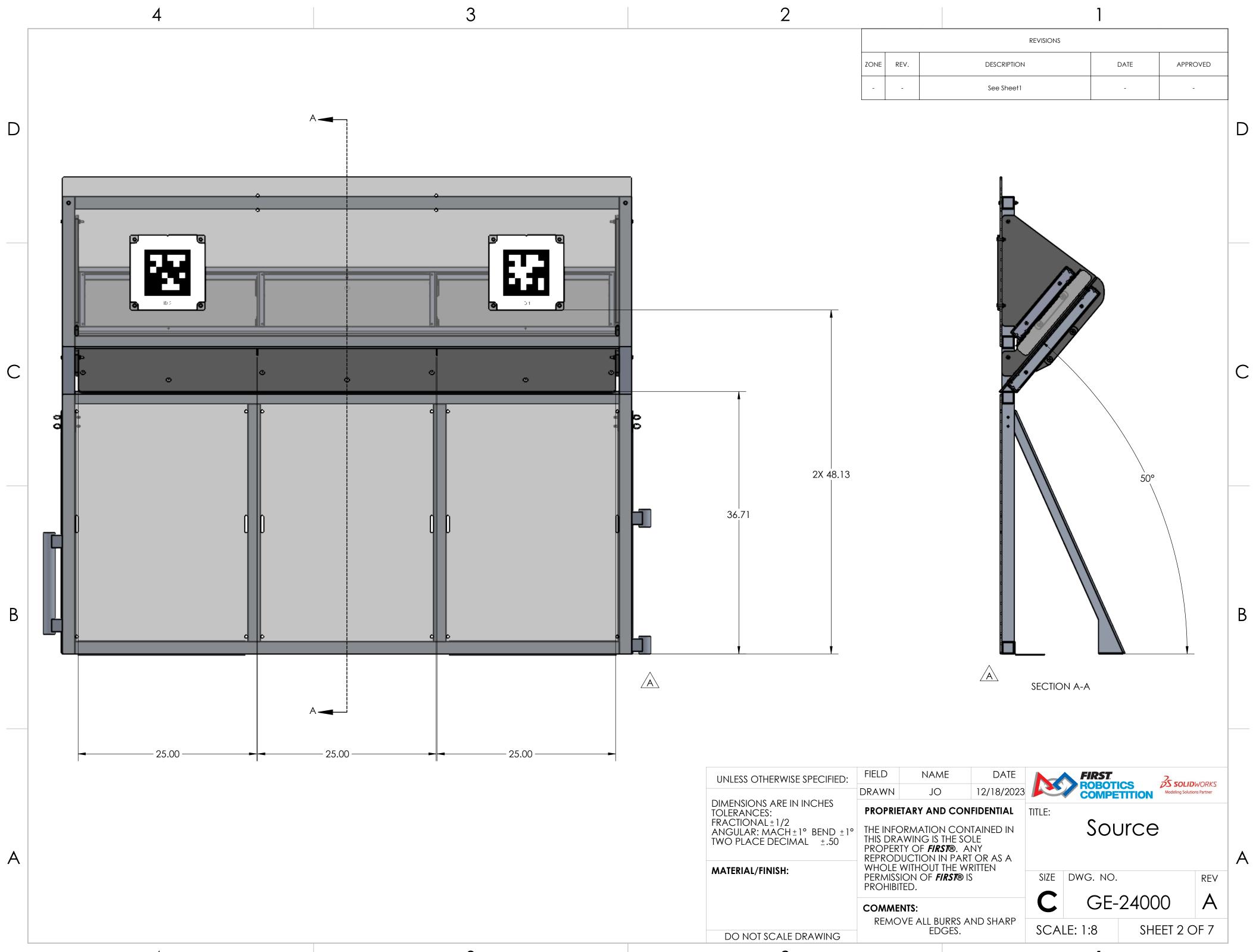
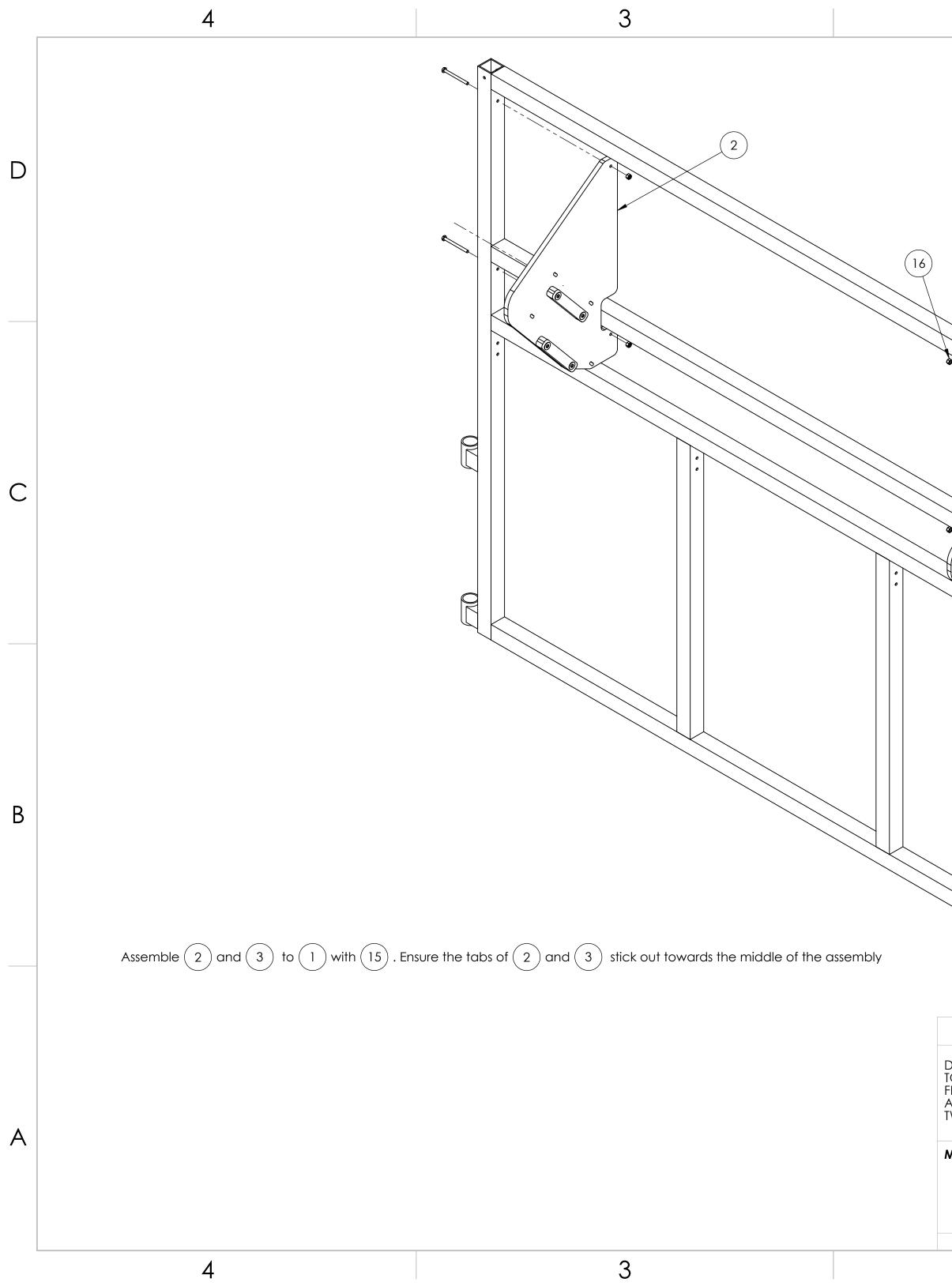
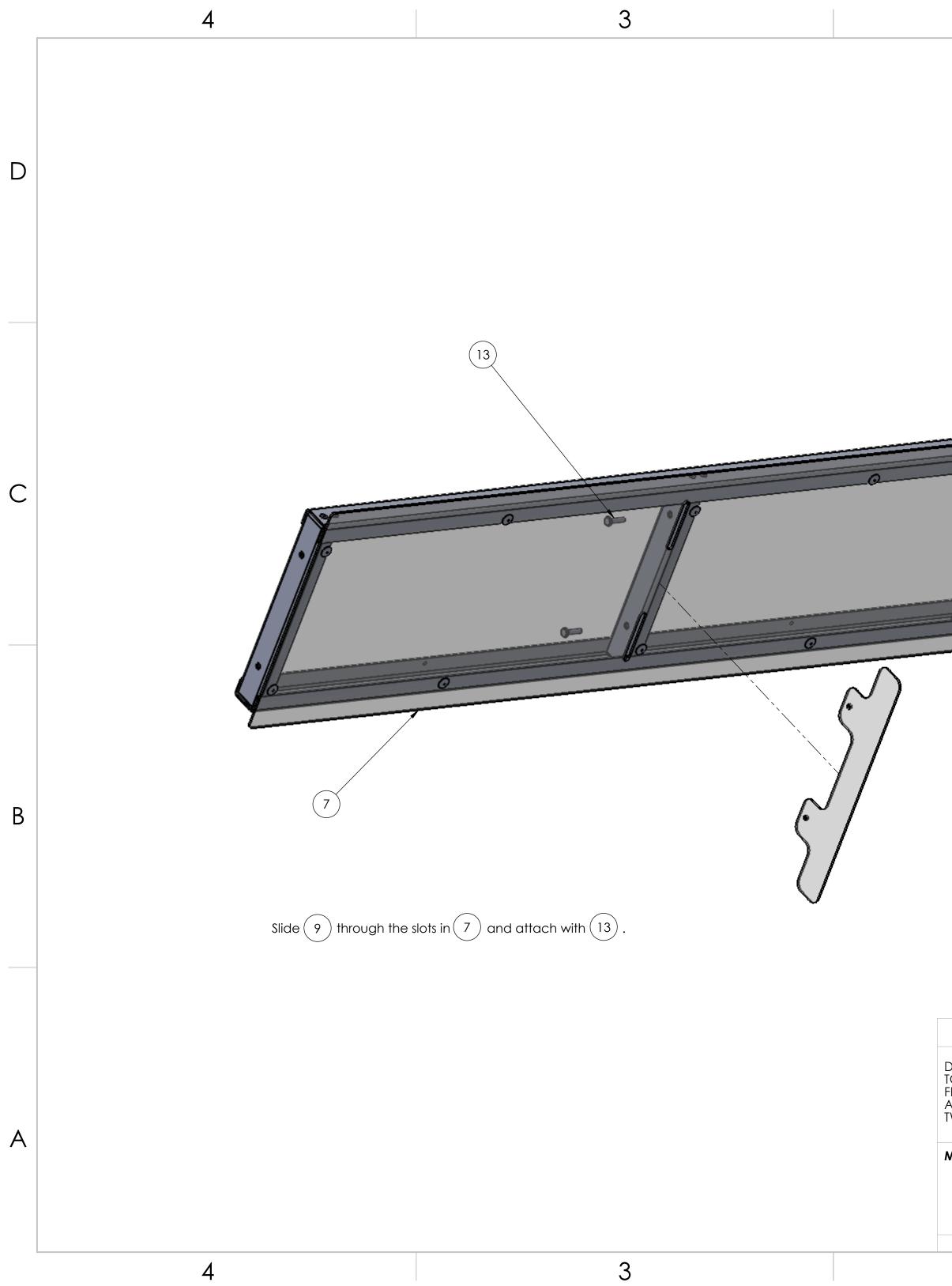


2				1						
					REVISIONS					]
	ZONE	REV.		DESCRIPT	10N		DATE	APPRC	APPROVED	
	2-B1, 2- B2	A		Sheet 2 ac	Ided	],	2/19/2023	JO	)	-
	B2						2/17/2023			_
	2		·		(11					D
				12						
	ITEM NO	Э.	PART N	JMBER		DESCRIPTIO	N		QTY.	
	1	GE	-24001		Fie	eld Border F	rame		1	
	2	GE	-24002		Side	Plate Asser	nbly Left		1	
	3	GE	-24003		Side F	Plate Assem	bly Right		1	
-	4	GE	-24006		Lc	wer Front F	Plastic		1	
	5	GE	-24007		Upper Front Plastic				1	
	6	GE	-24008		Chute Ramp Assembly				1	
_	7	GE	-24013		Chute Cover Assembly				1	
_	8	GE	-24017		Frame Support Leg				2	D
_	9	GE	-24018		Chute Divider				2	B
	10		00070		Anchor				2	
-	11		00083-ID			AprilTag			1	-
-	12		00083-ID2			AprilTag			1	
-	13		nfigurabl		-	1/4-20 Hex			20	
-	14		nfigurabl nfigurabl			g 1/4-20 He 1/4-20 Hex			2	
_	15		ck25_			n-Insert Loc			4	
	17		20A143	20		ed Steel Ring Release P			4	
UNLESS OTHERWISE SPECIFIED:	FIELD		NAME	DATE	=					
DIMENSIONS ARE IN INCHES	DRAW	N	JO	12/18/20	)23					
TOLERANCES: FRACTIONAL±1/2 ANGULAR: MACH±1° BEND±1 TWO PLACE DECIMAL ±.50	<ul> <li>THE IN THIS D PROP REPRO</li> </ul>	IFORMA RAWIN ERTY OF DDUCTI	ATION CC G IS THE S F <b>FIRST</b> ®.	ANY .RT OR AS A	Source					A
MATERIAL/FINISH:	PERM		OF <i>FIRST</i> ®		SIZE	DWG. NC	).		REV	
	СОМ	MENTS:			C	GE	-24000	C	A	
do not scale drawing		NOVE ALL BURRS AND SHARP EDGES.		SCALE: 1:8 SHEET 1 OF 7		F 7				
2						1				

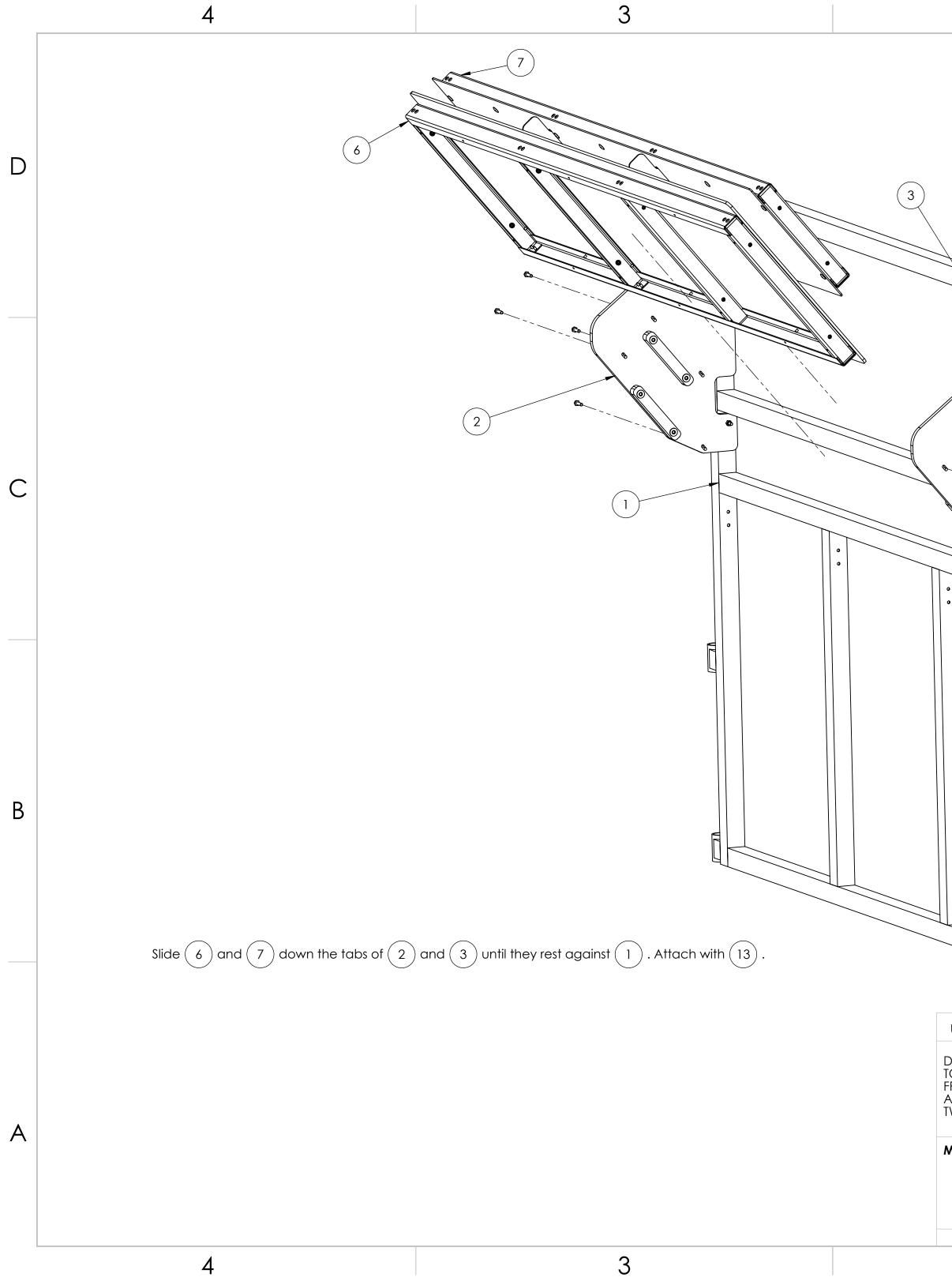




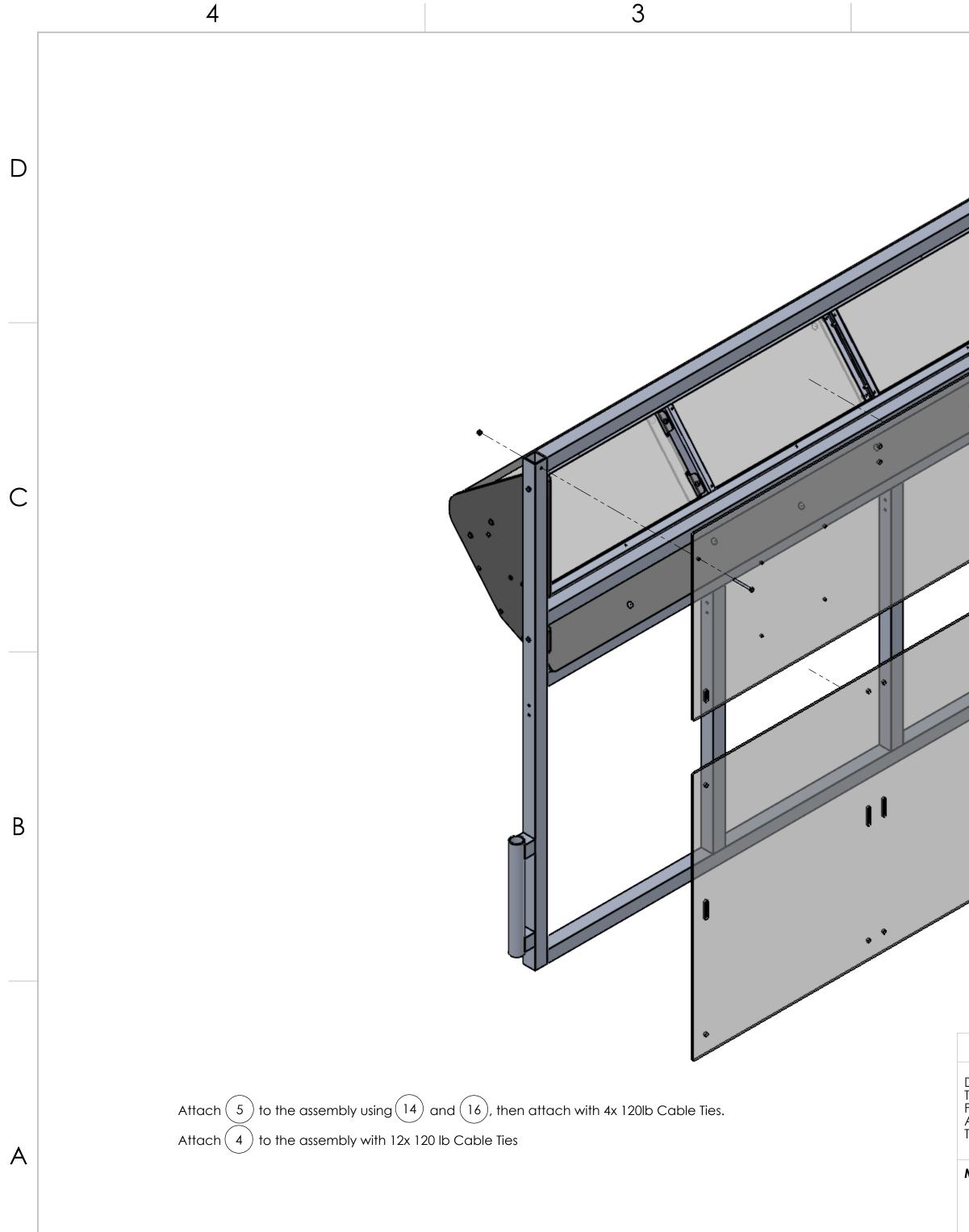
2		1	
3			D
			С
	1		В
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/2 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ±.50 MATERIAL/FINISH: DO NOT SCALE DRAWING	FIELDNAMED/DRAWNJO12/18/PROPRIETARY AND CONFIDENTIONTHE INFORMATION CONTAINEDTHIS DRAWING IS THE SOLEPROPERTY OFFIRST®. ANYREPRODUCTION IN PART OR ASWHOLE WITHOUT THE WRITTENPERMISSION OFFIRST® ISPROHIBITED.COMMENTS:REMOVE ALL BURRS AND SHAEDGES.	IN TITLE: SA SIZE DWG. NO. C GE-24000 A	<b>N</b>
2		1	



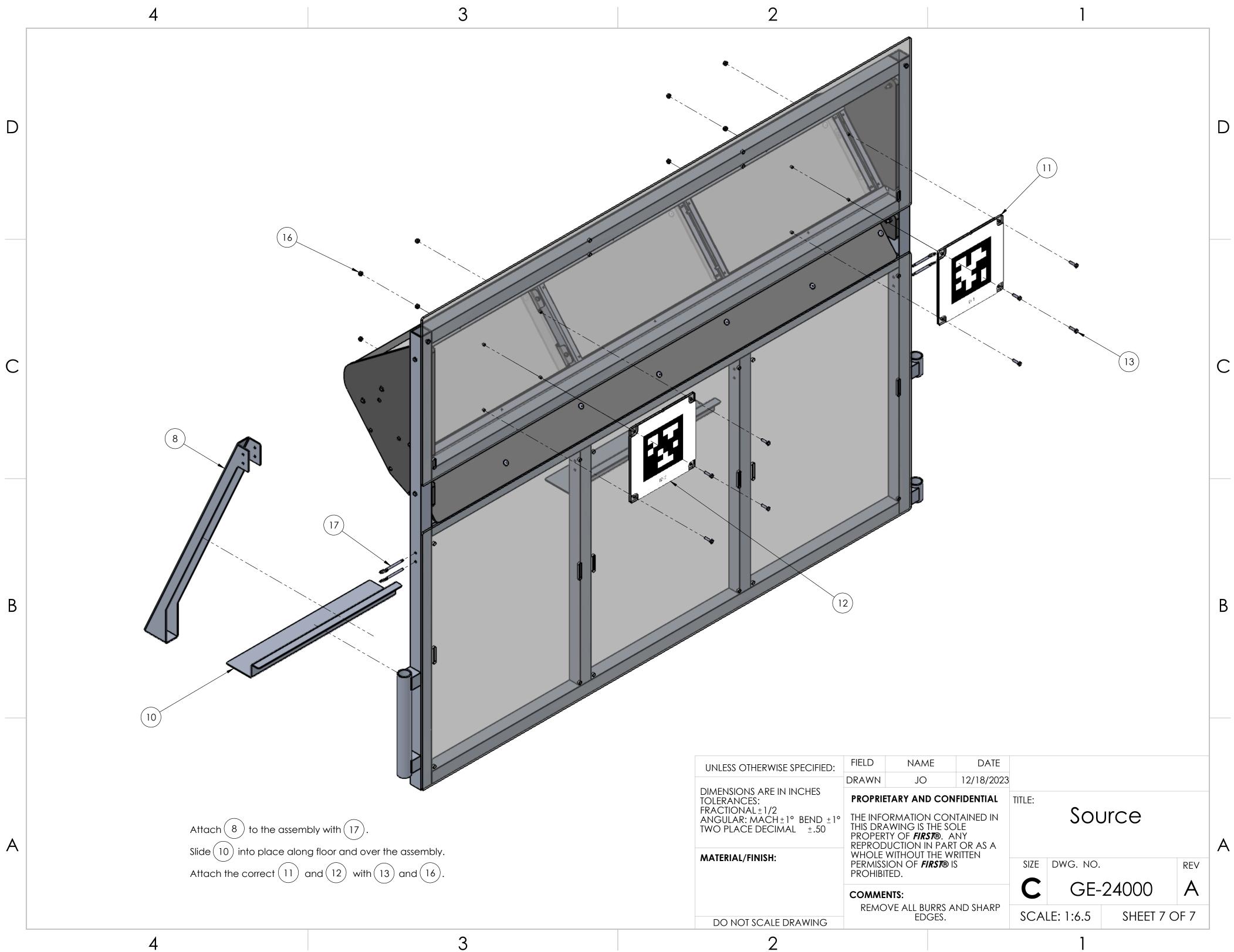
2				1	
					D
	°.				С
		5	9		В
UNLESS OTHERWISE SPECIFIED:	FIELD DRAWN	NAME JO	DATE 12/18/2023		
DIMENSIONS ARE IN INCHES TOLERANCES:	PROPRIE	TARY AND COI		TITLE:	_
FRACTIONAL±1/2 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.50	THIS DRA PROPERT	DRMATION COP WING IS THE SO TY OF <b>FIRST®</b> . A UCTION IN PAR	OLE ANY	Source	A
MATERIAL/FINISH:	WHOLE V	without the w Ion of <b>First</b> ®	VRITTEN	SIZE DWG. NO. REV	
	COMMENTS:			<b>C</b> GE-24000 A	
DO NOT SCALE DRAWING	REMO	VE ALL BURRS / EDGES.	and sharp	SCALE: 1:4 SHEET 4 OF 7	
2				1	_



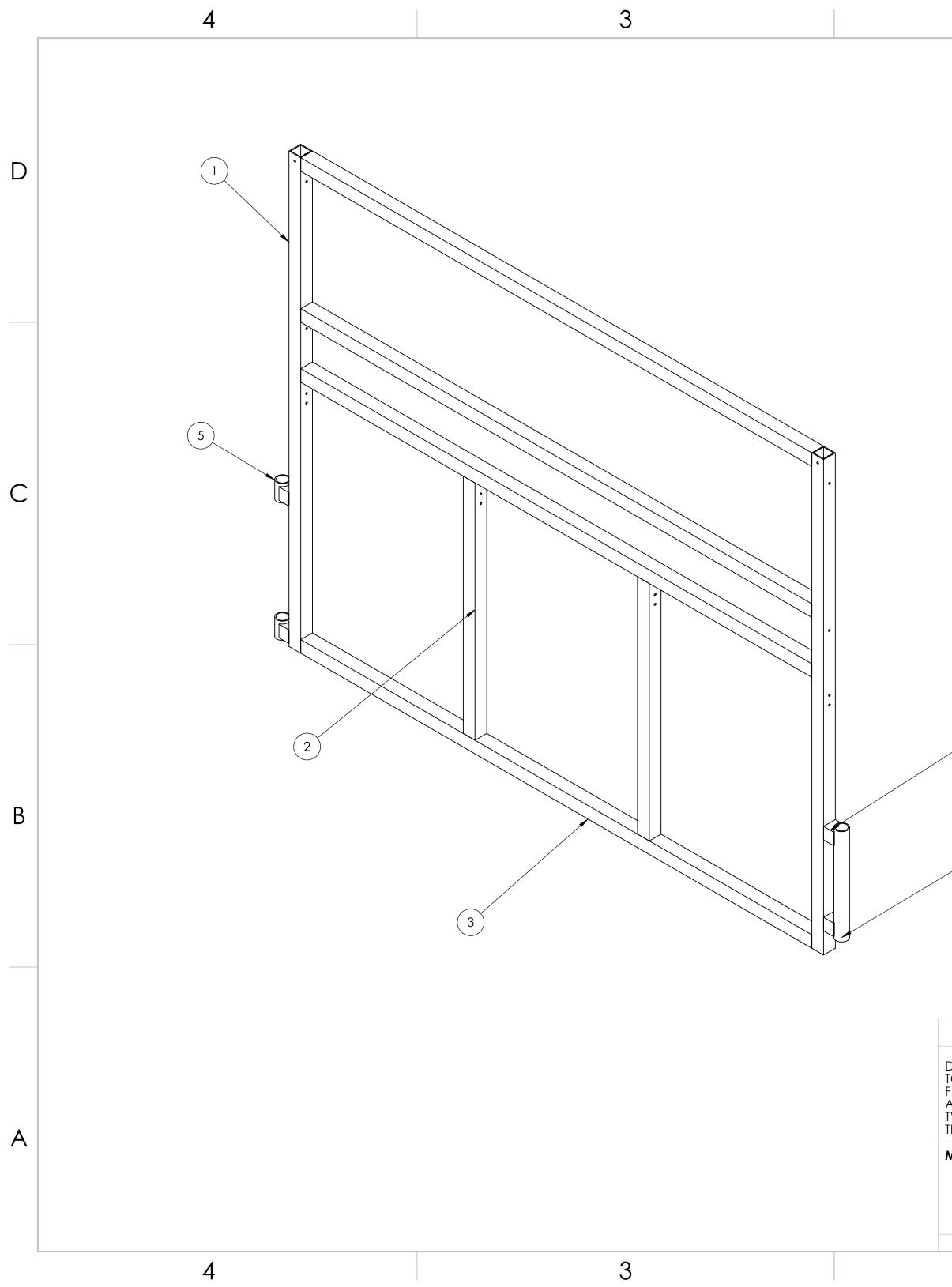
2				1			
							D
	13						С
							В
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/2 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ±.50 MATERIAL/FINISH: DO NOT SCALE DRAWING	FIELDNAMDRAWNJCPROPRIETARY ANTHE INFORMATIO THIS DRAWING IS PROPERTY OF FIR REPRODUCTION I WHOLE WITHOUT PERMISSION OF F PROHIBITED.COMMENTS: REMOVE ALL B ED	D 12/18/2023 D CONFIDENTIAL N CONTAINED IN THE SOLE 2570B. ANY IN PART OR AS A THE WRITTEN	TITLE:	owg. no. GE-	JICE 24000 SHEET 5 (	REV A OF 7	A



2			1		
		14			D
		4			С
•					B
UNLESS OTHERWISE SPECIFIED:	FIELD NAM DRAWN JO				-
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/2 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.50 MATERIAL/FINISH:	PROPRIETARY ANI	D CONFIDENTIAL N CONTAINED IN THE SOLE ST®. ANY N PART OR AS A THE WRITTEN	SIZE DWG. NO.	Jrce 24000 A	A
		JRRS AND SHARP GES.	SCALE: 1:8	SHEET 6 OF 7	-
DO NOT SCALE DRAWING			1		]
۷.			I		



DO N	IOT SC	ALE D	RAW	ING



6

2

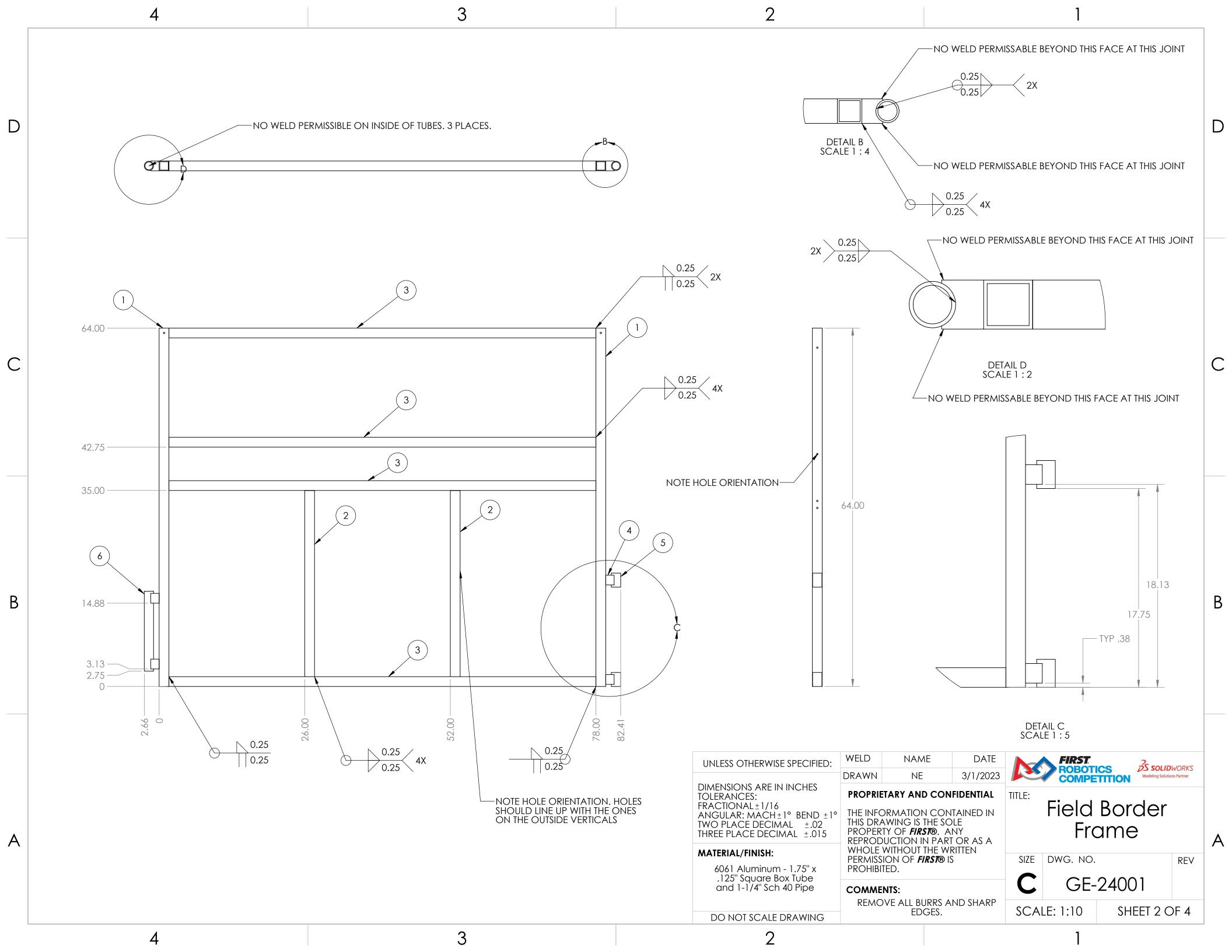
			I	
ITEM NO.	PART NUMBER		DESCRIPTION	QTY.
1	GE-2400	01-01	Field Border Frame Outer Upright	2
2	GE-24001-02		Field Border Frame Inner Upright	2
3	GE-24001-03		Field Border Frame Horizontal	4
4	GE-24001-04		Field Border Frame Pin Shell Connectors	4
5	GE-24001-05		Field Border Frame Short Pin Shell	2
6	GE-2400	01-06	Field Border Frame Long Pin Shell	1

