

busSTRUT Shop Drawing Set

Grid (Small) - 7'-6" x 7'-6" Power Drops

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.**

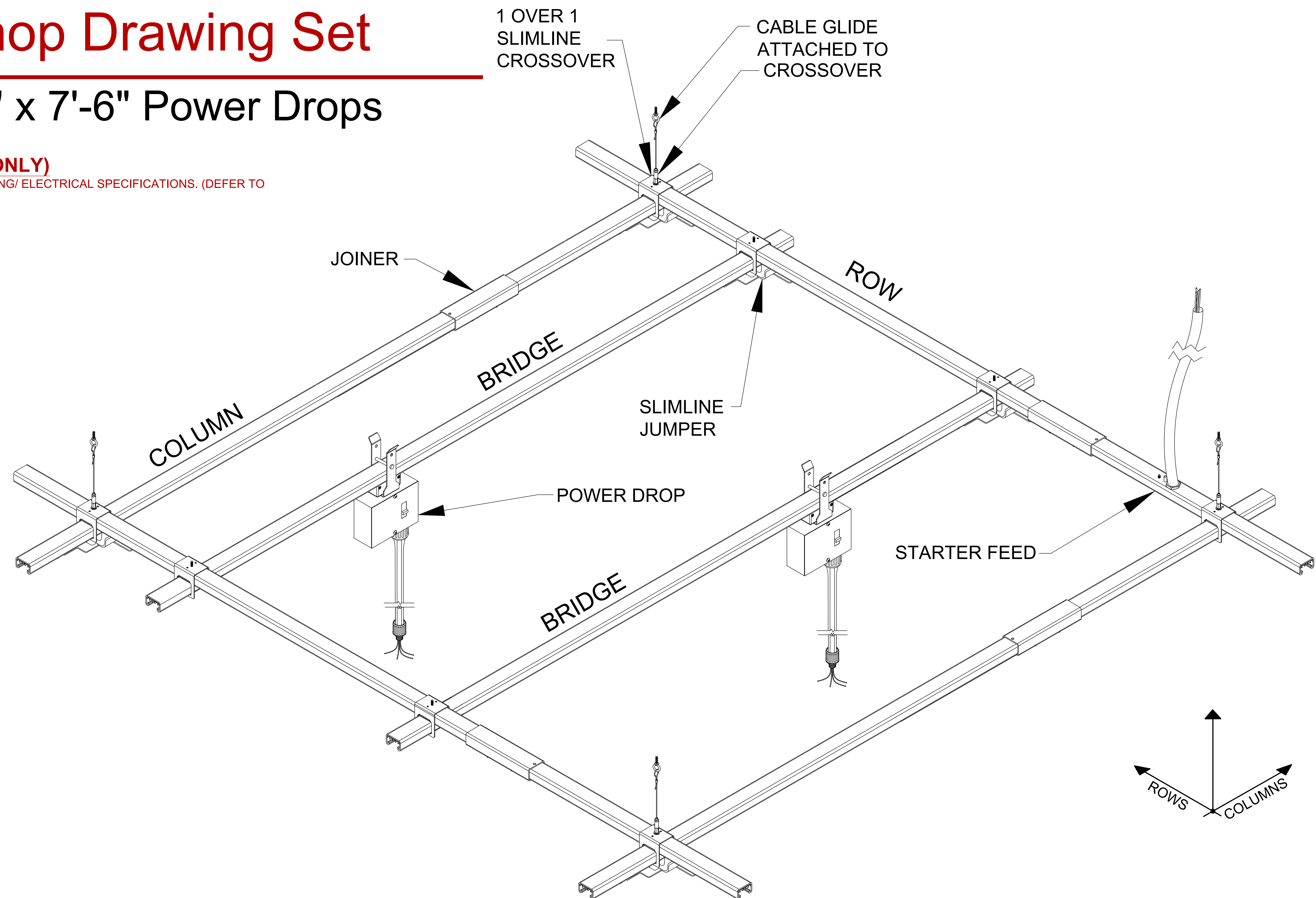
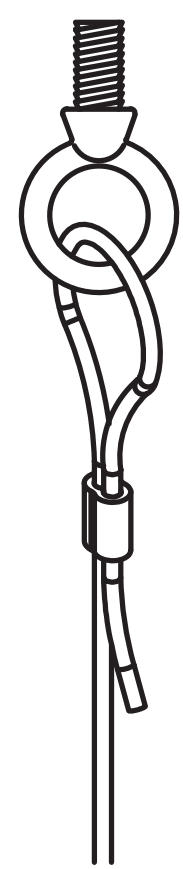


TABLE OF CONTENTS		KEY MOUNTING RULES		APPROVAL
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E-b1 E-b2	Lighting Plan, BOM, & Labor Hours Assembly Plan		Rows are to be mounted on top of Columns. Crossover sleeve runs with Rows. 	

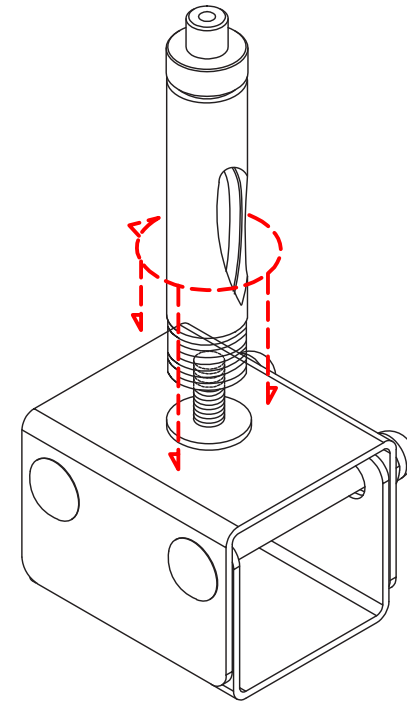
STEP 1

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).

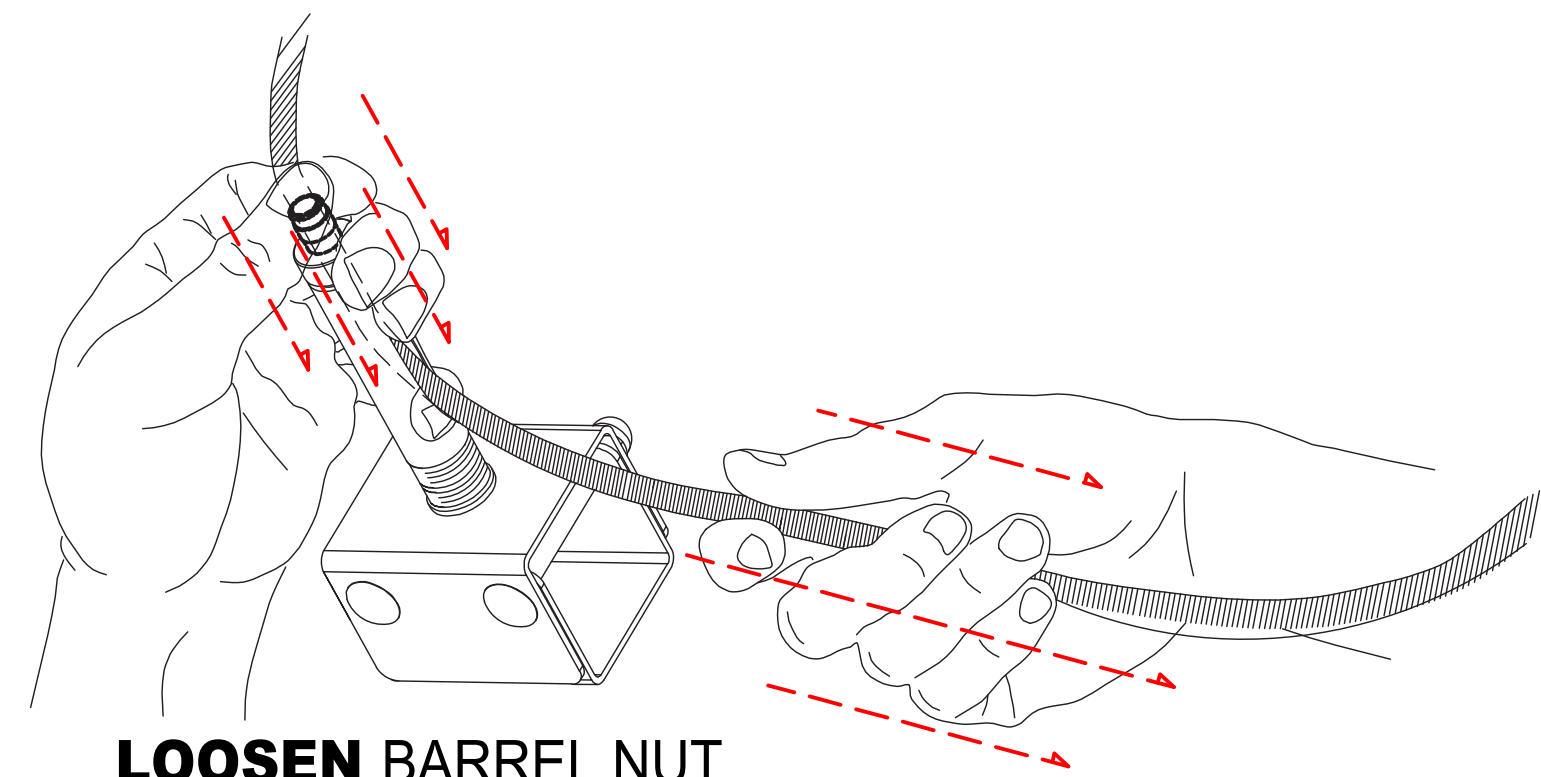
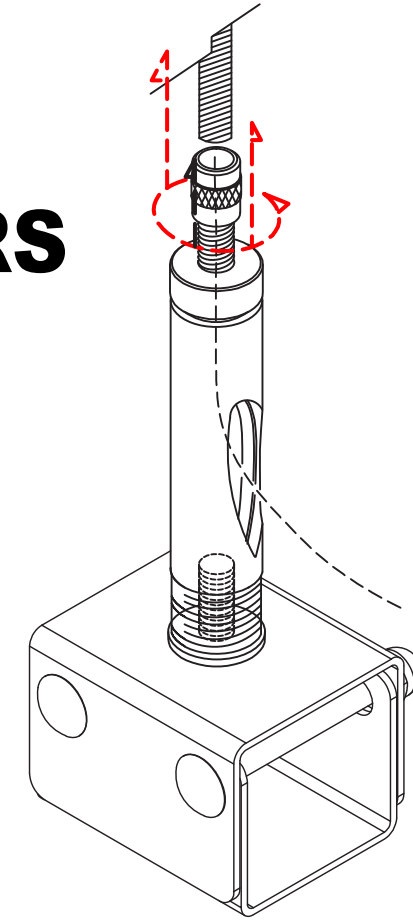


2 ASSEMBLE HANGERS (HM-S)

ASSEMBLE HANGERS AND
ATTACH CABLE GLIDE

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

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

CUT CABLE
Leave enough pass
through cable for
future leveling

STEP 2

INSERT JOINERS

ATTACH JOINERS TO EACH END OF
CONNECTING busSTRUT

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

TIGHTEN JOINERS

TIGHTEN SET SCREWS ON THE BOTTOM OF THE
JOINER

*Joiners require 3/32 Hex key
for tightening set screws*

ATTACH INSERT

ATTACH JOINERS TO EACH END OF
CONNECTING busSTRUT

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

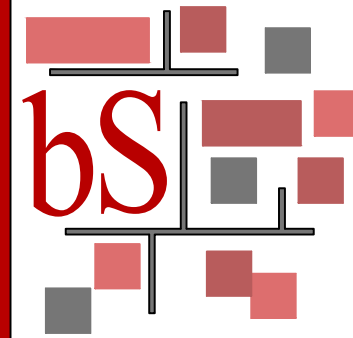
Turn the first knob

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

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.

