MOSAIC CEILING SYSTEM DETAILS INDEX

COMPONENTS AND ASSEMBLIES

CEILING BEAM 2" INSTALLATION DETAILS

CEILING BEAM DIRECT TO (CARRIER ZEE - SURFACE MOUNTED)

CEILING BEAM DIRECT TO (CARRIER CHANNEL - SUSPENDED)

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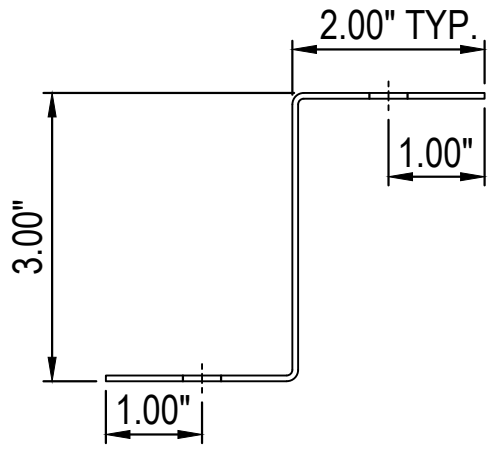
SYSTEM = MOSAIC BEAM CEILING SYSTEM

MOSAIC CEILING - FRAMING

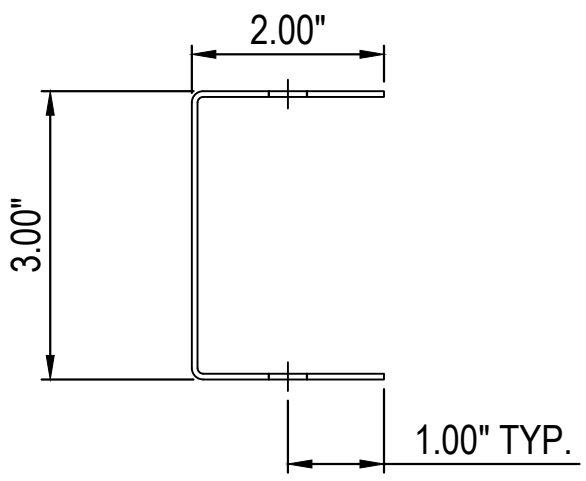
(CARRIER FRAME *DIRECT TO STRUCTURE*)



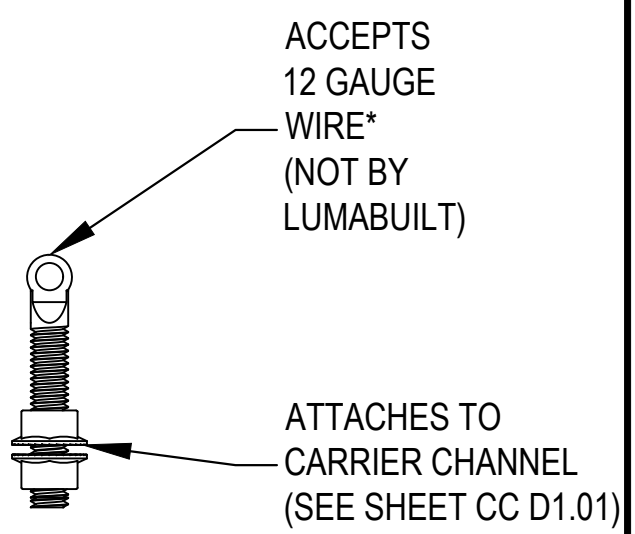
MOSAIC CARRIER ZEE
(10' LENGTH)

OR

(CARRIER FRAME *SUSPENDED FROM STRUCTURE*)



MOSAIC CARRIER CHANNEL
(10' LENGTH)



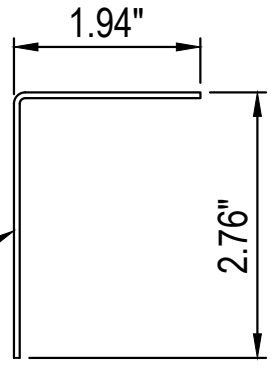
EYE BOLT ASSEMBLY

*12 GAUGE WIRE (NOT BY LUMABUILT) SHALL BE GALVANIZED, SOFT ANNEALED, MILD STEEL WIRE OR BY EOR

SPLICE PART (*IF>10' CARRIER IS NEEDED*)

SPLICE PART FOR ZEE OR CHANNEL
GREATER THAN 10' LENGTH

SEE SHEET CS
FOR INSTALL
INSTRUCTIONS



MOSAIC ZEE SPLICE
(4" LENGTH)

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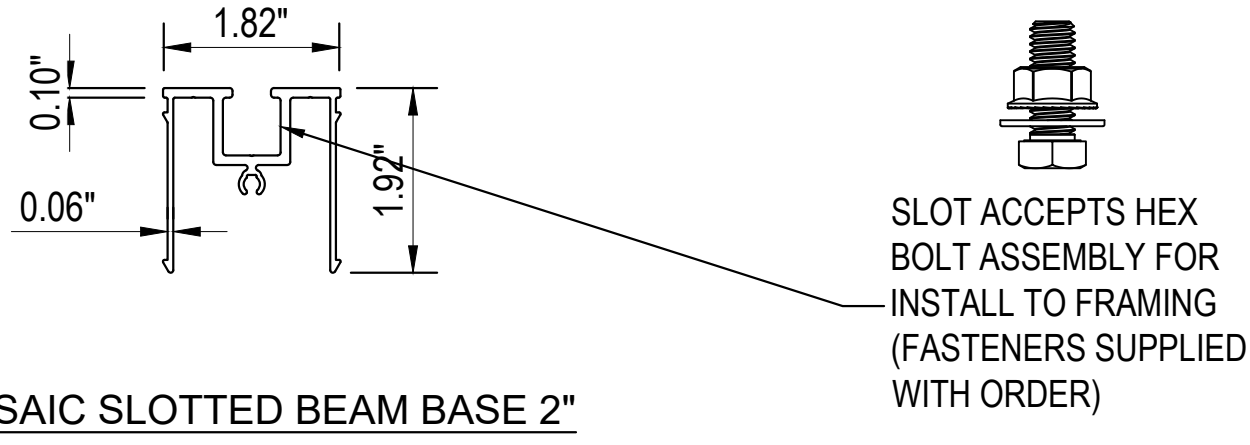
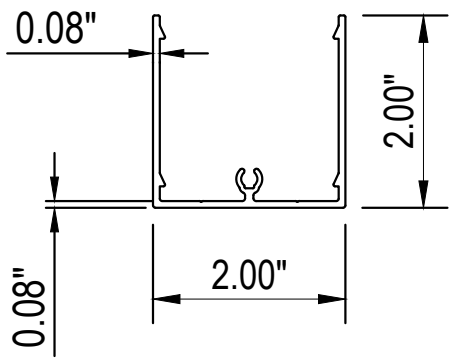
MOSAIC CEILING - DECORATIVE BEAMS

BEAM BASE (INSTALLED TO CARRIER FRAMING)

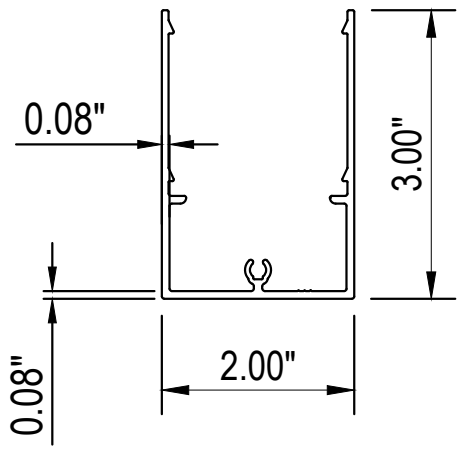


MOSAIC SLOTTED BEAM BASE 2"

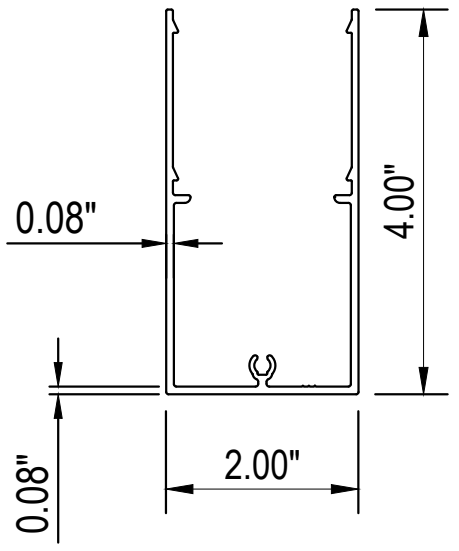
MOSAIC BEAM CAPS (INTERLOCK TO THE BEAM BASE)