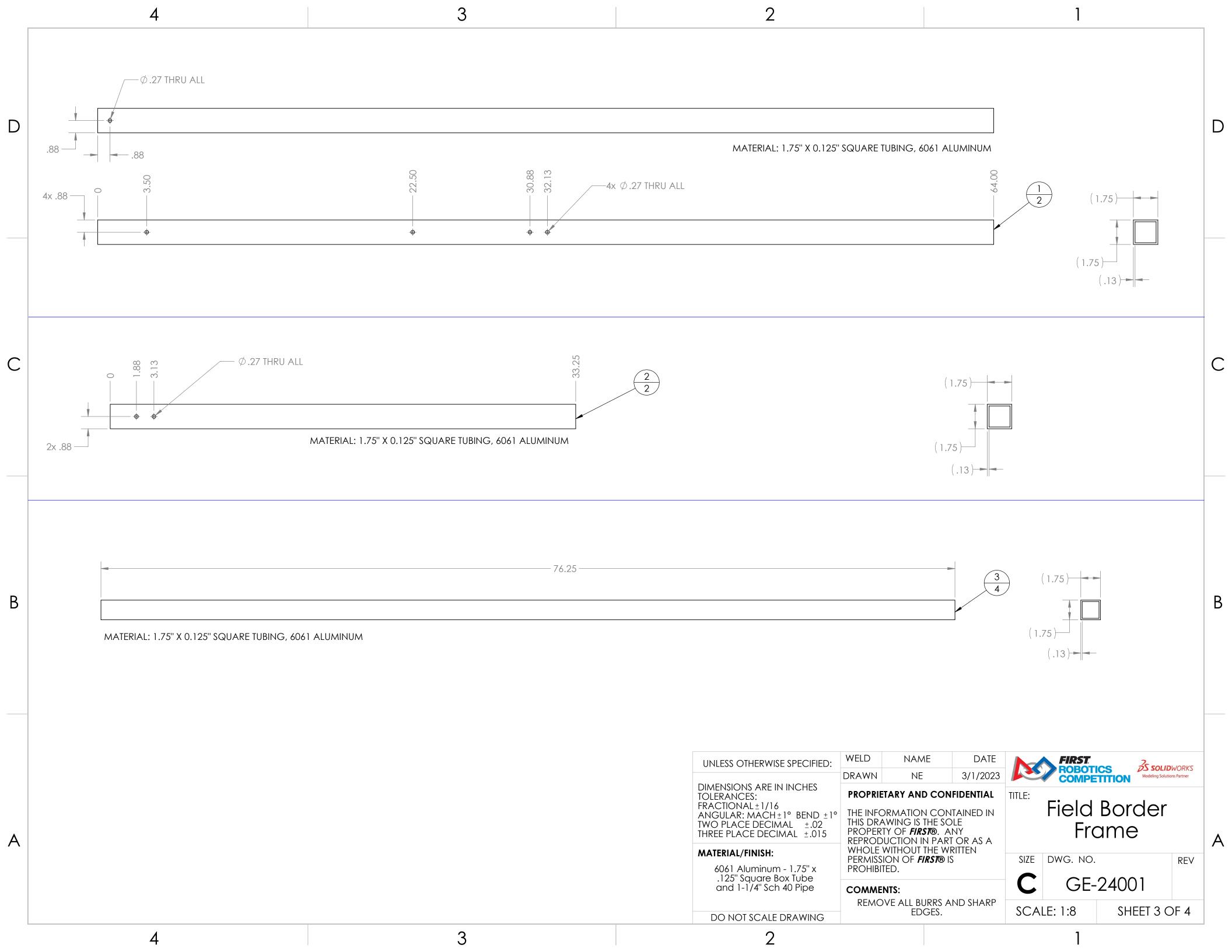
В

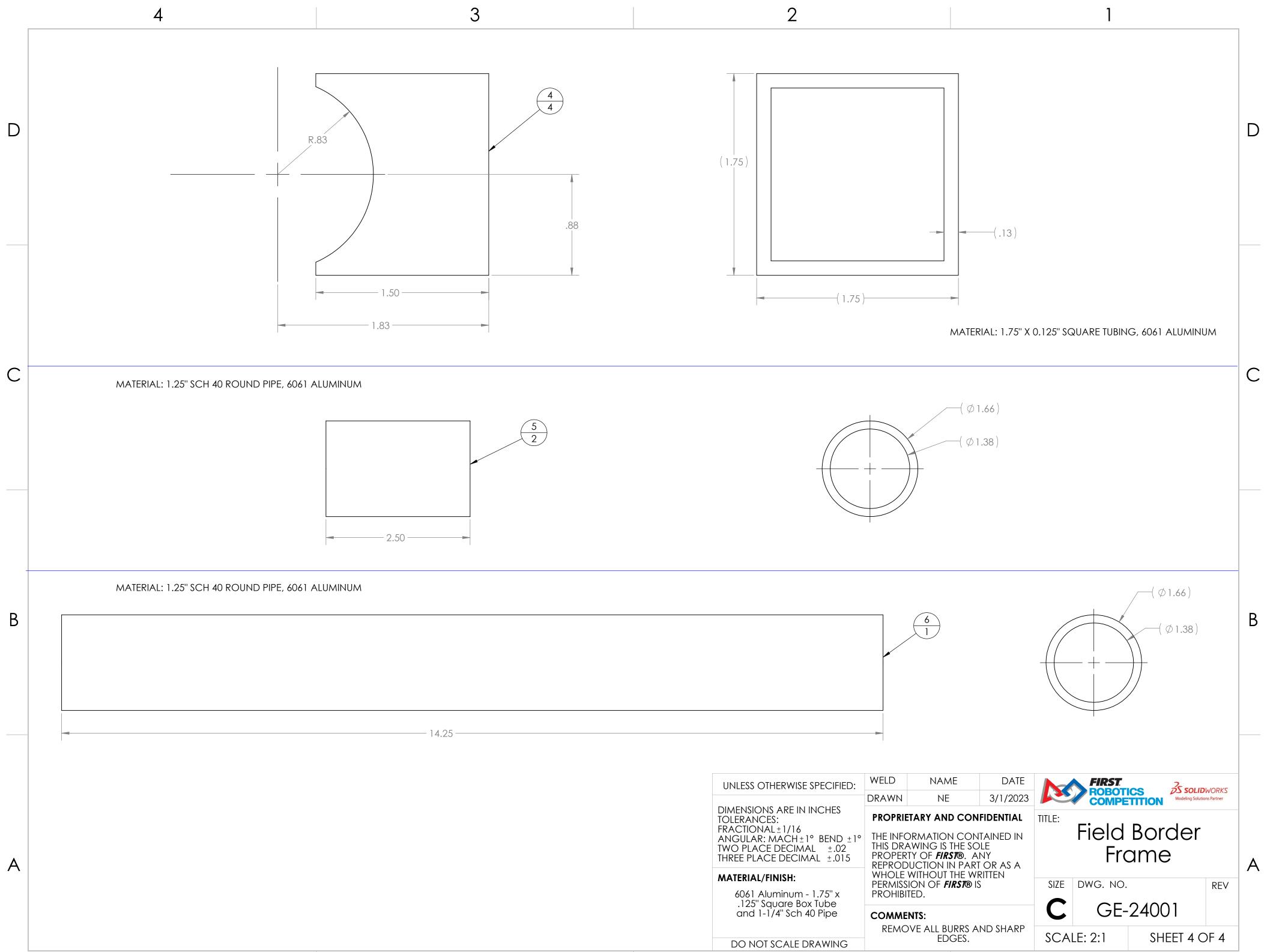
D

С

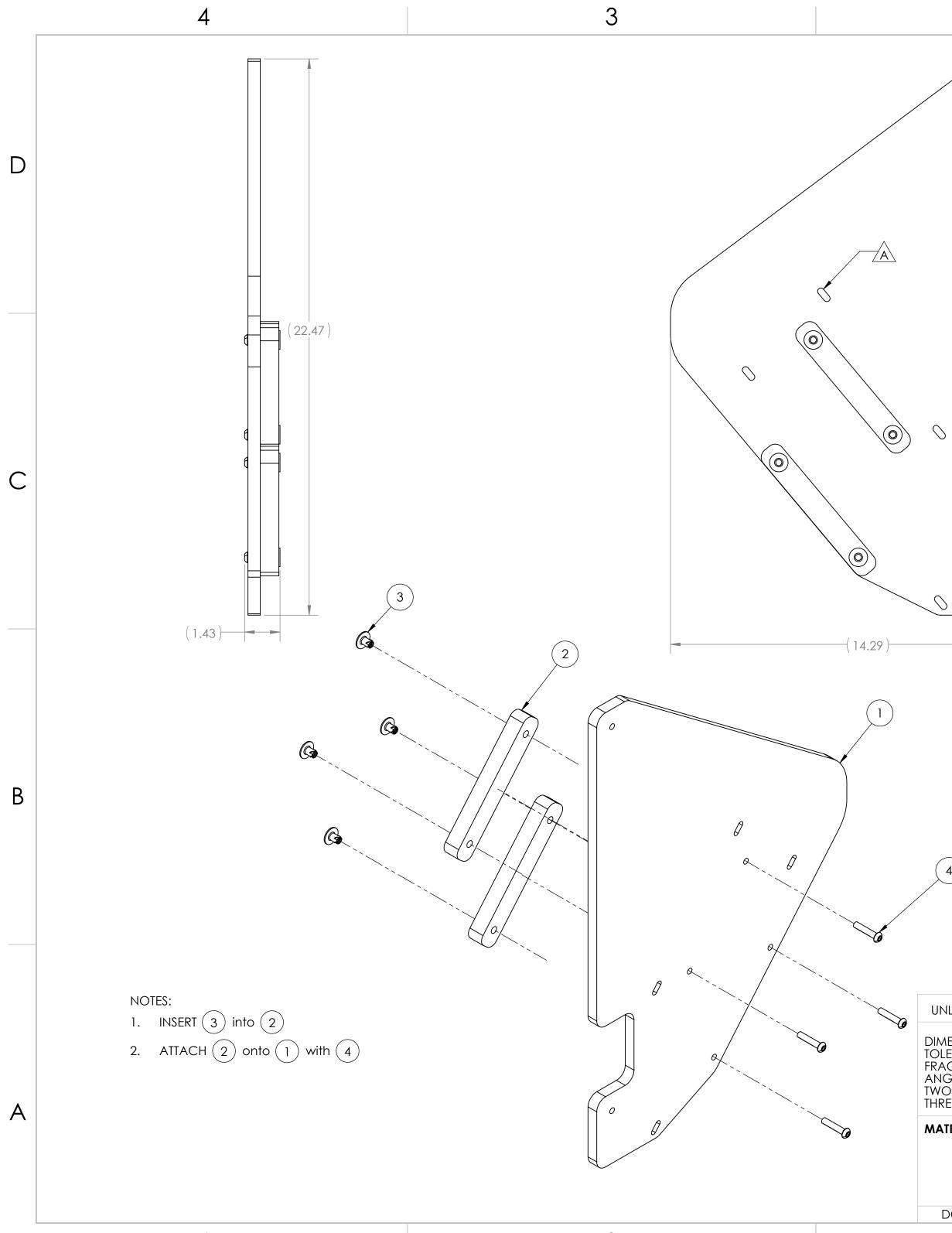
WELD NAME DATE **FIRST** UNLESS OTHERWISE SPECIFIED: **N** S SOLIDWORKS ROBOTICS COMPETITION Modeling Solutions Partner PROPRIETARY AND CONFIDENTIAL TITLE: Field Border Frame А SIZE DWG. NO. REV С GE-24001 COMMENTS: REMOVE ALL BURRS AND SHARP SCALE: 1:8 SHEET 1 OF 4 EDGES. DO NOT SCALE DRAWING







UNLESS OTHERWISE SPECIFIED:	WELD NAME		DATE		FIRST.		25 50117		
	DRAWN						WORKS		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND±1° TWO PLACE DECIMAL±.02 THREE PLACE DECIMAL±.015	THE INFO THIS DR/ PROPER	HE INFORMATION CONTAINED IN HIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A			Field Border Frame				A
MATERIAL/FINISH:	WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED. COMMENTS:			SIZE	DWG. NO.	REV		<b>PEV</b>	
6061 Aluminum - 1.75" x .125" Square Box Tube							KL ¥		
and 1-1/4" Sch 40 Pipe				C	<b>C</b> GE-2400		)]		
	REMC	VE ALL BURRS A	ND SHARP	SCALE: 2:1		Sheet 4 of 4			-
DO NOT SCALE DRAWING		EDGES.			JUALL. 2.1		JILLI 4 OI 4		
2				1					

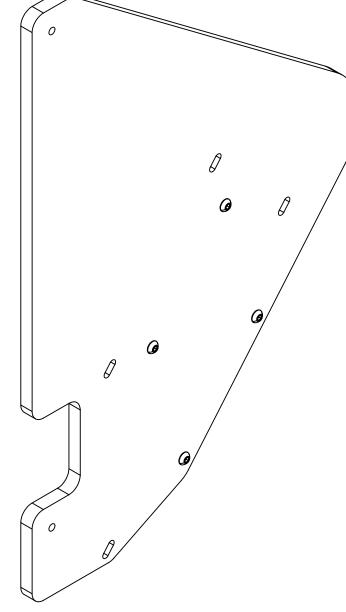


			1	
		REVISIONS		
ZONE	REV.	DESCRIPTION	DATE	APPROVED
D2	А	GE-24004 HAS UPDATED GEOMETRY	9/28/2023	NWE

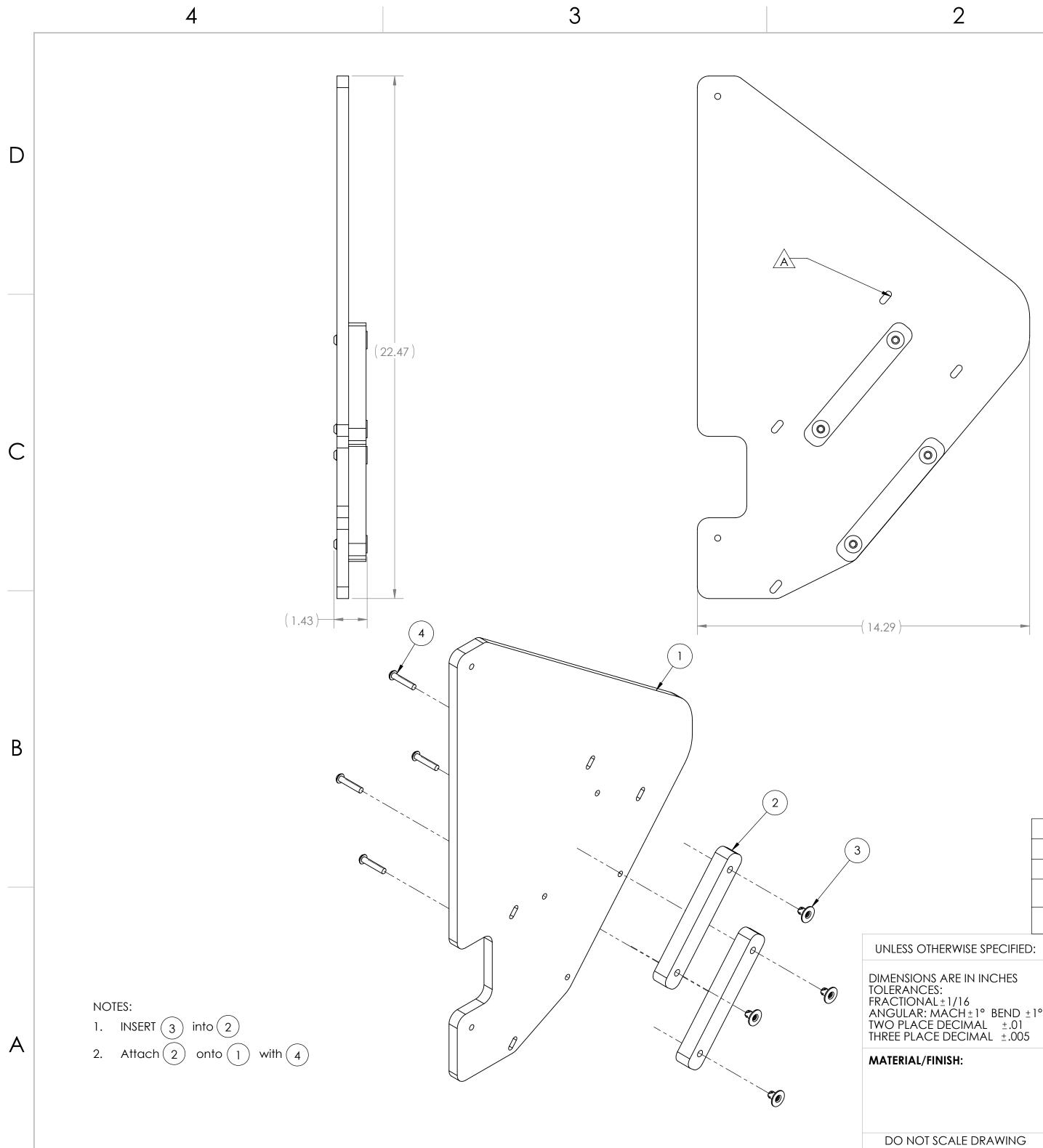
D

С

В



(4)	ITEM NO.	PART NUM	IBER		DESCRIPTIC	N	(	QTY.	1
-	1	GE-24004			Side Plate			1	1
	2	GE-24005		Side	e Plate Guic	le Rail		2	
	3	TeeNut_ultra_s 25_20	plit_rst	.25-20 TeeNut ultra split resistant			4		
	4	button_hex2	5_20_1.2	Button H	lead, Hex, 1,	/4-20 x 1.25		4	
UNLESS OTHERWISE SPECIFIED	VEND	NAME	DATE		<b>FIRST</b>		S SOLIDI		
	DRAWN	JO	6/7/202	3					
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ± TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	1° THE INFO THIS DR/ PROPER	TARY AND CON DRMATION CON AWING IS THE SO TY OF <i>FIRST</i> ®. A DUCTION IN PART		Side Plate Assembly Left				Δ	
MENSIONS ARE IN INCHES DLERANCES: ACTIONAL±1/16 NGULAR: MACH±1° BEND ± VO PLACE DECIMAL ±.01	WHOLE PERMISS	REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			DWG. NO.			REV	
	COMME REMC	VE ALL BURRS A	ND SHARP			24002		A	-
DO NOT SCALE DRAWING		EDGES.			SCALE: 1:3 SHEET			I OF I	



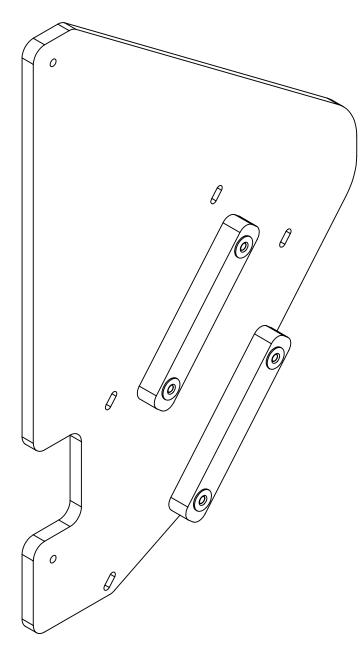
3

			1	
		REVISIONS		
ZONE	REV.	DESCRIPTION	DATE	APPROVED
D2	A	GE-24004 HAS UPDATED GEOMETRY	9/28/2023	NWE

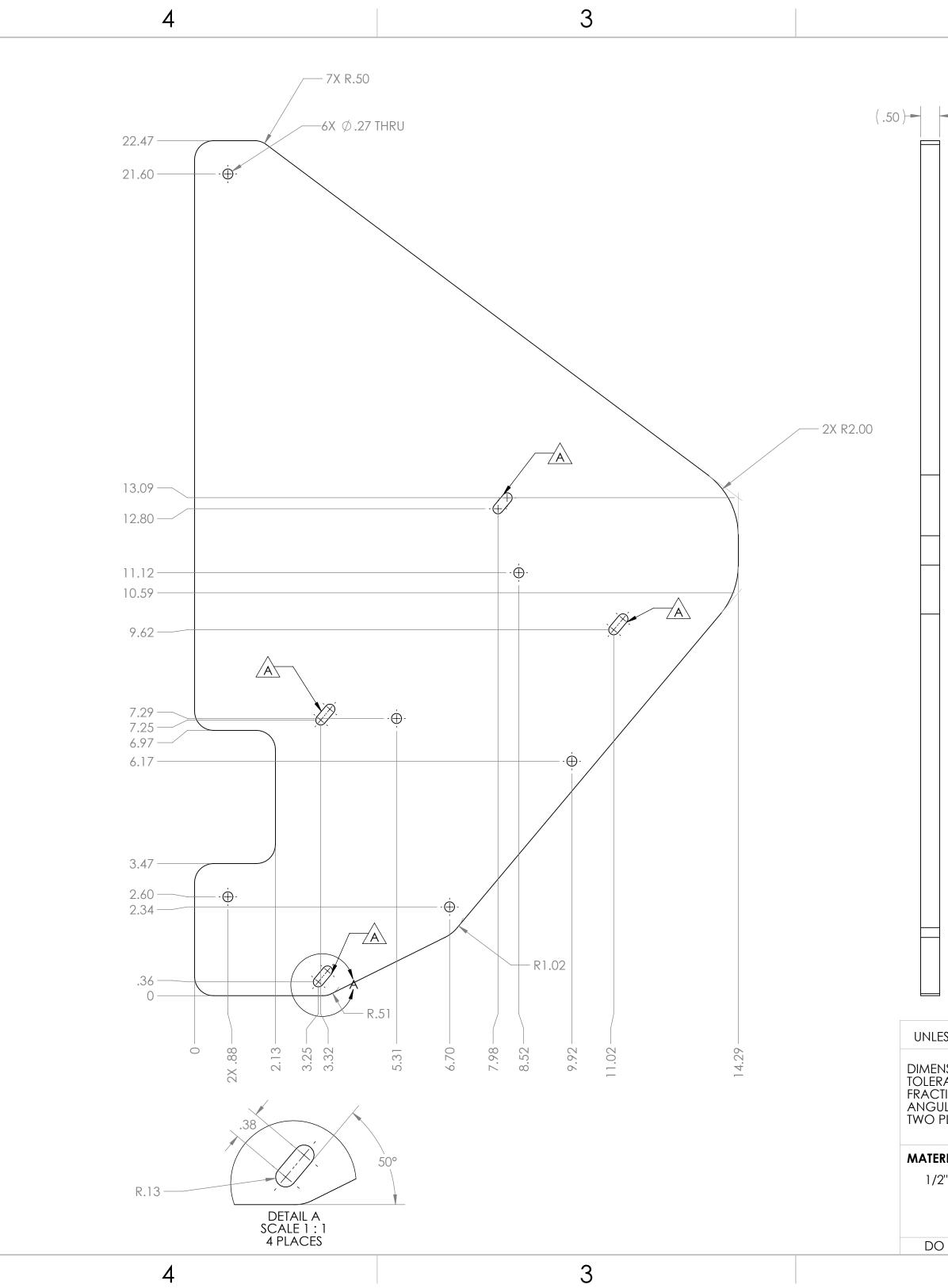
D

С

В



	ITEM NO.	PART NUM	1BER		DESCRIPTIO	N	QTY.	]
	1	GE-24004			Side Plate		1	1
	2	GE-24005		Side	e Plate Guid	e Rail	2	1
	3	TeeNut_ultra_s 25_20	plit_rst	.25-20 Tee	eNut ultra sp	lit resistant	4	
	4	button_hex2	5_20_1.2	Button H	ead, Hex, 1/	4-20 x 1.25	4	
UNLESS OTHERWISE SPECIFIED:		NAME	DATE		FIRST.		SOLIDWORKS	1
	DRAWN	JO	6/7/202	ROBOTICS COMPETITION			Solutions Partner	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ± TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	1° THE INFC THIS DRA PROPER	DRMATION CON WING IS THE SC TY OF <b>FIRST®</b> . A	<b>rst</b> ®. Any In Part Or As a I the Written		Side Plate Assembly Rig			Α
MATERIAL/FINISH:		WITHOUT THE WI ION OF <b>FIRST®</b> IS TED.			DWG. NO.		REV	-
	COMME			C	GE-	24003	A	
DO NOT SCALE DRAWING	EDGES.	EALL BURRS AND SHARP EDGES.		LE: 1:3	SHEET	1 OF 1		
2					1			



D

С

В

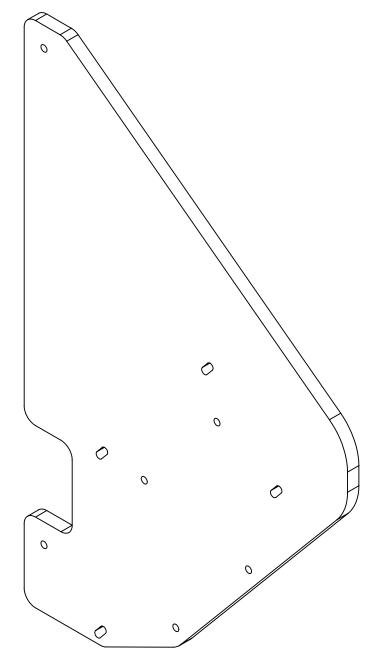
А

		REVISIONS		
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B4, C3	А	4 HOLES WERE REPLACED WITH SLOTS	9/28/2023	NWE

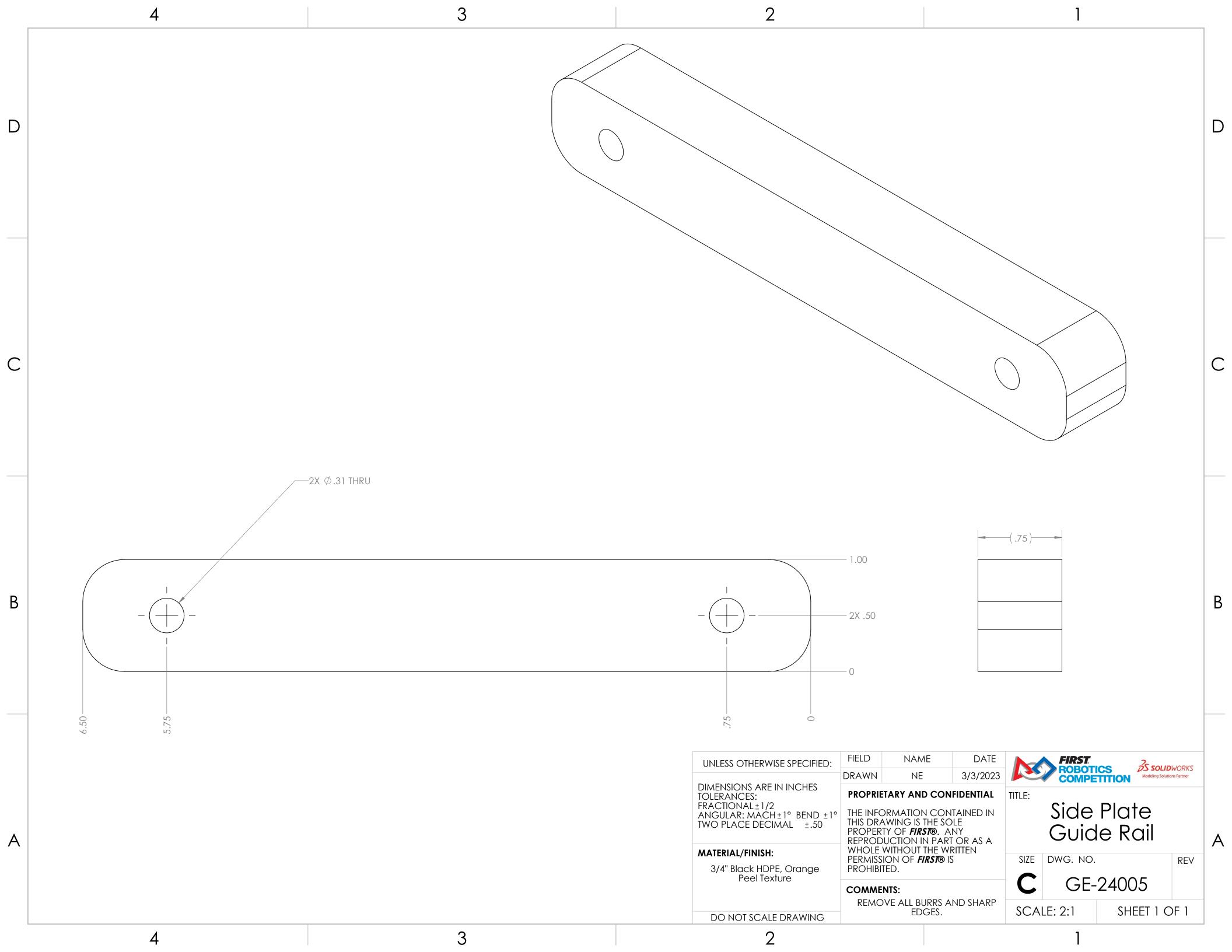
D

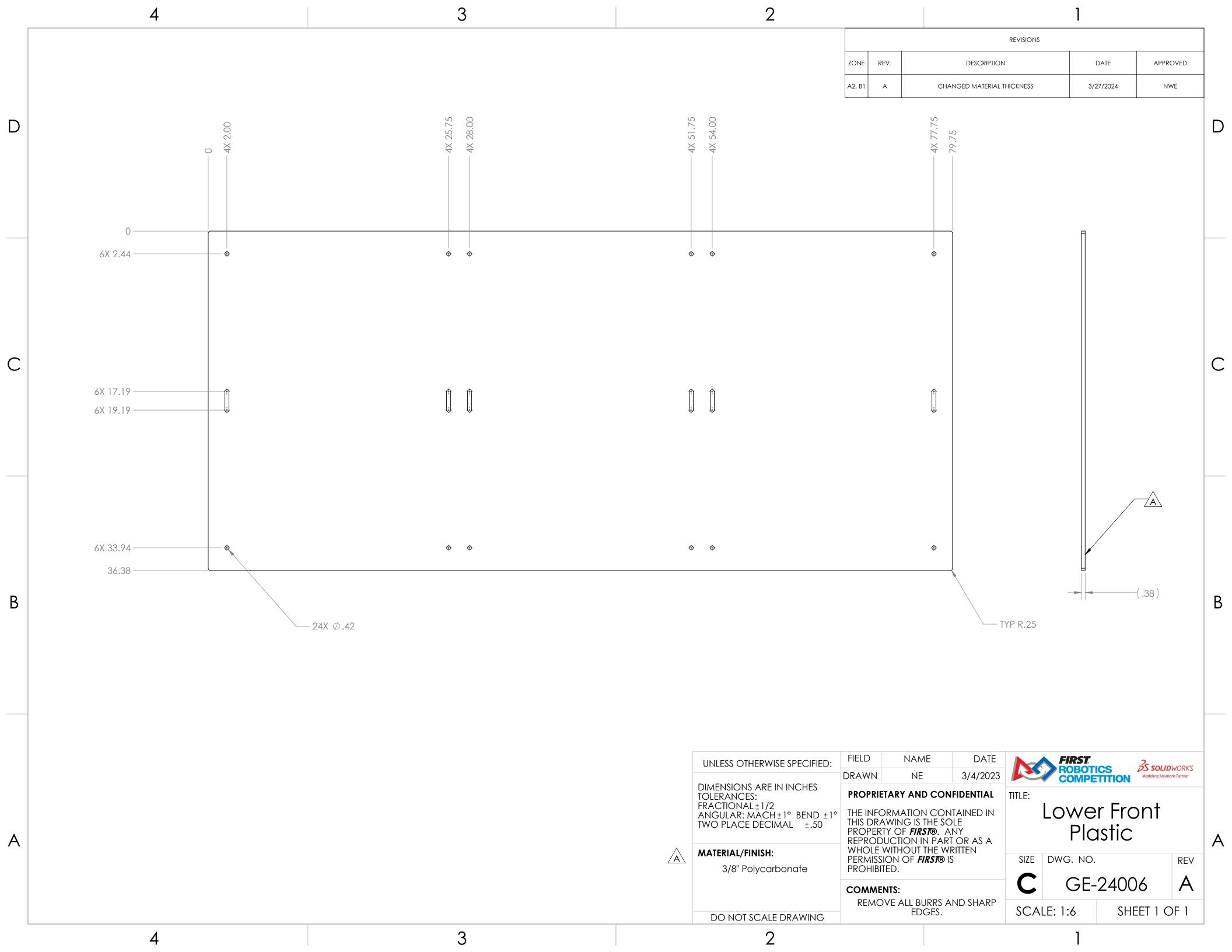
С

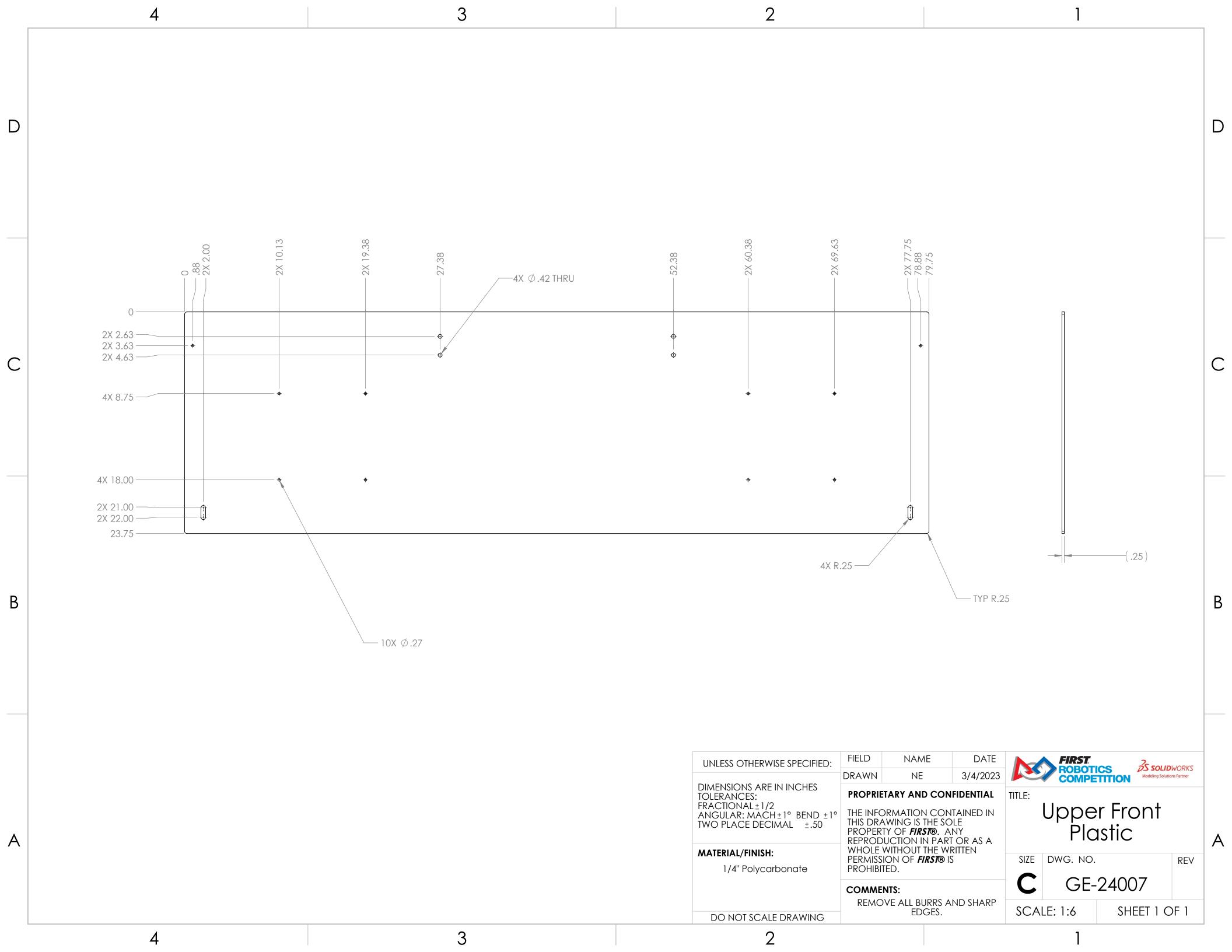
В

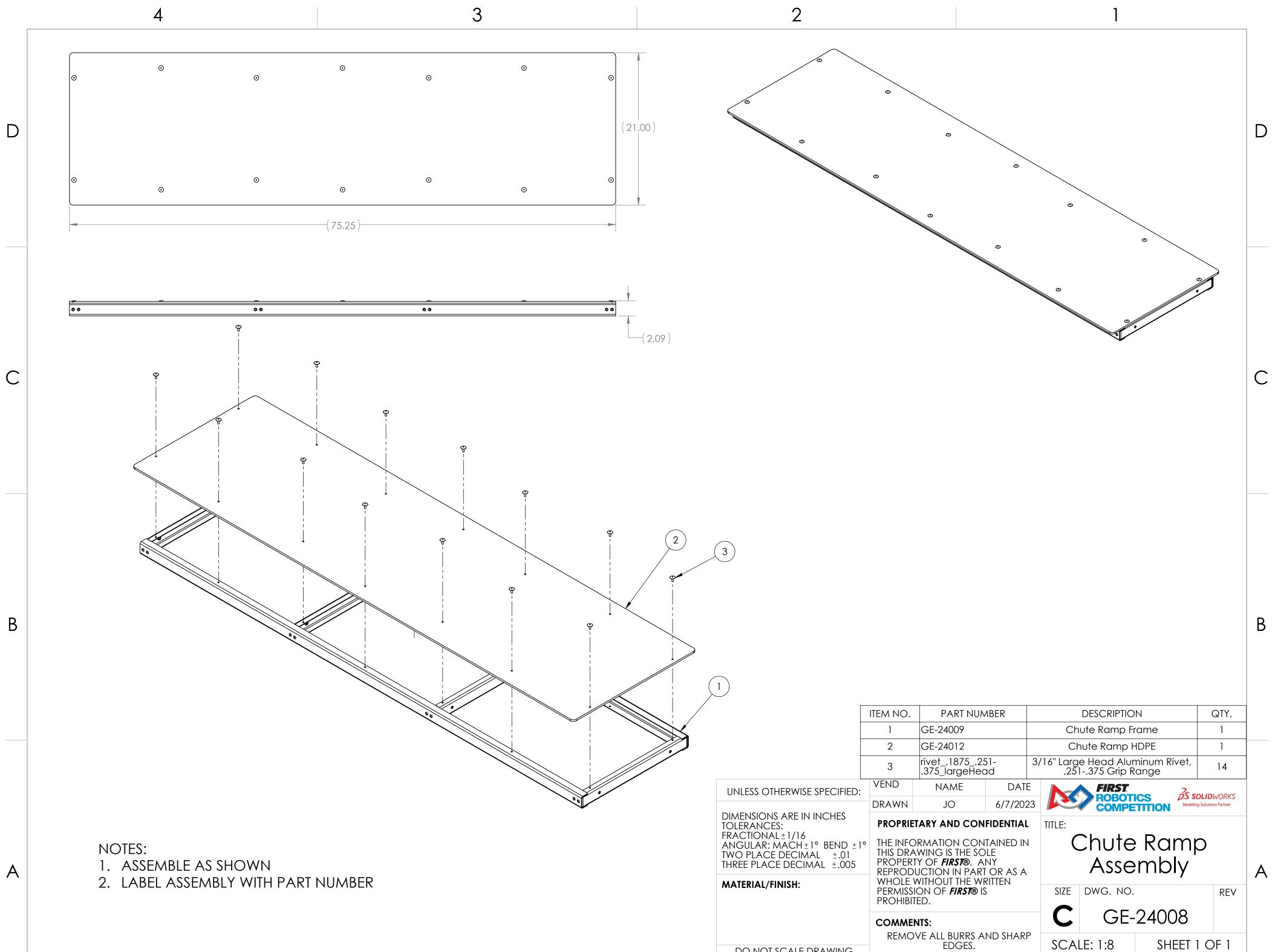


UNLESS OTHERWISE SPECIFIED:	FIELD	FIELD NAME			<b>FIRST</b>		S SOLID	MORKS	
	DRAWN	NE	3/3/2023		ROBOT	Modeling Solutions Partner			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/2 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.50	THE INFO THIS DRA PROPER	TARY AND CON DRMATION CON WING IS THE SC TY OF <i>FIRST</i> ®. A UCTION IN PAR	ITAINED IN DLE .NY	Side Plate					A
MATERIAL/FINISH:	PERMISS	without the w Ion of <b>first</b> ® 1:		SIZE	DWG. NO.	. RE		REV	7 .
1/2" Black HDPE, Orange Peel Texture	PROHIBI	TED.						٨	
	COMME		C	GE-	-2400	)4	A		
DO NOT SCALE DRAWING	REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:2		Sheet 1 of 1		)F 1	
2					1				1