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



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DESIGNED BY
Corey Sprouse

DATE
01/12/2024

REVISION
BID / REVIEW

TYPICAL
busSTRUT Installation Instructions

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

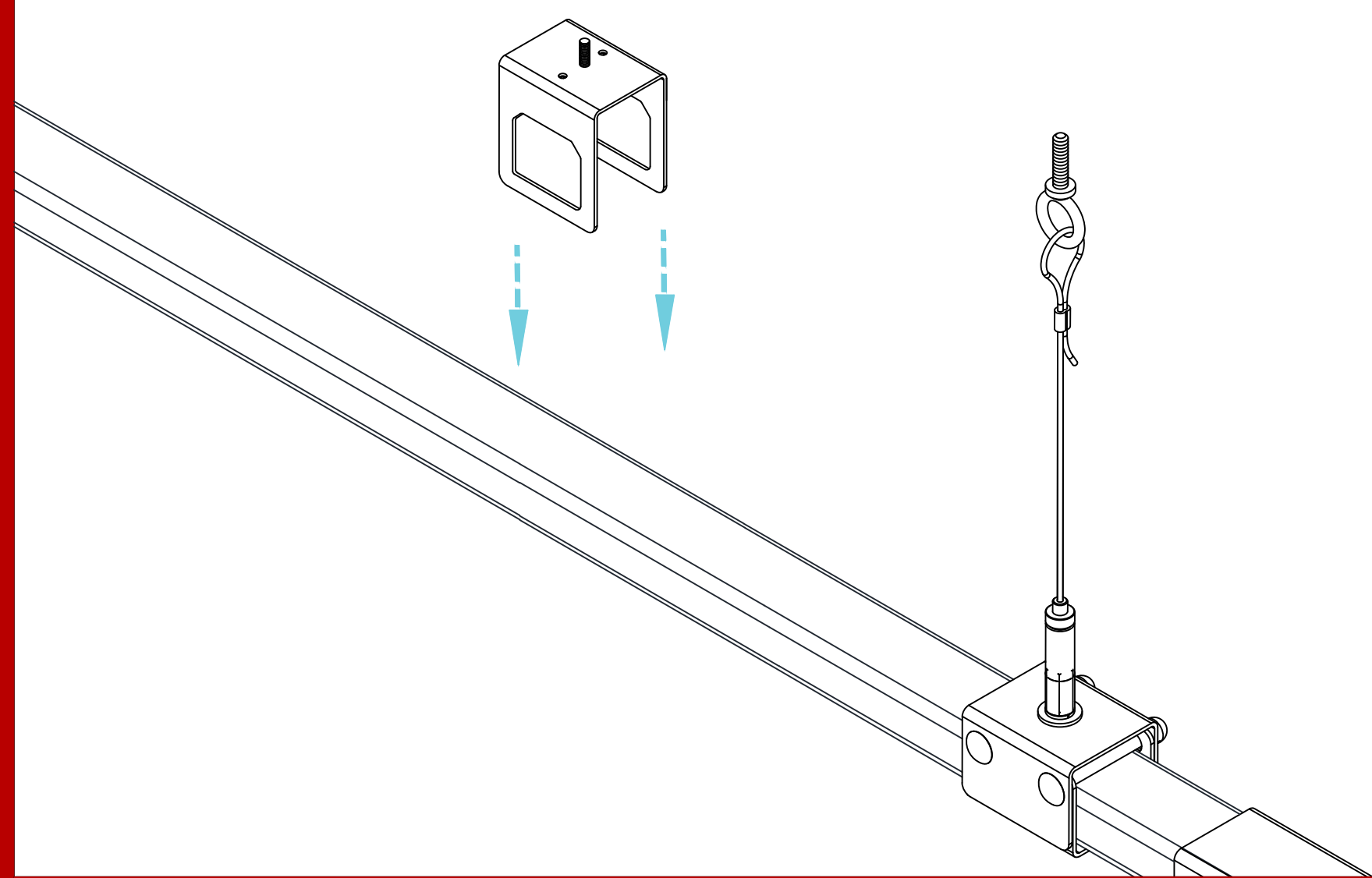
NO.	DATE	DESCRIPTION	BY
1			

PAPER SIZE:
ARCH E (48x36)
NOT TO SCALE
DRAWING NUMBER
E-b01

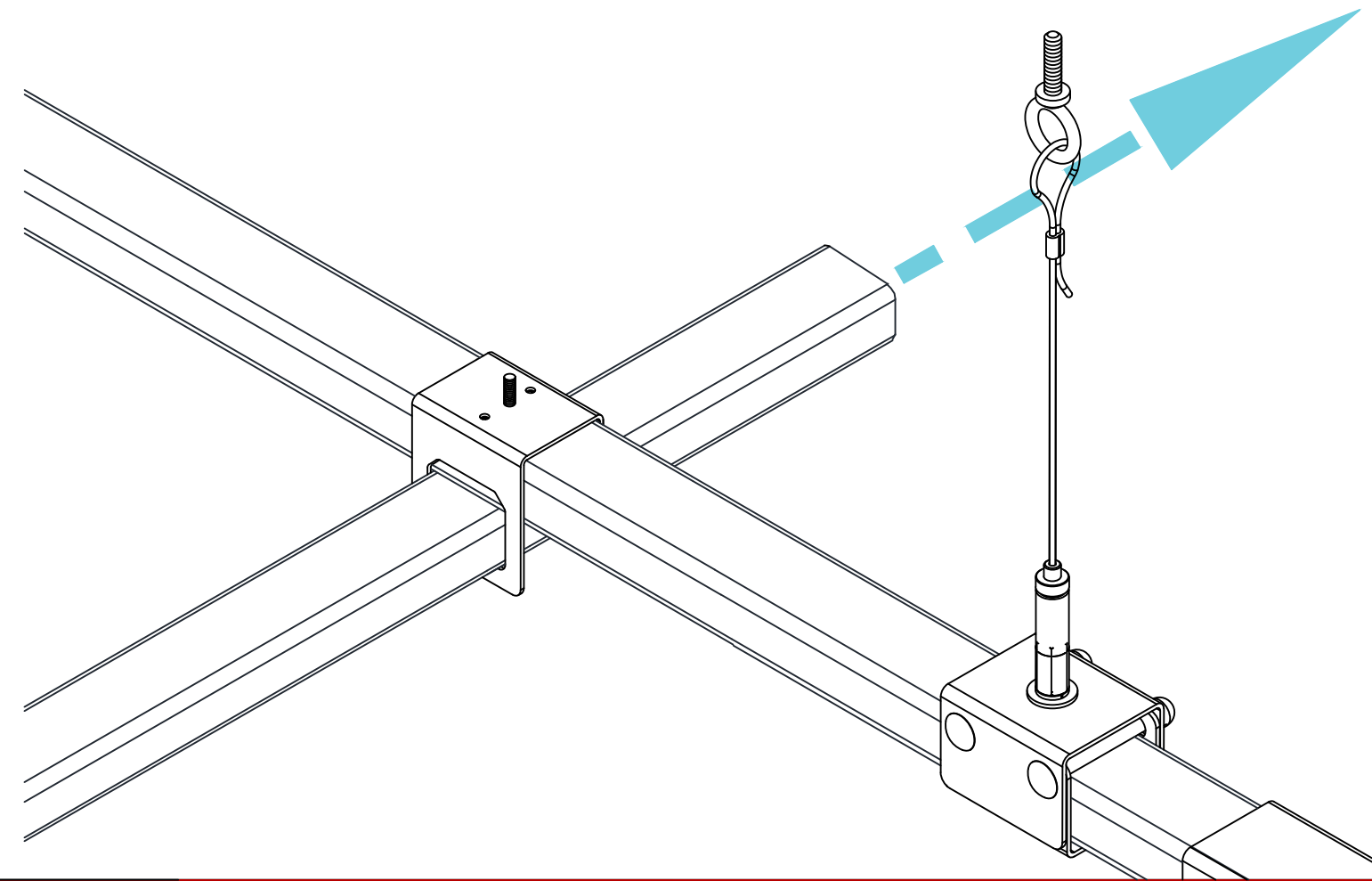
STEP 3

INSTALLING CROSSOVERS DROPPING ON

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



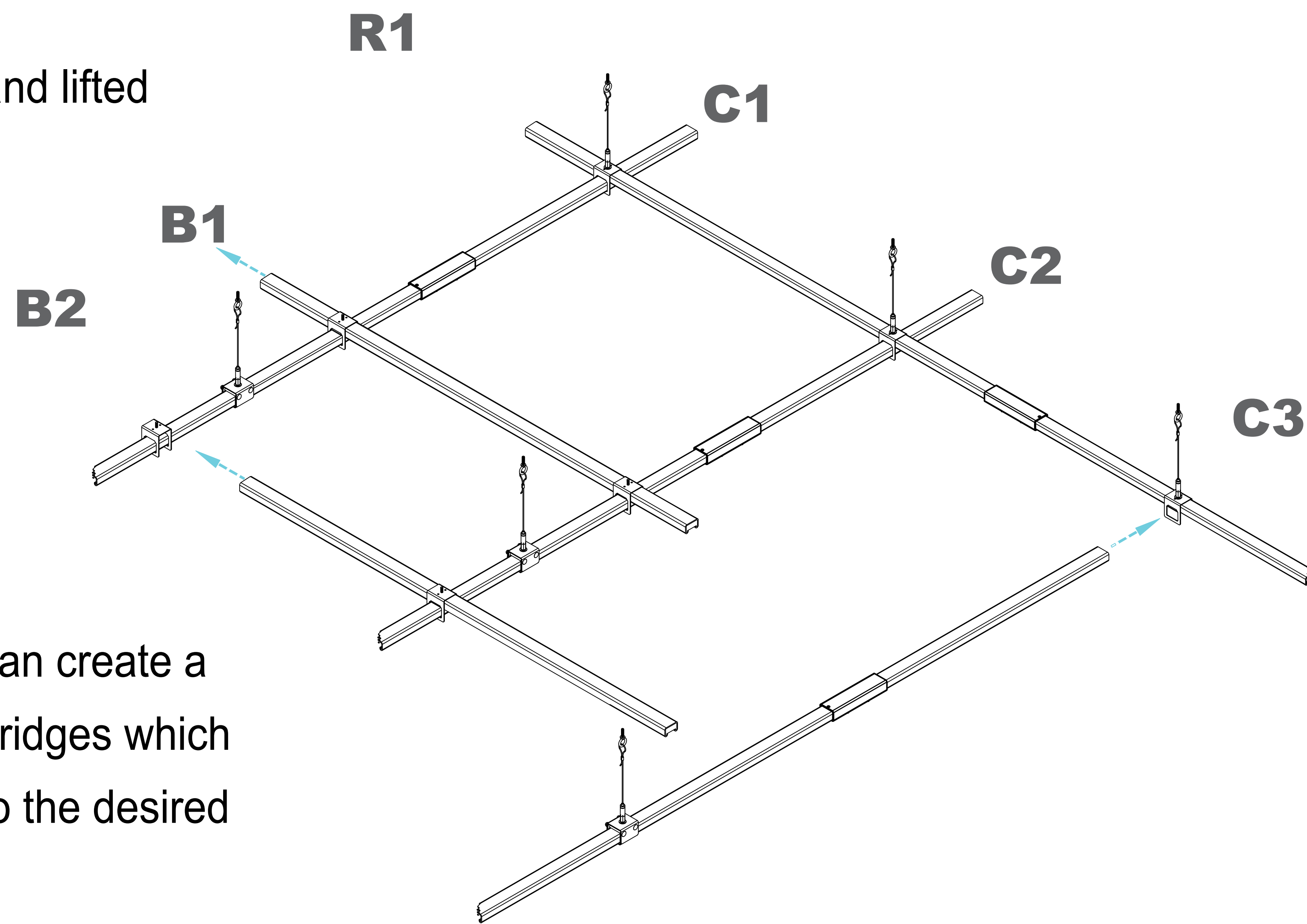
Slide perpendicular runs of busSTRUT through the crossover and tighten the set screws.



