

busSTRUT Shop Drawing Set

Express Grid (Medium)

busSTRUT SHOP DRAWING SET (ONLY)

NOT A REPLACEMENT FOR ARCHITECTURAL/ENGINEERING/ ELECTRICAL SPECIFICATIONS. (DEFER TO THEIR DRAWINGS)

CONTRACTOR RESPONSIBILITIES

CONTRACTOR IS RESPONSIBLE FOR:

- 1.- FOLLOWING busSTRUT CONFIGURATION MOUNTING POINT RULES.
- 2.- REFERRING TO ARCHITECTURAL PLANS FOR PLACEMENT OF LIGHTS.
- 3.- REFERRING TO ELECTRICAL PLANS FOR POWER DISTRIBUTION AND ELECTRICAL CONNECTION REQUIREMENTS.

CONNECTION TO STRUCTURE

ATTACHMENT FROM busSTRUT SYSTEM TO STRUCTURE MUST BE ENGINEERED AND INSTALLED TO PROPERLY SUPPORT THE ENTIRE SUSPENDED WEIGHT.

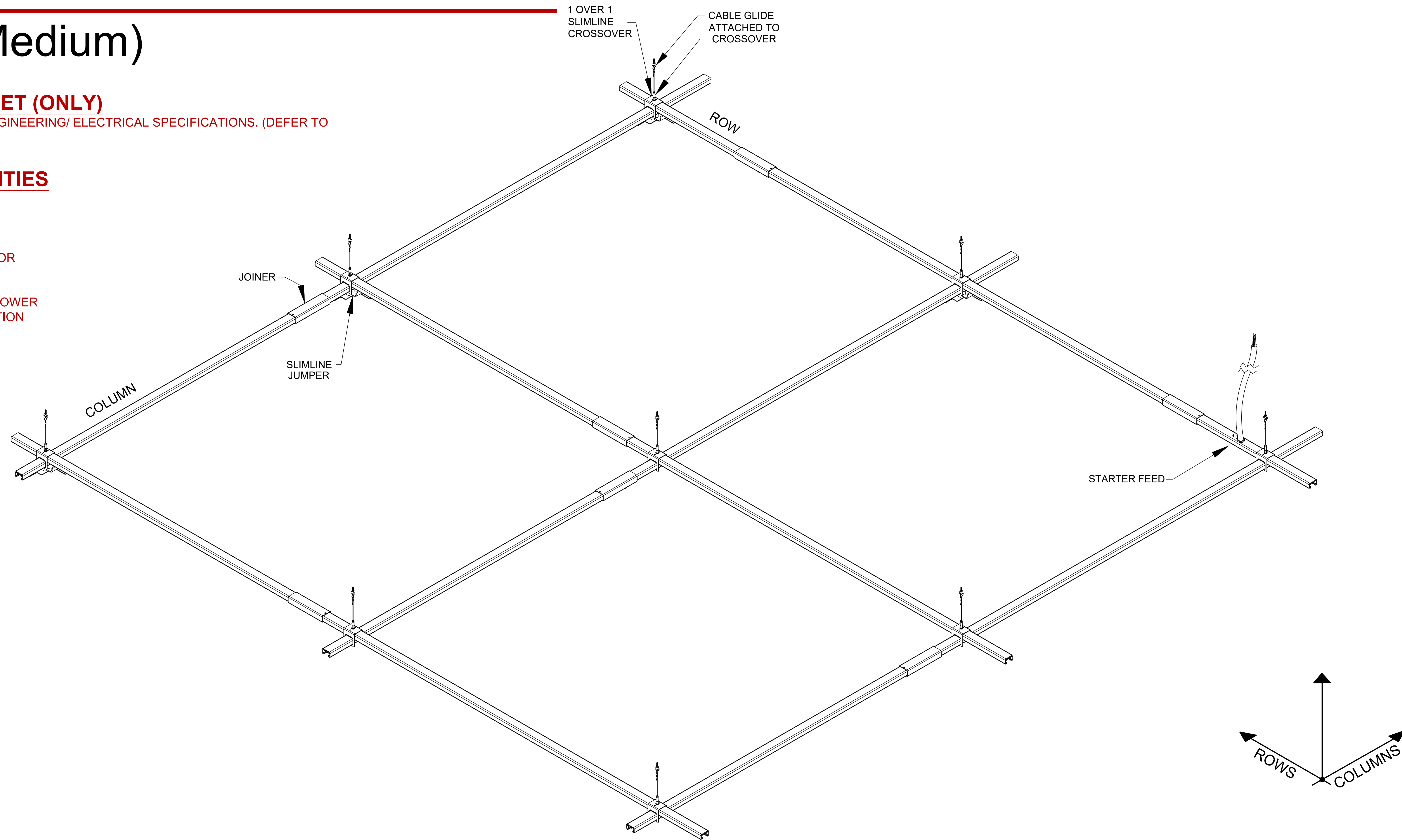
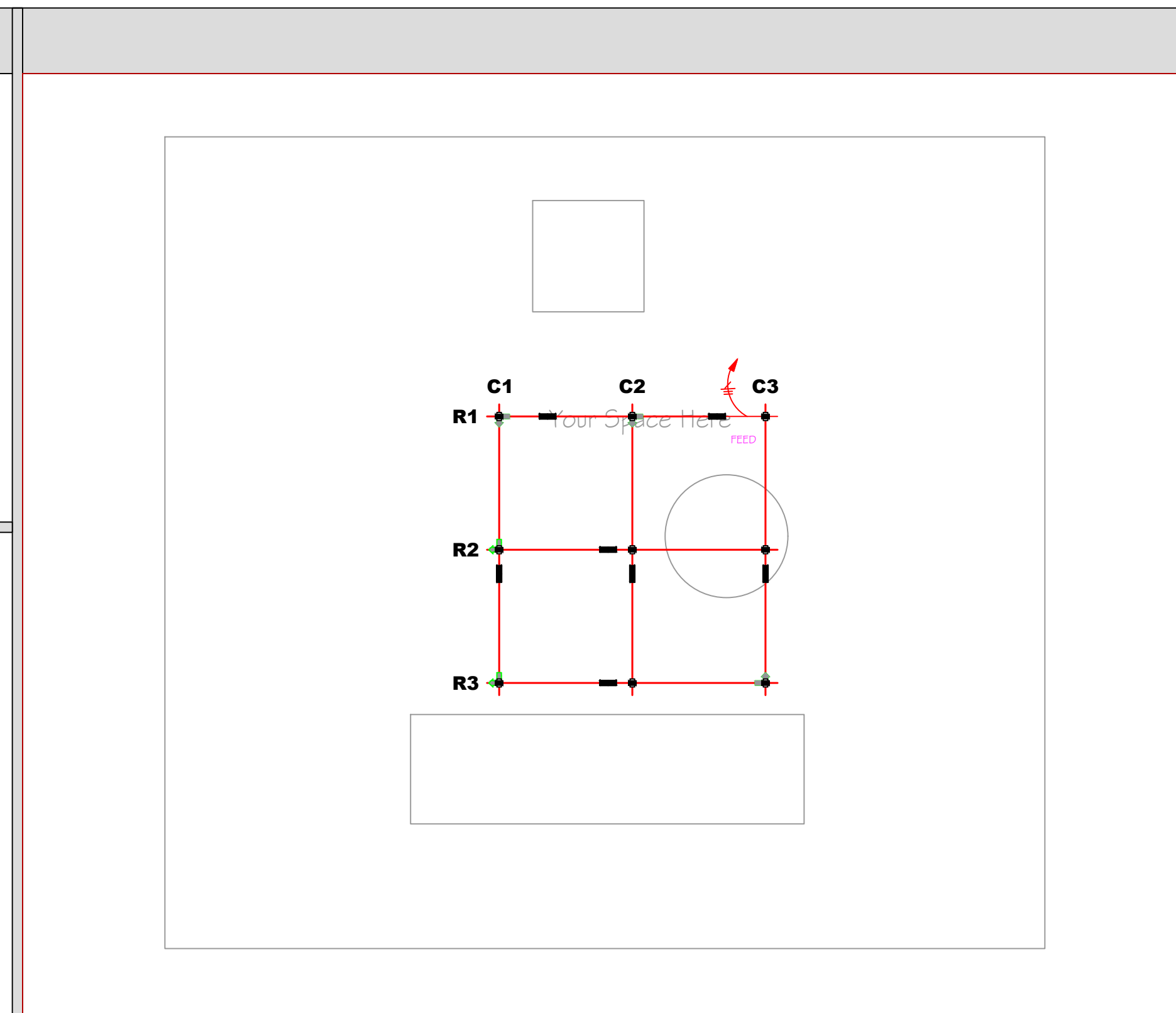


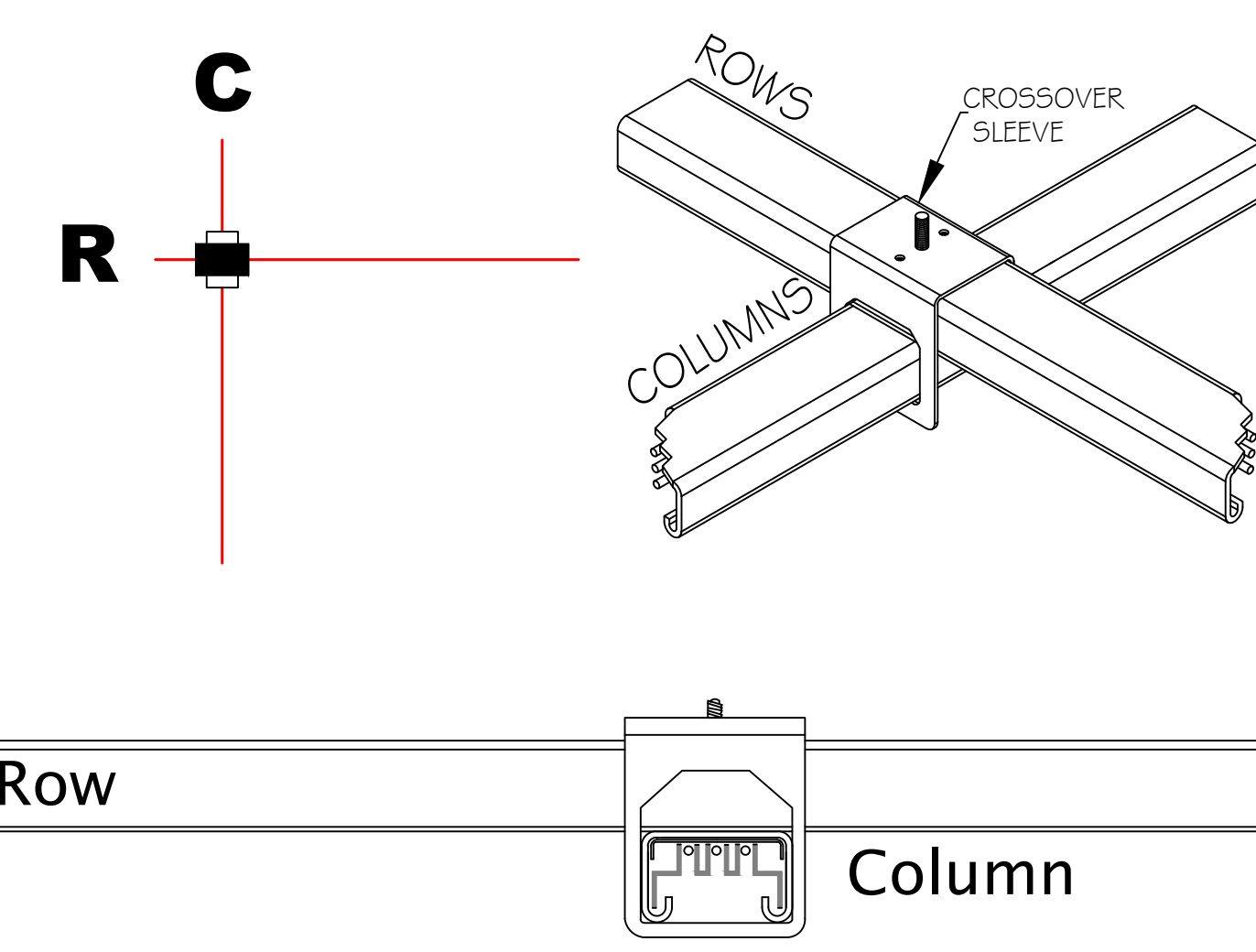
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KEY MOUNTING RULES

Rows are to be mounted on top of Columns.
Crossover sleeve runs with Rows.



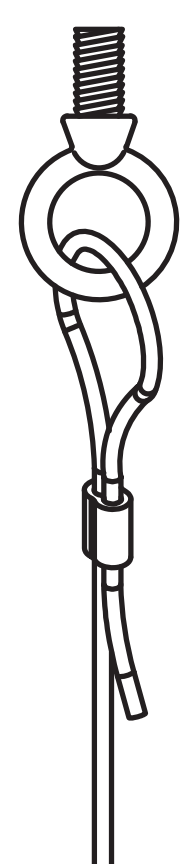
Legend

- busSTRUT 20 / Single Deck
- 30" Starter Feed
- Joiner
- 1/1 Slimline Crossover
- Slimline Jumper