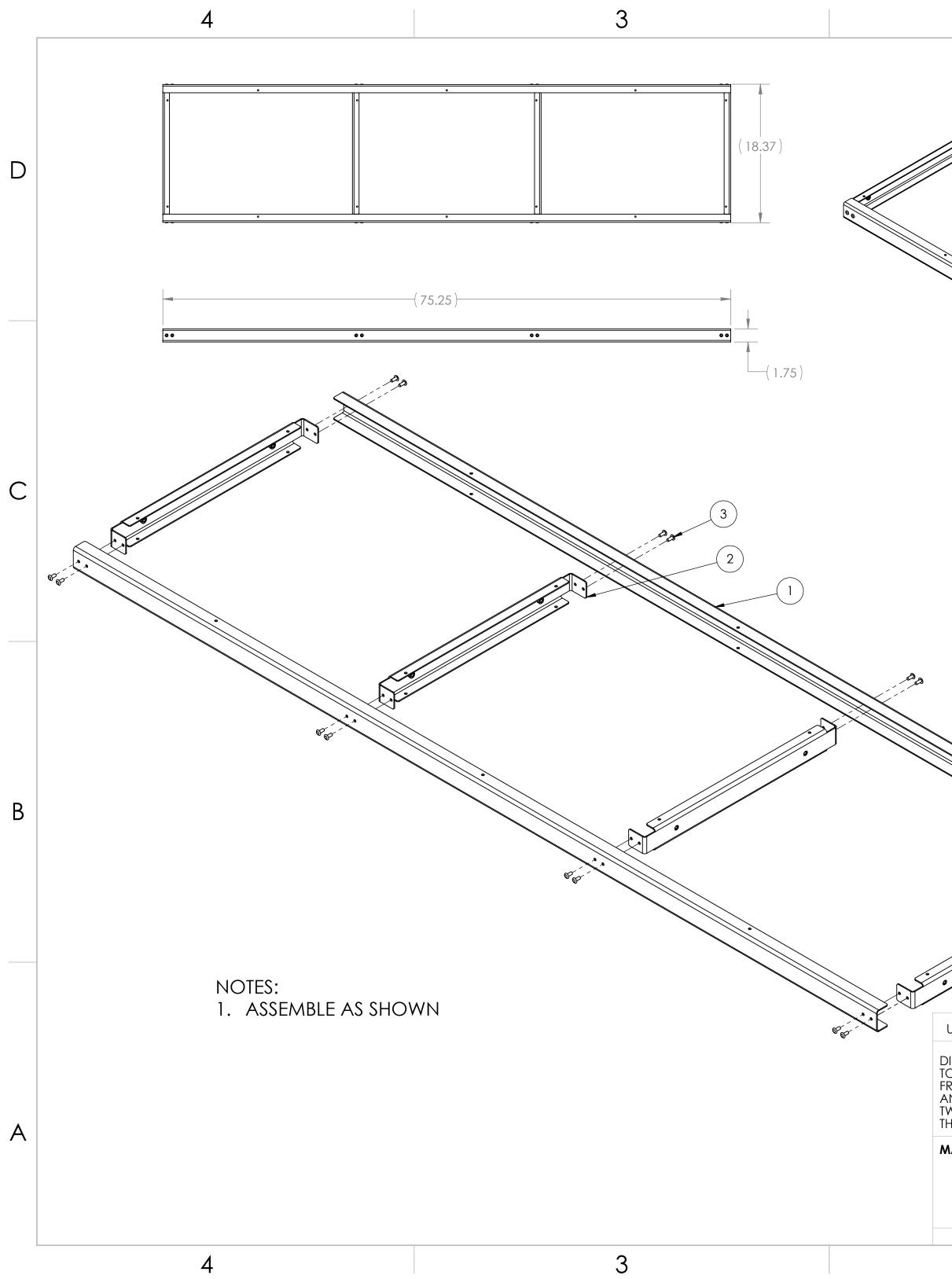




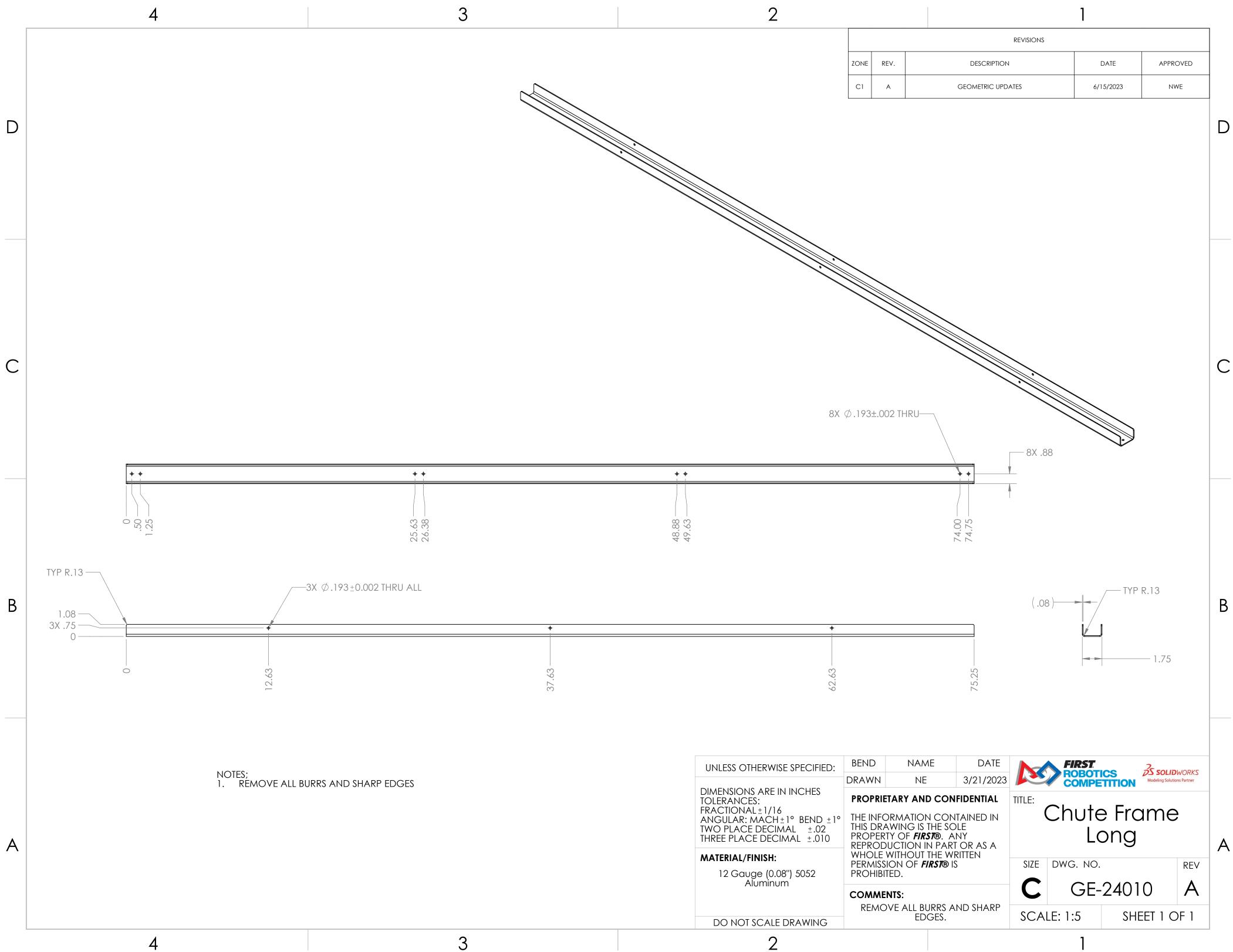




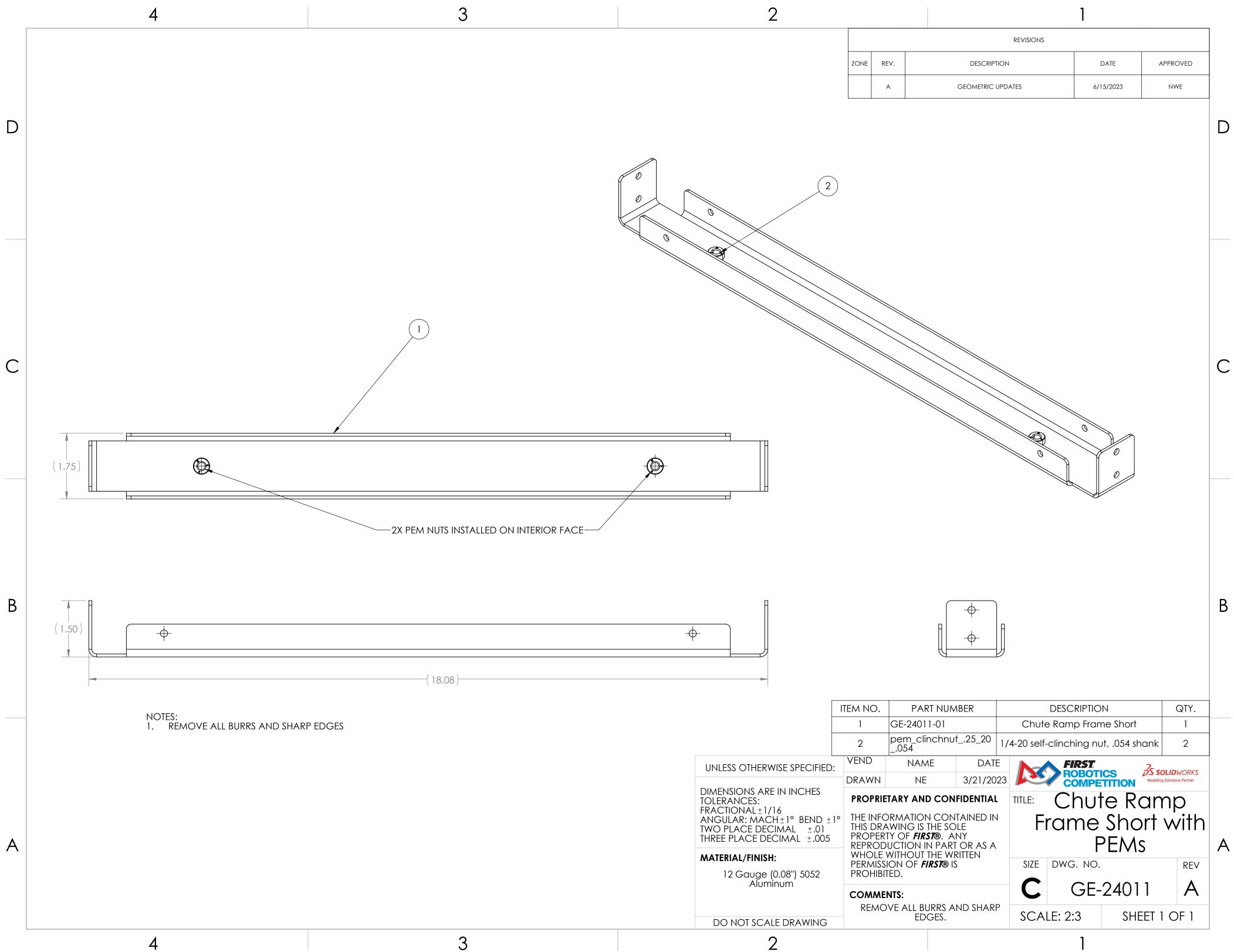
DO NOT SCALE DRAWING



2			1			
						D
						С
·	ITEM NO. PA	RT NUMBER	DESCRIPTIO	N	QTY.	В
	1 GE-240	10	Chute Frame	Long	2	
•	2 GE-240 3 rivet18	11 87512625	Chute Ramp Frame S 3/16" Rivet, .12625		4	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ± TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH:	DRAWN JC PROPRIETARY AN THE INFORMATION THIS DRAWING IS PROPERTY OF FIR REPRODUCTION I WHOLE WITHOUT PERMISSION OF F	D CONFIDENTIAL N CONTAINED IN THE SOLE ST®. ANY IN PART OR AS A THE WRITTEN		e Ramp ame	Dilutions Partner	A
	PROHIBITED.			-24009		
do not scale drawing		URRS AND SHARI GES.	SCALE: 1:10	SHEET 1	OF 1	
2			1			

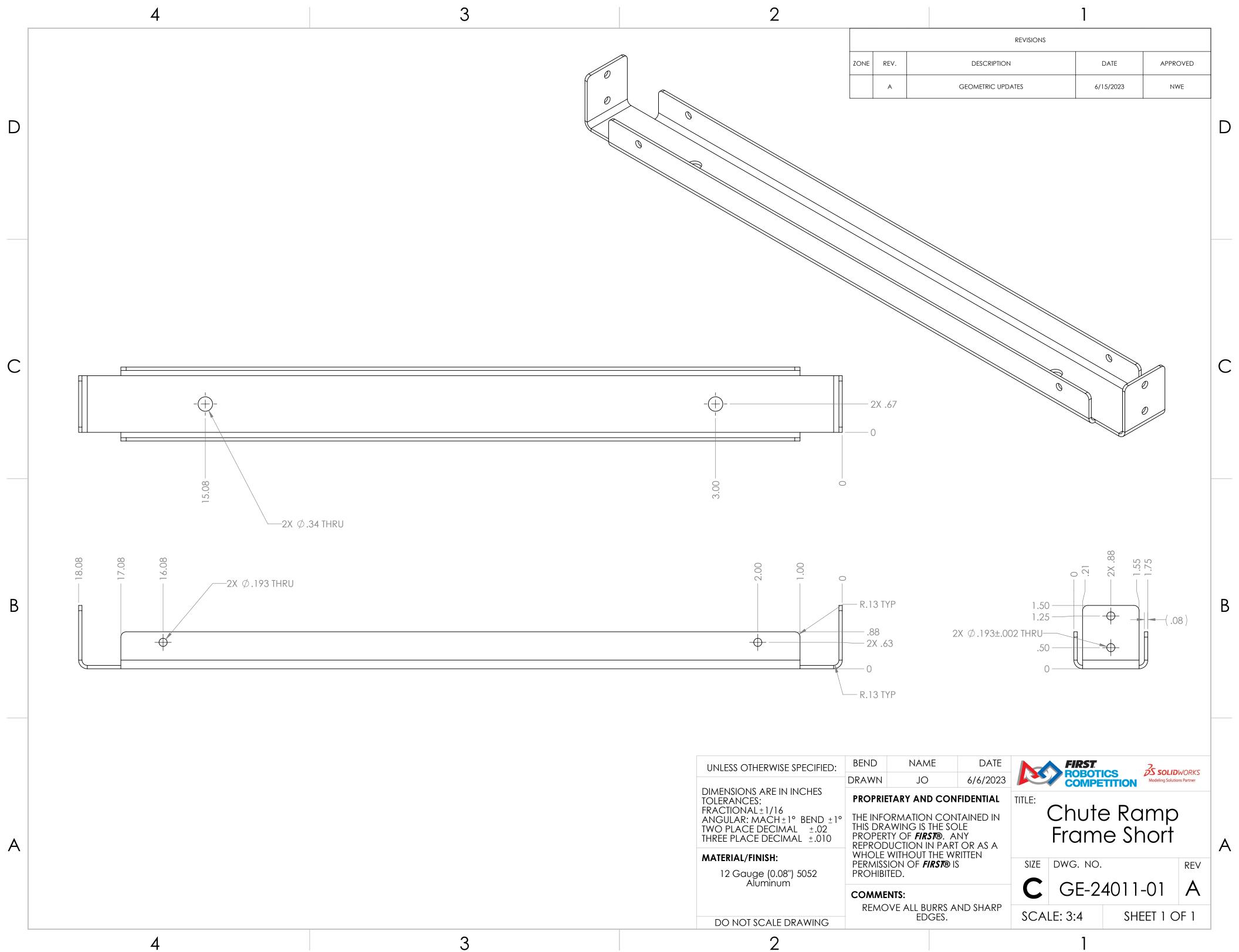


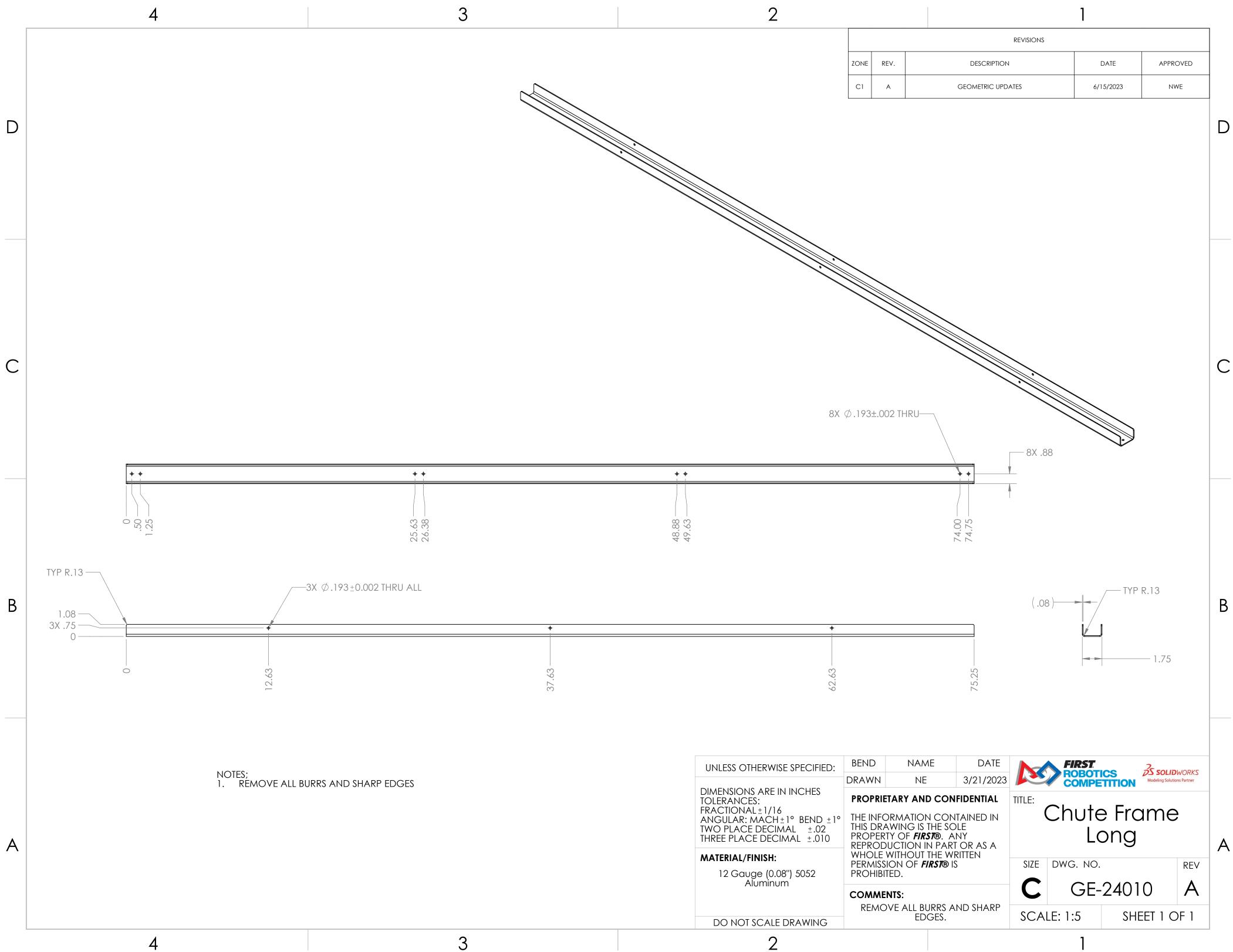
			I	
		REVISIONS		
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C1	А	GEOMETRIC UPDATES	6/15/2023	NWE



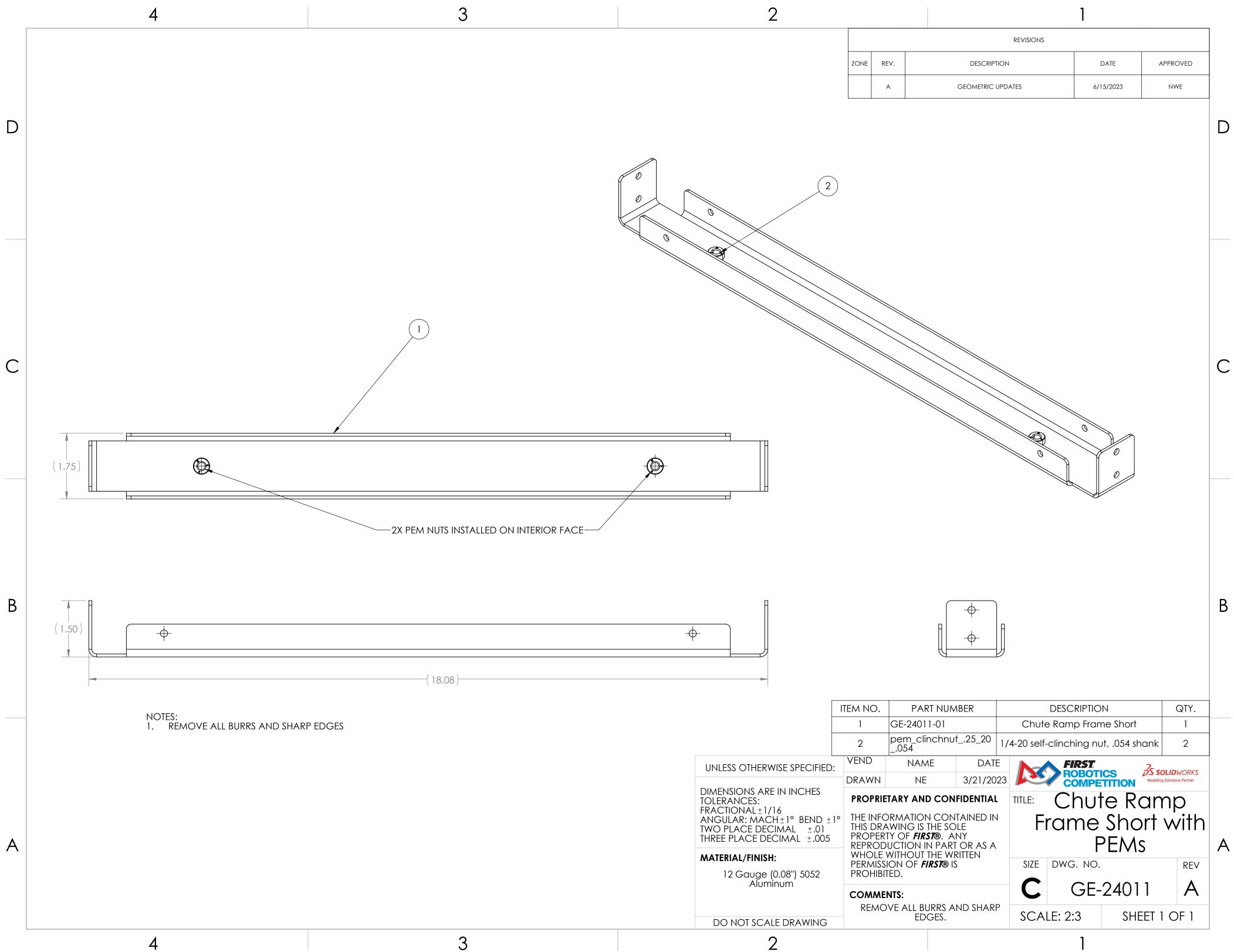
7	
∠	

			REVISIONS					
ZONE REV.			DESCRIPTION	DATE	APPROVED			
	A		GEOMETRIC UPDATES	6/15/2023	NWE			
	A		GEOMETRIC UPDATES	6/15/2023	NWE			



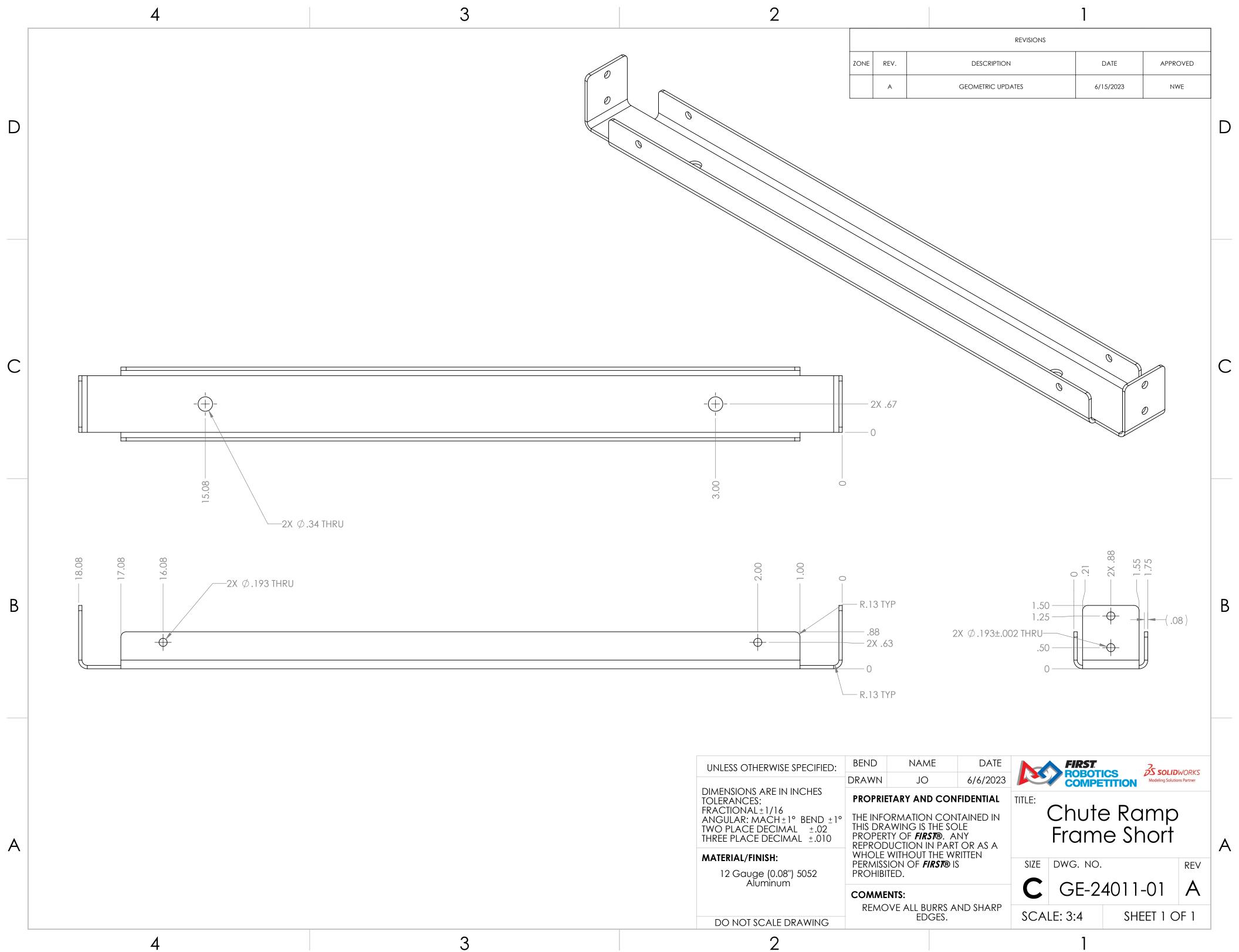


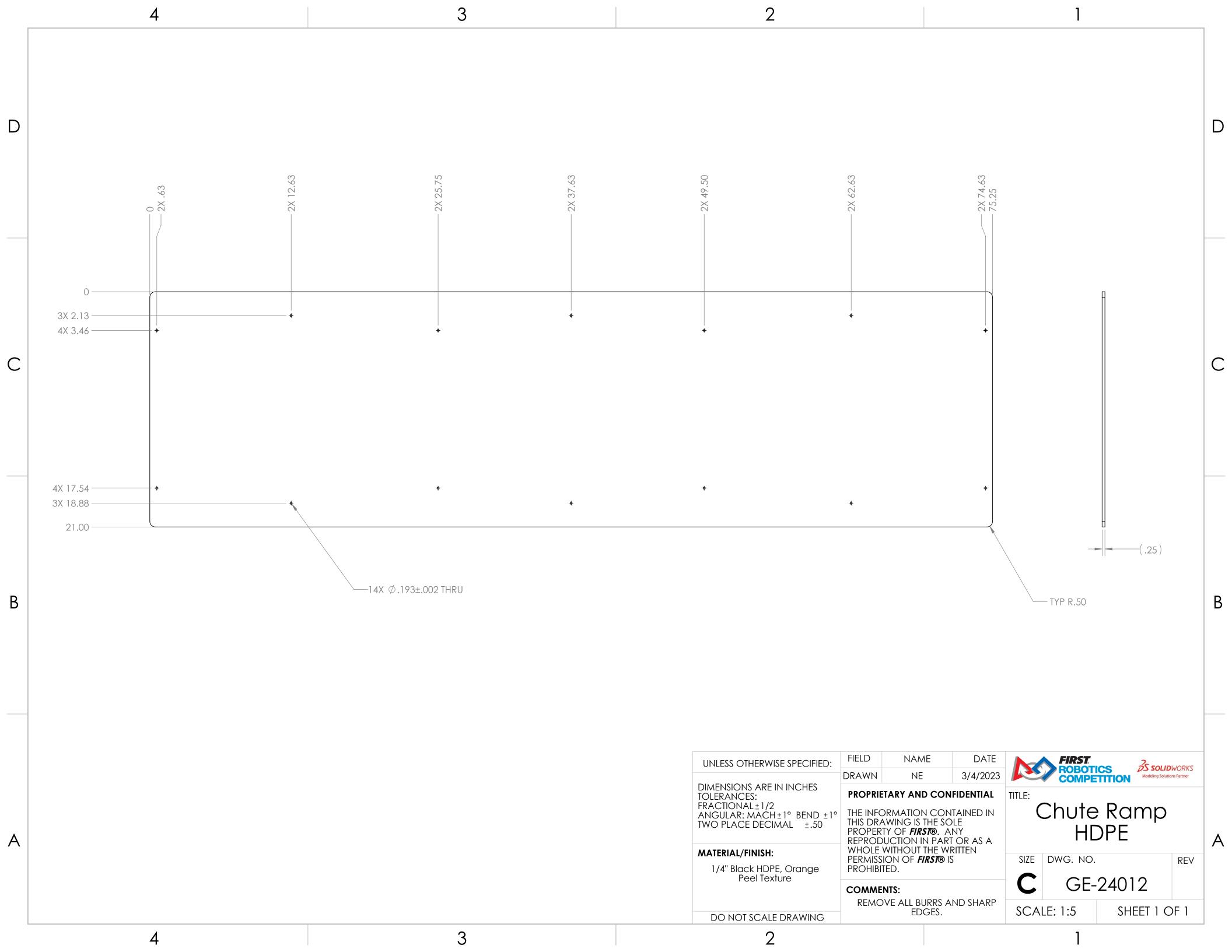
			I	
		REVISIONS		
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C1	А	GEOMETRIC UPDATES	6/15/2023	NWE

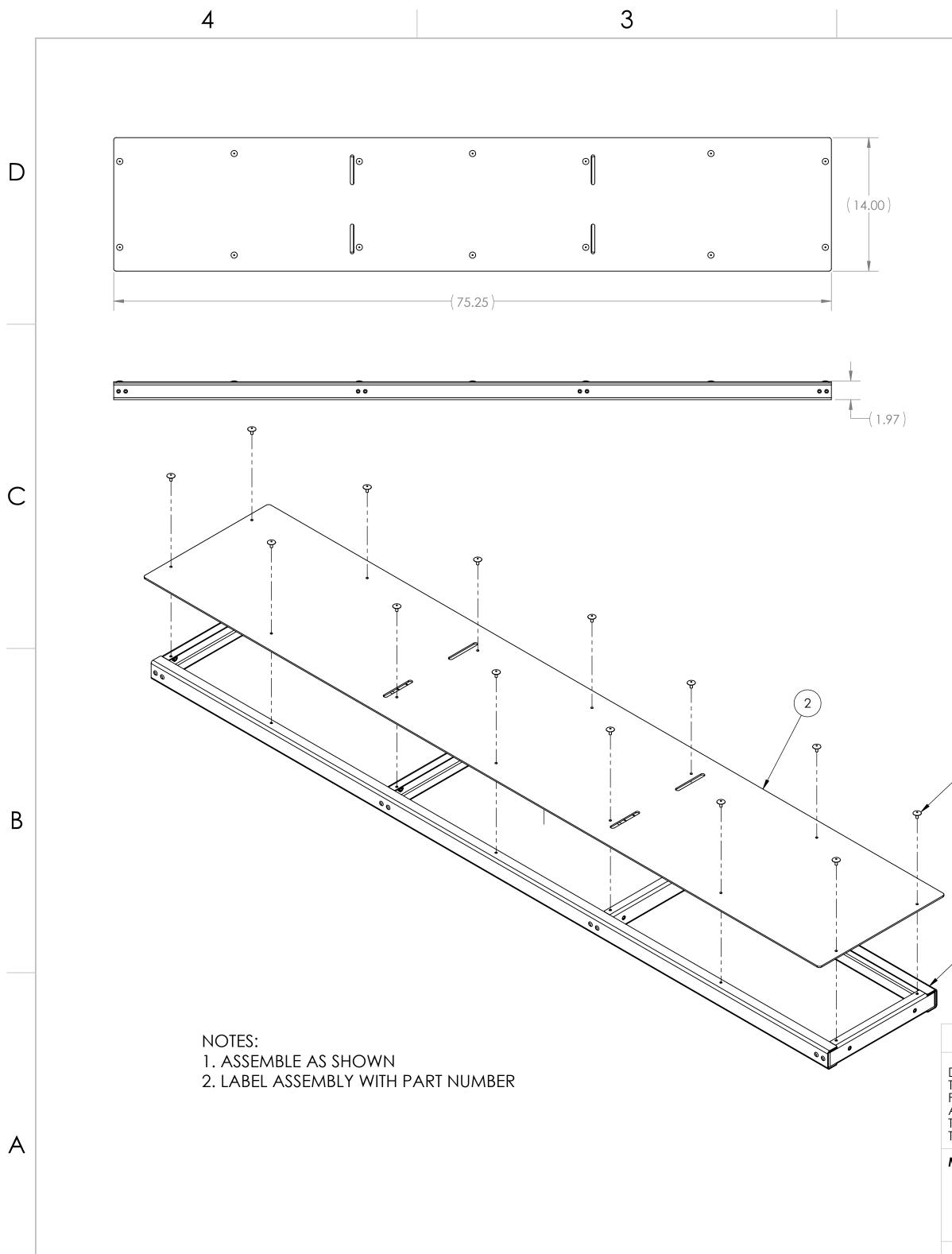


7	
∠	

			REVISIONS					
ZONE REV.			DESCRIPTION	DATE	APPROVED			
	A		GEOMETRIC UPDATES	6/15/2023	NWE			
	A		GEOMETRIC UPDATES	6/15/2023	NWE			