SLIDING ON

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

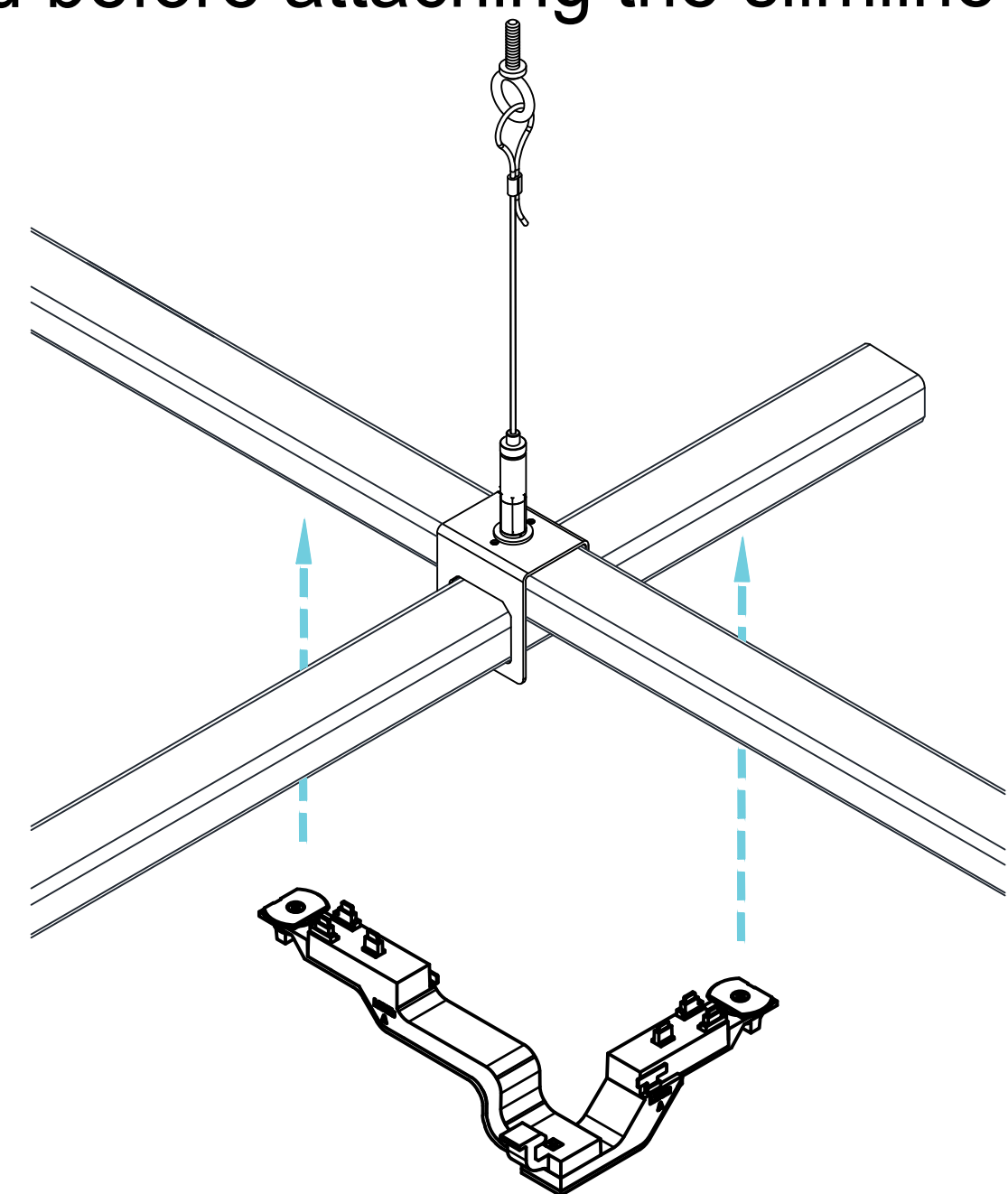
Perpendicular runs can create a full grid or be short bridges which are easily moved into the desired position.



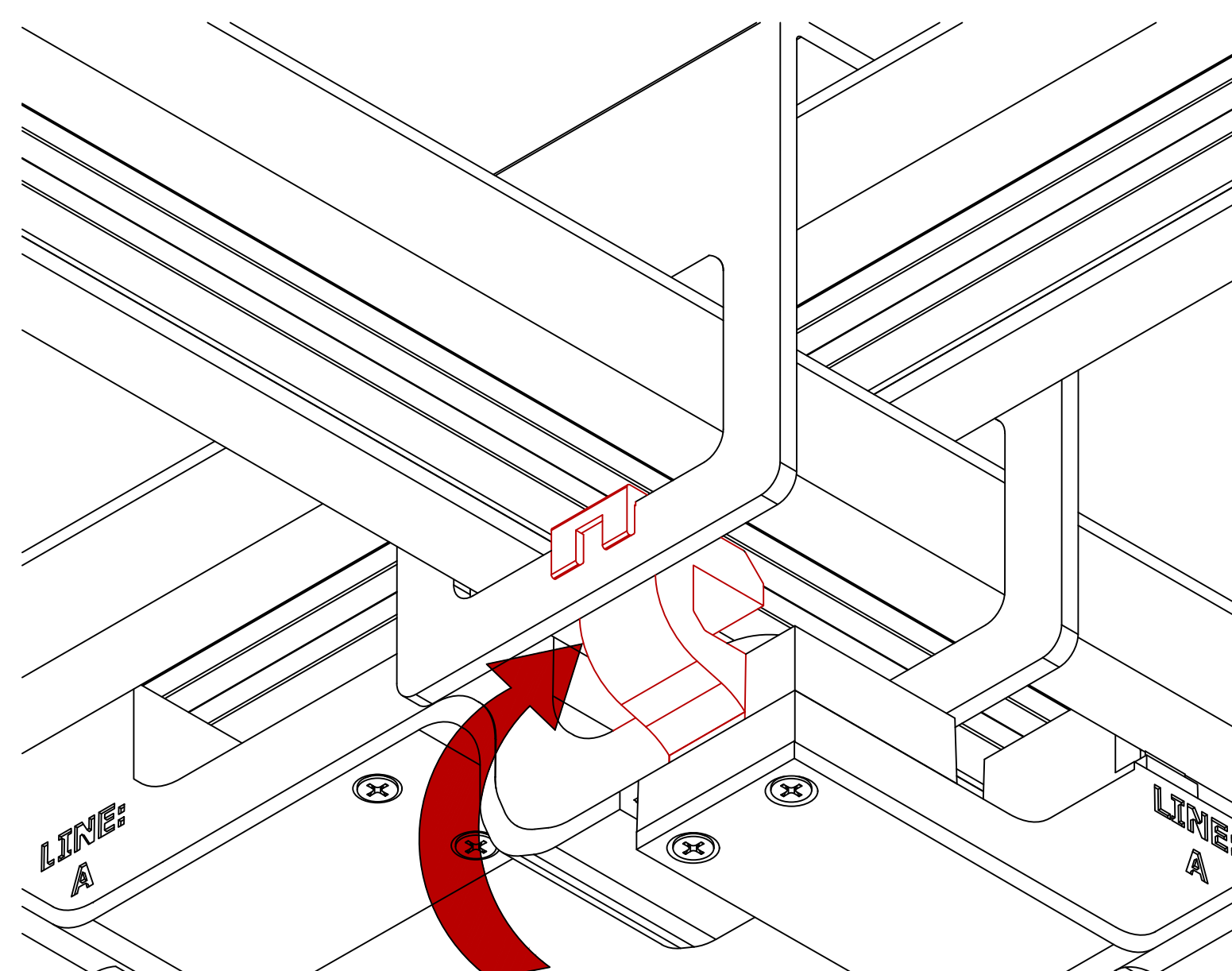
STEP 4A

SLIMLINE JUMPER

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

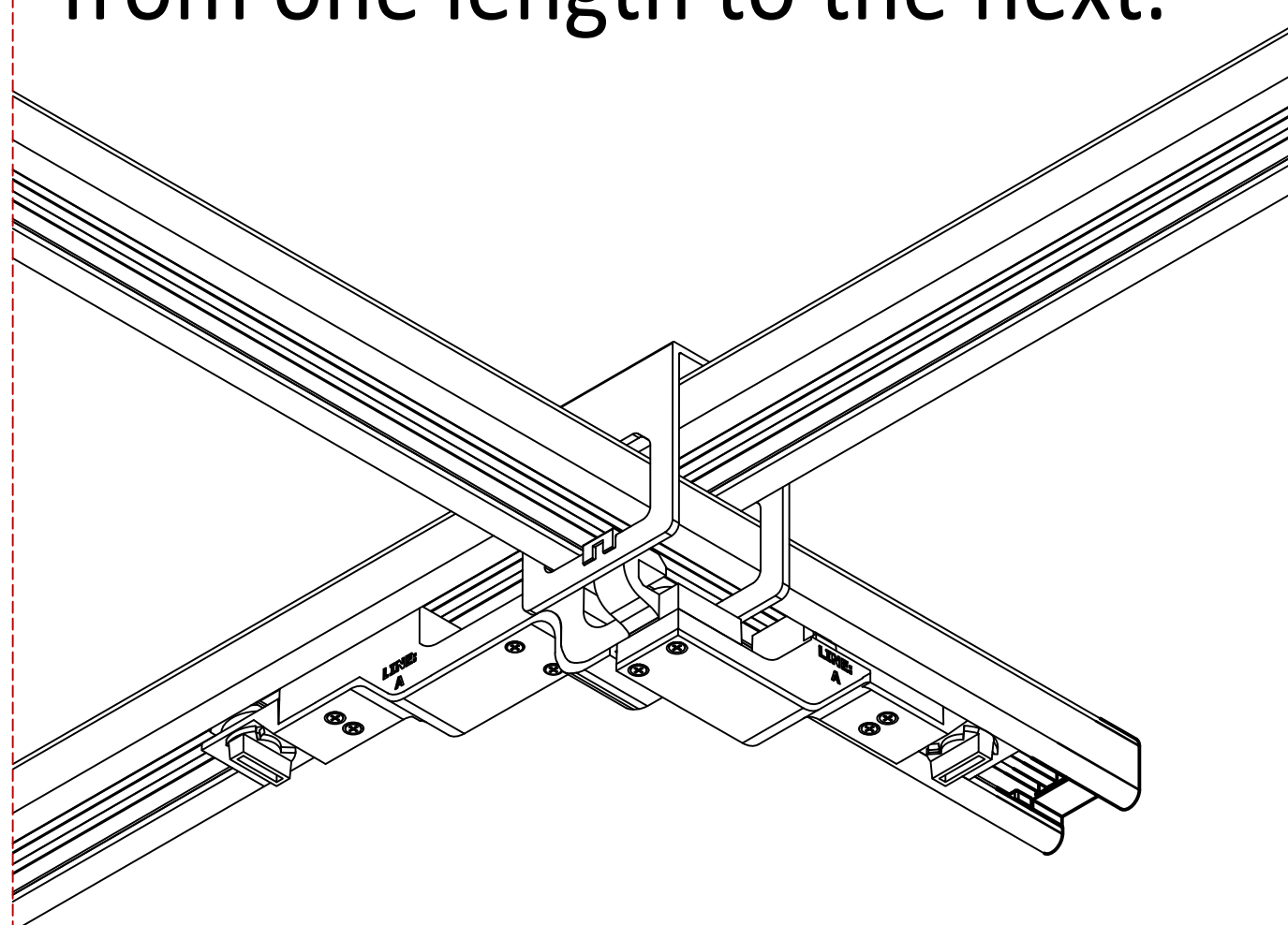


First, clip the jumper to the crossover.

