

busSTRUT Shop Drawing Set

Express Grid (Medium) - Lights

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.

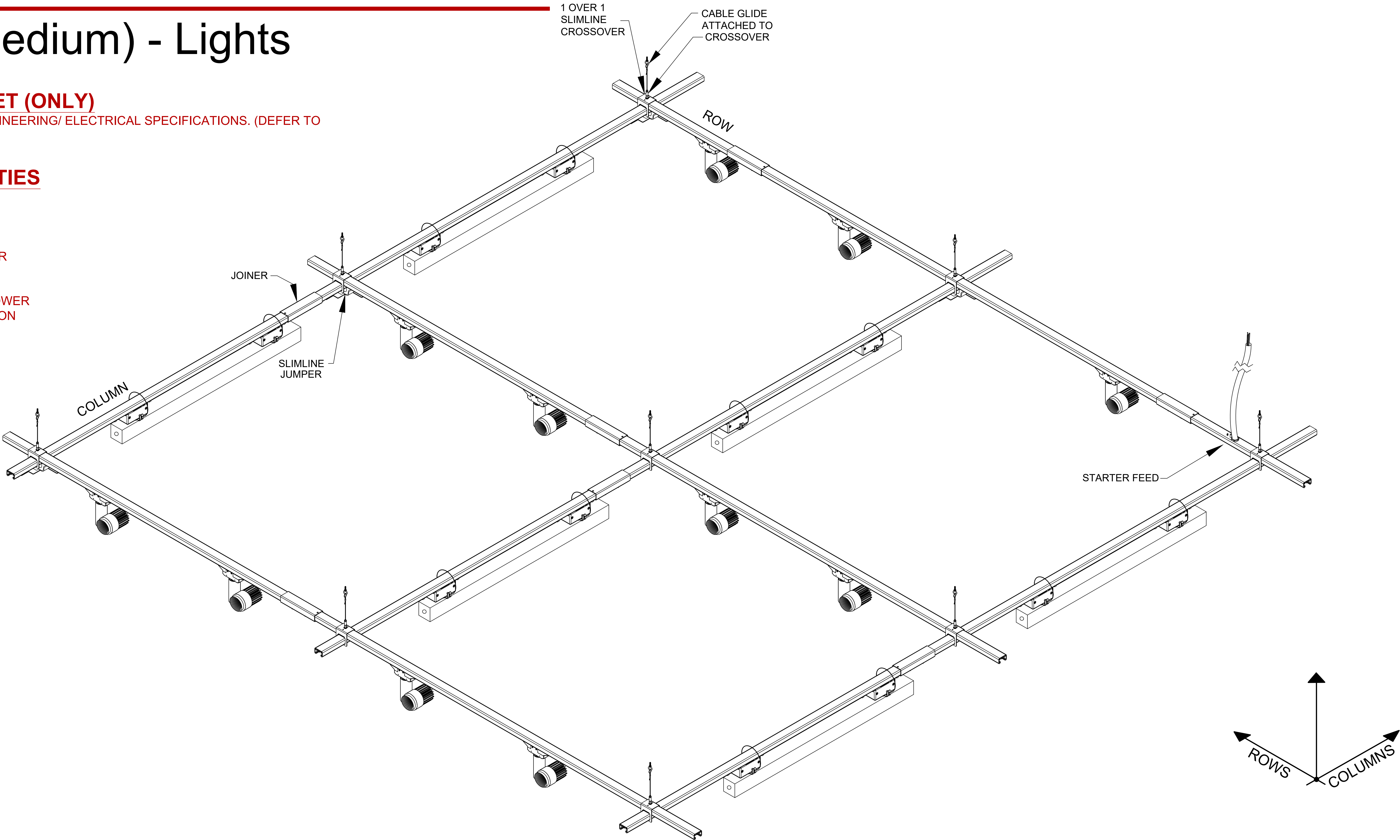
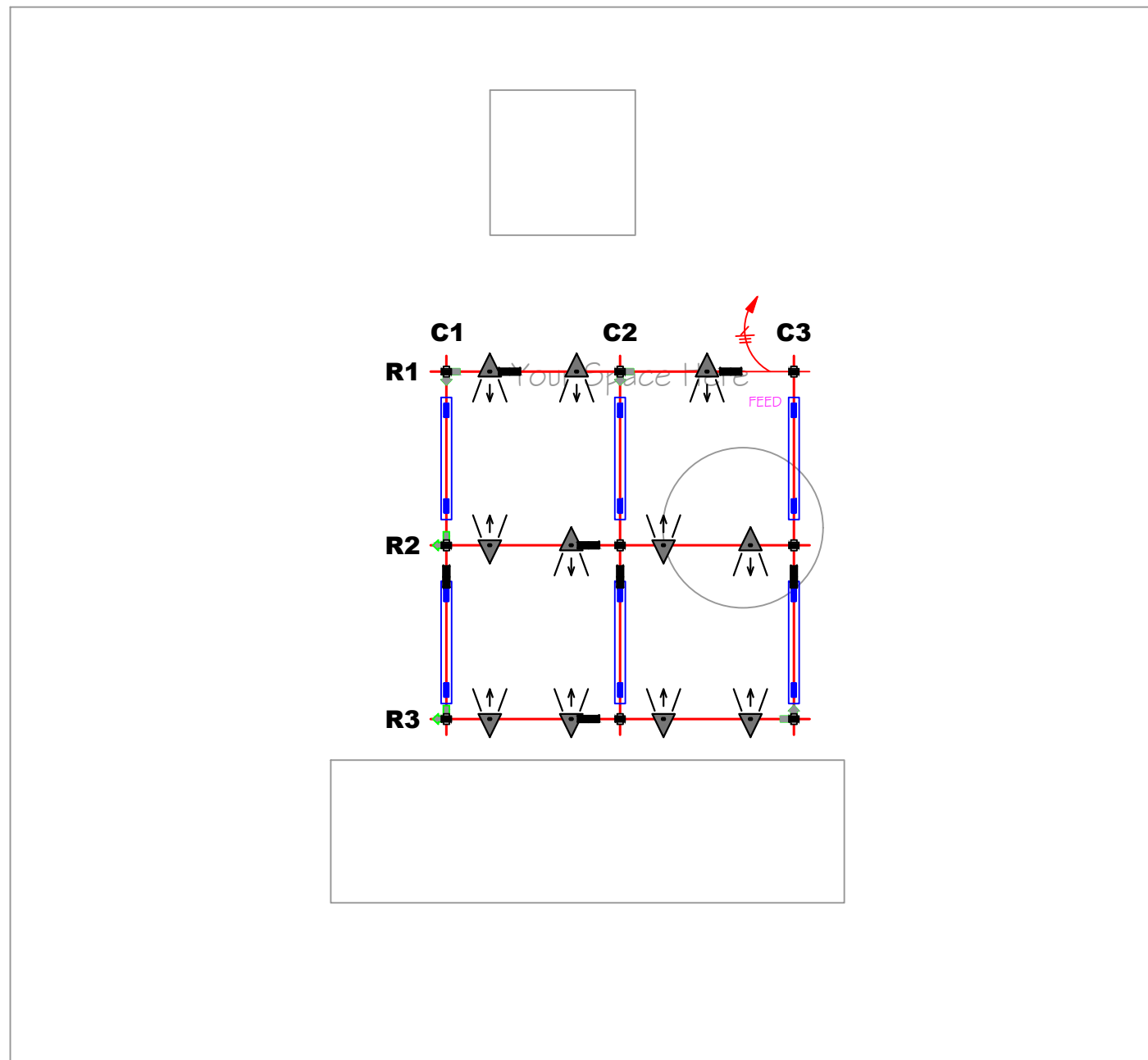
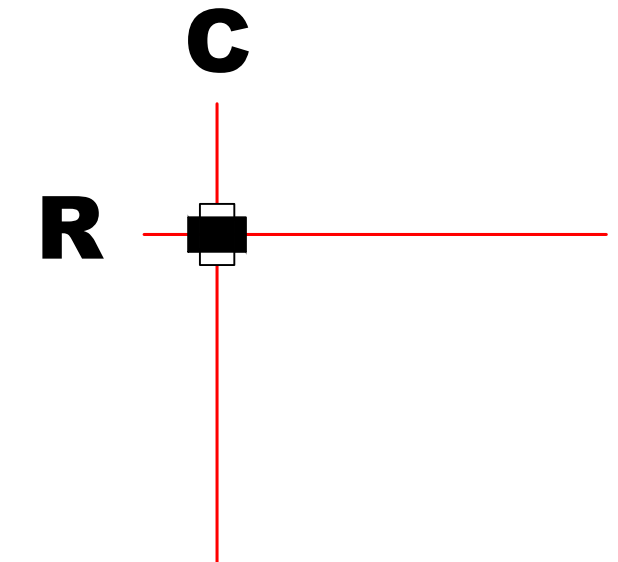
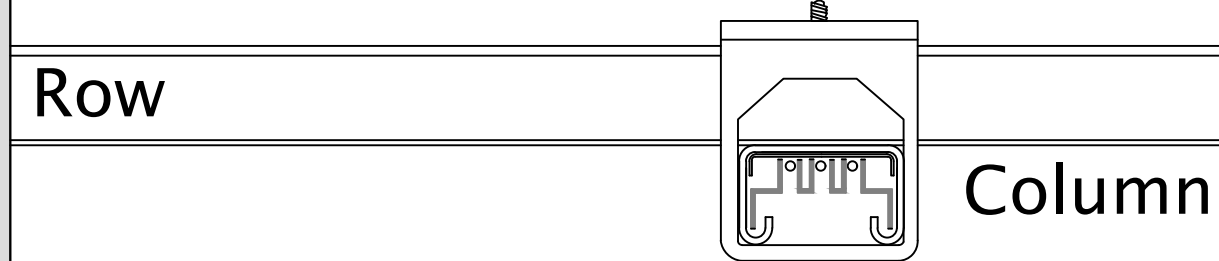
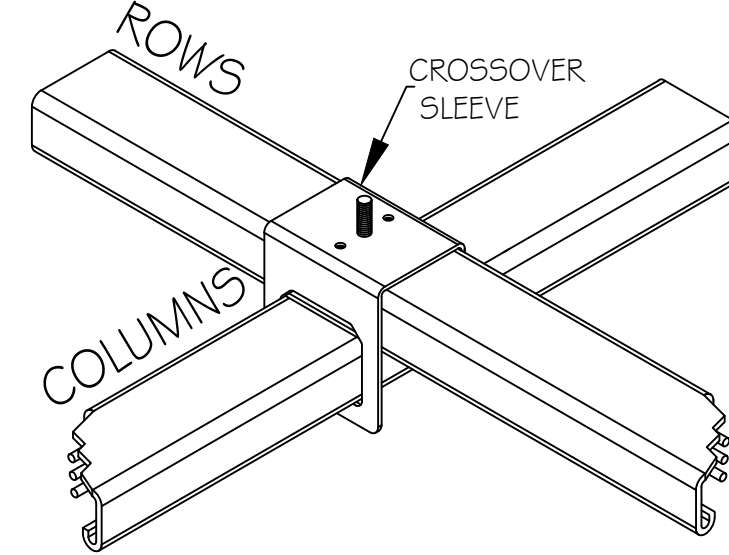
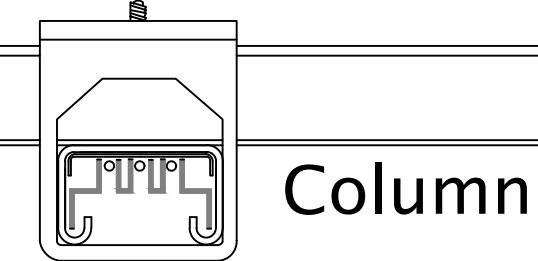


TABLE OF CONTENTS		KEY MOUNTING RULES		APPROVAL	
E-b01 E-b02	Typical Installation Instructions		Rows are to be mounted on top of Columns. Crossover sleeve runs with Rows.		Legend
E-b1 E-b2	Lighting Plan, BOM, & Labor Hours Assembly Plan		 		 

bs

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Issue Date

10/24/2024

Issue by

BID/REVIEW

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

XX

BT

XXXX

REVISION DESCRIPTION

XX-XX-XX

DATE

XX

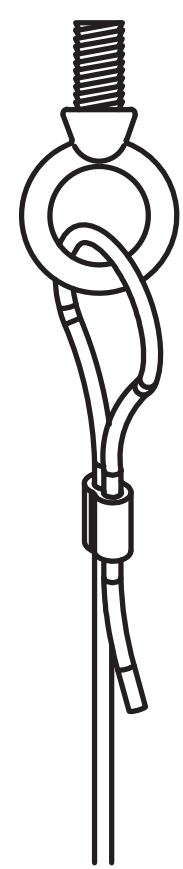
NO.

