

Express Grid (Large)

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

CONTRACTOR IS RESPONSIBLE FOR:

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

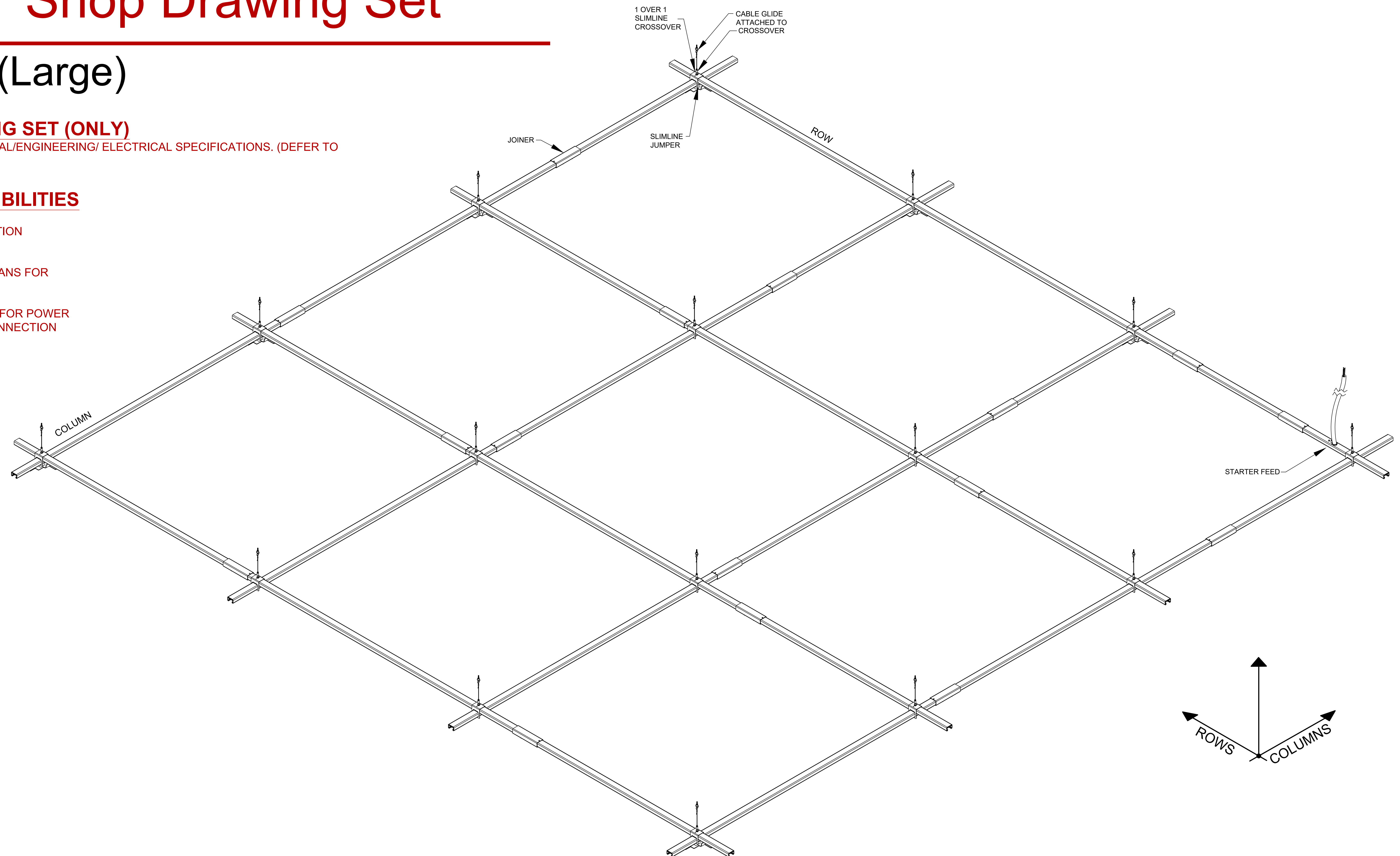
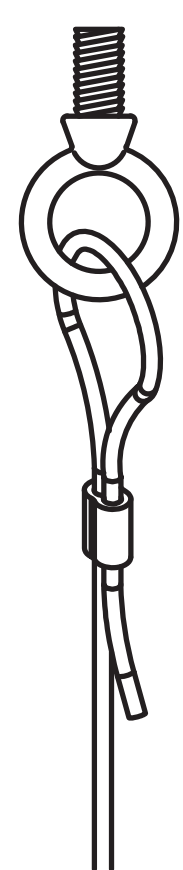


TABLE OF CONTENTS		KEY MOUNTING RULES		APPROVAL
E-b01 E-b02	Typical Installation Instructions		Legend busSTRUT 20 / Single Deck 30" Starter Feed Joiner 1/1 Slimline Crossover Slimline Jumper	
E-b1 E-b2	Lighting Plan, BOM, & Labor Hours Assembly Plan			

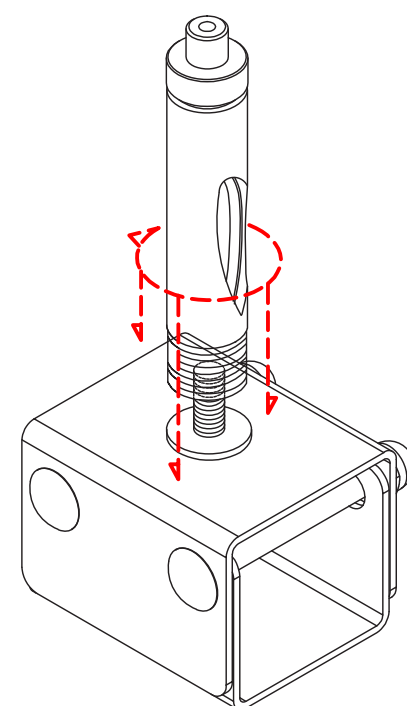
STEP 1

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).

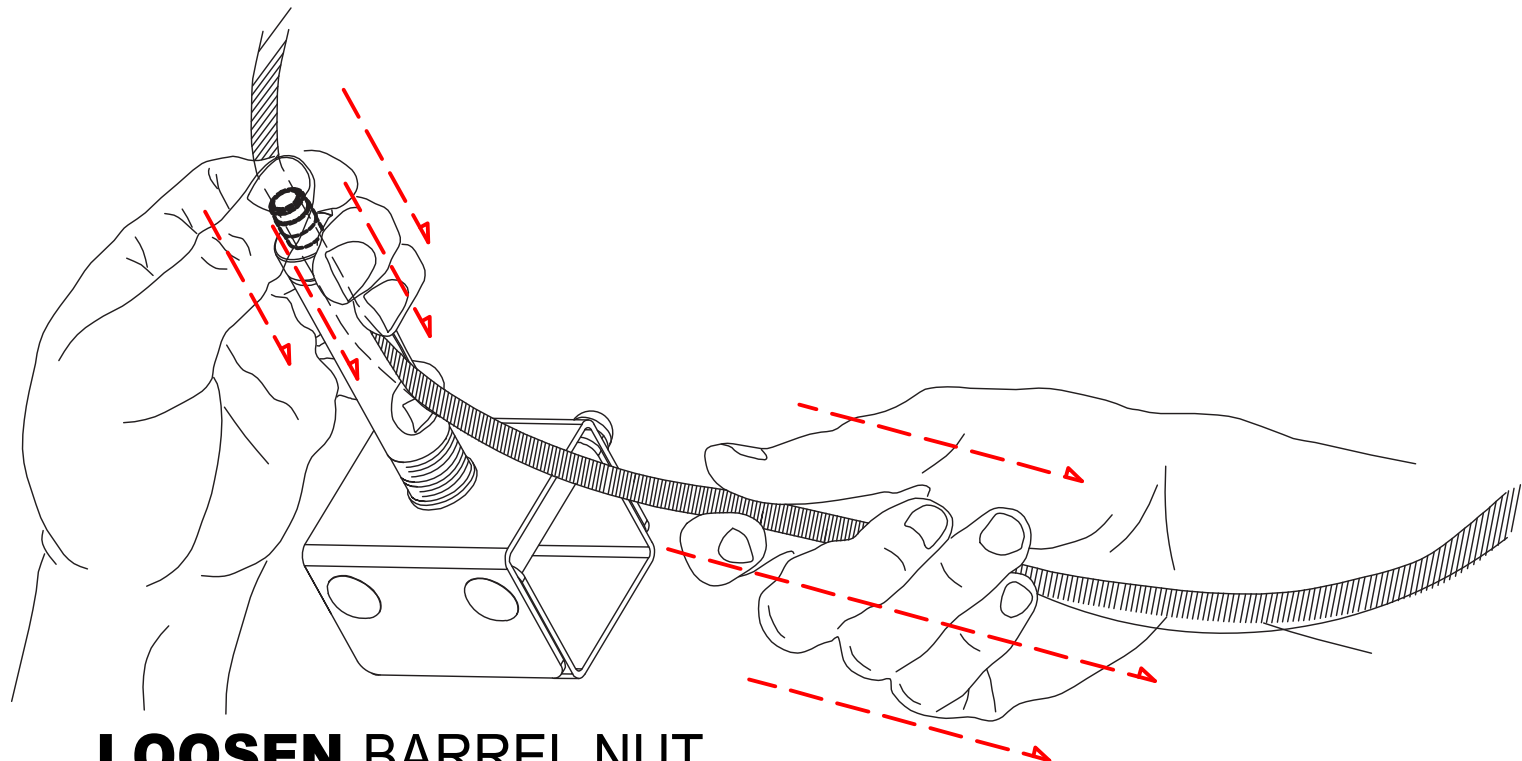
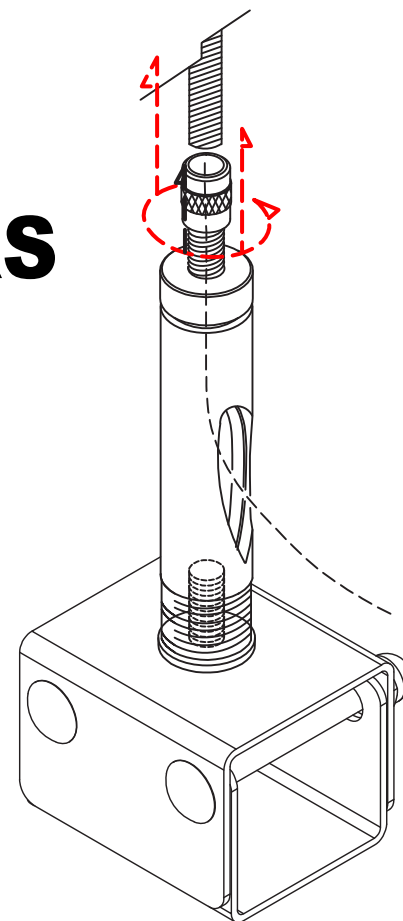


2 ASSEMBLE HANGERS (HM-S)

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

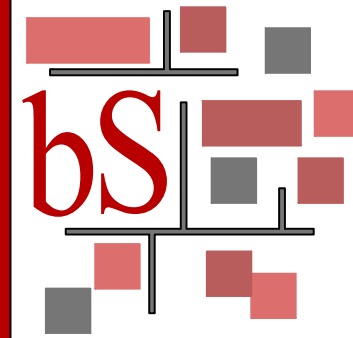
JOINER INSERT (M-JI-X)

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.