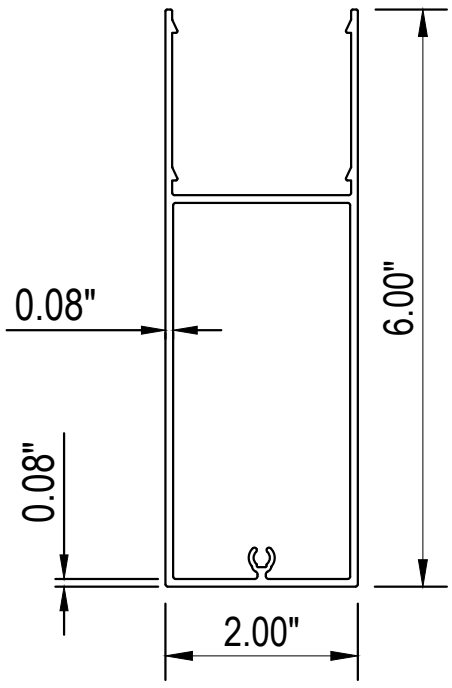
MOSAIC BEAM CAP 2"X2"



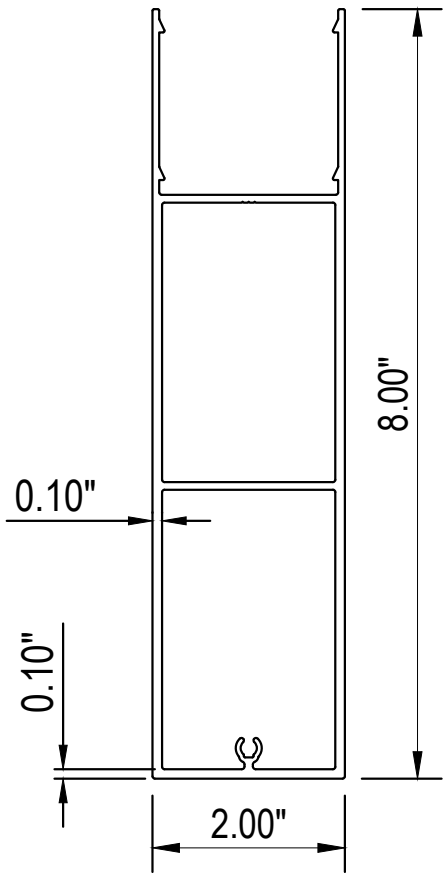
MOSAIC BEAM CAP 2"X3"



MOSAIC BEAM CAP 2"X4"



MOSAIC BEAM CAP 2"X6"



MOSAIC BEAM CAP 2"X8"

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MOSAIC BEAM PARTS

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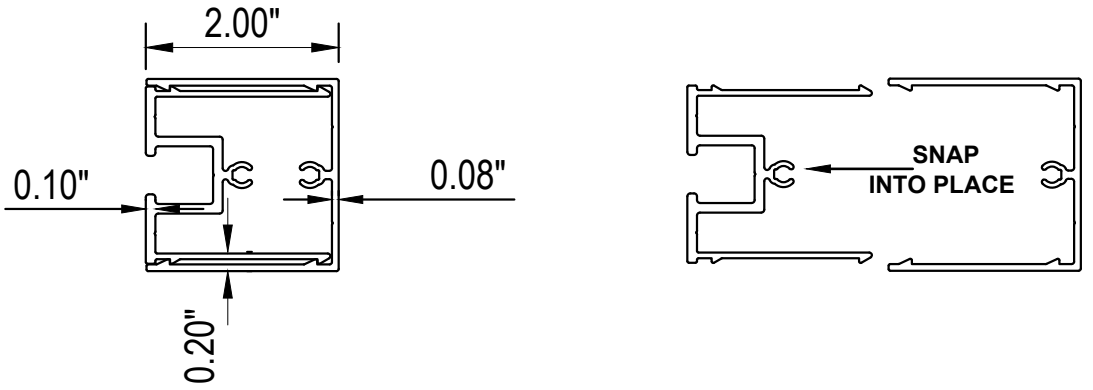
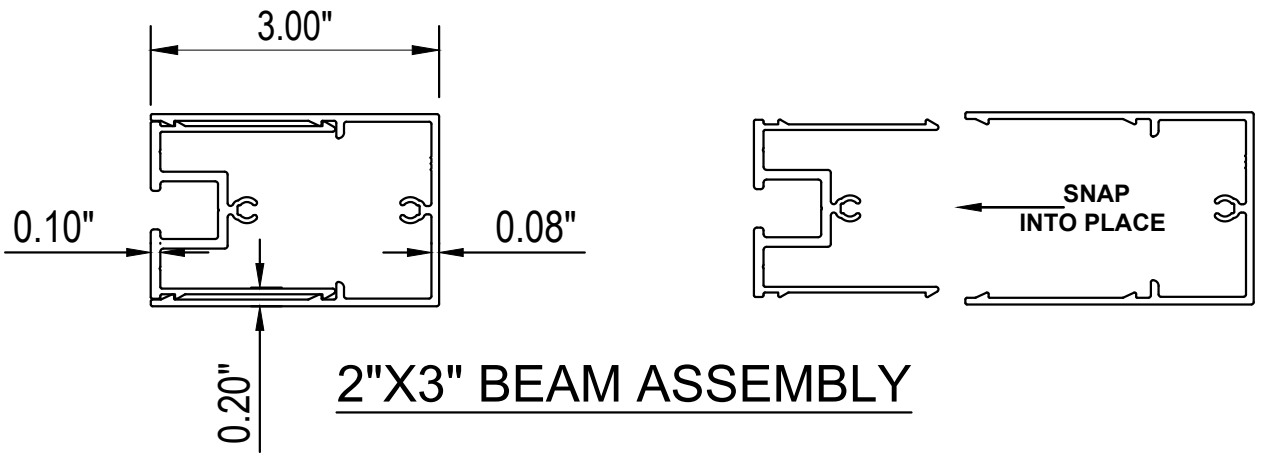
SYSTEM = MOSAIC BEAM CEILING SYSTEM

