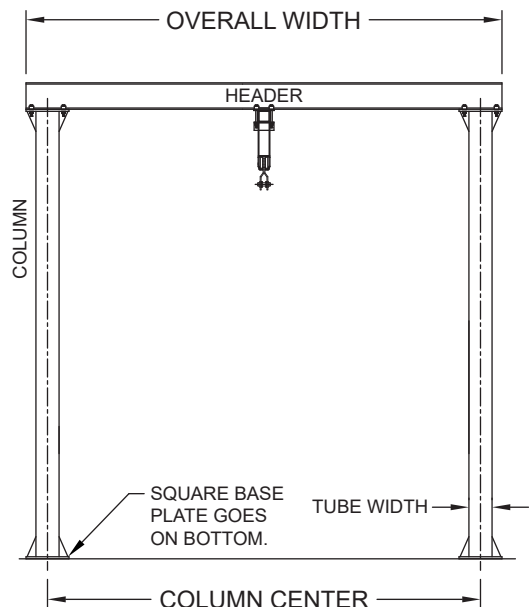
BRIDGE TOP VIEW



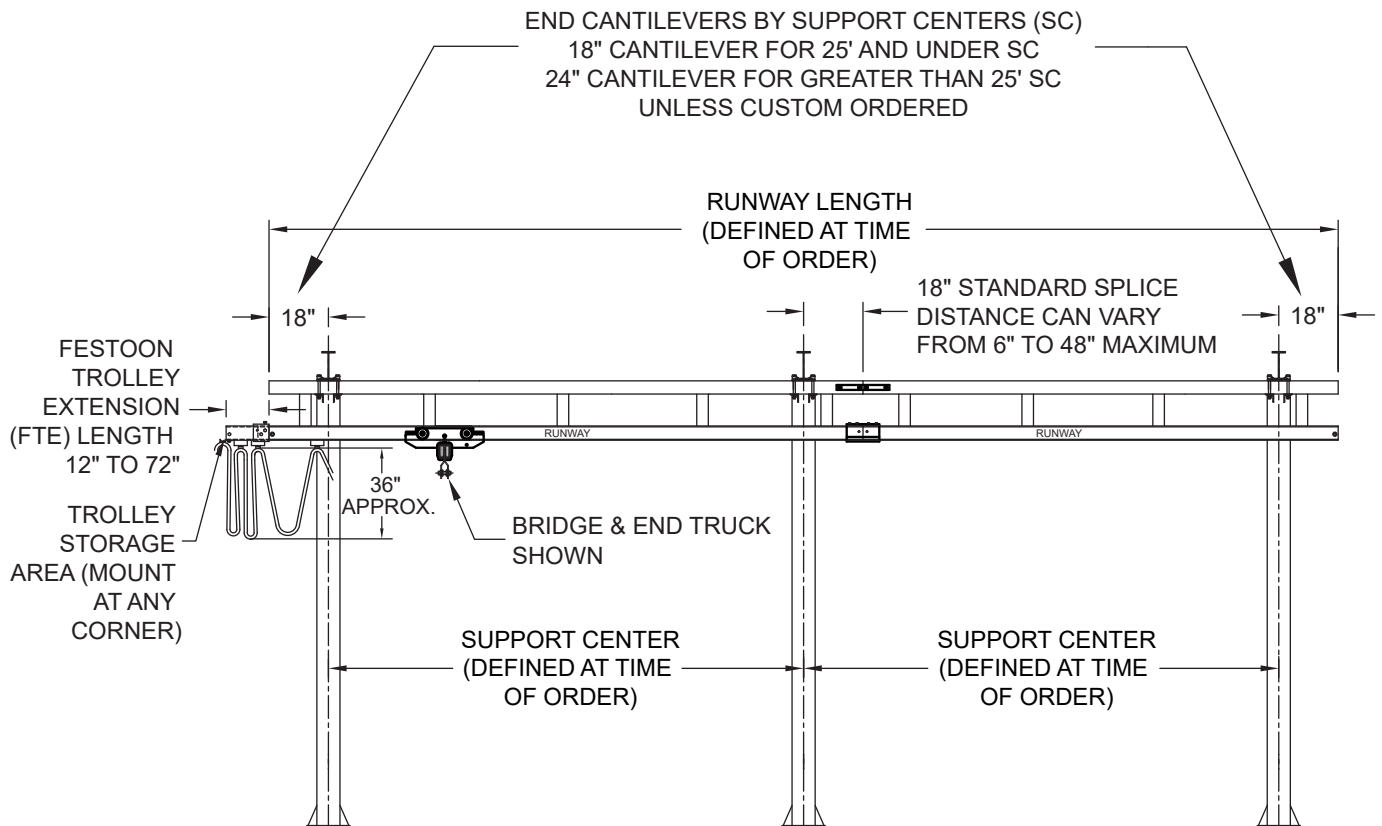
MONORAIL TOP VIEW



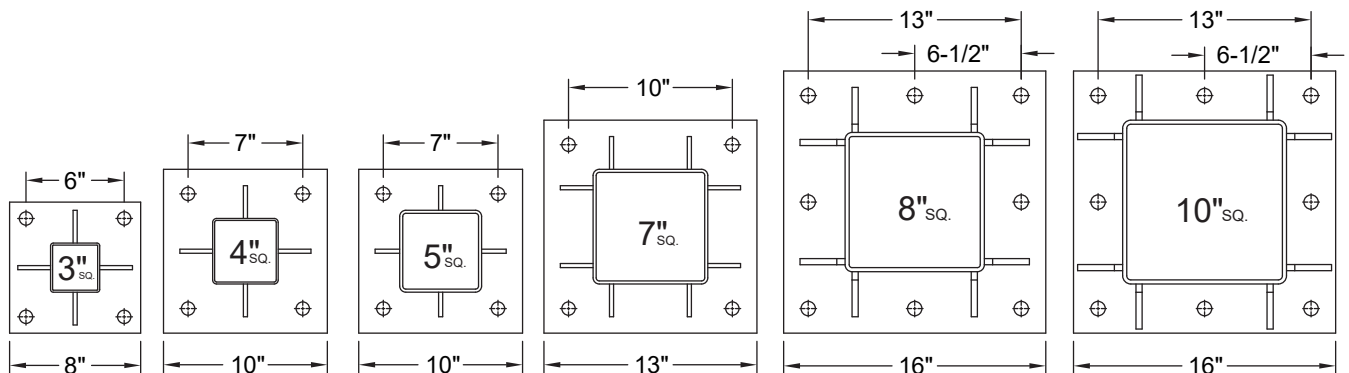
BRIDGE END VIEW



MONORAIL END VIEW



BRIDGE/MONORAIL SIDE VIEW
 (MONORAIL REPLACES BRIDGE & END TRUCK WITH TROLLEY)



ALL DIMENSIONS ARE TYPICAL - ALL HOLES ARE Ø1"

COLUMN BASE PLATE DETAIL

PREPARATION

Before starting the installation, check the material list to be sure you have received all parts. The anchor bolts for the support columns are available for purchase. Four 1" diameter holes are provided for anchor bolts.