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.



busSTRUT

805 Hilldowne Road
Suite C
Westerville, OH
43081
TEL: 614.933.8695
E-MAIL:
INFO@busSTRUT.COM
WWW.BUSSTRUT.COM

DESIGNED BY
LARRY GELLERT

CHECKED BY
JOHN LOCH

DRAWN BY
JOHN LOCH

DATE
10/28/2024

ISSUED FOR
BID / REVIEW

TYPICAL
busSTRUT Installation Instructions

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

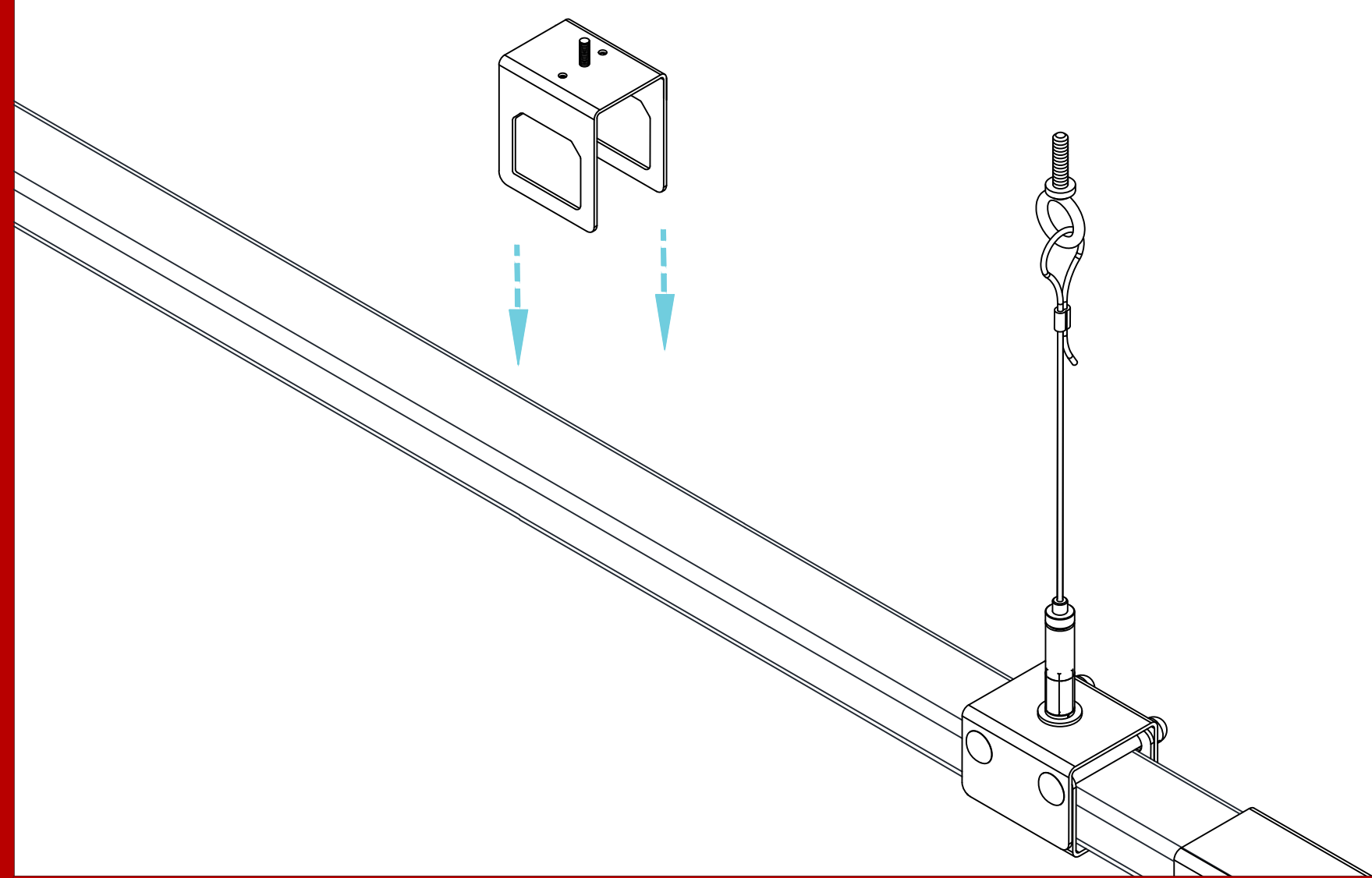
NO.	DATE	DESCRIPTION	BY
1			

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