APPROVAL

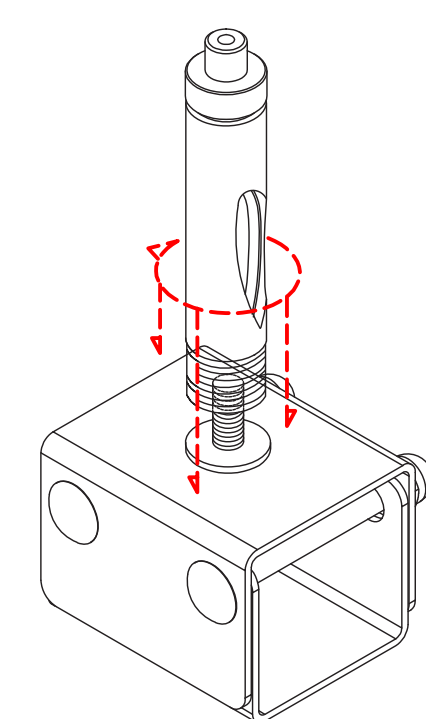
STEP 1

SUSPENDING busSTRUT



1 SUSPEND CABLES
(CG-XX)
ATTACH CABLE ASSEMBLY TO STRUCTURE

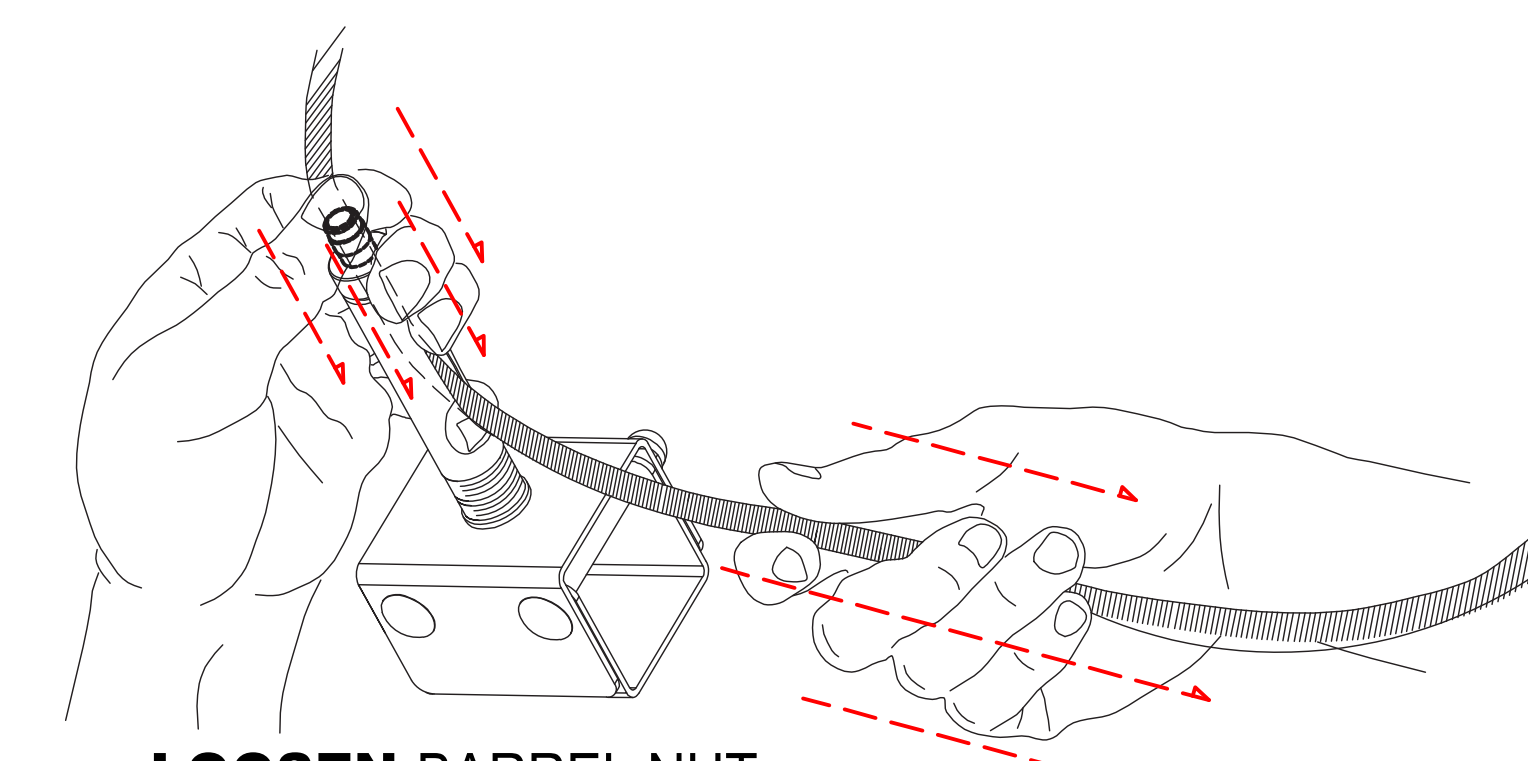
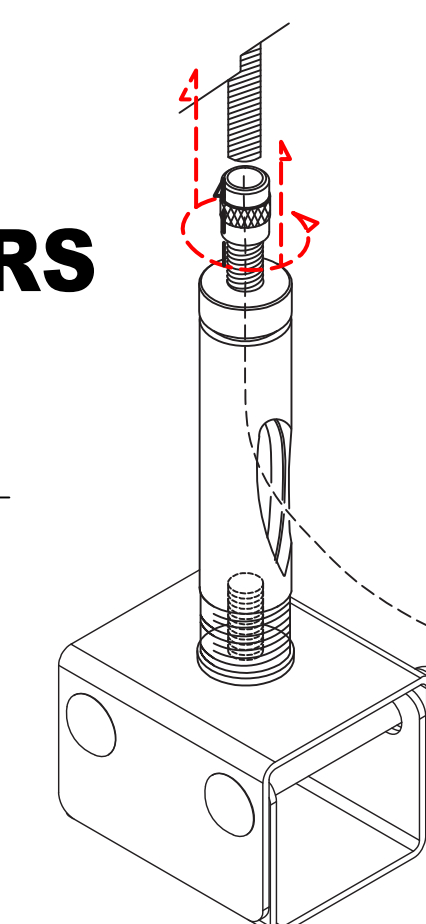
**It is the contractor and/or engineer's responsibility to determine correct connection to structure (beam clamp, etc).*



2 ASSEMBLE HANGERS
(HM-S)
ASSEMBLE HANGERS AND ATTACH CABLE GLIDE

**It is the contractor and/or engineer's responsibility to determine correct connection to structure (beam clamp, etc).*

3 ATTACH HANGERS TO CABLES
(CG-XX)
FEED CABLES THROUGH GLIDE TO ATTACH



LOOSEN BARREL NUT
PUSH CABLE THROUGH
PULL CABLE FOR SLACK

SLIDE busSTRUT THROUGH SUSPENDED HANGERS

Assemble

Create cable suspended runs of busSTRUT. Usually, these are running perpendicular to structural joists. Insert busSTRUT lengths through hangers/crossovers working from FINISHED HEIGHT.

FINISHED HEIGHT

**It is the contractor and/or engineer's responsibility to determine correct connection to structure (beam clamp, etc).*

LEVEL busSTRUT AND TRIM CABLE

FINISHED HEIGHT

CUT CABLE
Leave enough pass through cable for future leveling

BE SURE TO FOLLOW busSTRUT MOUNTING RULES (SEE busSTRUT shop drawings)

STEP 2

INSERT JOINERS

ATTACH JOINERS TO EACH END OF CONNECTING busSTRUT

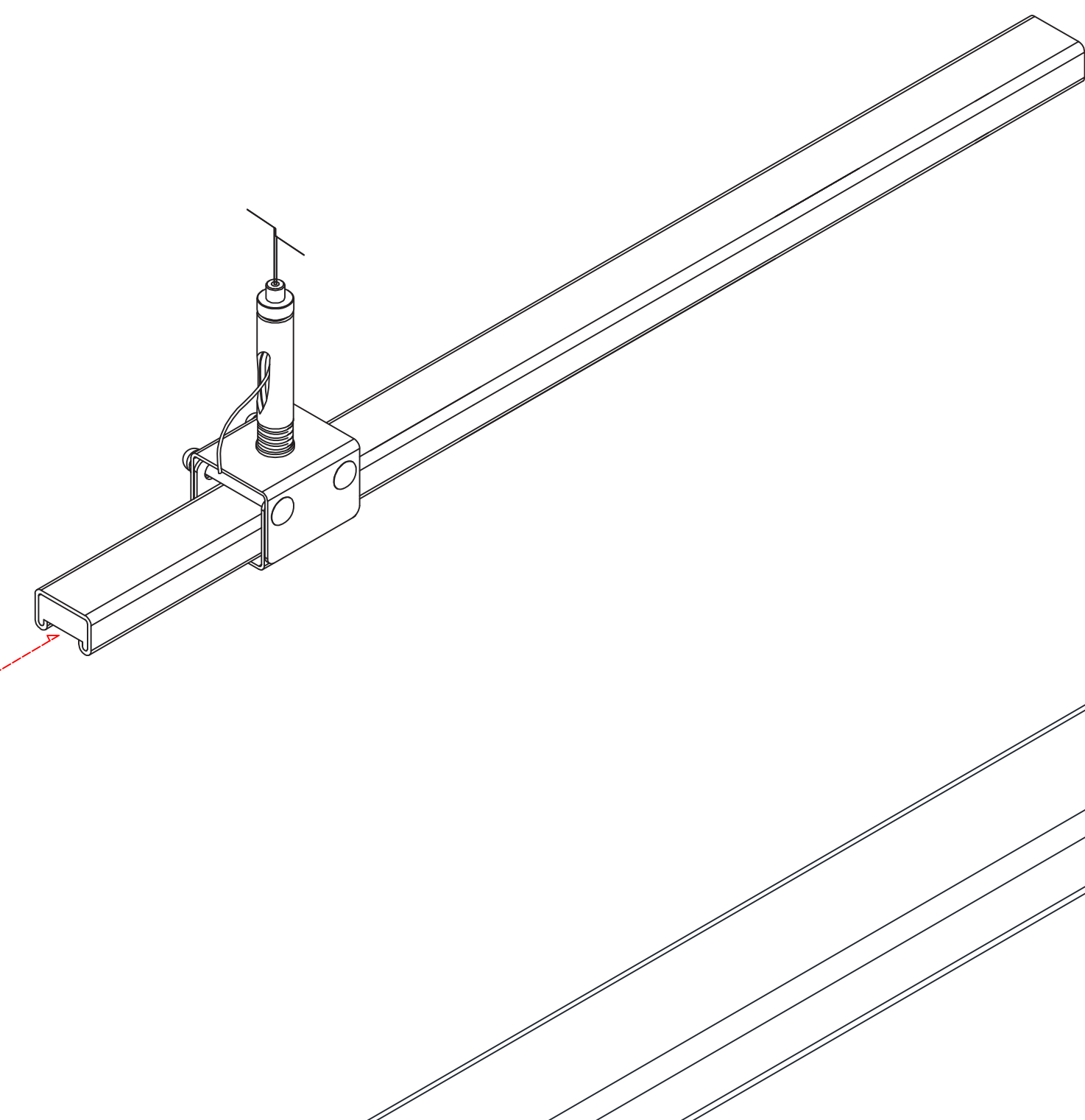
TIGHTEN JOINERS

TIGHTEN SET SCREWS ON THE BOTTOM OF THE JOINER

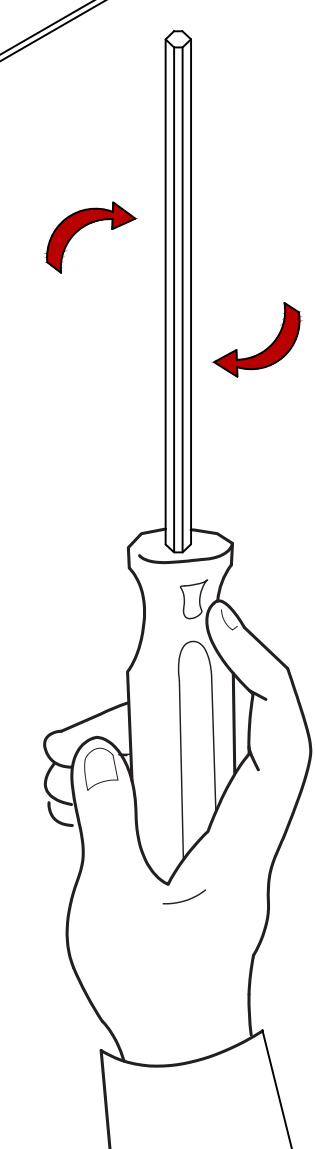
ATTACH INSERT

ATTACH JOINERS TO EACH END OF CONNECTING busSTRUT

JOINERS (M-JB)
Joiners are used to mechanically and electrically connect individual busSTRUT lengths.



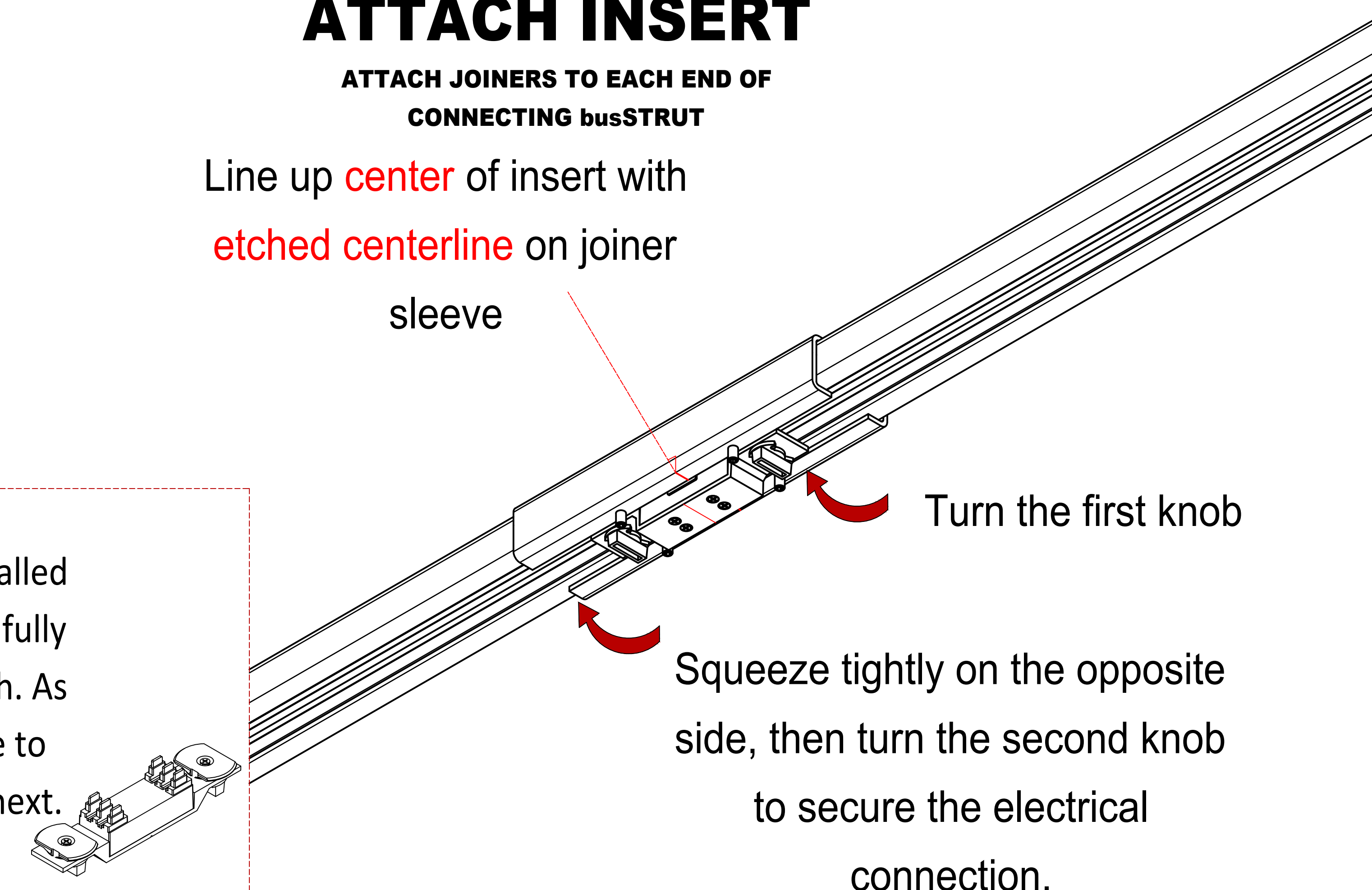
Joiners require 3/32 Hex key for tightening set screws



JOINER INSERT (M-JI-X)

A single piece unit that is installed with two knobs, one must be fully turned in each abutting length. As a result, power can continue to flow from one length to the next.