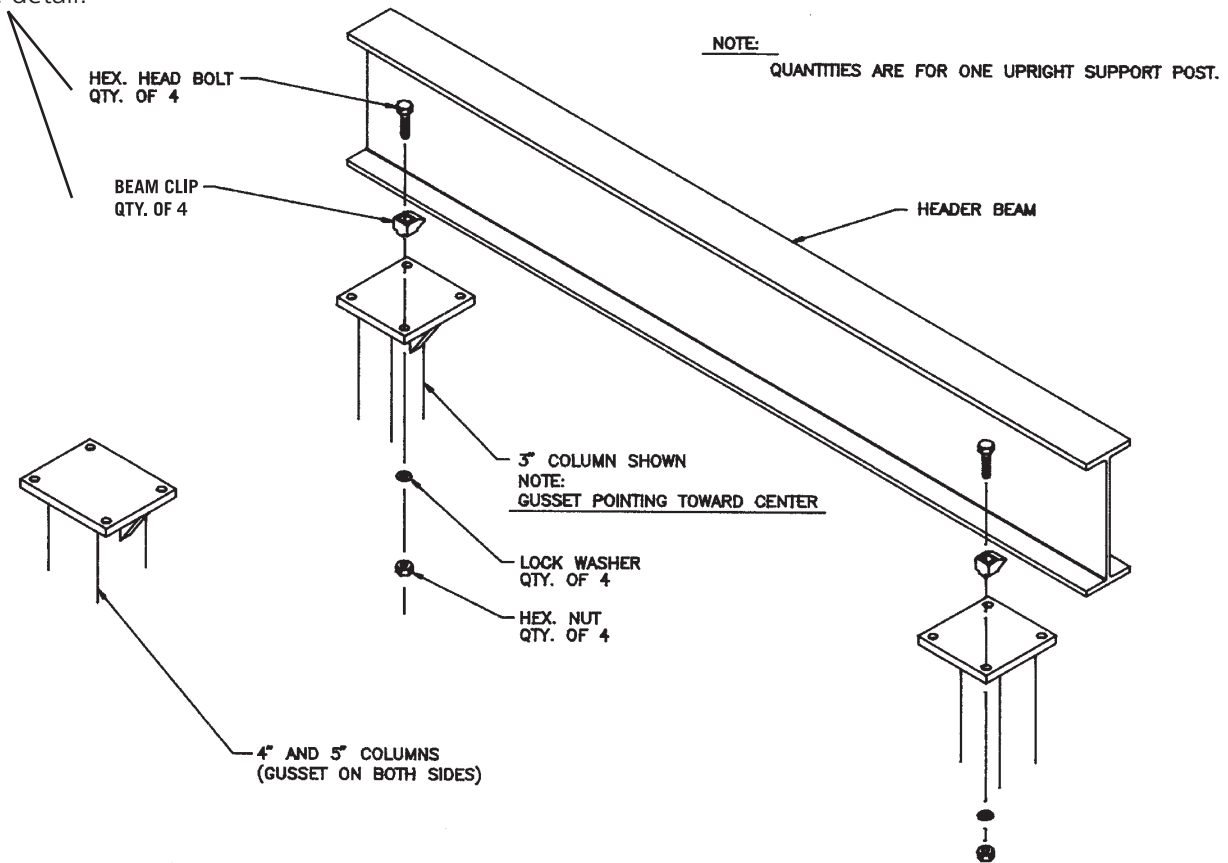
This SPANCO crane does not require bracing for strength. Bracing is only used to remove any undesired sway. Sway bracing brackets and brace tubes are available for purchase.

COLUMN AND HEADER INSTALLATION

- Lay out area where the crane is to be installed. Bolt the first set of columns to the floor and attach the header beam to columns with 5/8" fasteners. See **Figure 1**. Torque fasteners to 108 ft-lb. Follow the same procedure for subsequent sets of columns and headers.

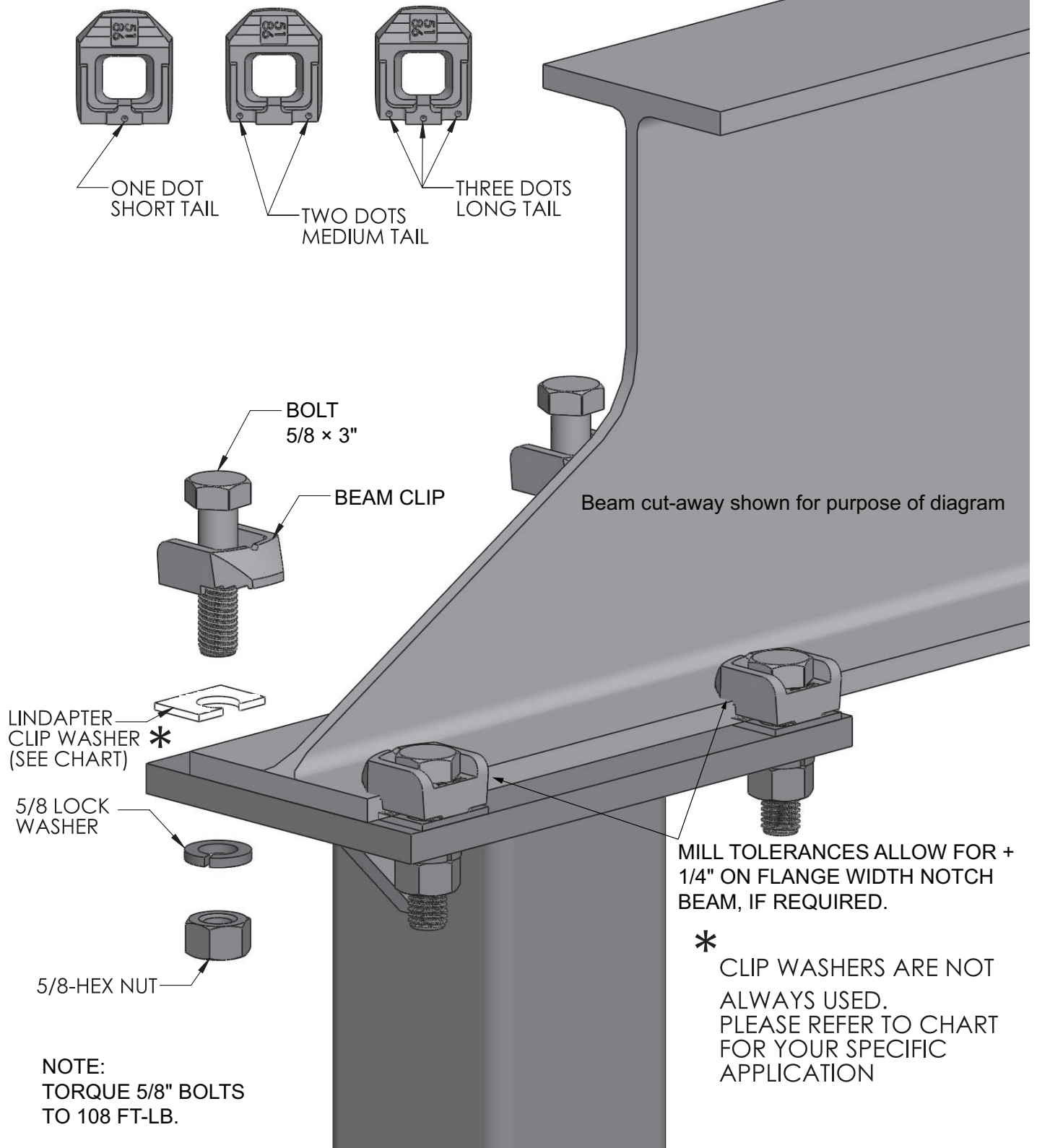
See **Column and Header Installation** Figure 1a for more detail.

Figure 1



COLUMN AND HEADER INSTALLATION

Figure 1a



BEAM CLIP CHART

BEAM THICKNESS (IN)	5/8" DIAMETER BEAM CLIP	3/4" DIAMETER BEAM CLIP
1/4"	S	S
5/16"	M	S
3/8"	S+CW	M
7/16"	L	S+CW
1/2"	S+2CW	L
9/16"	L+CW	M+CW
5/8"	M+P1	L+CW
11/16"	L+2CW	S+P1
3/4"	L+P1	S+3CW
13/16"	L+3CW	M+P1
7/8"	M+2CW+P1	M+3CW
15/16"	M+2P2	M+CW+P1
1"	L+2CW+P1	S+2CW+P1

S = SHORT TAIL

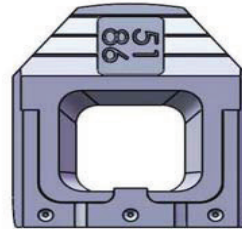
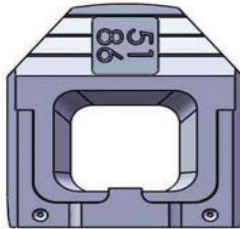
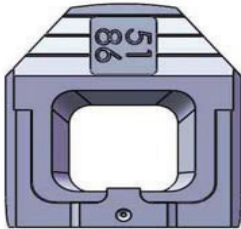
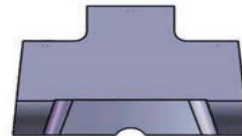
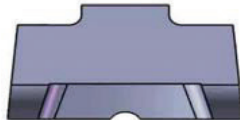
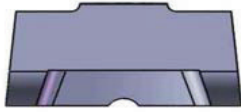
M = MEDIUM TAIL