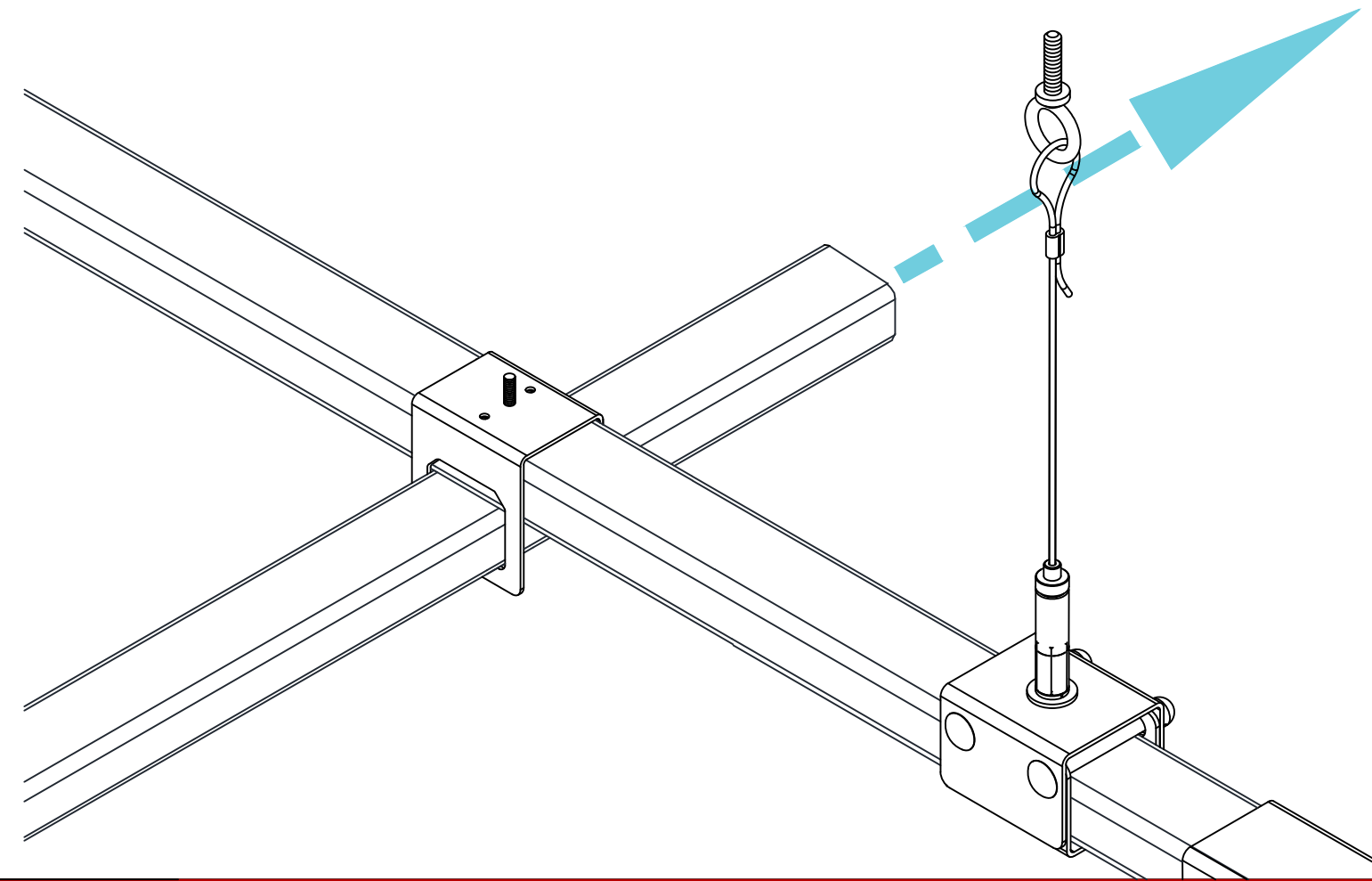
STEP 3

INSTALLING CROSSOVERS DROPPING ON

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



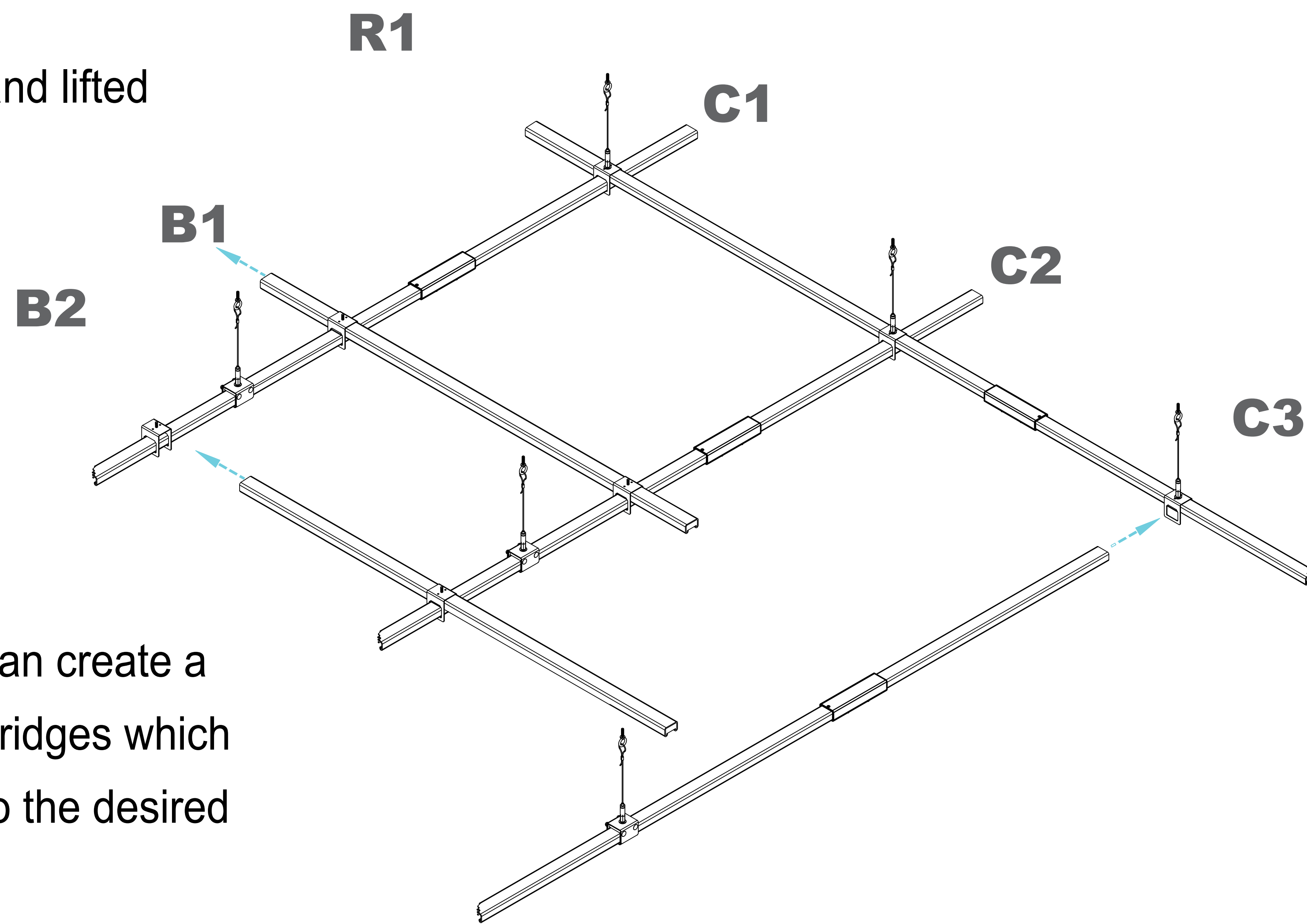
Slide perpendicular runs of busSTRUT through the crossover and tighten the set screws.



SLIDING ON

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

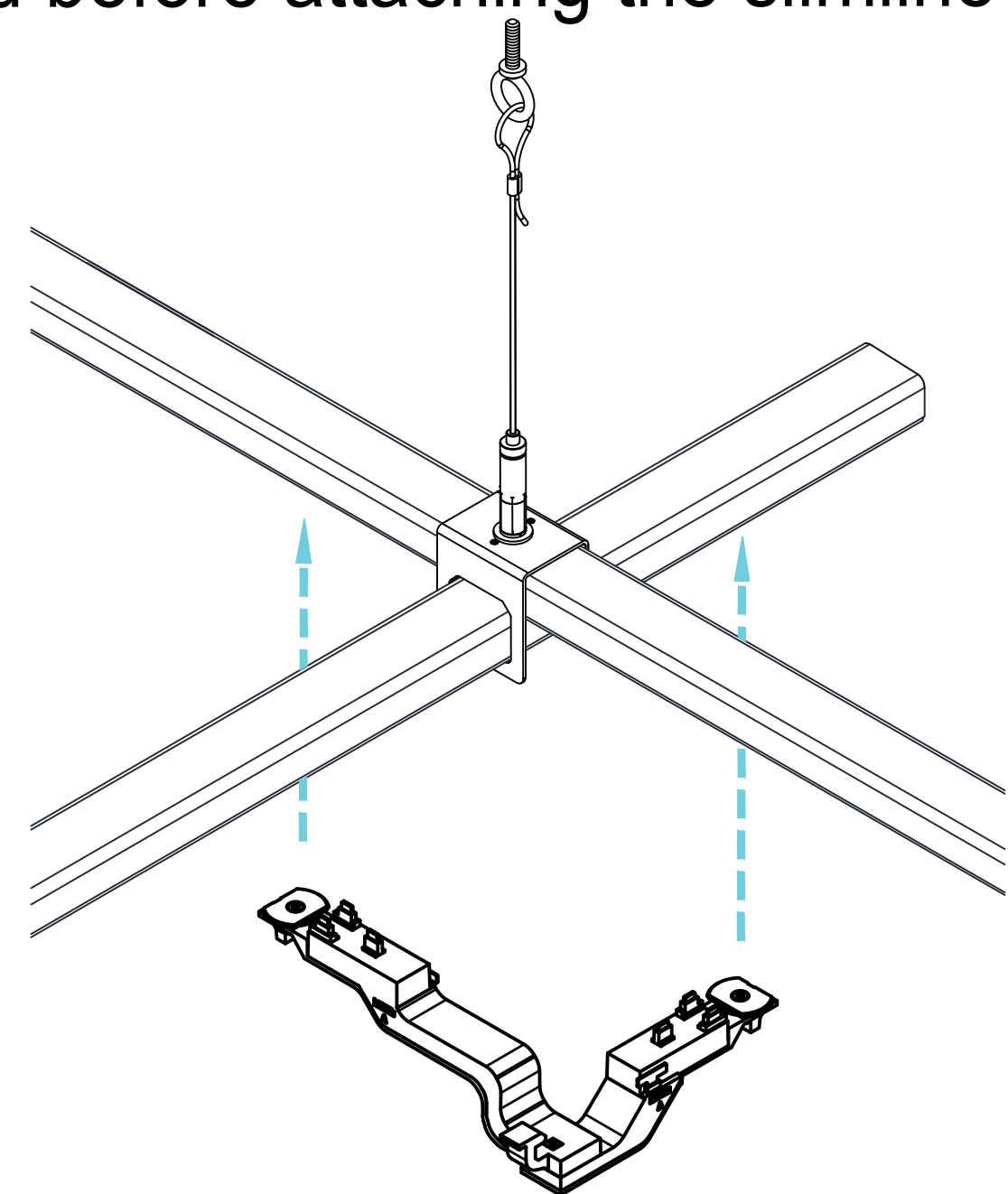
Perpendicular runs can create a full grid or be short bridges which are easily moved into the desired position.