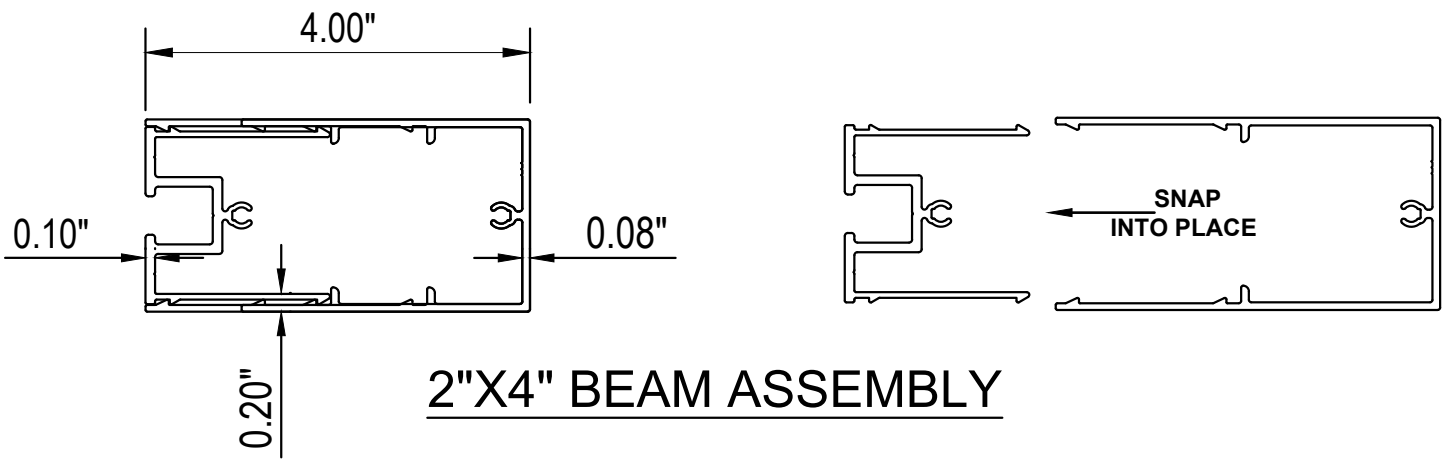
MOSAIC CEILING - DECORATIVE BEAMS



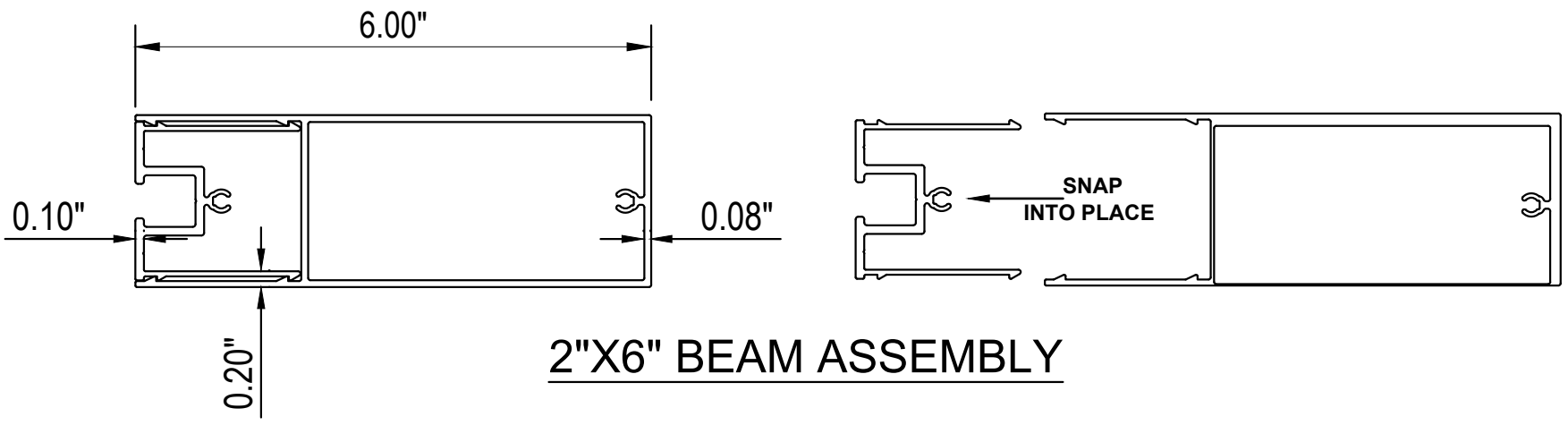
2"X2" BEAM ASSEMBLY



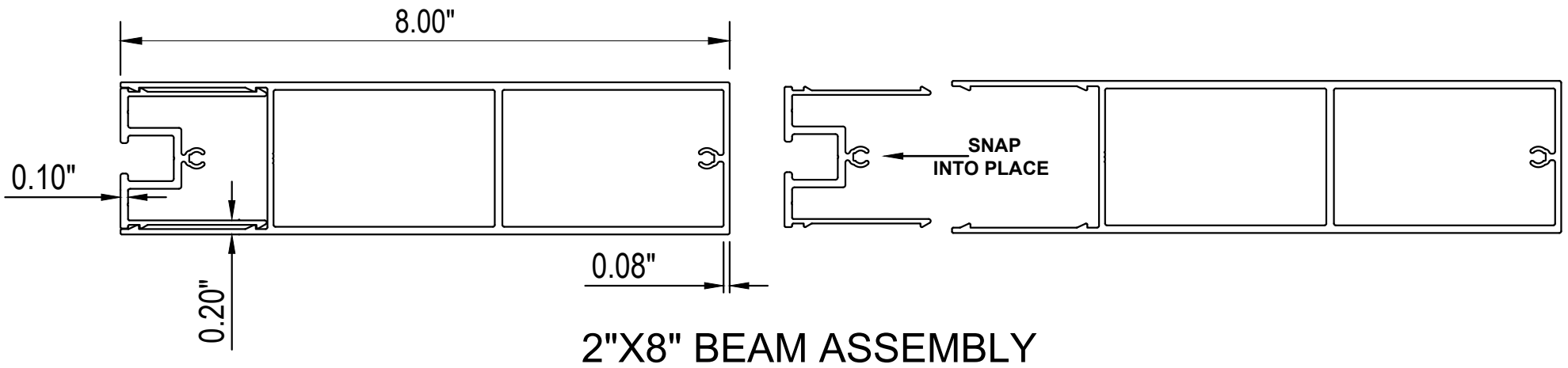
2"X3" BEAM ASSEMBLY



2"X4" BEAM ASSEMBLY



2"X6" BEAM ASSEMBLY



2"X8" BEAM ASSEMBLY

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MOSAIC BEAM ASSEMBLIES

C3

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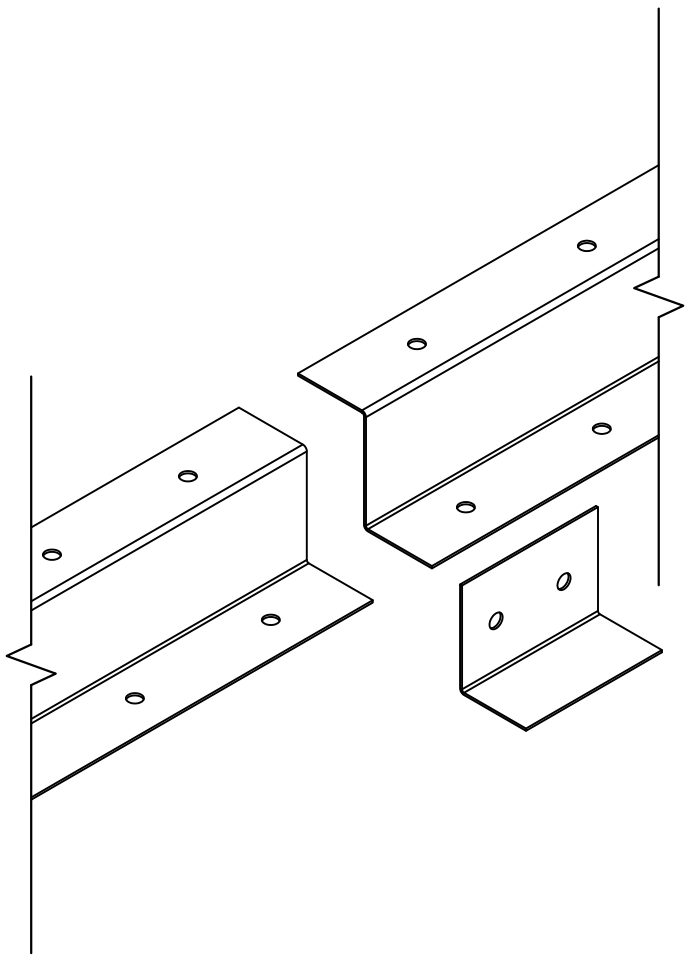
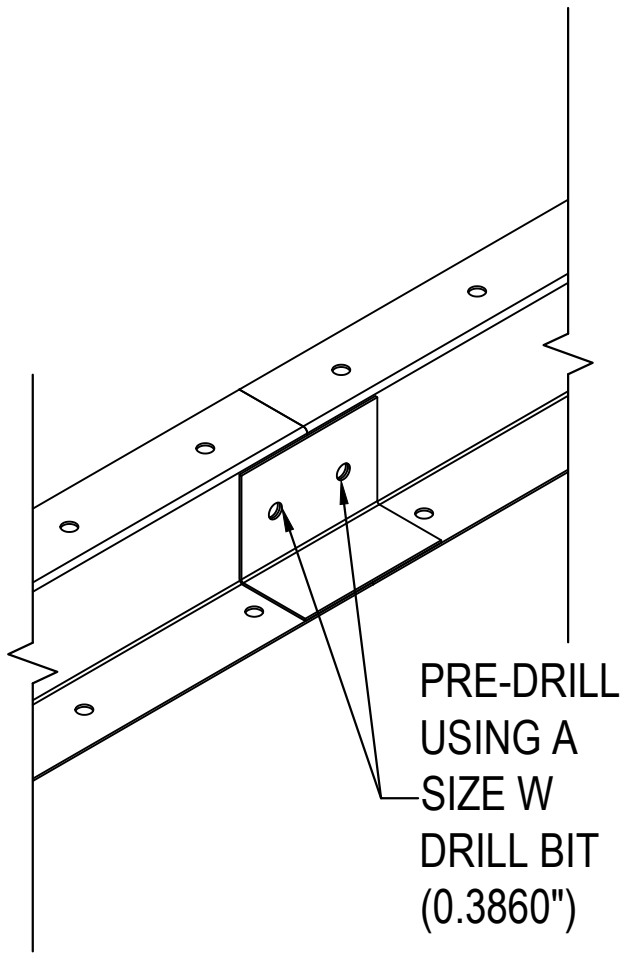
SYSTEM = MOSAIC BEAM CEILING SYSTEM

CARRIER FRAME SPLICE

CARRIER FRAME SPLICE INSTALL INSTRUCTIONS
(IF LONGER THEN 10' LENGTH OF CARRIER IS NEEDED)

