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REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
4-A3	A	Corrected Y axis dimensions of Apritag ID 3 and 6 in table.	1/9/2023	CPO

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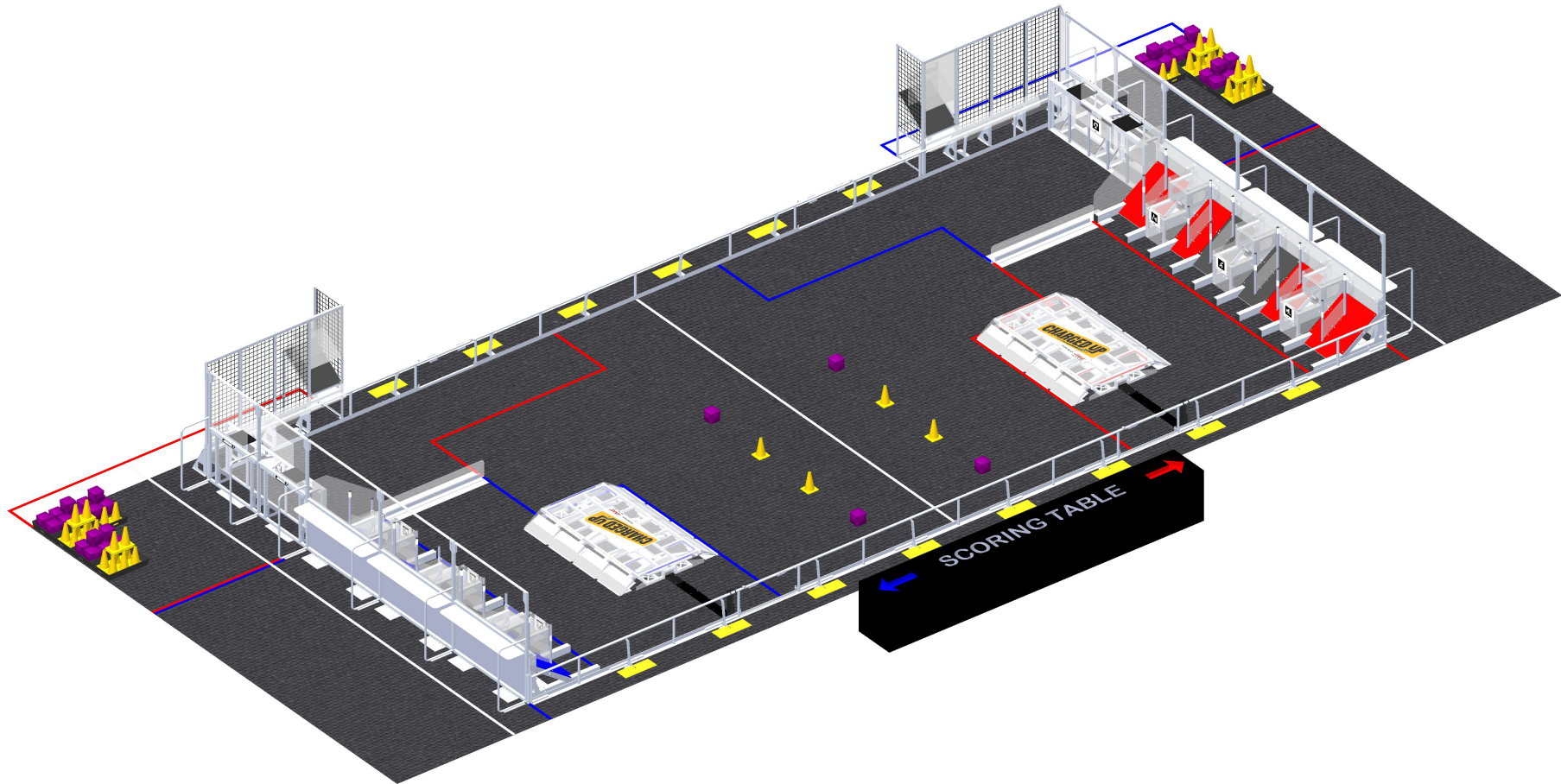
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UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL $\pm 1/2$
 ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
 TWO PLACE DECIMAL $\pm .50$

MATERIAL/FINISH:

DO NOT SCALE DRAWING

FIELD	NAME	DATE
DRAWN	JO	12/2/2022

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COMMENTS:
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TITLE: **2023 Field Layout and Marking**