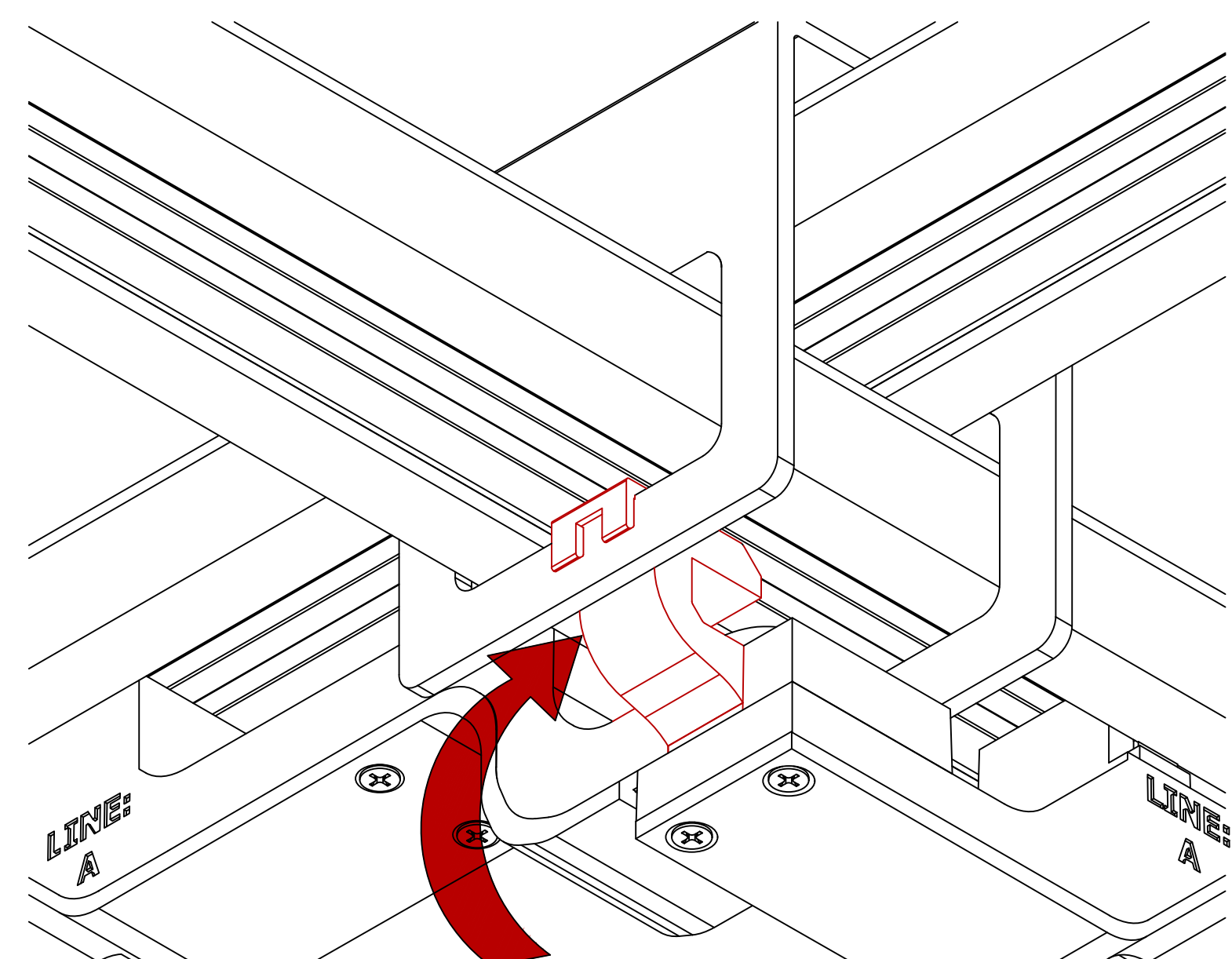
STEP 4A

SLIMLINE JUMPER

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

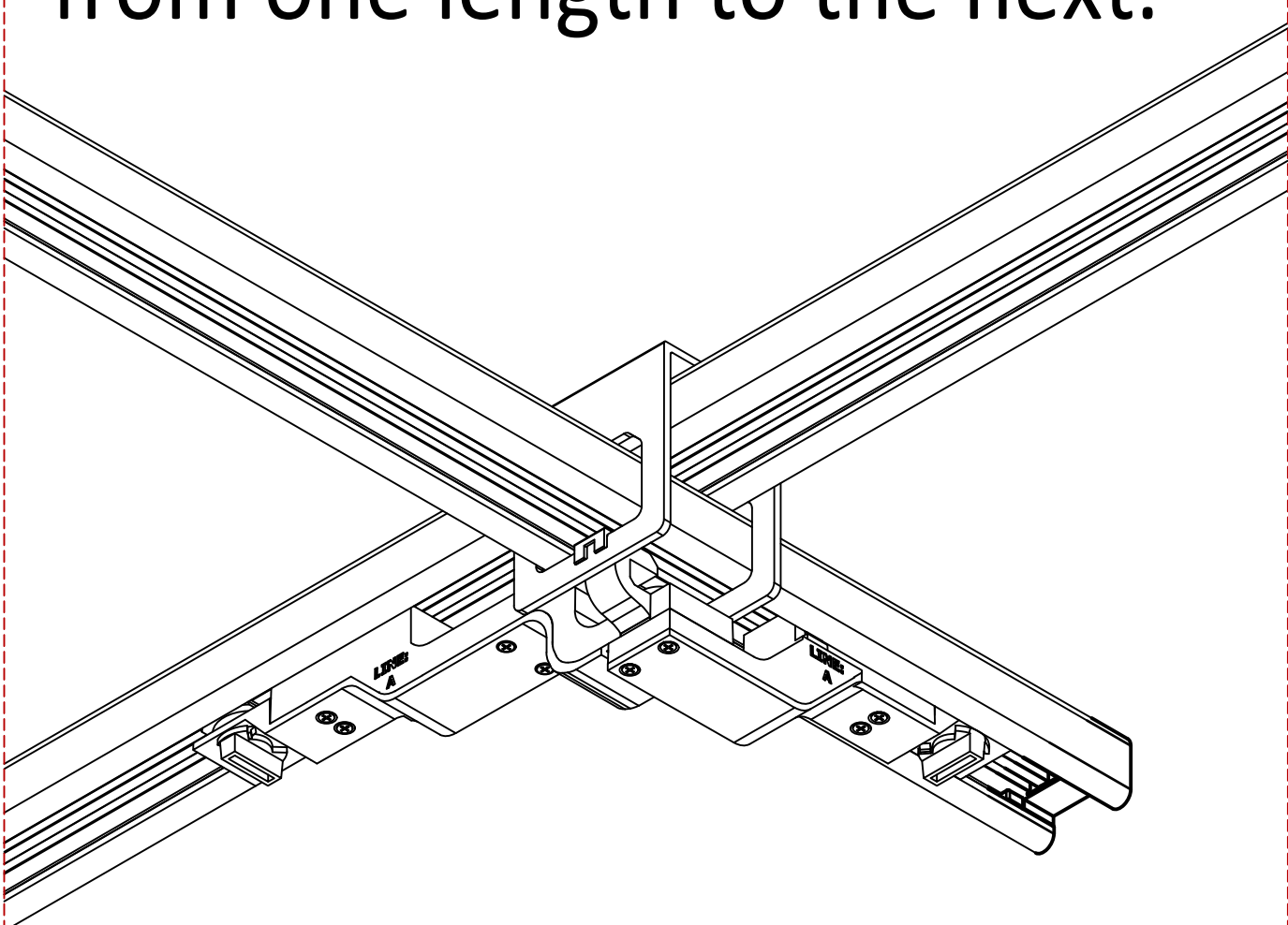


First, clip the jumper to the crossover.

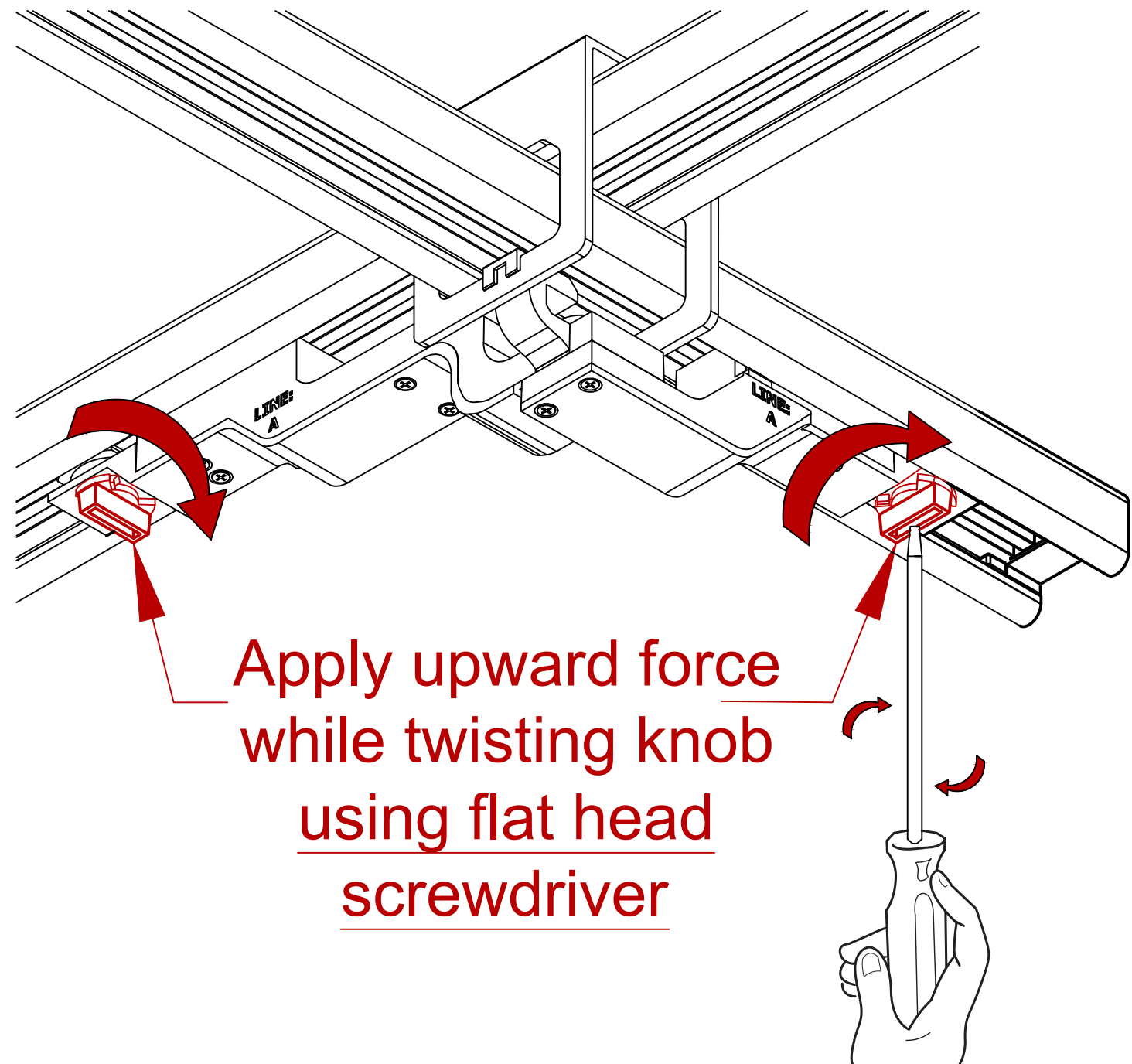


SLIMLINE JUMPER (MD2020-UNIV-IJ2-B-X)

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.