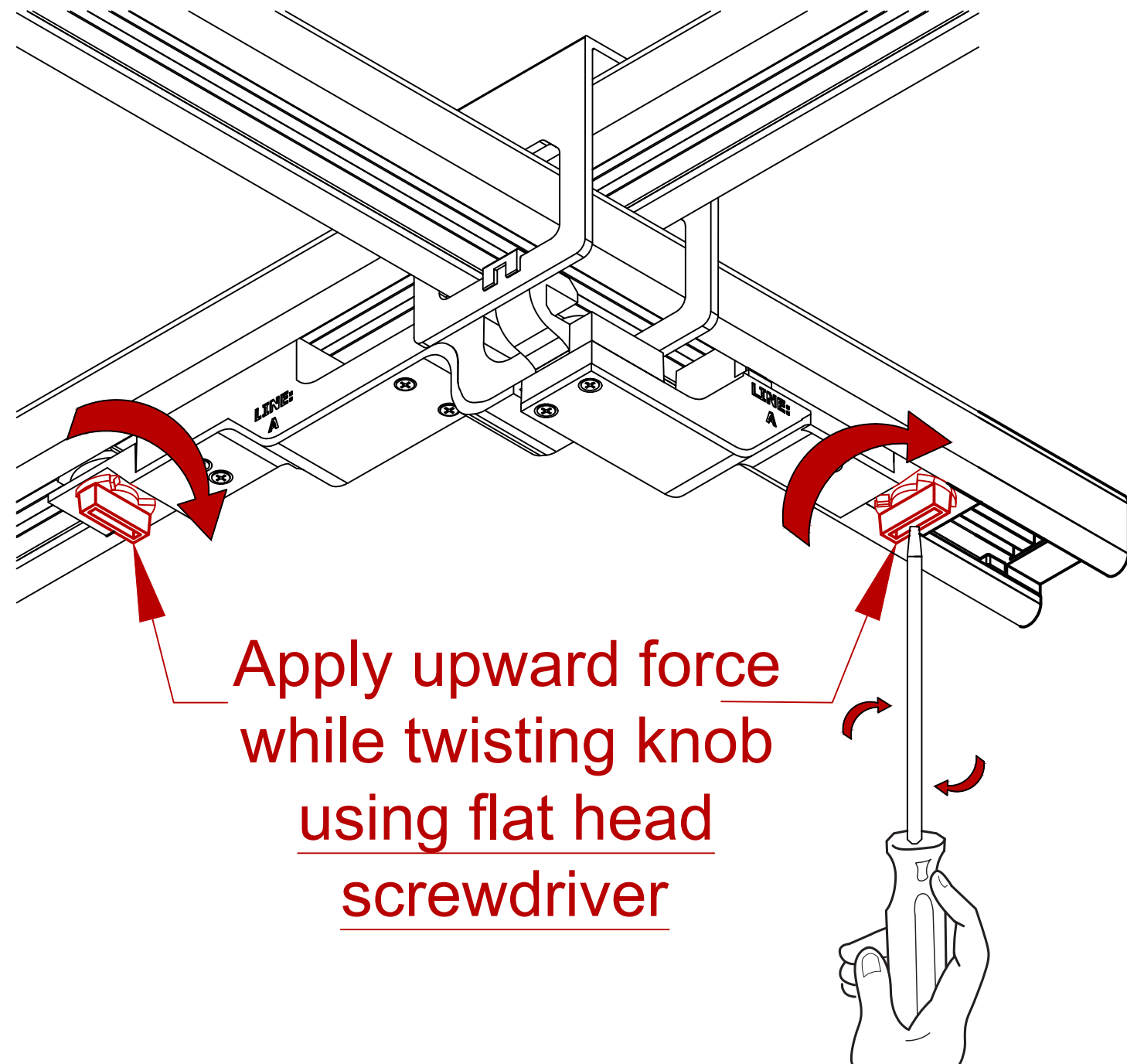


SLIMLINE JUMPER (MD2020-UNIV-IJ2-B-X)

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.



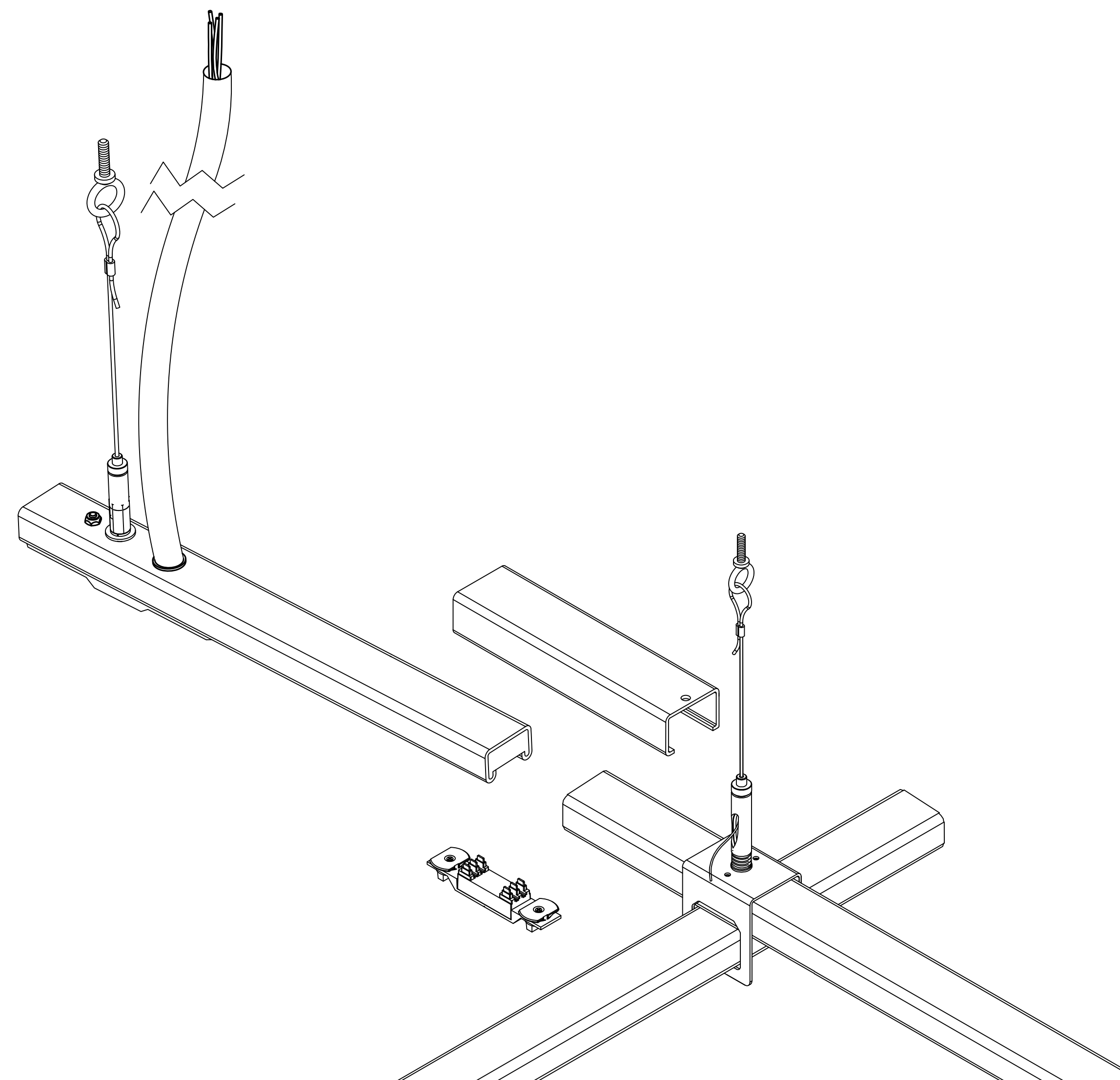
Apply upward force while twisting knob using flat head screwdriver

STEP 4B

STARTER FEED

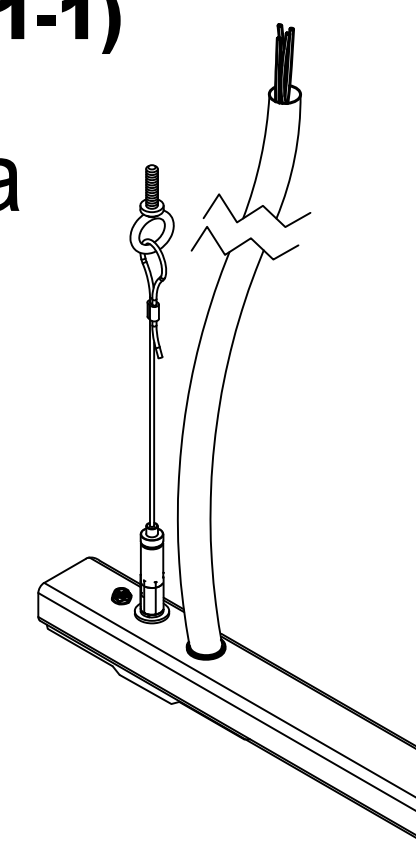
The Starter Feed comes with a 1/4-20 Stud to create an additional hang point and a 15' 12/4 SOOW Cord to connect power to the system.