Line up **center** of insert with **etched centerline** on joiner sleeve



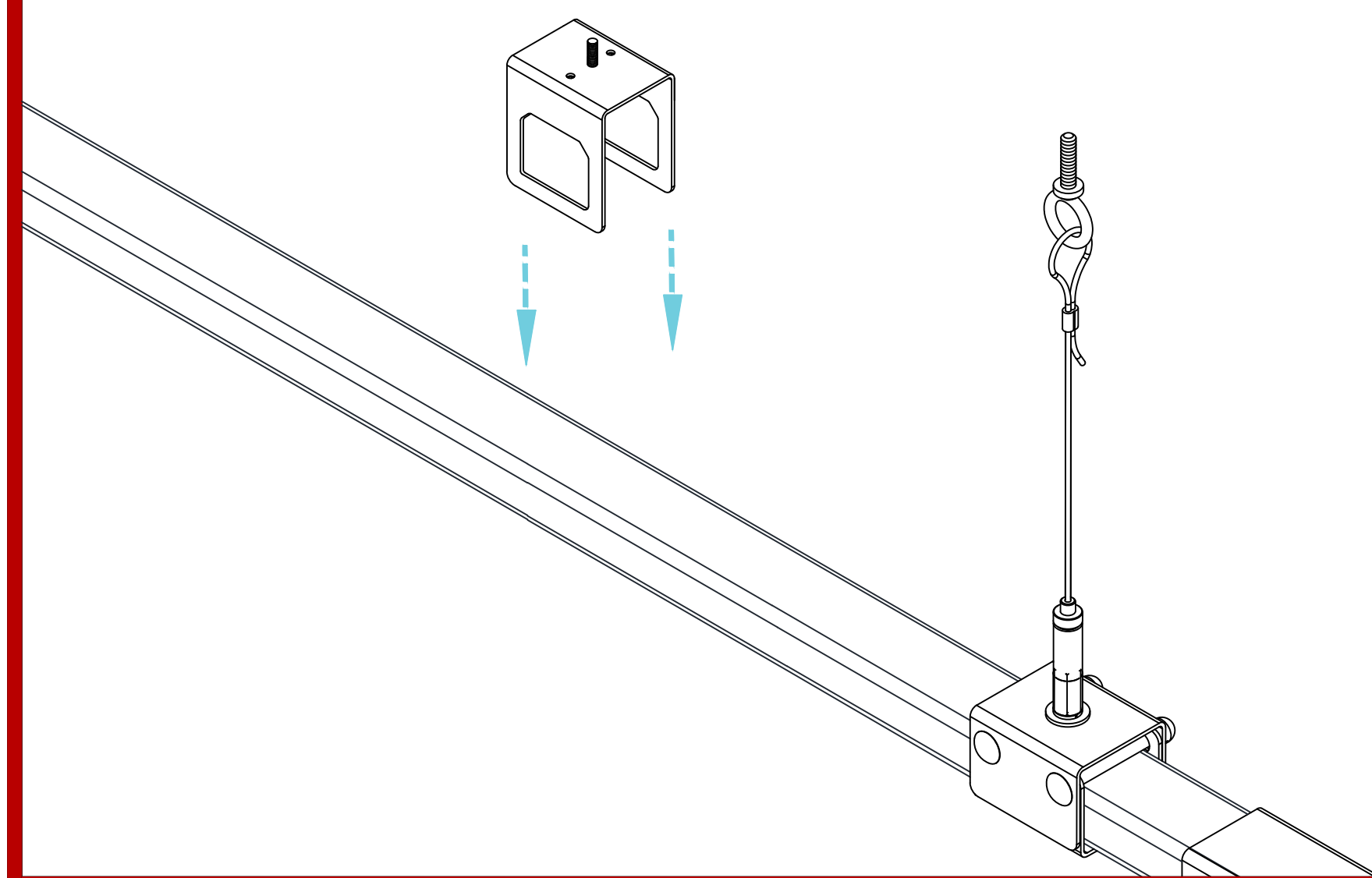
Turn the first knob
Squeeze tightly on the opposite side, then turn the second knob to secure the electrical connection.

****Installation Instruction Guidelines are provided only as that, informative guidelines. Defer to architectural/engineering drawings tailored to the specific project.**

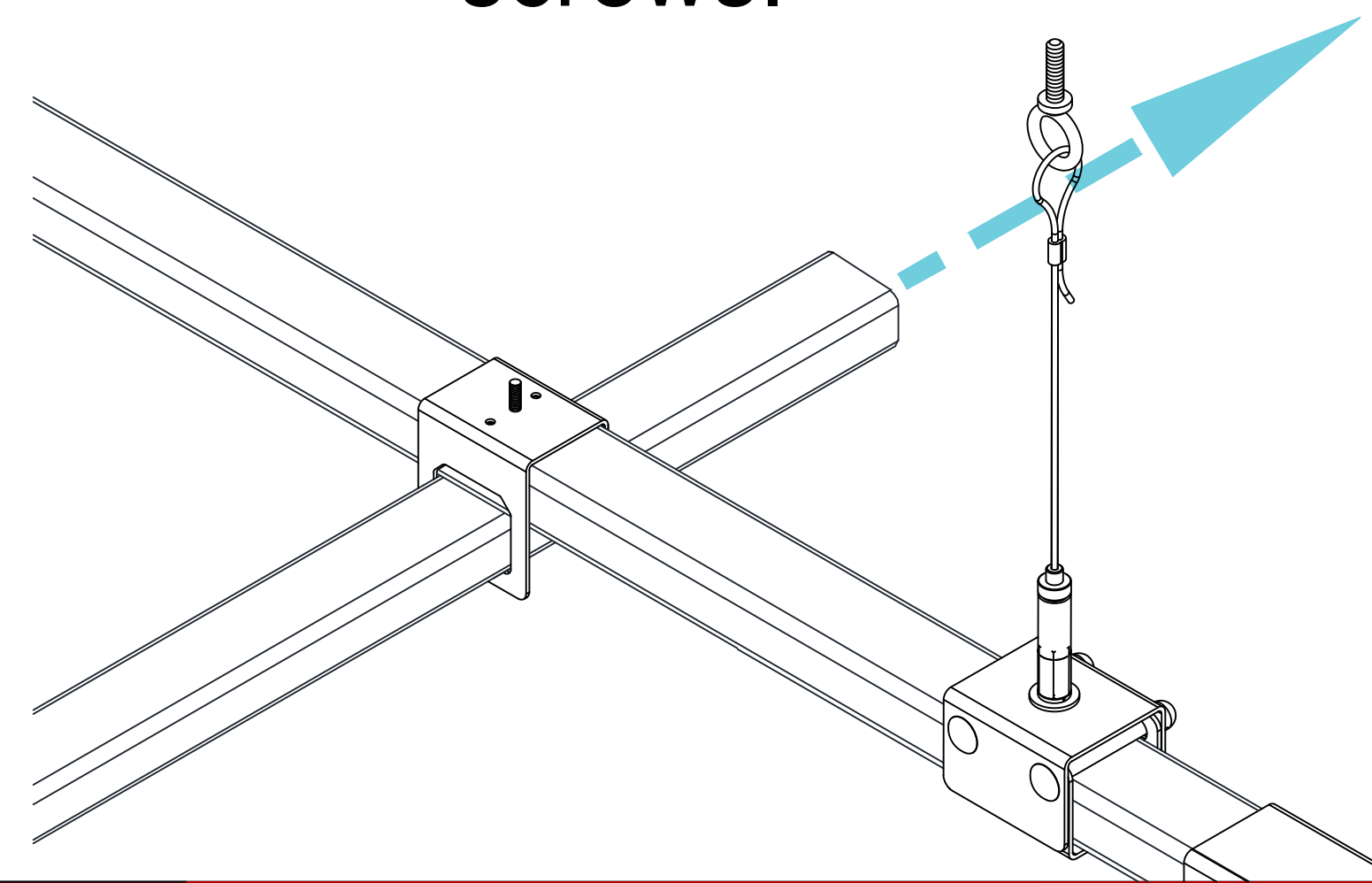
STEP 3

INSTALLING CROSSOVERS DROPPING ON

Crossovers can be dropped onto suspended busSTRUT to create an intersection with a perpendicular run of busSTRUT.



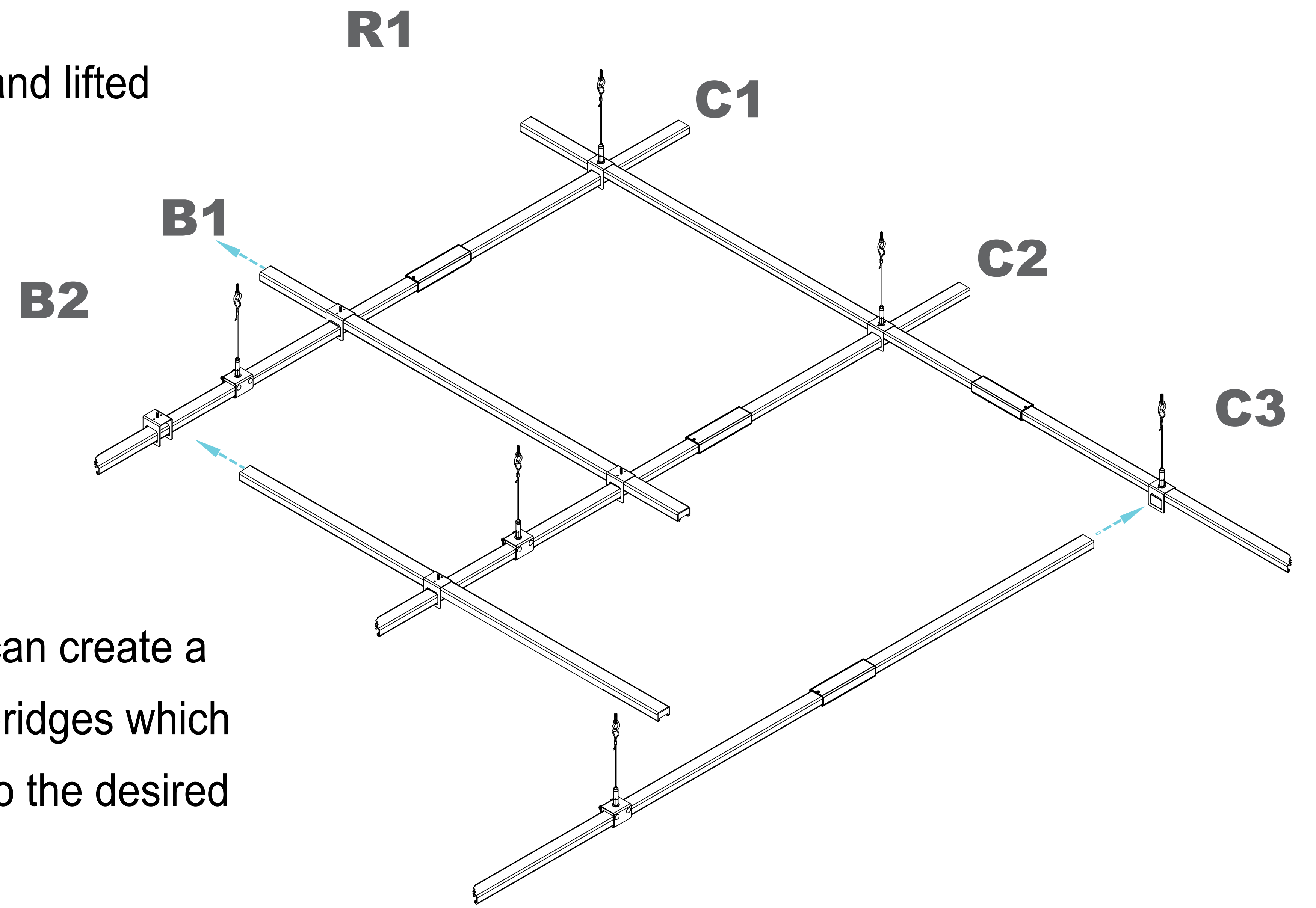
Slide perpendicular runs of busSTRUT through the crossover and tighten the set screws.



SLIDING ON

Crossovers can be slid into position and lifted to create perpendicular bridges.

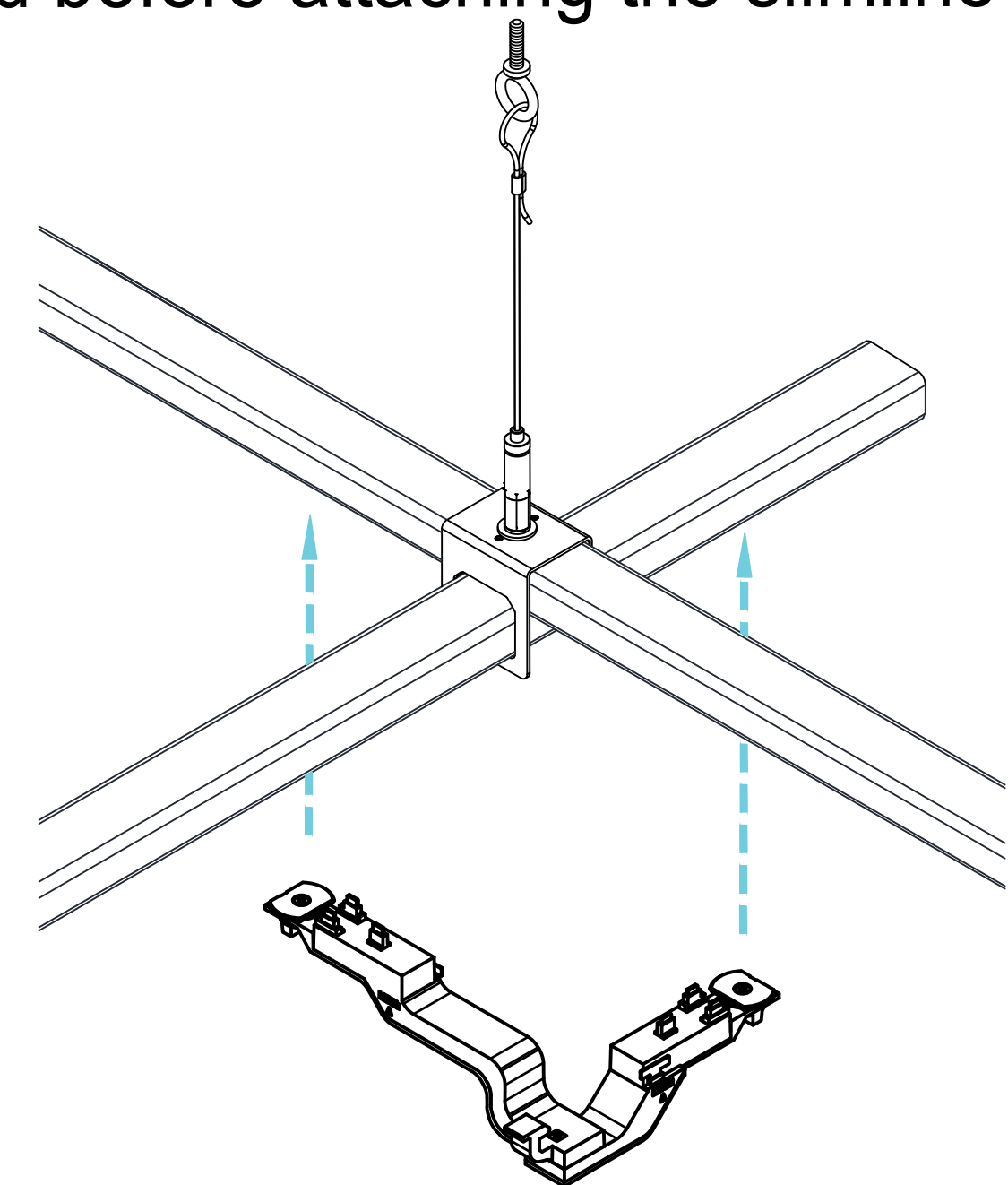
Perpendicular runs can create a full grid or be short bridges which are easily moved into the desired position.