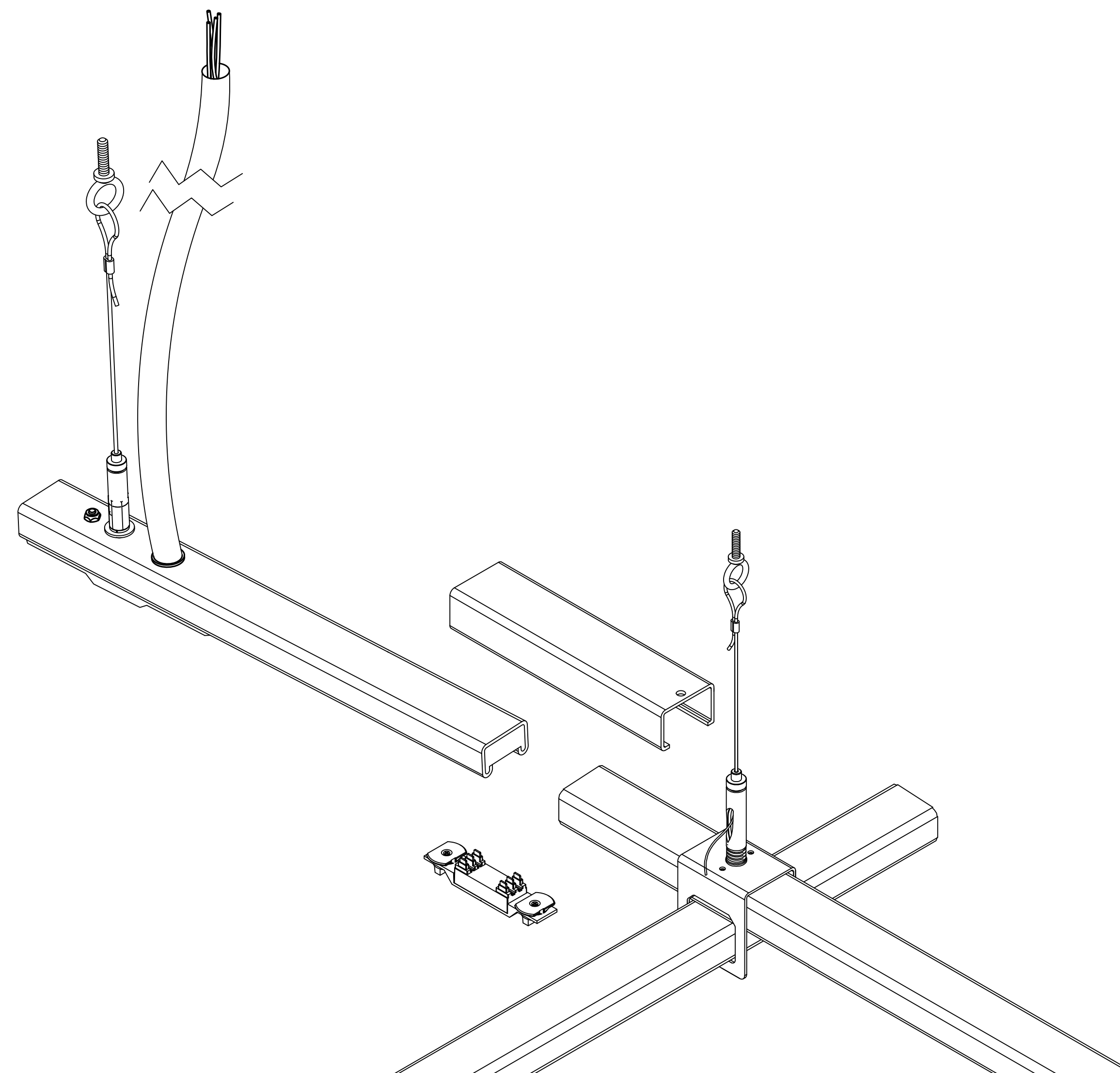


STEP 4B

STARTER FEED

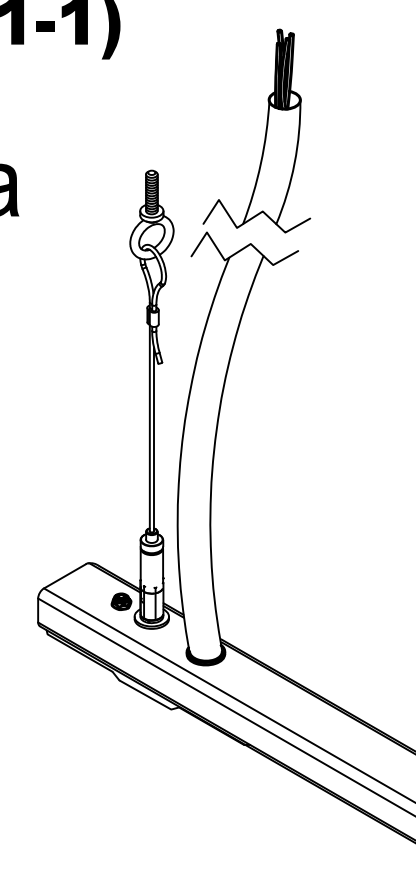
The Starter Feed comes with a 1/4-20 Stud to create an additional hang point and a 15' 12/4 SOOW Cord to connect power to the system.

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

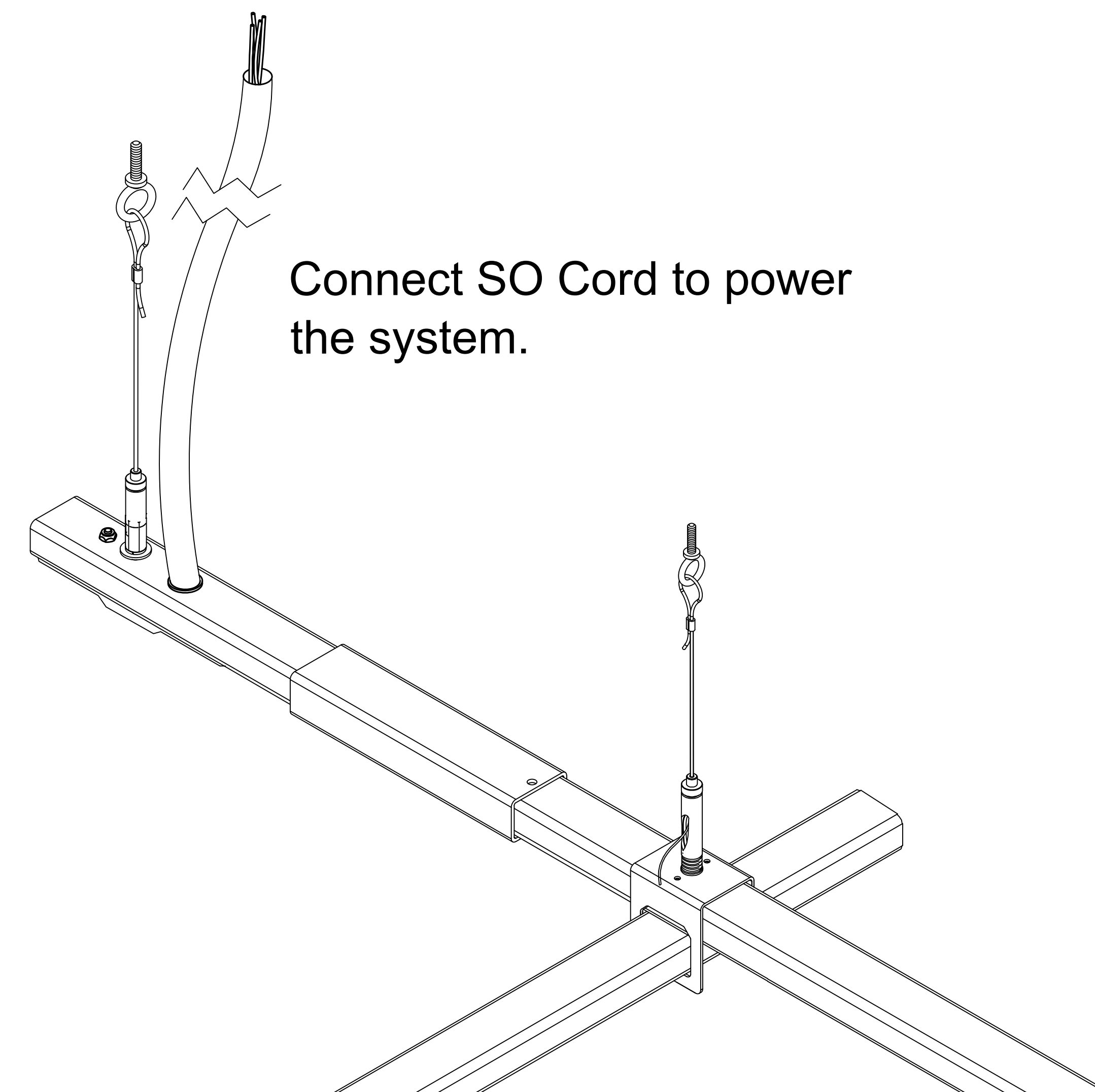


STARTER FEED (P20-3-40-UNIV-30-CM-F 1-1)

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® END	CABLE GLIDES	HANGERS	JOINERS	CROSSOVERS	FEEDS	
SINGLE DECK	GRAY 20 AMP'S M20-3-40-V-(L)		HM-S	M-JB	ICM-S	LINE P20-3-40-UNIV-FDX-X-F	STARTER P20-3-40-UNIV-30-CM-F 1-1
	BLACK 40 AMP'S M40-3-80-V-(L)		EMPTY-STRUT M00-(L)	HD-S	D-JB	ICD-S	JUMPER CABLE MD4020-UNIV-JC-F-90-12 MD2020-UNIV-IJ2-B-X
DOUBLE DECK	DOUBLE-STRUT NOTE: CIRCUITS "A" AND "B" ON BOTTOM CIRCUITS "C" AND "D" ON TOP						

STREET LIGHTS: 12 gauge "x" 1" x 1.58" braided cable with GLIDE® For use with LED lighting. STREET LIGHTS: features two 40 Amp circuits 40 Amps Maximum with busSTRT720, alternatively two 20 Amp circuits 40 Amps Maximum with busSTRT1060. 2.5', 5', and 20' lengths. Rated for use to 277/480V. Double cables with standard hardware for trunking.	BRAIDED CABLE with GLIDE® For use with LED lighting. HANGERS: Single and Double Hangers are for use with busSTRT. Each is an assembled two part unit. The upper piece includes a threaded stud with cable looped through 14-20" eye bolt.	HANGERS: Single and Double Hangers are for use with busSTRT. Each is an assembled two part unit. The upper piece includes a threaded stud with cable looped through 14-20" eye bolt.	JUNCTIONS: Single and Double are for use with busSTRT. Lengths are joined together mechanically with the 1" steel sleeve. Electrical Joints include both a Twist & Turn Plug-In electrical insert to bridge power. And continuous conductive inserts through the bus itself by means of a permanently affixed ground jacking bar.	CROSSOVERS: For use with intersecting busSTRT. Each is an assembled two part unit for building grid configurations and bridges. The upper piece includes a threaded stud for use with busSTRT cable-glide.	JUMPERS: For use with both busSTRT720 and busSTRT1060. The fused 400V Jumper Cables can be used to electrically connect busSTRT Trunks to busSTRT720 Branches and electrically connecting busSTRT720 to busSTRT1060.
--	---	--	---	--	--

busSTRUT Bill of Materials														Finish TBD: Galvanized, White, or Black				Drawn By Checked By Date		John Loch John Loch 10/28/2024	
GRID Large																					
				busSTRUT LENGTHS				busSTRUT Hardware						busSTRUT POWER							
				busSTRUT 20				Joiners			Hangers		C-Gl	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	M-JB-F-X	M-JI-F-X	M-JI-F-NE	MHS-F-ST-LFX	MKS-ST-A-F	CG-E-15-B-GL	ICM-S-F-ST-X	MD4020-UNIV-JCF-30-12-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-XX-LF-F	BRL-4-40L-30K30-ST-MD-F	BRL-LUCY-L-309-30-F-(OC)
R/C	Amps	LF	BF	2.5	3	5	7	M	INS	NE-INS	M	DB	C-Gl	1/1	12"	INVS	JK	30ST	40	GEN	ACT
Rows																					
R1	20	25	25	1	2		2		5	5				4	4				1		
R2	20	25	25		2	1	2		4	4				4	4		1				
R3	20	25	25		2	1	2		4	4				4	4		1				
R4	20	25	25		2	1	2		4	4				4	4		1				
SUB TOTAL		100	100	1	8	3	8	17	17					16	16	3	1				
R/C	Amps	LF	BF	2.5	3	5	7	M	INS	NE-INS	M	DB	C-Gl	1/1	12"	INVS	JK	30ST	40	GEN	ACT
Columns																					
C1	20	25	25		2	1	2		4	4							1				
C2	20	25	25		2	1	2		4	4							1				
C3	20	25	25		2	1	2		4	4							1				
C4	20	25	25		2	1	2		4	4							1				
SUB TOTAL		100	100		8	4	8	16	16								4				
STORE TOTAL		200.0	200.0	1	16	7	16	33	33					16	16		7		1		