L = LONG TAIL

CW = CLIP WASHER

P1 = PACKING

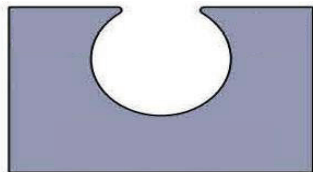
P2 = PACKING



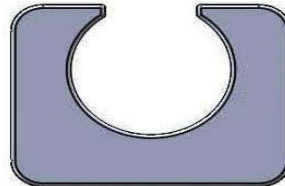
**SHORT TAIL
(1) DOT**

**MEDIUM TAIL
(2) DOT**

**LONG TAIL
(3) DOT**



**CLIP WASHER
(CW)**

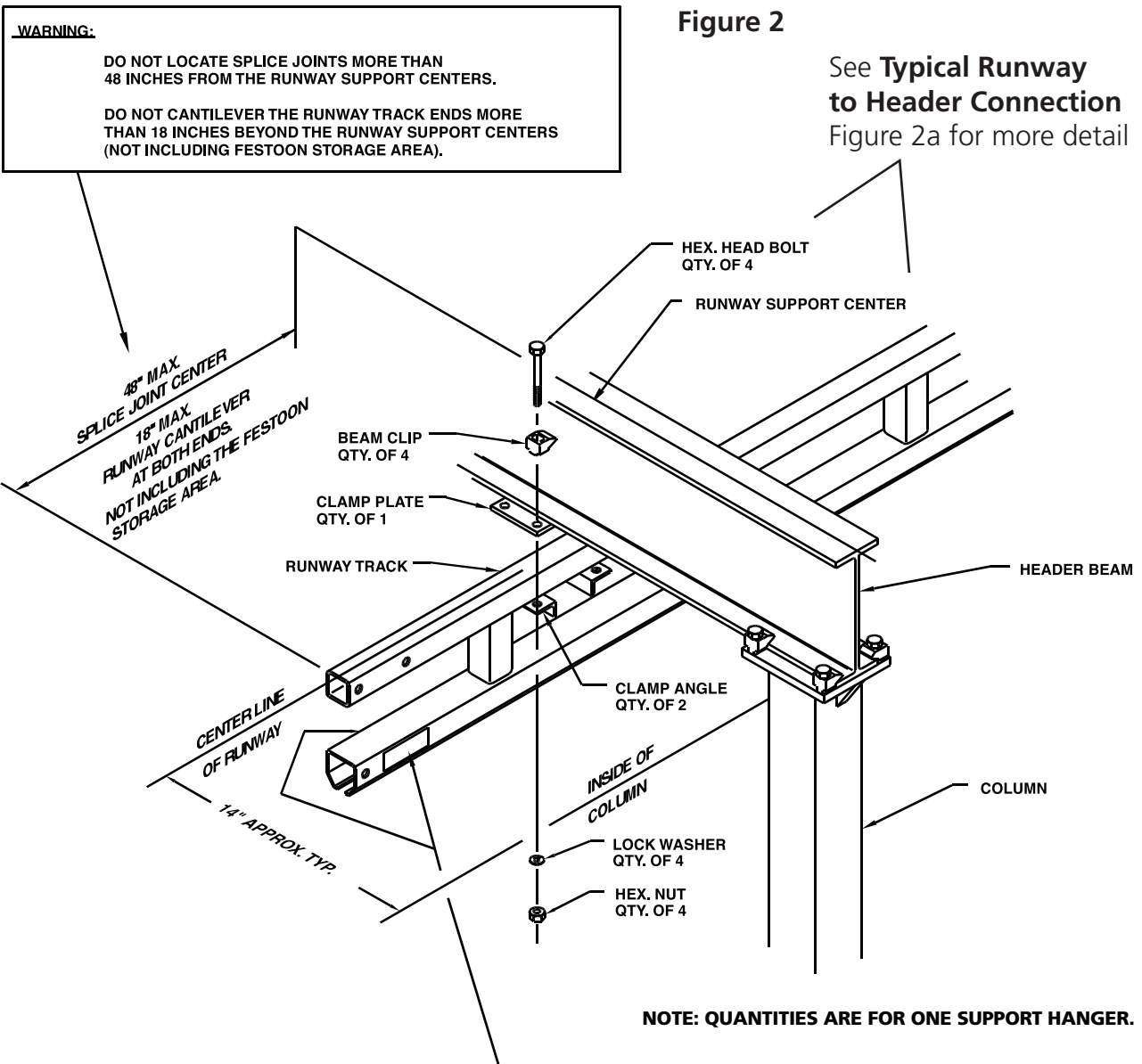



**PACKING
(P1)**



RUNWAY INSTALLATION

- Using caution not to disturb the columns, raise the runway track into position and clamp it to the header beams with 5/8" fasteners, see **Figure 2**. Torque fasteners to 108 ft. lbs. **Do not cantilever the ends of the runway tracks more than 18" beyond the support centers** (see **Bridge/Monorail Side View, page 3**, for maximum cantilever requirements). The center of runway is located approximately 14" from the inside edge of the support column. **OSHA regulations require a minimum clearance of 2" from the end of the bridge track to the face of the support columns or other obstructions.**





PIN 53-0047 REV D

⚠ WARNING

TO PREVENT TROLLEY OR END TRUCK, IF SUPPLIED, FROM RUNNING OUT OF THE TRACK, DO NOT OPERATE SYSTEM WITHOUT END STOP BOLTS SECURED ON EACH END OF RUNWAY AND BRIDGE, IF SUPPLIED.

DO NOT IMPACT END STOPS AT HIGH SPEED
 DO NOT USE END STOPS FOR REPETITIVE BRIDGE IMPACTS, IF BRIDGE IS SUPPLIED
 DO NOT SKEW BRIDGE, IF SUPPLIED, IN RUNWAYS

WARNING LABEL ON BOTH SIDES OF BOTH ENDS.

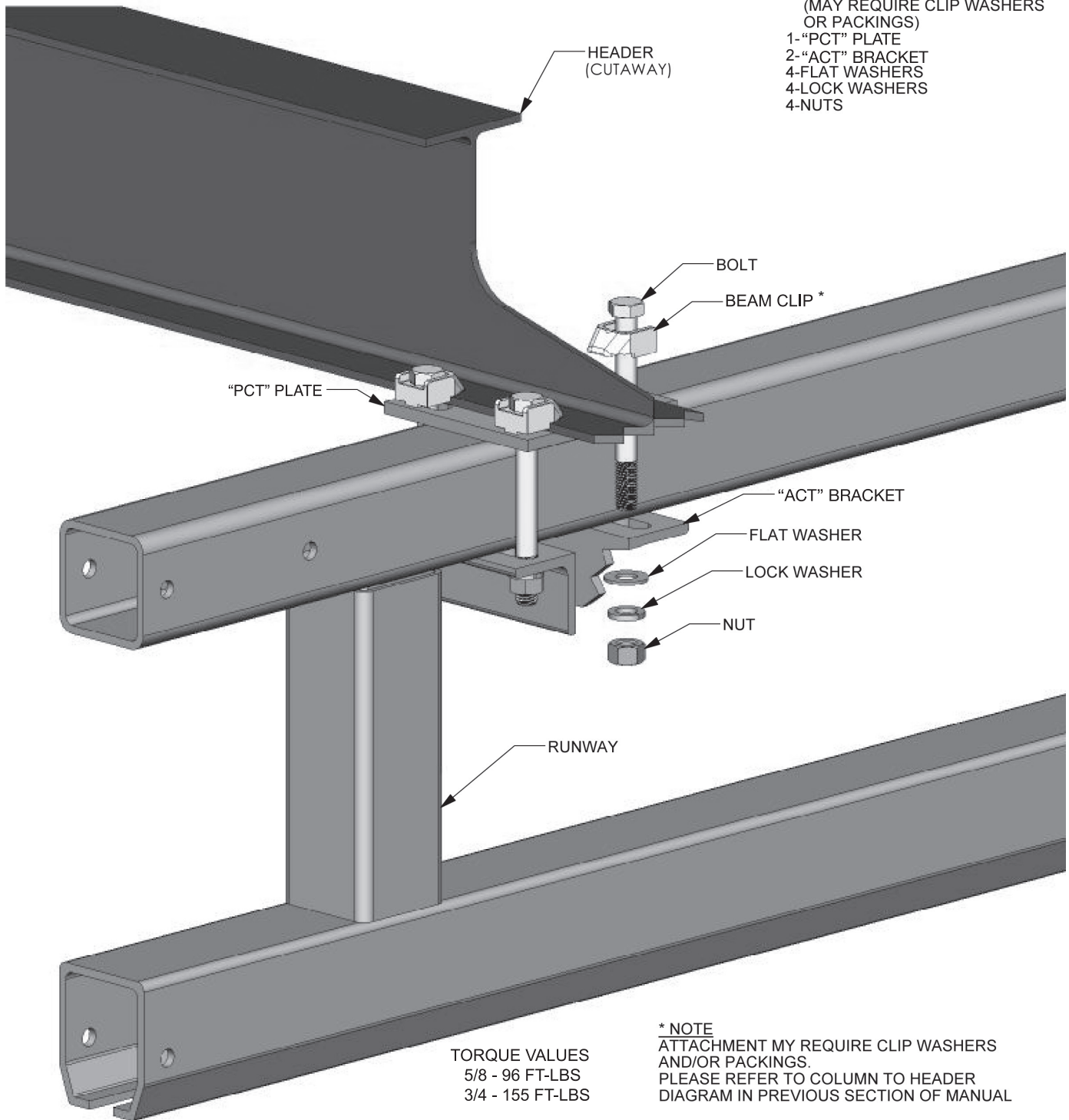
TYPICAL RUNWAY TO HEADER CONNECTION

NOTE: For heavy-duty applications or monorails, see Sandwich Hangers Figure 2b

Figure 2a

TYPICAL HANGER KIT

- 4-BOLTS
- 4-BEAM CLIP
(MAY REQUIRE CLIP WASHERS
OR PACKINGS)
- 1-"PCT" PLATE
- 2-"ACT" BRACKET
- 4-FLAT WASHERS
- 4-LOCK WASHERS
- 4-NUTS