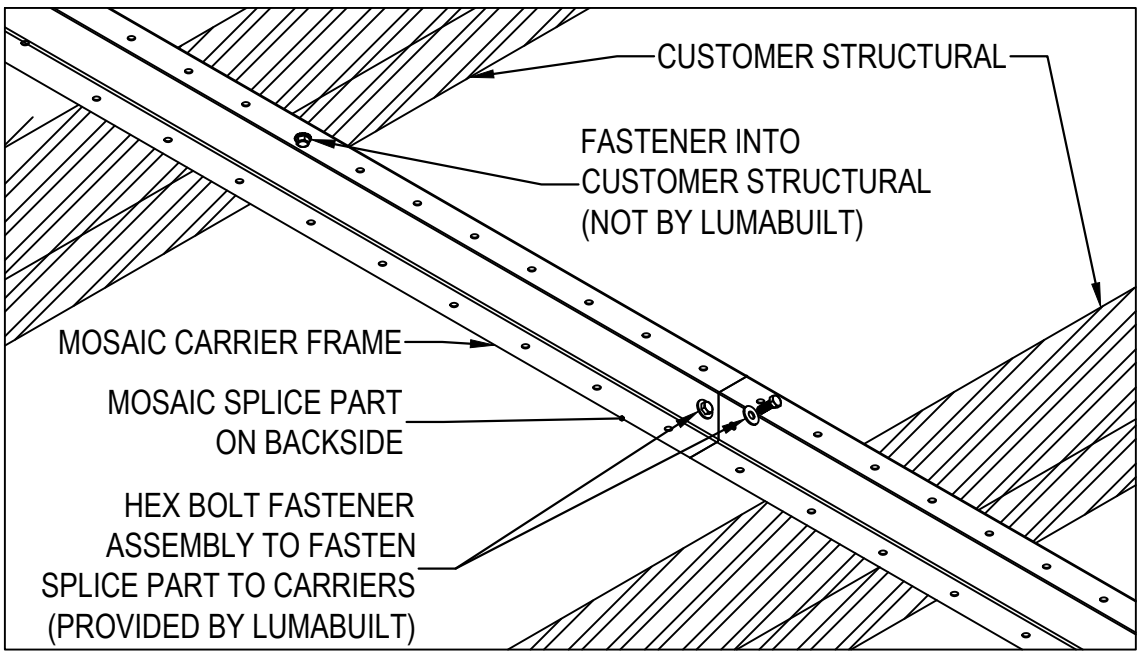


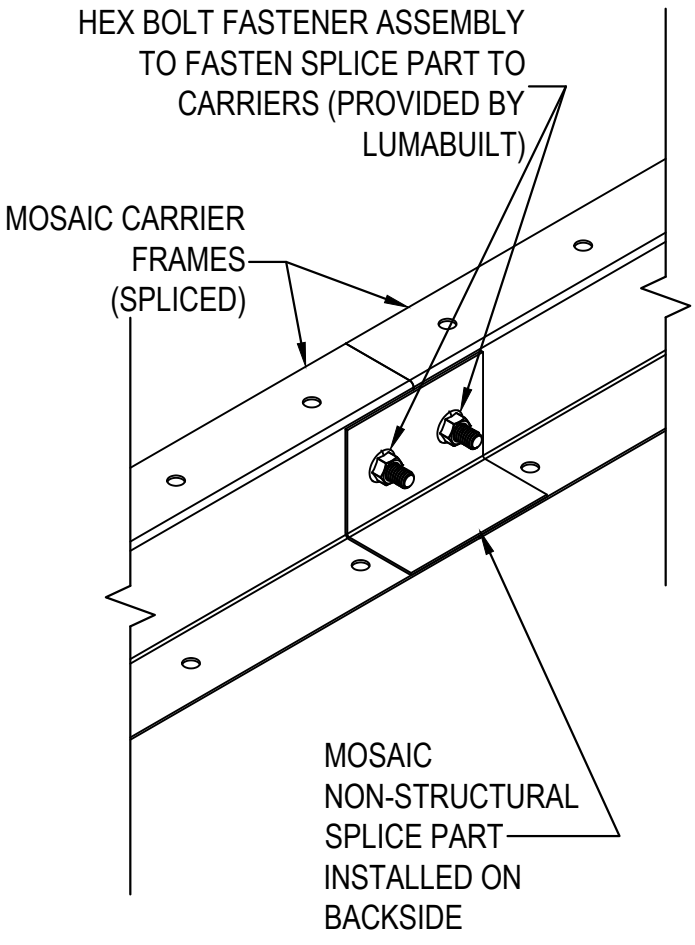


FIRST, CLAMP THE TWO CARRIER FRAMES AND SPLICE PART TOGETHER
THEN, PRE-DRILL INTO EACH CARRIER FRAME USING A SIZE "W" DRILL BIT

AFTER, INSTALL THE FIRST CARRIER FRAME TO THE STRUCTURAL ABOVE.
THEN WHILE SUPPORTING THE ADJACENT CARRIER FRAME, INSTALL THE
NON-STRUCTURAL CARRIER SPLICE PART.

FINALLY, THE ADJACENT CARRIER FRAME IS NOW ALIGNED AND READY
TO BE FASTENED TO THE STRUCTURAL.





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CARRIER SPLICE INSTALL INSTRUCTIONS

CS

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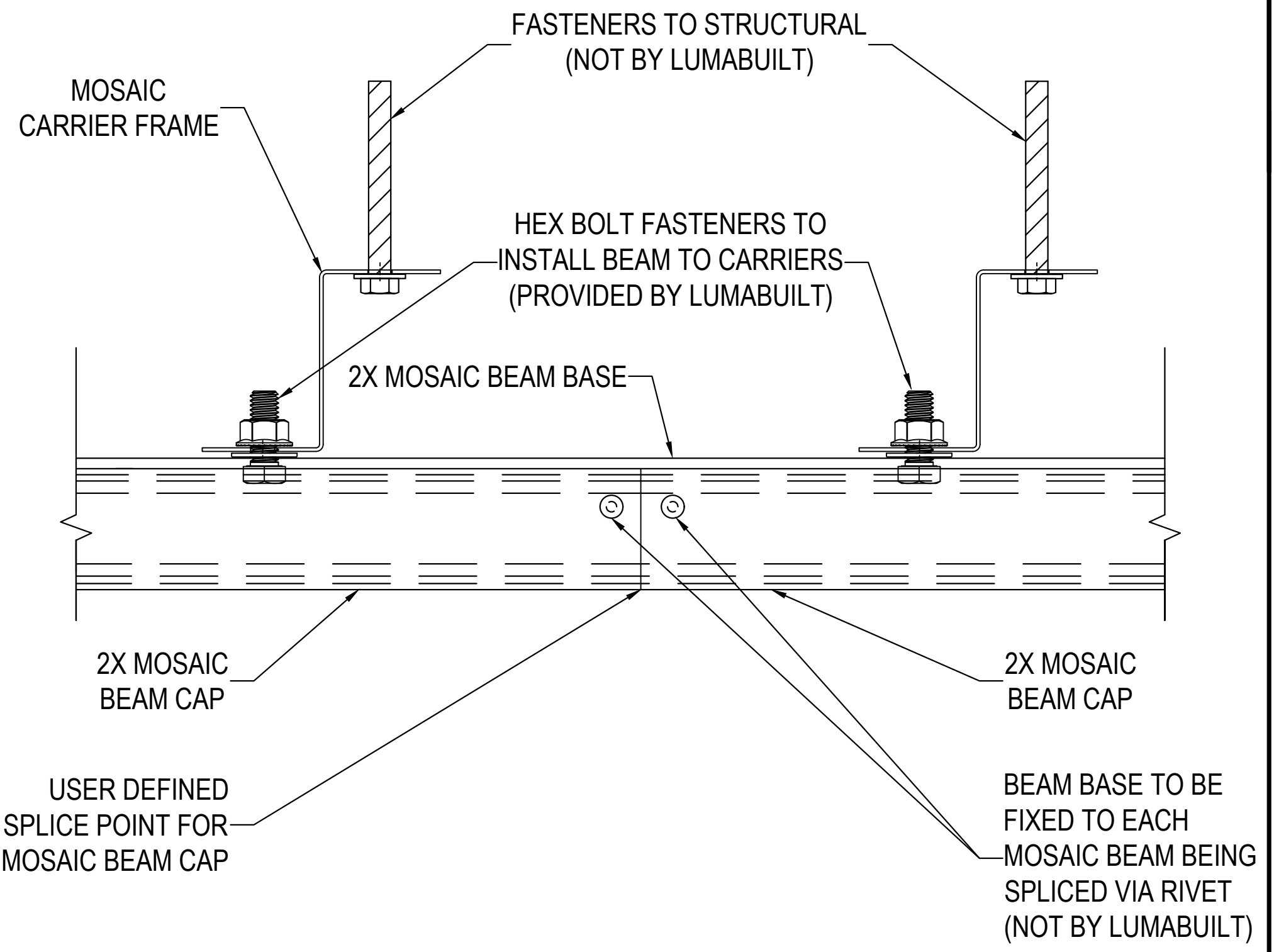
SYSTEM = MOSAIC BEAM CEILING SYSTEM

MOSAIC BEAM SPLICE

BEAM SPLICE INSTALL INSTRUCTIONS
(USED TO SPLICE MOSAIC BEAM CAPS TOGETHER)



FOLLOW THE STANDARD INSTALL INSTRUCTIONS FOR THE MOSAIC BEAM BASE.

THEN, ASSEMBLE THE BEAM CAPS ONTO THE BEAM BASE.