SIZE	DWG. NO.	REV
C	FE-2023	A

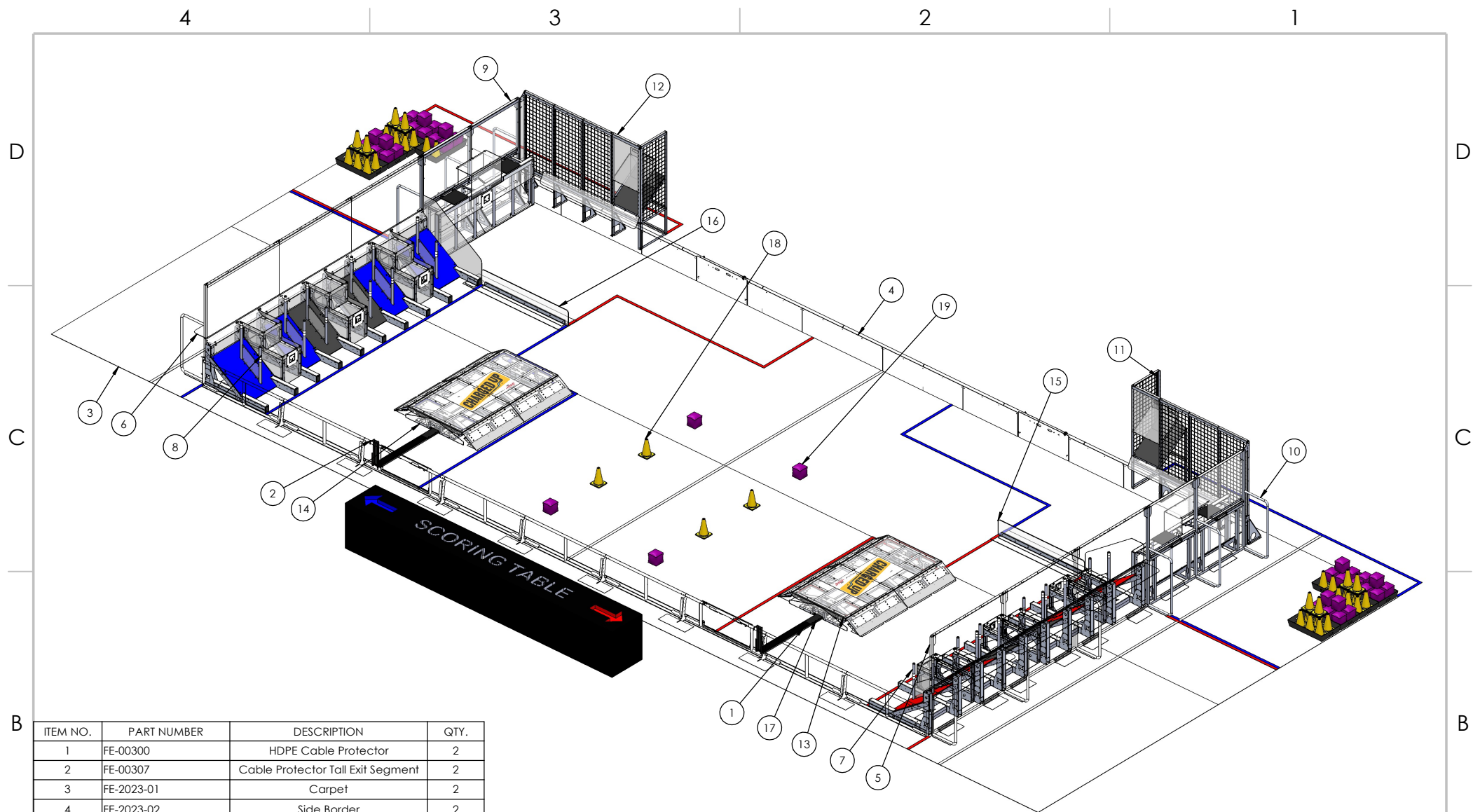
SCALE: 1:50 SHEET 1 OF 7

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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00300	HDPE Cable Protector	2
2	FE-00307	Cable Protector Tall Exit Segment	2
3	FE-2023-01	Carpet	2
4	FE-2023-02	Side Border	2
5	FE-2023-03	Red Alliance End Wall	1
6	FE-2023-04	Blue Alliance End Wall	1
7	GE-23000	Red Alliance Set of 3 GRIDS	1
8	GE-23000	Blue Alliance Set of 3 GRIDS	1
9	GE-23100	Red Alliance Double Substation	1
10	GE-23100	Blue Alliance Double Substation	1
11	GE-23200	Blue Alliance Single Substation	1
12	GE-23270	Red Alliance Single Substaion	1
13	GE-23300	Red Alliance Charge Station	1
14	GE-23300	Blue Alliance Charge Station	1
15	GE-23400	Red Divider Wall	1
16	GE-23410	Blue Divider Wall	1
17	GE-23500	2023 cable protector section	2
18	GE-23700	CONE	4
19	GE-23701	CUBE	4

Notes:

1. Bill of Materials and model do not represent all CONES and CUBES to be staged and used in a match.

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE
	DRAWN	JO	12/2/2022
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$			
MATERIAL/FINISH:			
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FIRST ROBOTICS COMPETITION		SOLIDWORKS Modeling Solutions Partner	
TITLE: 2023 Field Layout and Marking			
SIZE	DWG. NO.	REV	
C	FE-2023	A	
SCALE: 1:45		SHEET 2 OF 7	