TORQUE VALUES
5/8 - 96 FT-LBS
3/4 - 155 FT-LBS

* NOTE
ATTACHMENT MAY REQUIRE CLIP WASHERS
AND/OR PACKINGS.
PLEASE REFER TO COLUMN TO HEADER
DIAGRAM IN PREVIOUS SECTION OF MANUAL

TYPICAL RUNWAY TO HEADER—SANDWICH HANGER

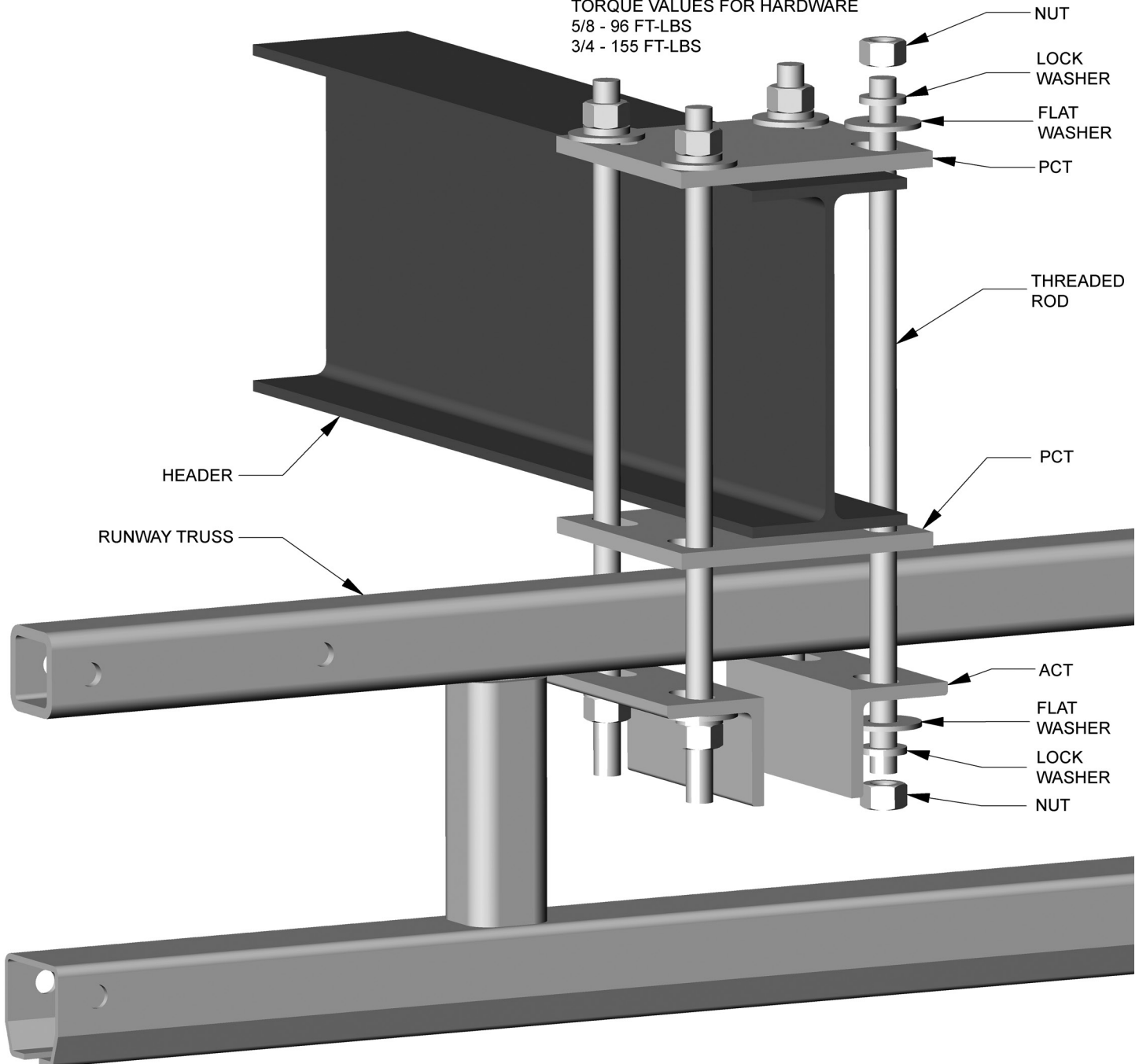
NOTE: Detail For non-standard hangers will be provided by Spanco Engineering at the time of order.

Figure 2b

TYPICAL SANDWICH HANGER KIT
 (QUANTITY - DESCRIPTION)

- 2-TRUSS CLAMP ANGLE (ACT)
- 2-TRUSS CLAMP PLATE (PCT)
- 8-HEX NUT (5/8 OR 3/4)
- 8-LOCK WASHER (5/8 OR 3/4)
- 8-FLAT WASHER (5/8 OR 3/4)
- 4-THREADED ROD (5/8 OR 3/4)
 VARIOUS LENGTH

TORQUE VALUES FOR HARDWARE
 5/8 - 96 FT-LBS
 3/4 - 155 FT-LBS



SPLICE INSTALLATION

- If your system has more than one section (length) of runway track, each additional section is installed in the same manner as the first, with the addition of a splice joint assembly.

The track splice joint is made using a sleeve with a total of eight set screws threaded into the top and both sides. Slide the sleeve over the end of the first runway track, then butt the second runway track against the first. Center the sleeve over the joint. The two center top set screws should be tightened slightly to push the tracks against the base of the sleeve so that the two bottom surfaces of the track are even. Adjust the side set screws so that the track slots are aligned and there is a smooth transition from one track to the other, see **Figure 3**. Tighten all top set screws then side set screws for correct track alignment. Do not over tighten set screws.

Trussed runway splice joints also include two splice plates and four, 1/2" bolts with nuts. Install the splice plates to connect the ends of the truss top tubes with the four through bolts provided. **Torque through bolts to 50 ft. lb.**, see **Figure 3**.

Trussed Runway: Splice joints should be within 48" of a support hanger as shown in **Figure 3**. Refer to **Figure 4** for splice joint track alignment.