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



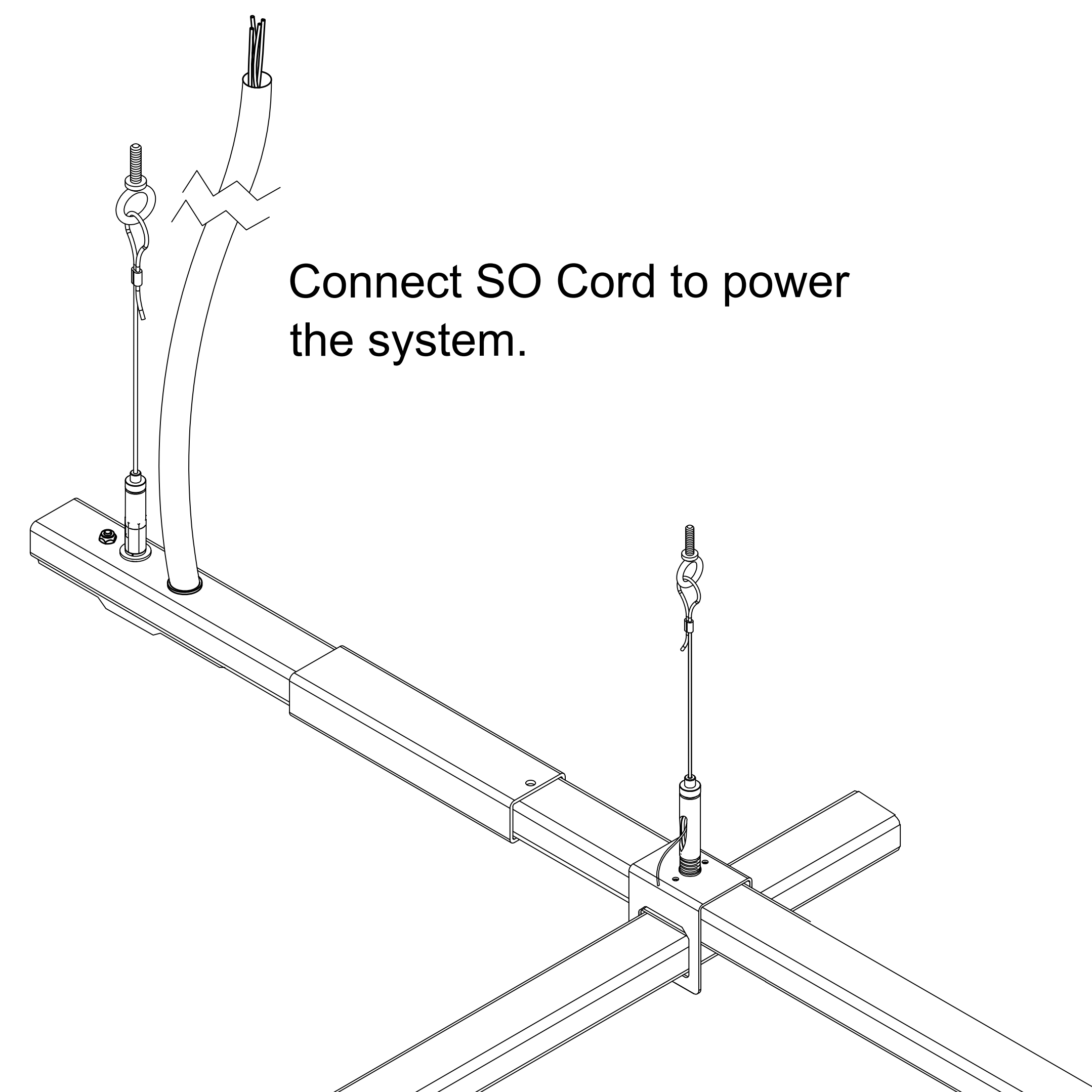
STARTER FEED (P20-3-40-UNIV-30-CM-F 1-1)

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.



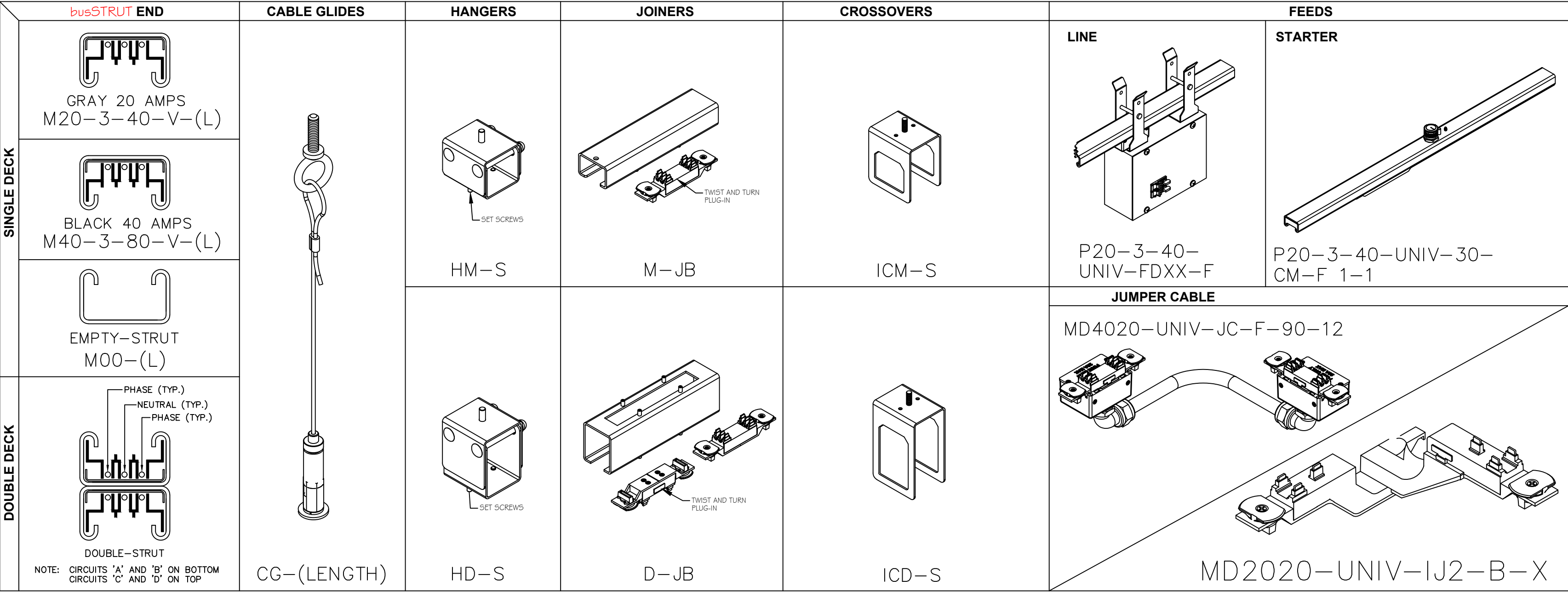
Once the starter is properly suspended, connect the starter to the suspended grid using a Joiner and Insert as shown in Step 2.

Connect SO Cord to power the system.



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

busSTRUT Parts



busSTRUT 12 gauge 1" x 1" x 1-5/8" STEEL **busSTRUT** features two Hot wires symmetrically surrounding a center Neutral. The result, two 20 Amp circuits 40 Amps Maximum with **busSTRUT**120, alternatively two 40 Amp circuits 80 Amps Maximum with **busSTRUT**140, 2, 5, 5', 10', and 20' lengths. Rated for up to 277/480V. Double decks with standard hardware for trunking.

BRAIDED CABLE with GLIDE: For use with **busSTRUT** Hangers/Crossovers. Includes cable-glide 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-glide.

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 in electrical insert to bridge power. And continuous grounding assists 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-glide.

JUMPERS: For use with both **busSTRUT**120 and **busSTRUT**140. The fused 4020 Jumper Cables can be used to electrically connect **busSTRUT**140. Trunks to **busSTRUT**120 Branches and/or electrically connecting **busSTRUT**120 to **busSTRUT**120.

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

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.

Lights

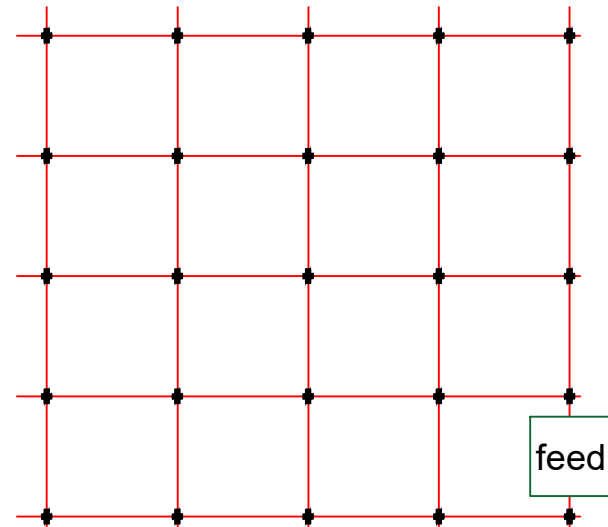
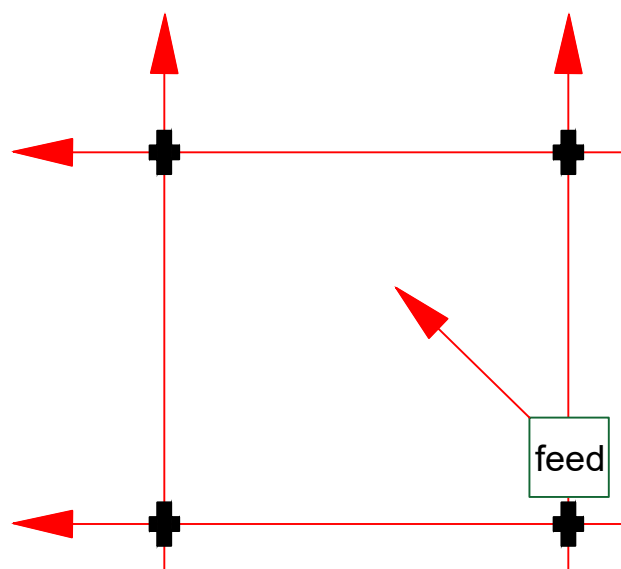
Legend

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

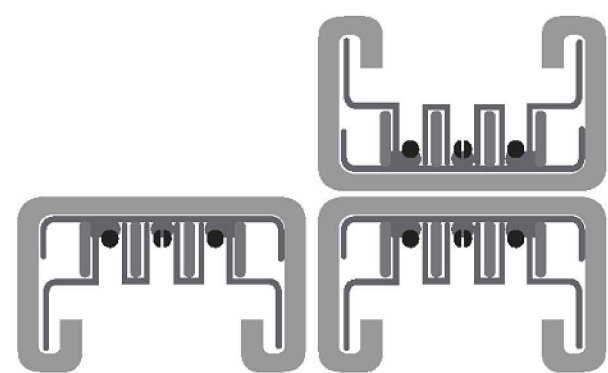
busSTRUT system is designed to be BID separately.