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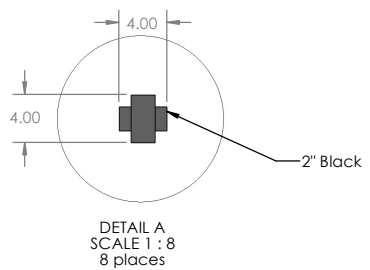
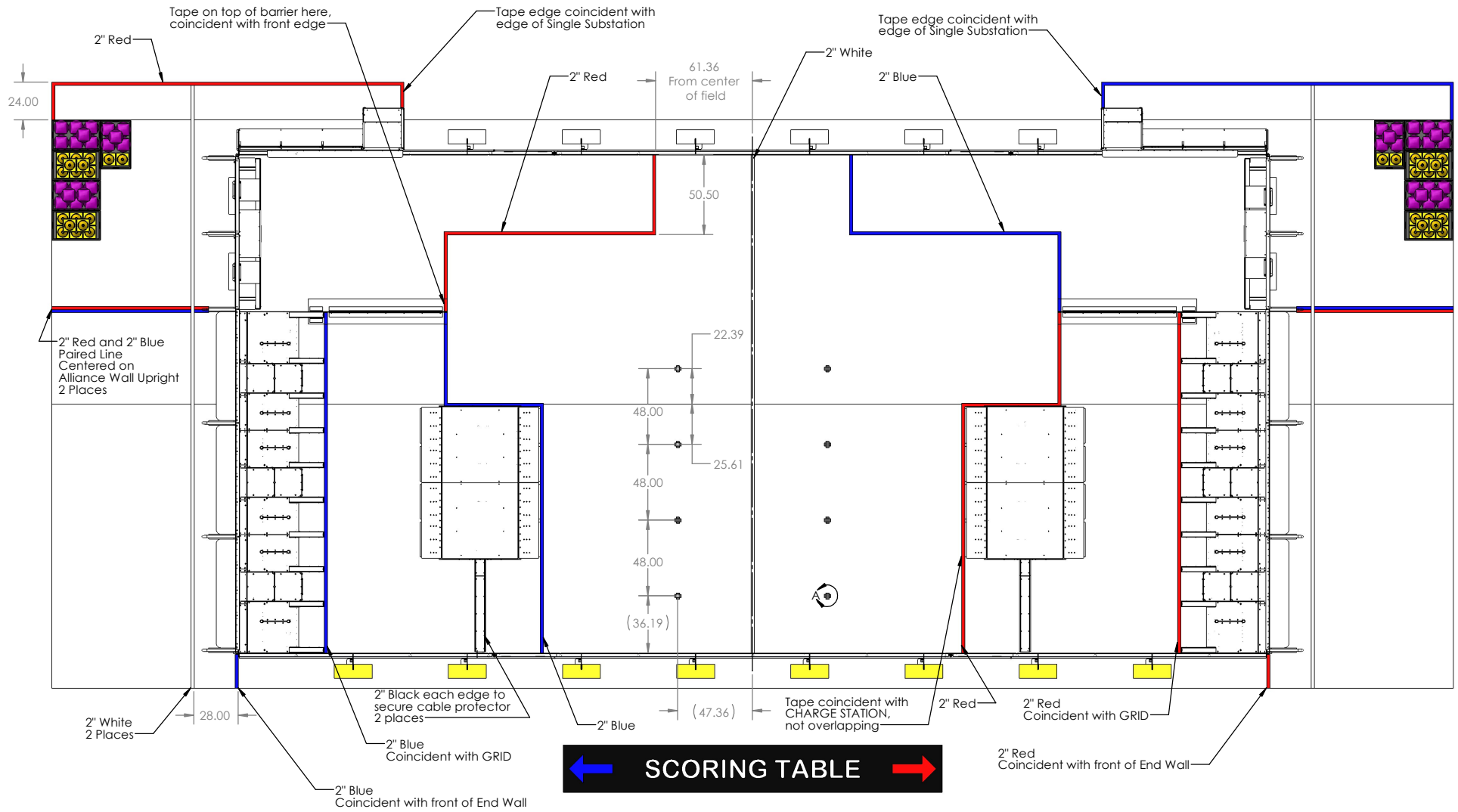
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UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE
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DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/2 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ± .50	PROPRIETARY AND CONFIDENTIAL		
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MATERIAL/FINISH:	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		
	DO NOT SCALE DRAWING		
TITLE:		2023 Field Layout and Marking	
SIZE	DWG. NO.	REV	
C	FE-2023	A	
SCALE: 1:46		SHEET 3 OF 7	



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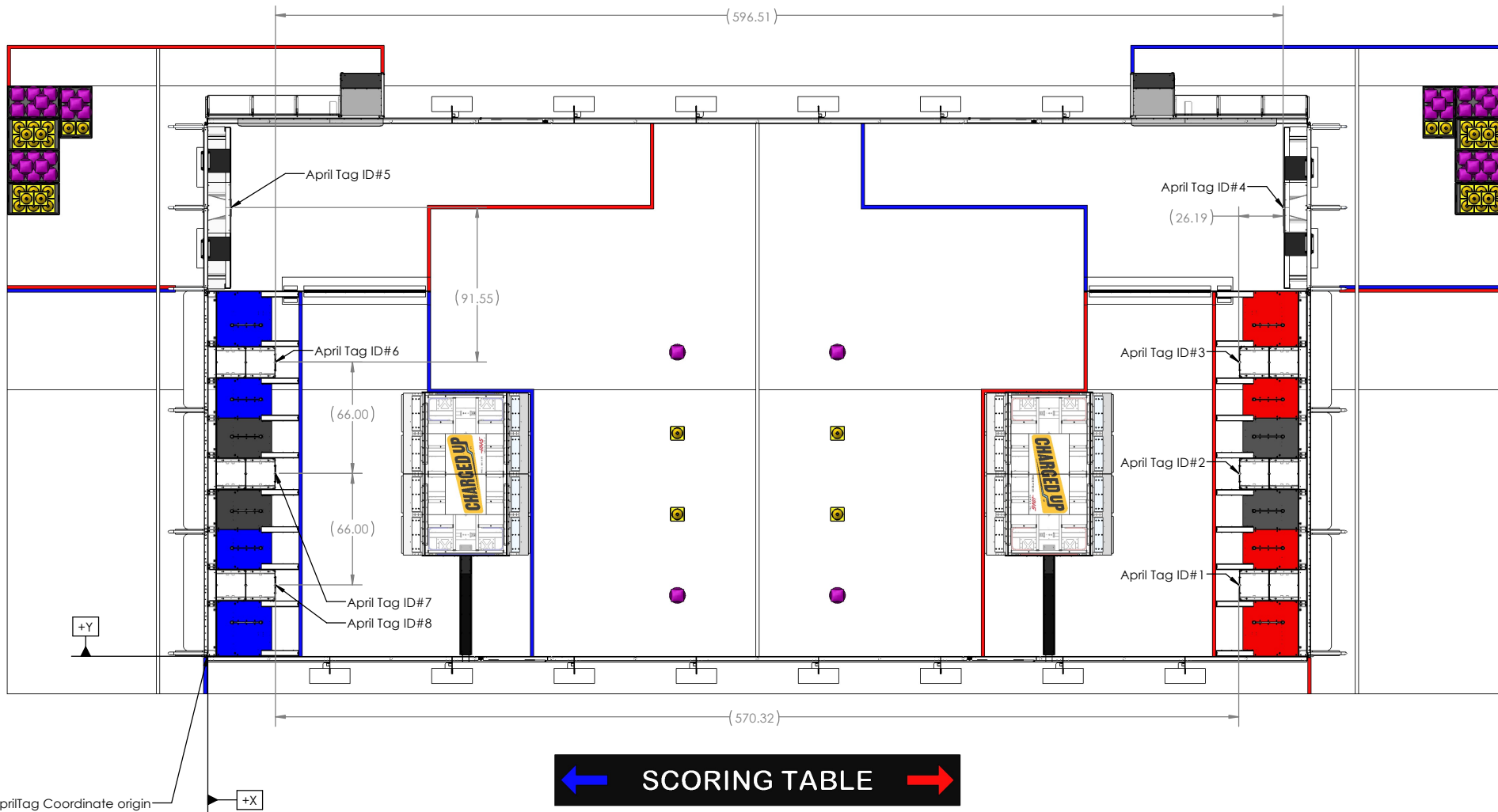
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AprilTag Coordinates