Α

3

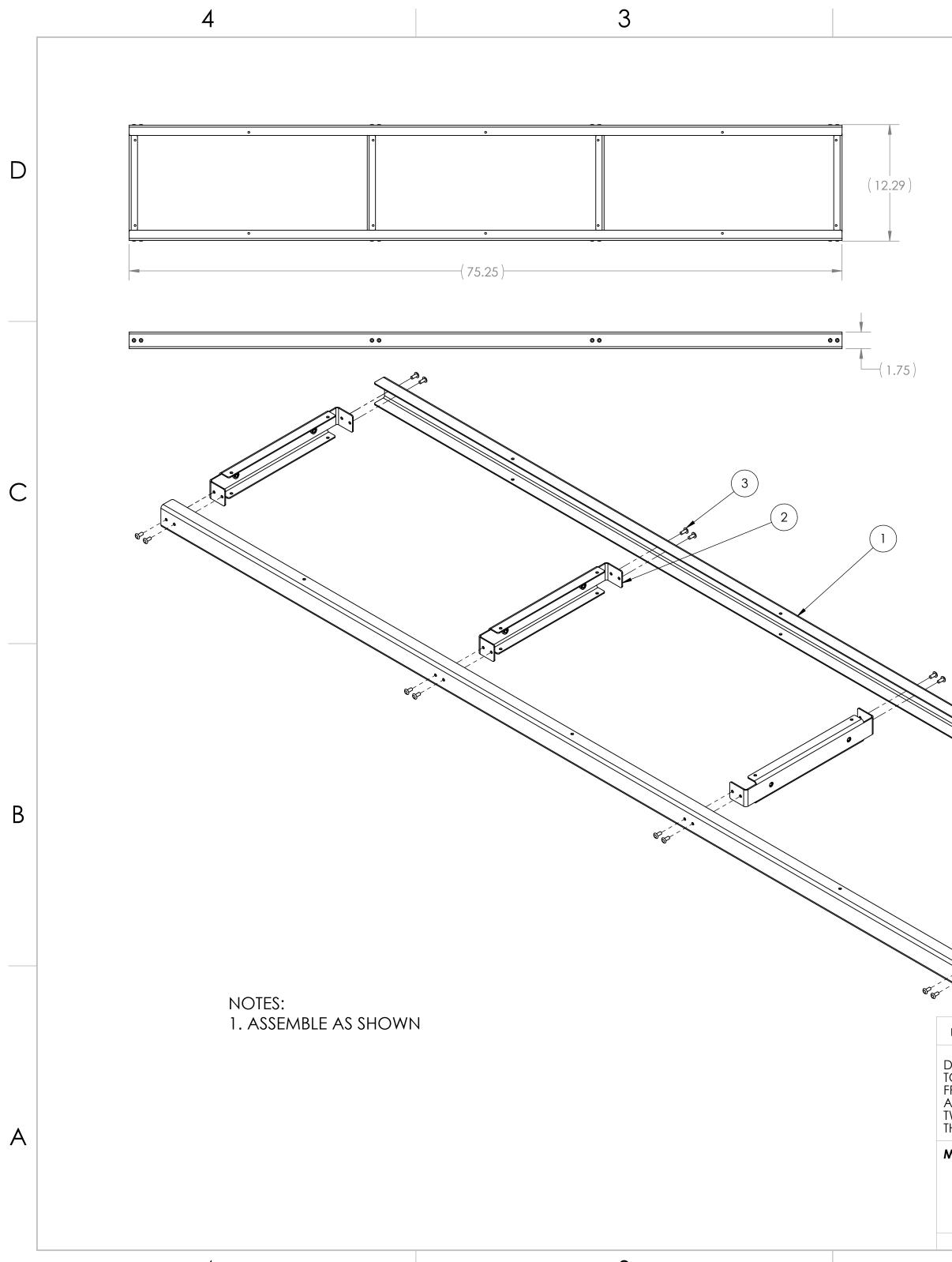
D

С

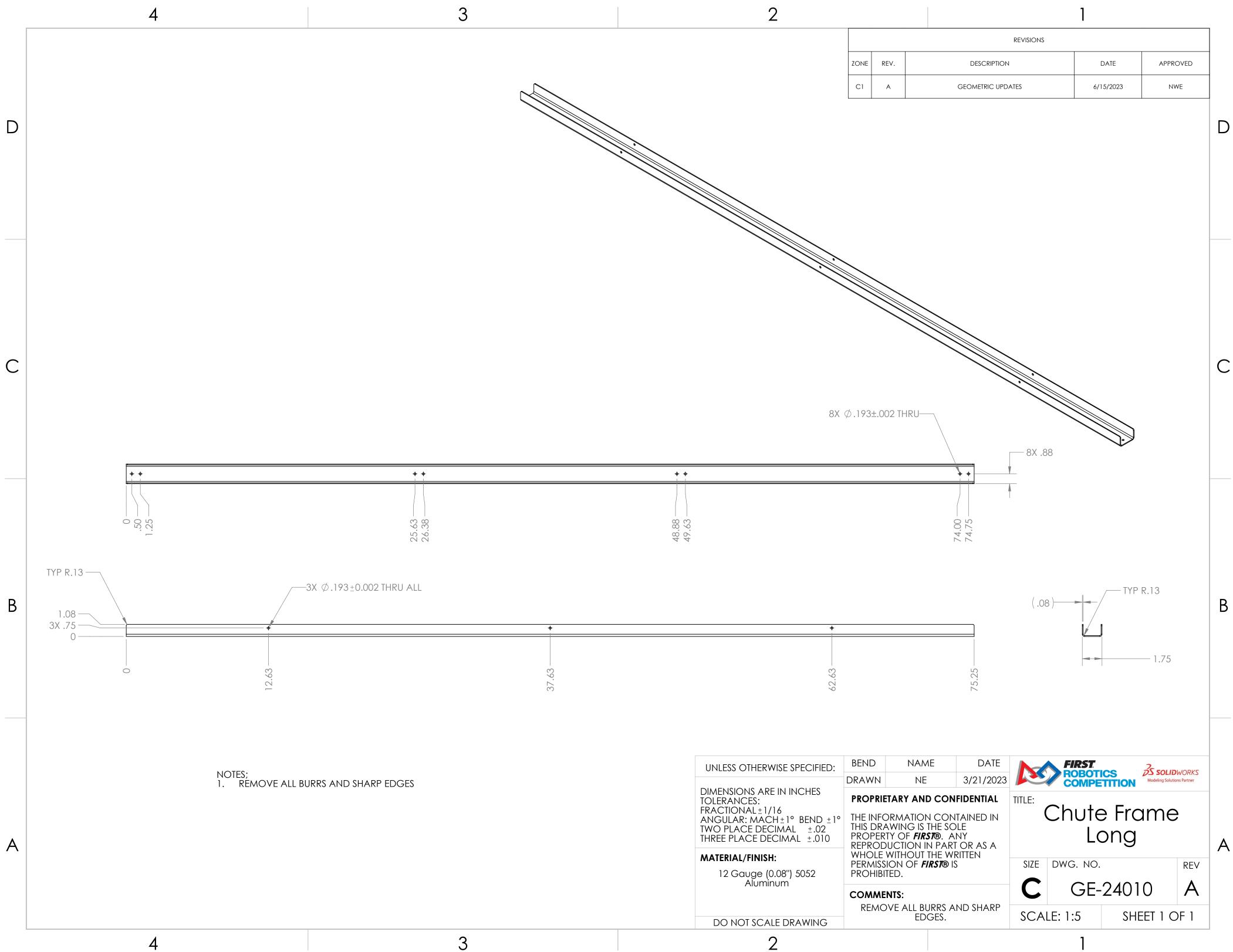
В

2

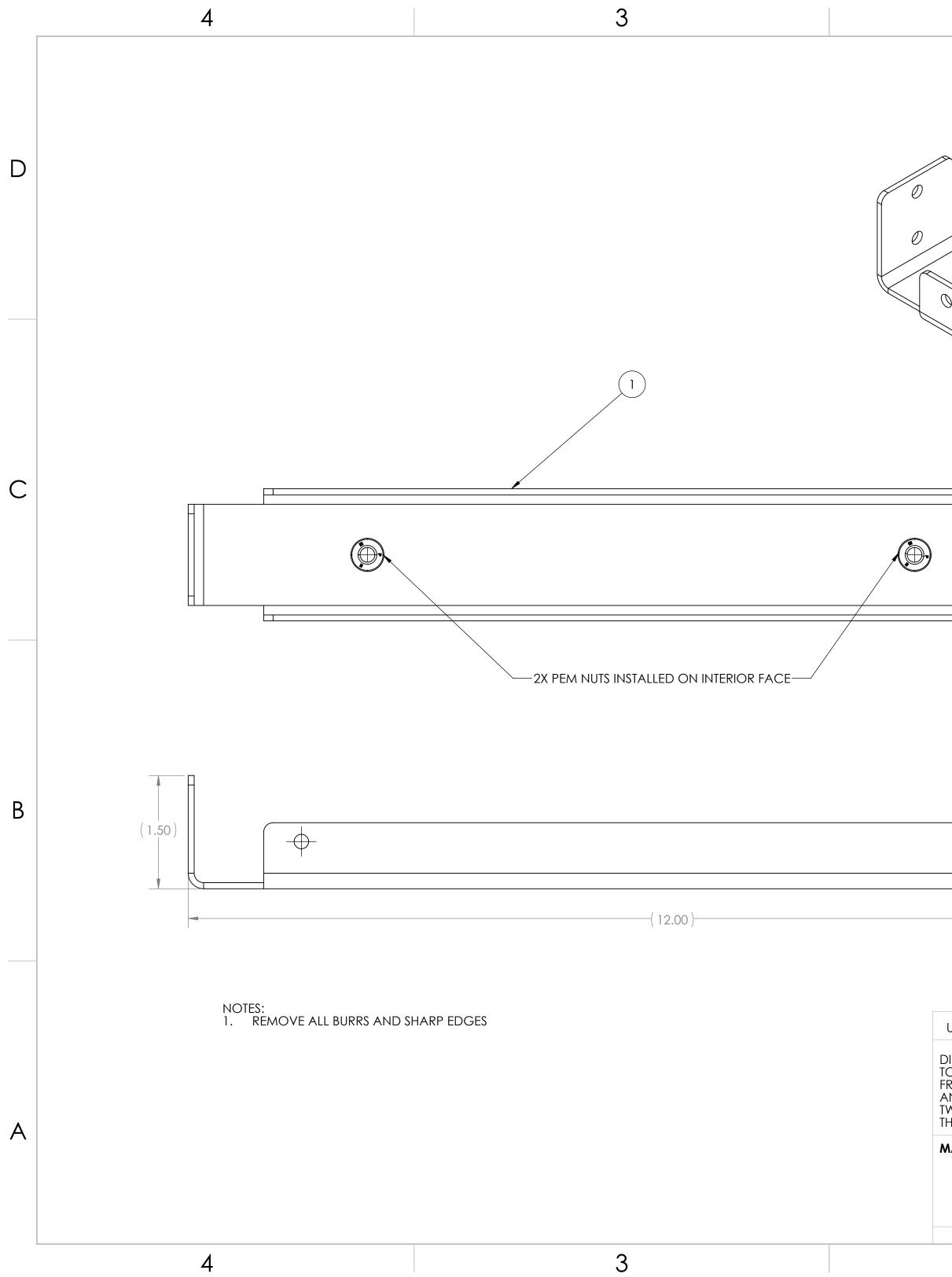
QTY. ITEM NO. PART NUMBER DESCRIPTION GE-24014 Chute Cover Frame 1 2 GE-24016 Chute Cover Plastic 1 3/16" Large Head Aluminum Rivet, .126-.26 Grip Range rivet\_.1875\_.125-.25\_largeHead 3 14 VEND DATE NAME UNLESS OTHERWISE SPECIFIED: **FIRST 3 SOLID**WORKS ROBOTICS COMPETITION JO 6/7/2023 DRAWN Modeling Solutions Partner DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 PROPRIETARY AND CONFIDENTIAL TITLE: THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF **FIRST®**. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF **FIRST®** IS PROHIBITED. Chute Cover Assembly Α MATERIAL/FINISH: SIZE DWG. NO. REV С GE-24013 COMMENTS: REMOVE ALL BURRS AND SHARP SCALE: 1:8 SHEET 1 OF 1 EDGES. DO NOT SCALE DRAWING 2



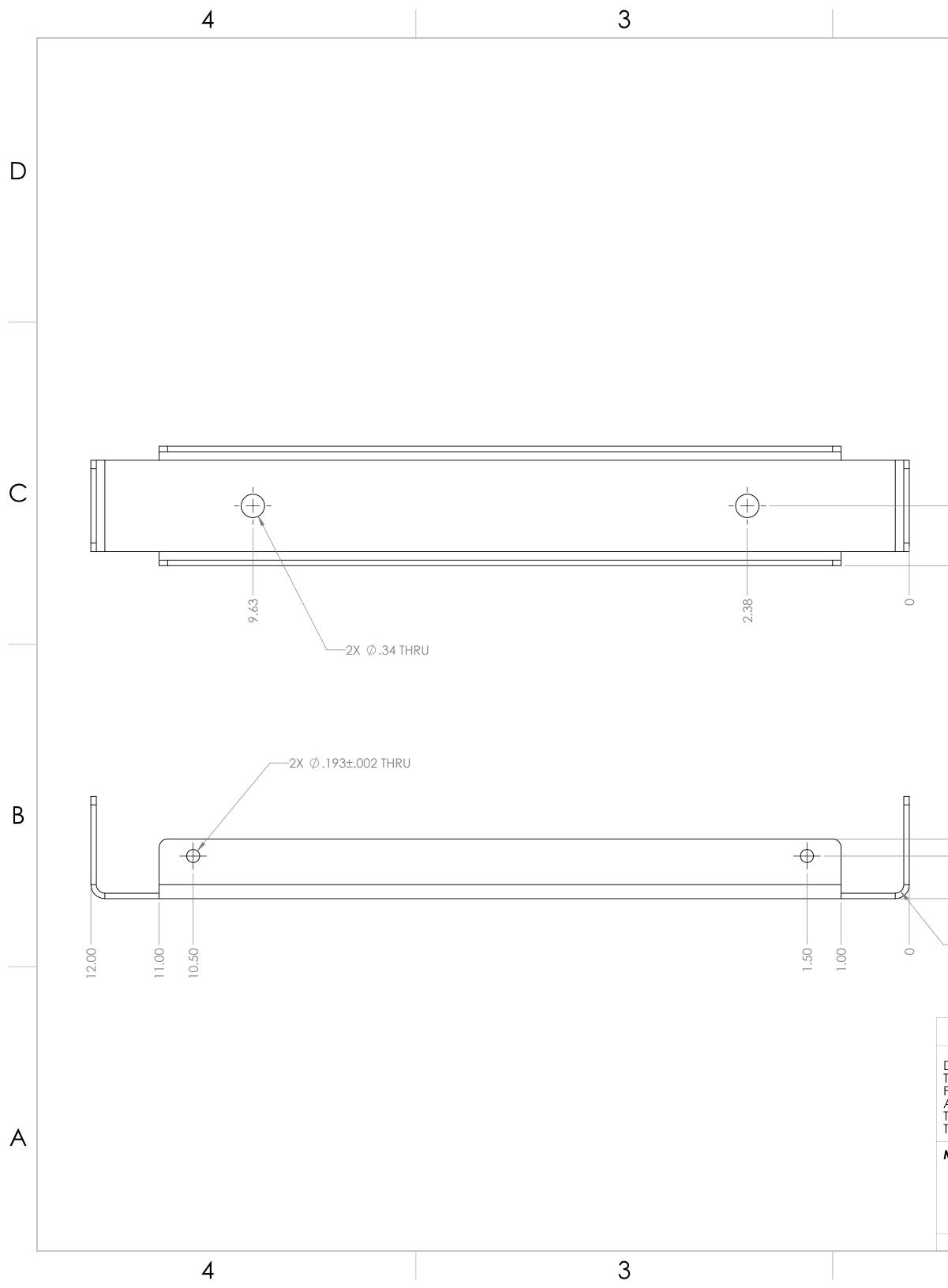
2				1			
	÷ • •						D
		00					С
							В
	ITEM NO.PAI1GE-240	rt number 10		DESCRIPTION ute Frame Lo		QTY. 2	
UNLESS OTHERWISE SPECIFIED:	VEND NAM	87512625 1E DAT	3/16" Rive	er Frame Sho et, .12625 Gi FIRST. ROBOTIC	rip Range	4 16 DLIDWORKS	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH:	DRAWN JO PROPRIETARY ANI THE INFORMATION THIS DRAWING IS PROPERTY OF FIR. REPRODUCTION I WHOLE WITHOUT PERMISSION OF FIR. PROHIBITED.	D CONFIDENTIAI N CONTAINED IN THE SOLE ST®. ANY N PART OR AS A THE WRITTEN	SIZE	COMPET Chute Frai Dwg. NO.	Cove Me	Solutions Partner	А
		JRRS AND SHAR	P SCAL		24014		
DO NOT SCALE DRAWING	ED	GES.	JUAL	.E: 1:8	SHEET 1		
Δ				1			



			I	
		REVISIONS		
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C1	А	GEOMETRIC UPDATES	6/15/2023	NWE



2		1												
				REVISIONS										
	ZONE	REV.			DESCR	RIPTION				DAT	E	AF	PROVED	
		A			GEOMETR	RIC UPD/	ATES			6/15/2	023		NWE	
														D
												0		С
	EM NC		PAR		BER	→		DES	CRIPTI				QTY.	В
			-2401		DER		Chute		ver Fro		Short		1	
	2	per 05	n_clir 54	nchnut <u></u>	25_20	) 1/4	-20 self	-clind	ching	nut, .	054 sh	ank	2	
UNLESS OTHERWISE SPECIFIED:	BEND		NAM			ATE			FIRS1 ROBO	TICS		-	<b>LID</b> WORKS	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND±1° TWO PLACE DECIMAL±.02 THREE PLACE DECIMAL±.010 MATERIAL/FINISH:	THE IN THIS D PROP REPRO WHOI PERM	RIETAR IFORM DRAWIN ERTY C DDUCT LE WITH	ATION NG IS PF <b>FIRS</b> ION II IOUT OF <b>FI</b>	<b>D CONI</b> N CONI THE SO <b>ST</b> ®. At	NY OR AS RITTEN	<b>al</b> In		nut Sh		CO' Wi	ΓΙΟΝ	Frc	ame 1s REV	A
12 Gauge (0.08'') 5052 Aluminum					<b>(</b>				401	5	A			
		MENTS: MOVE A	ALL BL		ND SHA	RP		 I ⊑∙						_
DO NOT SCALE DRAWING			EDO	GES.			SCA		1.l •		SHE		OF 1	
2														



			1			
		REVISIONS				
ZONE	REV.	DESCRIPTION	DATE APPROVED			
	A	GEOMETRIC UPDATE	6/15/2023	NWE		

D

С

В

Ø

0

0

 $\bigcirc$ 

 ${\cal O}$ 

0

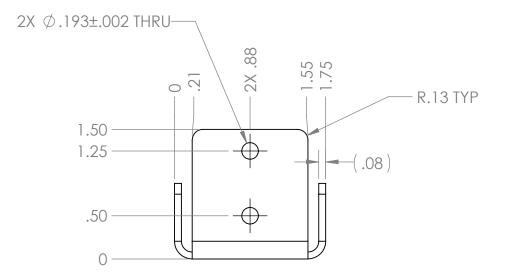
0

 $\bigcirc$ 

2

— 2X .88

— 0

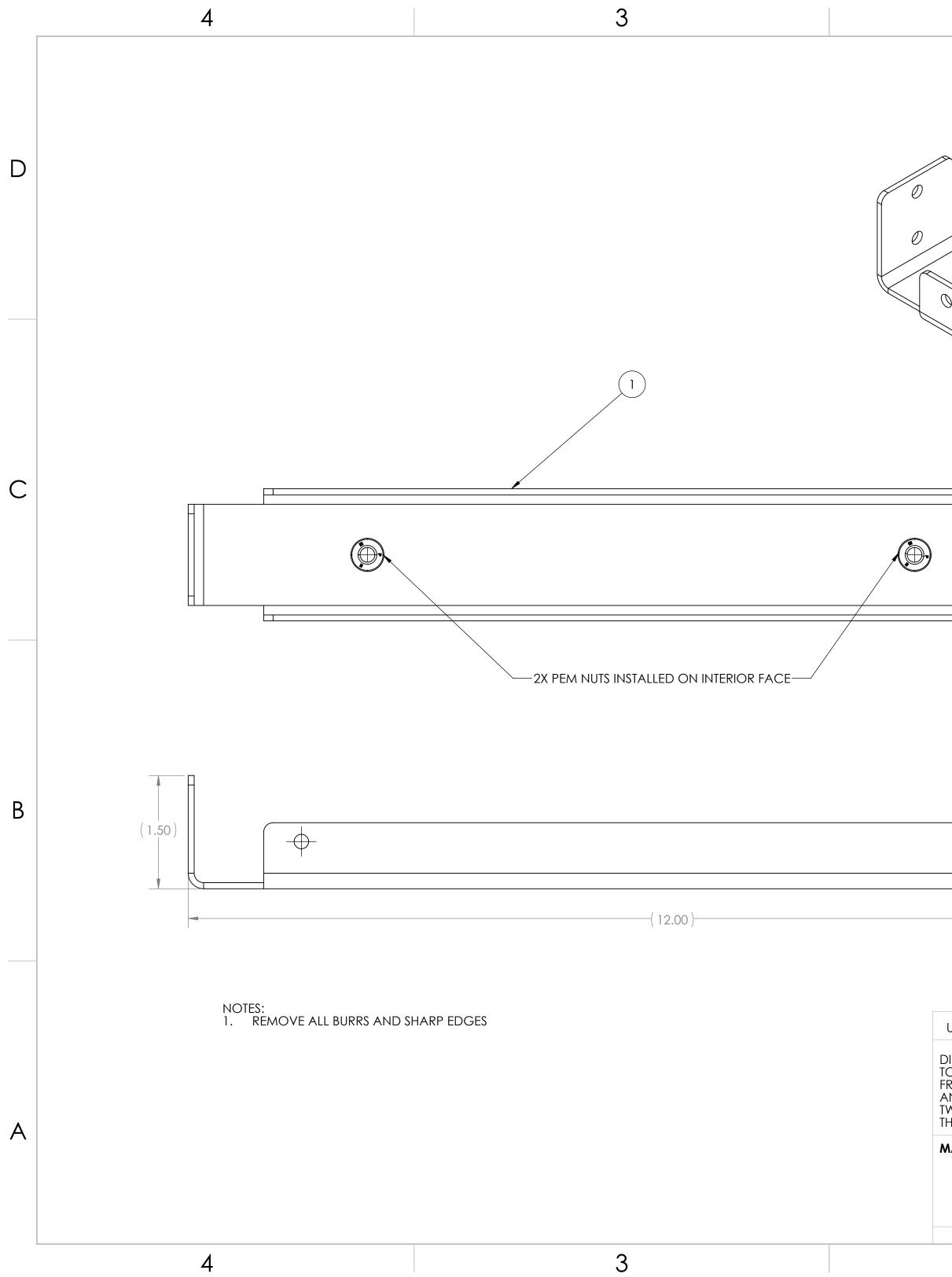


— 2X .63 — 0

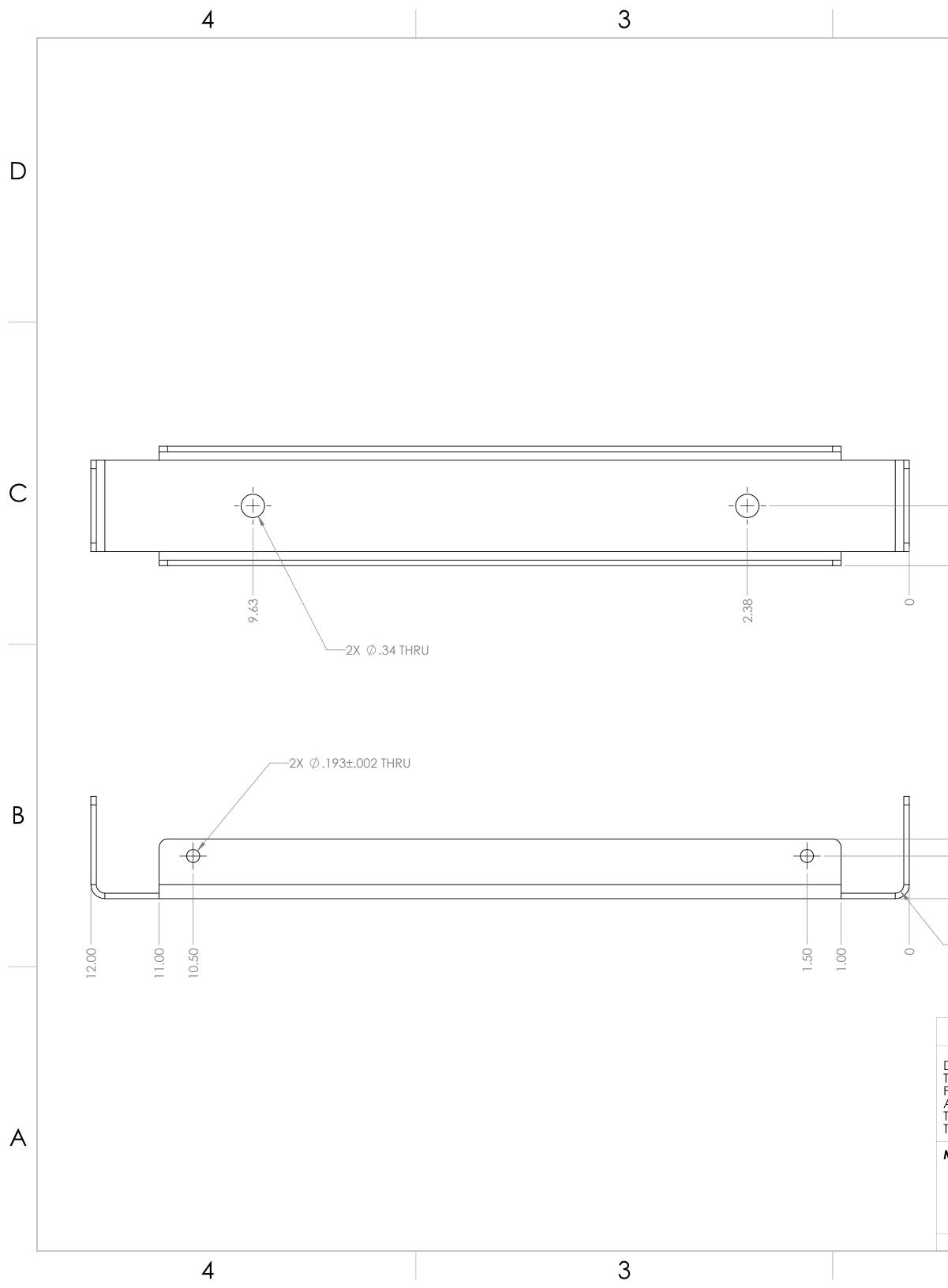
.88

R.13 TYP

UNLESS OTHERWISE SPECIFIED:	BEND NAME E		DATE		FIRST.	25 5011			
	DRAWN	JO	6/6/2023	ROBOTI	PETITION				
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010	THE INFO THIS DR/ PROPER REPROD	TARY AND CON DRMATION CON AWING IS THE SO TY OF <i>FIRST</i> ®. A DUCTION IN PART	TAINED IN LE NY OR AS A	Chute Cover Frame Short					
MATERIAL/FINISH: 12 Gauge (0.08'') 5052 Aluminum	-	WITHOUT THE WE SION OF <b>FIRST®</b> IS TED.		SIZE	DWG. NO.	/	REV	-	
Alominom	COMME	NTS:		C	GE-24015-01		A		
do not scale drawing	REMC	OVE ALL BURRS A EDGES.	ND SHARP	SCALE: 9:10 SHEET 1		SHEET 1 (	OF 1	-	
2					1			-	



2		1												
							Revisions							
	ZONE	REV.			DESCR	IPTION				DAT	E	A	PPROVED	
		A			GEOMETRI	IC UPDA	TES			6/15/2	023		NWE	
														D
												0		С
	EM NC		PAR					DES	CRIPT				QTY.	В
			-2401		DEK		Chute				Short		1	
	2	per 05	n_clir 54	nchnut <u></u>	25_20	1/4	-20 self	-clind	ching	nut, .	054 sh	ank	2	
UNLESS OTHERWISE SPECIFIED:	BEND		NAM		DA				FIRS1 ROBC	TICS	S	-		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND±1° TWO PLACE DECIMAL±.02 THREE PLACE DECIMAL±.010 MATERIAL/FINISH: DRAWN NE 3/21/2023 PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN DRAWN NE 3/21/2023								ame	A					
12 Gauge (0.08'') 5052 Aluminum					<b>^</b>				401	5	A			
		MENTS: MOVE A	ALL BL	JRRS AI GES.	ND SHAI	RP	SCA	F·				_	OF 1	<u> </u>
DO NOT SCALE DRAWING			ED(	JEJ.			JCA		1.1 1		3110			
2														



			1			
		REVISIONS				
ZONE	REV.	DESCRIPTION	DATE APPROVED			
	A	GEOMETRIC UPDATE	6/15/2023	NWE		

D

С

В

Ø

0

0

 $\bigcirc$ 

 ${\cal O}$ 

0

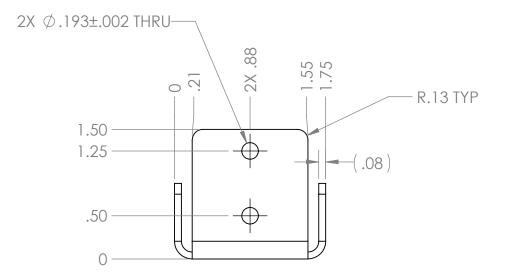
0

 $\bigcirc$ 

2

— 2X .88

— 0

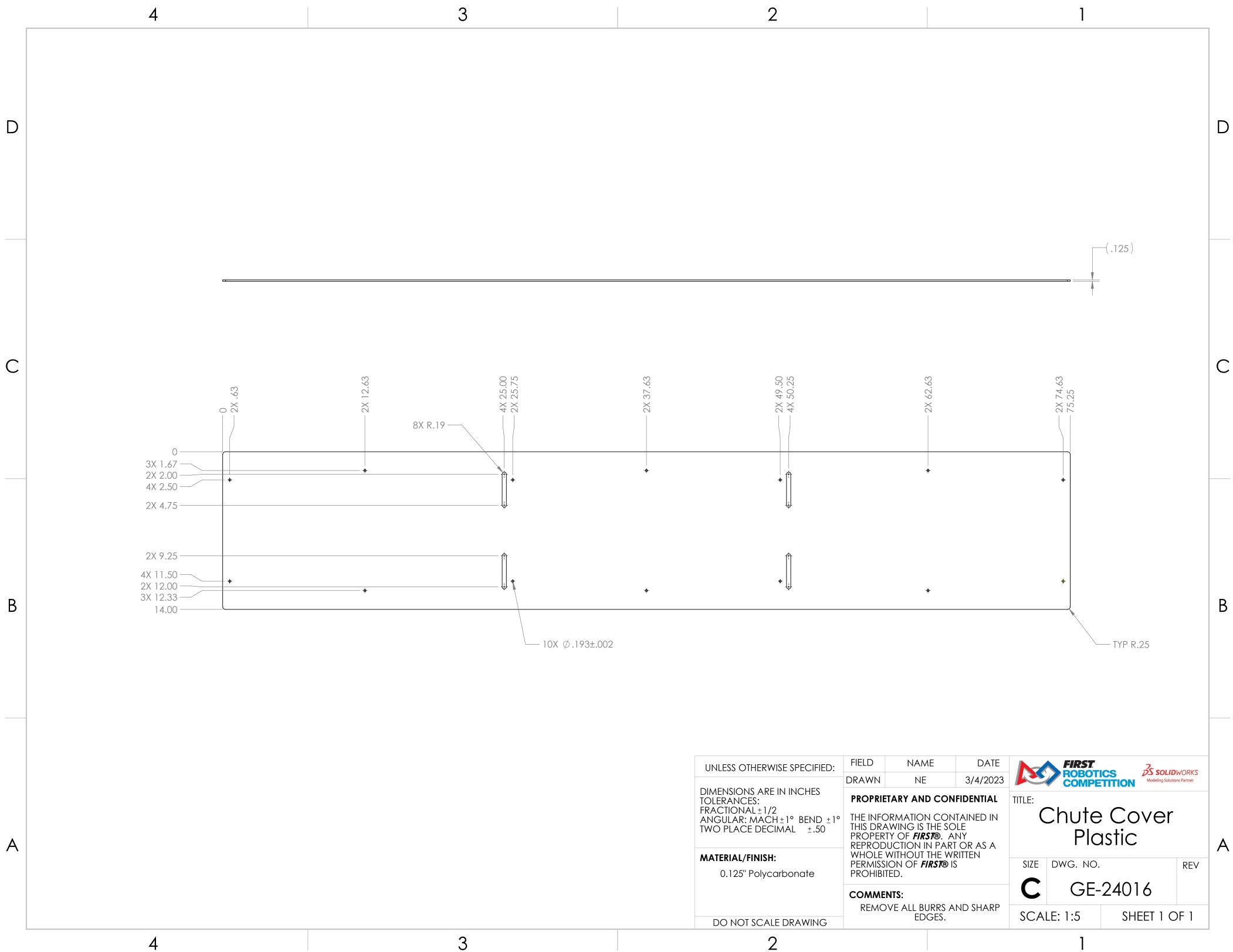


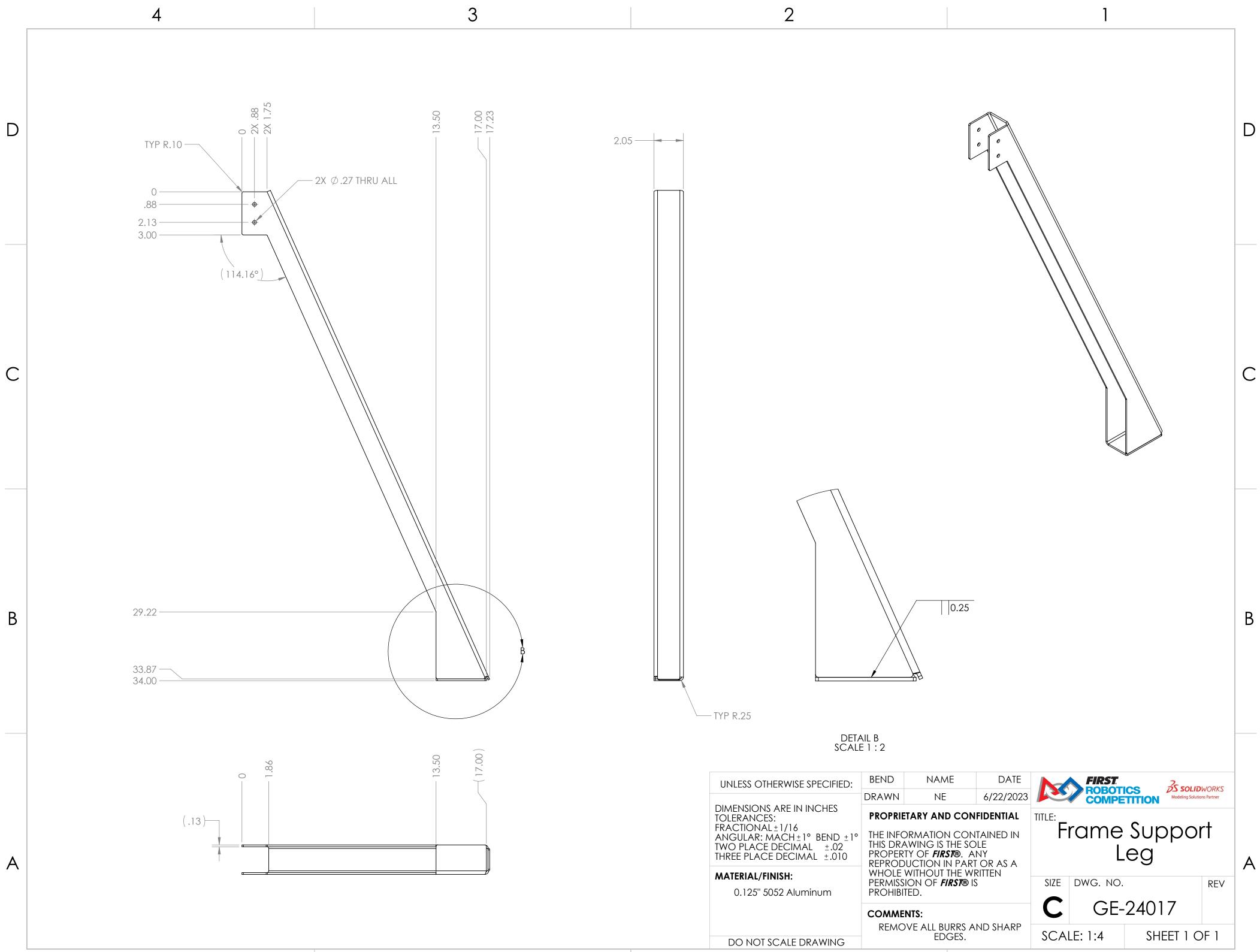
— 2X .63 — 0

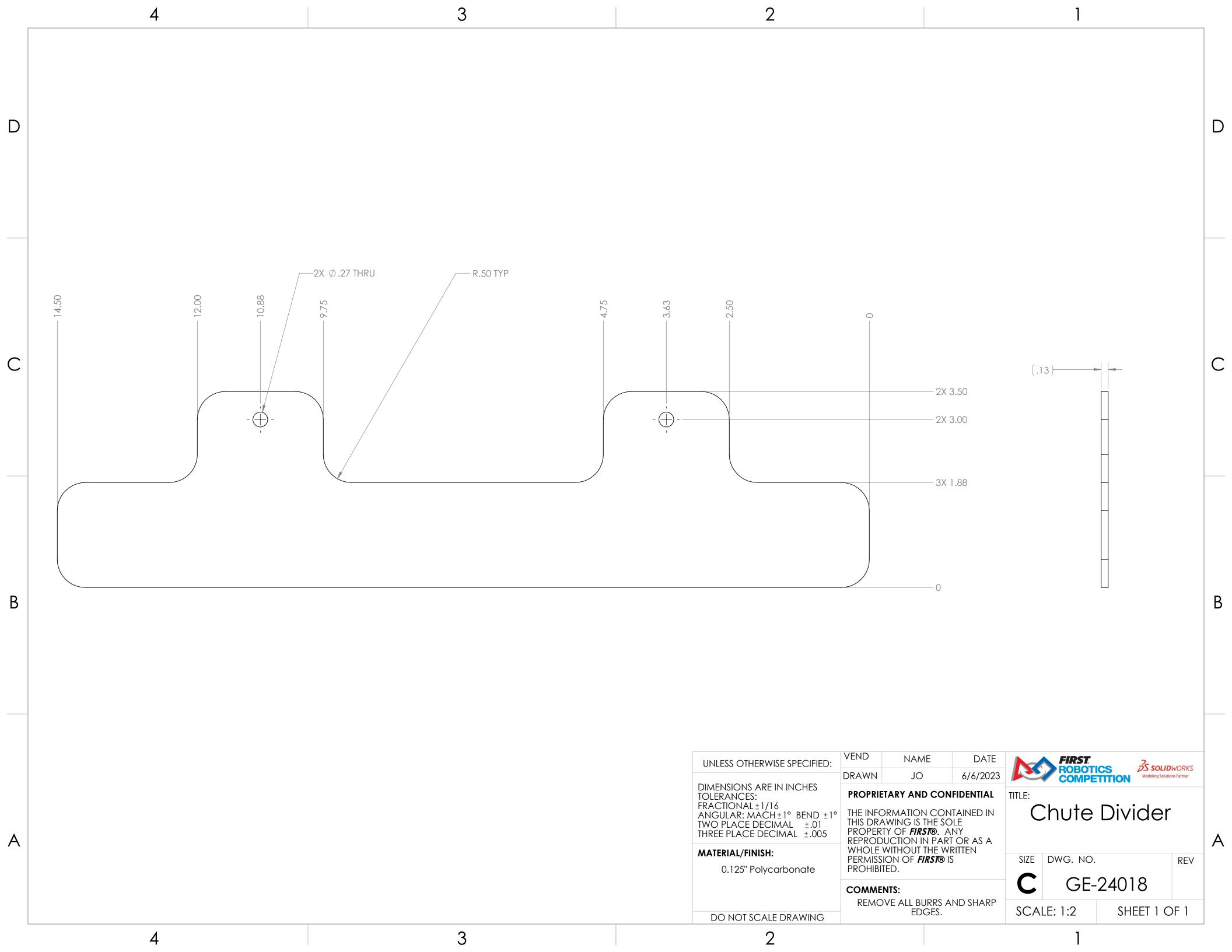
.88

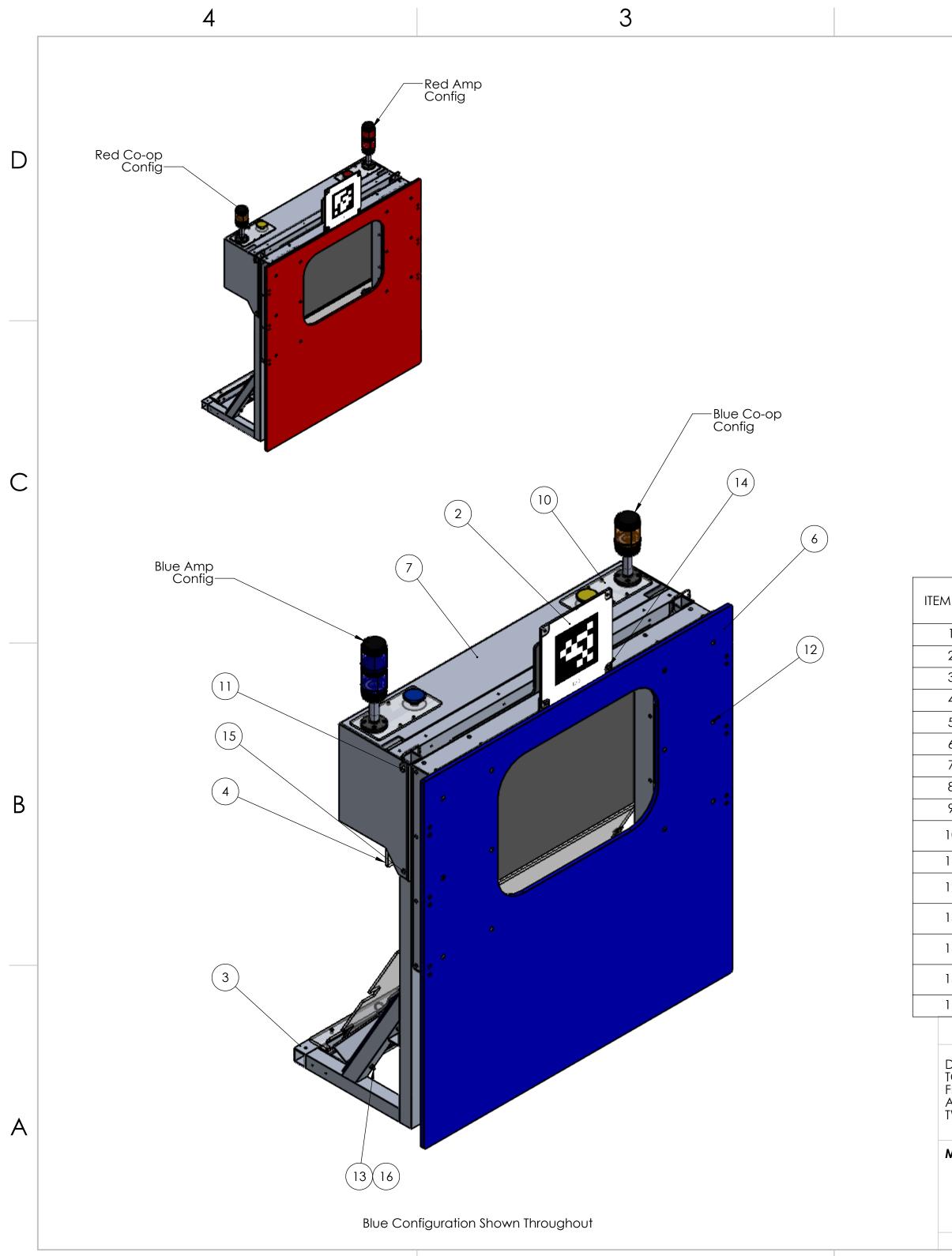
R.13 TYP

UNLESS OTHERWISE SPECIFIED:	BEND NAME E		DATE		FIRST.	25 5011			
	DRAWN	JO	6/6/2023	ROBOTI	PETITION				
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010	THE INFO THIS DR/ PROPER REPROD	TARY AND CON DRMATION CON AWING IS THE SO TY OF <i>FIRST</i> ®. A DUCTION IN PART	TAINED IN LE NY OR AS A	Chute Cover Frame Short					
MATERIAL/FINISH: 12 Gauge (0.08'') 5052 Aluminum	-	WITHOUT THE WE SION OF <b>FIRST®</b> IS TED.		SIZE	DWG. NO.	/	REV	-	
Alominom	COMME	NTS:		C	GE-24015-01		A		
do not scale drawing	REMC	OVE ALL BURRS A EDGES.	ND SHARP	SCALE: 9:10 SHEET		SHEET 1 (	OF 1	-	
2					1			-	