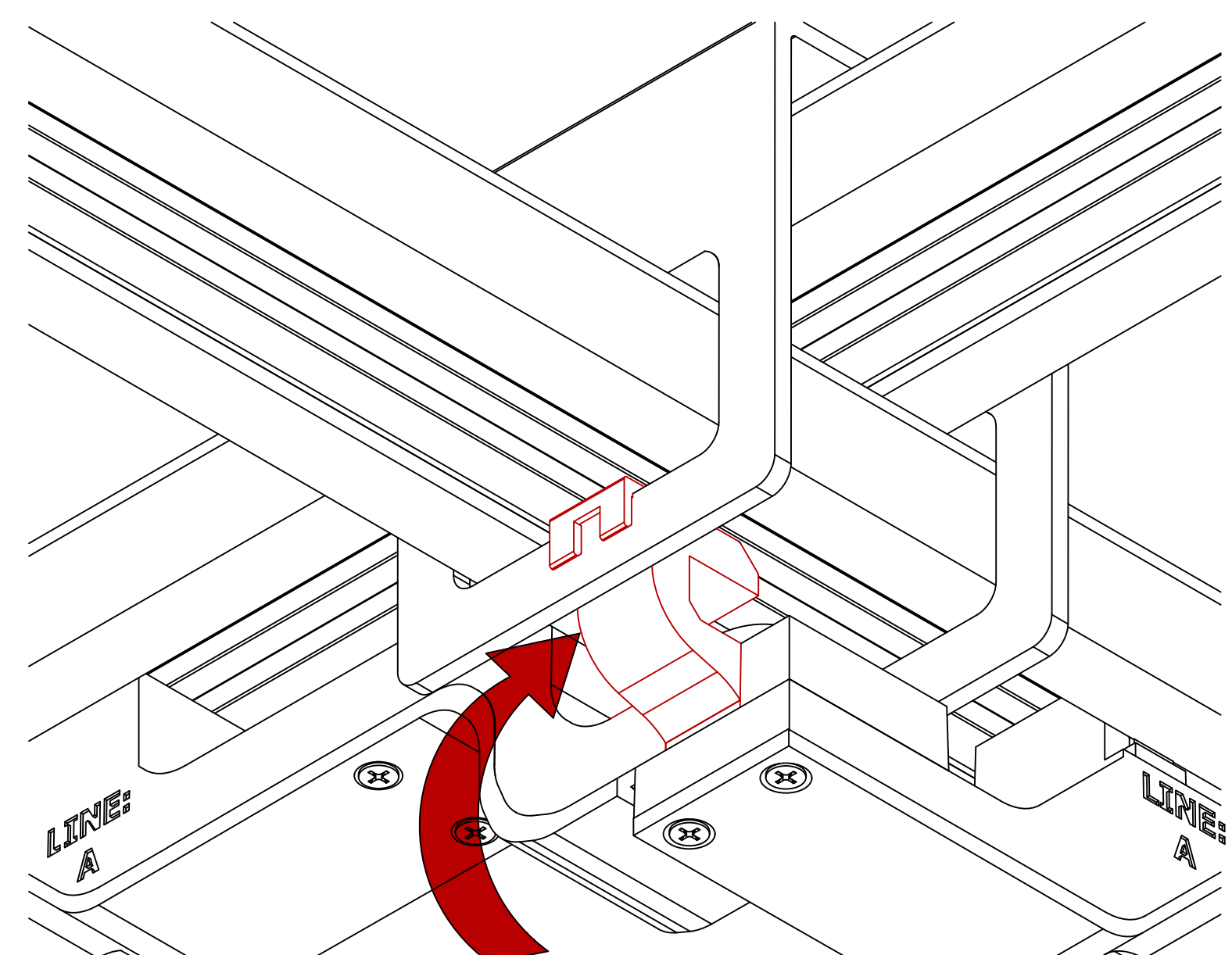
STEP 4A

SLIMLINE JUMPER

Make sure that the slimline crossover is tightened before attaching the slimline jumper.

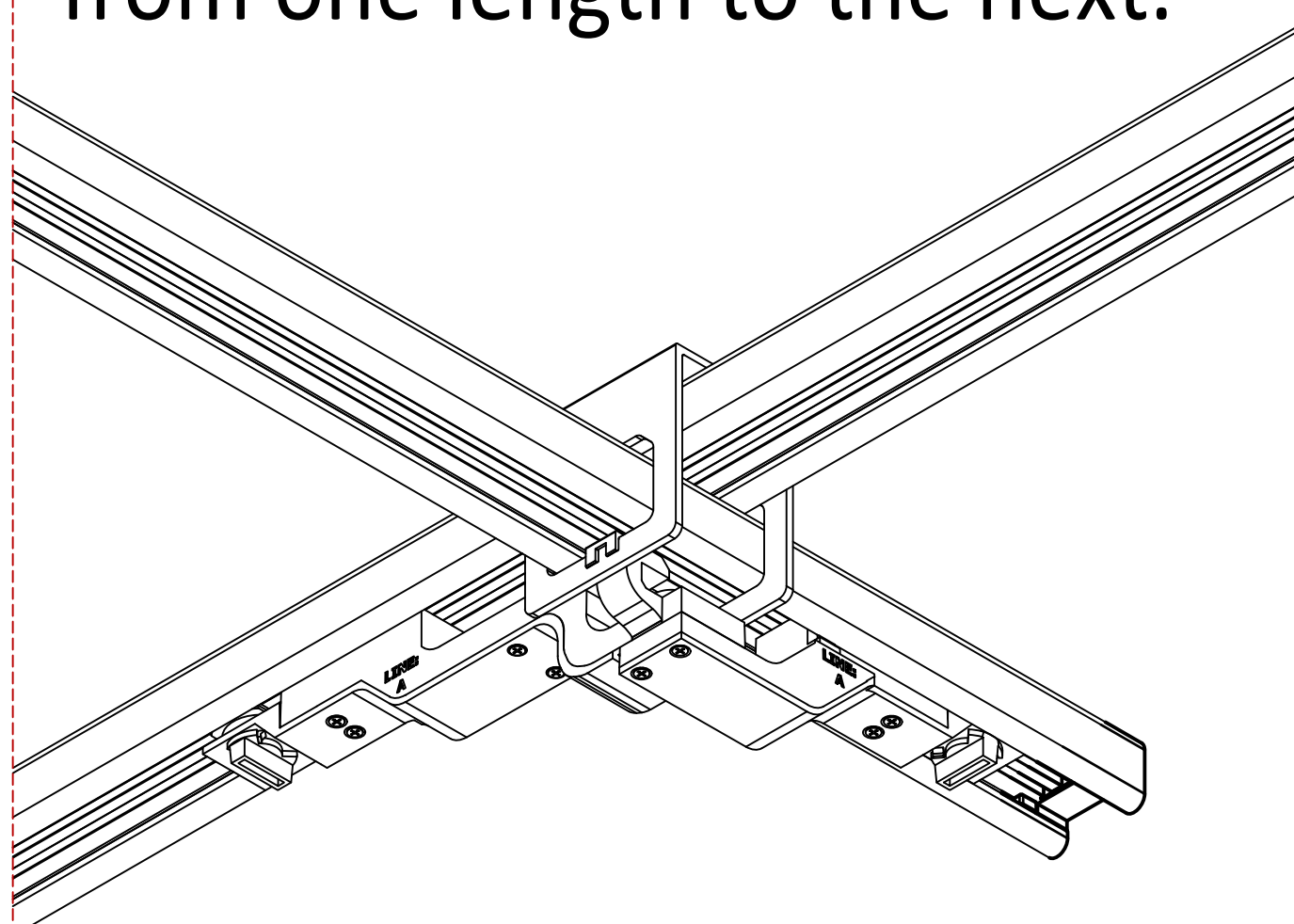


First, clip the jumper to the crossover.

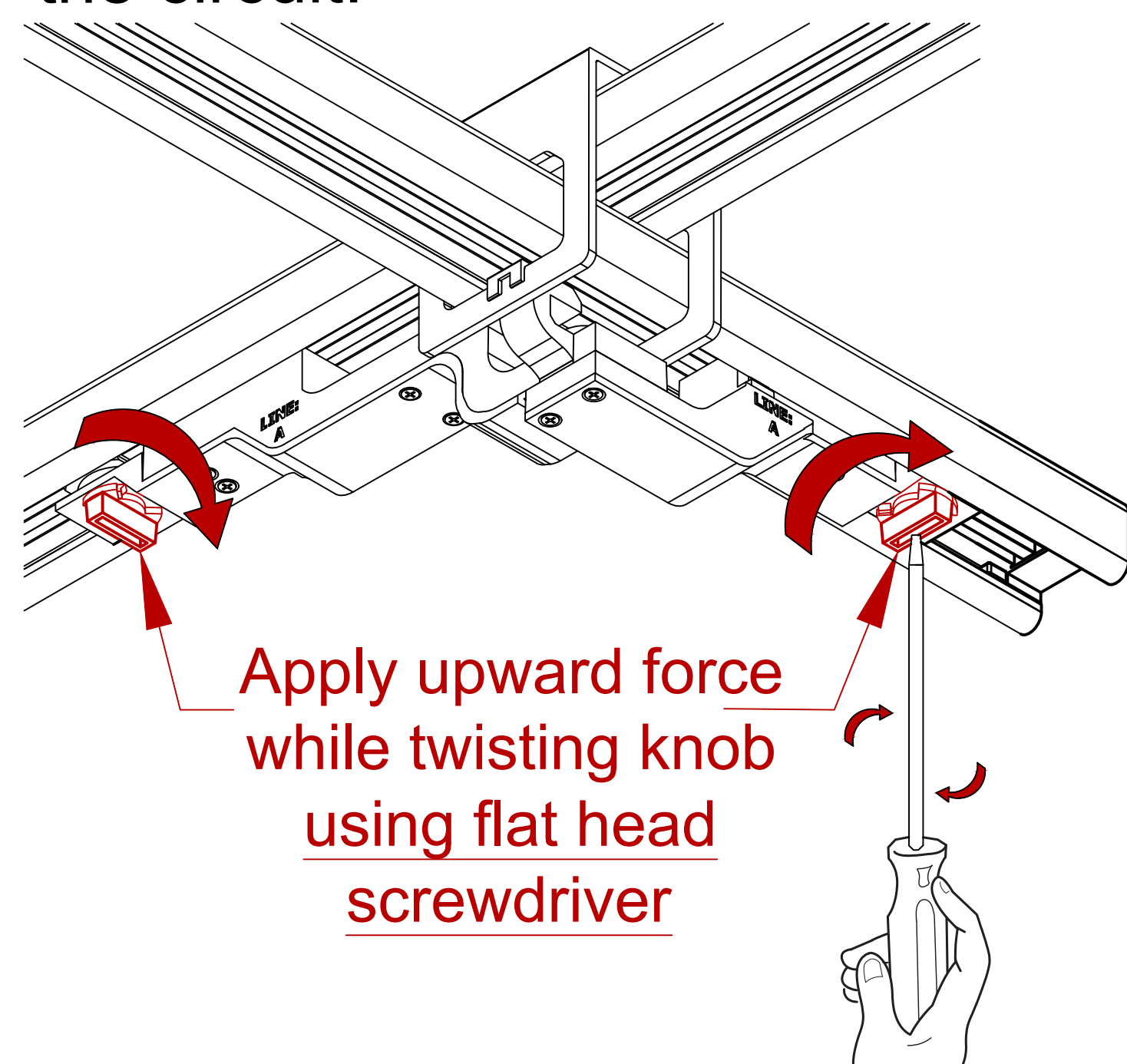


SLIMLINE JUMPER (MD2020-UNIV-IJ2-B-X)

A single piece unit that is installed with two knobs, one must be fully turned in each abutting length. As a result, power can continue to flow from one length to the next.



Seat the jumper into the busSTRUT by squeezing tightly on one side and turning the knob. Then, turn the other knob to complete the circuit.



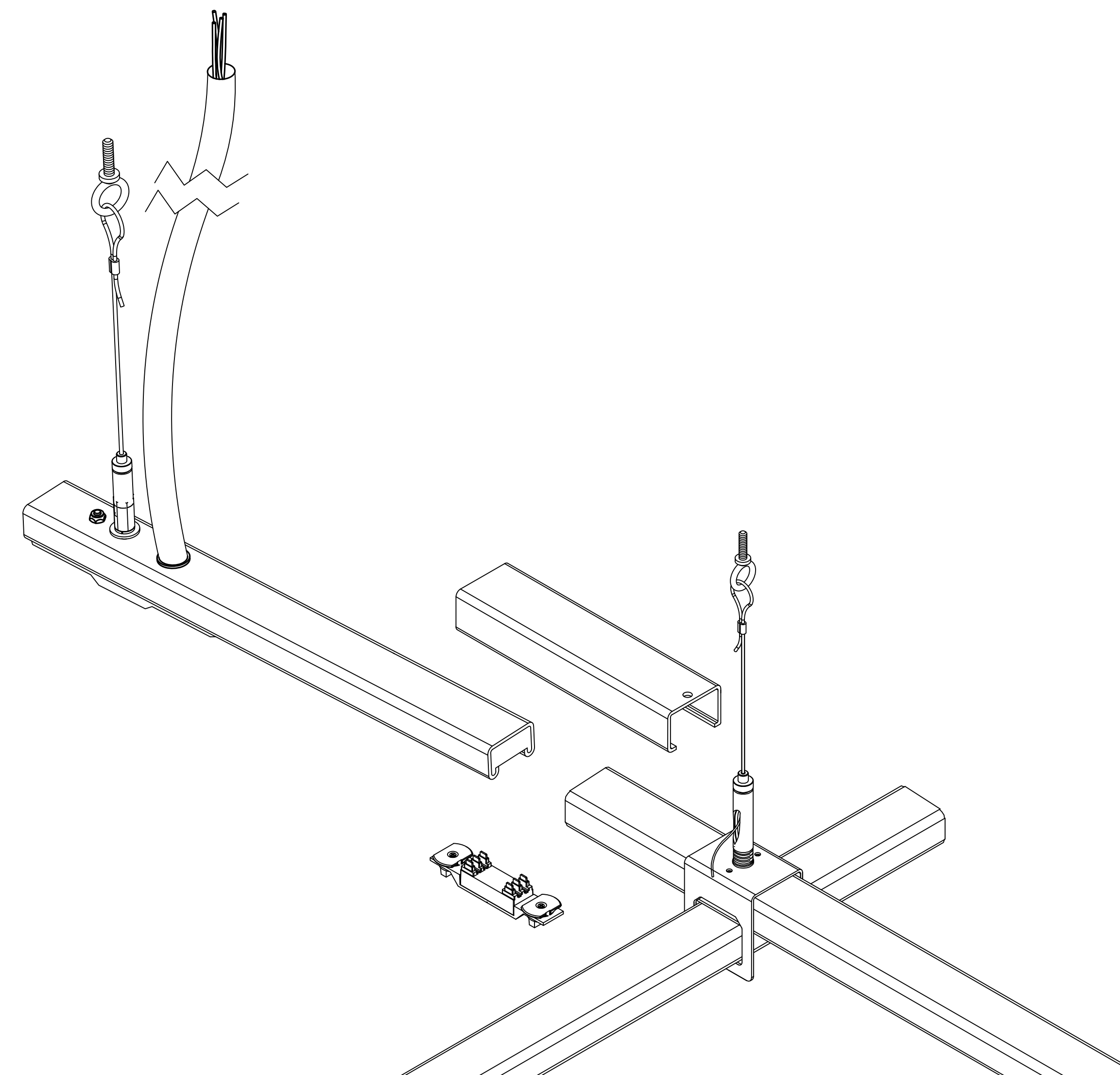
Apply upward force while twisting knob using flat head screwdriver

STEP 4B

STARTER FEED

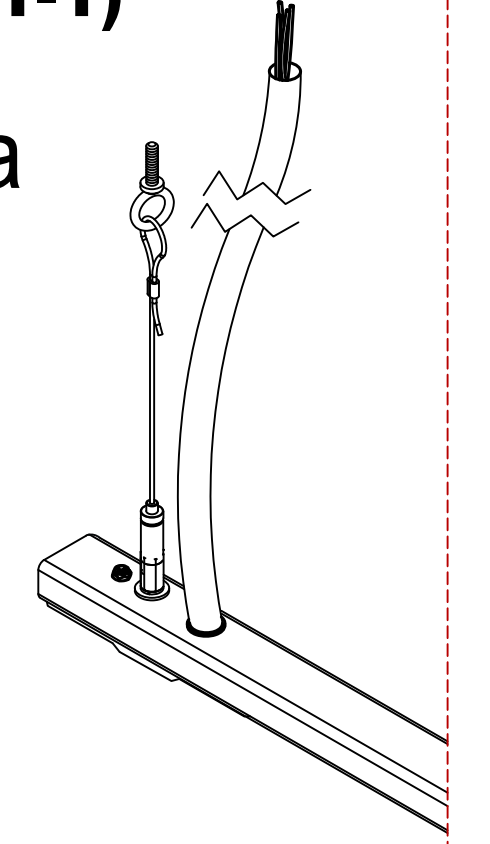
The Starter Feed comes with a 1/4-20 Stud to create an additional hang point and a 15' 12/4 SOOW Cord to connect power to the system.