The XYZ Origin is established in the bottom left corner of the field (as viewed in the image above). An x coordinate of 0 is aligned with the Blue Alliance Station diamond plate. A y coordinate of 0 is aligned with the side border polycarbonate on the scoring table side of the field. A z coordinate of 0 is on the carpet. Coordinate (0,0,0) is located inside of the Blue Alliance GRID.

+Z is up into the air from the carpet, +X is horizontal to the right (in this image above) toward the opposing alliance stations, and +Y runs from the GRID to the SUBSTATIONS.

The face-pose of the tags is denoted with 1 degree representation, the Z-rotation. 0° faces the red alliance station, and 180° faces the blue alliance station.

Distances are measured to the center of the tag.

ID	X	Y	Z	Z-rotation
1	610.77 in.	42.19 in.	18.22 in.	180°
2	610.77 in.	108.19 in.	18.22 in.	180°
3	610.77 in.	174.19 in.	18.22 in.	180°
4	636.96 in.	265.74 in.	27.38 in.	180°
5	14.25 in.	265.74 in.	27.38 in.	0°
6	40.45 in.	174.19 in.	18.22 in.	0°
7	40.45 in.	108.19 in.	18.22 in.	0°
8	40.45 in.	42.19 in.	18.22 in.	0°

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE
	DRAWN	JO	12/2/2022
PROPRIETARY AND CONFIDENTIAL			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50			
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TITLE: **2023 Field Layout and Marking**

SIZE DWG. NO. REV

C FE-2023 **A**

SCALE: 1:45 SHEET 4 OF 7

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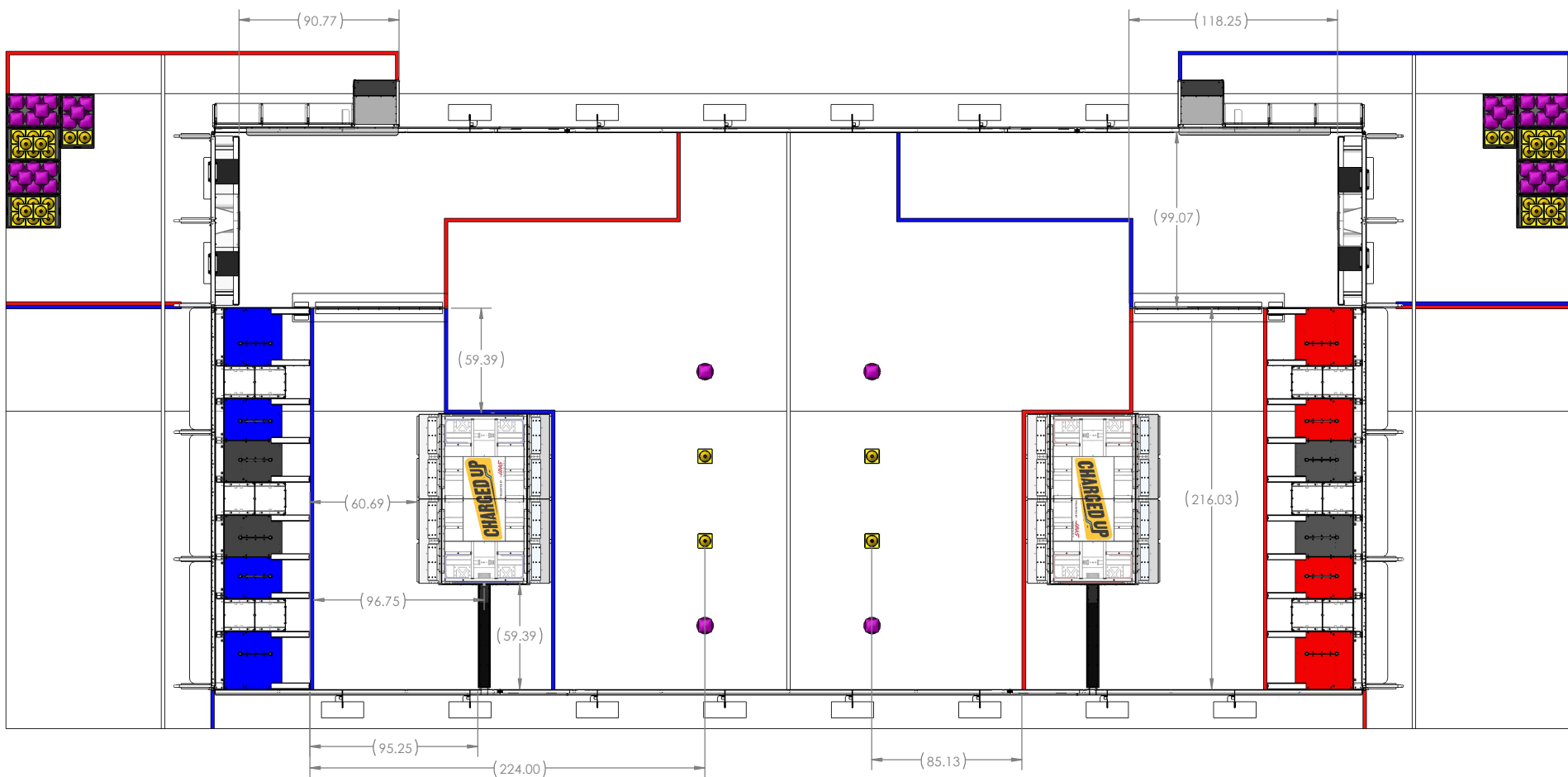
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← SCORING TABLE →