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 Checked By Date		John Loch John Loch 10/23/2024	
Small Grid PD																									
			busSTRUT LENGTHS					busSTRUT Hardware					busSTRUT POWER												
			busSTRUT 20					Joiners		Hangers		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-GL	ICM-S-F-ST-X	MD4020-UNIV-JC-F-90-12-G02	MD2020-UNIV-IJ2-F-X	P20-3-40-UNIV-JK-NB-F	P20-3-40-UNIV-30-CM-F-1-1	MD40-2-120-CB20-DC-XX-LE-F	BRL-4-40L-30K80-ST-WD-F	BRL-LUCY-U-309-30-F-(OC)					
R/C	Amps		LF	BF	2.5	3	5	7	10	M	INS	NE-INS	M	C-GI	1/1	12"	INVS	JK	30ST	PD	GEN	ACT			
Rows																									
R1	20		7.5	7.5				1		1	1			2	2				1						
R2	20		7.5	7.5	1		1			1	1			2	2		1								
SUB TOTAL			15	15	1		2			2	2			4	4		1		1						
R/C	Amps		LF	BF	2.5	3	5	7	10	M	INS	NE-INS	M	C-GI	1/1	12"	INVS	JK	30ST	PD	GEN	ACT			
Columns																									
C1	20		7.5	7.5	1		1			1	1						1								
C2	20		7.5	7.5	1		1			1	1						1								
SUB TOTAL			15	15	2		2			2	2						2								
R/C	Amps		LF	BF	2.5	3	5	7	10	M	INS	NE-INS	M	C-GI	1/1	12"	INVS	JK	30ST	PD	GEN	ACT			
Bridges																									
B1	20		7	7				1							2		1			1					
B2	20		7	7				1							2		1			1					
SUB TOTAL			14	14				2							4		2			2					
STORE TOTAL			44.0	44.0	3		4	2		4	4			4	8		5	1	2						

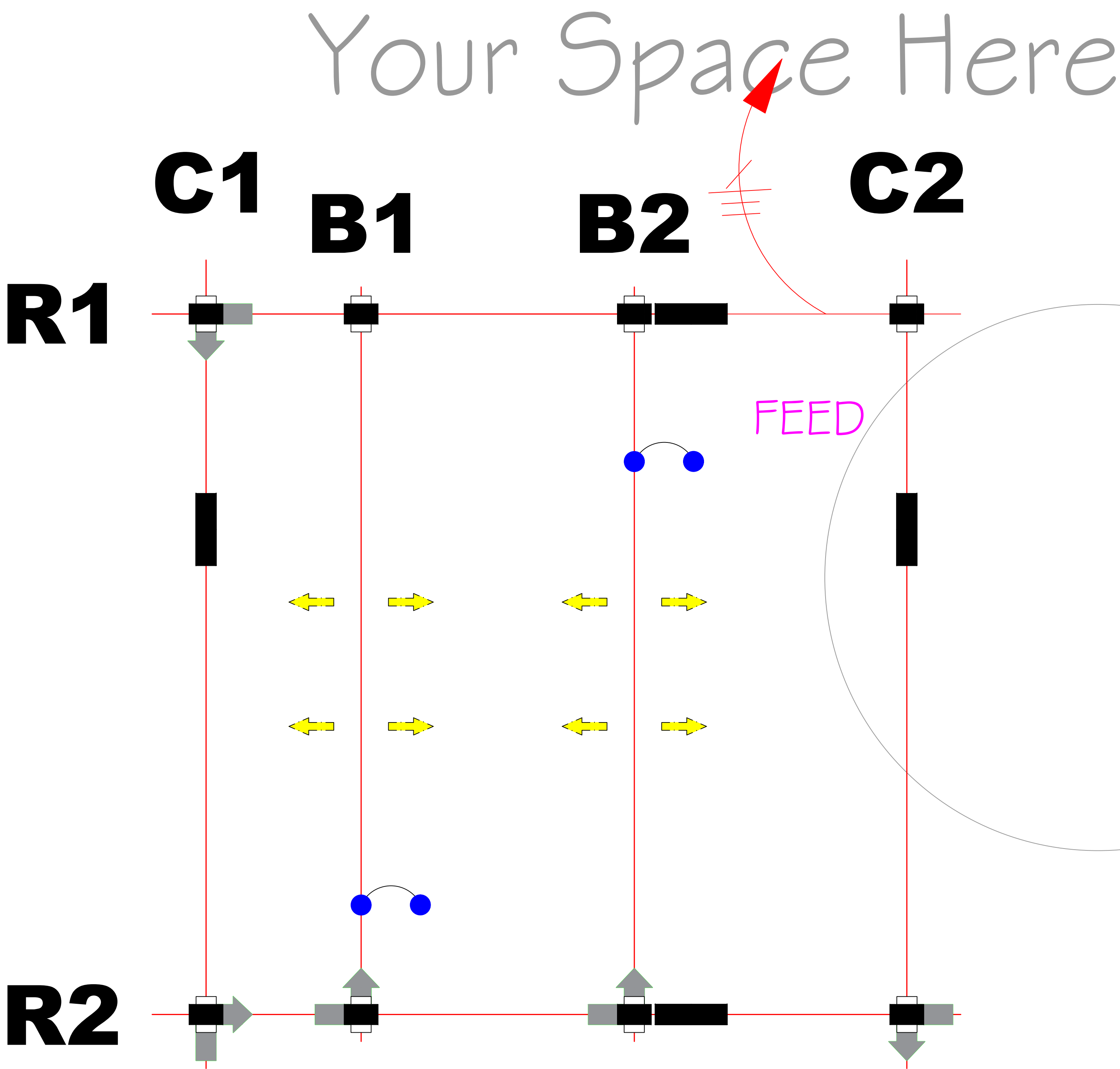
Labor Hours

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

busSTRUT LABOR								TOTAL HRS		
ITEMS	Qty.	U/M	STANDARDIZED LABOR HOURS							
			min	hrs	60					
busSTRUT SYSTEM	LENGTHS	44	LF	x	2.75	0.05	=	2		
	JOINERS	4	EA	x	1.2	0.20	=	1		
	HANGERS	4	EA	x	25	0.42	=	2		
	CROSSOVERS	8	EA	x	10	0.17	=	1		
	ATTACHMENTS	2	EA	x	8	0.13	=	0		
	JUMPERS	5	EA	x	6	0.10	=	1		
FIXTURES	FEEDS	1	EA	x	15	0.25	=	0		
	busSTRUT SUB-TOTAL								=	7
	ACCENT		EA	x	8	0.13	=	0		
LIGHTS	LINEARS		EA	x	20	0.33	=	0		
	busSTRUT READY LIGHTS SUB-TOTAL								=	0
TOTAL TIME								=	7	

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
SMALL GRID - Power Drops

bs

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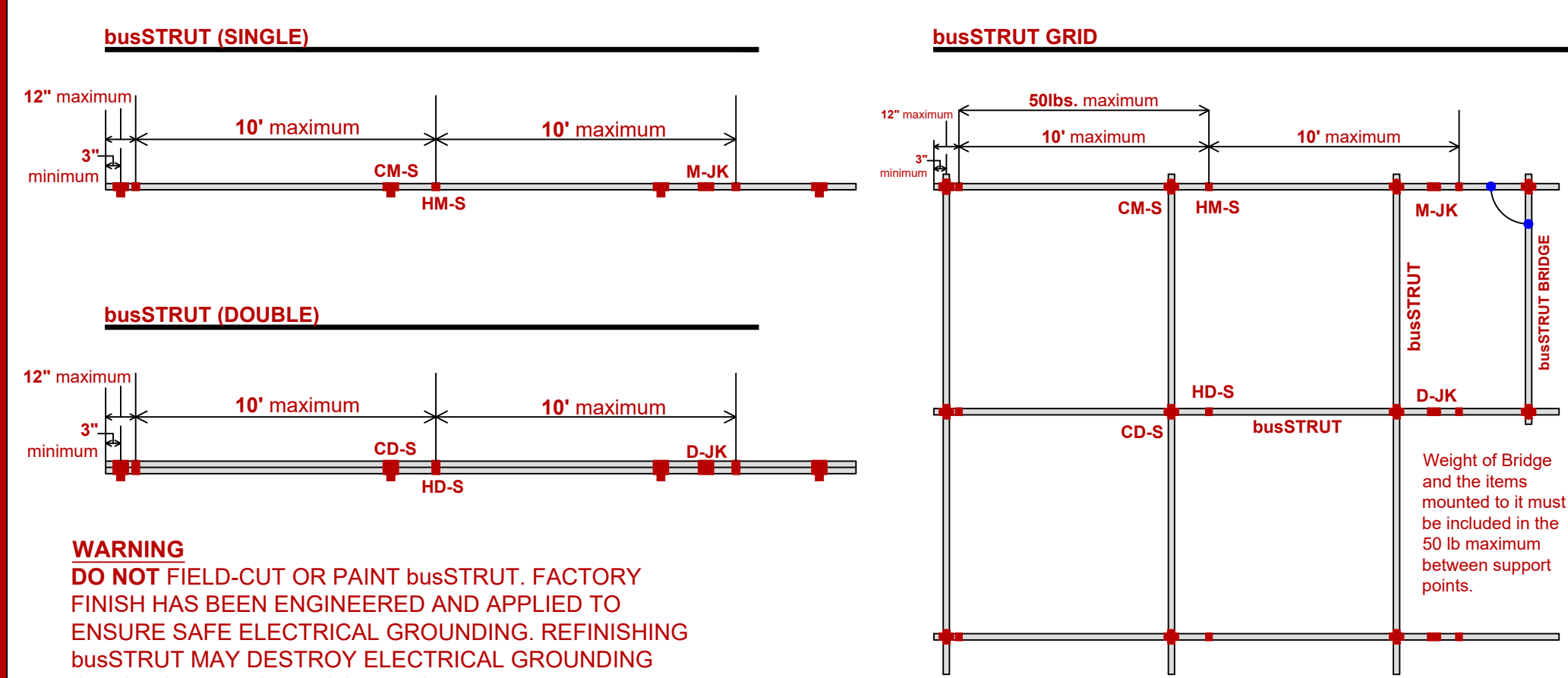
PERSONAL IN CHARGE
LARRY GELLERT
CHECKED BY
JOHN LOCH
DRAWN BY
Corey Sprouse
DATE
01/12/2024
REVISION
BID/REVIEW

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

NO. DATE REGION DESCRIPTION

PAPER SIZE: ARCH E (48x36)
SCALE 1/4" = 1'-0"
DRAWING NUMBER E-b1

Mounting Rules



Do NOT remove the factory installed end caps from the busSTRUT.

CAUTION:

TIGHTEN ALL JOINER SET SCREWS TO 10 in/lbs

Required to ensure grounding

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

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

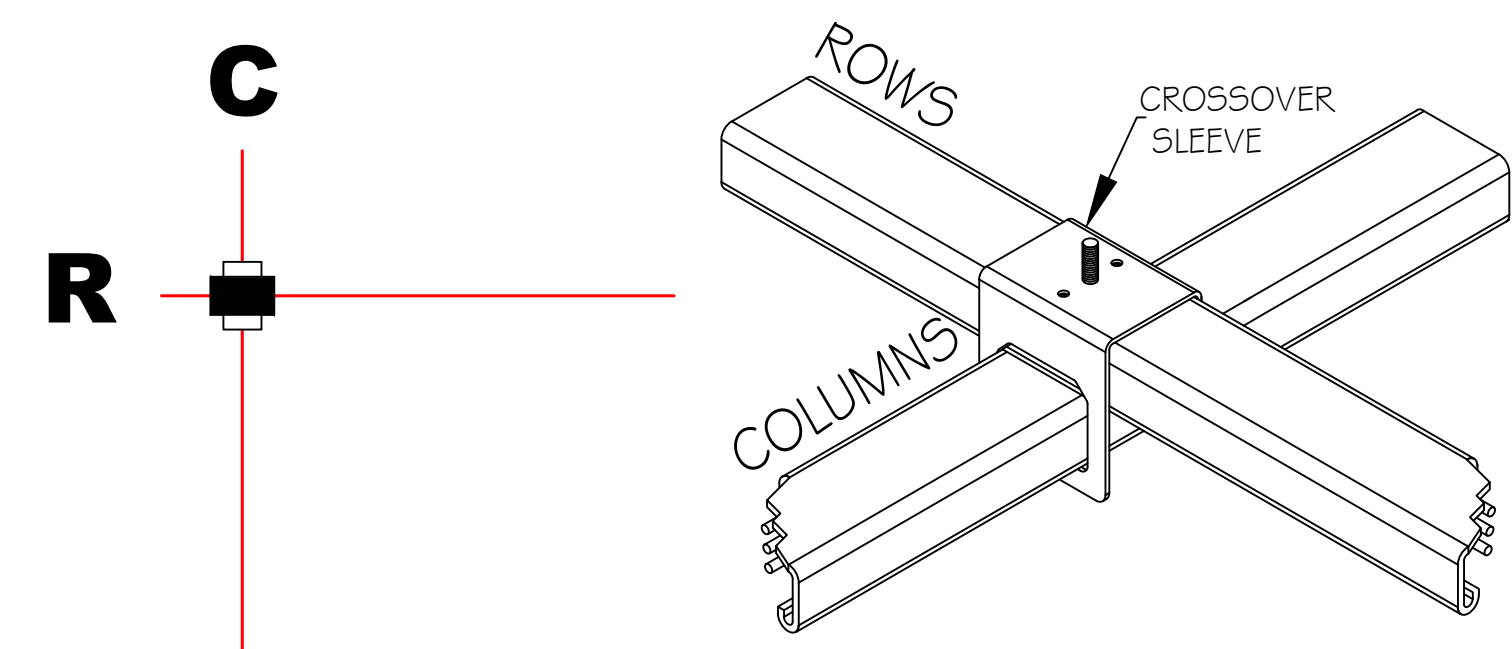
Attachment from busSTRUT System to structure must be engineered and installed to properly support the entire suspended weight.