Attach the cable glide to the stud and tighten. Connect the aircraft cable as shown in Step 1.

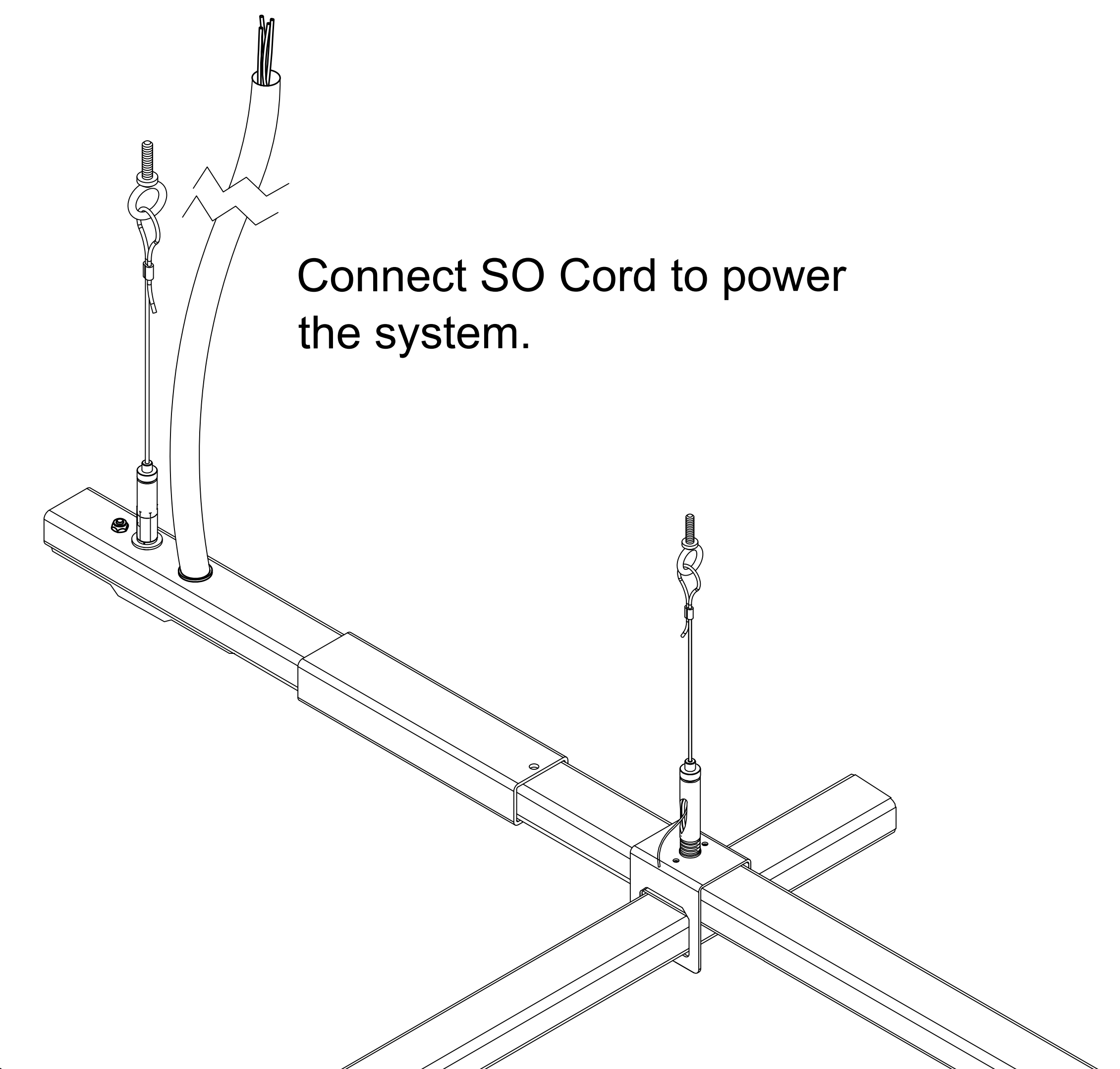


STARTER FEED (P20-3-40-UNIV-30-CM-F 1-1)

This 30" length supplies power to a configuration from the preassembled cord and to the abutting length via a joiner insert that must be installed.

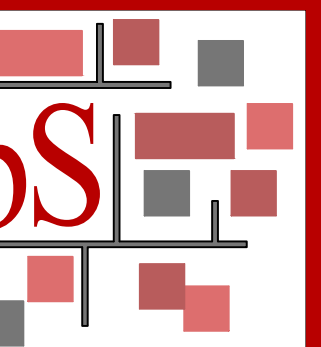


Once the starter is properly suspended, connect the starter to the suspended grid using a Joiner and Insert as shown in Step 2.



Connect SO Cord to power the system.

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LARRY GELLERT
CHECKED BY:
JOHN LOCH
DRAWN BY:
JOHN LOCH
DATE:
10/24/2024
SCALE:
BID/REVIEW

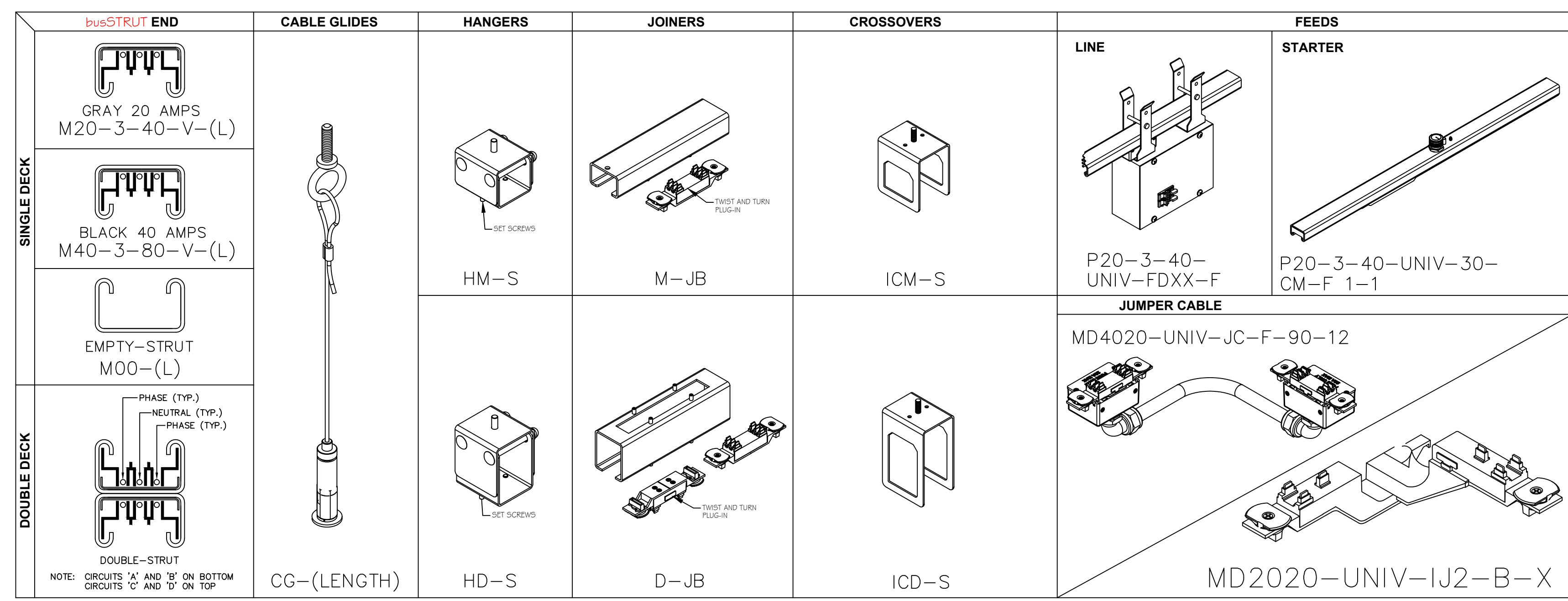
TYPICAL
busSTRUT Installation Instructions

BUSSTRUT
SHOP DRAWING SET(ONLY)
NOT A REPLACEMENT FOR
ARCHITECTURAL/
ENGINEERING OR ELECTRICAL
DRAWINGS

NO.	DATE	REV.	DESCRIPTION

PAPER SIZE:
ARCH E (48x36)
NOT TO SCALE
DRAWING NUMBER
E-b02

busSTRUT Parts



busSTRUT 12 gauge 1" x 1" x 1-5/8" STEEL **busSTRUT** features two Hot wire symmetrically surrounding a center Neutral. The result, two 20 Amp circuits 40 Amps Maximum with **busSTRUT** (20) alternatively two 40 Amp circuits 80 Amps Maximum with **busSTRUT** (40). 2, 5, 10, and 20' lengths. Rated for up to 277/480V. Double decks with standard hardware for trunking.

BRAIDED CABLE with **GUIDE**: For use with **busSTRUT**. Hangers/Crossovers. Includes cable-glides and cable with factory assembled cable looped threaded 1/4-20" eye bolt.

HANGERS: Single and Double Hangers are for use with **busSTRUT**. Each is an assembled two-part unit. The upper piece includes a threaded stud for use with **busSTRUT** cable-glides.

JOINERS: Single and Double are for use with **busSTRUT**. Lengths are joined together mechanically with the 8" steel sleeve. Electrical Joiner-Kits include both a Twist & Turn Plug to electrical insert to bridge power. And continuous grounding wasta through the bus itself by means of a permanently affixed copper grounding bar.

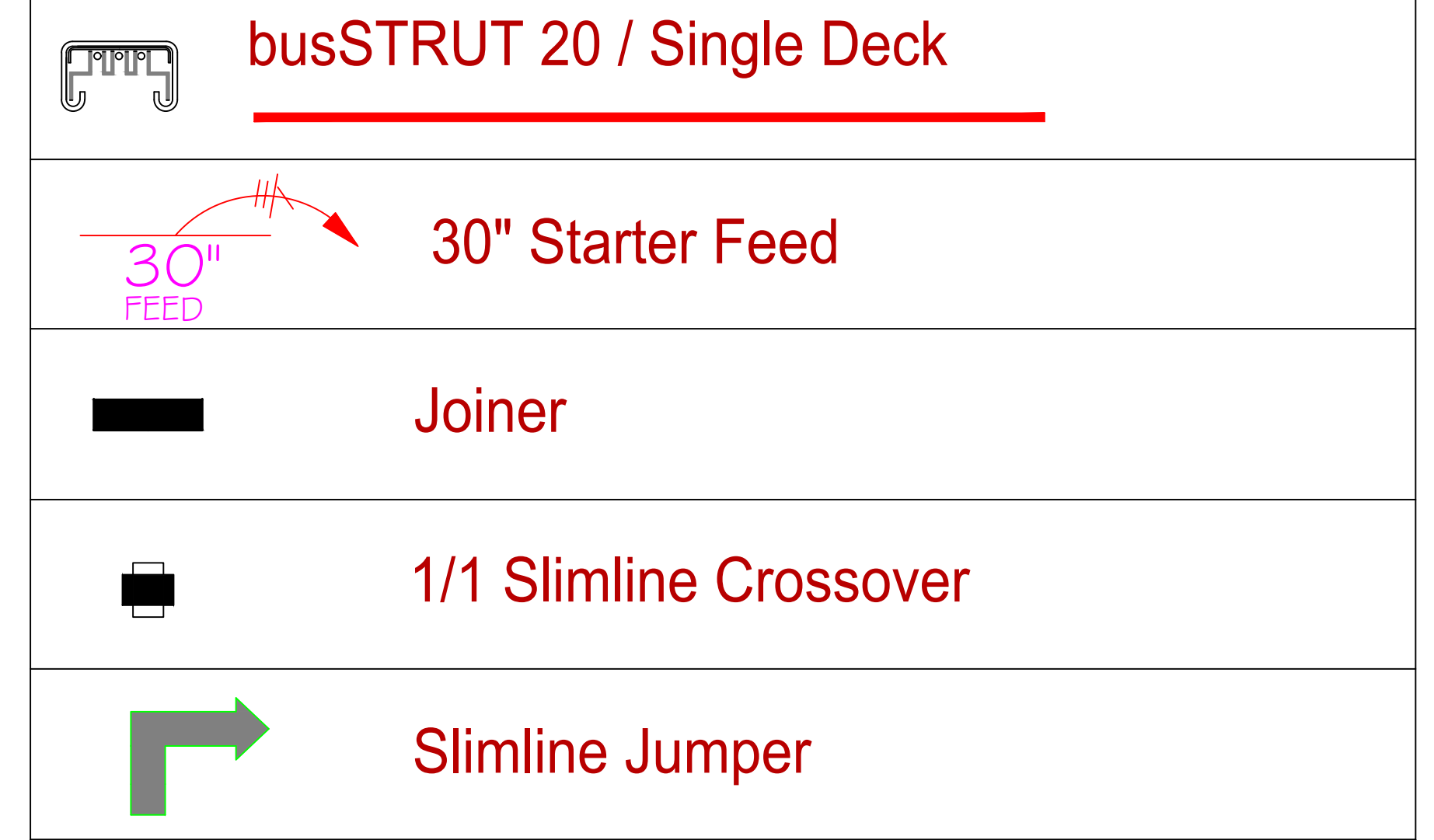
CROSSOVERS: For use with intersecting **busSTRUT**. Each is an assembled two-part unit for building grid configurations and bridges. The upper piece includes a threaded stud for use with **busSTRUT** cable-glides.

JUMPERS: For use with both **busSTRUT** (20) and **busSTRUT** (40). The fused 4000 Jumper Cables can be used to electrically connect **busSTRUT** (40) Trunks to **busSTRUT** (20) Branches and/or electrically connecting **busSTRUT** (20) to **busSTRUT** (20).

LINE FEEDS: For use with powering single-decked **busSTRUT**. Junction Box features energy code type "Tenters" (breakers/fuse holders) and 3 Pole Fuses. Available up to 277/480V. Can be positioned anywhere along **busSTRUT** to reduce the lengths of runnems.

STARTER FEEDS: For use with powering single-decked **busSTRUT**. Utilized when no current limiting is required on the **busSTRUT**. Must be positioned at the beginning of a run.