FINALLY, FASTEN EACH BEAM CAP TO THE BEAM BASE BY USING #8 RIVET (NOT BY LUMABUILT), MAKING SURE THERE IS NO GAP BETWEEN THE SPLICED BEAM CAPS.

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MOSAIC BEAM SPLICE INSTALL INSTRUCTIONS

BS

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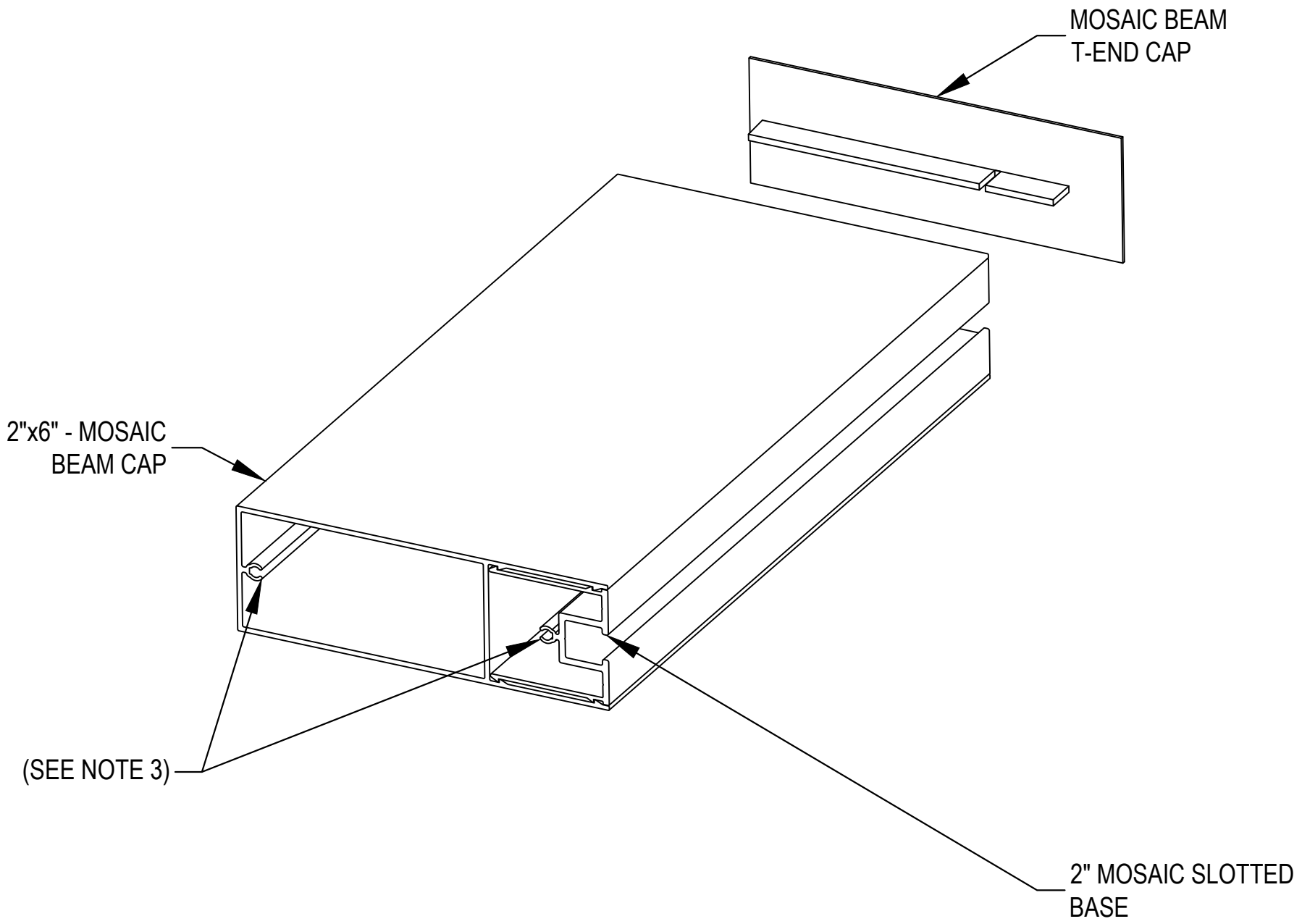
SYSTEM = MOSAIC BEAM CEILING SYSTEM

MOSAIC BEAM T-END CAP



NOTES

1. ADDITIONAL BEAM SIZES AVAILABLE.
2. ENSURE THE EXTRUSION(S) ARE CUT SQUARE TO ACCOMMODATE END CAP. REMOVE ALL BURRS.
3. APPLY A SMALL DROP OF CLEAR SILICON IN EACH SCREW BOSS LOCATION, WHERE END CAP WILL BE INSERTED, JUST PRIOR TO INSERTING THE PRE-CUT END CAP.
4. A RUBBER MALLET IS RECOMMENDED TO SEAT THE CAP INTO PLACE.

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MOSAIC BEAM END CAP INSTALLATION

E1

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SYSTEM = MOSAIC BEAM CEILING SYSTEM

CARRIER FRAMING ANCHOR SPACING
FOR MULTI-SPAN LINEAR BEAMS ON CARRIER FRAME

Install Substrate	**2x S-P-F Wood Stud**	Loading	**Suspended**
Allowable Deflection Limit	**L/360**	Carrier Spacing	**4' OC**
Maximum Anchor Reaction	**175 lbs**	Limiting Criteria	**Carrier Substrate**

	CARRIER FRAMING ANCHOR SPAN - INCHES															
Design Load	**10 PSF**		**20 PSF**		**30 PSF**		**40 PSF**		**50 PSF**		**60 PSF**		**70 PSF**		**80 PSF**	
Beam Spacing (O.C)	**4"**	**5"**	**4"**	**5"**	**4"**	**5"**	**4"**	**5"**	**4"**	**5"**	**4"**	**5"**	**4"**	**5"**	**4"**	**5"**
2" X 2" Linear Beam	25.6"	32.0"	15.9"	19.9"	11.5"	14.4"	9.0"	11.3"	7.4"	9.3"	6.3"	7.9"	5.5"	6.9"	4.9"	6.1"
2" X 3" Linear Beam	25.5"	29.4"	15.1"	18.8"	11.1"	13.9"	8.8"	11.0"	7.3"	9.1"	6.2"	7.7"	5.4"	6.7"	4.8"	6.0"
2" X 4" Linear Beam	22.1"	27.6"	14.5"	18.1"	10.8"	13.5"	8.6"	10.7"	7.1"	8.9"	6.1"	7.6"	5.3"	6.6"	4.7"	5.9"
2" X 6" Linear Beam	19.0"	23.7"	13.1"	16.3"	10.0"	12.5"	8.1"	10.1"	6.8"	8.5"	5.8"	7.3"	5.1"	6.4"	4.6"	5.7"
2" X 8" Linear Beam	15.5"	19.4"	11.3"	14.2	8.9"	11.2"	7.4"	9.2"	6.3"	7.8"	5.5"	6.8"	4.8"	6.0"	4.3"	5.4"

REQUIRED ANCHOR SPACING (inches)

Each carrier to substrate connection is analyzed using a #12 wood screw at each anchorage point.

Install Substrate	**16 Gauge Steel 45 KSI**	Loading	**Suspended**
Allowable Deflection Limit	**L/360**	Carrier Spacing	**4' OC**
Maximum Anchor Reaction	**262 lbs**	Limiting Criteria	**Carrier Substrate**

	CARRIER FRAMING ANCHOR SPAN - INCHES															
Design Load	**10 PSF**		**20 PSF**		**30 PSF**		**40 PSF**		**50 PSF**		**60 PSF**		**70 PSF**		**80 PSF**	
Beam Spacing (O.C)	**4"**	**5"**	**4"**	**5"**	**4"**	**5"**	**4"**	**5"**	**4"**	**5"**	**4"**	**5"**	**4"**	**5"**	**4"**	**5"**
2" X 2" Linear Beam	38.3"	47.8"	23.8"	29.7"	17.3"	21.6"	13.5"	16.9"	11.1"	13.9"	9.5"	11.8"	8.2"	10.3"	7.3"	9.1"
2" X 3" Linear Beam	35.2"	44.0"	22.6"	28.2"	16.6"	20.8"	13.1"	16.4"	10.9"	13.6"	9.3"	11.6"	8.1"	10.1"	7.2"	8.9"
2" X 4" Linear Beam	33.1"	41.3"	21.7"	27.1"	16.1"	20.1"	12.8"	16.0"	10.7"	13.3"	9.1"	11.4"	8.0"	9.9"	7.1"	8.8"
2" X 6" Linear Beam	28.4"	35.5"	19.6"	24.5"	14.9"	18.7"	12.1"	15.1"	10.1"	12.7"	8.7"	10.9"	7.7"	9.6"	6.8"	8.5"
2" X 8" Linear Beam	23.3"	29.1"	17.0"	21.2"	13.4"	16.7"	11.0"	13.8"	9.4"	11.7"	8.2"	10.2"	7.2"	9.0"	6.5"	8.1"

REQUIRED ANCHOR SPACING (inches)

Each carrier to substrate connection is analyzed using a 14 SEA Grade 5 self-drill screw at each anchorage point.