Figure 3

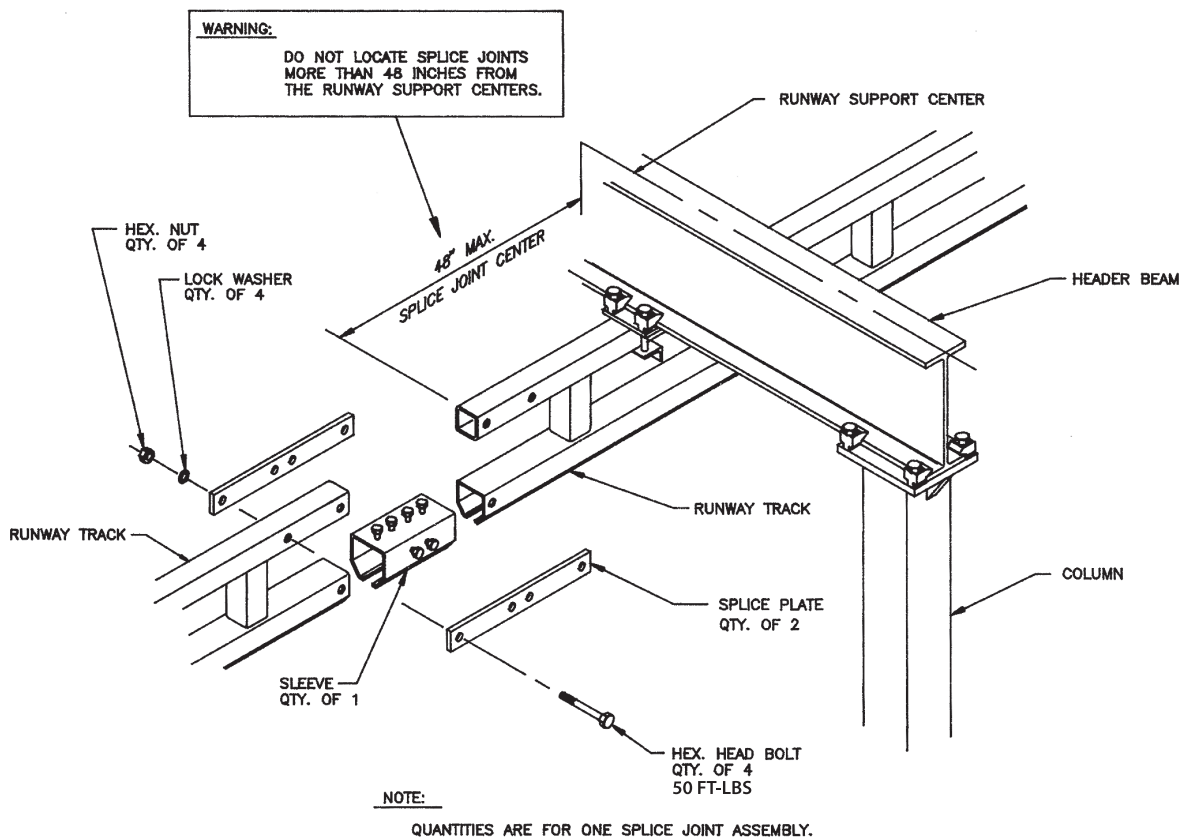
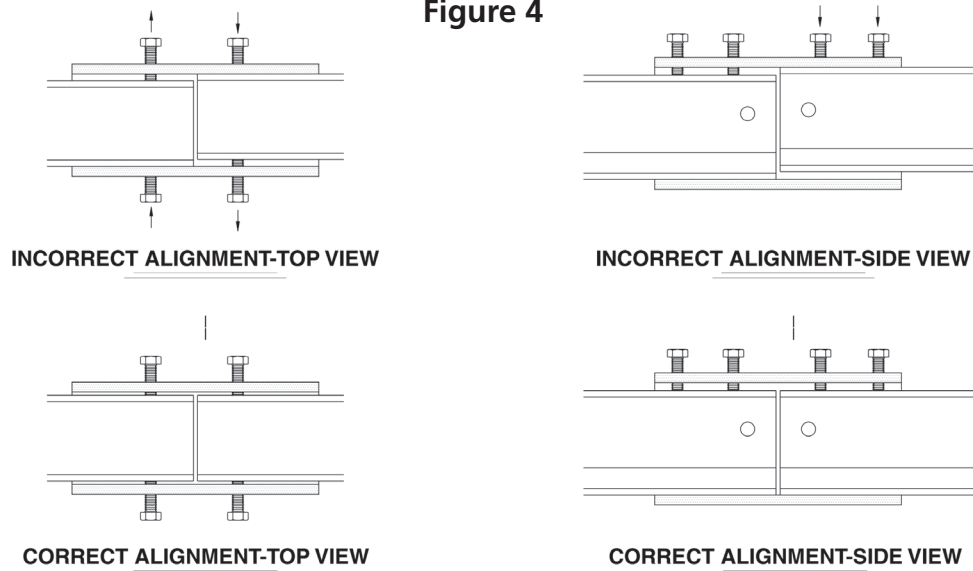


Figure 4



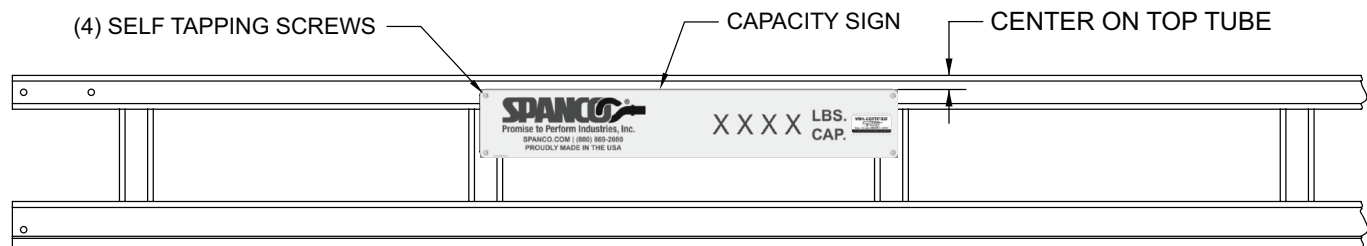
MONORAIL INSTALLATION

The below steps are in addition to the standard steps when installing a monorail system:

Monorail Capacity Sign Installation

1. Based on your facility, determine the most visible location for the capacity sign on the monorail.
2. Center the top edge of the the sign on the top tube of the runway with each side on the left and right on a vertical support. Ensure that when installed, the capacity sign will be in the desired location in the facility.
3. Install the sign with the four (4) self tapping screws provided in the (4) mounting holes of the sign. Do not over tighten screws.

Figure 5



Runway Festoon Installation

Follow instructions on page 14 (see **Figure 8**).

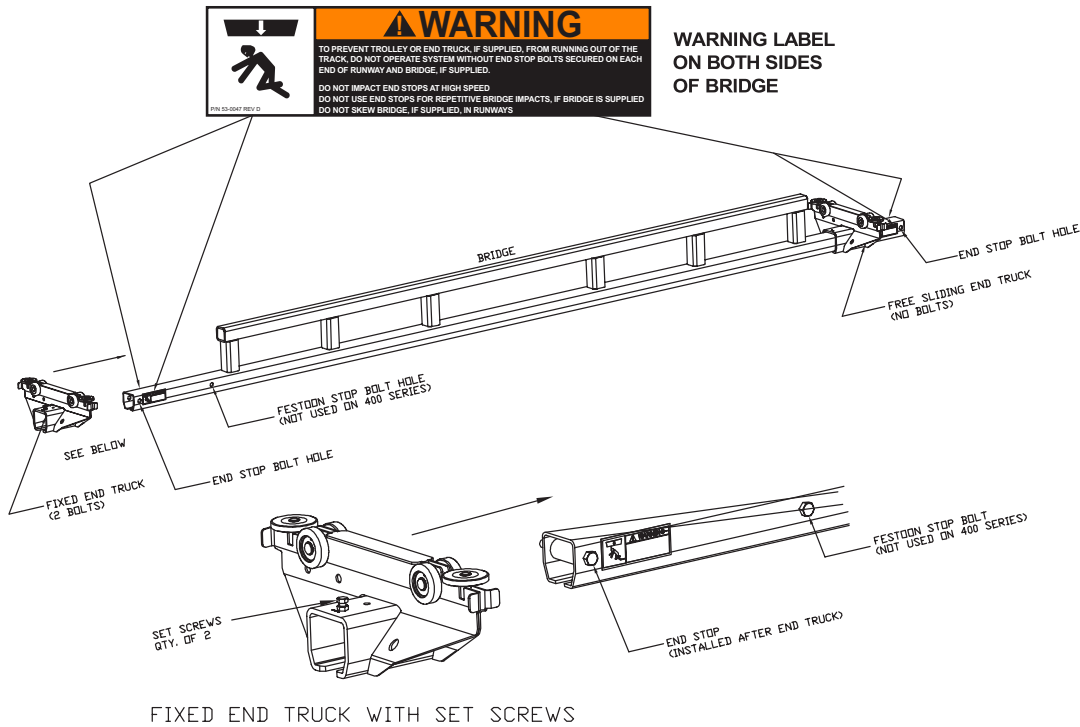
Hoist installation

Refer to instructions on page 16 (see **Figure 10**).

BRIDGE END TRUCK INSTALLATION

- Insert the bridge track into the sleeves of the end trucks. Locate the center of the end trucks approximately 12" from each end of the bridge. One end truck is secured to the bridge track with set screws, furnished with the sleeve. The other end truck is allowed to slide freely on the bridge track in order to accommodate any slight misalignment between the parallel runway tracks, see **Figure 6**. Install the bridge crane by inserting the end trucks of the runway tracks at one end of the runway. Adjust and tighten the bridge end truck set screws to provide a minimum clearance of 2" between the ends of the bridge and the support columns.

Figure 6



RUNWAY END STOP INSTALLATION

- Secure end stop assemblies, end stop bolts, and lock nuts at both ends of both runway tracks, except for the end of the festoon storage area, where applicable. See **Figures 7a** and **7b**.