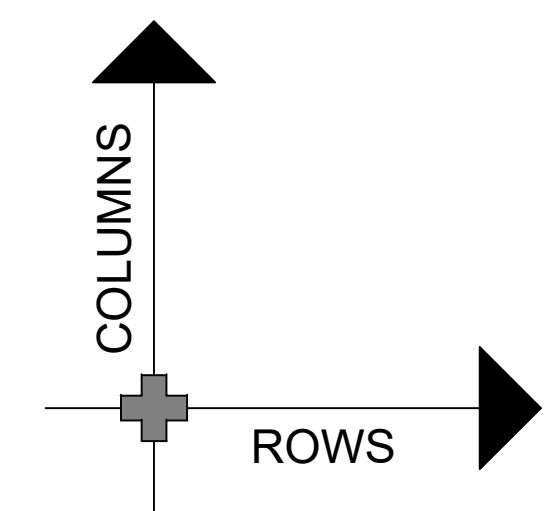
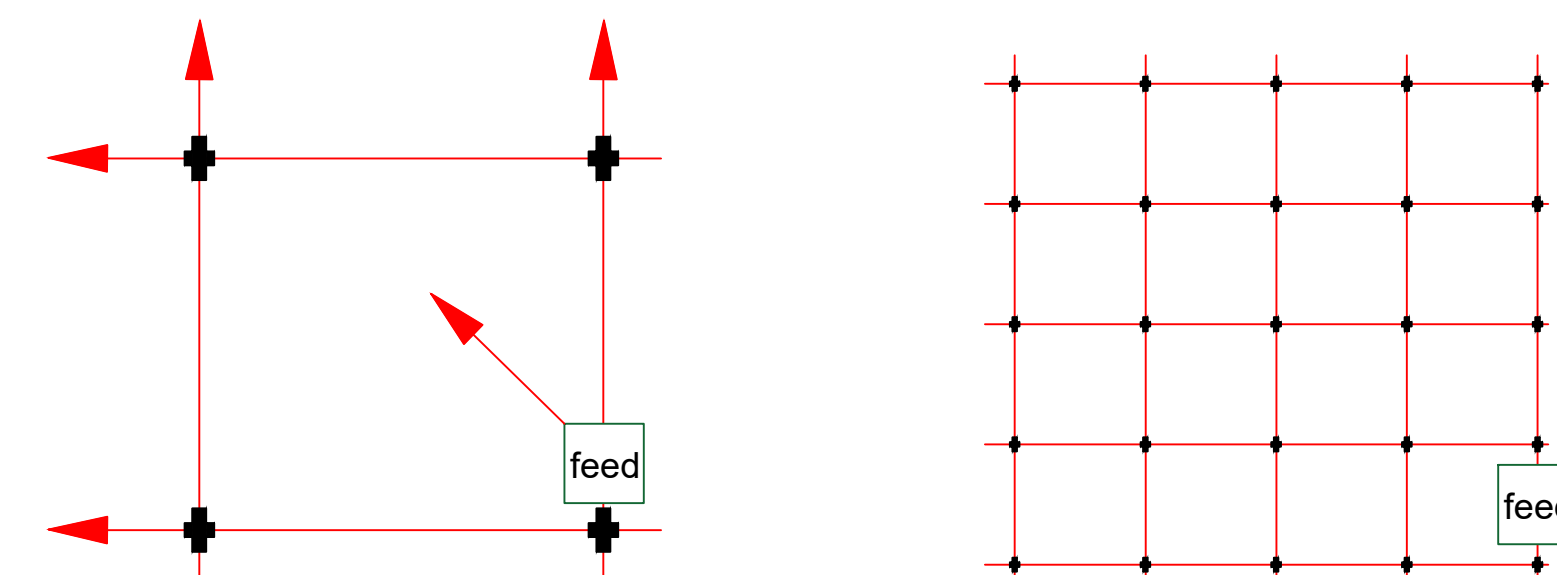
Legend



busSTRUT system is designed to be BID separately.

Bid from the feeds-in.

* Powered by a minimal amount of feed boxes.



Bill of Materials

busSTRUT Bill of Materials																								
Finish TBD: Galvanized, White, or Black																		Drawn By John Loch						
																		Checked By John Loch						
																		Date 10/24/2024						
R/C	Amps	LF	BF	busSTRUT LENGTHS						busSTRUT Hardware						busSTRUT POWER								
				2.5	3	5	7	10	M	INS	NE-INS	M	C-GI	Xover	Jcord	Line	GEN	ACT						
				M20-3-40-277-2.5-F-2B	M20-3-40-277-3-F-2B	M20-3-40-277-5-F-2B	M20-3-40-277-7-F-2B	M20-3-40-277-10-F-2B	M-JB-F-X	M-JI-F-X	M-JI-F-NE	HM-S-F-ST-LFX	CG-E-15-B-GI	ICM-S-F-ST-X	JUMP COORD	MD4020-UNIV-JC-F-90-12-GO2	MD2020-UNIV-IJ2-F-X	P20-3-40-UNIV-JK-NB-F	P20-3-40-UNIV-30-CM-F-1-1	P40-5-60-UNIV-FD-F	30ST	40	GEN	ACT
R1	20	12	12	1			1		2	2			3							1				
R2	20	12	12			1	1		1	1			3											
R3	20	12	12			1	1		1	1			3											
SUB TOTAL		36	36	1	3	2	3	10	4	4			9		9					2	1			
C1	20	12	12			1	1		1	1										1				
C2	20	12	12			1	1		1	1										1				
C3	20	12	12			1	1		1	1										1				
SUB TOTAL		36	36			3	3		3	3										3				
STORE TOTAL		72.0	72.0	1	5	6	7	7					9		9					5	1			

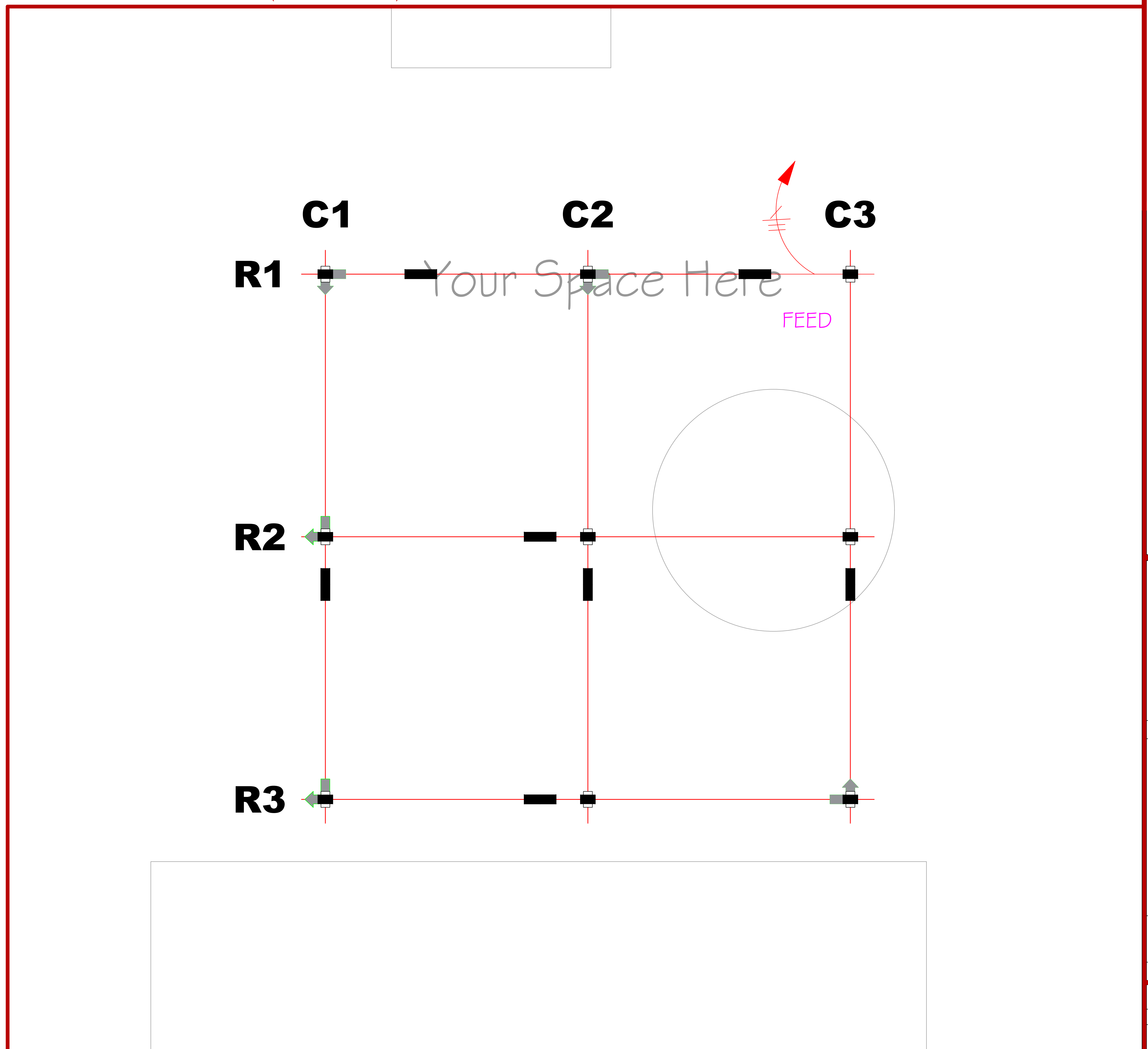
Labor Hours

busSTRUT provides time-tested standard labor hours per part, which are then multiplied by the project's Bill of Materials.

busSTRUT LABOR					
ITEMS	Qty.	UM	STANDARDIZED LABOR HOURS		TOTAL HRS
			min	hrs 60	
LENGTHS	72	LF	2.75	0.05	3
JOINERS	7	EA	12	0.20	1
HANGERS	9	EA	25	0.42	4
CROSSOVERS	9	EA	10	0.17	2
ATTACHMENTS		EA	8	0.13	0
JUMPERS	5	EA	6	0.10	1
FEEDS	1	EA	15	0.25	0
busSTRUT SUB-TOTAL					11
ACCENT		EA	8	0.13	0
LINEARS		EA	20	0.33	0
busSTRUT READY LIGHTS SUB-TOTAL					0
TOTAL TIME					11

Lighting Plan

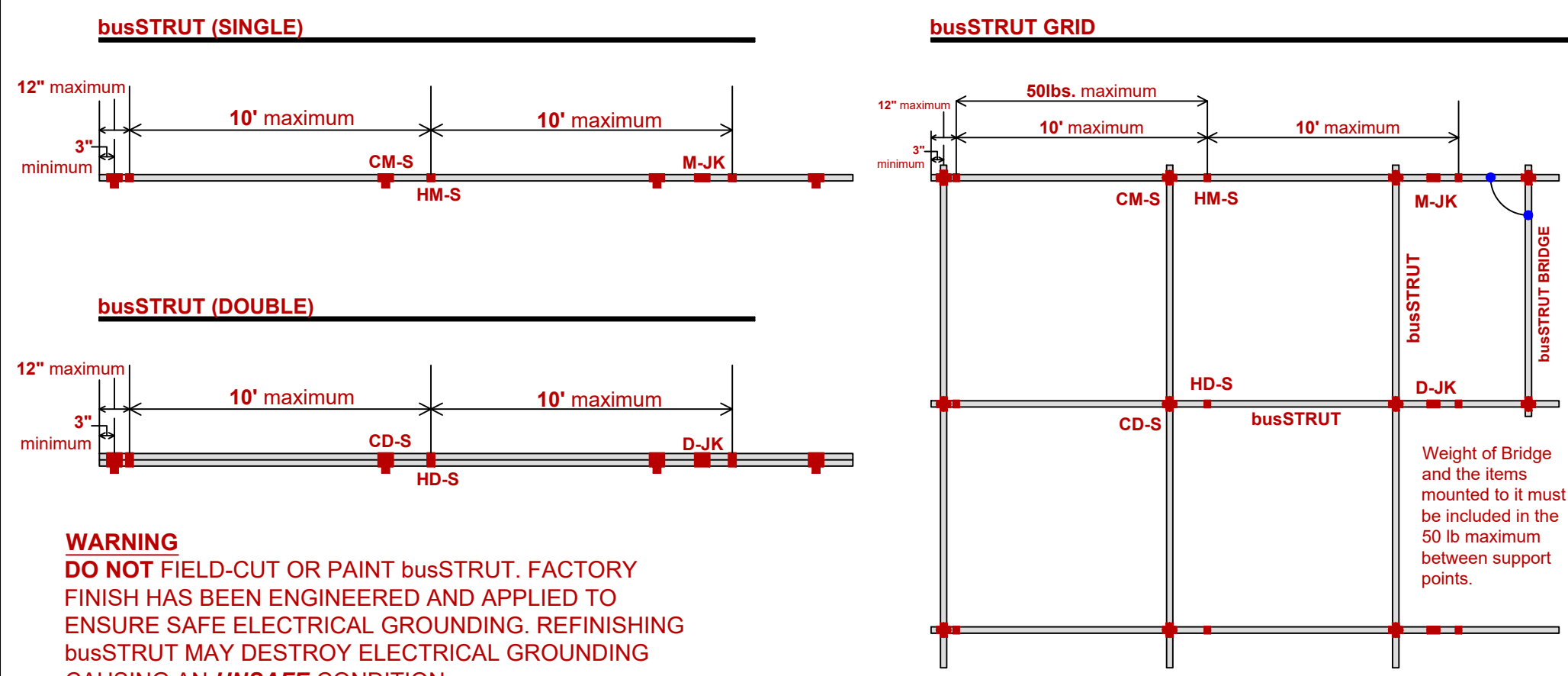
busSTRUT LIGHTING PLAN ONLY
THIS DRAWING IS MEANT TO SHOW THE LOCATION OF busSTRUT LIGHTS ONLY. IT IS NOT A REPLACEMENT FOR: ARCHITECTURAL / ENGINEERING / ELECTRICAL SPECIFICATIONS. (SEE THEIR DRAWINGS)



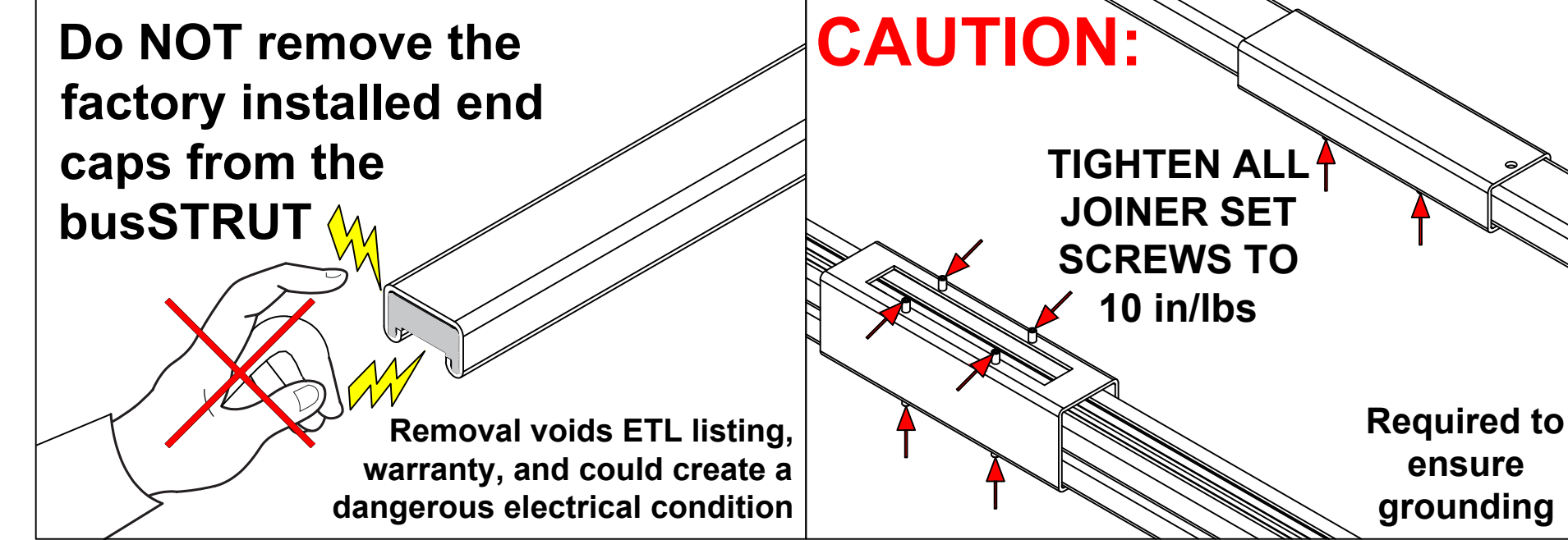
Lighting Plan & Bill of Materials
GRID MEDIUM

busSTRUT SHOP DRAWING (SET ONLY) NOT A REPLACEMENT FOR ARCHITECTURAL / ENGINEERING OR ELECTRICAL DRAWINGS
PAPER SIZE: ARCH E (48x36)
SCALE 1" = 1'-0"
DRAWING NUMBER E-b1

Mounting Rules



WARNING
 DO NOT FIELD-CUT OR PAINT busSTRUT. FACTORY FINISH HAS BEEN ENGINEERED AND APPLIED TO ENSURE SAFE ELECTRICAL GROUNDING. REFINISHING busSTRUT MAY DESTROY ELECTRICAL GROUNDING CAUSING AN UNSAFE CONDITION.