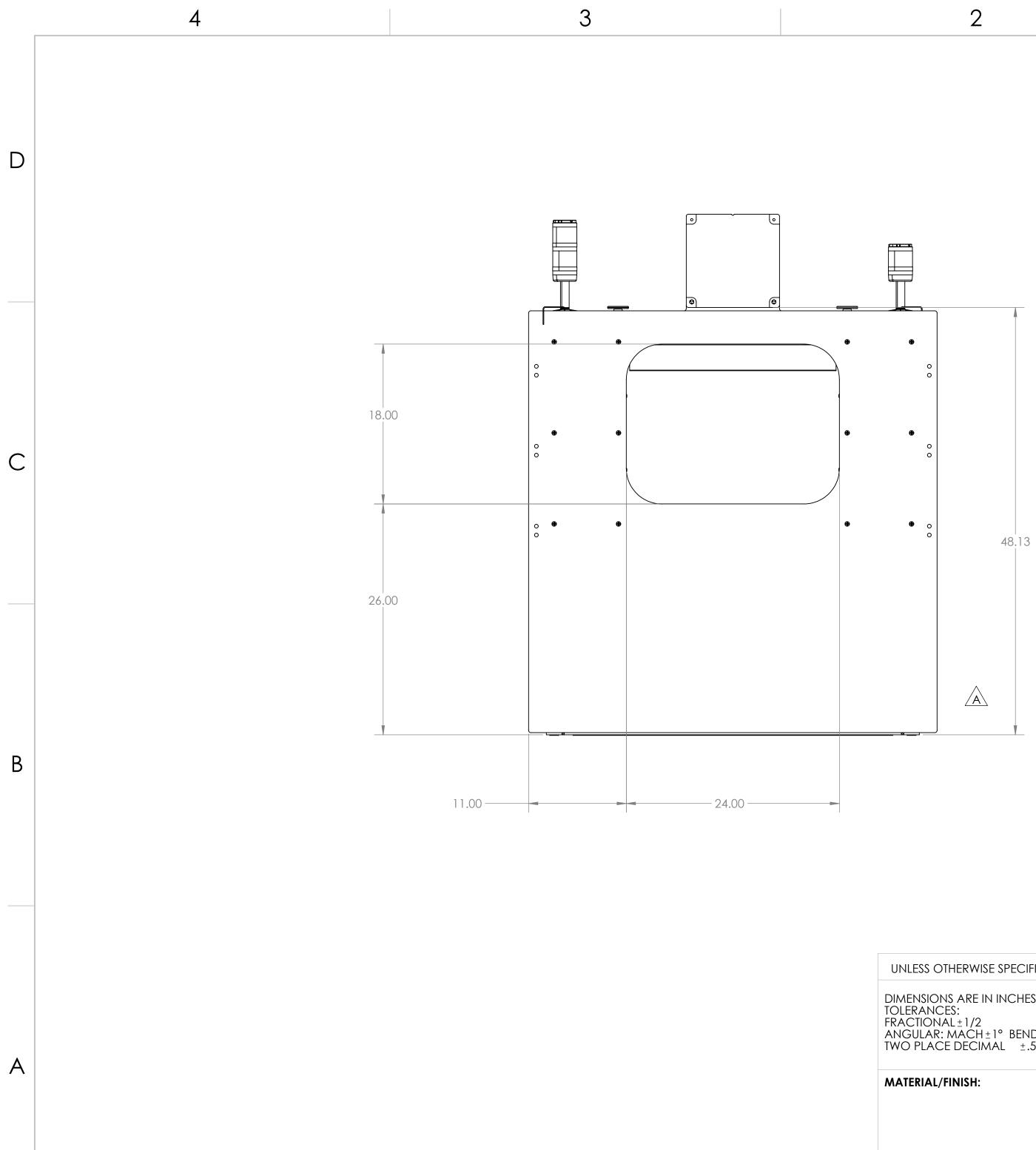
2

				•			
REVISIONS							
ZONE REV.			DESCRIPTION	DATE	APPROVED		
2-B2 A			Added Sheet 2	12/20/2023	DAF		

D

С

									1
M NO.	PART NUMBER		DESCRIPTION		BLUE C	ONFIG QTY.	RED CONF	IG QTY.	
1	FE-00083-ID5		AprilTag			-	1		
2	FE-00083-ID6		AprilTag			1	-		
3	GE-24101	Amp F	Permament Ass	embly		1	1		1
4	GE-24113	Tru	uss Capture Lar	ge		1	1		
5	GE-24114	Front Red				1	-		
6	GE-24115	Front Blue				- 1			]
7	GE-24116	Stack	light and Butto	on Box		1	1		
8	GE-24118	R	ing Counter Re	d		1	-		
9	GE-24119	Ri	ing Counter Blu	Je		-	1		B
10	GE-24128	Stack	ight and Buttor Assembly	n Plate		2	2		
11	98416A013	pin	_clevis25_2.13	875		2	2		
12	flat_phil25_20_1	Steel Ph 1/4''x20 >	Steel Phillips Flat Head Screw, 1/4"x20 x 1" long, fully threaded			12	12		
13	flat_phil25_20_2.5	Steel Philli 20 x 2-1	Steel Phillips Flat Head Screw, 1/4"- 20 x 2-1/2" long, fully threaded			4	4		
14	hex25_20_0.75		x Head Screw, long, fully three			2	2		
15	hex25_20_2.5_partial		Head Screw, 1 ng, partially thr			2	2		
16	nylock25_20	Steel Nylc	on-Insert Locknu	ut, 1/4"-20		6	6		
UNLES	s otherwise specified:	FIELD	NAME	DATE		FIRST.	25.50	<b>LID</b> WORKS	
		DRAWN	DF	12/18/2023		<b>ROBOTI</b> COMPE		Solutions Partner	
TOLERA FRACTI ANGUL	SIONS ARE IN INCHES NCES: ONAL±1/2 .AR: MACH±1° BEND ±1° .ACE DECIMAL ±.50	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <i>FIRST</i> ®. ANY REPRODUCTION IN PART OR AS A			Amp Station				A
MATERI	AL/FINISH:		VITHOUT THE WE ON OF <b>FIRST®</b> IS ED.		SIZE	DWG. NO.		REV	_
		COMMEN			C	GE-	24100	A	
DO	NOT SCALE DRAWING	REMO	REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:8 SHEET 1 OF 4		OF 4	
	2	1			1	1			

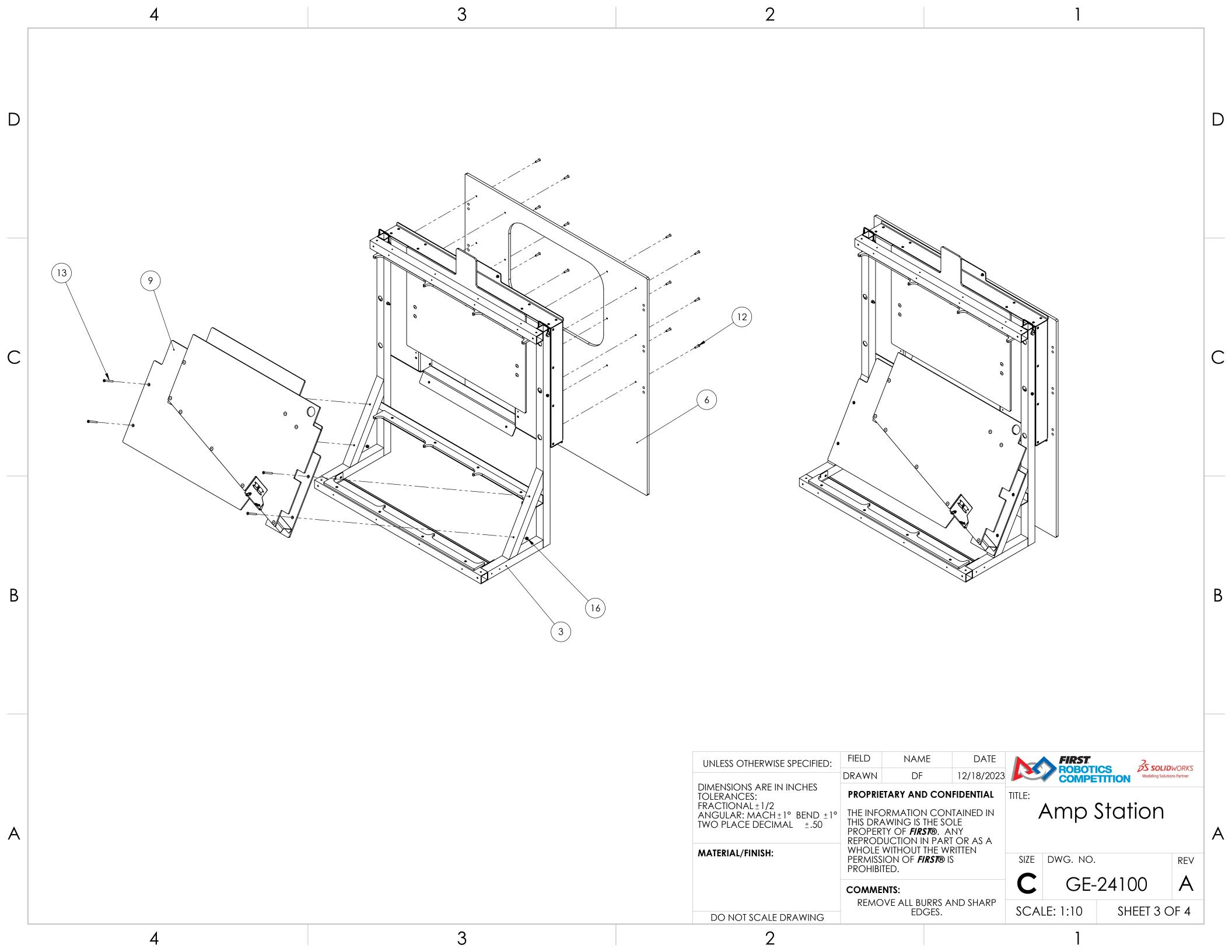


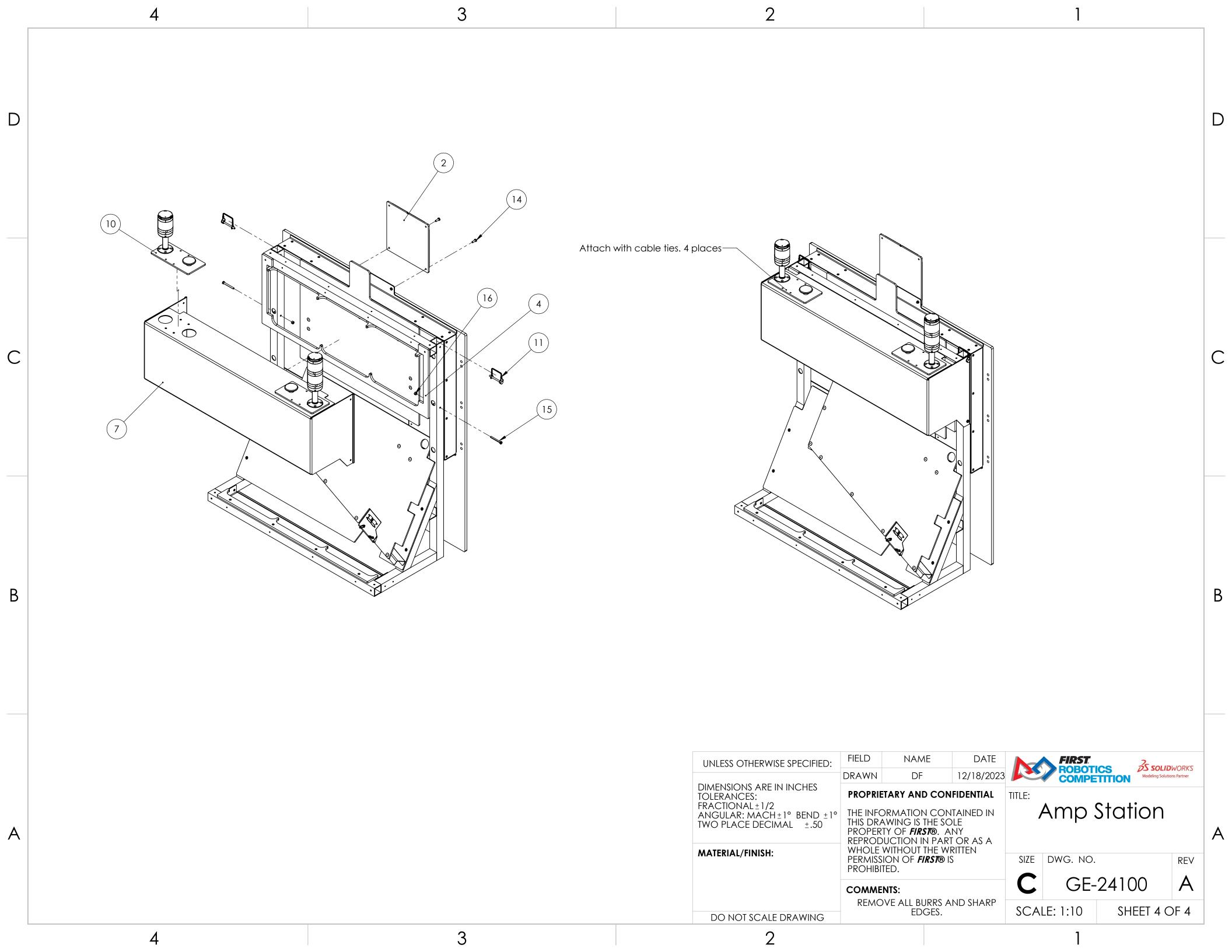
3

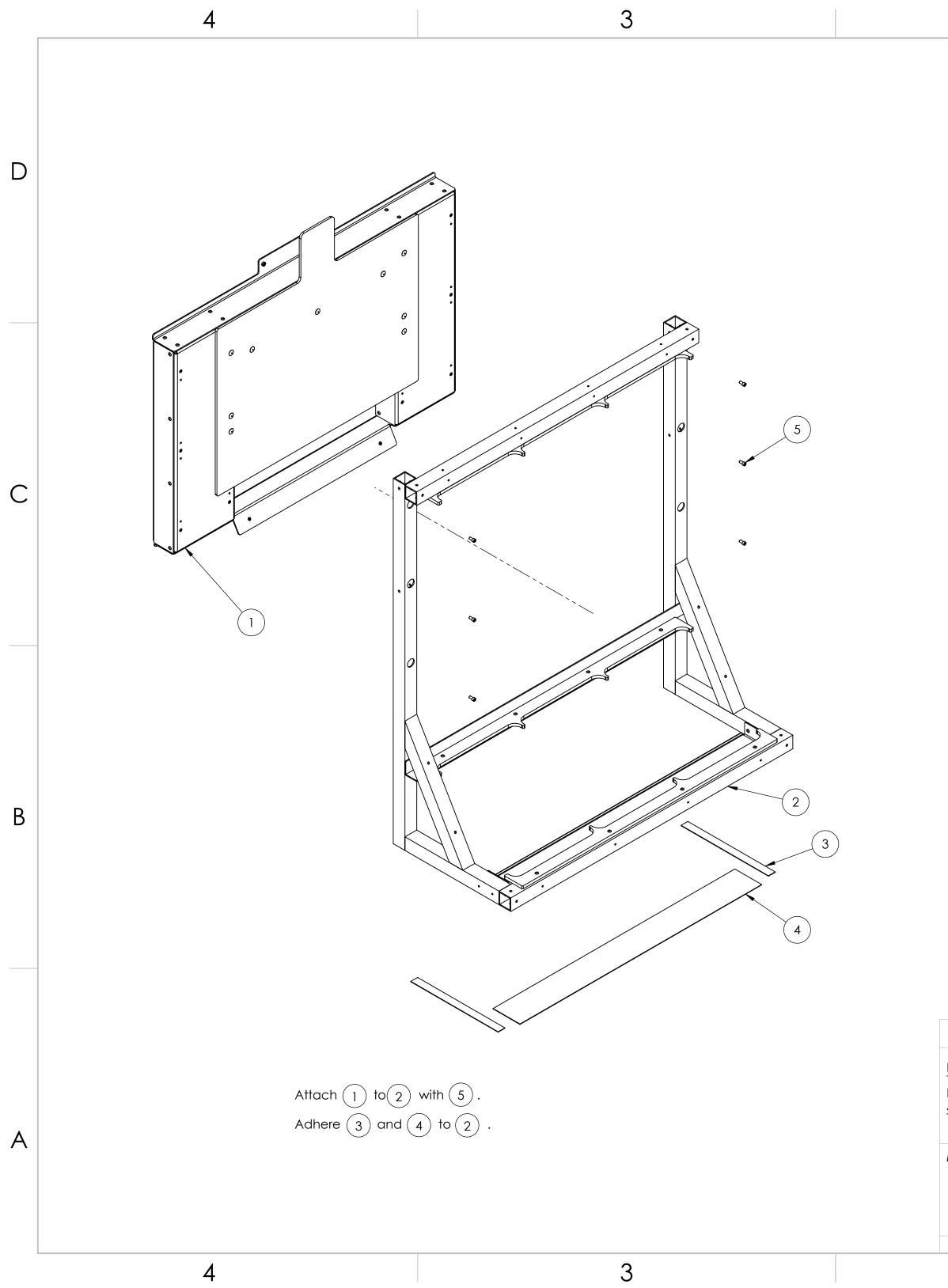
UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE		FIRST. ROBOT		S SOLIDI	NORKS	
	DRAWN	DF			TITION	Modeling Solution			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/2 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ±.50	THE INFO THIS DRA PROPER REPROD	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN			Amp Station				
MATERIAL/FINISH:	PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			SIZE	DWG. NO.			RE∨	-
	COMME	NTS:		<b>C</b> G		SE-24100		A	
	VE ALL BURRS A EDGES.	ND SHARP		LE: 1:16	сЦI	EET 2 C		-	
DO NOT SCALE DRAWING				JCA	LL. 1.10	511		/1 4	
2					1				

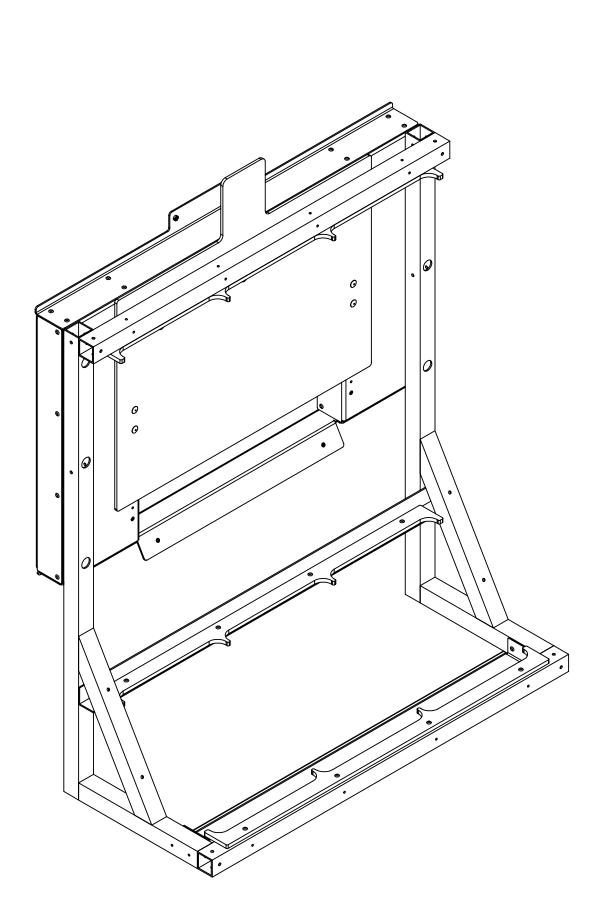
D

С





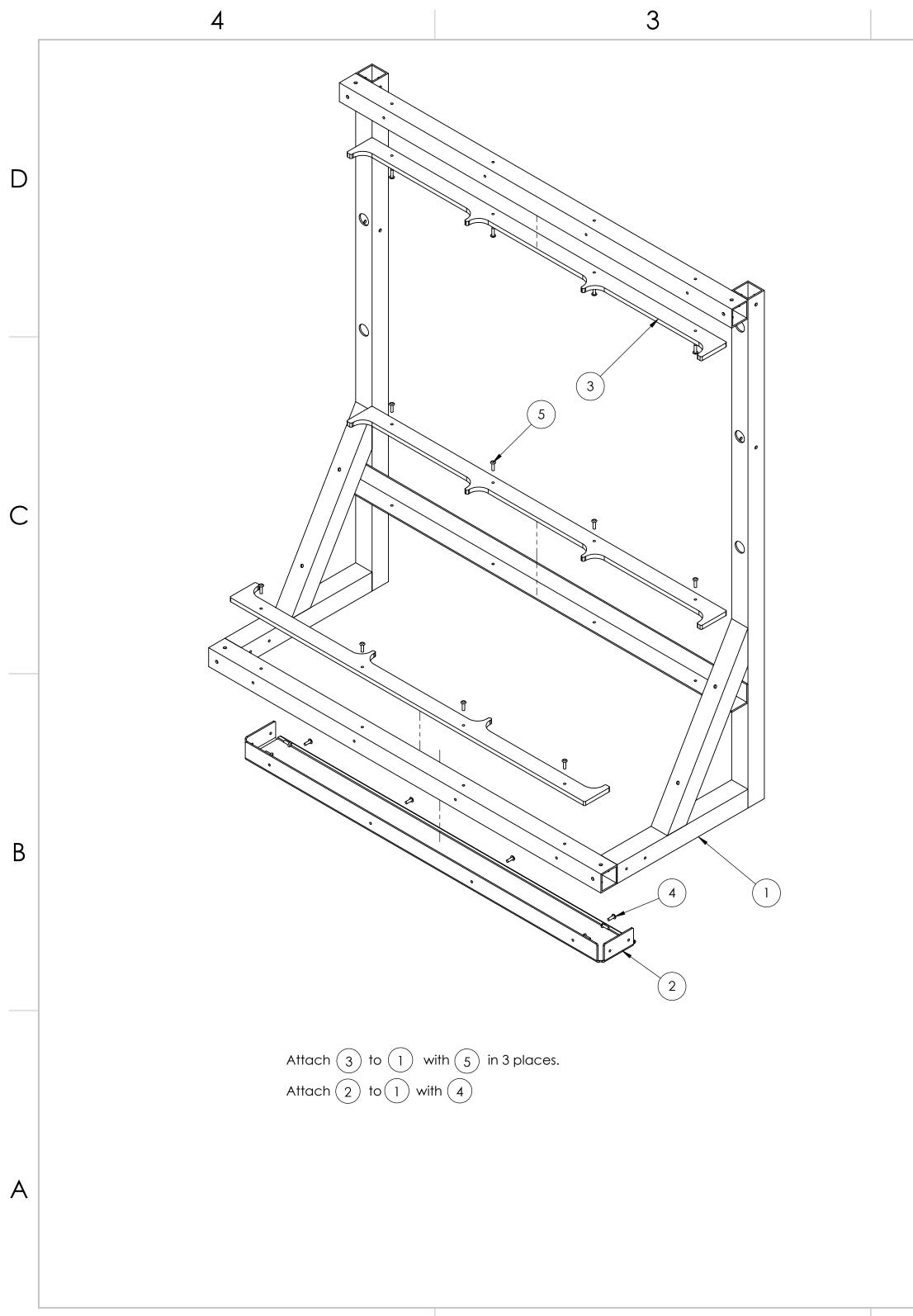




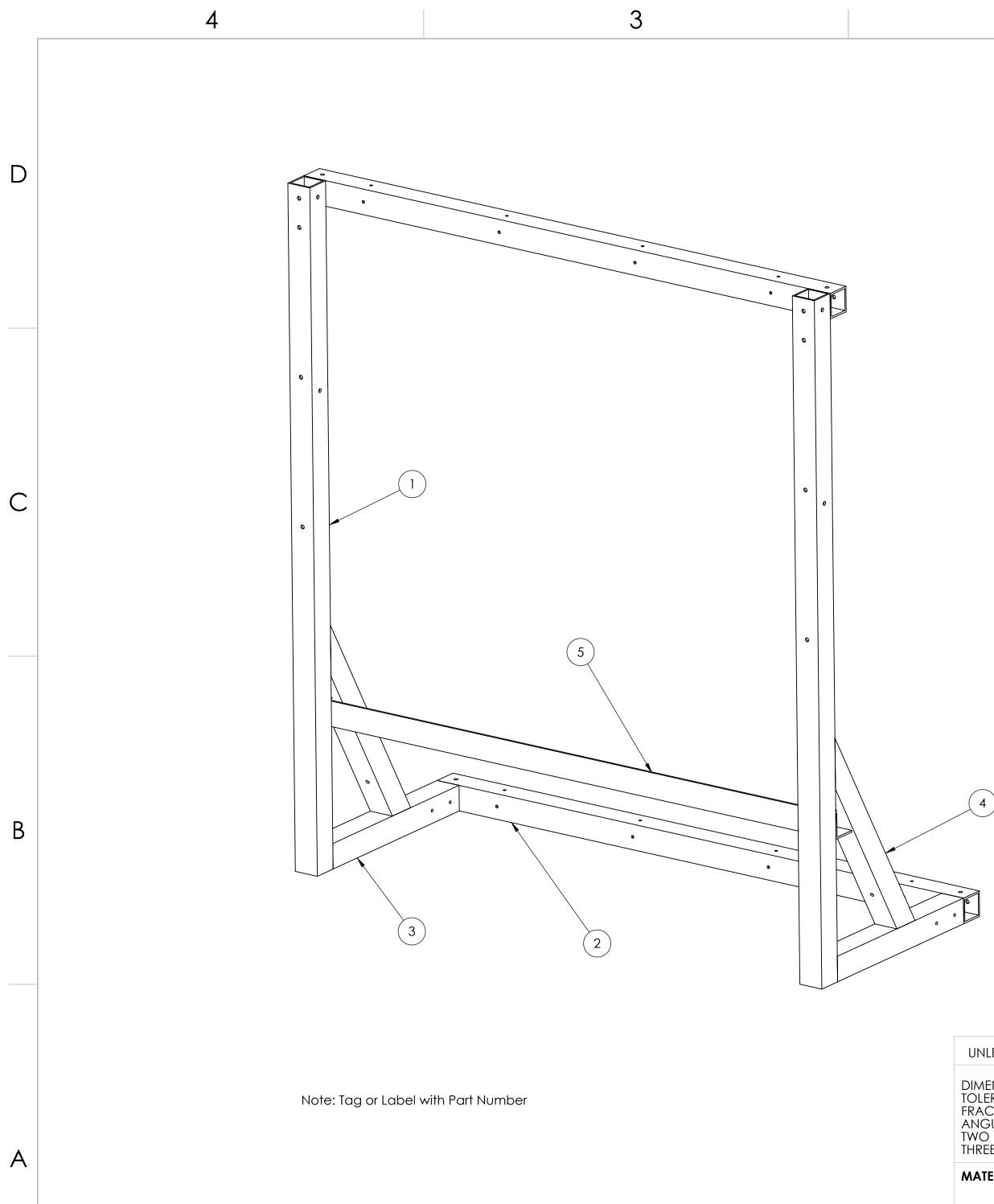
С

В

	ITEM NO.	PAR	T NUM	\BER			DESCRIPTIO	N	QT	Y.	
	1	GE-2410	6			Amp	Frame with	Plastic	1		
	2	GE-24102	2		Weldn	nent	with Truss Flo Capture	oor and Truss	1		
	3	Hook_1_	13		1" x	13'' He	ook, Adhesi	ve Backed	2		
	4	Hook_4_	36		4'' x \$	36" Ho	ook, Adhesi	ve Backed	1		
	5	Configur	able E	Bolt	.5" Lo	ng 1,	/4-20 Socket Screw	Head Cap	6		
UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	=	DATE			FIRST.	~ 35	<b>olid</b> wof	DVC	
	DRAWN	JO		11/1/202	23 📕		ROBOTI COMPE		ng Solutions Parti		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/2		FARY AND				.E:	Ar	np			
ANGULAR: MACH ± 1° BEND ± 1 TWO PLACE DECIMAL ±.50	THIS DRA	WING IS T	N CONTAINED IN THE SOLE		l	Permament			†		
	REPRODU	'Y OF <b>FIRS</b> ' UCTION IN	<b>PART</b>	OR AS A		Assembly					A
MATERIAL/FINISH:		VITHOUT T ON OF <b>FIR</b>	T THE WRITTEN		S	SIZE	DWG. NO.		P	EV	-
	PROHIBIT								K		
	COMMEN						GE-	24101			
REMOVE A			rrs af Ges.	ND SHARF	S	CAL	E: 1:8	SHEET	1 OF	1	
DO NOT SCALE DRAWING											
2							1				



2				1		
		•				D
						С
	ITEM NO.	PART NUM GE-24103	MBER	DESCRIPTION Amp Weldment	QT\ 1	B
UNLESS OTHERWISE SPECIFIED:	3 4 5 FIELD	GE-24104 GE-24105 rivet187525 rivet187537 NAME	765 DAT		1375 Grip 8 765 Grip 12	2KS
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/2 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ±.50 MATERIAL/FINISH:	<ul> <li>THE INFORT THIS DRAV PROPERTY REPRODU WHOLE W</li> </ul>	JO ARY AND CON RMATION CON WING IS THE SO OF <i>FIRST</i> ®. AI CTION IN PART ITHOUT THE WE ON OF <i>FIRST</i> ® IS ED.	TAINED IN LE NY OR AS A RITTEN	TITLE: Weldme Truss Flo Truss C SIZE DWG. NO.	ent with oor and apture	1
do not scale drawing	COMMEN REMOV	ts: /e all burrs a Edges.	nd Shari	P SCALE: 1:6	4102 Sheet 1 Of	1
2				1		



3

		•	
PAI	rt number	DESCRIPTION	QTY.
GE-2410	03-01	Weldment Vertical	2
2 GE-24103-02		Weldment Width	2
GE-2410	03-03	Weldment Horizontal	2
GE-2410	)3-04	Weldment Angled Tube	2
GE-2410	)3-05	Weldment Angle	1
	GE-2410 GE-2410 GE-2410 GE-2410	PART NUMBER GE-24103-01 GE-24103-02 GE-24103-03 GE-24103-04 GE-24103-05	GE-24103-01Weldment VerticalGE-24103-02Weldment WidthGE-24103-03Weldment HorizontalGE-24103-04Weldment Angled Tube

D

С

В

UNLESS OTHERWISE SPECIFIED:	WELD	NAME	DATE		FIRST.		S SOLID		
	DRAWN	DRAWN NE 9/12/2023 COMPETITION						WORKS ons Partner	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND±1° TWO PLACE DECIMAL±.02 THREE PLACE DECIMAL±.015	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <i>FIRST</i> ®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <i>FIRST</i> ® IS PROHIBITED.			Amp Weldment					Α
MATERIAL/FINISH: 6061 Aluminum				SIZE	DWG. NO.			REV	-
	COMME	NTS:		C	GE-	2410	)3		
DO NOT SCALE DRAWING	REMC	REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:5 SHEET		eet 1 C	)F 4	
2					1				