FESTOON TRACK EXTENSION INSTALLATION

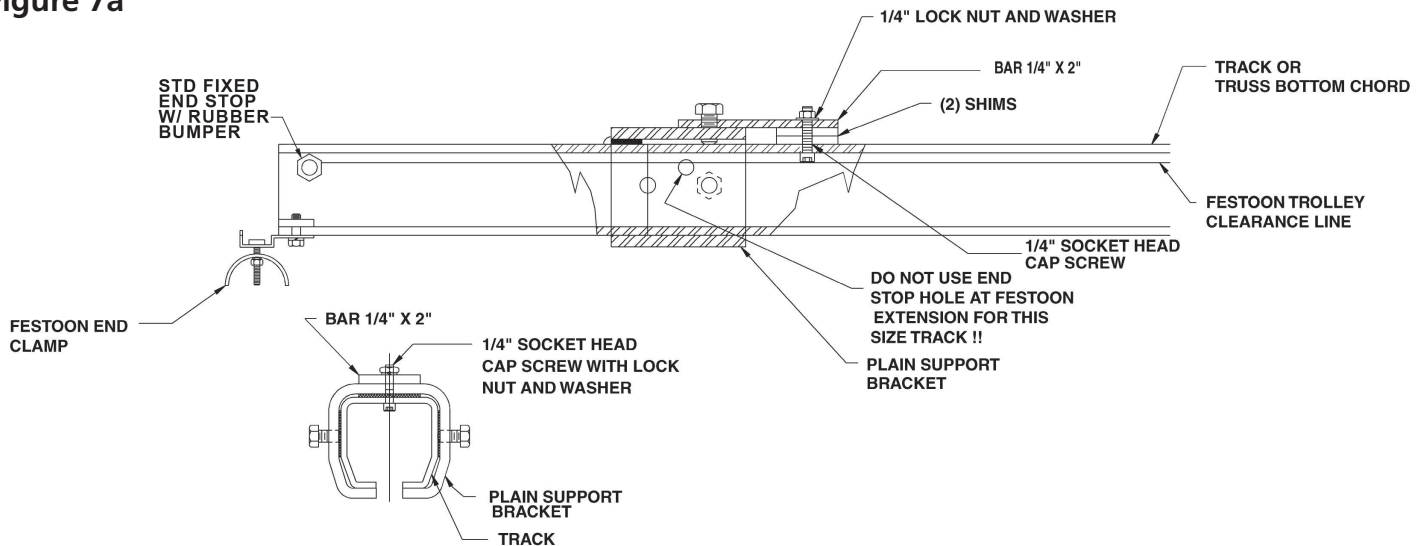
- Place festoon track extension on end of runway as close as possible to the power junction box. Align the festoon track extension prior to tightening any bolts. Adjust bolts in the side of the festoon track extension to ensure alignment of bottom flanges of track. Clamp festoon track extension firmly into a level, straight position prior to tightening the top of the extension. Check to ensure that all surfaces of the track ends and the festoon track extension are in contact. Tighten top bolt to:

400 Series	12 ft. lb.
500-900 Series	17 ft. lb.

400 Series Track

- Install special 1/4" through bolt in top of festoon track extension. See **Figure 7a**. Place flat washer and lock nut on through bolt and tighten. Do not place end stop at this location. Using end stop supplied with the system, install in the end of the festoon track extension.

Figure 7a



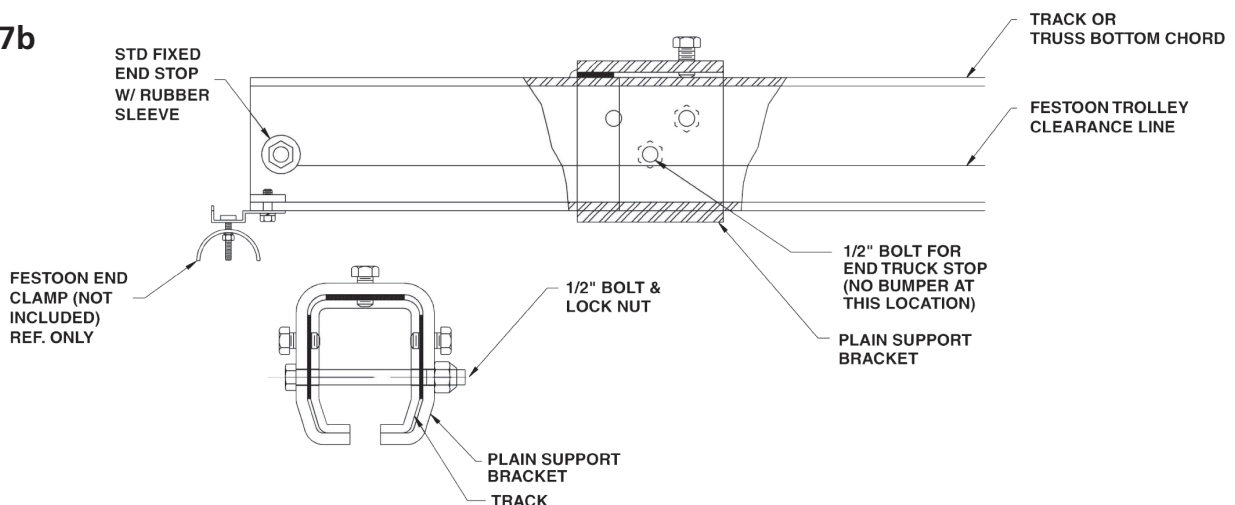
500-900 Series Track

- Install through bolt through side of festoon track extension. See **Figure 7b**. Place lock nut on through bolt and tighten. Do not place end stop or end stop bumper supplied with system at this location. Using end stop supplied with the system, install in the end of the festoon track extension.

NOTE: ALL endstop bolts must have the rubber bumper to ensure the festoon trolleys remain in the track.

- Ensure that all end stop warning labels are in place. Install festoon end clamp to secure festoon cable at the end of the festoon track extension. Ensure the trolleys slide across the runway and festoon track extension joint smoothly. Make necessary adjustments. Ensure all trolleys stack properly in festoon track extension area, clear through bolts, and contact the end stop.

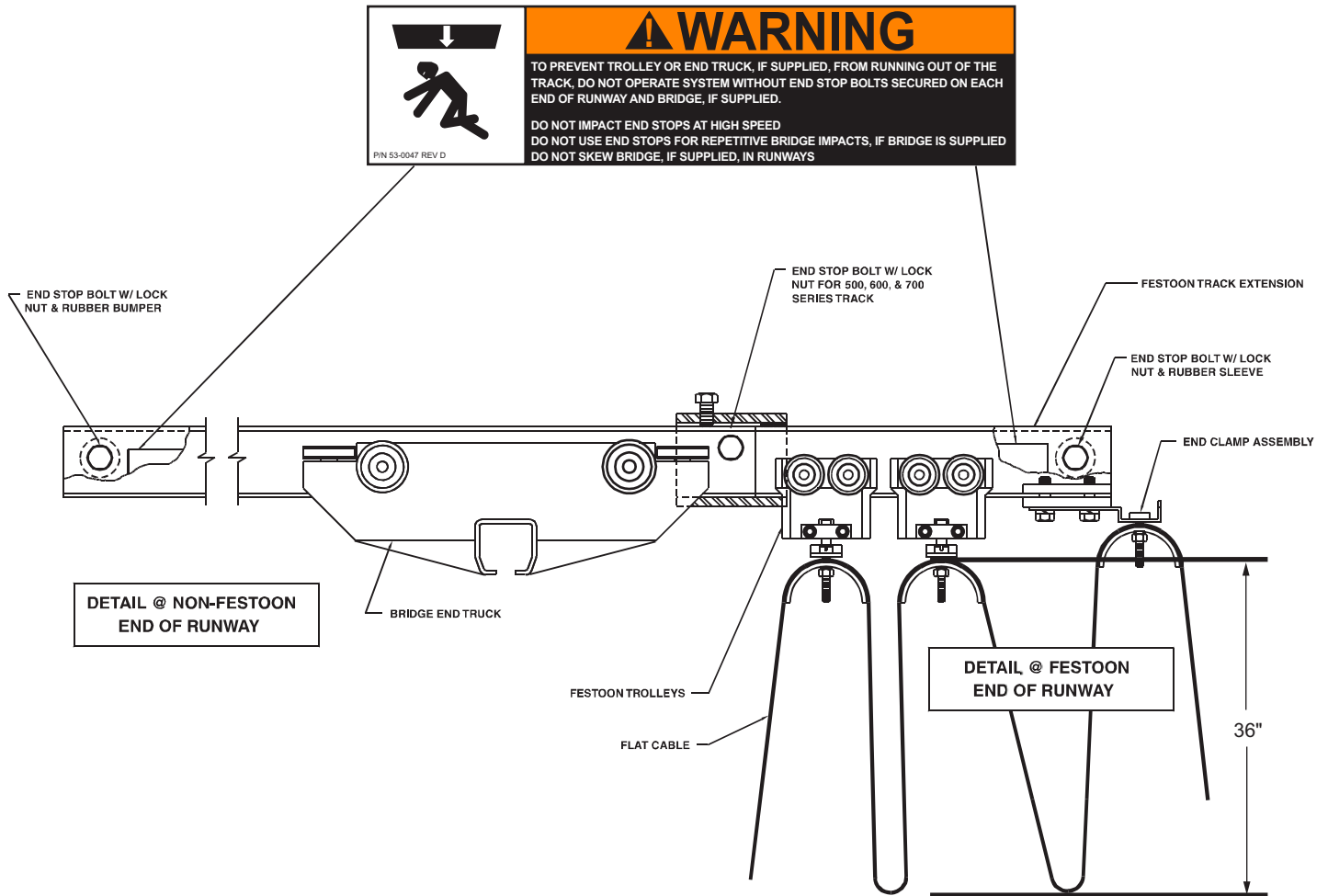
Figure 7b



RUNWAY FESTOON INSTALLATION

- Install festoon trolleys into the storage area of runway track if system includes festooning. Secure end stop bolts and rubber bumpers. Locate and secure festoon end clamps as shown in **Figure 8**. Install the festoon cable on the festoon trolleys at equal spacing, approximately 6' 7" apart for approximate 36" loops. Festooning can be located on any end of runway.