DISTANCE:
 10' MAXIMUM 10' spacing between support points

12" Support point must be within 12" from every end or corner

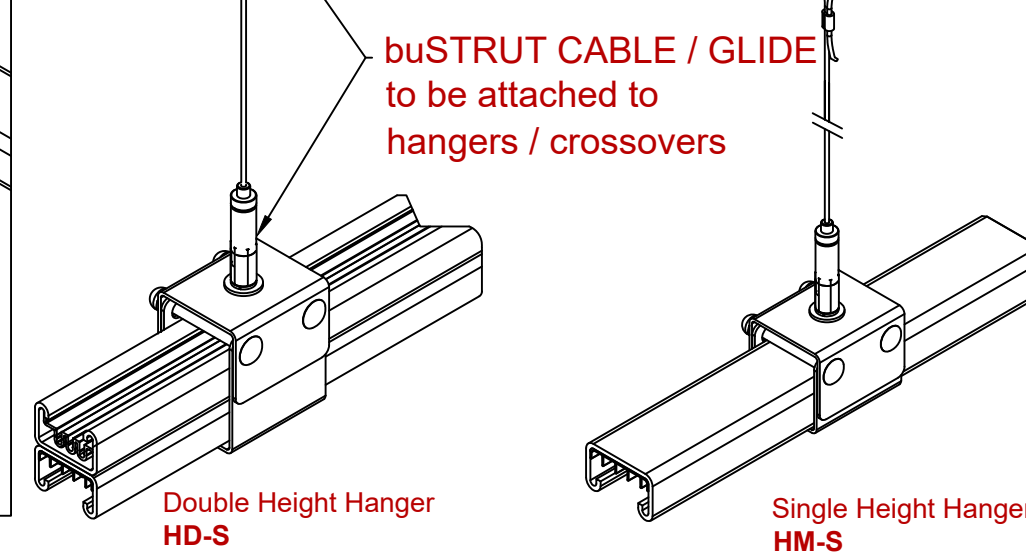
3" MINIMUM 3" of busSTRUT to be exposed beyond end of mounting hangers and/or crossovers

WEIGHT:
 50 lbs Maximum 50 pounds between support points (Include weight of busSTRUT System)
 Weight of 1 foot of busSTRUT System:
 Single (MIN) - 1.5 lb per Linear Foot (not including connected weight)
 Double (MAX) - 3 lb per Linear Foot (not including connected weight)

FITTERS
 40 lbs The busSTRUT Flip-Fitters (with metal bracket) are rated for 40 lbs maximum static, vertical load.
 Flip-Fitters without metal bracket are for use with standard track light fixtures only. Consult for maximum weight restrictions.

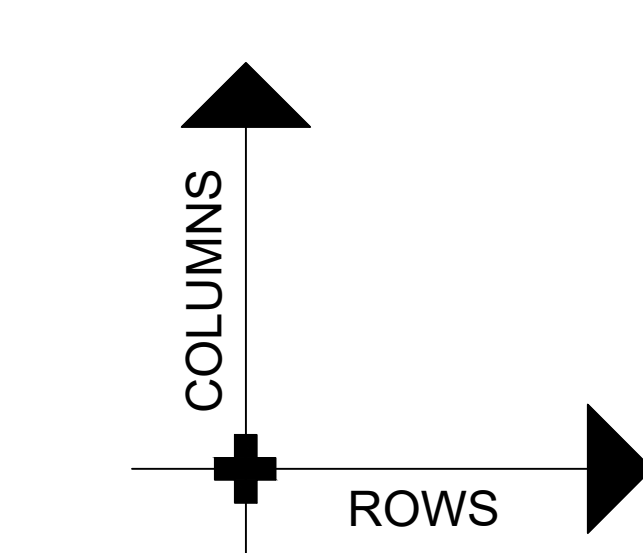
Only busSTRUT fittings and hardware may be mounted directly to busSTRUT.

CONNECTION TO STRUCTURE BY OTHERS
 Attachment from busSTRUT System to structure must be engineered and installed to properly support the entire suspended weight.

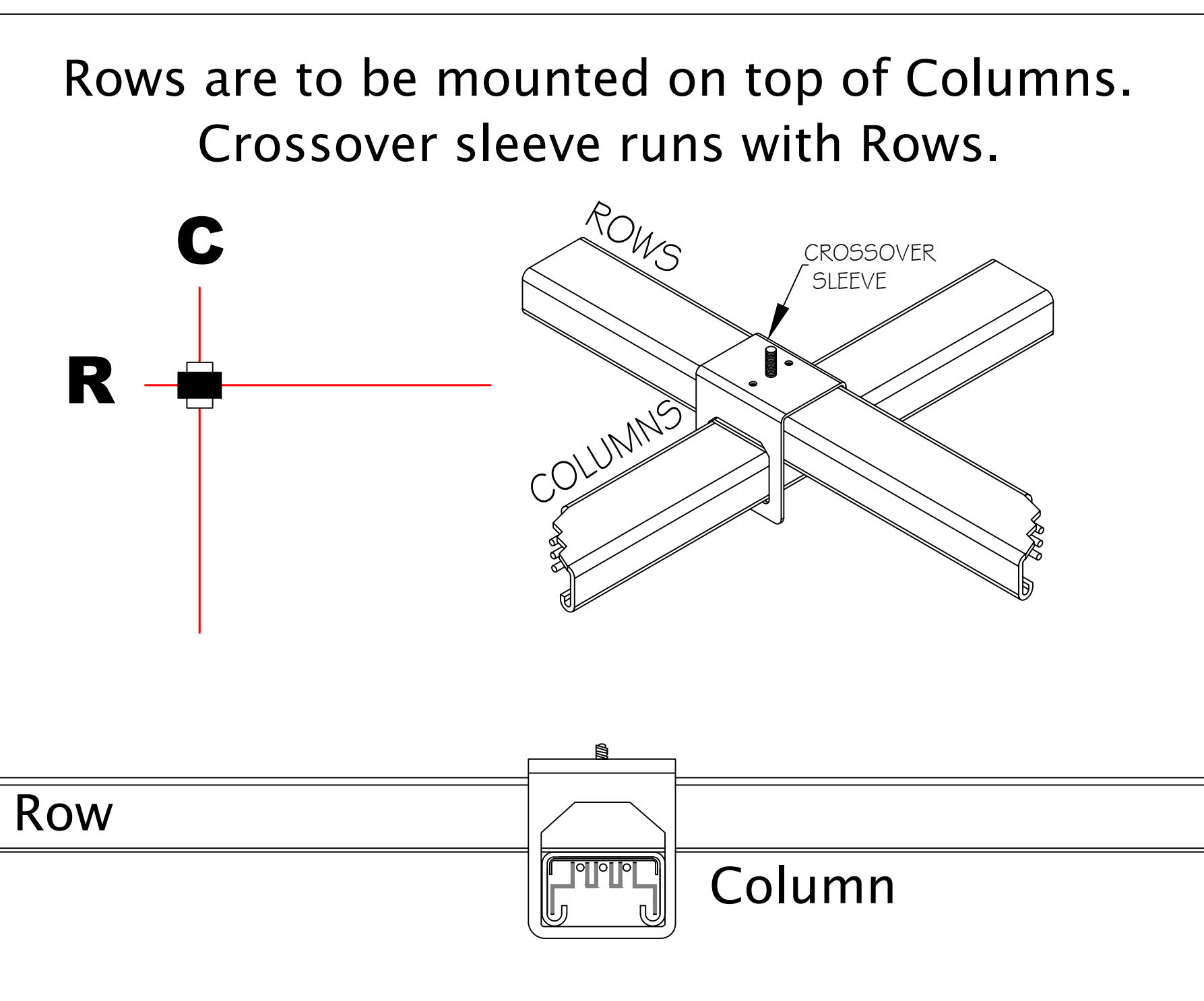


Legend

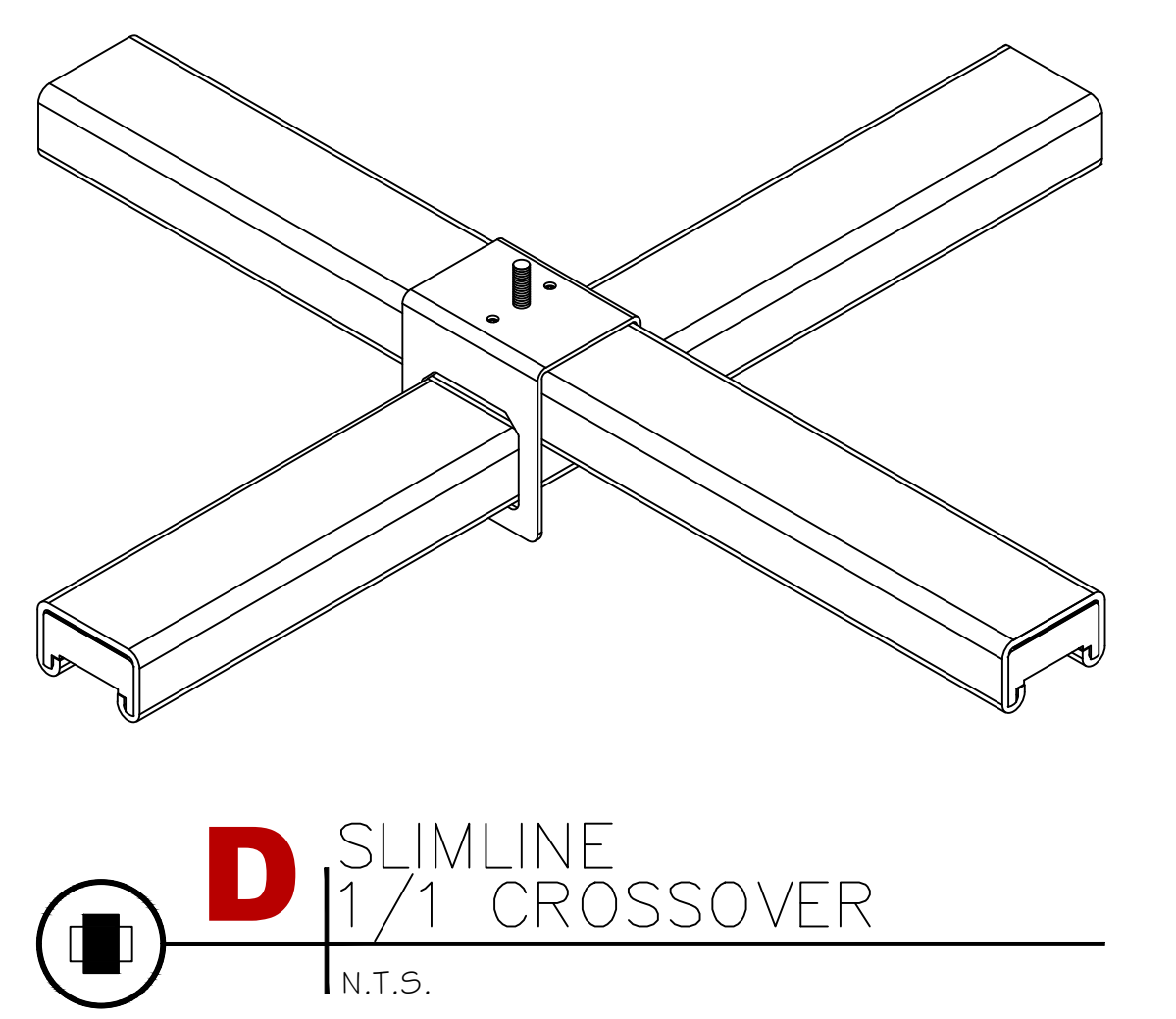
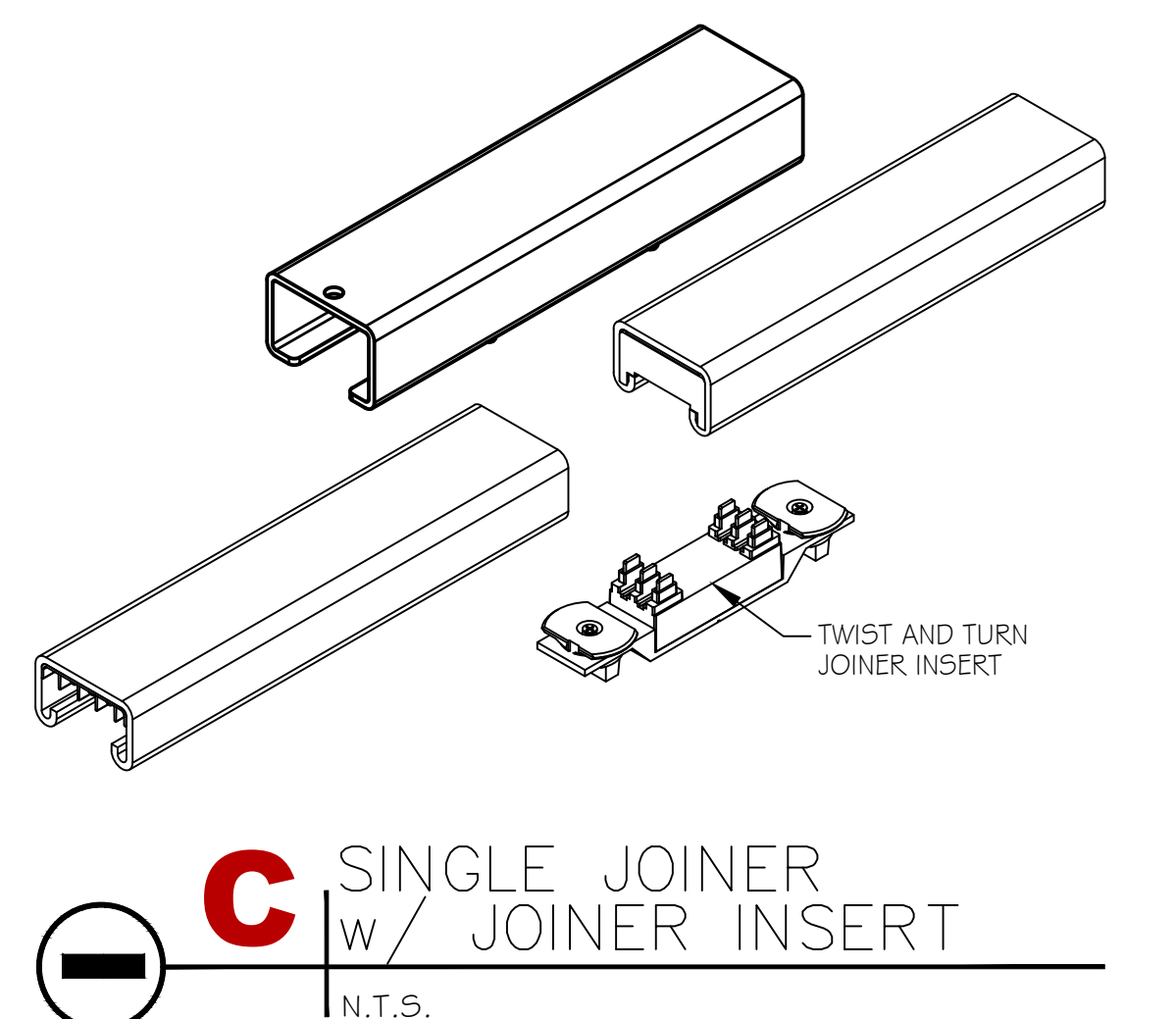
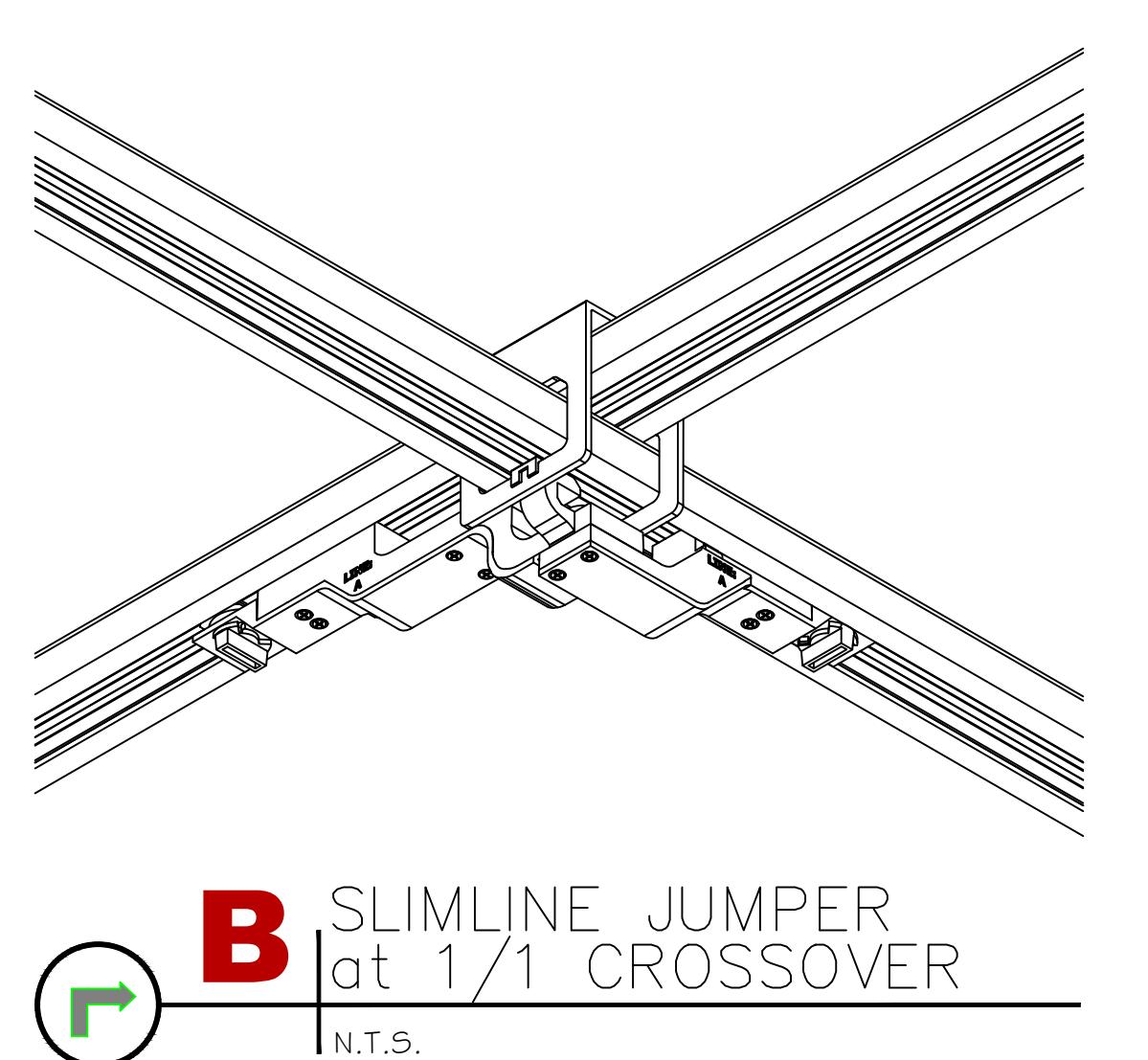
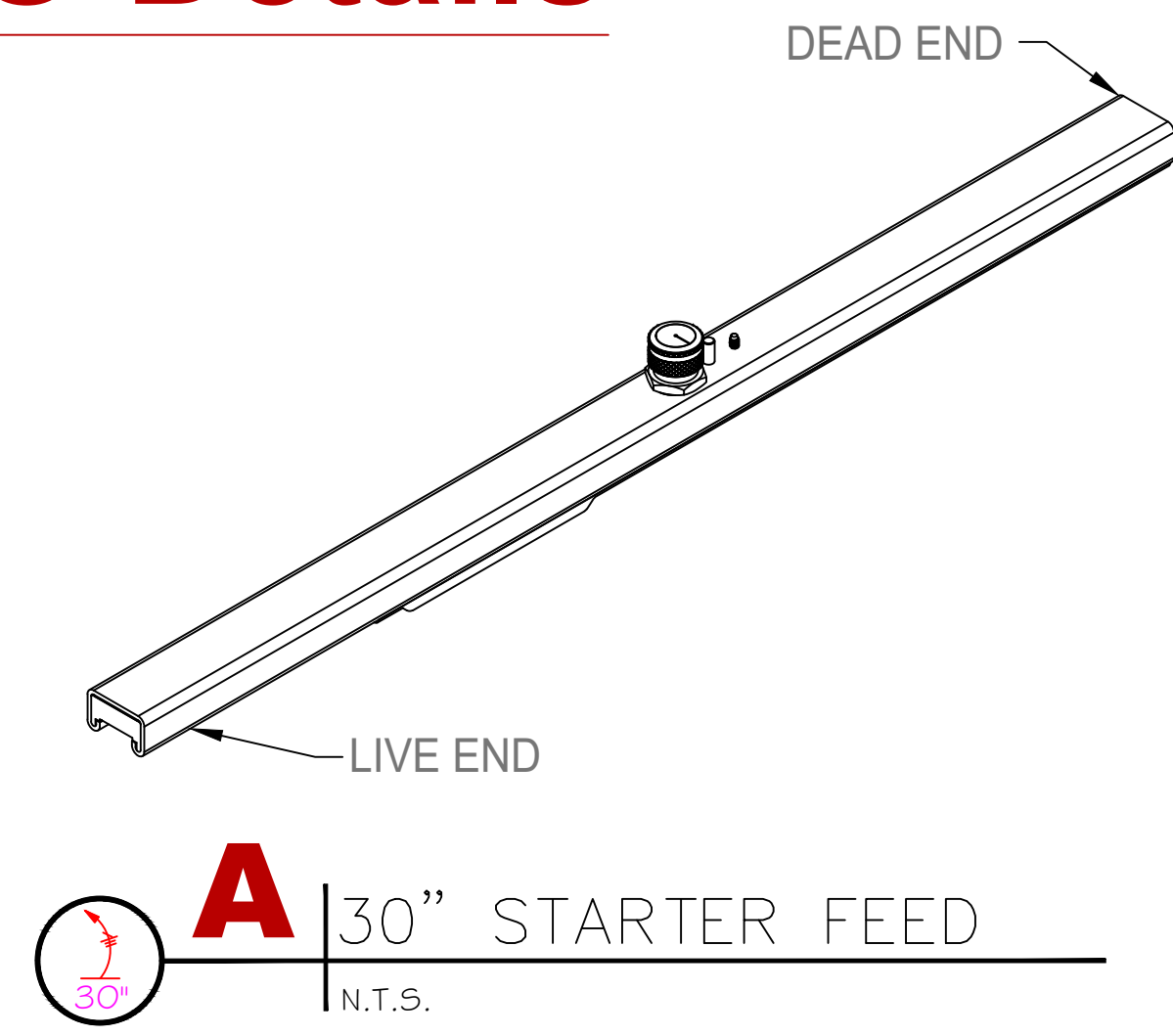
- busSTRUT 20 / Single Deck
- 30" FEED
- 30" Starter Feed
- Joiner
- 1/1 Slimline Crossover
- Slimline Jumper