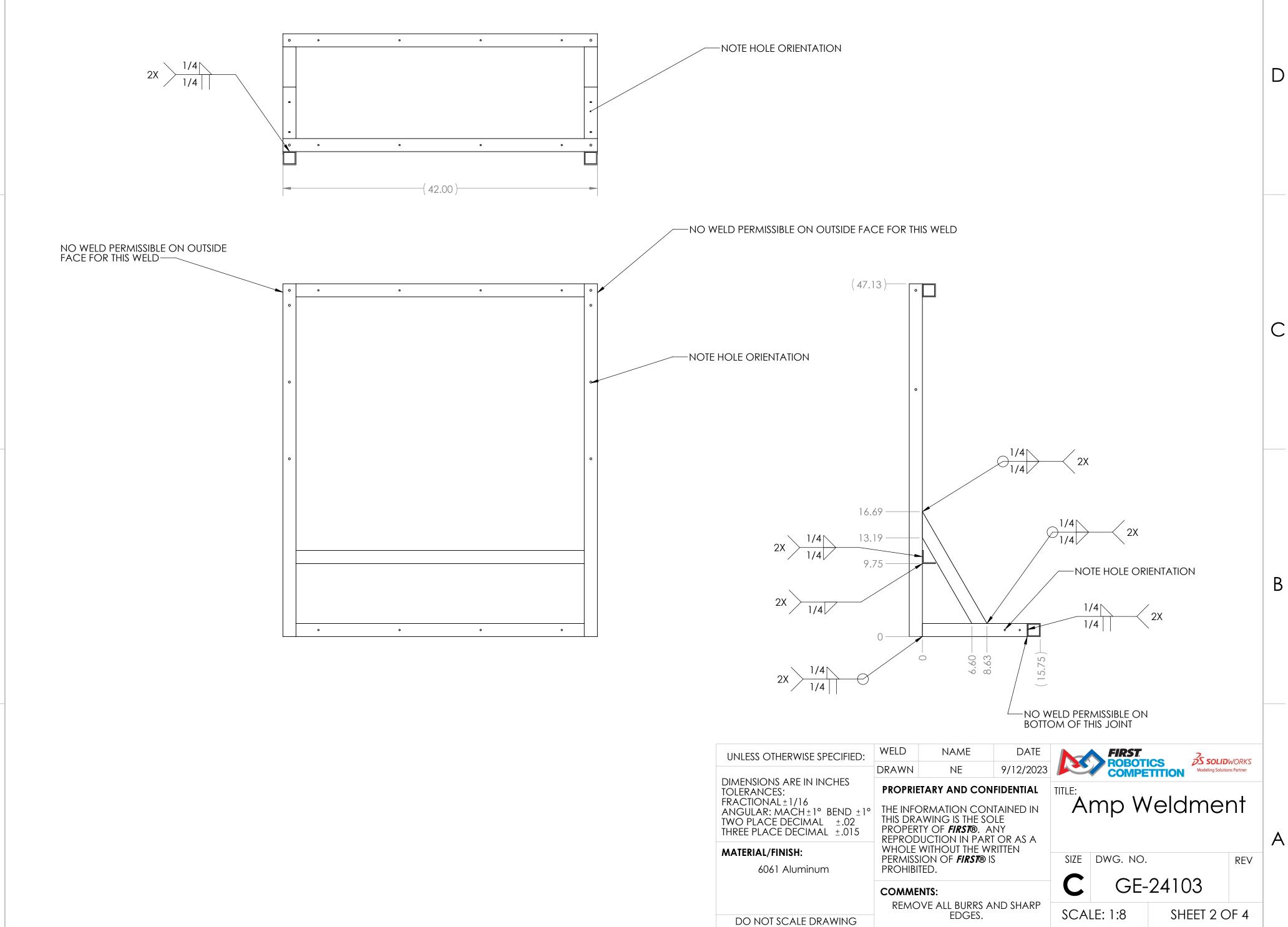


С

В

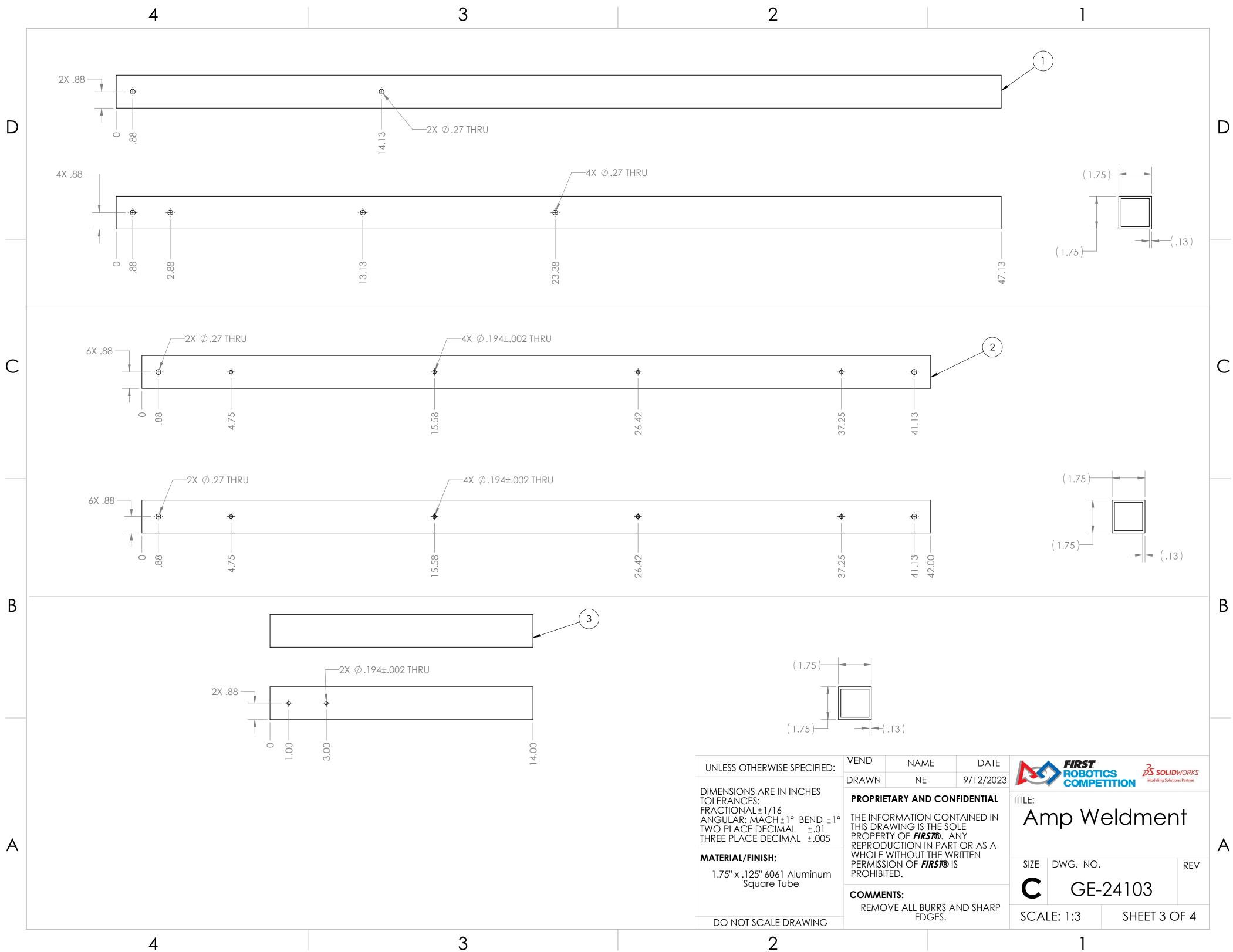
Α

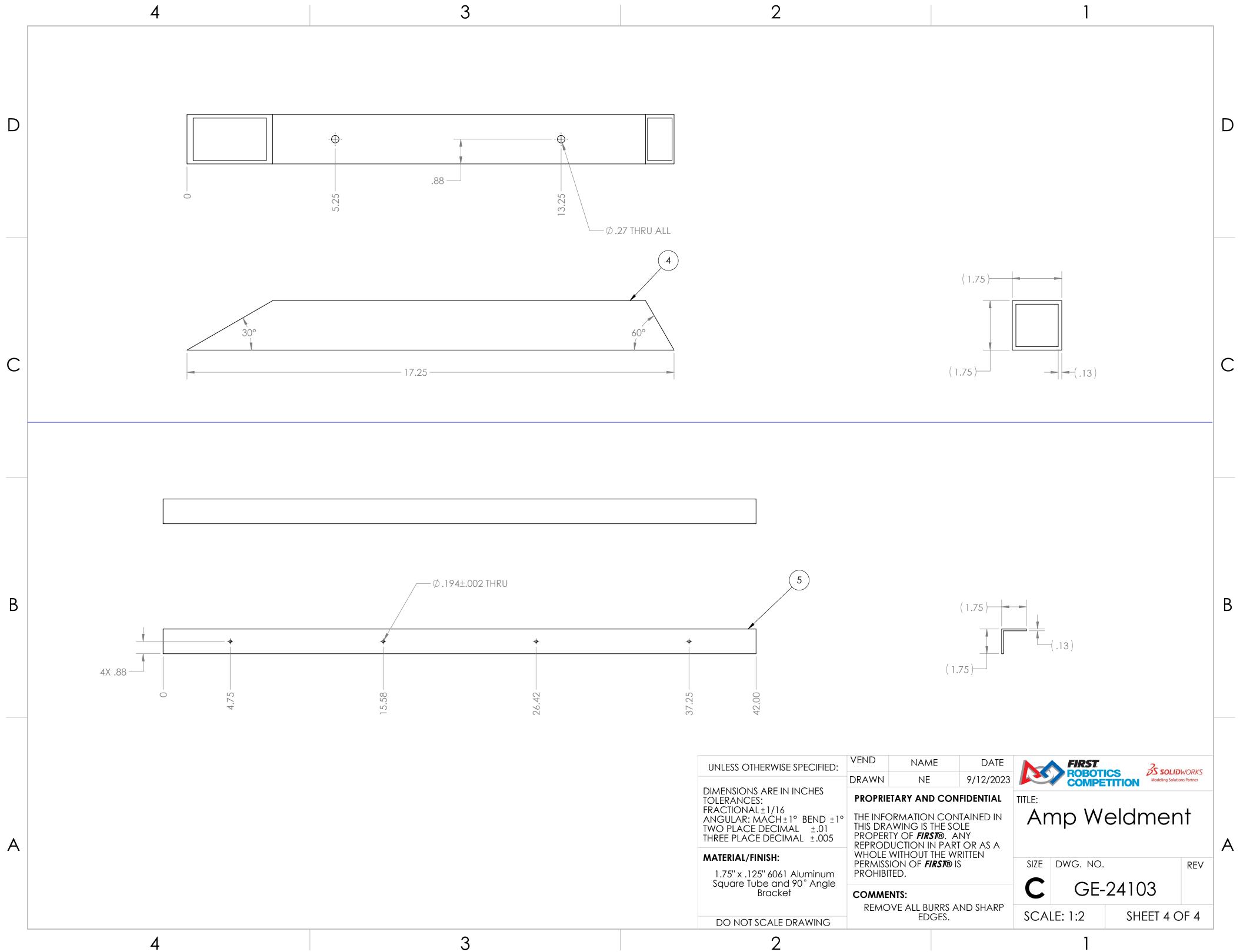


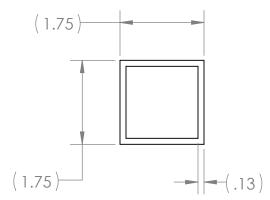


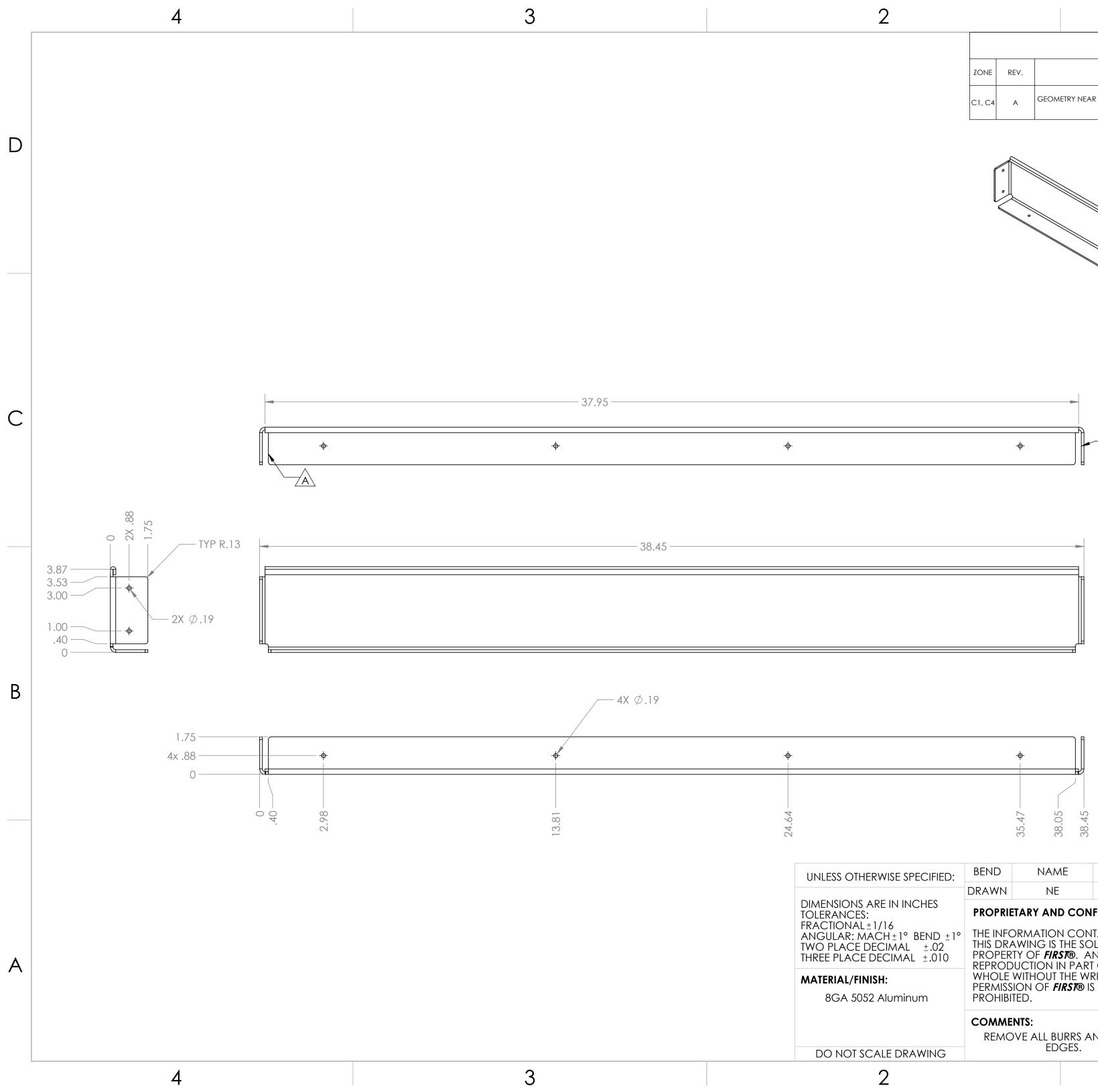
2

3

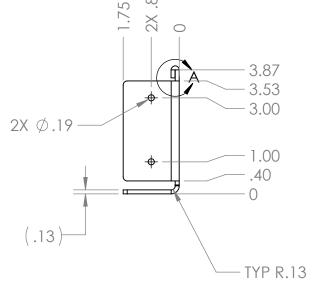




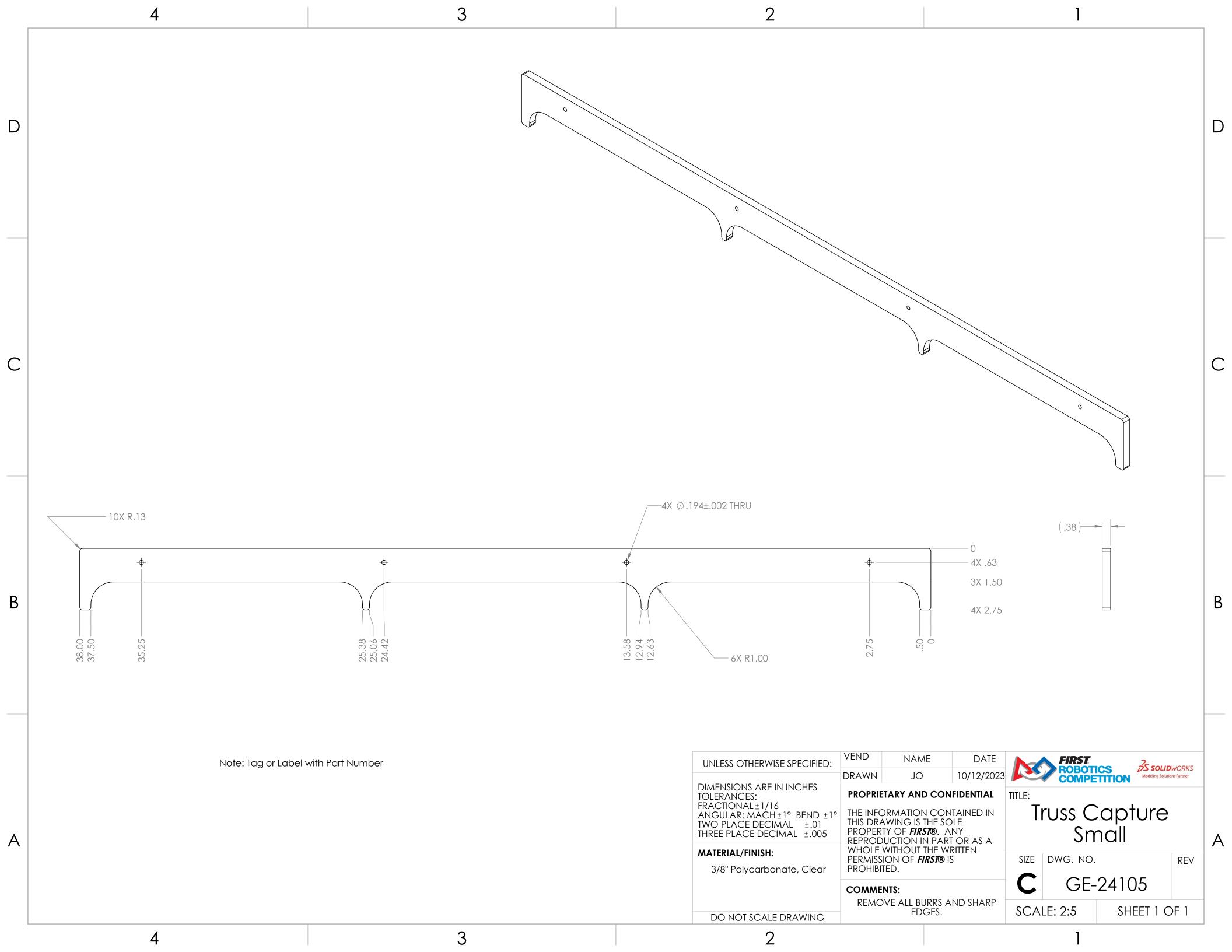


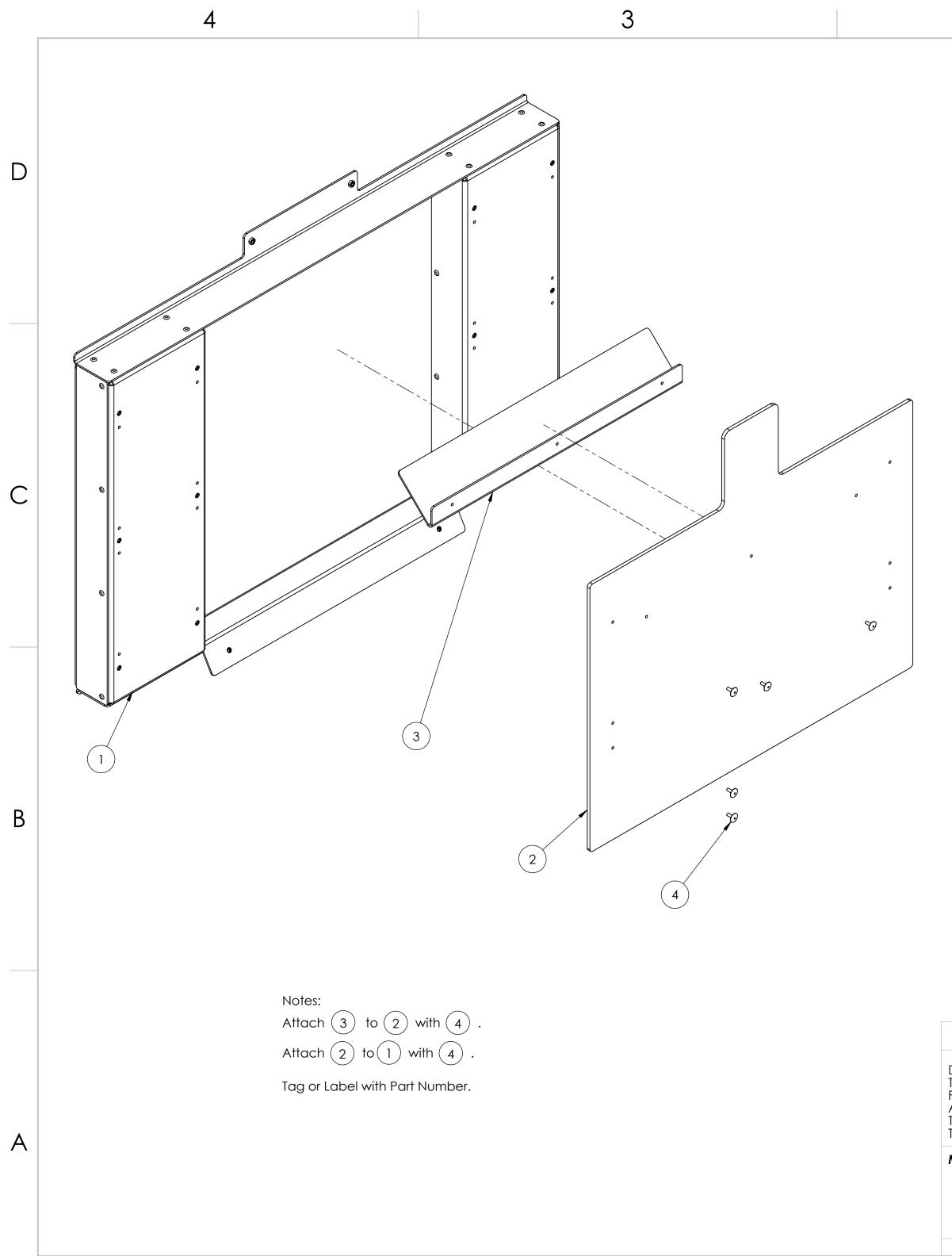


2				1		1
			REVISIONS			
	ZONE	REV.	DESCRIPTION	DATE	APPROVED	
	C1, C4	А	GEOMETRY NEAR CORNERS HAS CHANGED TO CREATE LARGER GAPS	10/13/2023	NWE	
						D
		<del>ф</del>		.25		C
			DETAIL A SCALE 2 : 3			
			1.75 2X.88	D		

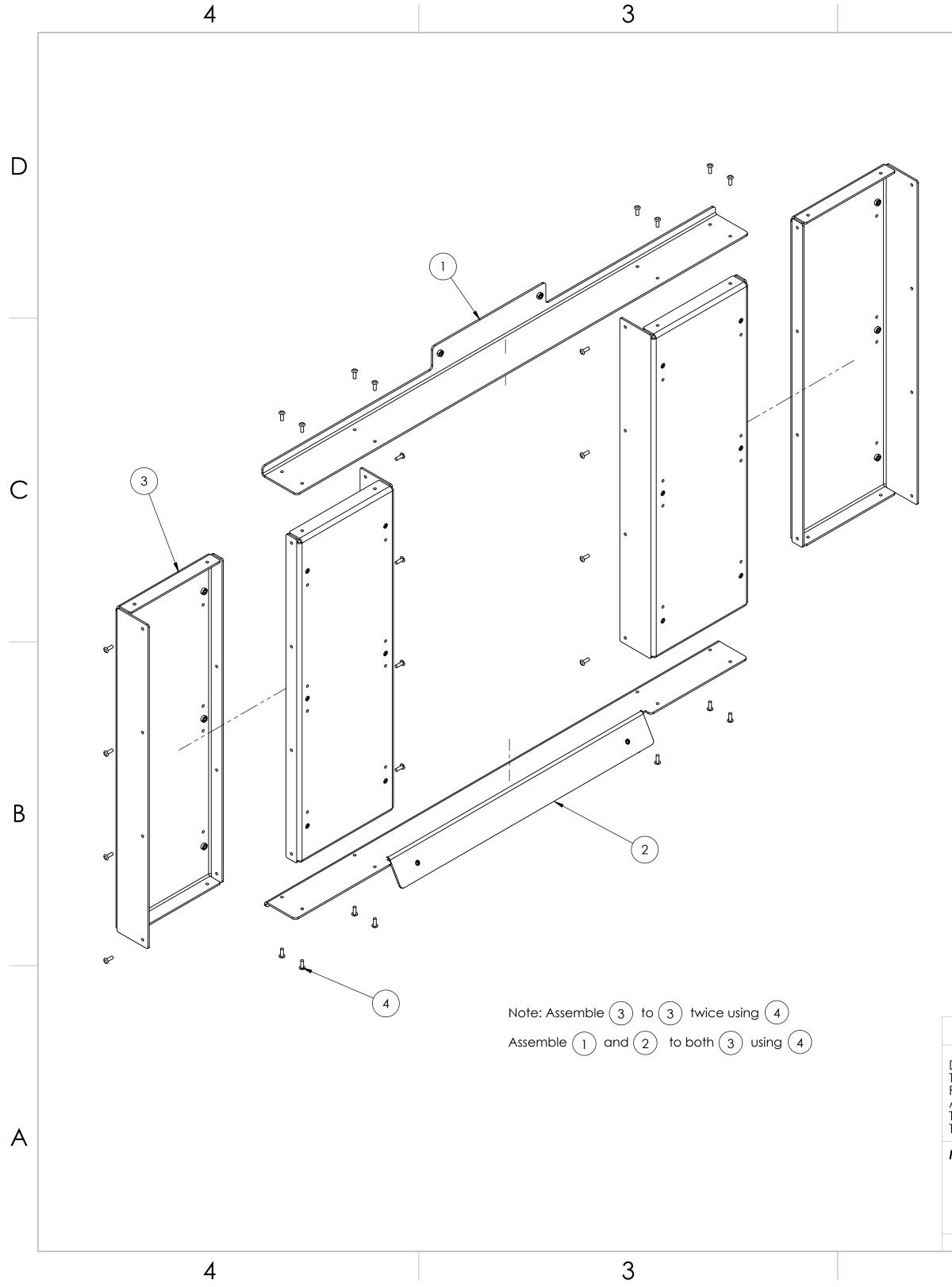


UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE		FIRST. ROBOT		2 25 solid	LODKS	
	DRAWN	NE	9/19/2023			ETITION	Modeling Solution		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010	THE INFO THIS DRA PROPER	TARY AND CON DRMATION CON AWING IS THE SC TY OF <i>FIRST</i> ®. A DUCTION IN PART	TITLE: Truss Floor					Δ	
MATERIAL/FINISH: 8GA 5052 Aluminum	WHOLE	WITHOUT THE WI ION OF <b>FIRST®</b> IS	SIZE				REV		
	COMMENTS:			C	GE-24104		)4	A	
do not scale drawing	REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:3 SHEET 1 C		DF 1			
2					1				_

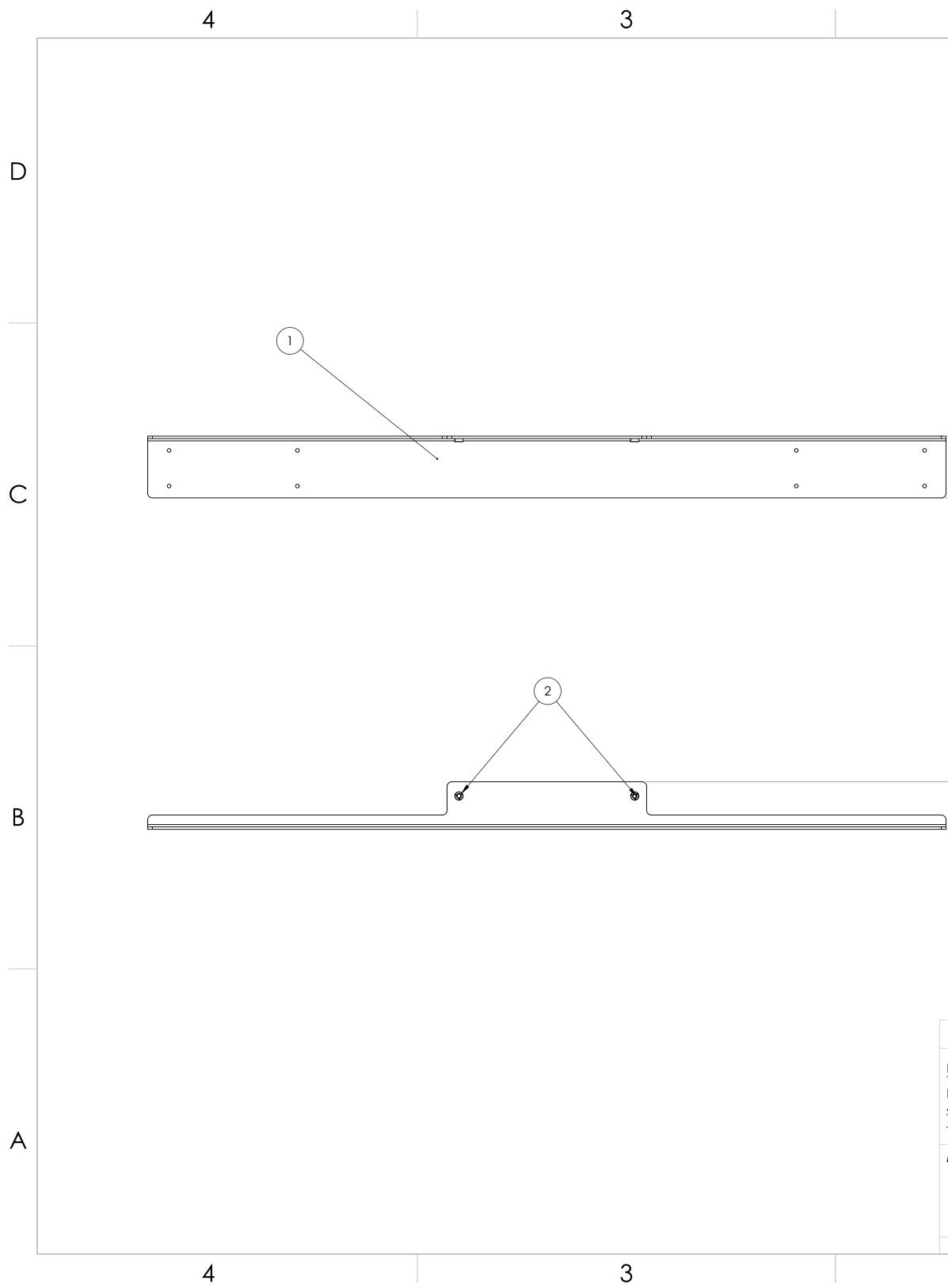




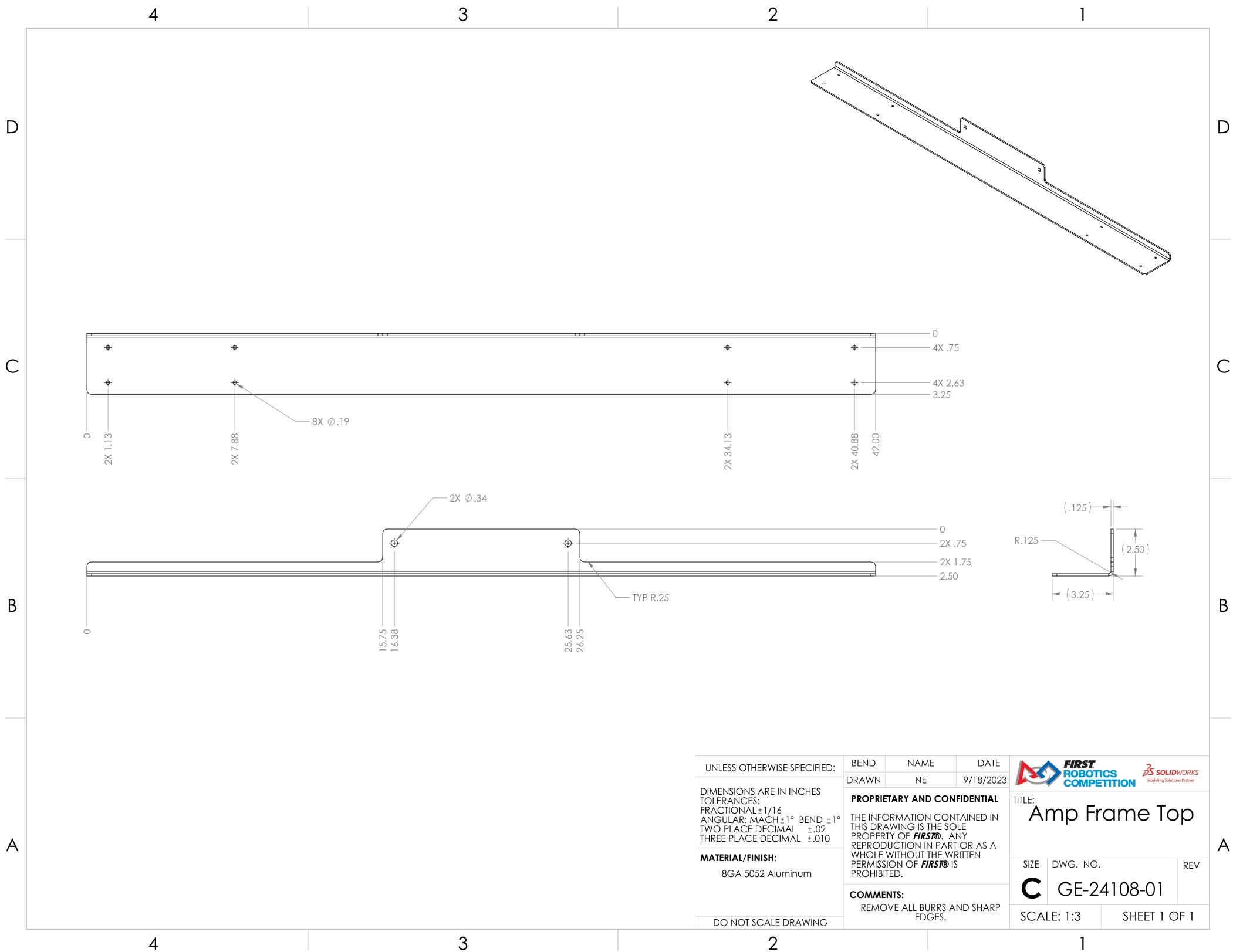
2	1	
		D
		С
	ITEM NO. PART NUMBER DESCRIPTION QTY.	В
UNLESS OTHERWISE SPECIFIED:	1       GE-24107       Amp Frame       1         2       GE-24111       Amp Back       1         3       GE-24112       Amp Deflector       1         4       rivet1875251- .375_largeHead       3/16" Large Head Aluminum Rivet, .251375 Grip Range       9         VEND       NAME       DATE       FIRST       FOBOTICS       Modeling Solutions Partner         DRAWN       JO       10/12/2023       FOBOTICS       Modeling Solutions Partner	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/16 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 <b>MATERIAL/FINISH:</b>	PROPRIETARY AND CONFIDENTIAL TITLE:	A
DO NOT SCALE DRAWING	]	

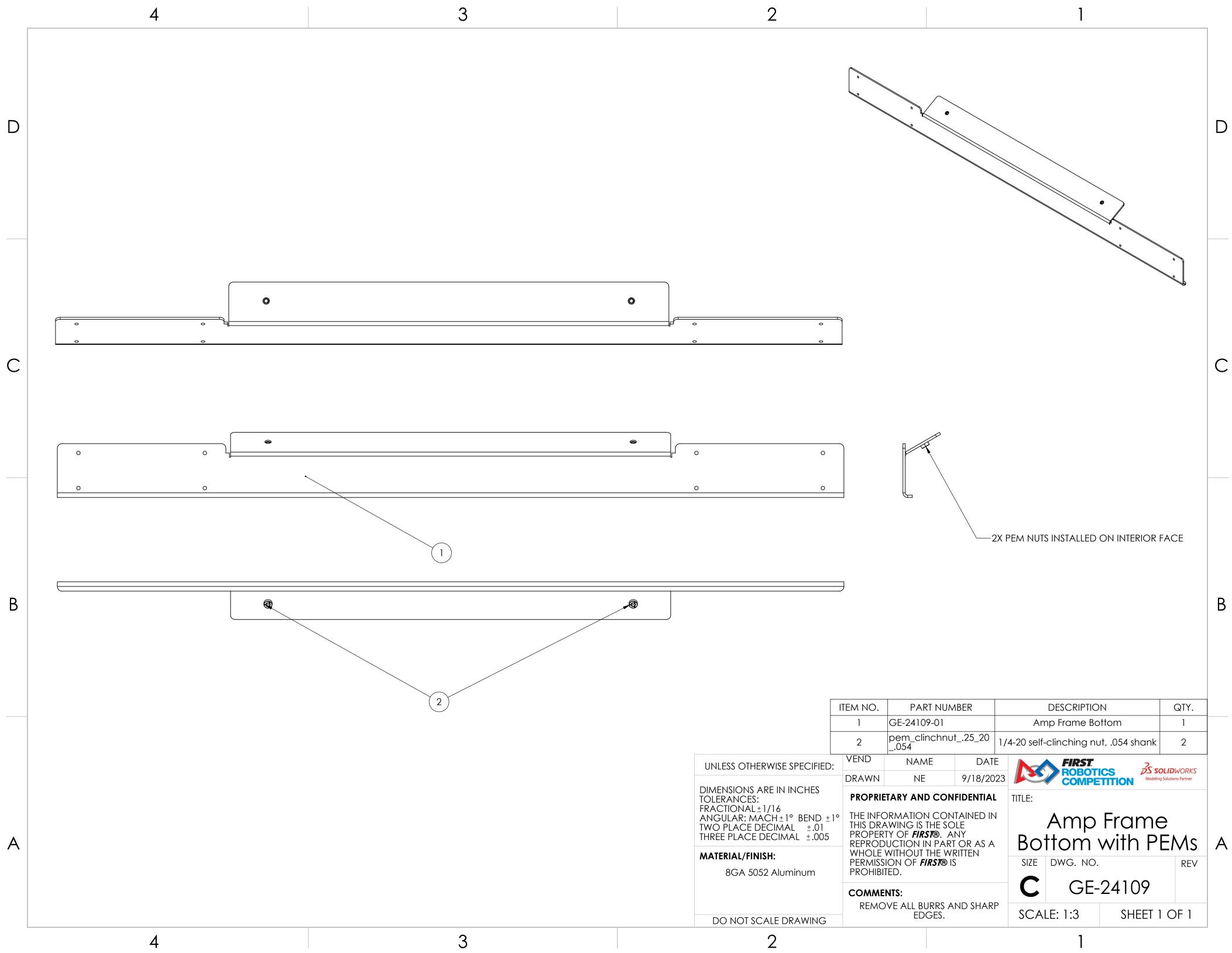


2			1	
A				D
A				
A	۹			
				С
	ITEM NO. PAR 1 GE-2410 2 GE-2410 3 GE-241	09	Amp Frame Top with PEMs Amp Frame Bottom with PEMs	QTY. 1 1 4
-			Amp Frame Side with PEMs 3/16" Aluminum Rivet, .251375 Grip Range	32
UNLESS OTHERWISE SPECIFIED:	VEND NAM		FIRST 25 SOLID	WORKS
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND±1 TWO PLACE DECIMAL±.01 THREE PLACE DECIMAL±.005 MATERIAL/FINISH:	<ul> <li>DRAWN JO</li> <li>PROPRIETARY ANI</li> <li>THE INFORMATION THIS DRAWING IS PROPERTY OF FIR: REPRODUCTION II WHOLE WITHOUT PERMISSION OF FIR</li> </ul>	D CONFIDENTIAL N CONTAINED IN THE SOLE ST®. ANY N PART OR AS A THE WRITTEN	TITLE: Amp Frame	REV
	PROHIBITED.	JRRS AND SHARI	<b>C</b> GE-24107	NEV
DO NOT SCALE DRAWING		GES.	SCALE: 1:5 SHEET 1 C	)F 1
2			1	