PAPER SIZE:
ARCH E (48x36)
NOT TO SCALE

COVER SHEET

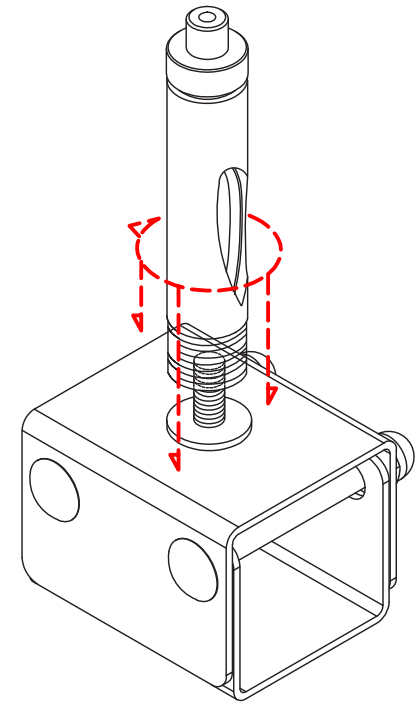
STEP 1

SUSPENDING busSTRUT



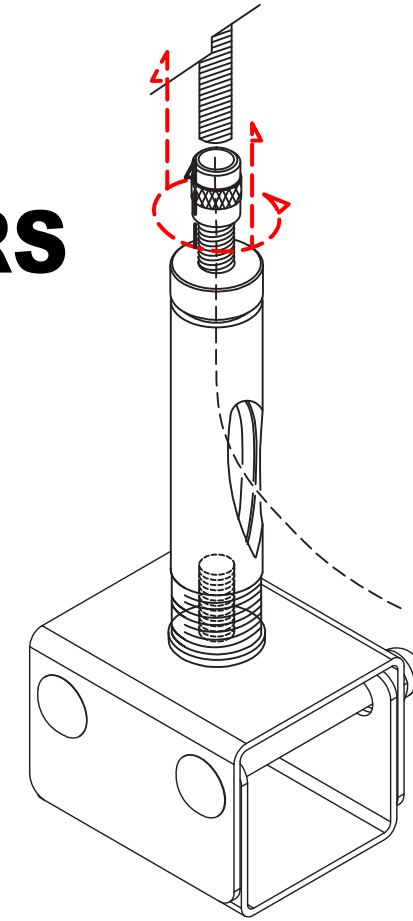
1 SUSPEND CABLES (CG-XX) ATTACH CABLE ASSEMBLY to STRUCTURE

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



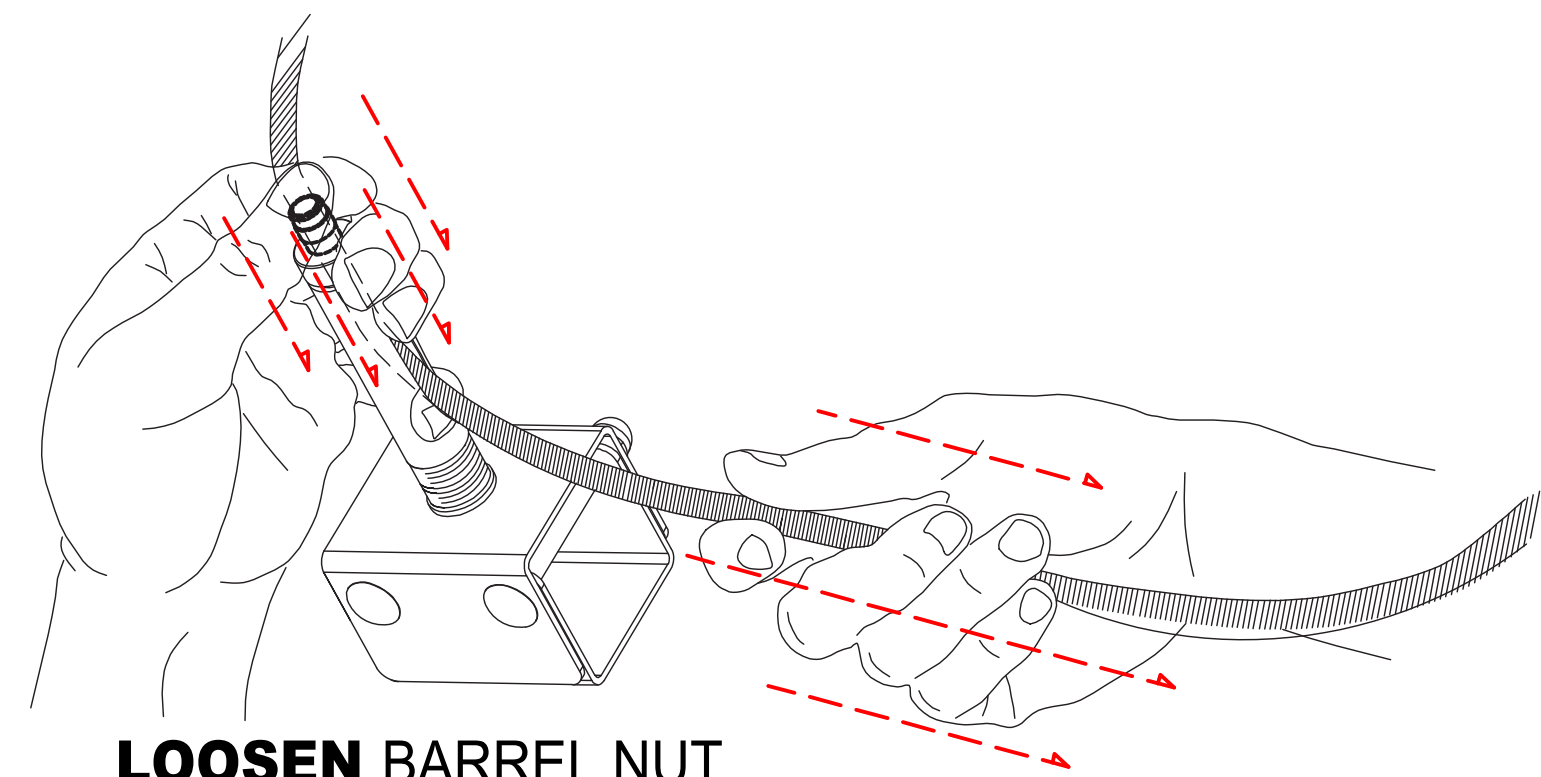
2 ASSEMBLE HANGERS (HM-S)

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

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

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

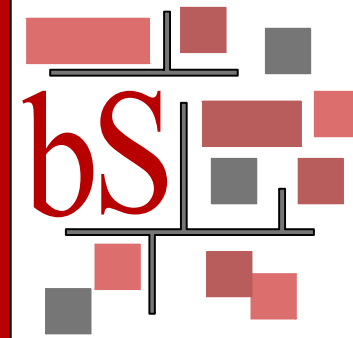
Turn the first knob

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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DATE
10/24/2024

ISSUED FOR
BID / REVIEW

TYPICAL
busSTRUT Installation Instructions

busSTRUT
SHOP DRAWING SET(ONLY)
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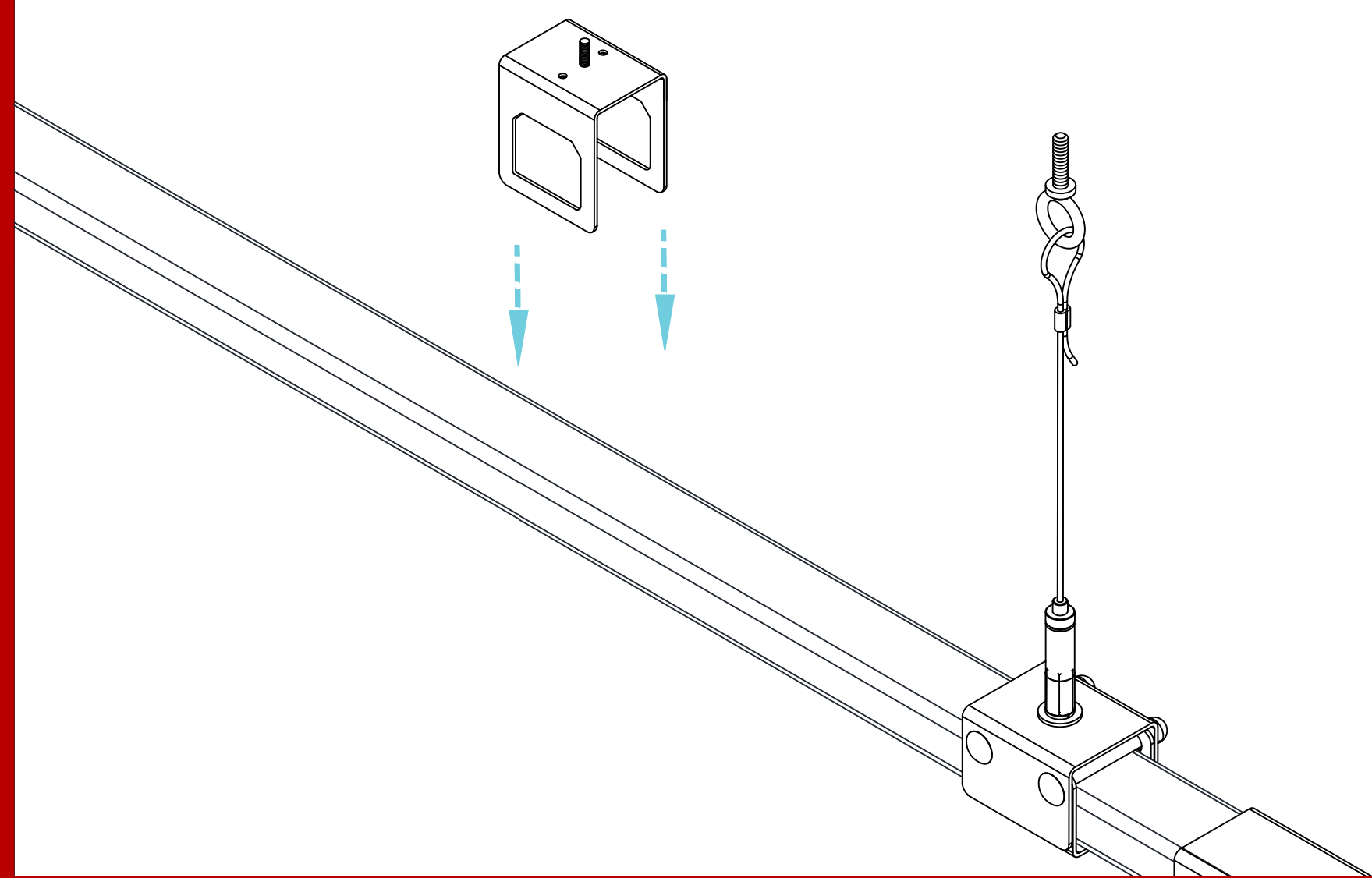
NO.	REV.	DESCRIPTION
1	01	ISSUED FOR BID / REVIEW