Install Substrate	**Concrete 2500 PSI**	Loading	**Suspended**
Allowable Deflection Limit	**L/360**	Carrier Spacing	**4' OC**
Maximum Anchor Reaction	**330 lbs**	Limiting Criteria	**Carrier Substrate**

	CARRIER FRAMING ANCHOR SPAN - INCHES															
Design Load	**10 PSF**		**20 PSF**		**30 PSF**		**40 PSF**		**50 PSF**		**60 PSF**		**70 PSF**		**80 PSF**	
Beam Spacing (O.C)	**4"**	**5"**	**4"**	**5"**	**4"**	**5"**	**4"**	**5"**	**4"**	**5"**	**4"**	**5"**	**4"**	**5"**	**4"**	**5"**
2" X 2" Linear Beam	48.2"	60.3"	30.0"	37.5"	21.7"	27.2"	17.1"	21.3"	14.0"	17.5"	11.9"	14.9"	10.4"	13.0"	9.2"	11.5"
2" X 3" Linear Beam	44.3"	55.4"	28.4"	35.5"	20.9"	26.1"	16.5"	20.7"	13.7"	17.1"	11.7"	14.6"	10.2"	12.7"	9.0"	11.3"
2" X 4" Linear Beam	41.7"	52.1"	27.3"	34.1"	20.3"	25.4"	16.2"	20.2"	13.4"	16.8"	11.5"	14.3"	10.0"	12.5"	8.9"	11.1"
2" X 6" Linear Beam	35.8"	44.8"	24.7"	30.8"	18.8"	23.3"	15.2"	19.0"	12.8"	15.9"	11.0"	13.7"	9.6"	12.1"	8.6"	10.7
2" X 8" Linear Beam	29.3"	36.6"	21.4"	26.7"	16.8"	21.0"	13.9"	17.4"	11.8"	14.8"	10.3"	12.9"	9.1"	11.4"	8.2"	10.2"

REQUIRED ANCHOR SPACING (inches)

Each carrier to substrate connection is analyzed using a ¼" concrete screw anchor at each anchorage point.

To obtain values for 8" o.c spacing of carrier framing, half the value of the anchor spacing shown in the tables.
Structure to be designed by EOR to withstand the max. anchor reaction at each anchor point.
Mosaic beam length is analyzed at 24'.
Carrier anchor spacing required at 6" from edge of the carrier profile (2 locations)
Design pressures are limited to 75 psf
Snow loads are not included in calculations
Factor of safety of 3 is considered in the calculations

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INSTALLING WITH CUSTOMER FRAMING

BEAM SIZE	ANCHOR REACTIONS ON BEAM (lbs) (4'-0" Spacing of Anchor Points on BEAM with 24' BEAM Length)									
	DL/FT	Dead Load	DL+10 PSF	DL+20 PSF	DL+30 PSF	DL+40 PSF	DL+50 PSF	DL+60 PSF	DL+70 PSF	DL+80 PSF
2x2 Beam	1.093	4.9	12.4	20	27.6	35.1	42.7	50.3	57.8	65.4
2x3 Beam	1.338	6	13.5	21.1	28.7	36.2	43.8	51.4	58.9	66.5
2x4 Beam	1.532	6.8	14.4	22	29.5	37.1	44.7	52.2	59.8	67.4
2x6 Beam	2.06	9.2	16.7	24.3	31.9	39.4	47	54.6	62.1	69.7
2x8 Beam	2.898	12.9	20.5	28	35.6	43.2	50.7	58.3	65.9	73.4

BEAM SIZE	ANCHOR REACTIONS ON BEAM (lbs) (8'-0" Spacing of Anchor Points on BEAM with 24' BEAM Length)									
	DL/FT	Dead Load	DL+10 PSF	DL+20 PSF	DL+30 PSF	DL+40 PSF	DL+50 PSF	DL+60 PSF	DL+70 PSF	DL+80 PSF
2x2 Beam	1.093	16.5	31.7	46.8	62	84.5	92.2	107.4	122.5	137.6
2x3 Beam	1.338	20.3	35.4	50.5	65.7	88.3	95.9	111.1	126.2	141.3
2x4 Beam	1.532	23.2	38.3	53.5	68.6	91.2	98.9	114	129.1	144.3
2x6 Beam	2.06	31.2	46.3	61.5	76.6	99.2	106.9	122	137.1	152.3
2x8 Beam	2.898	43.9	59	74.1	89.3	111.9	119.6	134.7	149.8	165

BEAM SIZE	DL/FT	ANCHOR REACTIONS ON BEAM (lbs) (SINGLE-SPAN WITH CUSTOM LENGTH BEAM)
2x2 Beam	1.093	Equation for individual anchor reactions with single span beams @ "beam span" length
2x3 Beam	1.338	$R \text{ @ ANCHOR POINT} = \frac{\{(1.25 \times DL_{BEAM}) + (\text{Wind Load})\} \times [\text{Beam Span}]}{2}$
2x4 Beam	1.532	Example: what is individual anchor reaction for a 2" x 6" batten and a 36" (3 feet) simple span, with 30
2x6 Beam	2.06	$\frac{\{(1.25 \times 2.06) + (30 \text{ psi})\} \times [3 \text{ feet}]}{2} = 48.86 \text{ LB REACTION @ ANCHOR POINT}$
2x8 Beam	2.898	

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MOSAIC BEAM ANCHOR REACTIONS

S2

02/27/26

SYSTEM = MOSAIC BEAM CEILING SYSTEM

EXPANSION AND CONTRACTION TABLE FOR ALUMINUM 6063

		Average Temperature at Time of Cutting & Installation										
	°F	-20	0	10	20	35	50	65	80	95	105	120
Minimum and Maximum Temperature at Install Location	°F	Expansion or Contraction (Inches/Foot)										
	-20	0.000	0.003	0.002	0.006	0.008	0.011	0.013	0.015	0.017	0.019	0.021
	0	0.003	0.000	0.002	0.003	0.005	0.008	0.010	0.012	0.014	0.016	0.018
	10	0.005	0.002	0.000	0.002	0.004	0.006	0.008	0.011	0.013	0.014	0.017
	20	0.006	0.003	0.002	0.000	0.002	0.005	0.007	0.009	0.011	0.013	0.015
	35	0.008	0.005	0.004	0.002	0.000	0.002	0.005	0.007	0.009	0.011	0.013
	50	0.011	0.008	0.006	0.005	0.002	0.000	0.002	0.005	0.007	0.008	0.011
	65	0.013	0.010	0.008	0.007	0.005	0.002	0.000	0.002	0.005	0.006	0.008
	80	0.015	0.012	0.011	0.009	0.007	0.005	0.002	0.000	0.002	0.004	0.006
	95	0.017	0.014	0.013	0.011	0.009	0.007	0.005	0.002	0.000	0.002	0.004
	105	0.019	0.016	0.014	0.013	0.011	0.008	0.006	0.004	0.002	0.000	0.002
	120	0.021	0.018	0.017	0.015	0.013	0.011	0.008	0.006	0.004	0.002	0.000

INSTRUCTIONS FOR USING THE EXPANSION AND CONTRACTION TABLE

1. DETERMINE THE:
   - 1.1. TEMPERATURE AT THE TIME OF CUTTING/INSTALLATION OF MOSAIC BEAMS
   - 1.2. TEMPERATURE HIGH AND LOW OF THE INSTALLATION AREA.

2. TO FIND MOSAIC BEAM EXPANSION:
   - 2.1. USE THE HIGH TEMPERATURE OF THE INSTALLATION AREA TO LOCATE THE CORRESPONDING VALUE IN THE LEFT COLUMN.
   - 2.2. USE THE CURRENT TEMPERATURE AT THE TIME OF CUTTING/INSTALLATION TO LOCATE THE CORRESPONDING VALUE IN THE TOP ROW.
   - 2.3. FIND THE VALUE WHERE THE COLUMN AND ROW INTERSECT. MULTIPLY THIS VALUE TIMES THE TOTAL LENGTH OF THE BEAM AND THIS WILL BE THE AMOUNT THE BEAM WILL EXPAND.

3. TO FIND MOSAIC BEAM CONTRACTION:
   - 3.1. PERFORM STEPS 2.1 TO 2.3, EXCEPT USE THE LOW TEMPERATURE OF THE INSTALLATION AREA WHEN LOCATING YOUR COLUMN VALUE.