buSTRUT CABLE / GLIDE
to be attached to
hangers / crossovers

Single Height Member

Project Specific Rules

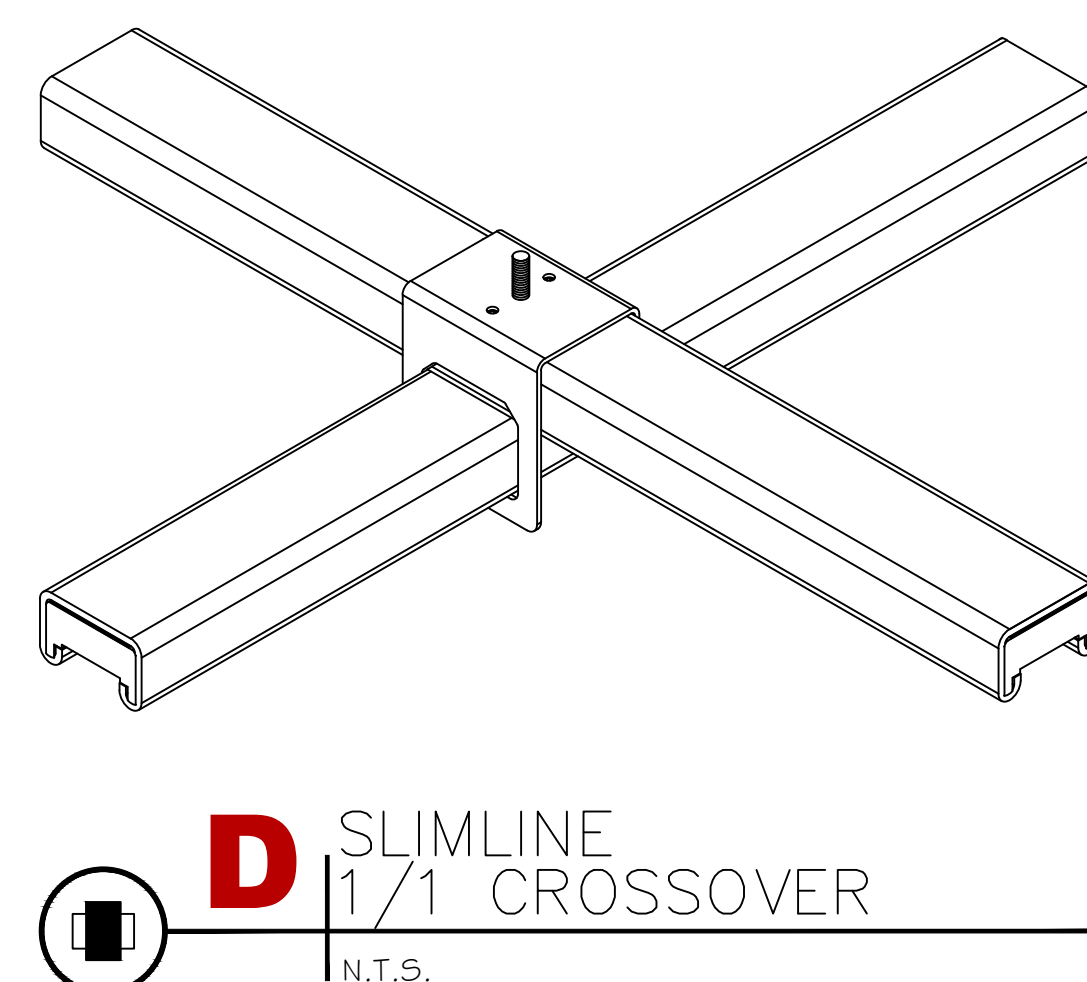
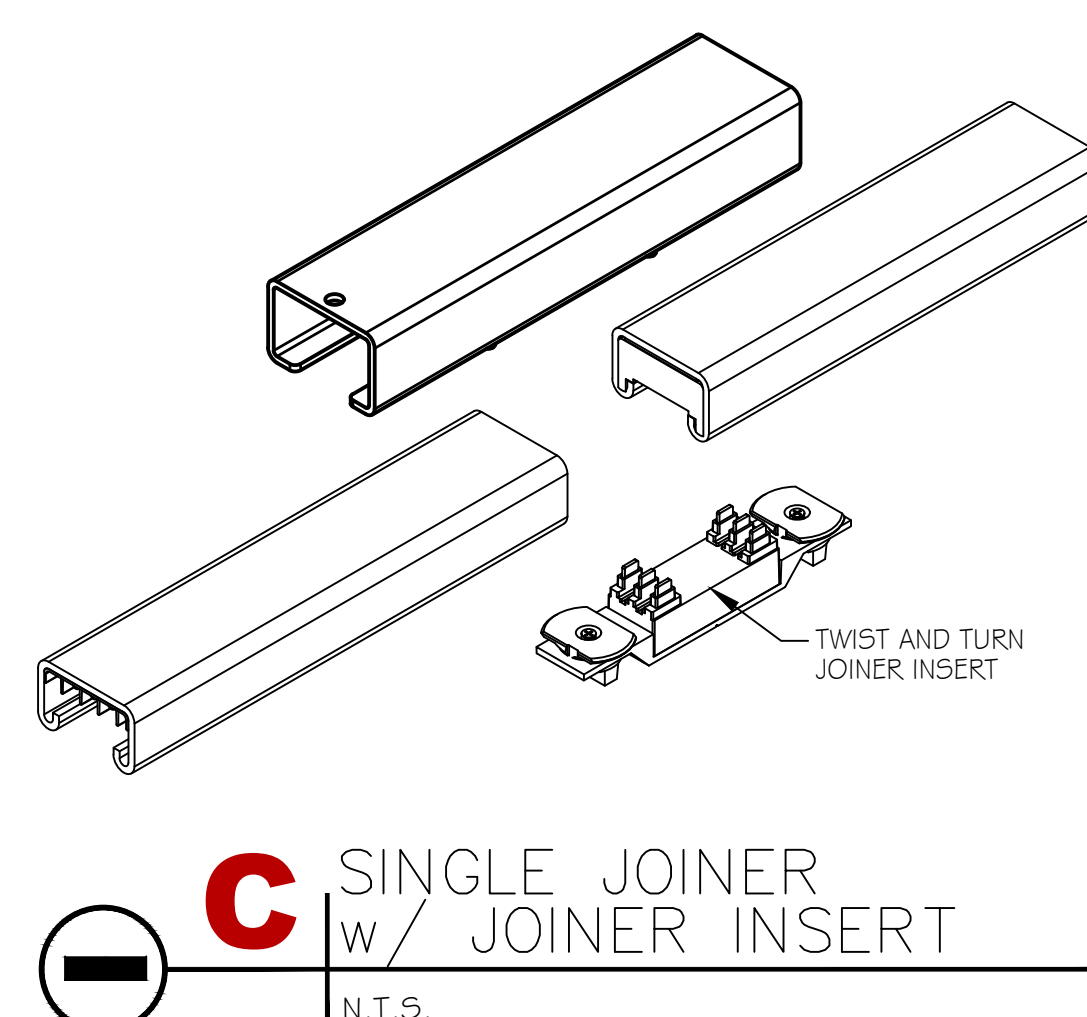
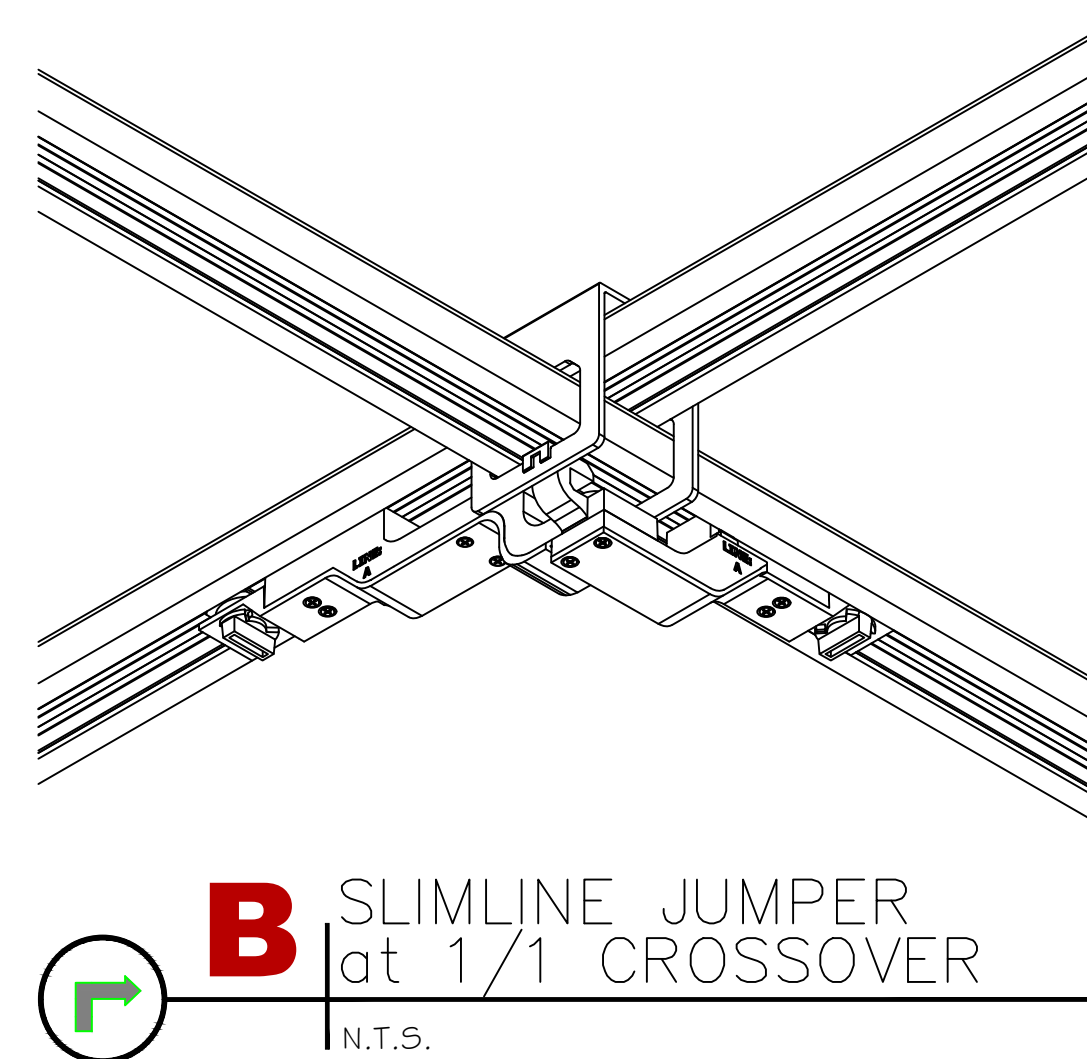
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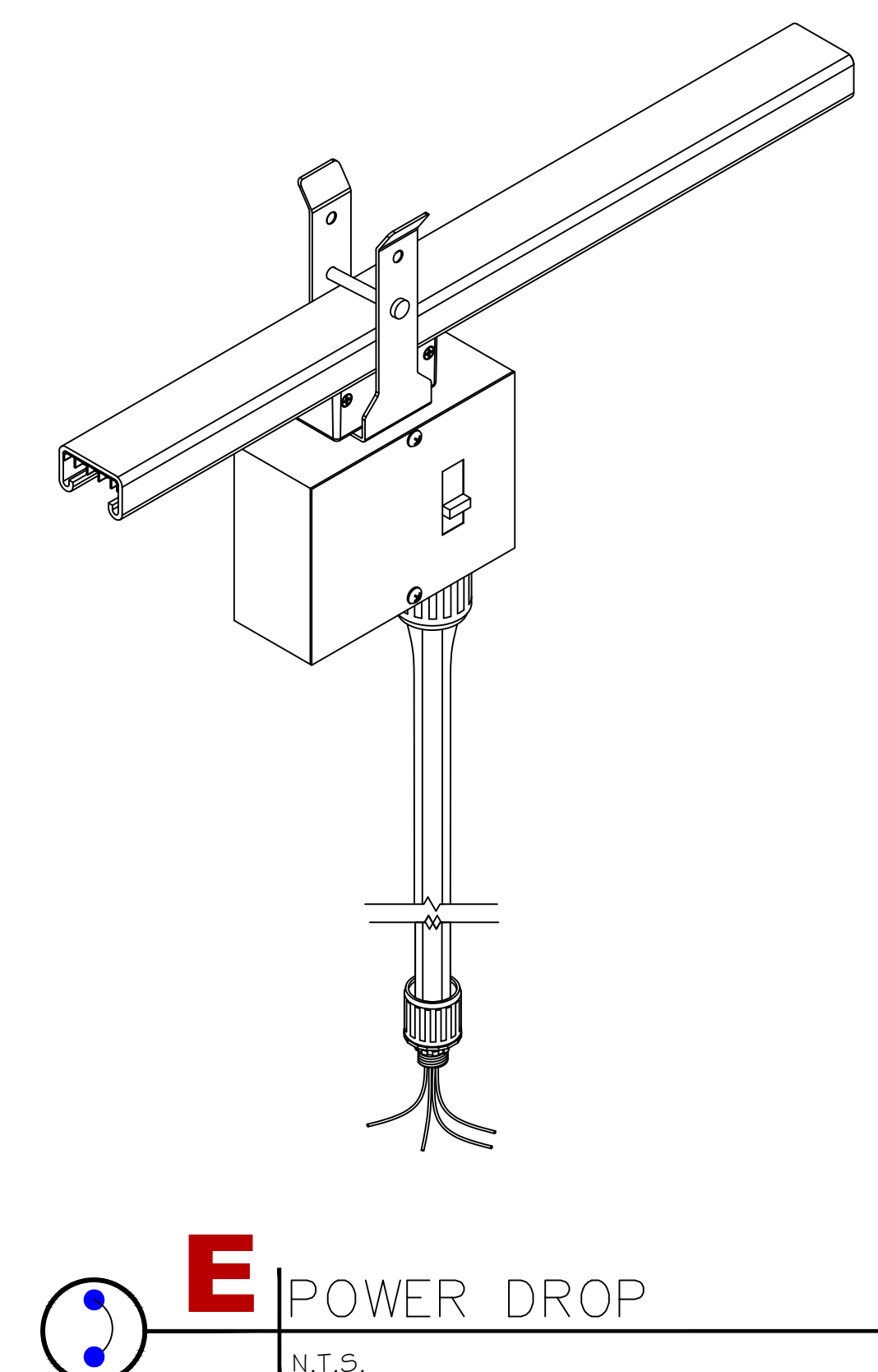
Row