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$	FIELD	NAME	DATE
	DRAWN	JO	12/2/2022
MATERIAL/FINISH:	PROPRIETARY AND CONFIDENTIAL		
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DO NOT SCALE DRAWING	COMMENTS:		REMOVE ALL BURRS AND SHARP EDGES.
	TITLE: 2023 Field Layout and Marking		
SIZE	DWG. NO.	REV	
C	FE-2023	A	
SCALE: 1:45		SHEET 5 OF 7	



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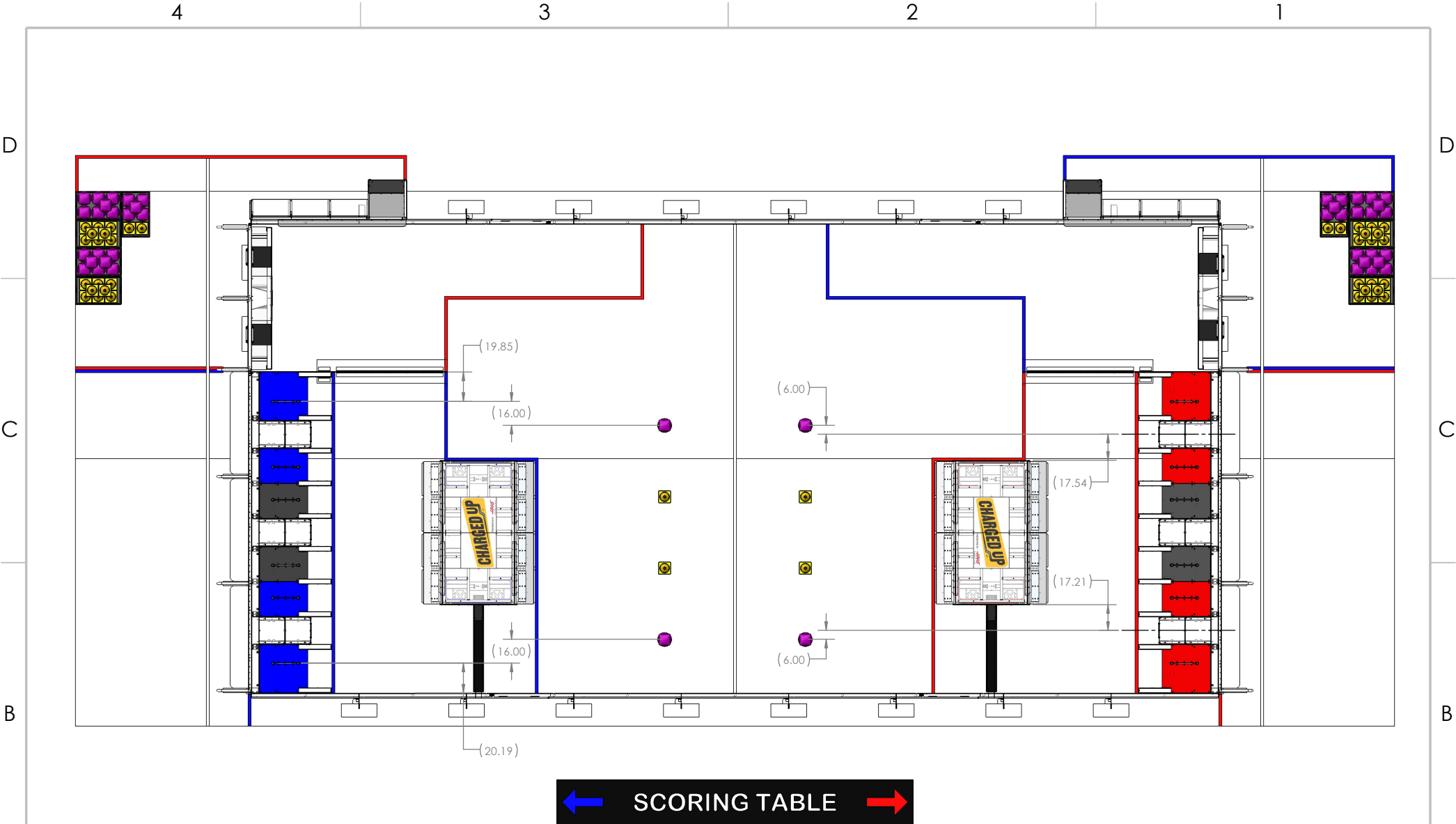
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← SCORING TABLE →

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$	FIELD	NAME	DATE
	DRAWN	JO	12/2/2022
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	REMOVE ALL BURRS AND SHARP EDGES.		
TITLE: 2023 Field Layout and Marking		SIZE	REV
		DWG. NO. C	A
SCALE: 1:45		SHEET 6 OF 7	