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

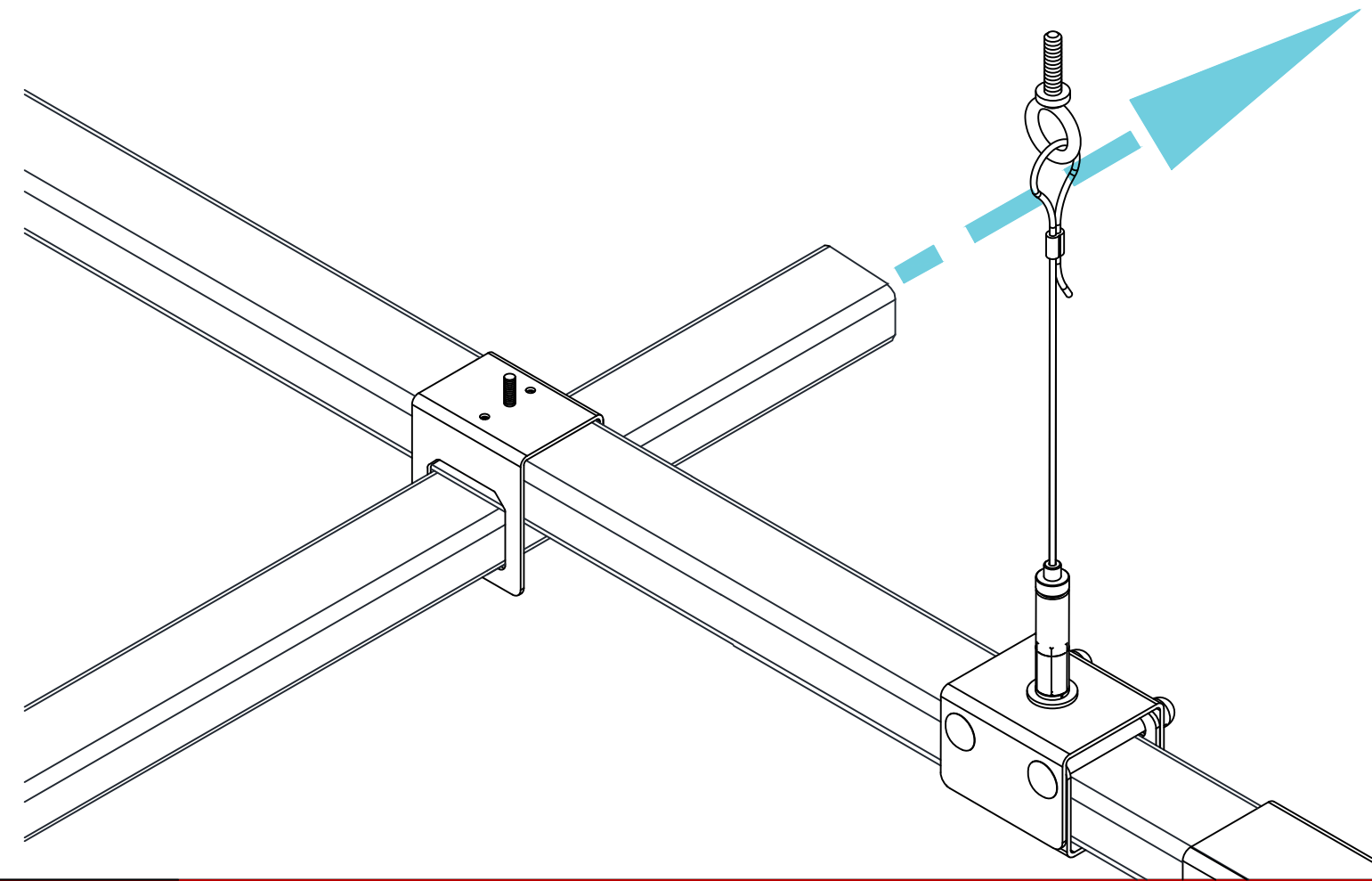
STEP 3

INSTALLING CROSSOVERS DROPPING ON

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



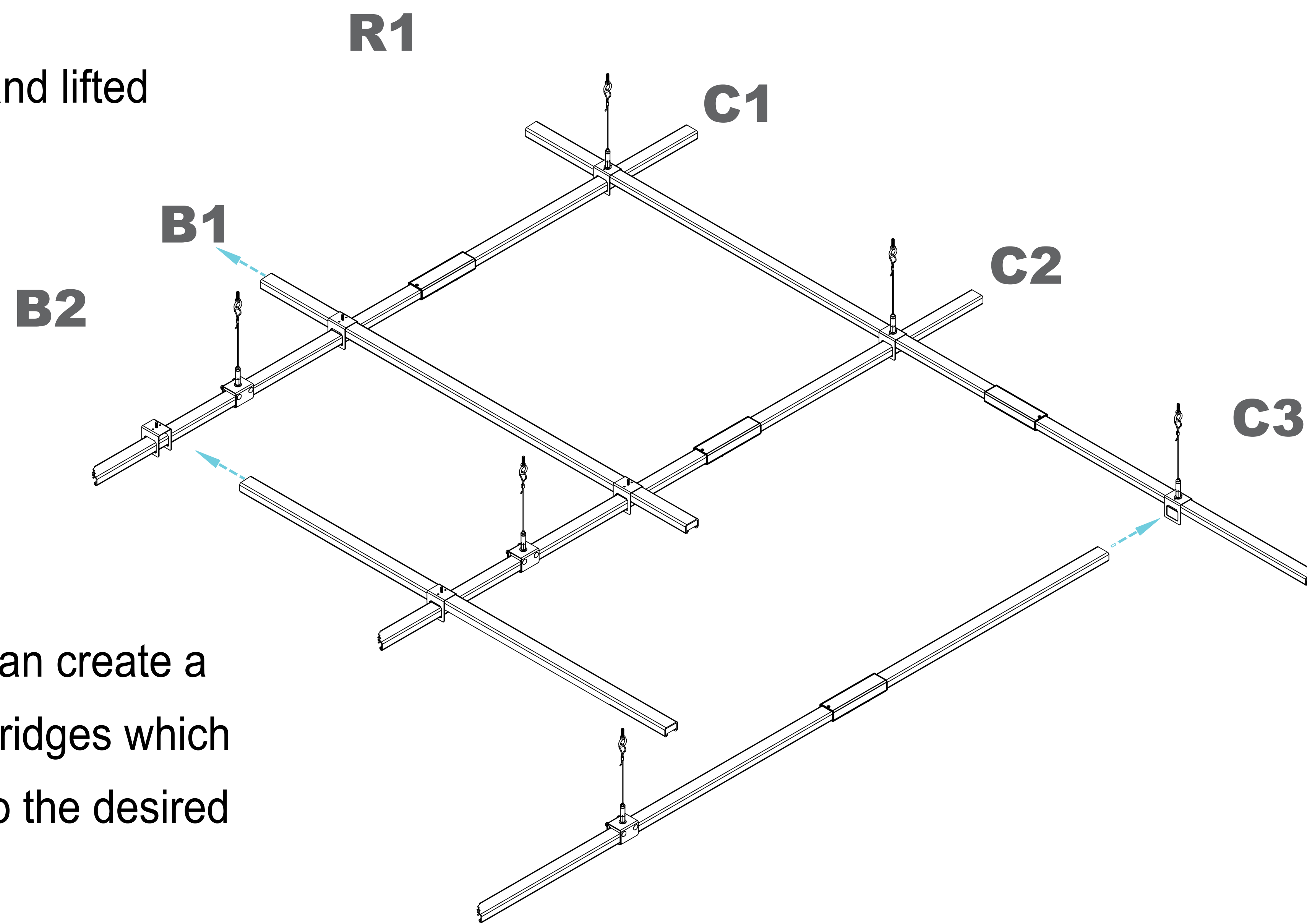
Slide perpendicular runs of busSTRUT through the crossover and tighten the set screws.



SLIDING ON

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

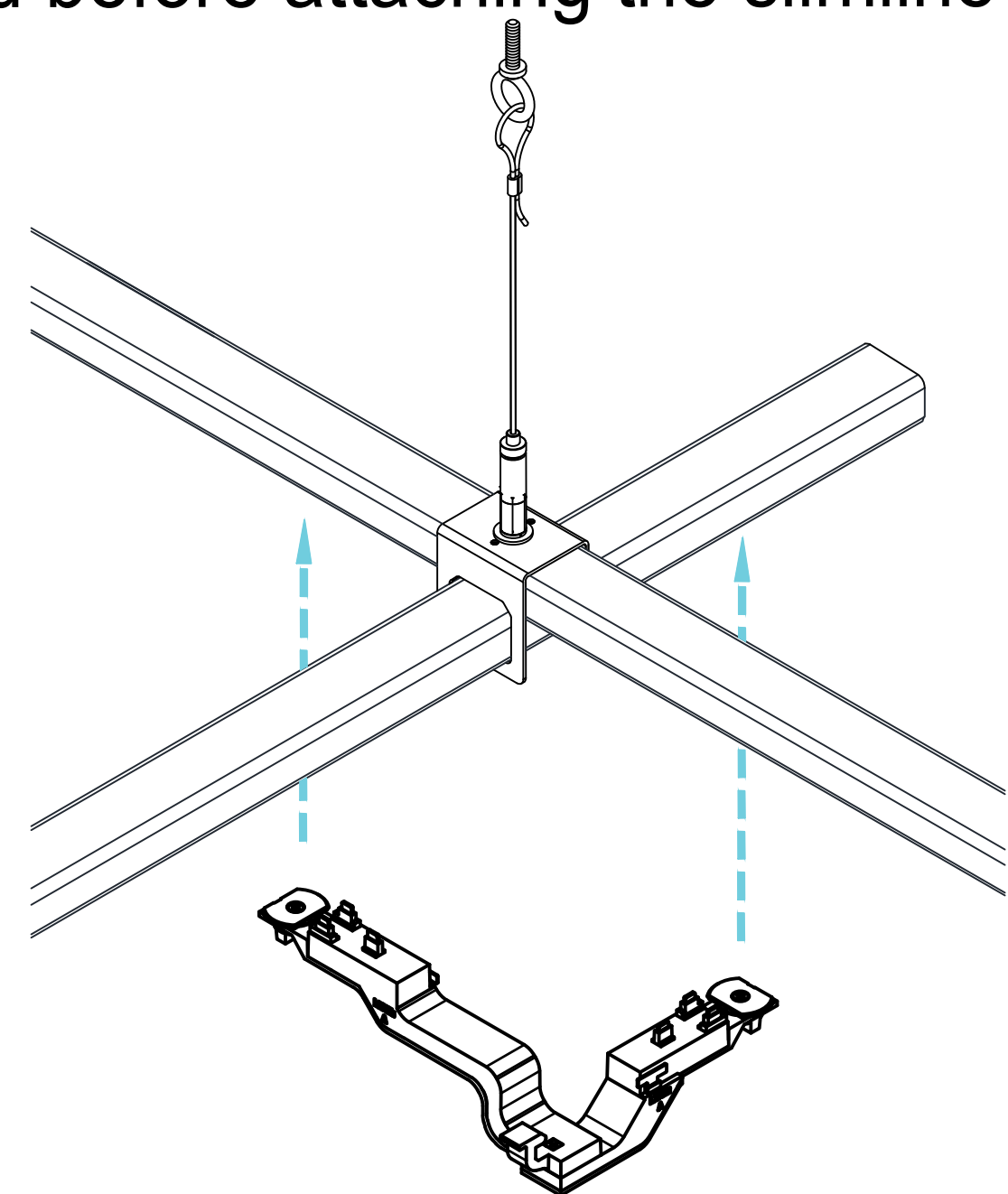
Perpendicular runs can create a full grid or be short bridges which are easily moved into the desired position.