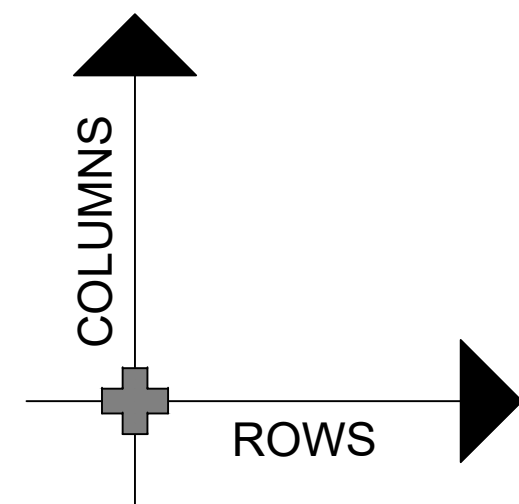
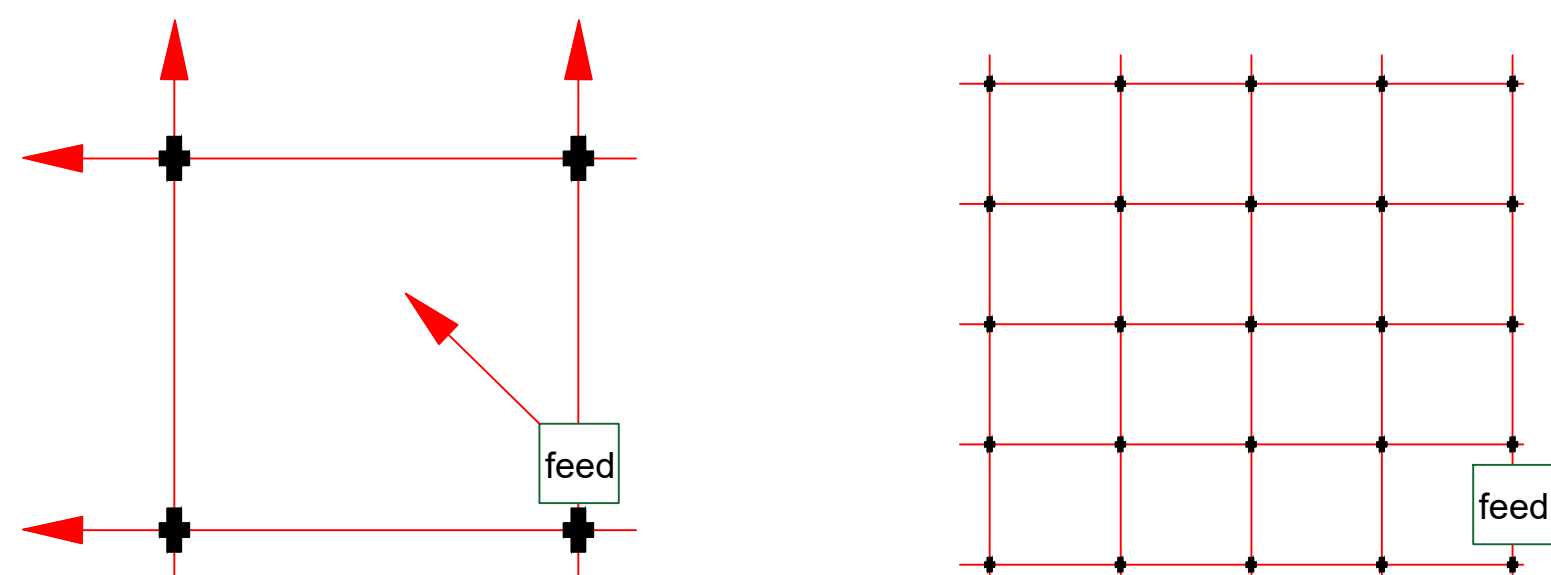
busSTRUT provides time-tested standard labor hours per part, which are then multiplied by the project's Bill of Materials.

busSTRUT LABOR									
ITEMS	Qty.	U/M	STANDARDIZED				TOTAL HRS		
			LABOR HOURS		min	hrs			
busSTRUT SYSTEM	LENGTHS	200	LF	x	2.75	0.05	=	9	
	JOINERS	33	EA	x	12	0.20	=	7	
	HANGERS	16	EA	x	25	0.42	=	7	
	CROSSOVERS	16	EA	x	10	0.17	=	3	
	ATTACHMENTS		EA	x	8	0.13	=	0	
	JUMPERS	7	EA	x	6	0.10	=	1	
	FEEDS	1	EA	x	15	0.25	=	0	
busSTRUT SUB-TOTAL							=	26	
FIXTURES	ACCENT		EA	x	8	0.13	=	0	
	LINEARS		EA	x	20	0.33	=	0	
	busSTRUT READY LIGHTS SUB-TOTAL							=	0
TOTAL TIME							=	26	

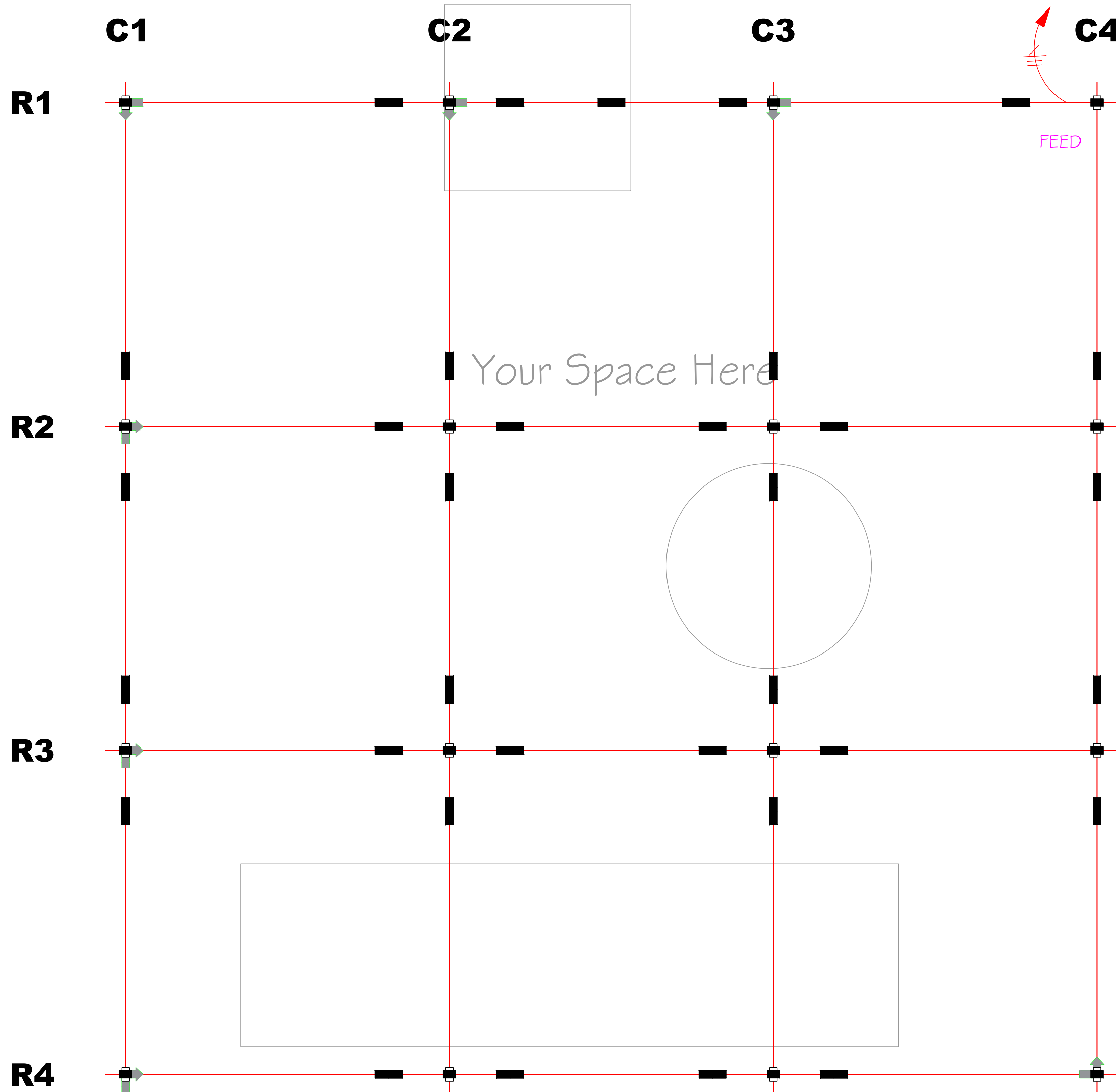
	busSTRUT 20 / Single Deck
	30" Starter Feed
	Joiner
	1/1 Slimline Crossover
	Slimline Jumper

Bid from the **feeds-in**.

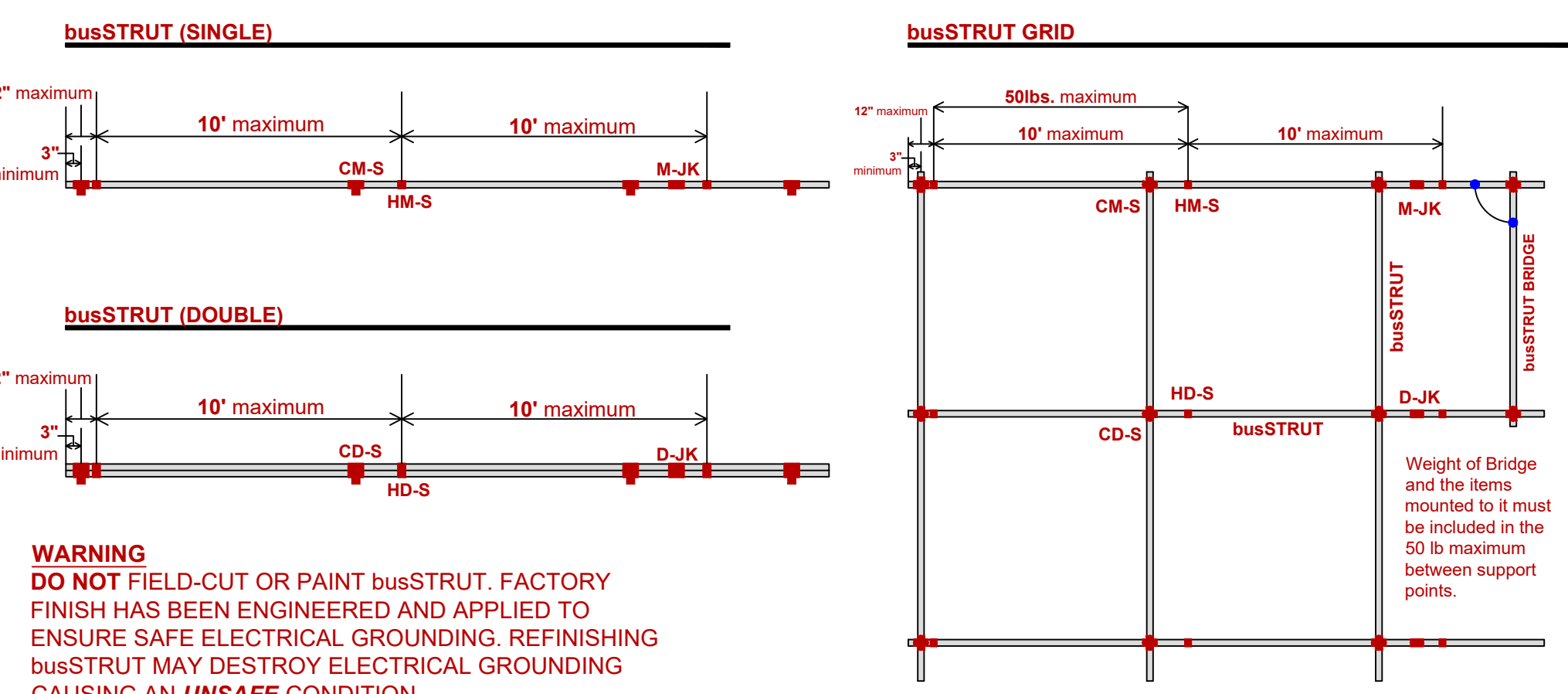
* Powered by a minimal amount of feed boxes.