Figure 8
Runway Festoon Detail
(or Monorail Festoon Detail)

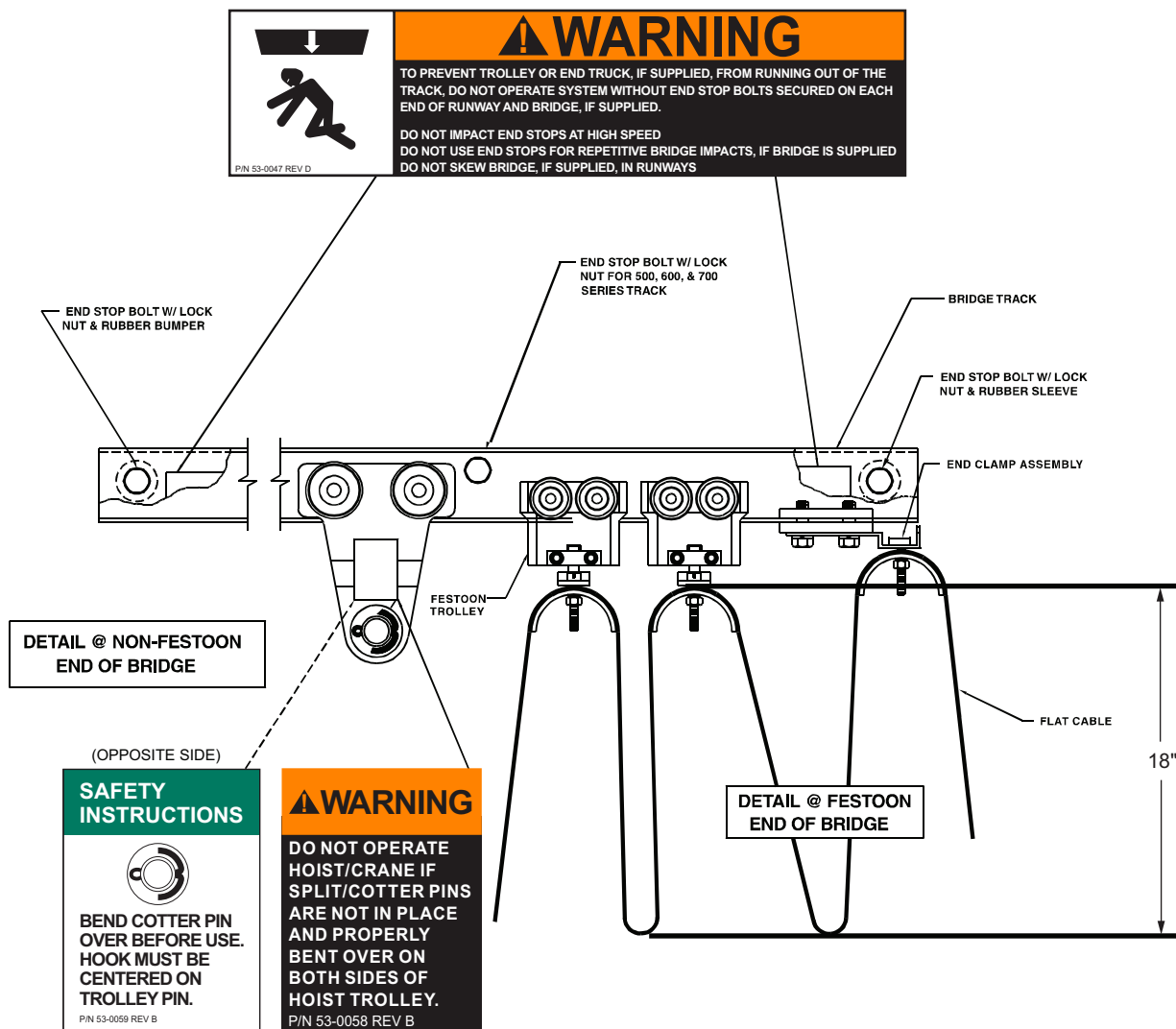


HOIST TROLLEY AND BRIDGE FESTOON INSTALLATION

- Install hoist trolley and festoon trolleys on bridge track, if applicable, as shown in **Figure 9**. Secure end stop bolts and rubber bumpers, also shown in **Figure 9**. Install the festoon cable on the festoon trolleys at equal spacing, approximately 3'4", for approximate 18" loops. Festoon storage area is within the bridge length.

Once installation is completed, the bridge and runways should be leveled. The total system should then be checked for tightness of all nuts and bolts.

Figure 9



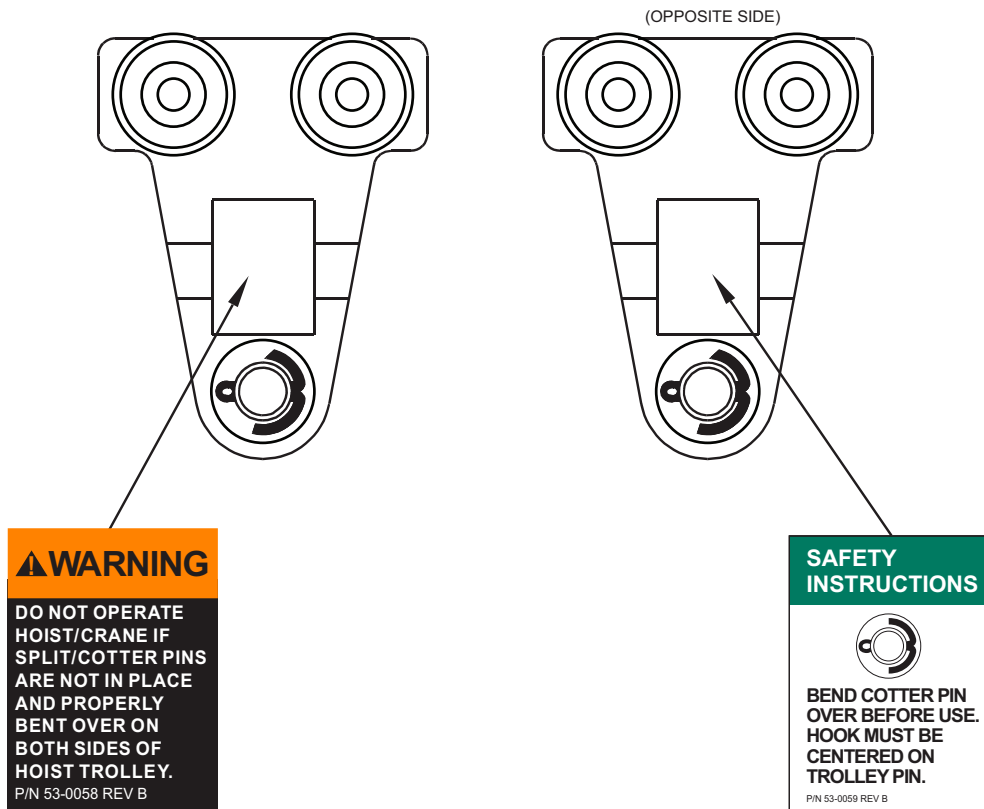
HOIST INSTALLATION

- Attach hoist supplied by others to hoist trolley. **Use washers on hoist mounting pin to center hoist inside hoist trolley. Reinstall washer on outside of hoist trolley (both sides) before installing or reinstalling cotter pins to secure hoist mounting pin.** Replace cotter pin(s) if worn or broken. Bend cotter pin around mounting pin, see **Figure 10**.

WARNING: Do not operate hoist or crane if cotter pins are not in place and properly bent over on both sides of hoist trolley. Check regularly that the cotter pins are in place and securing the hoist on the hoist trolley.

Figure 10

NOTE: Some trolley load pins only have one cotter pin.