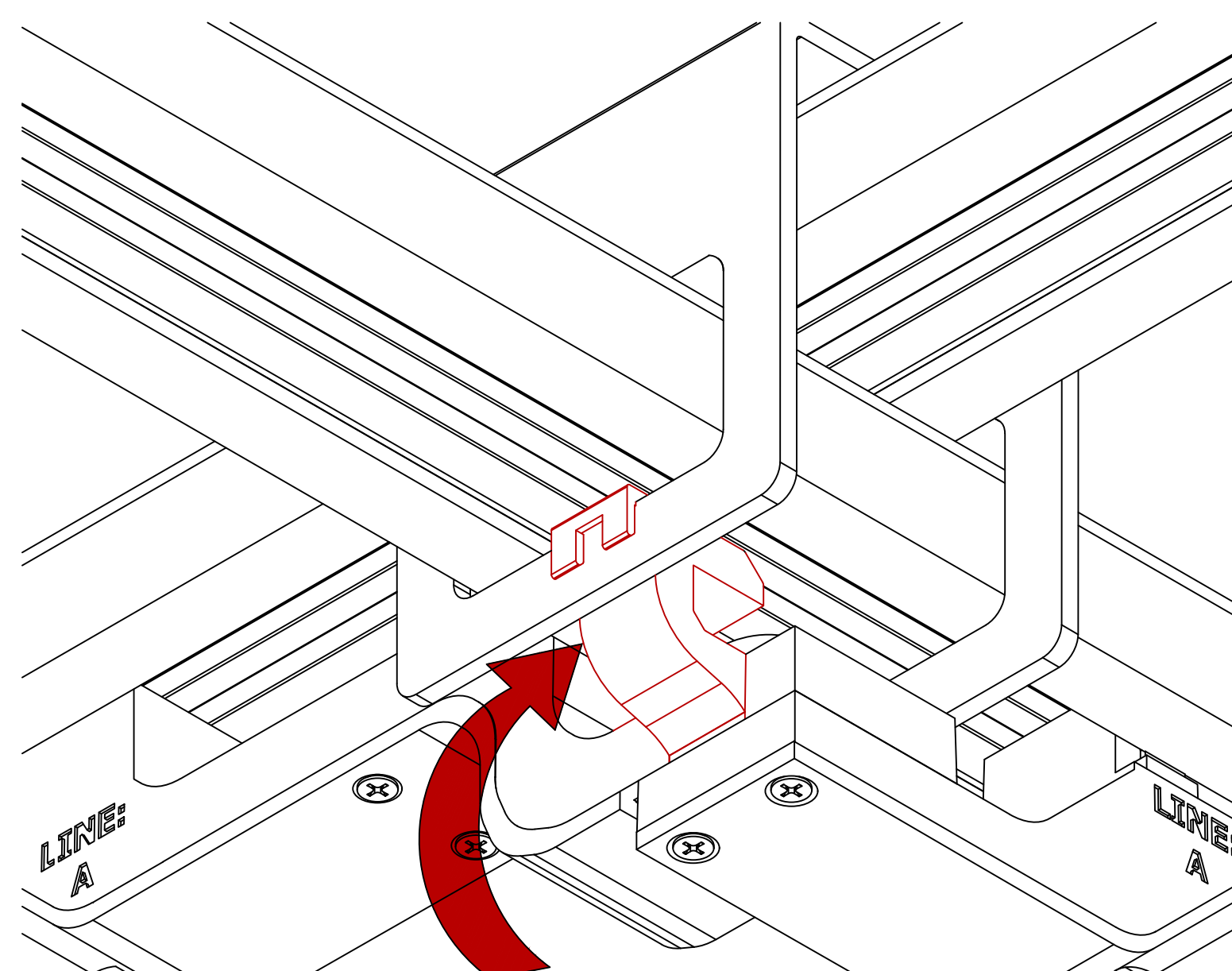
STEP 4A

SLIMLINE JUMPER

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

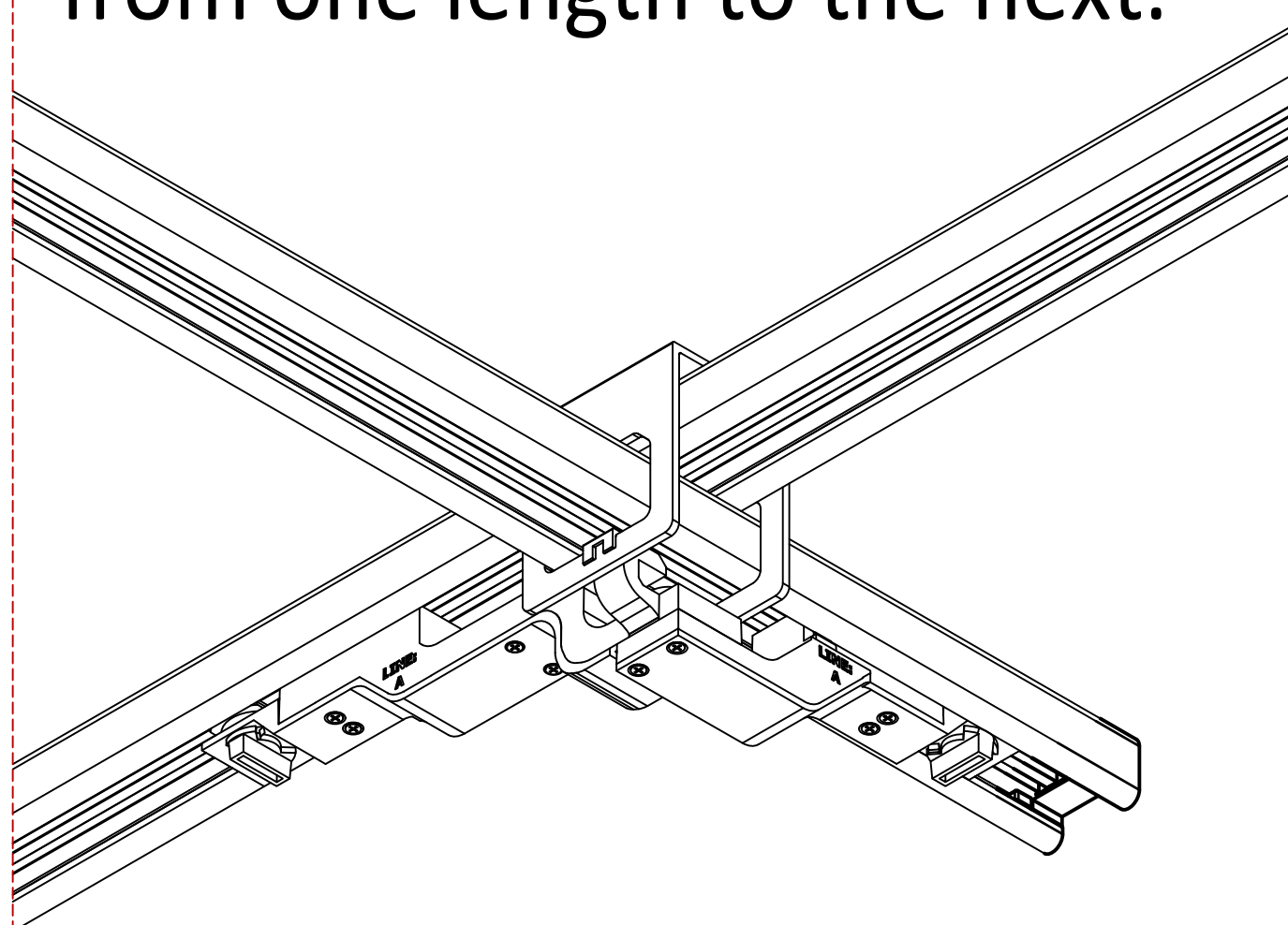


First, clip the jumper to the crossover.

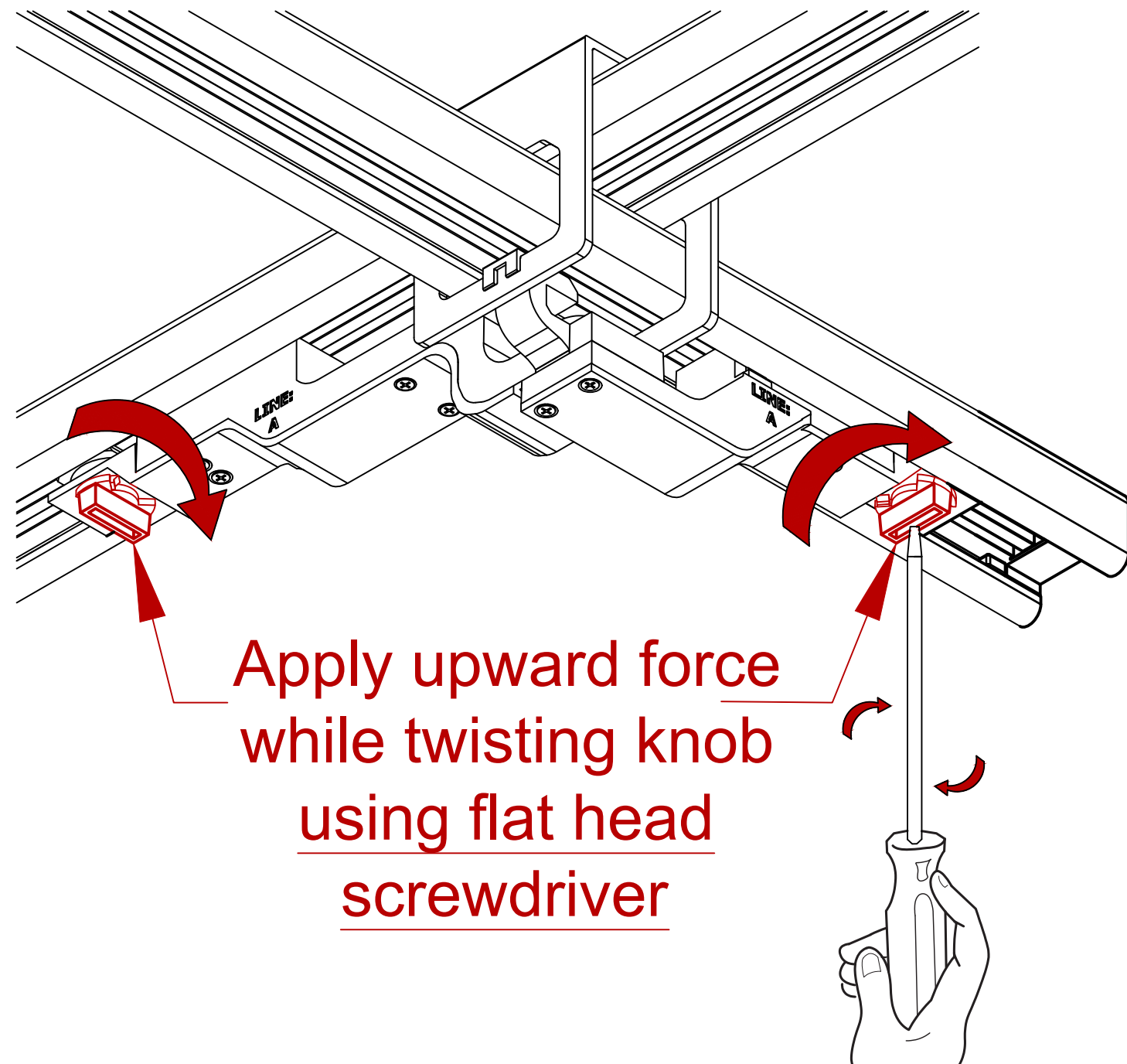


SLIMLINE JUMPER (MD2020-UNIV-IJ2-B-X)

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.