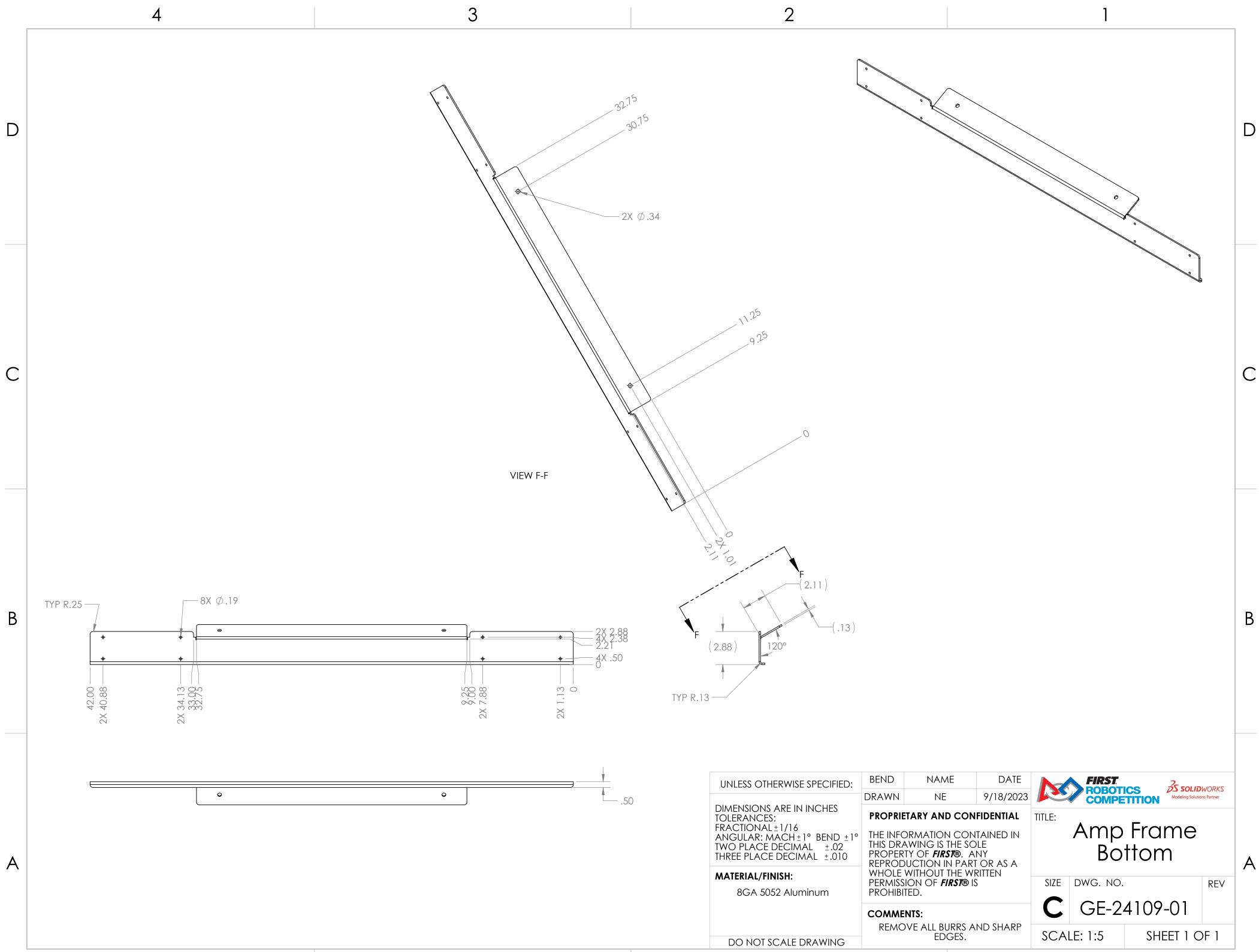


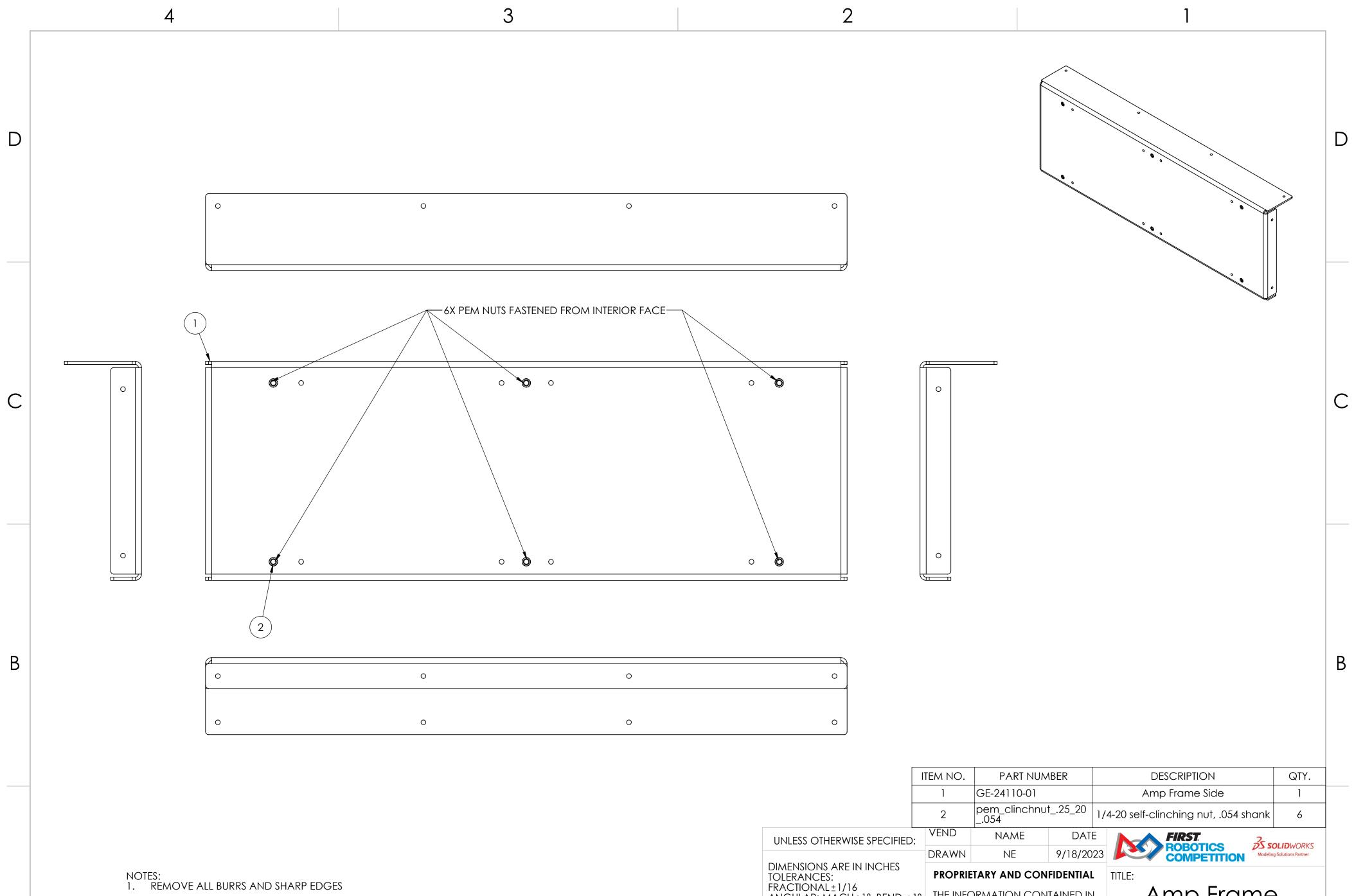
2			1	
				D
(3.25) 2X PEM NUTS INST	ALLED ON INTERIOR	FACE		C
(2.50)				В
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND±1° TWO PLACE DECIMAL±.01 THREE PLACE DECIMAL±.005 <b>MATERIAL/FINISH:</b> 8GA 5052 Aluminum	1GE-241082pem_clir 054VENDNAMDRAWNNEPROPRIETARY AND THIS DRAWING IS T PROPERTY OF FIRS REPRODUCTION IN WHOLE WITHOUT T PERMISSION OF FIR PROHIBITED.COMMENTS: REMOVE ALL BU	DATE DATE 9/18/202 D CONFIDENTIAL N CONTAINED IN THE SOLE ST®. ANY N PART OR AS A THE WRITTEN (RST® IS JRRS AND SHARP	Amp Frame T with PEMs SIZE DWG. NO. GE-24108	OLDWORKS ng Solutions Partner OD REV
DO NOT SCALE DRAWING		GES.	SCALE: 1:4 SHEET	1 OF 1
Z			Ι	





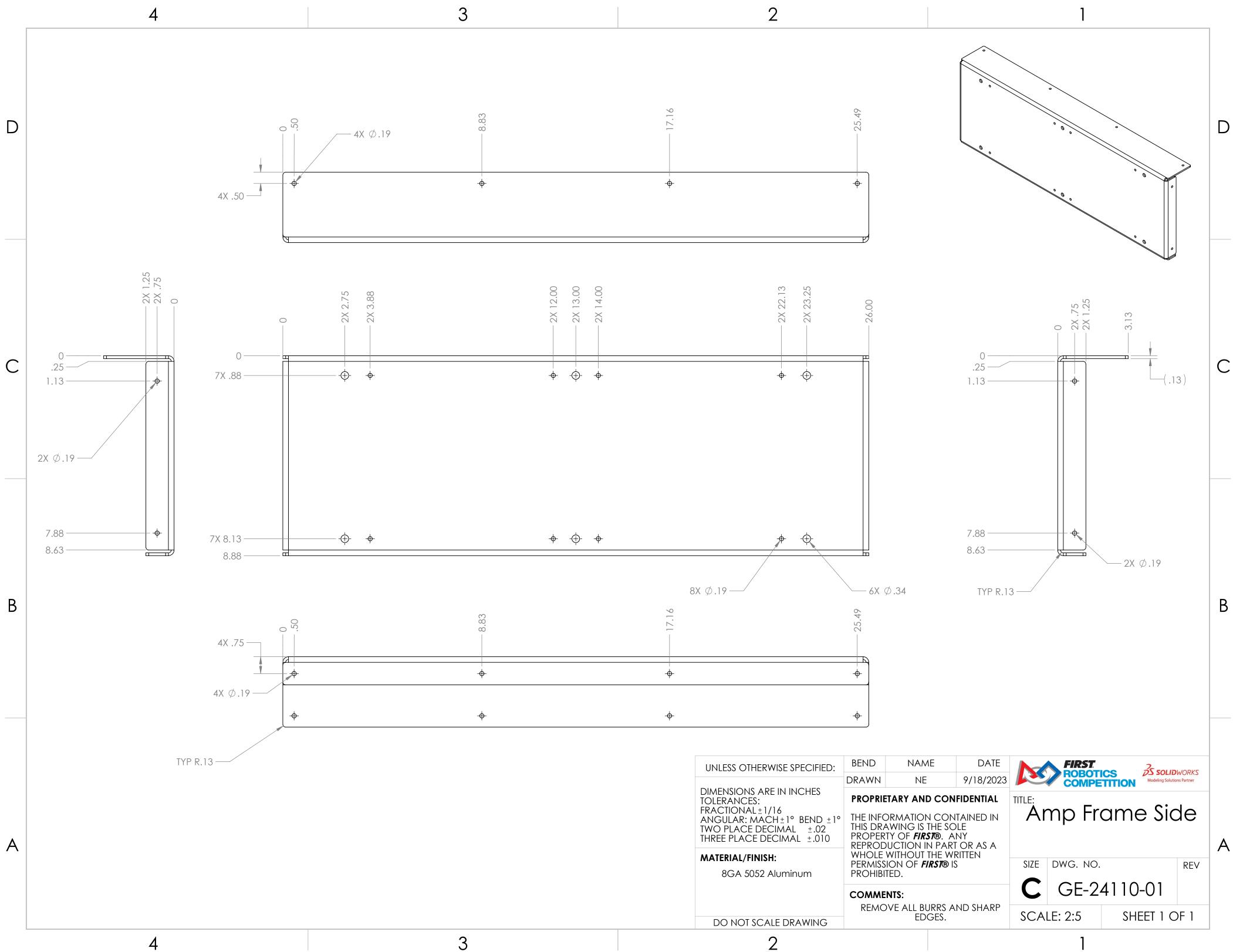
	ITEM NO.	PART NUN	<b>ABER</b>		DESCRIPTION	١	QTY.	
	1	GE-24109-01		Ar	Amp Frame Bottom			
	2	pem_clinchnu 054	_clinchnut25_20 1/4-20 self-clinching nut, .054 shank		t, .054 shank	2		
UNLESS OTHERWISE SPECIFIED	: VEND	NAME	DAT				<b>DLID</b> WORKS	
	DRAWN	NE	9/18/20	23	Solutions Partner			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ± TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH:	1° THE INFO THIS DRA PROPER REPROD WHOLE	DRMATION CON AWING IS THE SC TY OF <b>FIRST</b> ®. A	<b>rst</b> ®. Any I In Part Or AS A I The Written		TITLE: Amp Frame Bottom with P			A
8GA 5052 Aluminum	PROHIBI	TED.				0 ( 1 0 0	REV	
	COMME	NTS:		C	GE-	24109		
	REMC	VE ALL BURRS A EDGES.	BURRS AND SHARP		SCALE: 1:3 SHEET		OF 1	1
DO NOT SCALE DRAWING		0.071		0				
2	2				1			

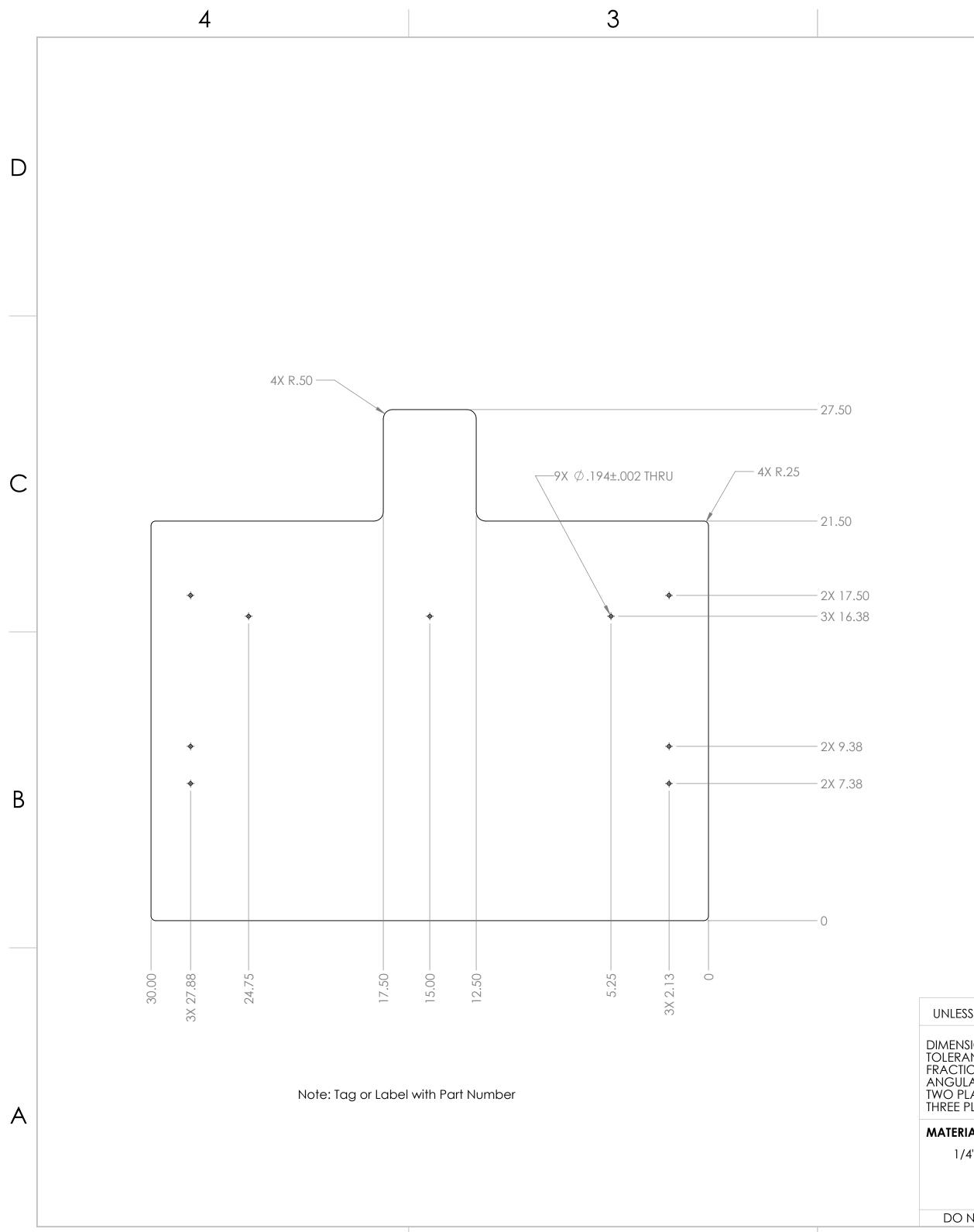




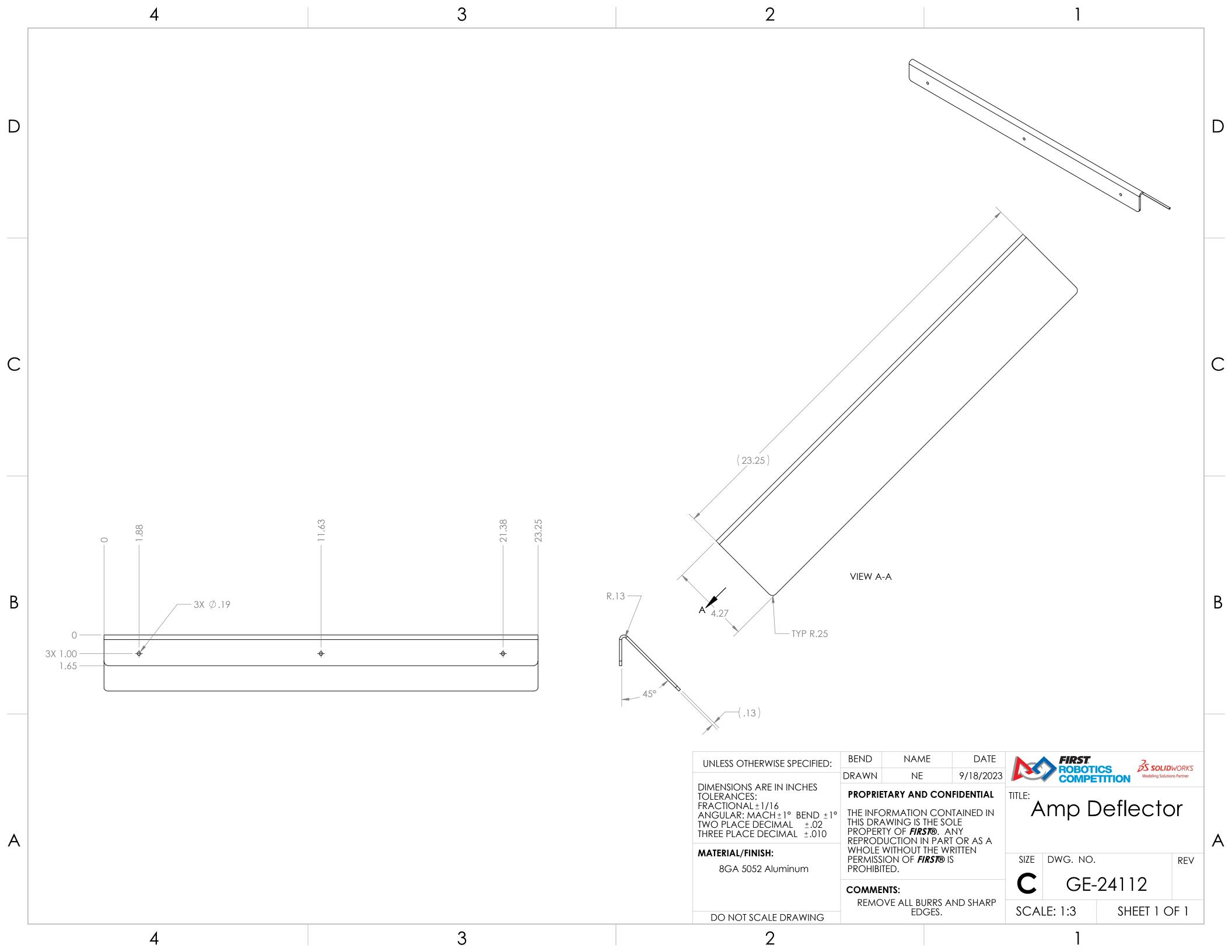
А

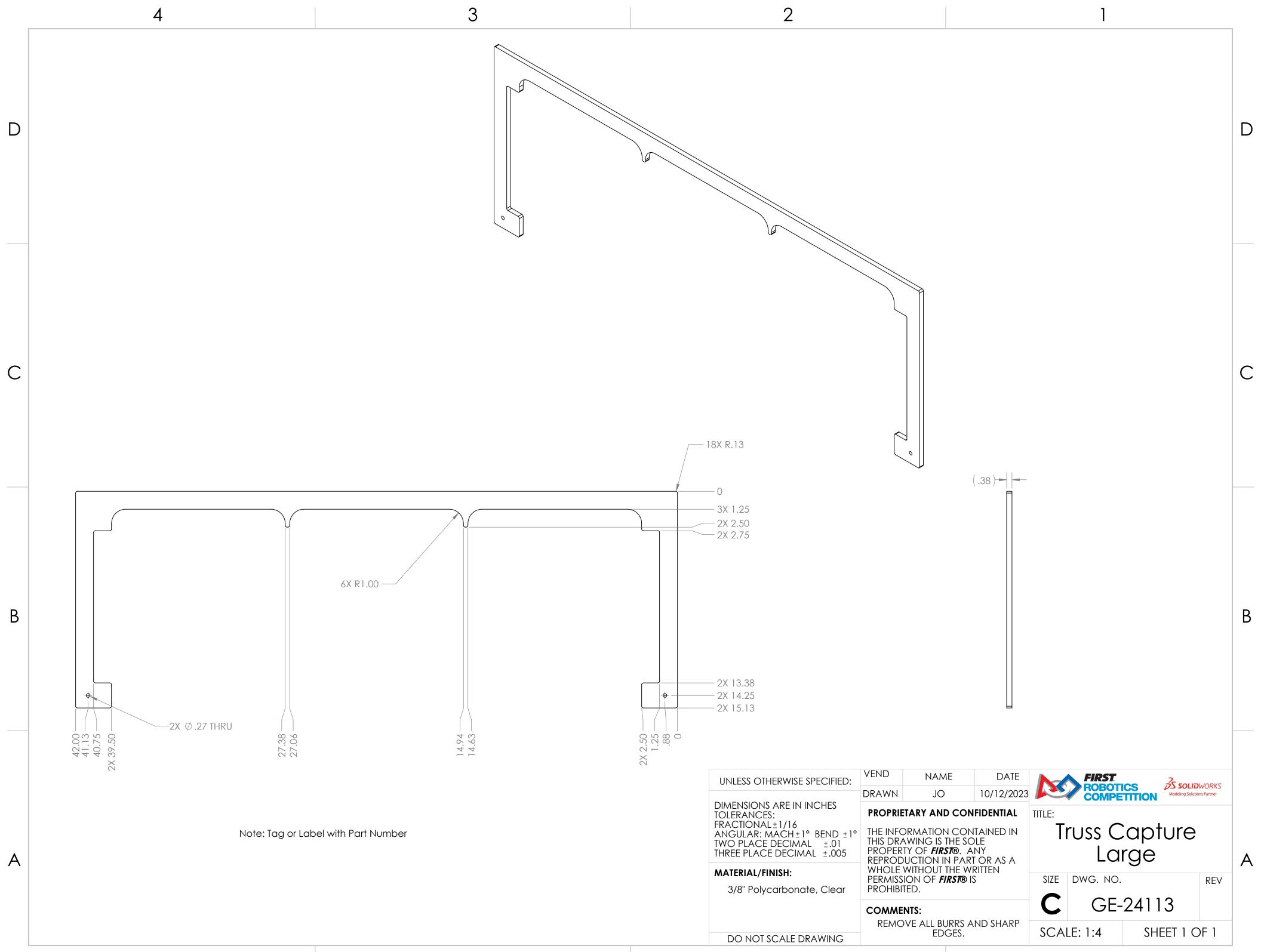
	ITEM NO.	PART NUM	\BER		DESCRIPTION	N		QTY.	]
	1	GE-24110-01		A	mp Frame Si	ide		1	
-	2	pem_clinchnu <sup>.</sup> 054	t25_20	1/4-20 self-	/4-20 self-clinching nut, .054 shank 6			6	
UNLESS OTHERWISE SPECIFIED	VEND	NAME	DATE		<b>FIRST</b>		ZS SOLIE		1
	DRAWN	NE	9/18/202	23	ROBOTIC		Modeling Soluti		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ± TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH:	1° THE INFO THIS DRA PROPER REPROD WHOLE	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <i>FIRST</i> ®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN			Amp Frame Side with PEN				A
8GA 5052 Aluminum	PERMISS	SION OF <b>FIRST®</b> IS TED.	5	SIZE			-	REV	
	COMME	NTS:		C	GE-	2411	0		
DO NOT SCALE DRAWLING	OVE ALL BURRS A EDGES.	E ALL BURRS AND SHARP EDGES.		SCALE: 2:5 SHEET 1		EET 1 C	)F 1		
2 1. REMO		1				,			

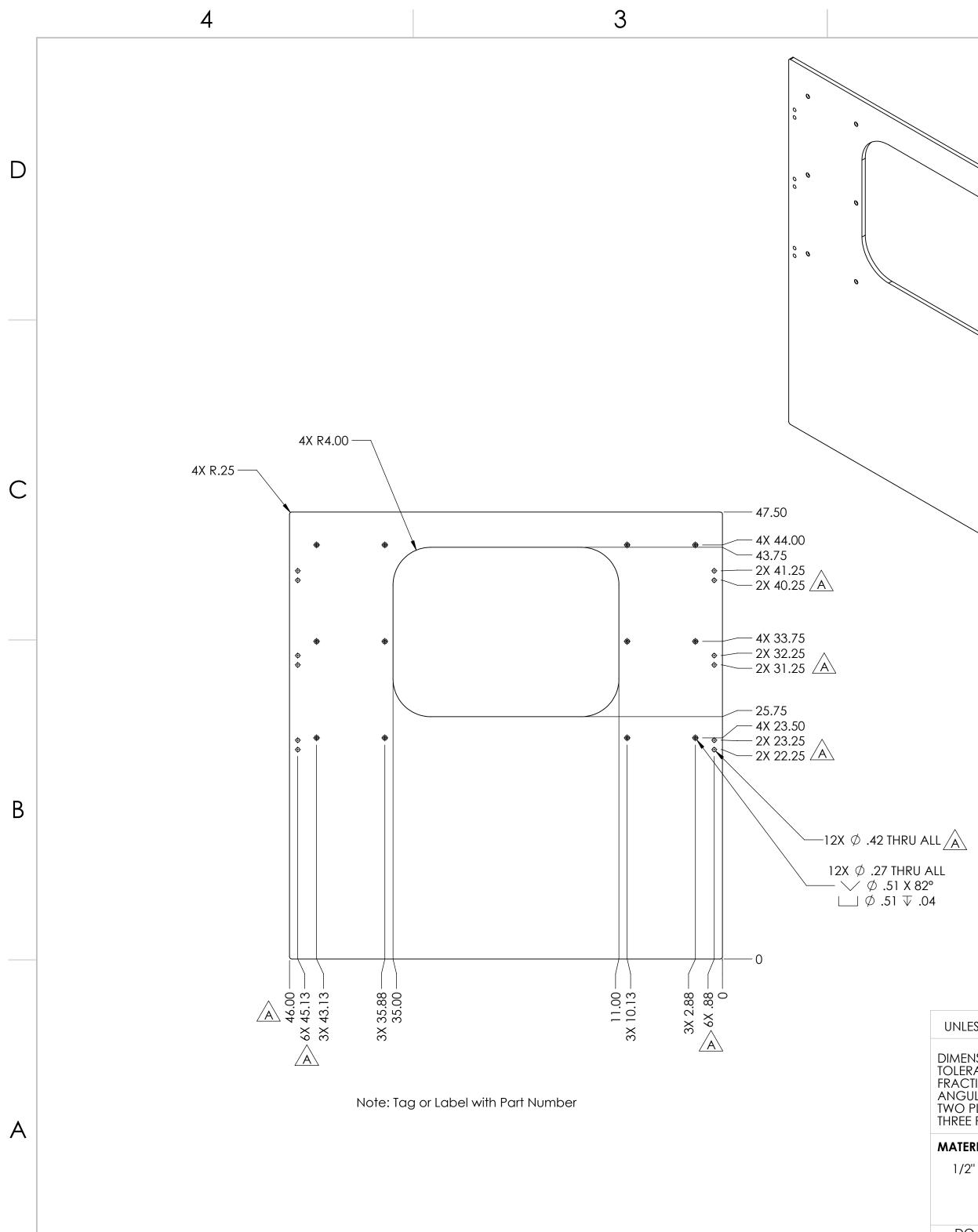




	D
	С
	В
VEND       NAME       DATE         JSIONS ARE IN INCHES       DRAWN       JO       10/12/2023         NSIONS ARE IN INCHES       DRAWN       JO       10/12/2023         INONAL±1/16       DRAWN       JO       10/12/2023         PROPRIETARY AND CONFIDENTIAL       THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <i>FIRST</i> ®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <i>FIRST</i> ® IS PROHIBITED.       TITLE:         AMAL / FINISH: /4" HDPE, Black Matter Finish       SIZE       DWG. NO.       REV         ONOT SCALE DRAWING       COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.       SIZE       DWG. NO.       REV	A
2 IDDES. SCALE. 1.4 STILLET OF T	]







$\mathbf{O}$
Ζ

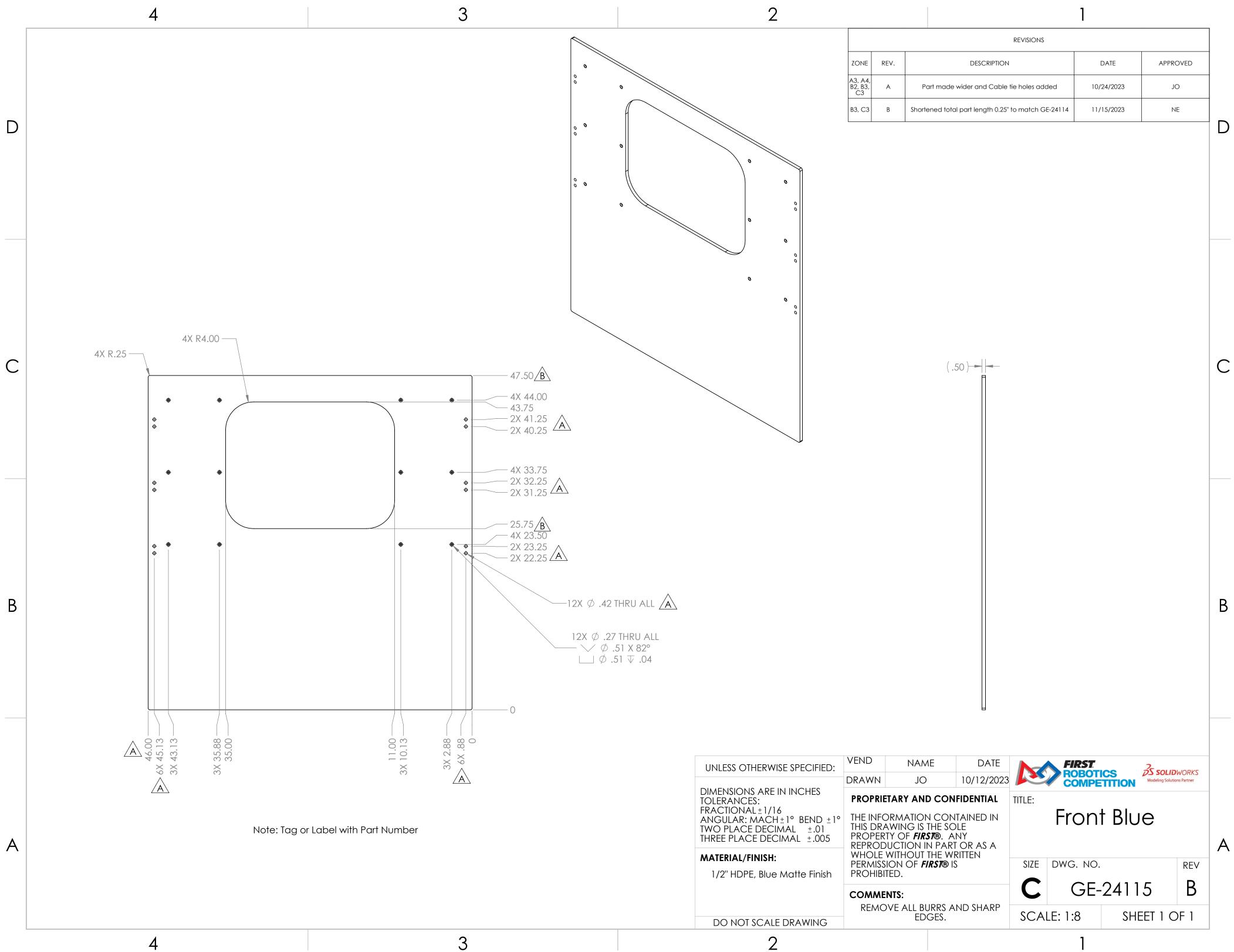
			REVISIONS		
	ZONE	REV.	DESCRIPTION	DATE	APPROVED
Æ	A3, A4, B2, B3, C3	А	Part made wider and holes added for Cable Ties	10/24/2023	JO