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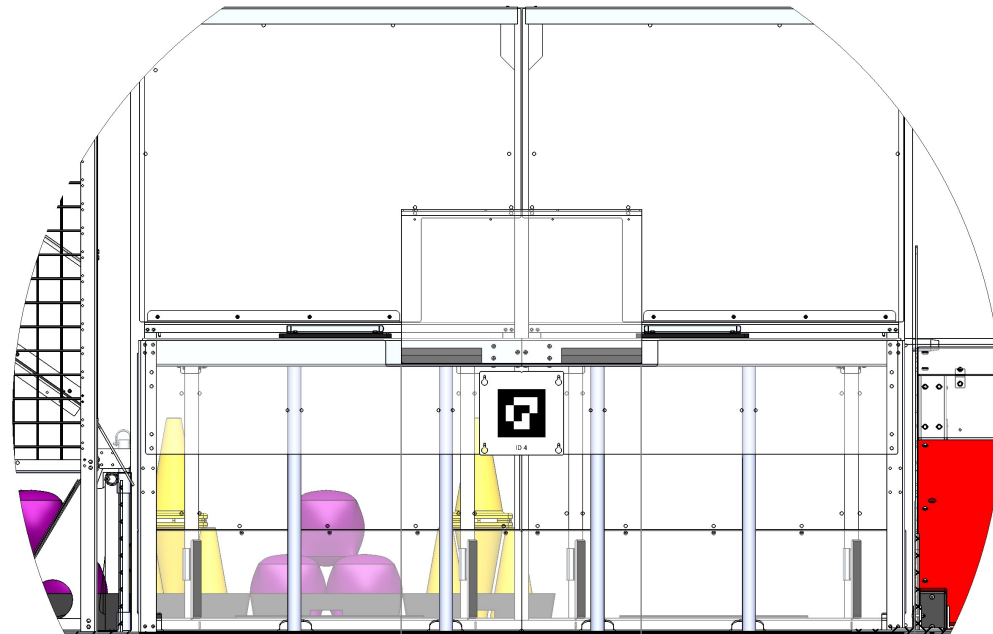
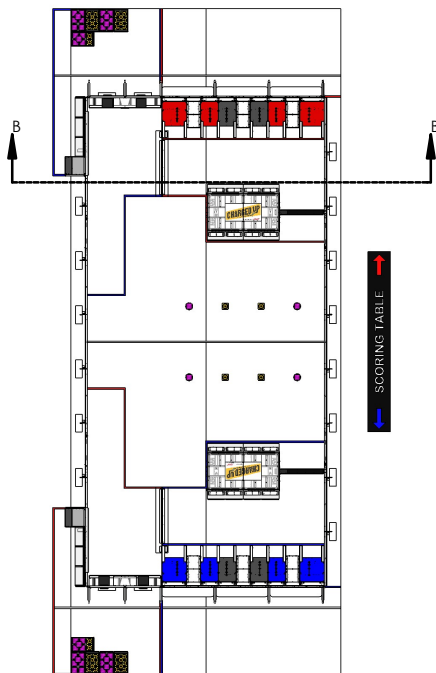
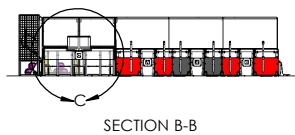
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3.18
Distance from guardrail
plastic to SINGLE SUBSTATION chute edge
(4.25 nominal dimension on AndyMark field)

34.86
(34.00 on AndyMark field)

34.21±1.00

DETAIL C
SCALE 1 : 12

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE
	DRAWN	JO	12/2/2022
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	PROPRIETARY AND CONFIDENTIAL		
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MATERIAL/FINISH:	COMMENTS:		
	REMOVE ALL BURRS AND SHARP EDGES.		
DO NOT SCALE DRAWING			

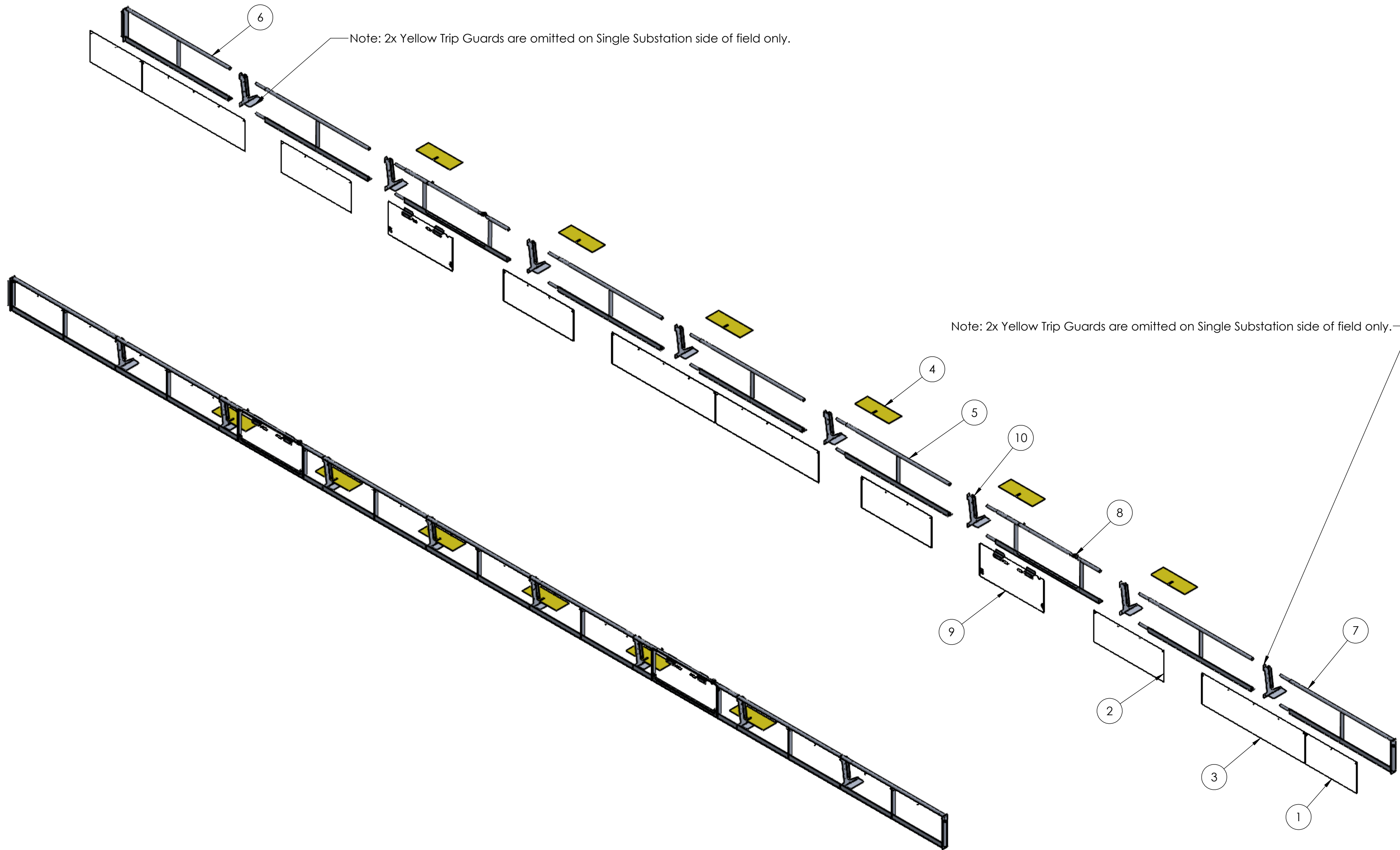
TITLE: 2023 Field Layout and Marking	
SIZE: C	DWG. NO.: FE-2023
SCALE: 1:128	SHEET 7 OF 7
REV: A	