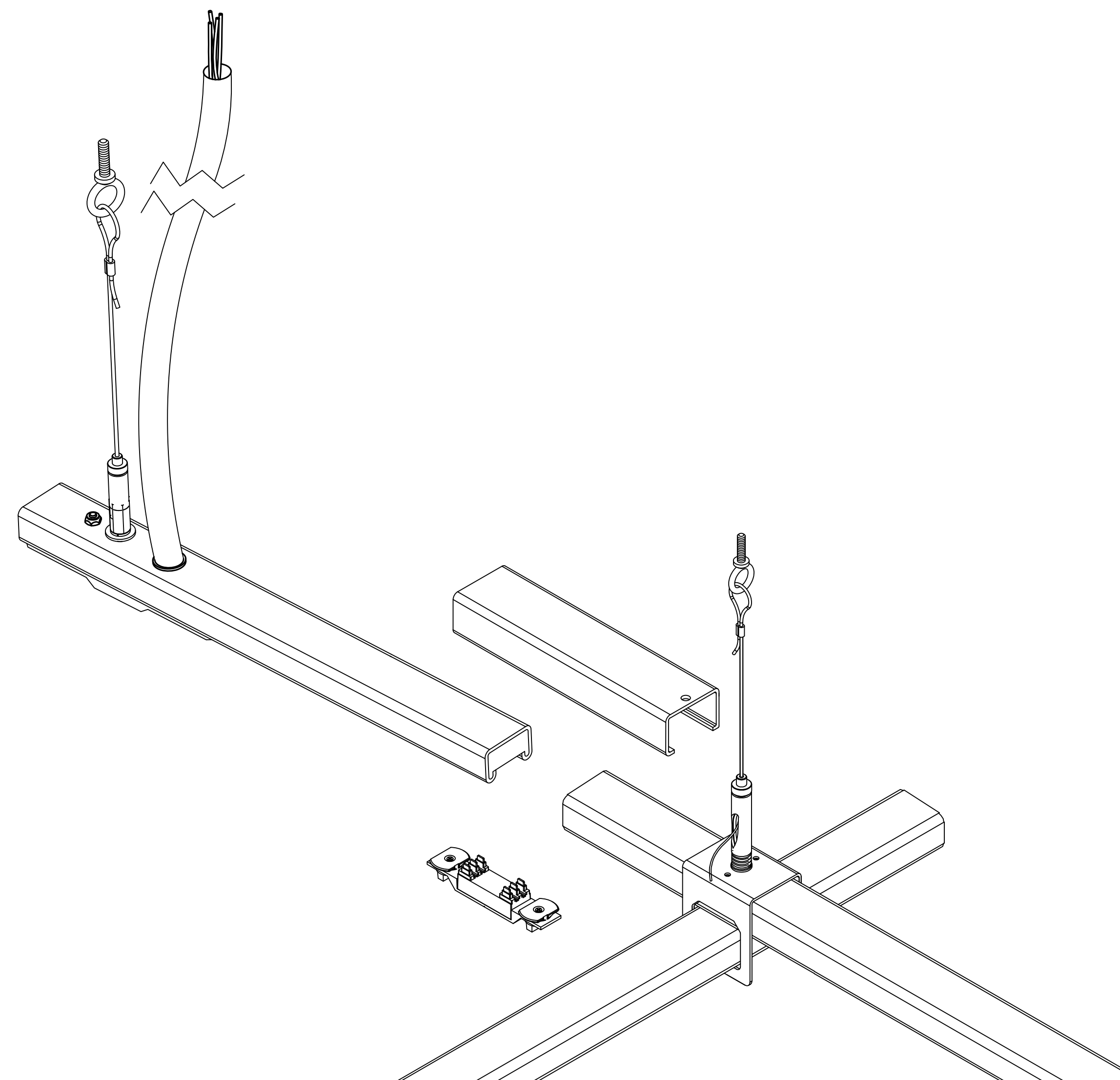
Apply upward force while twisting knob using flat head screwdriver

STEP 4B

STARTER FEED

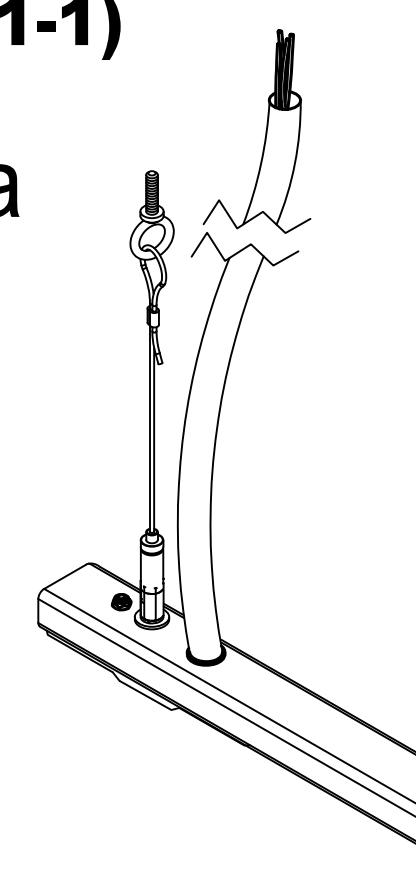
The Starter Feed comes with a 1/4-20 Stud to create an additional hang point and a 15' 12/4 SOOW Cord to connect power to the system.

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



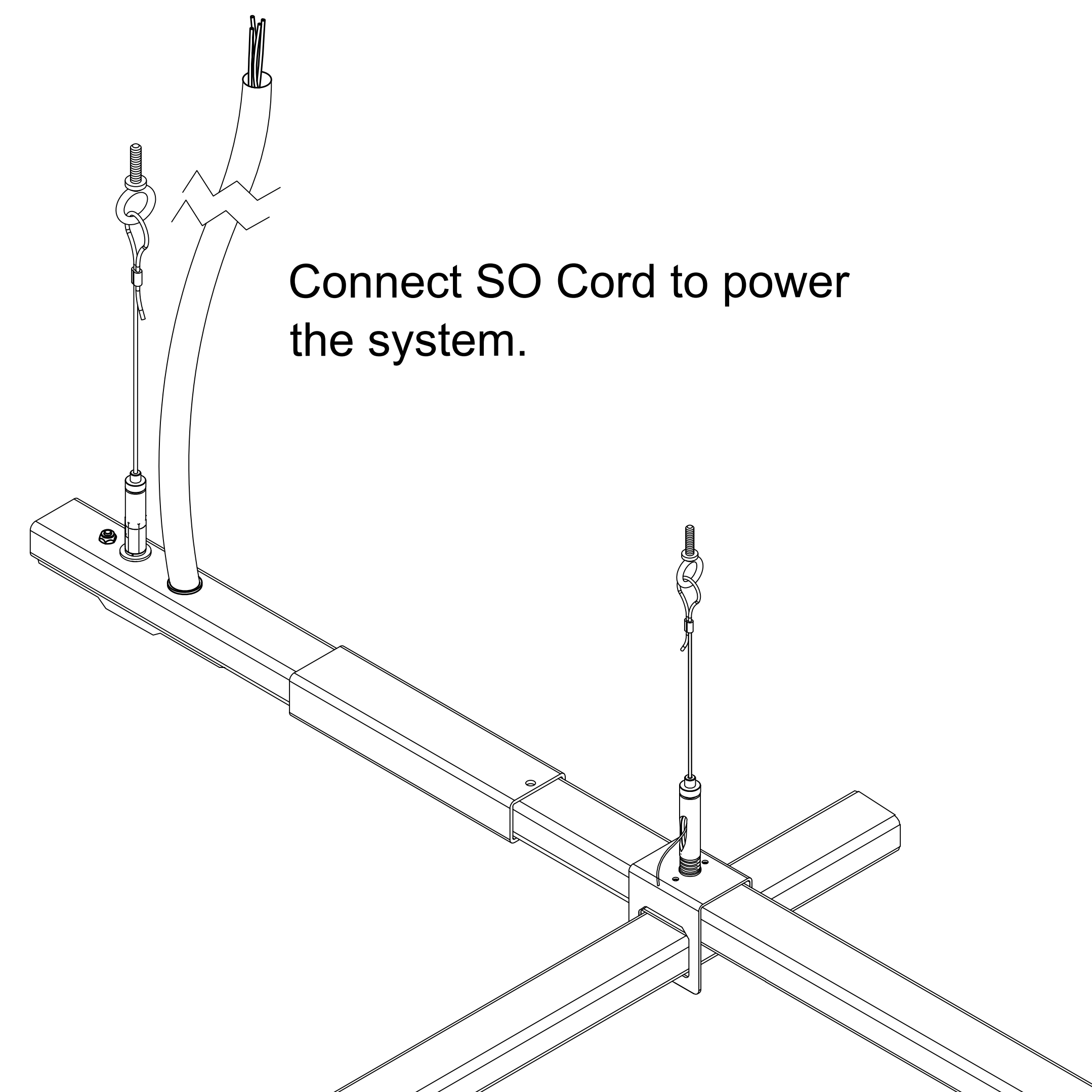
STARTER FEED (P20-3-40-UNIV-30-CM-F 1-1)

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.

SINGLE DECK	 GRAY 20 AMP'S M20-3-40-V-(L)	 CG-(LENGTH)	 HM-S	 M-JB	 ICM-S	 P20-3-40-UNIV-FDX-X-F	 P20-3-40-UNIV-30-CM-F 1-1
	 EMPTY-STRUT M00-(L)						
DOUBLE DECK	 DOUBLE-STRUT M00-(L) NOTE: CIRCUITS "A" AND "B" ON BOTTOM CIRCUITS "C" AND "D" ON TOP	 CG-(LENGTH)	 HD-S	 D-JB	 ICD-S	 MD4020-UNIV-JC-F-90-12 MD2020-UNIV-IJ2-B-X	

STEEL BUSHTRU[®] 12 gauge 1" x 1/8" STEEL BUSHTRU[®] features two Hot wires and is specifically announcing a center Neutral wire. It has 20 Amp circuits 40 Amps Maximum with bushTRU[®]/20, alternatively two 40 Amp circuits 80 Amps Maximum with bushTRU[®]/40, 2.5, 5, 10, and 20' lengths. Rated for use to 2747460V. Double coats with standard hardware for trunking.	BRAIDED CABLE with GLIDE[®] For use with bushTRU[®] and bushCrossovers[®]. Includes cable-glide and cable with factory assembled cable with looped threaded 14-20 eye bolt.	HANDERS: Single and Double Hangers are for use with bushTRU[®]. Each is an assembled two-part unit. The upper piece includes a threaded stud with cable looped threaded with cable.	JOINERS: Single and Double for use with bushTRU[®]. Lengths are joined together mechanically with the 8000 Series Electrical Joiners include each with a Twist & Turn Plug-In electrical insert to bridge power. And continuous running through the bus itself by means of a permanently affixed corner joining bar.	CROSSOVERS: For use with intersecting bushTRU[®]. Each in the 8000 Series. Crossover Cable can be used for configurations and bridges. The top piece includes a threaded stud for use with bushTRU[®] cable-glide. JUMPERS: For use with both bushTRU[®]/20 and bushTRU[®]/40. The 8000 Series Jumper Cable can be used for electrically connecting the Trunks to bushTRU[®]/20 Branches and electrically connecting bushTRU[®]/20 to bushTRU[®]/40. LINE FEEDS: For use with powering single bushTRU[®]. Junction Box features energy code type "limiter" (breakover/house holders) and 7 Pole Filters. Available in 10' and 748789'. Can be positioned anywhere along bushTRU[®] to reduce the lengths of hangers. STARTER FEEDS: For use with powering single bushTRU[®]. Utilized when no current limiting is required on the bushTRU[®]. Must be positioned at the beginning of a run.
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busSTRUT Bill of Materials												Drawn By John Loch Checked By John Loch Date 10/24/2024														
GRID Medium LT												Finish TBD: Galvanized, White, or Black														
												busSTRUT LENGTHS					busSTRUT Hardware					busSTRUT POWER				
												busSTRUT 20					Joiners		Hangers	C-GI	Xover	Jcord	Line		GEN	ACT
R/C	Amps	LF	BF	2.5	3	5	7	10	M	INS	NE-INS	M	C-GI	1/1	12"	INVS	JK	30ST	40	GEN	ACT					
Rows																										
R1	20	12	12	1			1		2	2			3	3				1			3					
R2	20	12	12			1	1		1	1			3	3			1				4					
R3	20	12	12			1	1		1	1			3	3			1				4					
SUB TOTAL		36	36	1		2	3		4	4			9	9			2		1		11					
R/C	Amps	LF	BF	2.5	3	5	7	10	M	INS	NE-INS	M	C-GI	1/1	12"	INVS	JK	30ST	40	GEN	ACT					
Columns																										
C1	20	12	12			1	1		1	1							1				2					
C2	20	12	12			1	1		1	1							1				2					
C3	20	12	12			1	1		1	1							1				2					
SUB TOTAL		36	36			3	3		3	3							3				6					
STORE TOTAL		72.0	72.0	1		5	6		7	7			9	9			5		1		6	11				