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)



Mounting Rules



Do NOT remove the factory installed end caps from the busSTRUT

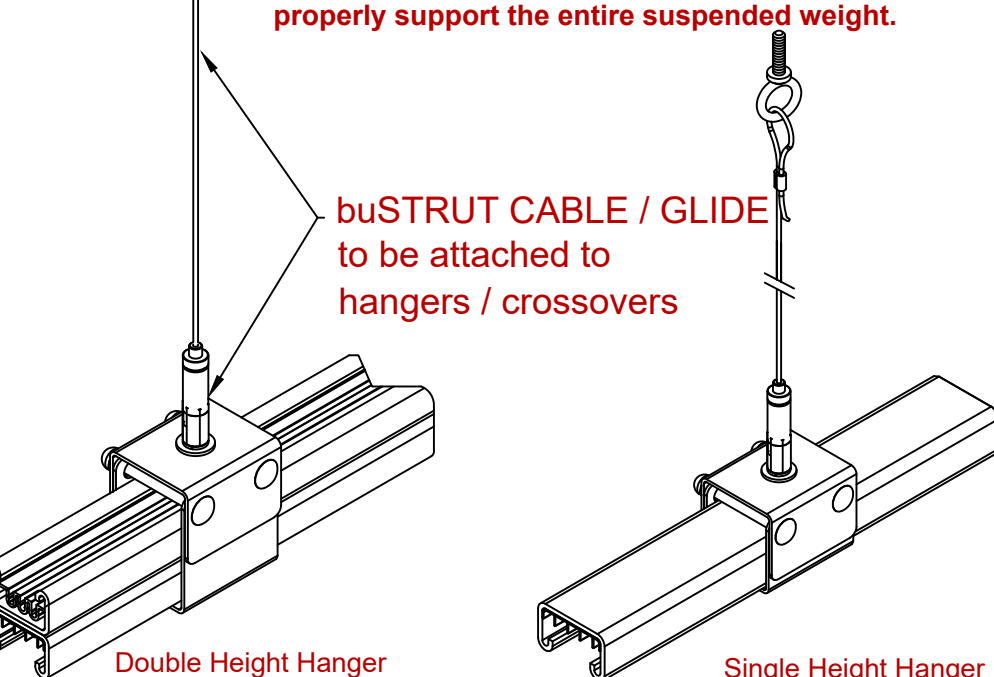
Removal voids ETL listing, warranty, and could create a dangerous electrical condition

CAUTION:

TIGHTEN ALL JOINER SET SCREWS TO 10 in/lbs

Required to ensure grounding

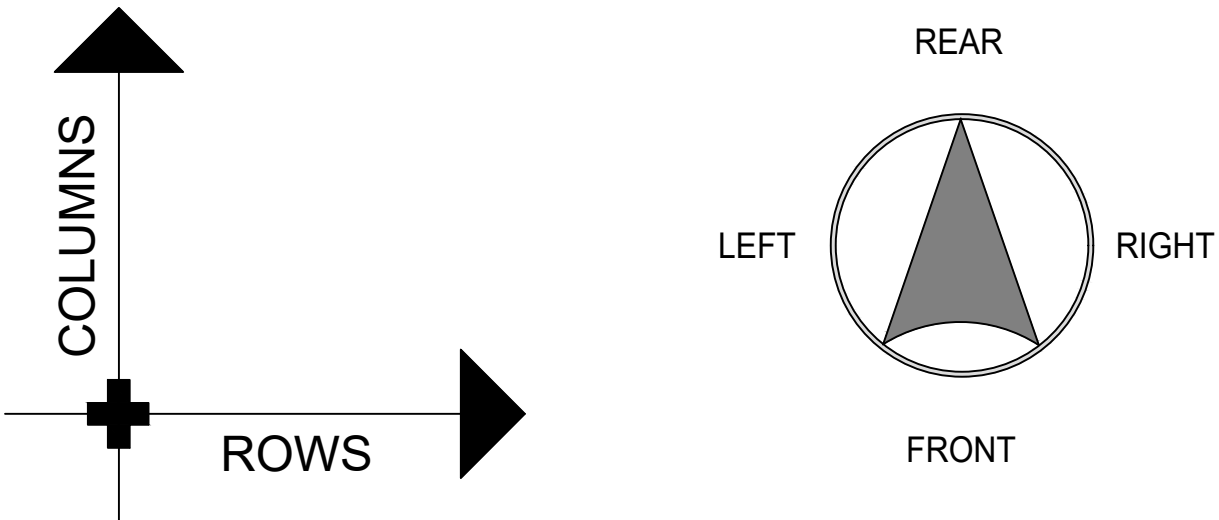
- DISTANCE:**
 - 10'** MAXIMUM 10' spacing between support points
 - 12"** Support point must be within 12" from every end or corner
 - 3"** MINIMUM 3" of busSTRUT to be exposed beyond end of mounting hangers and/or crossovers
- WEIGHT:**
 - 50 lbs** Maximum 50 pounds between support points (Include weight of busSTRUT System)
 - Weight of 1 foot of busSTRUT:
 - 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.
- CONNECTION TO STRUCTURE BY OTHERS**
 - Attachment from busSTRUT System to structure must be engineered and installed to properly support the entire suspended weight.