ALTERNATIVELY THIS EQUATION MAY BE USED:

$$\left(\begin{array}{l}\text{THERMAL (EXPANSION OR}\\ \text{CONTRACTION) CHANGE IN}\\ \text{LENGTH (INCHES)}\end{array}\right) = (12.5\times10^{-6}) \text{ X } \left(\begin{array}{l}\text{STARTING BEAM}\\ \text{LENGTH (INCHES)}\end{array}\right) \text{ X } \left(\begin{array}{l}\text{CHANGE IN}\\ \text{TEMPERATURE (°F)}\end{array}\right)$$

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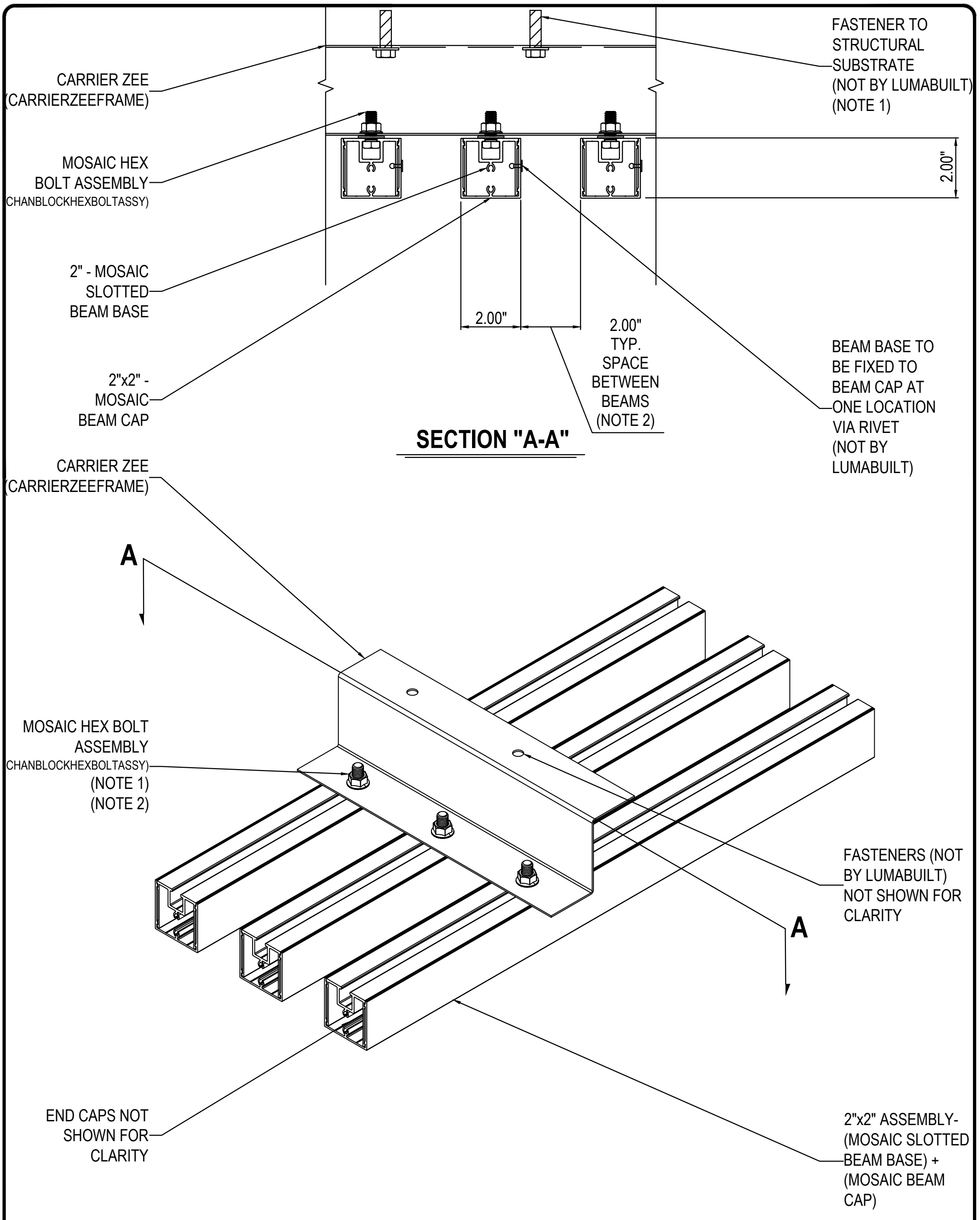

NOTES

1. FASTENER SIZE, TYPE AND SPACING TO BE DETERMINED BY PROJECT ENGINEER.
2. THE CARRIER ZEE MAY BE INSTALLED TO ACCOMMODATE (2" BEAM SPACING) OR (3" BEAM SPACING), DEPENDENT ON THE SIDE CHOSEN.

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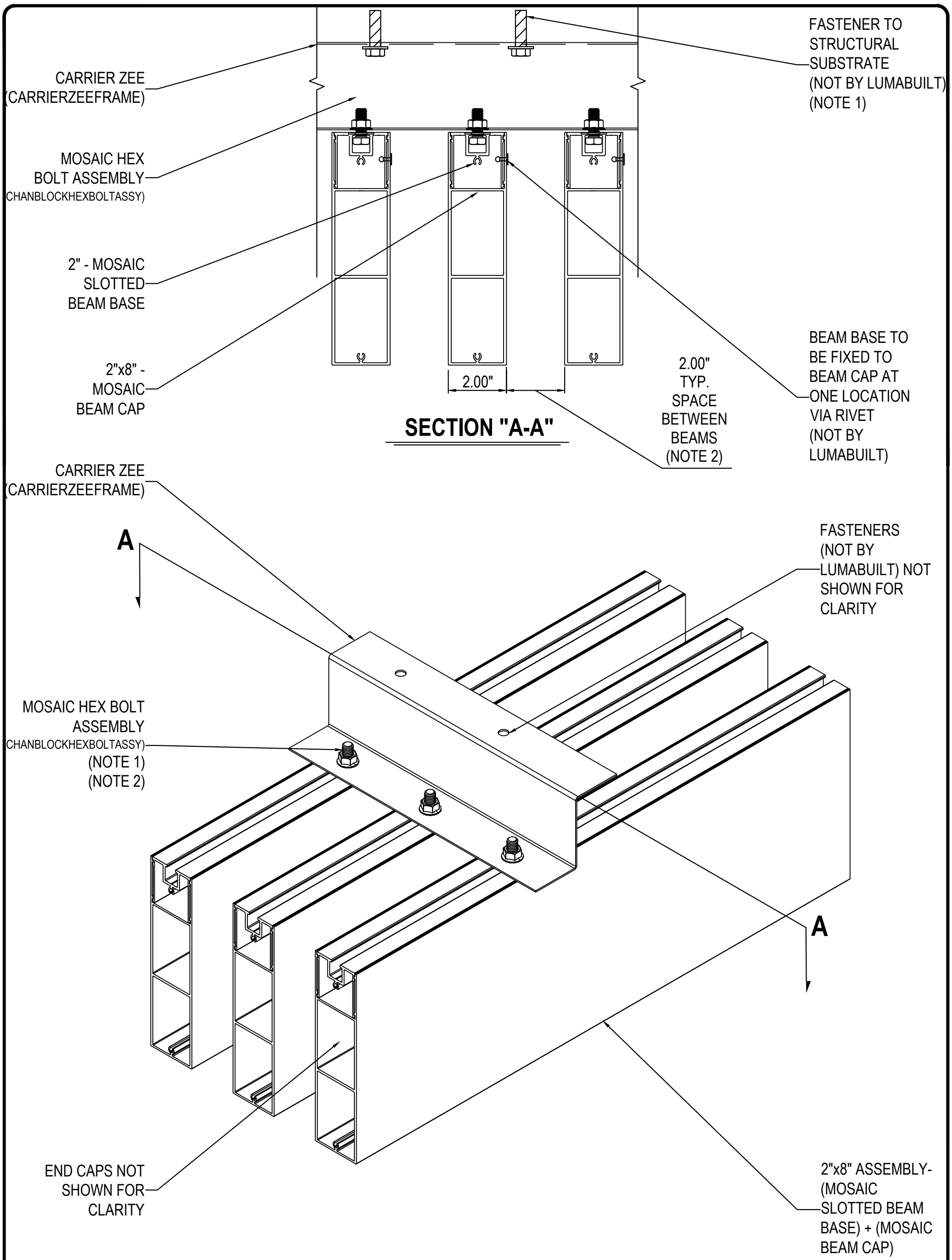
2"x2" BEAM ASSEMBLY @ DIRECT TO CARRIER ZEE