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

bus.STRUT LABOR									
ITEMS	Qty.	U/M	STANDARDIZED				TOTAL HRS		
			LABOR HOURS						
			min	hrs	EO				
bus.STRUT SYSTEM	LENGTHS	72	LF	x	2.75	0.05	=	3	
	JOINERS	7	EA	x	12	0.20	=	1	
	HANGERS	9	EA	x	25	0.42	=	4	
	CROSSOVERS	9	EA	x	10	0.17	=	2	
	ATTACHMENTS		EA	x	8	0.13	=	0	
	JUMPERS	5	EA	x	6	0.10	=	1	
	FEEDS	1	EA	x	15	0.25	=	0	
bus.STRUT SUB-TOTAL							=	11	
FIXTURES									
	ACCENT	11	EA	x	8	0.13	=	1	
	LINEARS	6	EA	x	20	0.33	=	2	
bus.STRUT READY LIGHTS SUB-TOTAL							=	3	
TOTAL TIME							=	14	

ACCENT LIGHT

BR-(LUCY-U-309-30-F)-(OC)

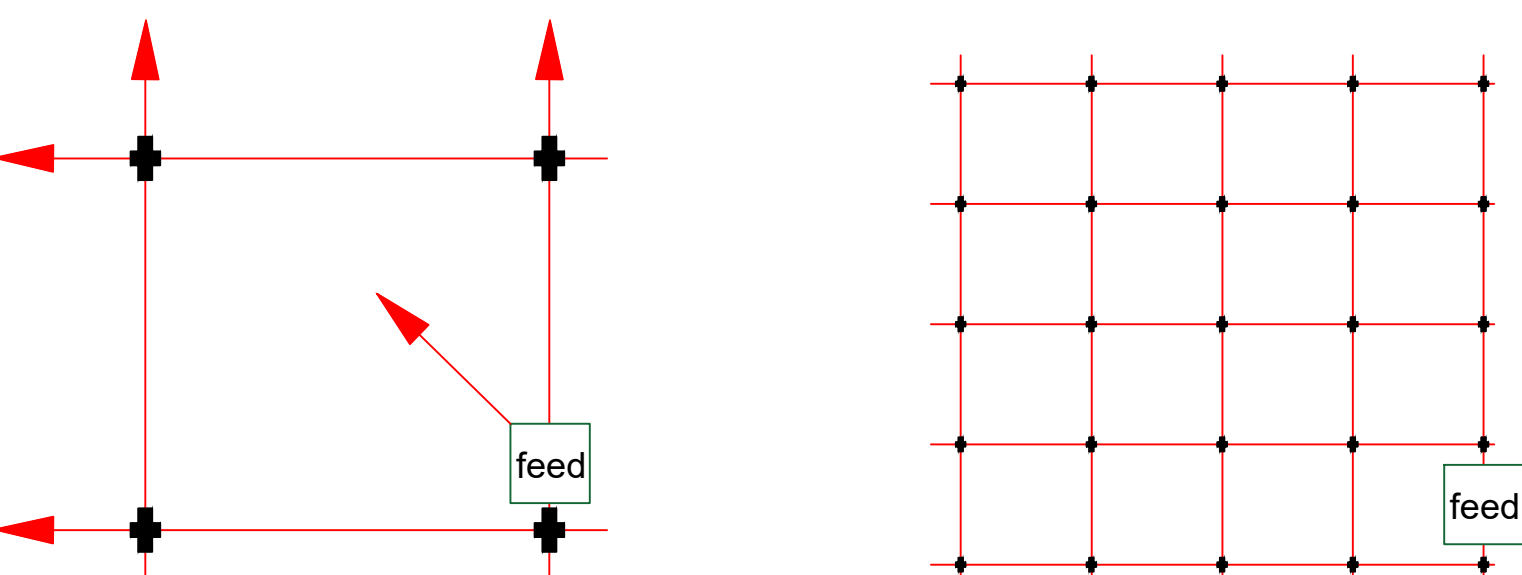
N.T.S.

4" LED DOWNLIGHT

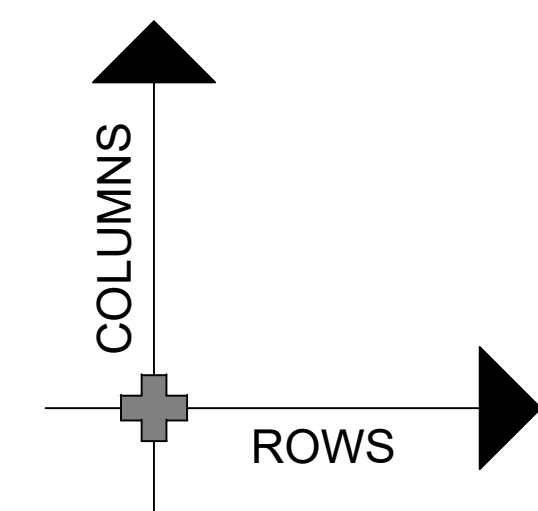
BRL-4-40L-30K80-ST-WD-F

N.T.S.

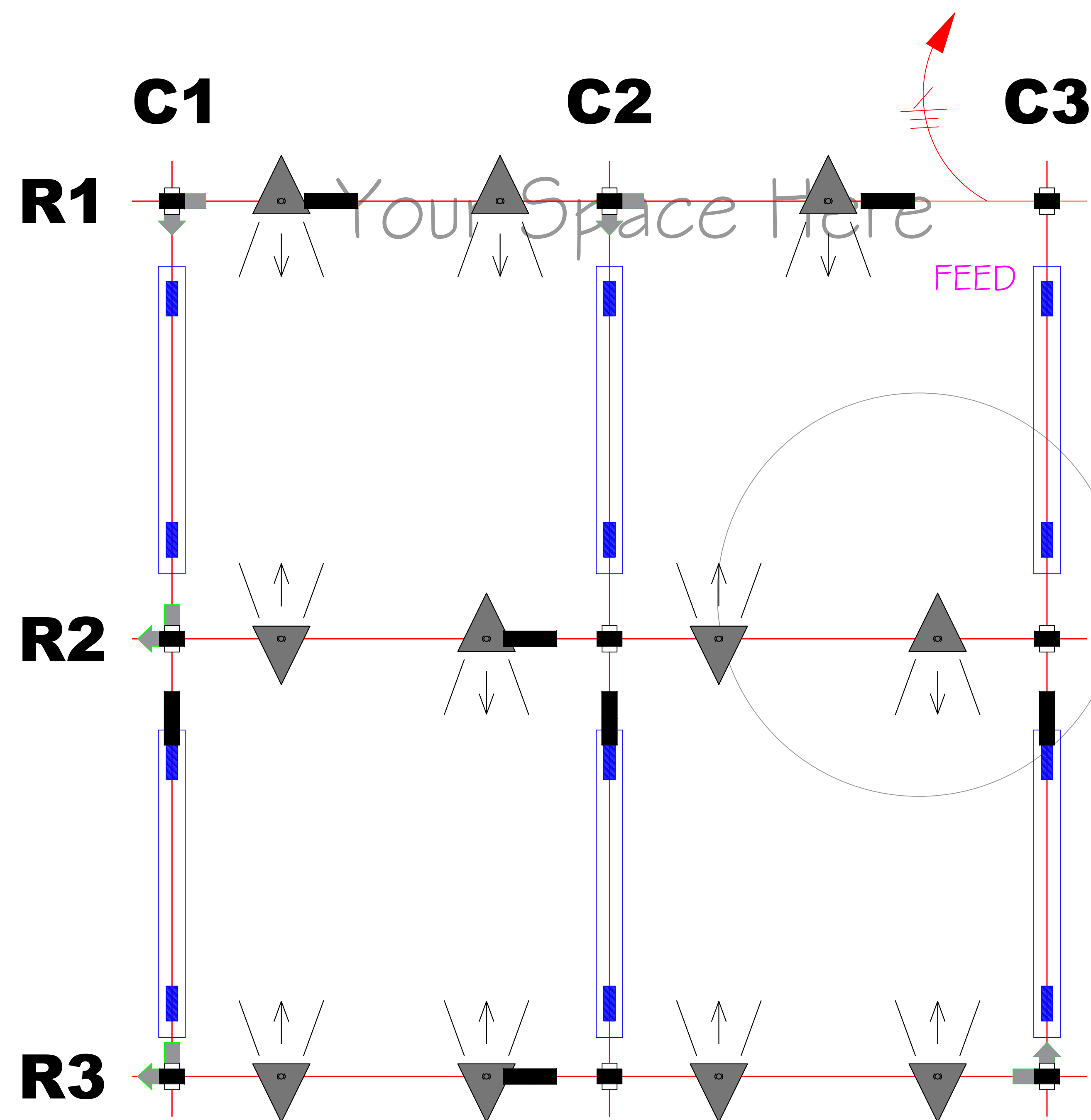
* Powered by a minimal amount of feed boxes.



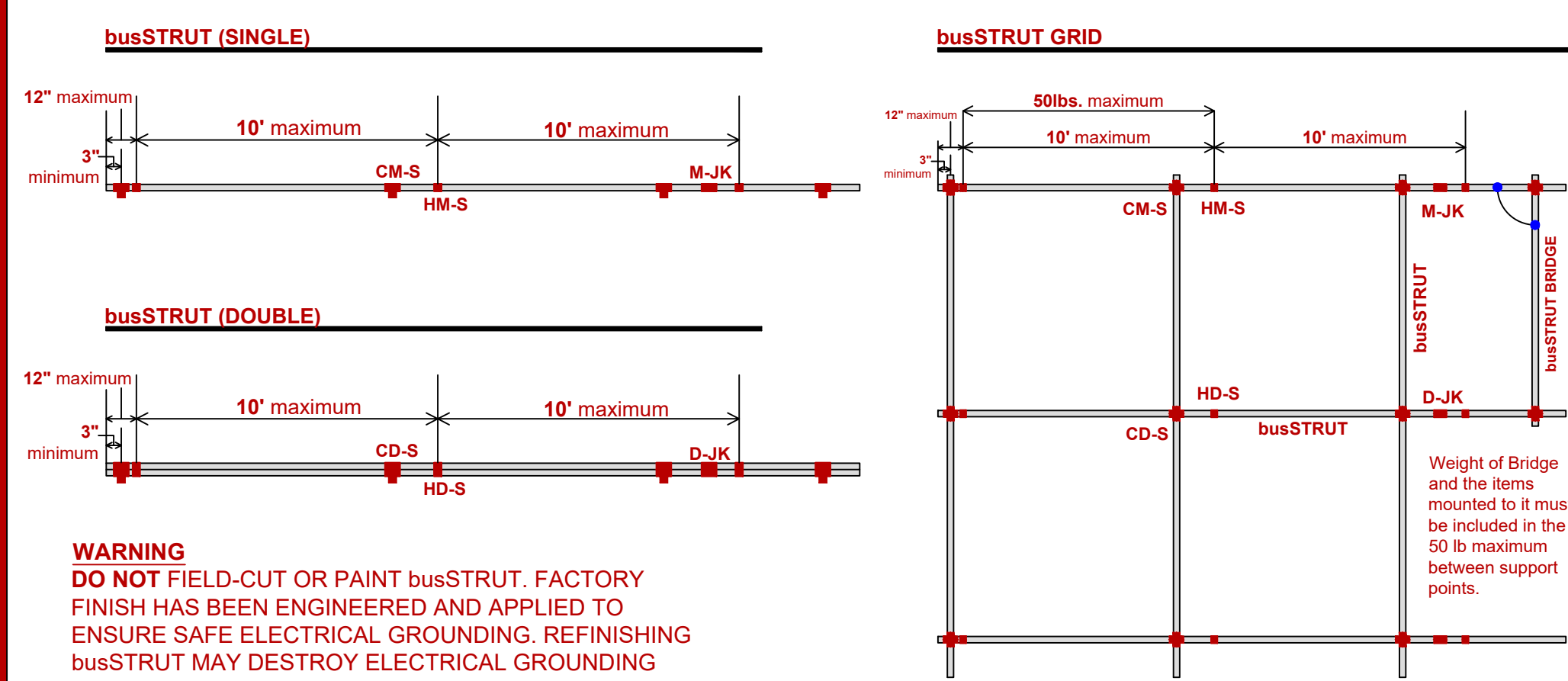
busSTRUT 20 / Single Deck	
	30" Starter Feed
	Joiner
	1/1 Slimline Crossover
	Slimline Jumper