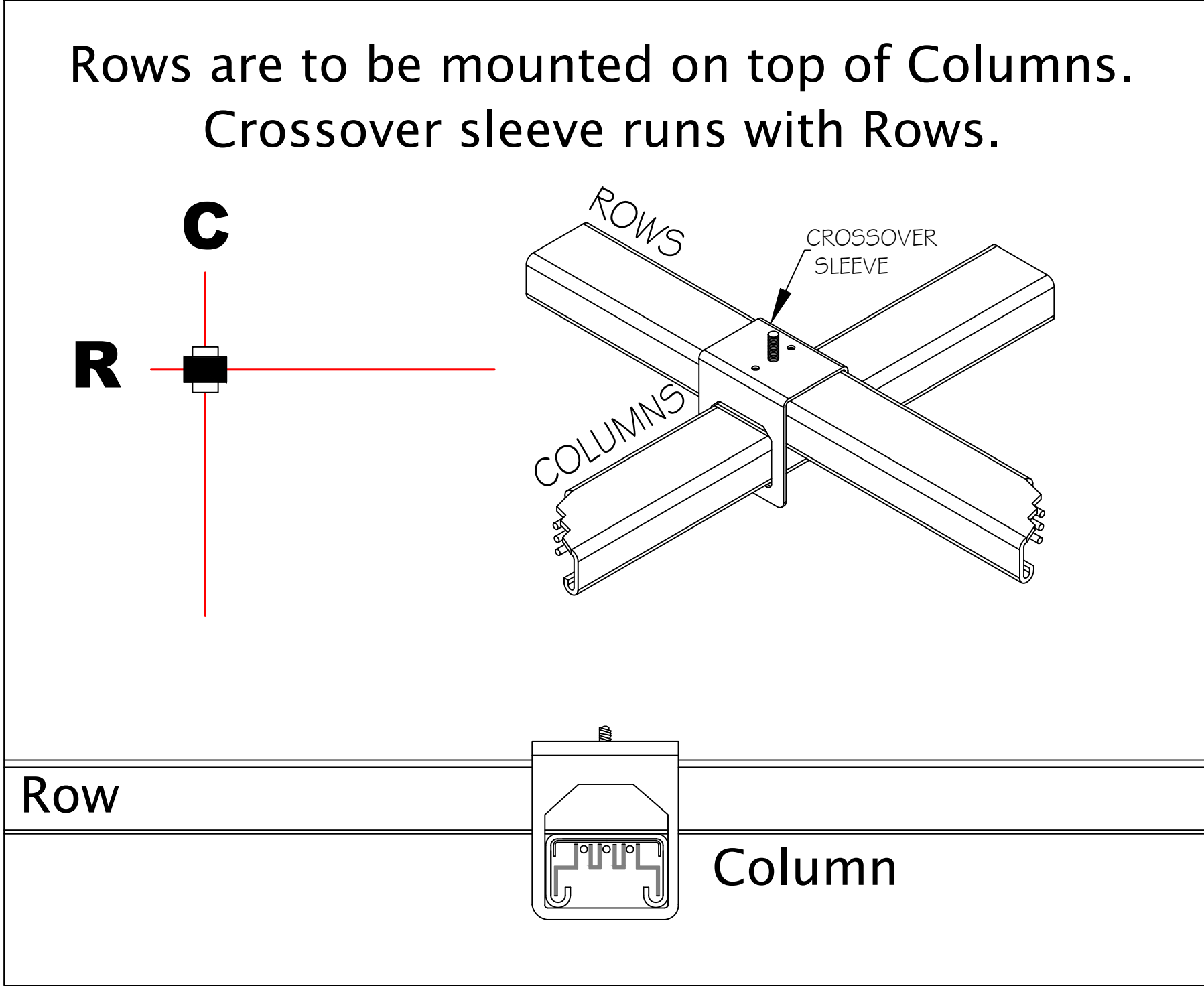
Legend

busSTRUT 20 / Single Deck

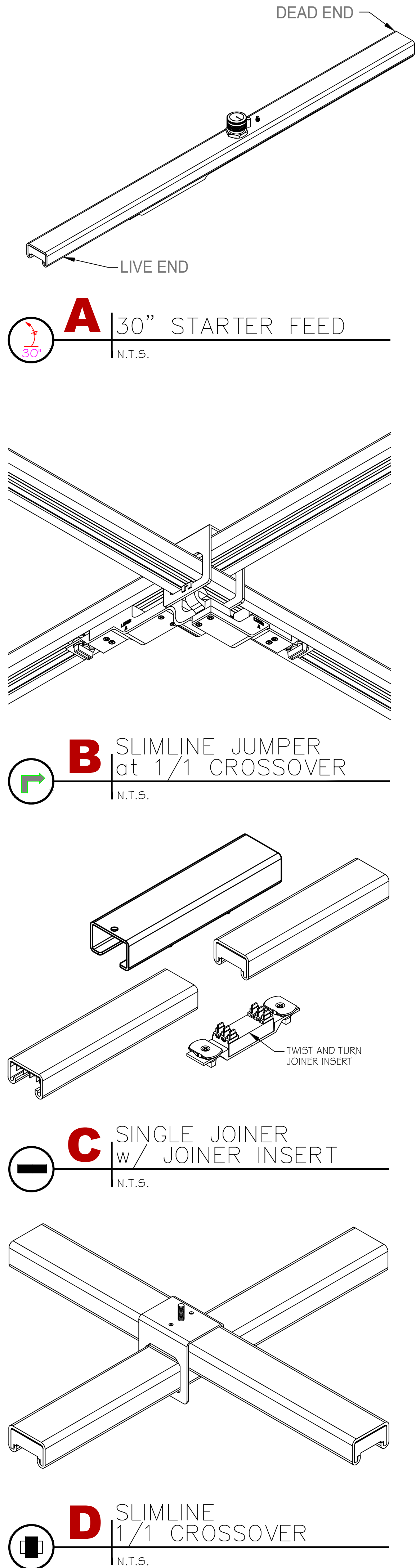
- 30" Starter Feed
- Joiner
- 1/1 Slimline Crossover
- Slimline Jumper



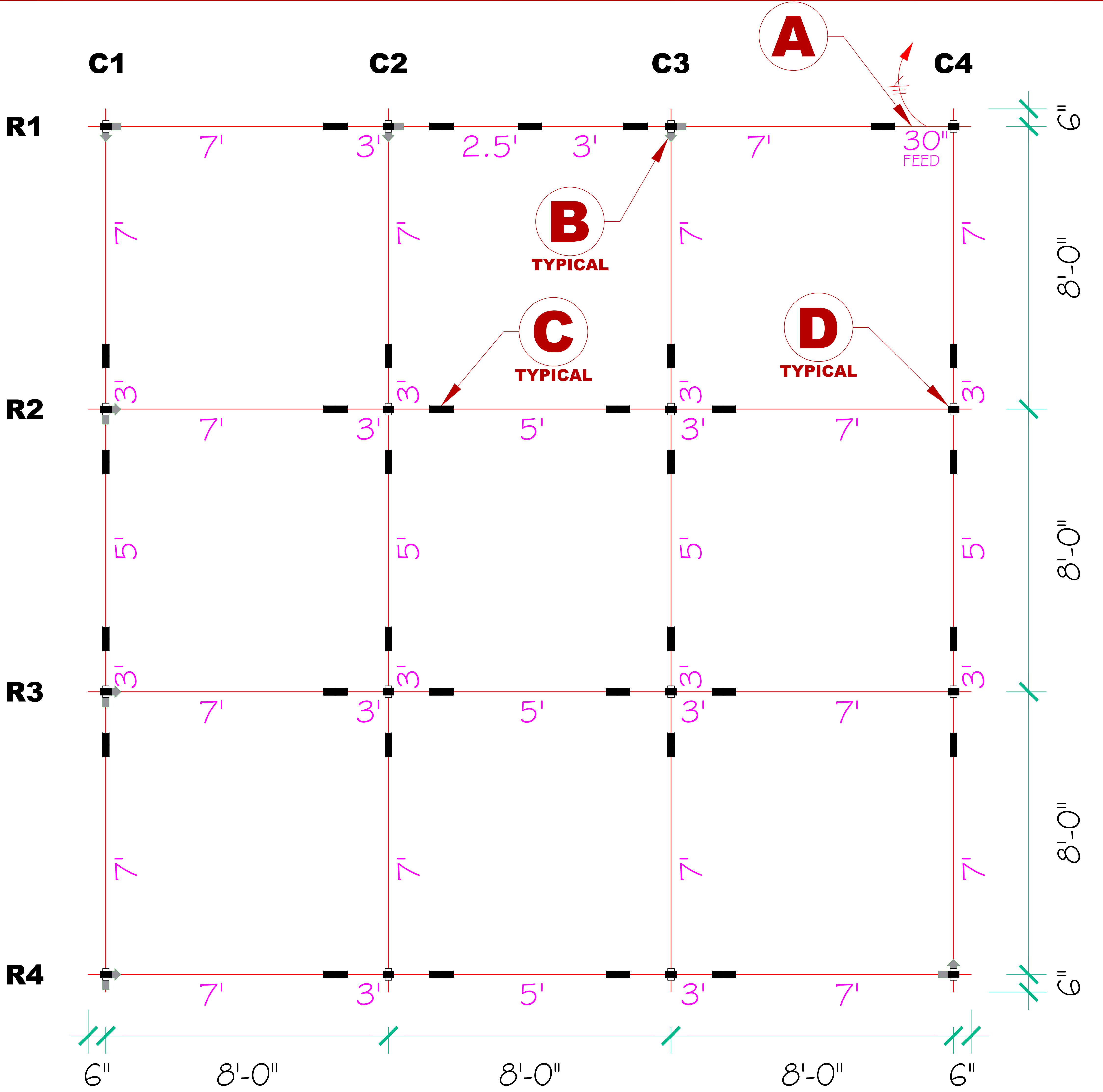
Project Specific Rules



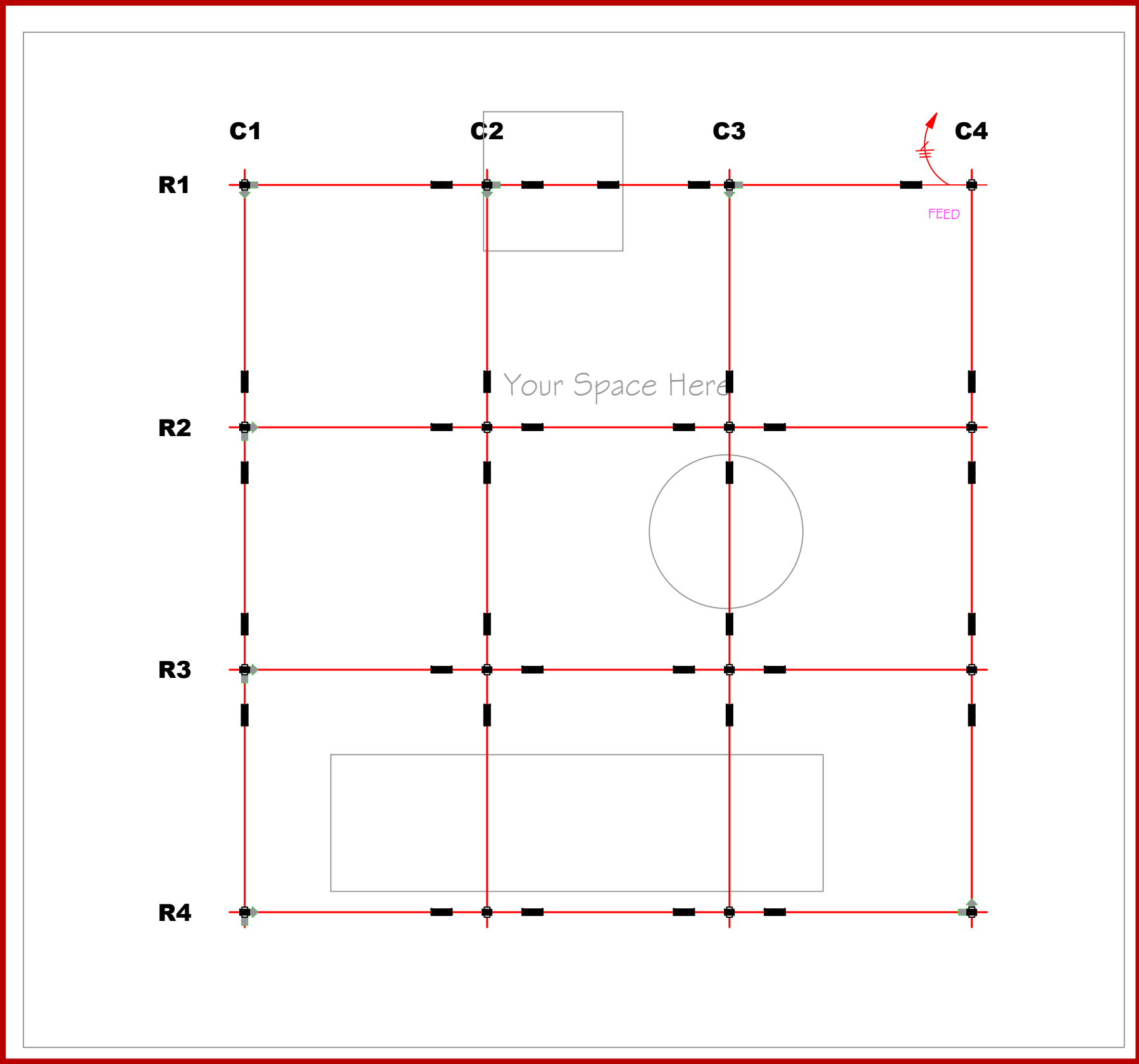
ISO Details



Dimensions



- busSTRUT Lengths Used in this Project
- 2.5'
 - 3'
 - 5'
 - 7'



busSTRUT
805 Hillside Road
Suite C
Westerville, OH 43081
TEL: 614.933.8695
E-MAIL: INFO@BUSSTRUT.COM
WWW.BUSSTRUT.COM

PRINCIPAL IN CHARGE: LARRY GELLERT
CHECKED BY: JOHN LOCH
DRAWN BY: JOHN LOCH
DATE: 10/26/2024
REVISION: BID/REVIEW

Assembly Plan

GRID LARGE

busSTRUT
SPEC DRAWING SET(ONLY)
NOT A REPLACEMENT FOR
AN ELECTRICAL
ARCHITECTURAL
ENGINEERING OR ELECTRICAL
DRAWINGS

NO.	REVISION	DESCRIPTION	BY
XX	XXXX		
XX	XX-XX-XX	DATE	

PAPER SIZE: ARCH E (48x36)
SCALE 3/4" = 1'-0"
DRAWING NUMBER: **E-b2**