CZ D1.01

02/27/26

SYSTEM = MOSAIC BEAM CEILING SYSTEM



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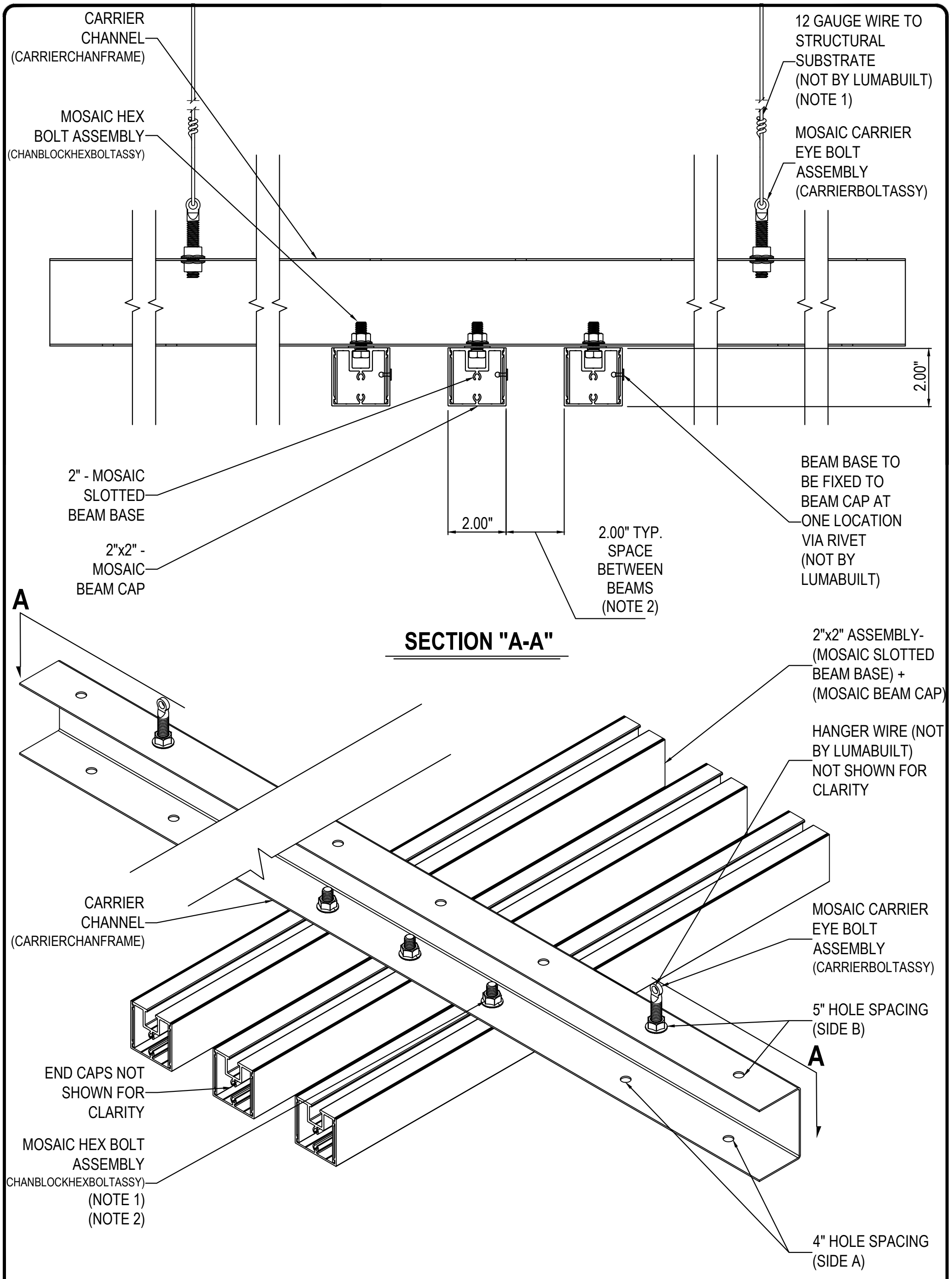
2"x8" BEAM ASSEMBLY @ DIRECT TO CARRIER ZEE

CZ D1.02

02/27/26

SYSTEM = MOSAIC BEAM CEILING SYSTEM



NOTES

1. FASTENER / WIRE GAUGE, TYPE AND SPACING TO BE DETERMINED BY PROJECT ENGINEER.
2. THE CARRIER CHANNEL MAY BE INSTALLED TO ACCOMMODATE (2" BEAM SPACING) OR (3" BEAM SPACING), DEPENDENT ON THE SIDE CHOSEN.

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2"x2" BEAM ASSEMBLY @ DIRECT TO CARRIER CHAN.

CC D1.01

02/27/26

SYSTEM = MOSAIC BEAM CEILING SYSTEM

CARRIER CHANNEL (CARRIERCHANFRAME)

MOSAIC HEX BOLT ASSEMBLY (CHANBLOCKHEXBOLTASSY)

12 GAUGE WIRE TO STRUCTURAL SUBSTRATE (NOT BY LUMABUILT) (NOTE 1)

MOSAIC CARRIER EYE BOLT ASSEMBLY (CARRIERBOLTASSY)

2.00"

2" - MOSAIC SLOTTED BEAM BASE

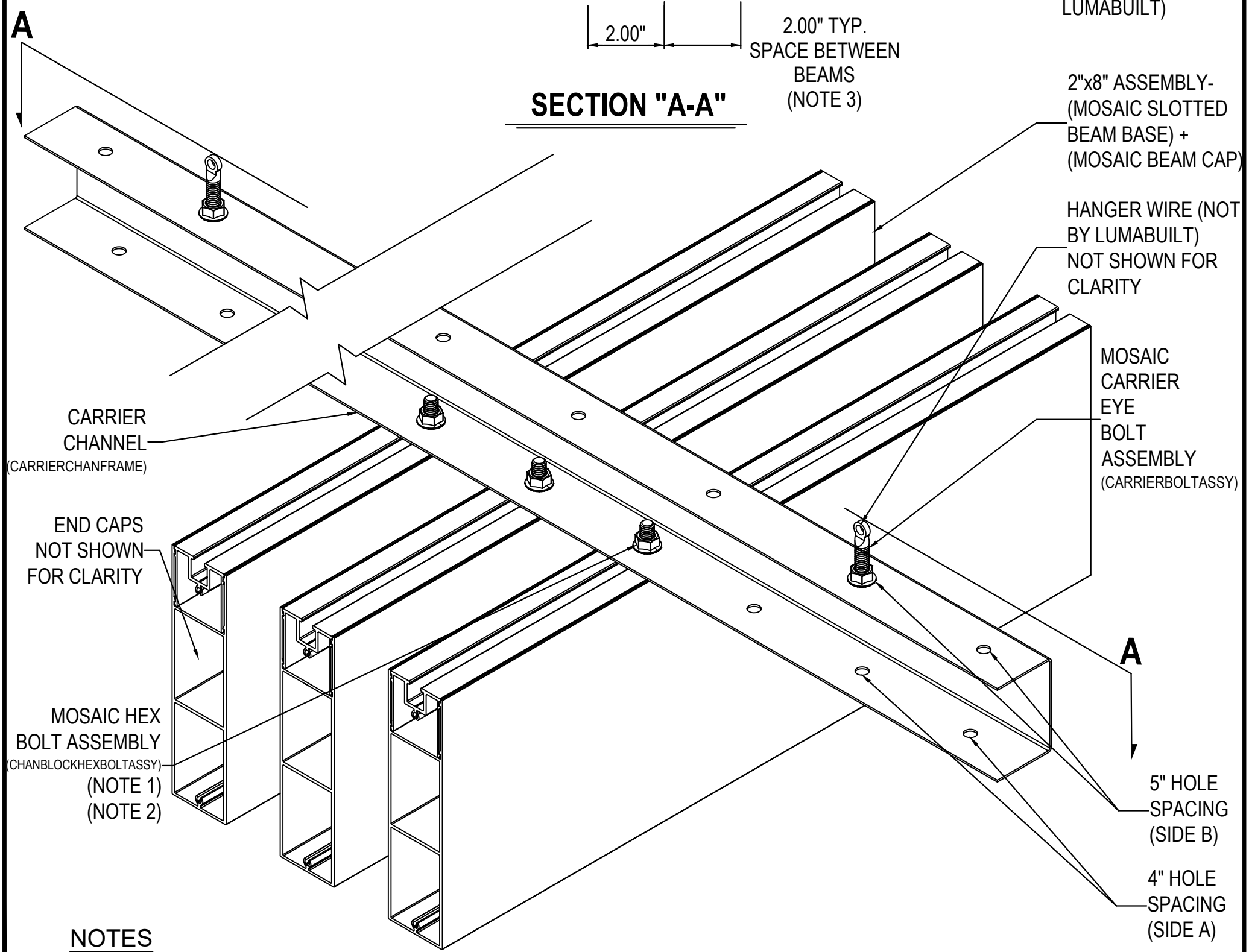
2"x8" - MOSAIC BEAM CAP

BEAM BASE TO BE FIXED TO BEAM CAP AT ONE LOCATION VIA RIVET (NOT BY LUMABUILT)

2.00"

2.00" TYP. SPACE BETWEEN BEAMS (NOTE 3)

SECTION "A-A"



NOTES

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2"x8" BEAM ASSEMBLY @ DIRECT TO CARRIER CHAN.

CC D1.02

02/27/26

SYSTEM = MOSAIC BEAM CEILING SYSTEM