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

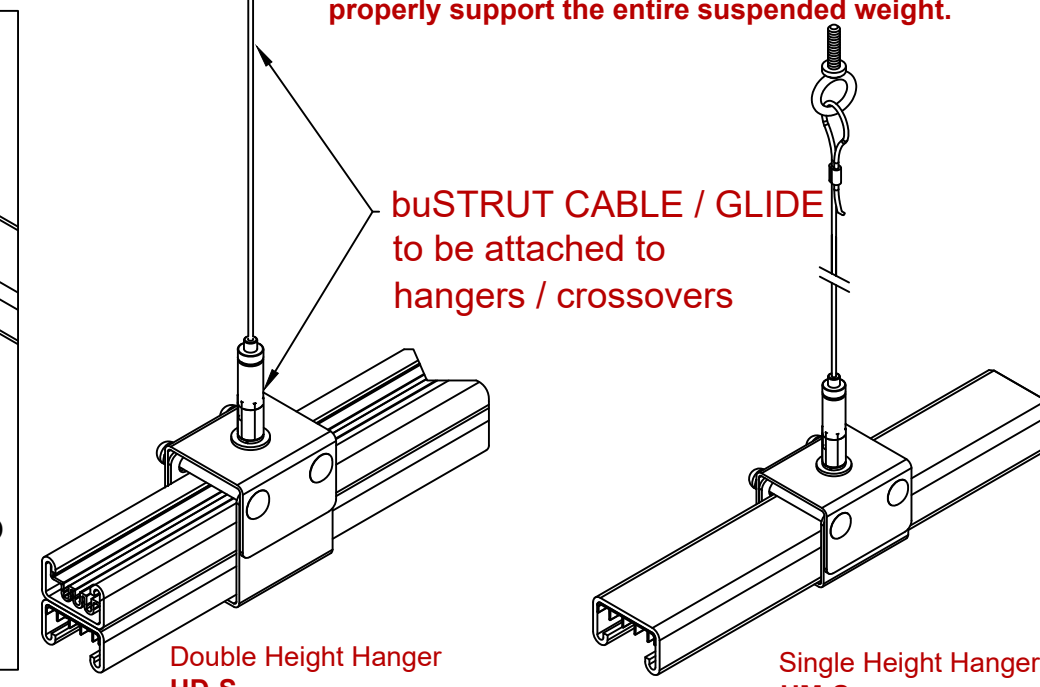


Do NOT remove the factory installed end caps from the busSTRUT 

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 lighting fixtures only. Consult for maximum weight restrictions.

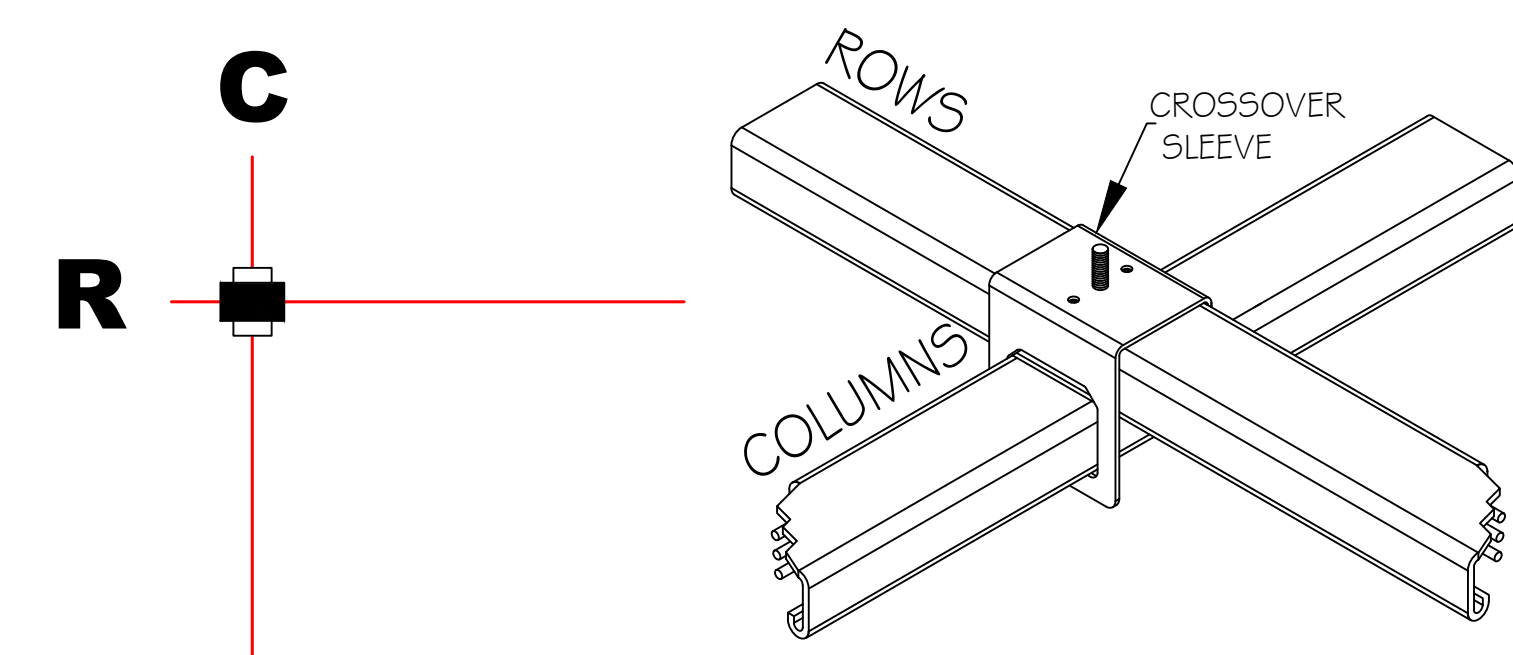
Only busSTRUT fittings and hardware may be mounted directly to busSTRUT.