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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00008	Field Plastic "A"	2
2	FE-00009	Field Plastic "B"	4
3	FE-00010	Field Plastic "C"	4
4	FE-00015	Trip Guard	6
5	FE-00022	Field Rail Assy - Mid	5
6	FE-00023	Field Rail Assy - Left	1
7	FE-00024	Field Rail Assy - Right	1
8	FE-00029	Field Gate, Assembly	2
9	FE-00047	Gate Plastic Assembly	2
10	FE-00050	Outrigger	8

UNLESS OTHERWISE SPECIFIED:

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 FRACTIONAL $\pm 1/2$
 ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
 TWO PLACE DECIMAL $\pm .50$

MATERIAL/FINISH:

DO NOT SCALE DRAWING

FIELD	NAME	DATE
DRAWN	JO	12/27/2022

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COMMENTS:

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TITLE: Side Border

SIZE	DWG. NO.	REV
C	FE-2023-02	

SCALE: 1:35	SHEET 1 OF 1
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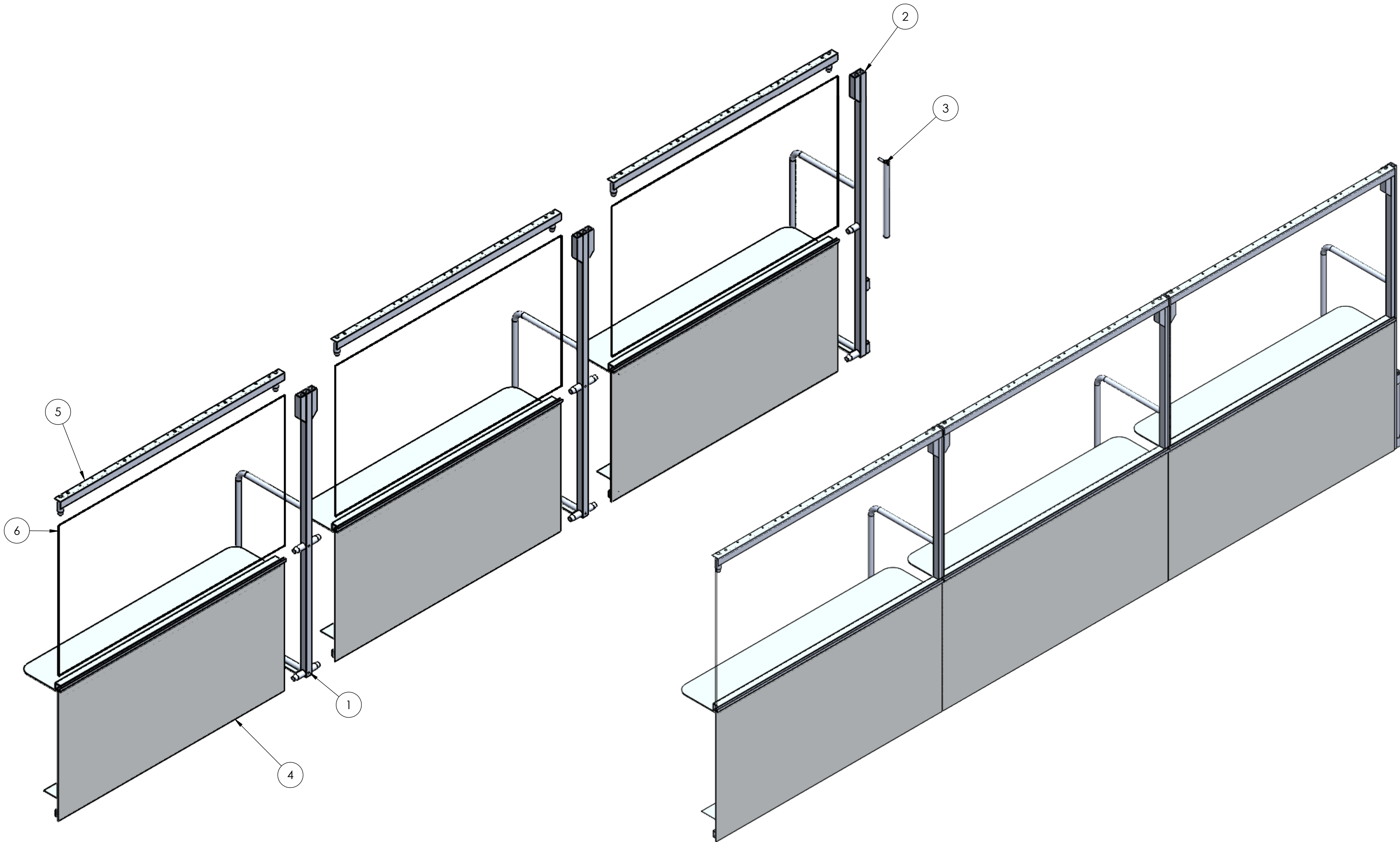
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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00001	Drivers Station Support	2
2	FE-00002	Corner Supports, Left	1
3	FE-00003	Rail Pin Assy	1
4	FE-00004	End Panel	3
5	FE-00007	Field Top Rail	3
6	FE-00012	Drivers Station Acrylic	3