SERVICE CONNECTIONS

Where applicable, follow the supplemental circuit diagrams to make service connections, such as electrical power. Make sure services are not energized while making any connections and that they match the specified supply on the circuit diagram.

WARNING, SAFETY, OR CAPACITY LABELS

If at any time these labels are lost, stolen, removed or become illegible, contact SPANCO at 800-869-2080 for free replacements. Please order by part number on the label or by the facsimiles in this manual.

ACCEPTANCE TEST

After the workstation crane or monorail system has been installed, OSHA requires an acceptance test before operating and also after any modifications. This acceptance test should be performed by an authorized dealer or installer.

IMPORTANT MAINTENANCE INFORMATION

At the end of the first month after a new installation, an inspection of the system should be performed. All nuts, bolts and screws should be checked for tightness. All end stops, cotter pins, and hoist trolleys should be checked for abnormal wear or breakage. Check all track splices for alignment and that end trucks and festoon trolleys travel smoothly through the joints. Also, check that all festoon cables and/or hoses are securely clamped to the festoon trolleys and end clamps. Adjust as necessary.

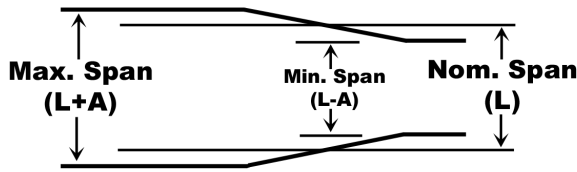
Thereafter, a complete inspection of all fasteners and connections should be performed annually or every 2000 hours, whichever ever comes first. It is important to note that every system application and use will be different, therefore some conditions of use could require more frequent inspection. Examples of such conditions might be two or three shift operations, high, repetitive, fast movement of the crane, or frequent crashing of the crane end trucks or trolley into the end stops.

It is expected that every time an operator uses a workstation crane or monorail system, they visually inspect the system before using it and note any unusual or abnormal operation of the system while using it. Meticulous, careful operation of the system will help minimize system maintenance.

Item	Check
Nuts, Bolts, Screws	Tightness
Endstops, Cotter Pins, Hoist Trolley(s), Track, and Supports	Abnormal Wear or Breakage
Track Splices	Alignment and Smooth Travel Through Joints
Festoon Cable/Hoses	Clamped Securely, Abnormal wear or Breakage

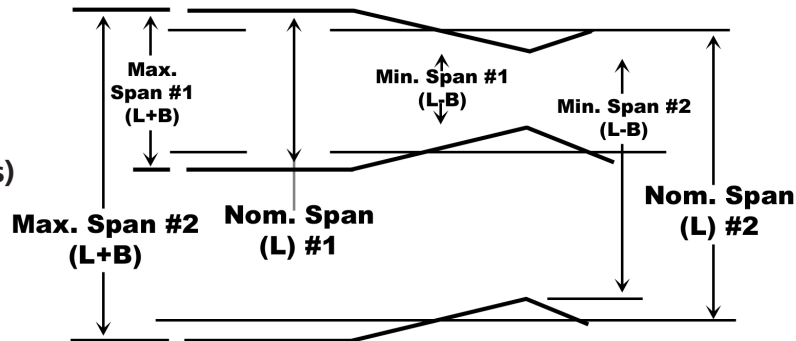
Runway Alignment Tolerance

Span
(2 Runway)



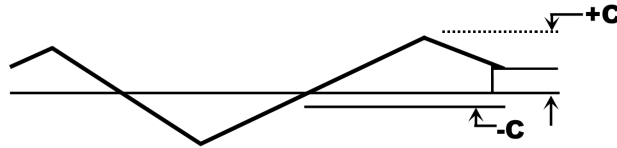
A=3/16" in any support span

Span
(3 or more Runways)



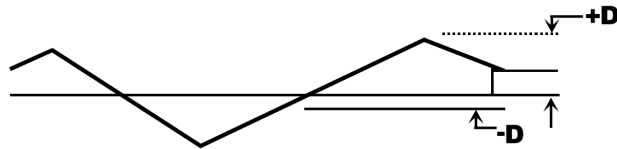
B=3/16" in any support span

Straightness



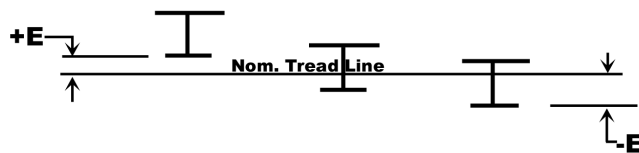
C=1/4" in any support span

Elevation



D=1/4" in any support span

Rail to Rail
Elevation



E=1/4" between adjacent rails

The Enclosed Track Systems provide a very high ease of movement, therefore, we recommend a bridge and runway slope of no more than 1/4" in 20'-0" to prevent drift of bridge on trolley. Diagrams courtesy of Monorail Manufacturers Association MH27.1 and MH 27.2

PRODUCT WARRANTY COVERAGE

Spanco warrants its products to be free from defects in material and workmanship as follows:

- **Manual Systems & Equipment:** Ten Years
- **Motorized Systems & Equipment and Paint and Finishes for Non-Aluminum Components:** Two Years

Ten-Year Warranty Coverage:

- Defects in equipment material and workmanship of manual systems and equipment
- Only applies to the wearable wheels on workstation bridge crane end trucks and hoist trolley.

Spanco warrants its manual workstation bridge crane, jib crane, and gantry crane products to be free from defects in material and workmanship for a period of ten (10) years or 20,000 hours, commencing on the date of shipment to the first retail purchaser. This warranty extends to non-wearable parts only, with the exception of the wheels supplied on manually operated workstation end trucks and hoist trolleys.

Two-Year Warranty Coverage:

- Defects in equipment material and workmanship of motorized systems and equipment
- Paint coatings and finishes for non-aluminum components.

Spanco warrants motorized equipment to be free from defects in material and workmanship for a period of two (2) years or 4,000 hours, commencing on the date of shipment to the first retail purchaser. Spanco warrants its paint and finishes for a period of two (2) years. Warranty claims related to coatings must be accompanied by documentation of the product's application and environmental conditions from time of delivery to time of claim.

WARRANTY TERMS & CONDITIONS

All warranty claims must be approved by Spanco before any work is performed. Spanco's obligation under this warranty is limited to the replacement or repair of Spanco products at the factory or separate location approved by Spanco. Other than the above mentioned warranty, Spanco will not honor any other warranties—whether expressed, implied, or statutory—and disclaims any warranties of merchantability or fitness for a particular purpose. Spanco has the right to reject any warranty claim due to harsh and/or inappropriate environmental conditions.

Spanco Is Not Liable for:

- Indirect, incidental, or consequential damages including lost profits, operating costs, loss of production, or travel expenses.
- Components or accessories not manufactured by Spanco
- Defective equipment or system failure caused by misuse, negligence, and improper installation or maintenance
- Equipment that has been used in excess of its rated capacity or beyond its service factors
- Rework and modification of any equipment that has been altered without Spanco's written authorization
- Freight charges and damage incurred by freight carriers
- Any loss, injury, or damage to persons or property resulting from failure or defective operation of material or equipment
- Any damage to paint coatings and finishes caused by negligence and improper storage, such as temporarily storing an indoor system outdoors

Reimbursement Disclaimer:

- Written notice of any claimed system defect must be given to Spanco within ninety (90) days of shipment.
- All requests for reimbursement must be accompanied by proper documentation.
- Reimbursement is provided in the form of a credit unless otherwise approved by Spanco management.
- Reimbursement for labor will be provided at a maximum rate of \$90 per hour.
- All reimbursement is subject to approval by Spanco management.



FREESTANDING ENCLOSED TRACK

Promise to Perform Industries, Inc.

ABOUT SPANCO®

Our Commitment

Spanco professionals are dedicated to designing and manufacturing a variety of material handling solutions that meet all applicable CMAA, ANSI, OSHA, and MMA guidelines and standards. Our team of engineers and industry experts combine many years of experience in the material handling industry to manufacture material handling solutions that are backed by the best warranty in the industry.

Spanco production facilities are certified under the ISO 9001:2015 Quality Management System to provide superior quality products. And every welder at Spanco is certified to handle steel (D1.1) and aluminum (D1.2) in accordance with the rigorous requirements and lab testing established by the American Welders Society (AWS).

Spanco professionals welcome challenging projects that require custom crane engineering. Spanco also offers hundreds of pre-engineered lifting solutions, including Workstation Bridge Cranes, Jib Cranes, Gantry Cranes, Monorails, and Tractor Drives.

Our Production:

All of our systems are designed and manufactured in the United States of America. We have production facilities in Las Vegas, Nevada, Franklin, WI, and at our headquarters in Morgantown, Pennsylvania.



Morgantown, PA | Las Vegas, NV | Franklin, WI
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