CONNECTION TO STRUCTURE BY OTHERS

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

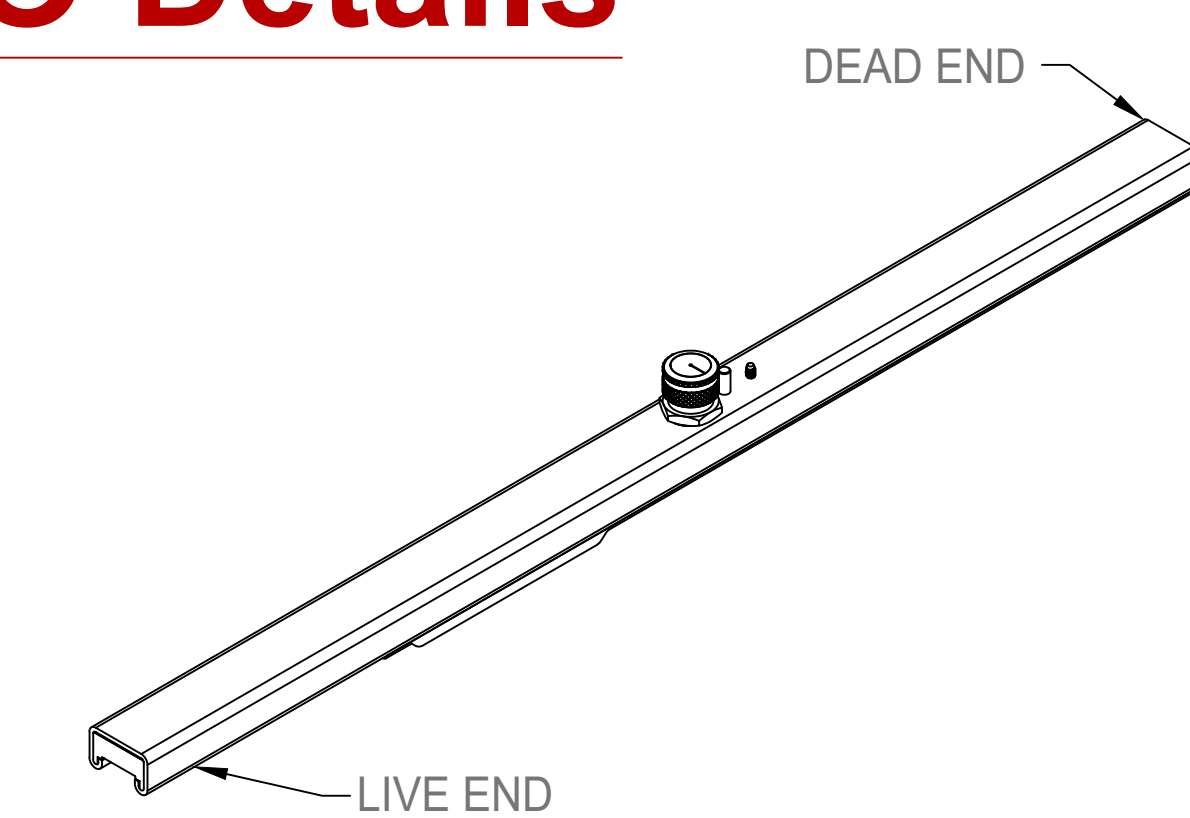
Project Specific Rules

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

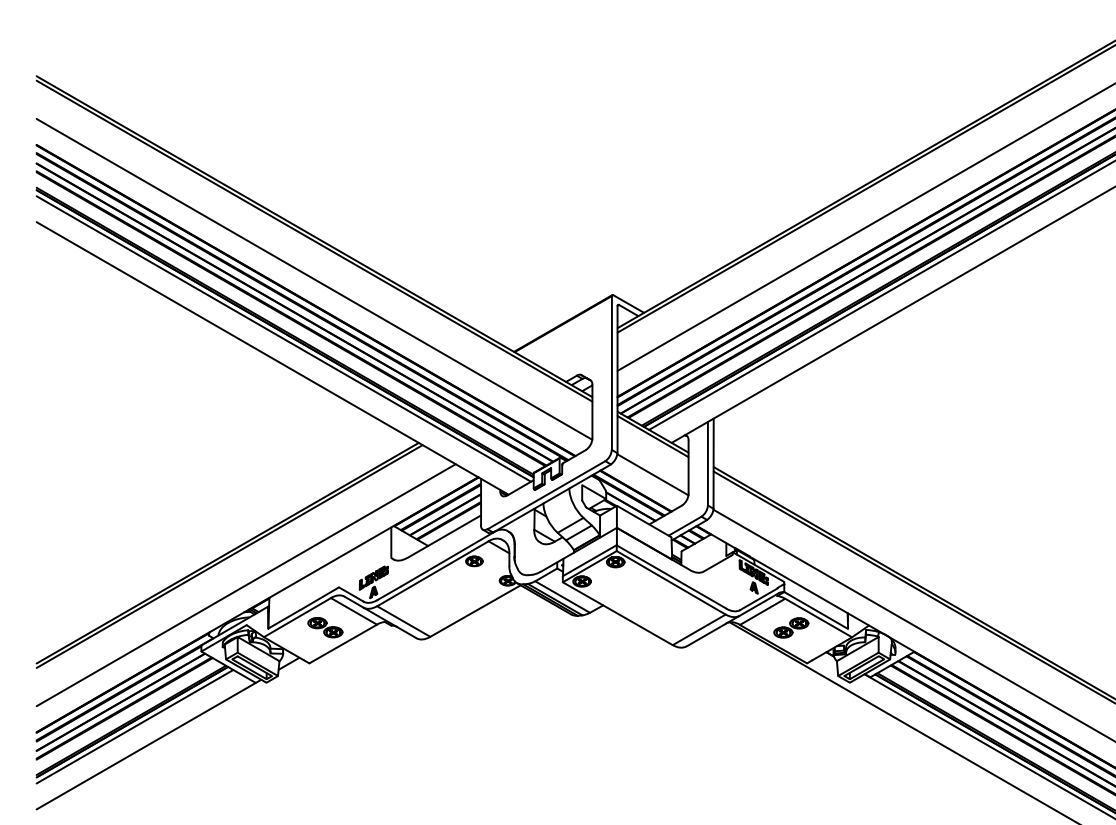


Row		Column

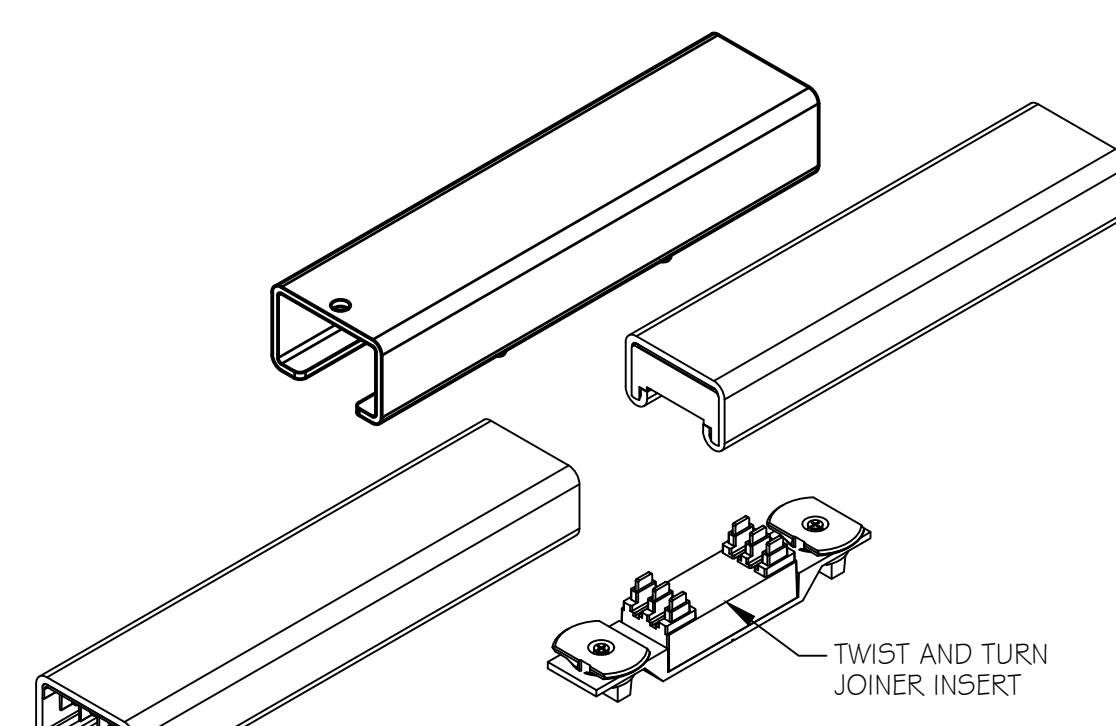
ISO Details



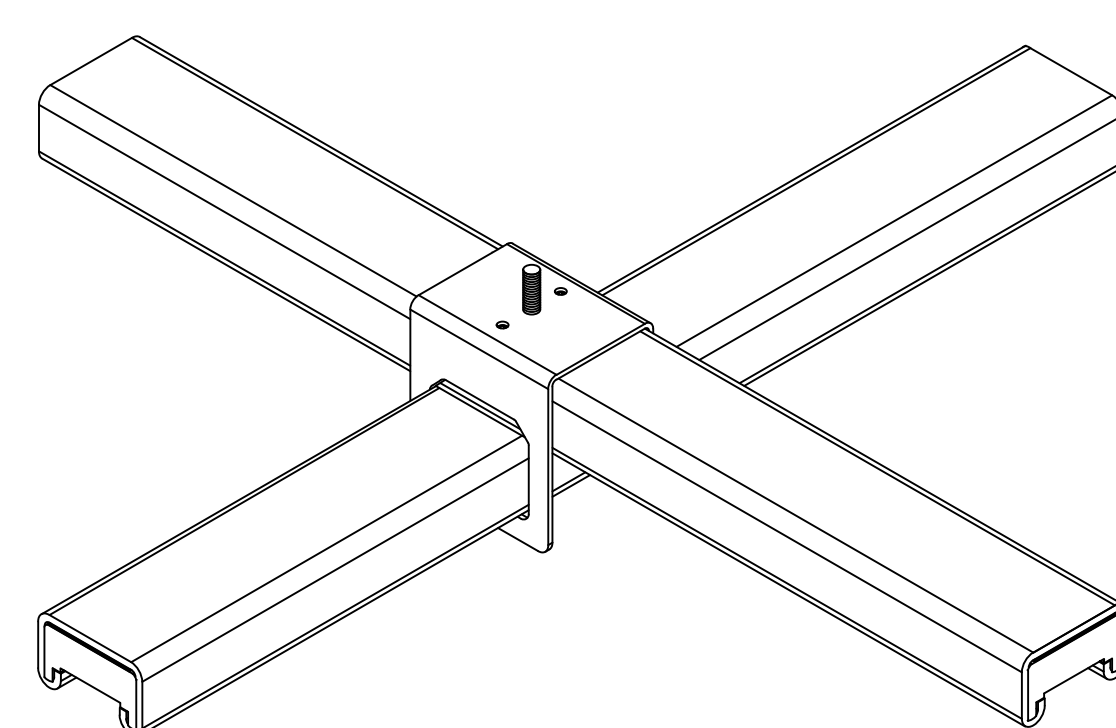
A 30" STARTER FEED
N.T.S.



B SLIMLINE JUMPER
at 1/1 CROSSOVER

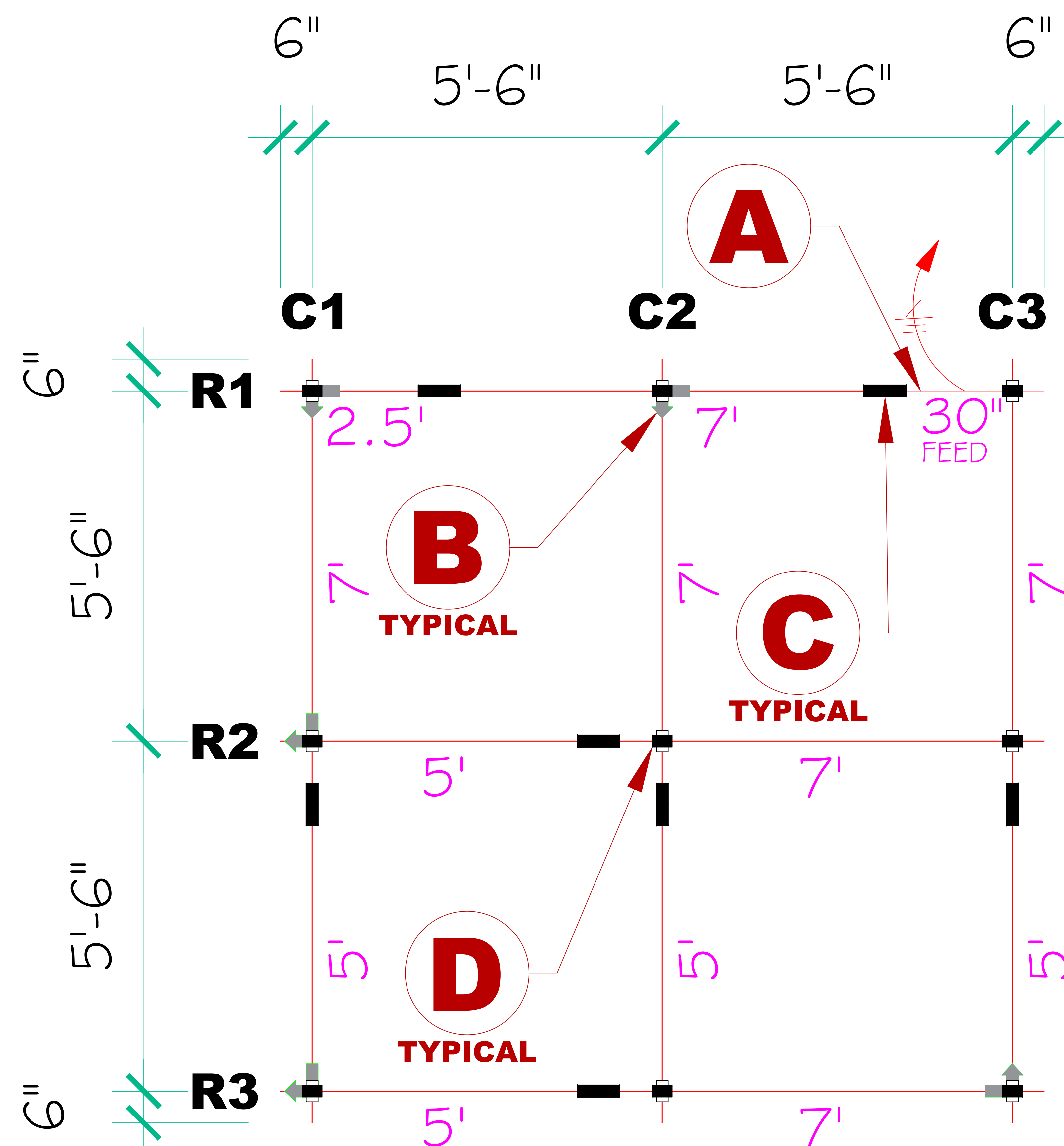


C SINGLE JOINER
w/ JOINER INSERT



D SLIMLINE
1/1 CROSSOVER
NTS

Dimensions



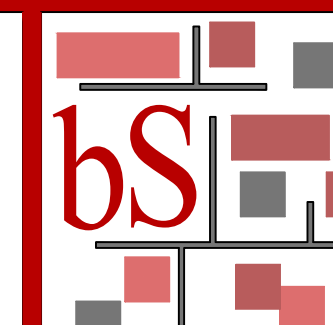
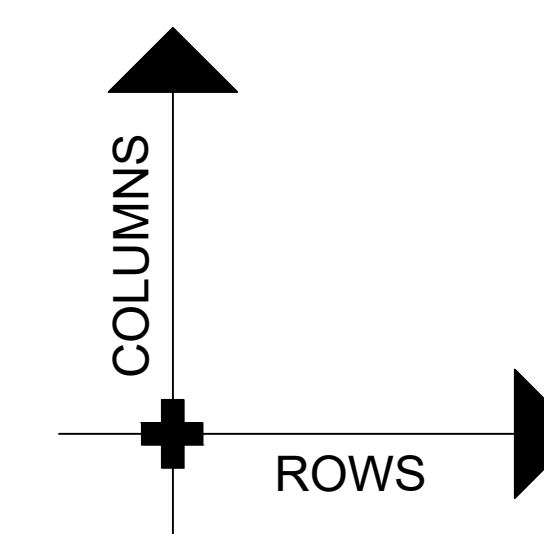
Legend

 busSTRUT 20 / Single Deck

30" Starter Feed

Joiner

1/1 Slimline Crossover

 Slimline Jumper

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ISSUED FOR:
BID/REVIEW

[illegible]

Assembly Plan

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[illegible]

PAPER SIZE:
ARCH E (48x36)

SCALE 1" = 1'-0"

DRAWING NUMBER
E-b2