Column

ISO Details



Dimensions



Legend

 busSTRUT 20 / Single Deck

30" Starter Feed

Joiner

1/1 Slimline Crossover

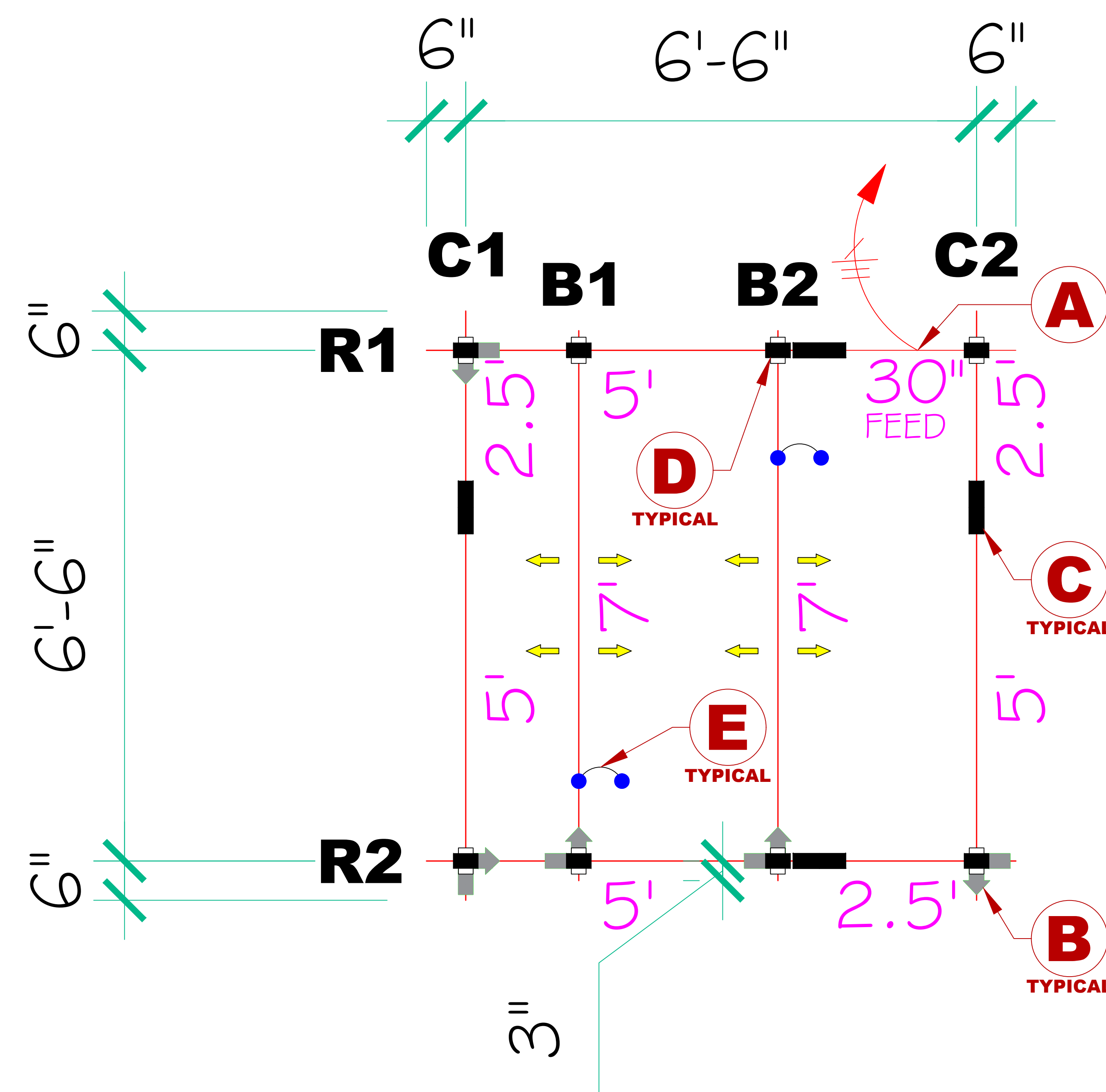
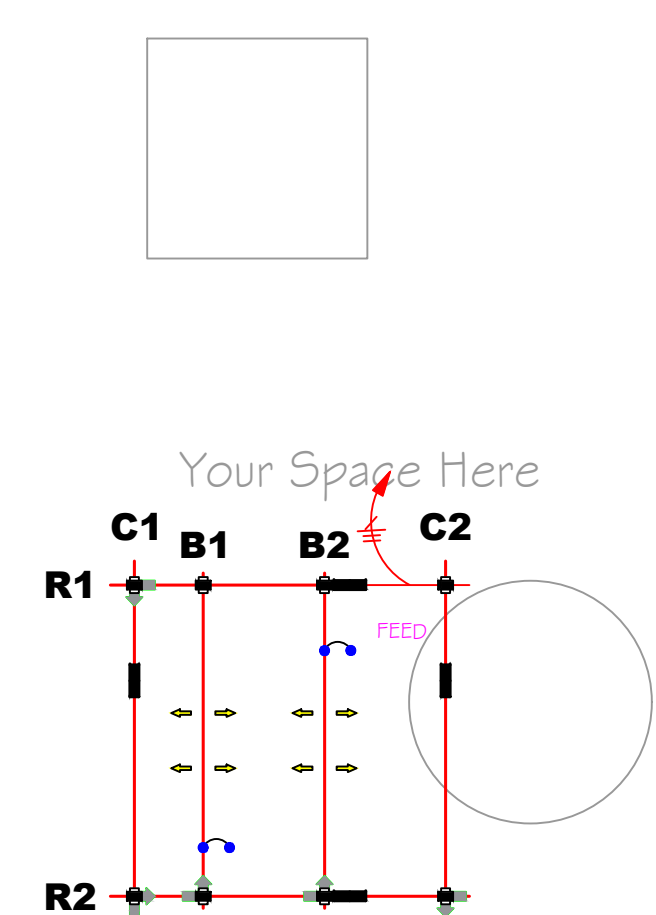
 Slimline Jumper

busSTRUT Lengths Used in this Project

2.5'

5

71



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PRINCIPAL IN CHARGE:	LARRY GELLERT
CHECKED BY:	JOHN LOCH
DRAWN BY:	Corey Sprouse
ISSUE DATE:	01/12/2024
ISSUED FOR:	BID/REVIEW

[illegible]

Assembly Plan

busSTRUT
SHOP DRAWING SET(ONLY)
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			XI-XII	XXX	XI

PAPER SIZE:
ARCH E (48x36)

SCALE 1" = 1'-0"

DRAWING NUMBER
E-b2