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$	FIELD	NAME	DATE
	DRAWN	JO	12/27/2022
MATERIAL/FINISH:	PROPRIETARY AND CONFIDENTIAL		
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DO NOT SCALE DRAWING	COMMENTS:		  TITLE: <h2>Red Alliance End Wall</h2>
	REMOVE ALL BURRS AND SHARP EDGES.		
SCALE: 1:16		SHEET 1 OF 1	

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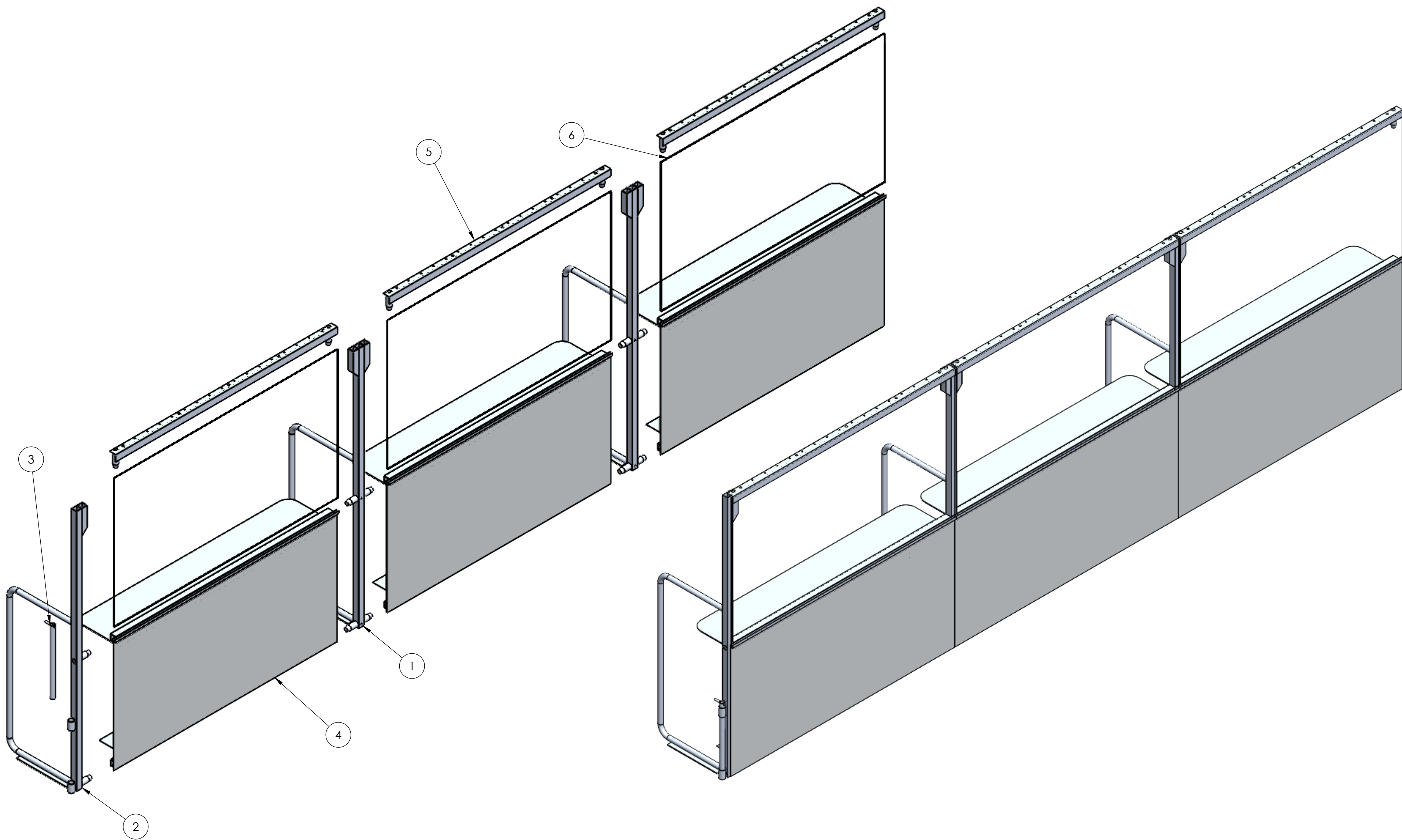
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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00001	Drivers Station Support	2
2	FE-00002_Left	Corner Supports, Left	1
3	FE-00003	Rail Pin Assy	1
4	FE-00004	End Panel	3
5	FE-00007	Field Top Rail	3
6	FE-00012	Drivers Station Acrylic	3

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$	FIELD	NAME	DATE
	DRAWN	JO	12/27/2022
MATERIAL/FINISH:	PROPRIETARY AND CONFIDENTIAL		
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DO NOT SCALE DRAWING	COMMENTS:		 
	REMOVE ALL BURRS AND SHARP EDGES.		
TITLE:		Blue Alliance End Wall	
SIZE	DWG. NO.	REV	
C	FE-2023-04		
SCALE: 1:16		SHEET 1 OF 1	

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