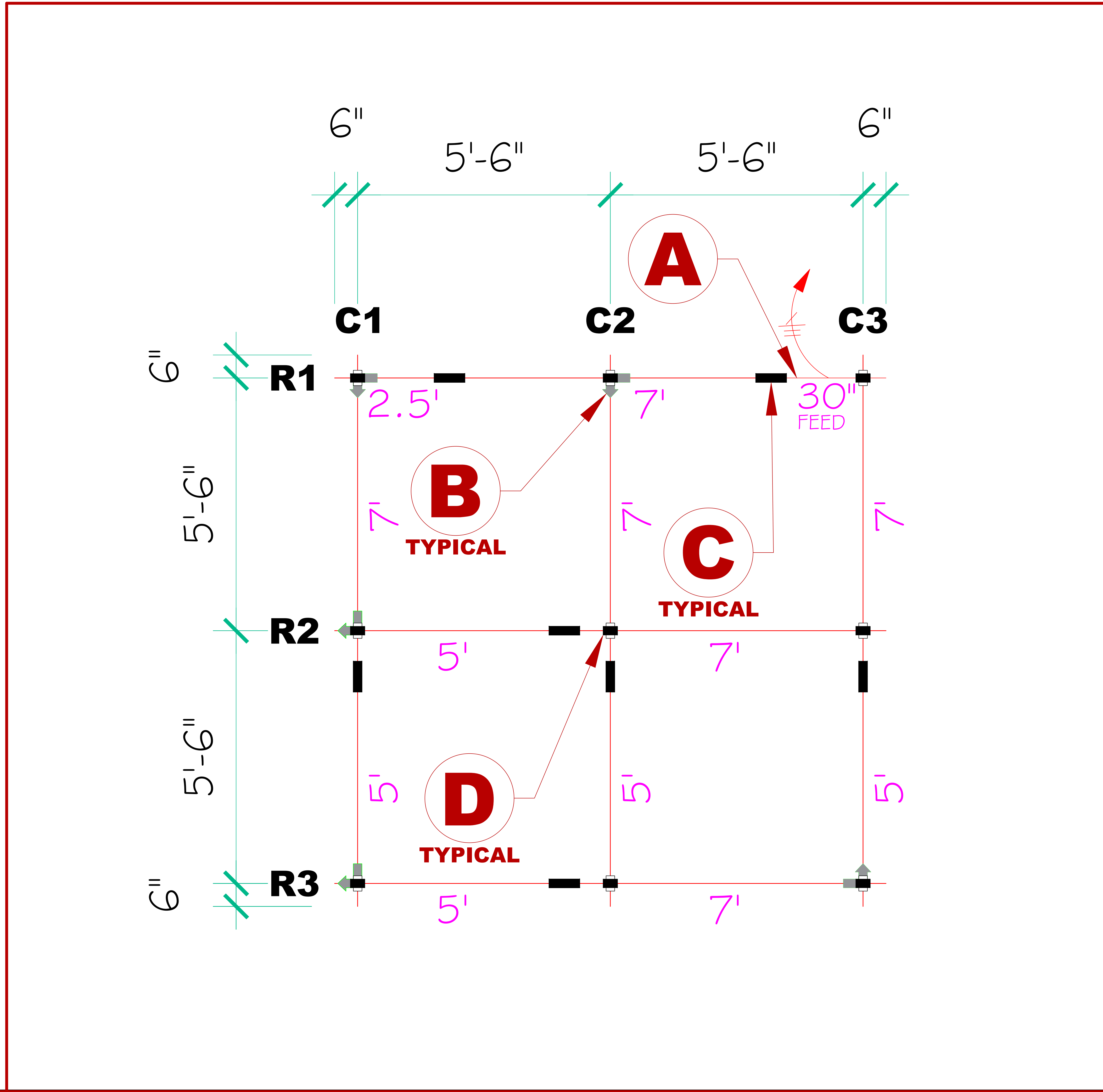
Project Specific Rules



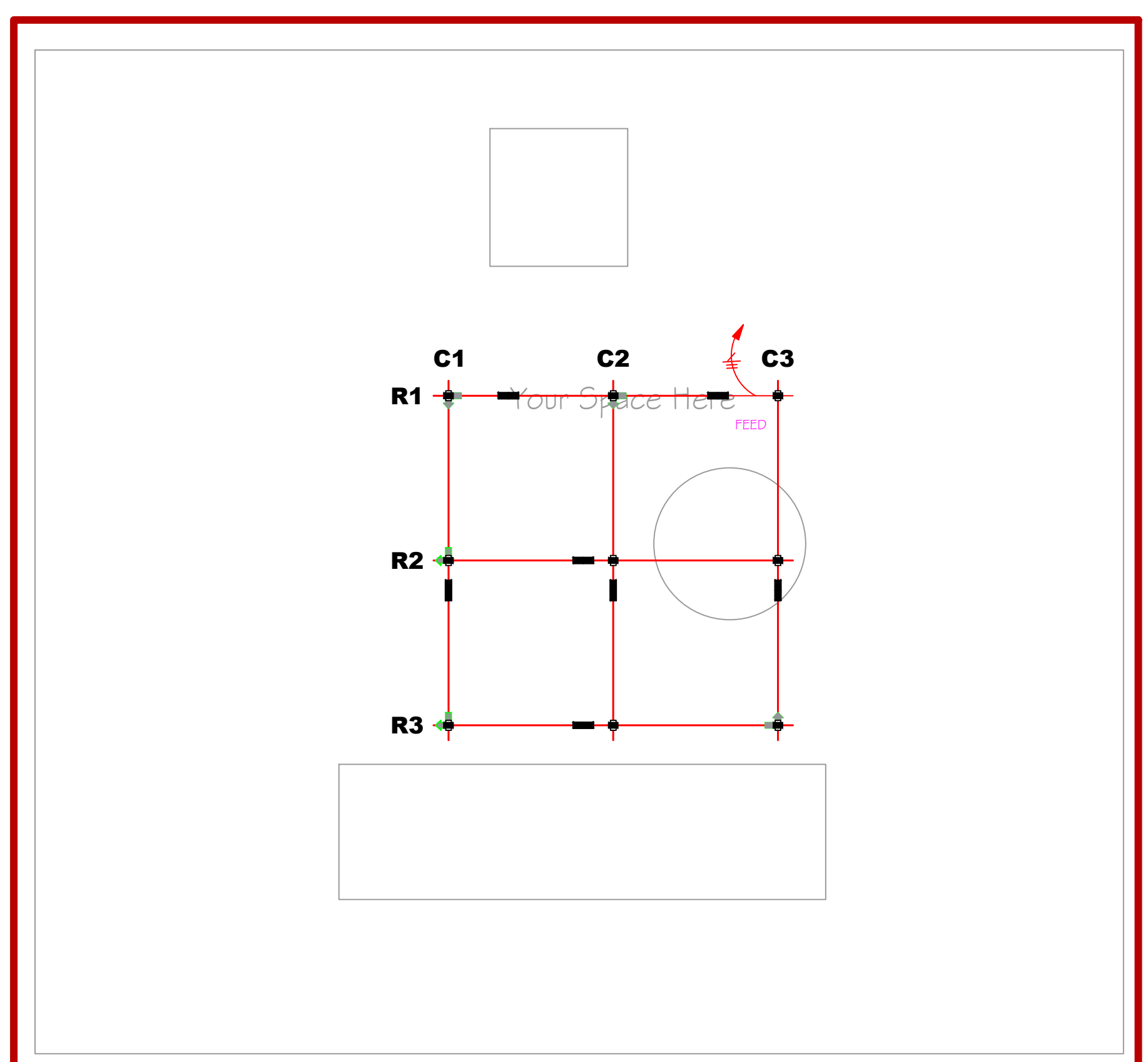
ISO Details



Dimensions



- busSTRUT Lengths Used in this Project**
- 2.5'
 - 5'
 - 7'



bs
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DESIGNED BY: LARRY GELLERT
 CHECKED BY: JOHN LOCH
 DRAWN BY: JOHN LOCH
 DATE: 10/24/2024
 REVISION: BID/REVIEW

Assembly Plan

GRID MEDIUM

BUSSTRUT DRAWING SET(ONLY) STOP HERE! PREPARATION FOR ARCHITECTURAL ENGINEERING OR ELECTRICAL DRAWINGS

NO.	DATE	REVISION DESCRIPTION	BY

PAPER SIZE: ARCH E (48x36)
 SCALE 1" = 1'-0"
 DRAWING NUMBER: E-b2