D

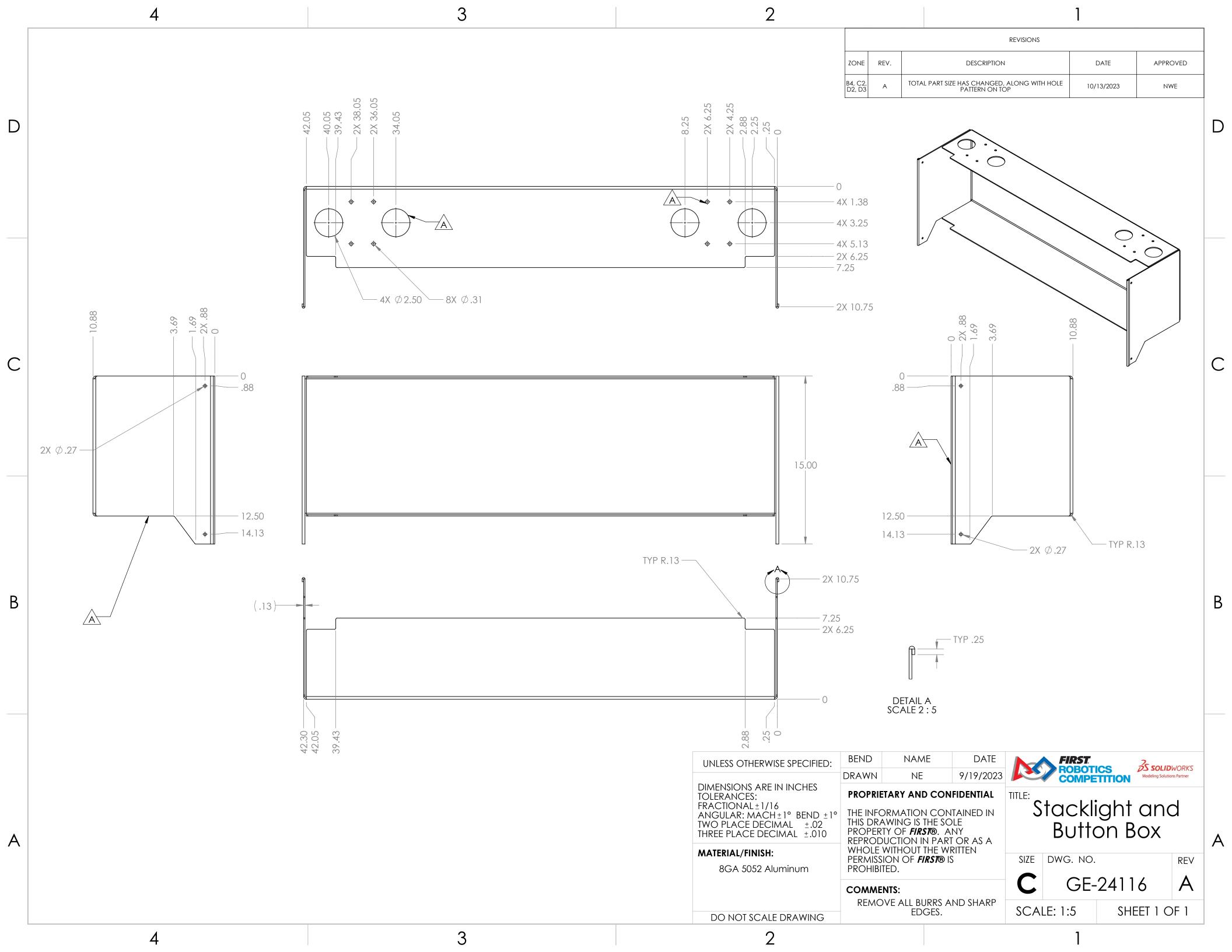
С

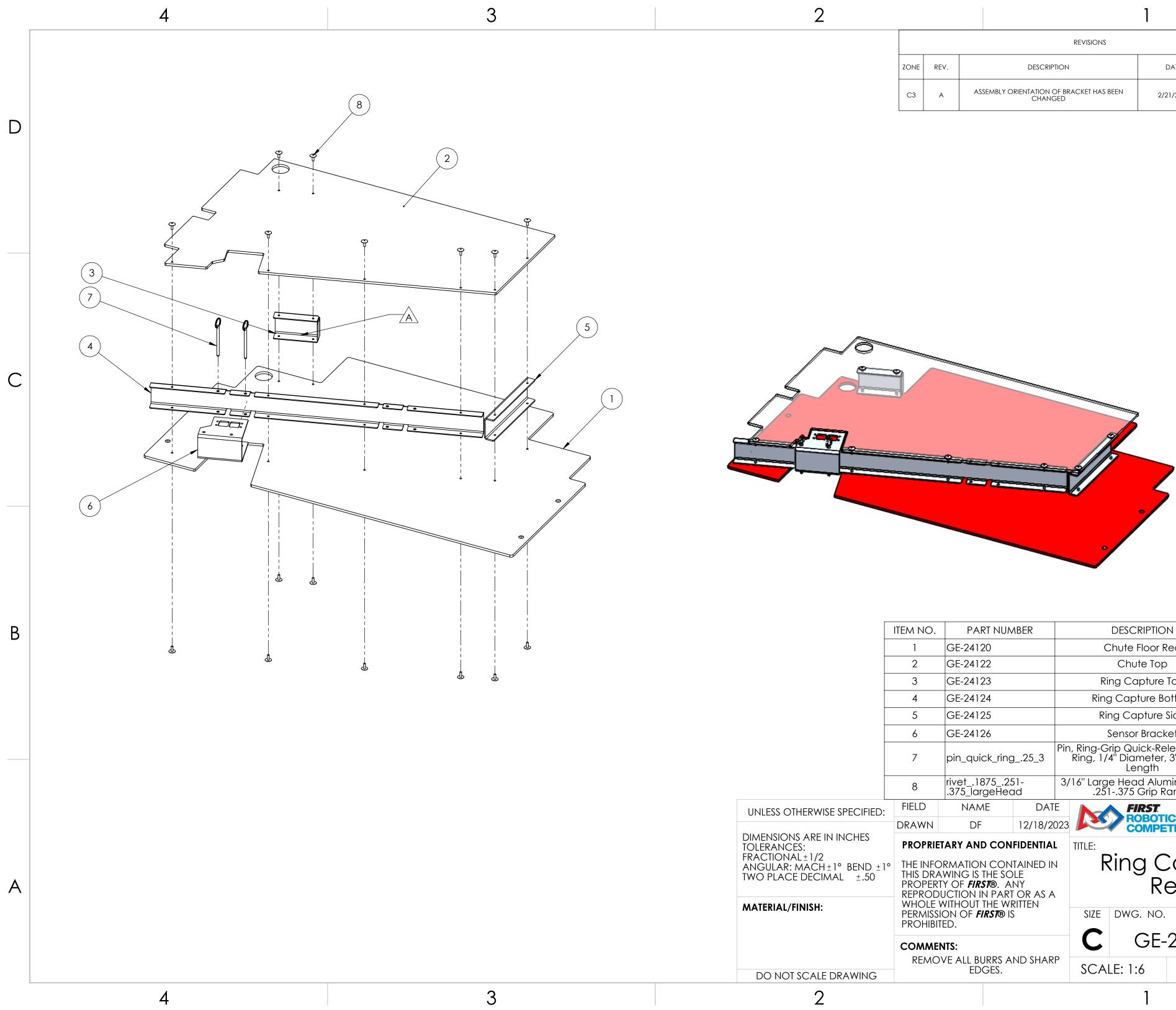
В

UNLESS OTHERWISE SPECIFIED:	VEND NAME DATE			FIRST. ROBOTICS 35 SOLIDWORKS					
	DRAWN	JO	10/12/2023			TITION	Modeling Soluti		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	THE INFO THIS DRA PROPERT	<b>ARY AND CON</b> RMATION CON WING IS THE SC Y OF <b>FIRST®</b> . A	ITAINED IN DLE NY	Front Red					
MATERIAL/FINISH: 1/2" HDPE, Red Matte Finish	WHOLE V	JCTION IN PART VITHOUT THE WI ON OF <b>FIRST®</b> IS ED.	SIZE	DWG. NO.			REV	A	
	COMMEN	ITS:		C	GE-	2411	4	A	
do not scale drawing	REMO	/E ALL BURRS A EDGES.	SCA	ALE: 1:8 SHEET 1 OF		DF 1			
2				1					



	REVISIONS								
ZONE	REV.	DESCRIPTION	DATE	APPROVED					
A3, A4, B2, B3, C3	А	Part made wider and Cable tie holes added	10/24/2023	JO					
B3, C3	В	Shortened total part length 0.25" to match GE-24114	11/15/2023	NE					

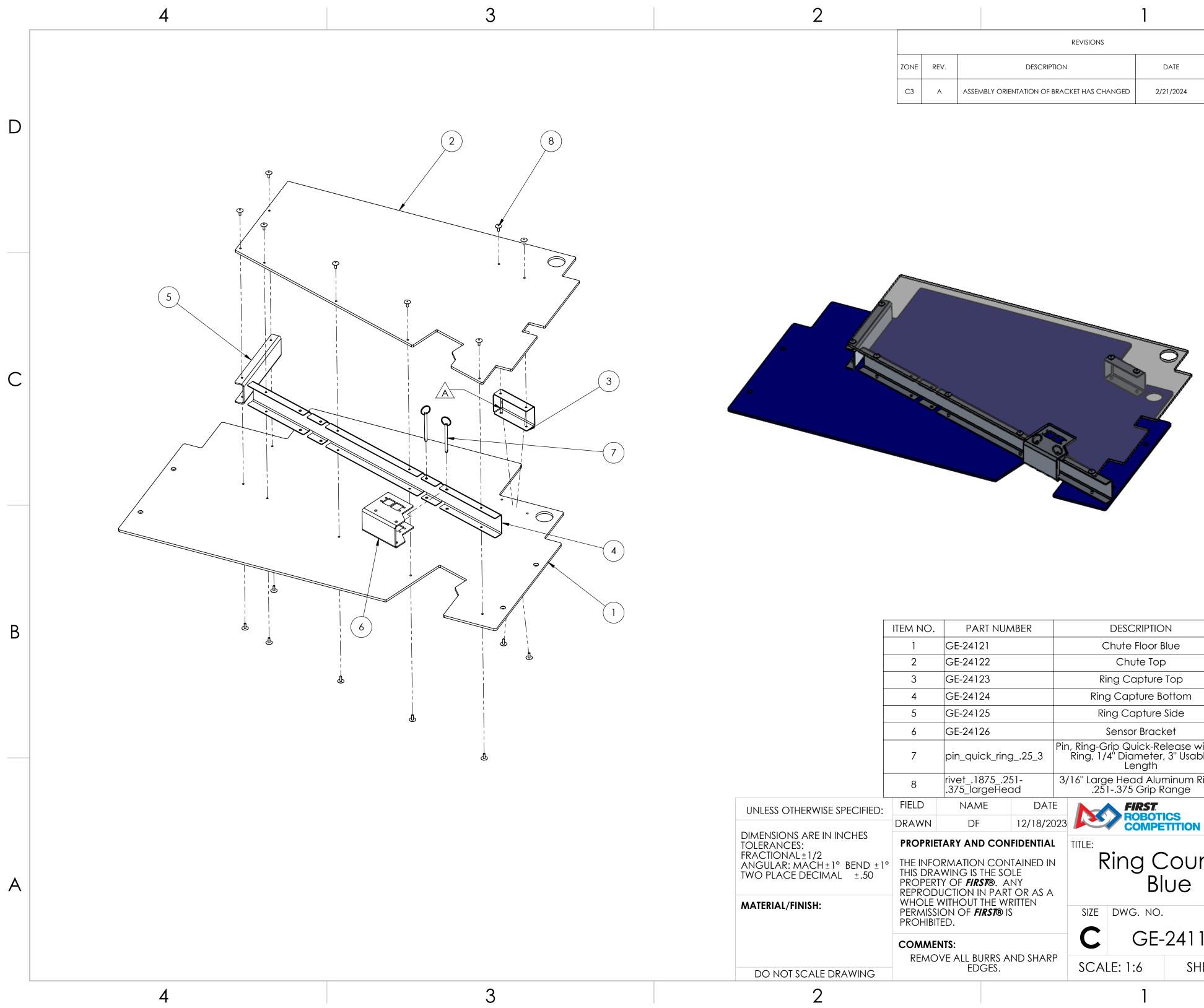




	REVISIONS											
ZC	ONE	REV.	DESCRIPTION	DATE	APPROVED							
(	C3	A	ASSEMBLY ORIENTATION OF BRACKET HAS BEEN CHANGED	2/21/2024	NWE							

С

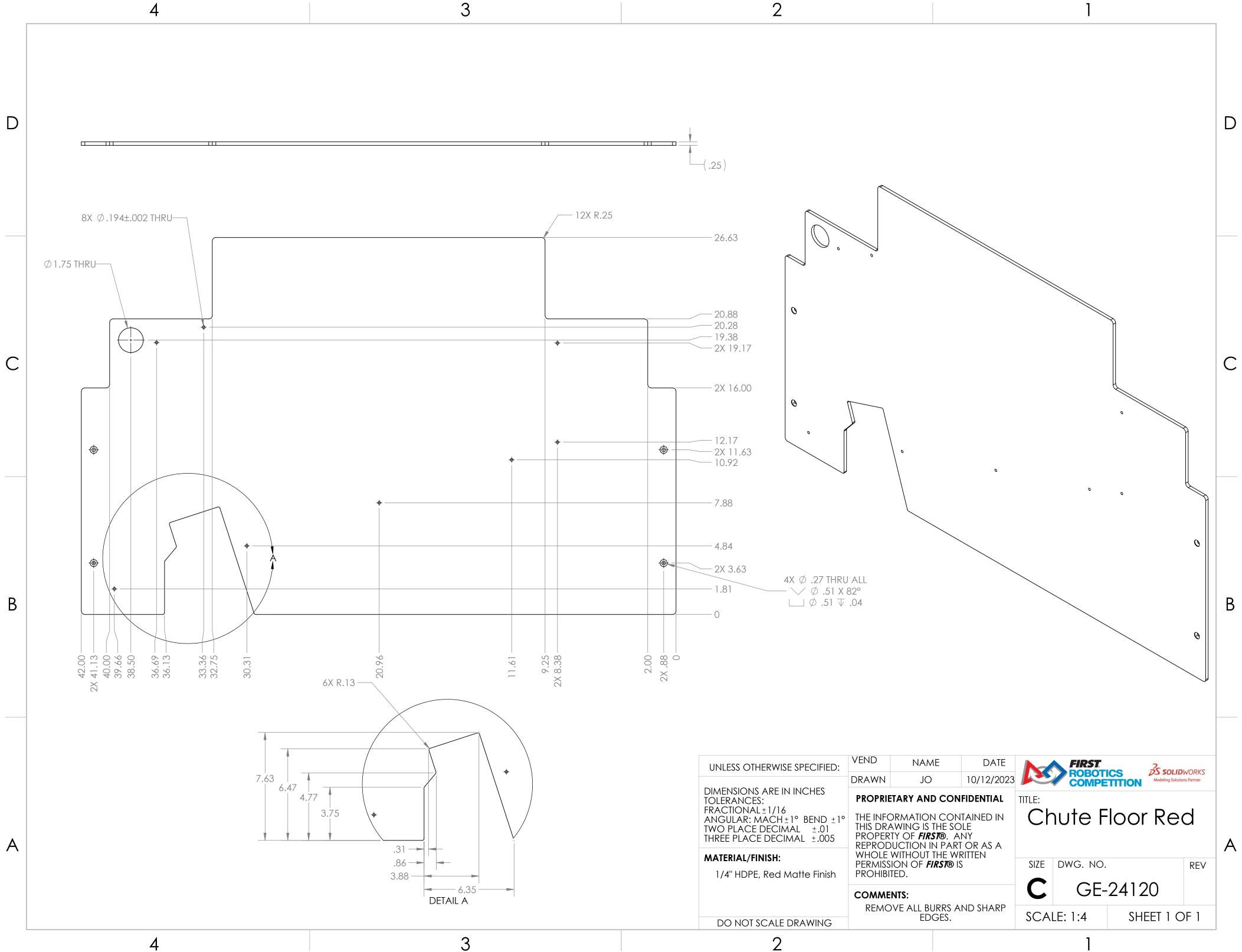
										-
	ITEM NO.	PA	rt num	<b>1</b> BER		DESCRIPTIO	Ν	Ģ	QTY.	B
	1	GE-2412	20			Chute Floor R	Red		1	
	2	GE-2412	22			Chute Top	)		1	
	3	GE-2412	23		F	Ring Capture Top			1	1
	4	GE-2412	24		Rir	Ring Capture Bottom			1	1
	5	GE-2412	25		F	Ring Capture Side			1	1
	6	GE-2412	26			Sensor Brack	(et		1	1
	7	7 pin_quick_r		g25_3	Pin, Ring-( Ring, 1	Grip Quick-Re /4" Diameter, Length	lease with SS 3'' Usable	use with SS Usable 2		
						ge Head Alur 51375 Grip R	ad Aluminum Rivet, Grip Range		16	
UNLESS OTHERWISE SPECIFIED:	FIELD	NAM	۱E	DAT	E	FIRST.	25	SOLIDH		]
	DRAWN	DF		12/18/2	023 尾			eling Solutions		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/2 ANGULAR: MACH±1° BEND ±1 TWO PLACE DECIMAL ±.50	THE INFO     THIS DRA     PROPERT	RMATION WING IS Y OF <b>FIR</b>	RY AND CONFIDENTIAL MATION CONTAINED IN ING IS THE SOLE OF <b>FIRST®</b> . ANY CTION IN PART OR AS A			Din or Counstar				A
MATERIAL/FINISH:	WHOLE V PERMISSI	VITHOUT	THE WF	RITTEN	SIZE	DWG. NO.			REV	-
	PROHIBIT			,					KL V	
	COMME	NTS:			C	GE-	24118		A	
	REMO		BURRS AND SHARP DGES.		P	SCALE: 1:6 SHEET 1		1 0		
do not scale drawing		SCF	ALL. 1.0	SHEET						
2						1				

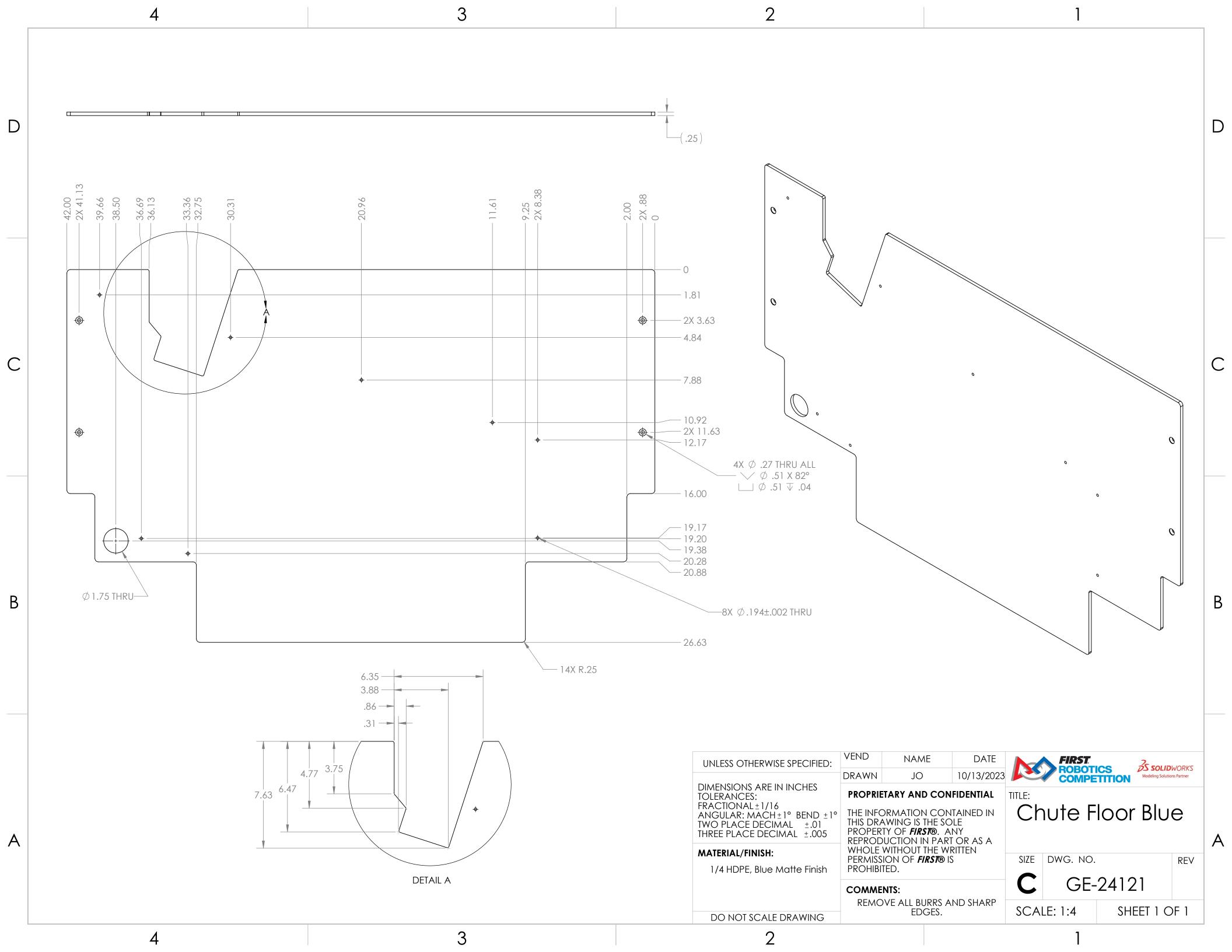


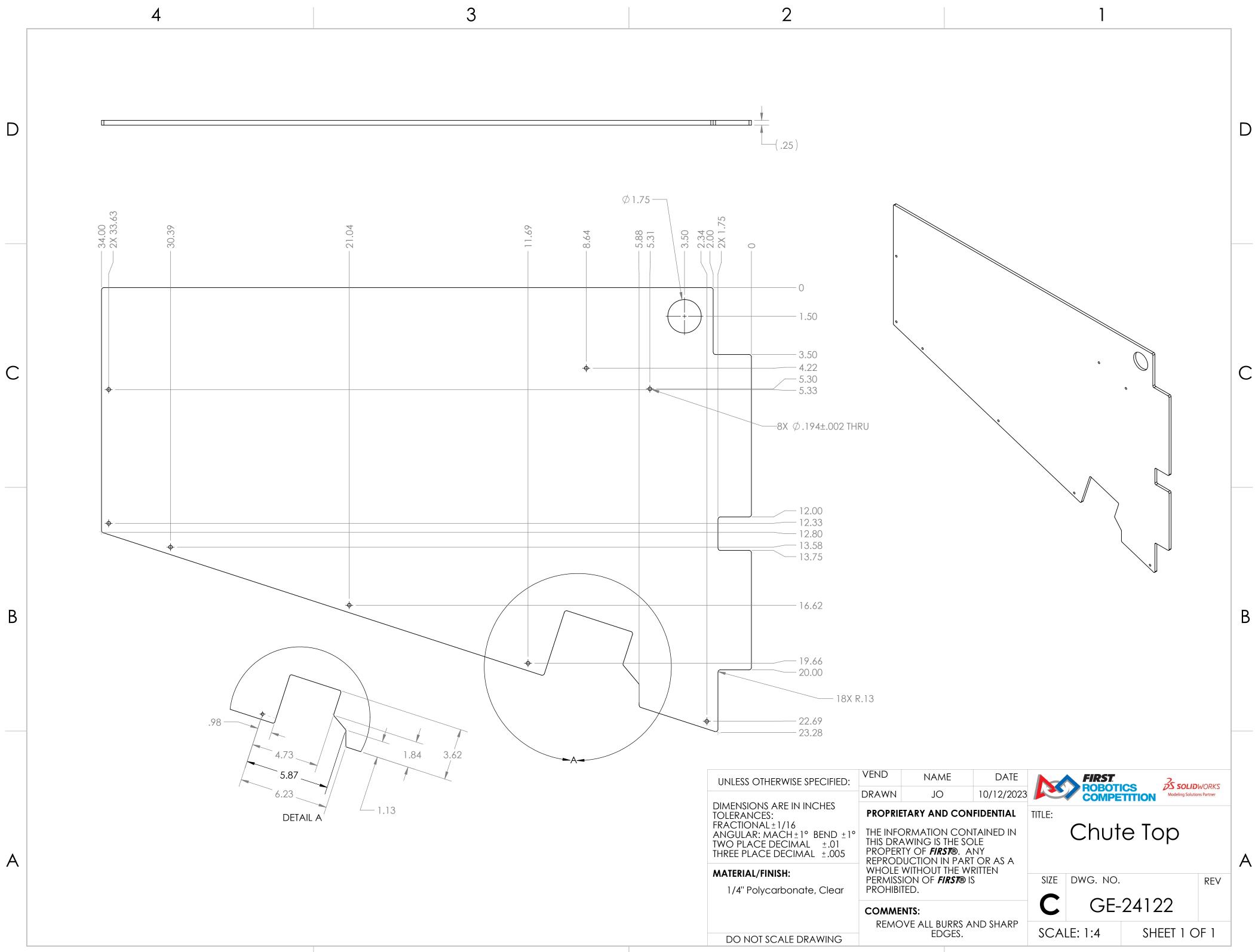
			•	
		REVISIONS		
ZONE	REV.	DESCRIPTION	DATE	APPROVED
С3	A	ASSEMBLY ORIENTATION OF BRACKET HAS CHANGED	2/21/2024	NWE

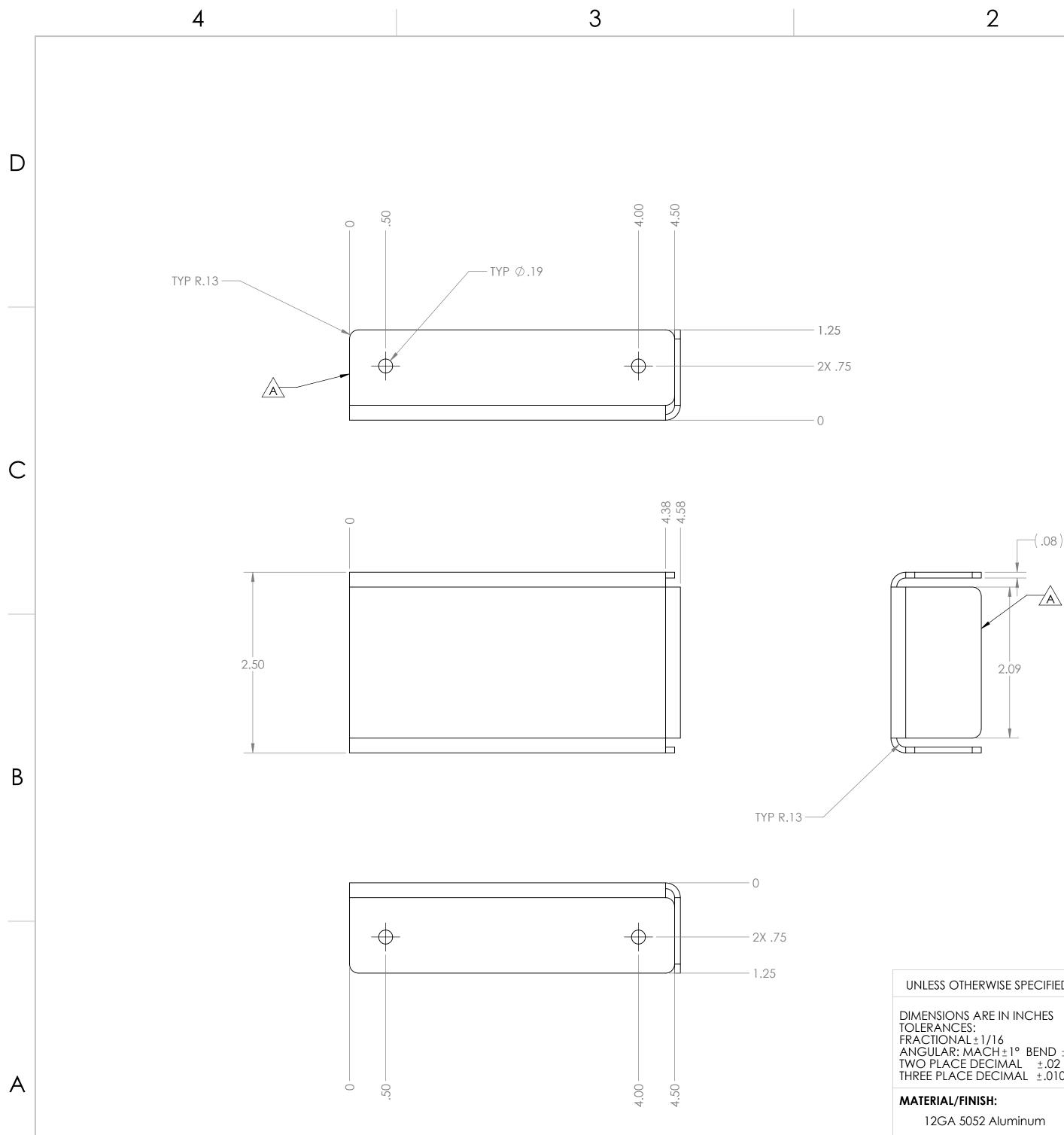
С

	ITEM NO.	PA	RT NUN	/BER			DESCRIPTIO	N		QTY.	B
-	1	GE-2412	21			C	Chute Floor B	lue		1	
-	2	GE-2412	22				Chute Top	)		1	1
	3	GE-2412	23			Ring Capture Top				1	1
	4	GE-2412	24			Ring Capture Bottom				1	1
	5	GE-2412	GE-24125			Ring Capture Side				1	1
	6	GE-2412	GE-24126			Sensor Bracket				1	1
	7	pin_quick_ring25_3		Pin	Pin, Ring-Grip Quick-Release with SS Ring, 1/4" Diameter, 3" Usable Length 3/16" Large Head Aluminum Rivet, .251375 Grip Range			h SS ?	2		
	8 rivet13 .375_lai							3/	ret,	16	
UNLESS OTHERWISE SPECIFIED:	FIELD	NAN	۱E	DAT	E		FIRST.		ZS SOLID		
	DRAWN	DRAWN DF 12/18/2023					ROBOTI		Modeling Solution		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/2 ANGULAR: MACH±1° BEND±1 TWO PLACE DECIMAL ±.50	<ul> <li>THE INFC THIS DRA PROPERT</li> </ul>	RMATION WING IS Y OF <b>FIR</b>	n CON The So <b>St</b> ®, Al		1	Ring Counte Blue				۶r	
MATERIAL/FINISH:	WHOLE \	WITHOUT ON OF <b>F</b>	THE WF	RITTEN		SIZE	DWG. NO.			REV	_
	PROHIBIT			)		JIZL				KE V	
	COMME	NTS:				C	GE-	2411	9	A	
	REMO		SURRS AND SHARP		P	SCALE: 1:6 SHEET 1			FT 1 C		
DO NOT SCALE DRAWING						SCALE: 1:6 SHEET 1 OF 1					
2							1				







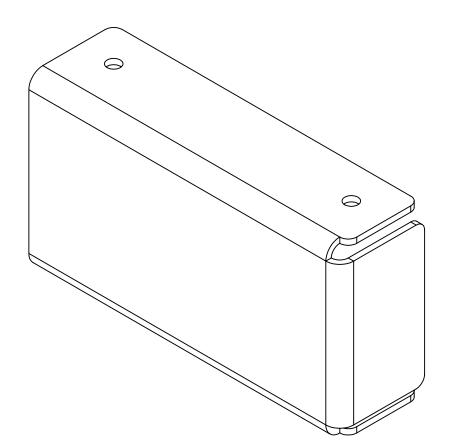


3

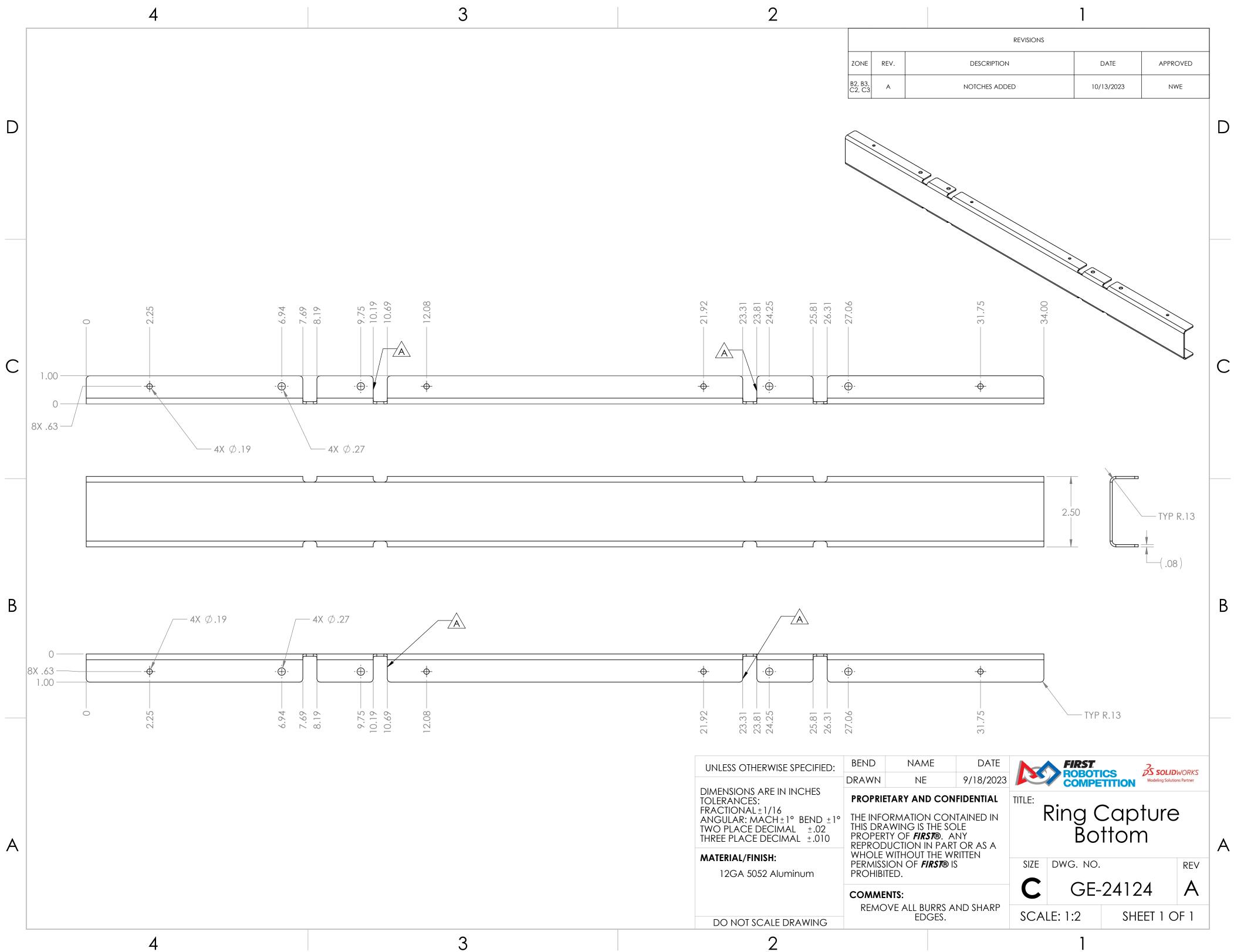
				•	
			REVISIONS		
	ZONE	REV.	DESCRIPTION	DATE	APPROVED
(	C2, C4	A	TOTAL PART LENGTH AND FLANGE LENGTH	10/13/2023	NWE

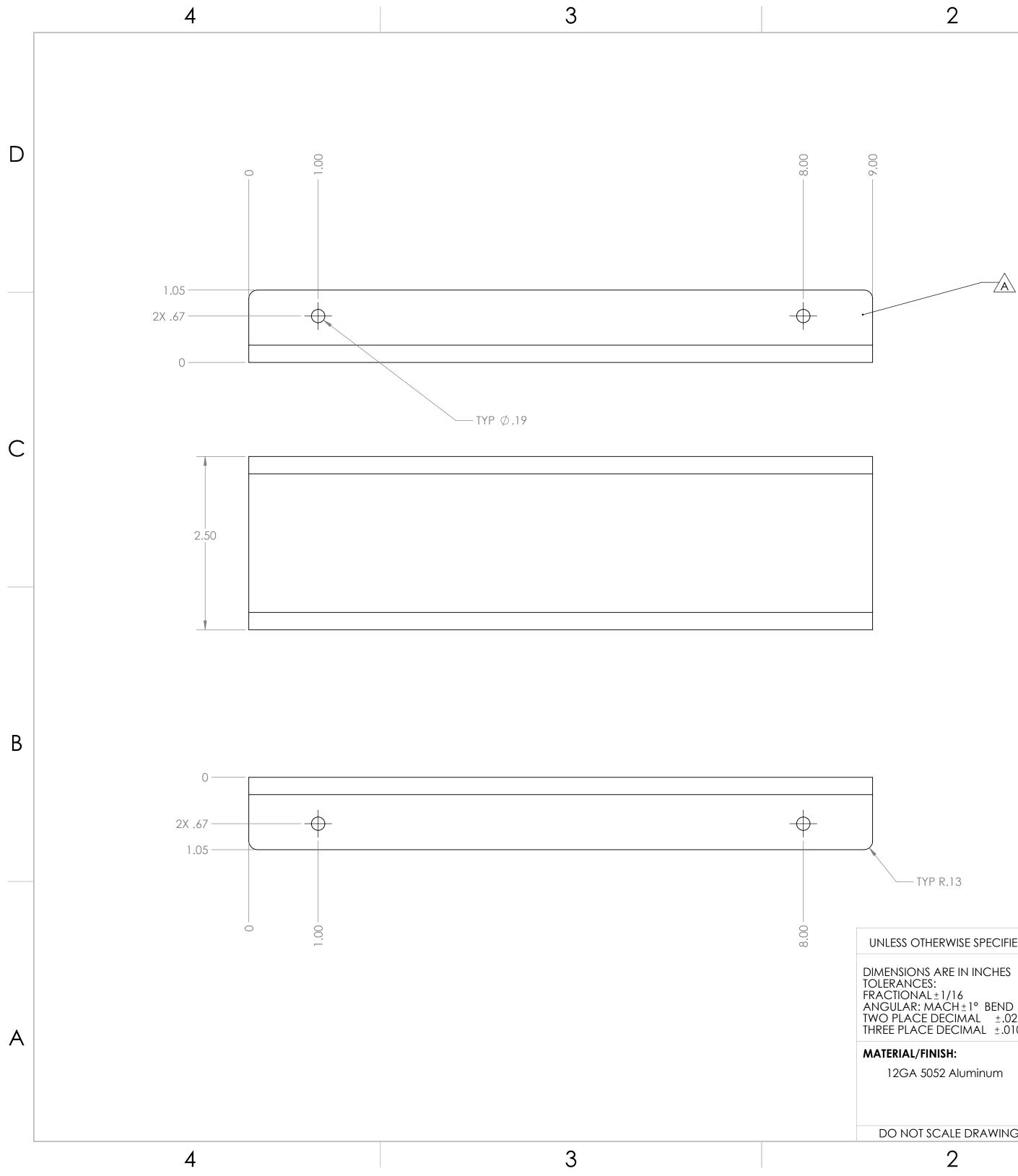
D

С



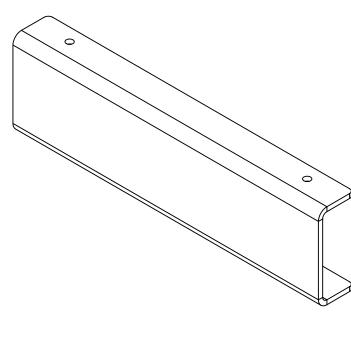
UNLESS OTHERWISE SPECIFIED:	BEND NAME		DATE	FIRST.				LIODKS	
	DRAWN	NE	9/18/2023	3 ROBOTICS COMPETITION					
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <i>FIRST</i> ®. ANY REPRODUCTION IN PART OR AS A			Ring Capture					A
MATERIAL/FINISH:		without the written Ion of <b>First</b> ® Is		SIZE	DWG. NO	. NO.		REV	-
12GA 5052 Aluminum	PROHIBI	PROHIBITED.			~ -	0 4 1 4			
					GE	-2412	23	A	
REMOVE ALL BURRS AN			ND SHARP	d sharp SCAL		-• 1•1 SHFF1		et 1 of 1	
do not scale drawing						011			
2				1					



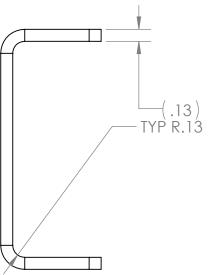


$\mathbf{O}$	
L	

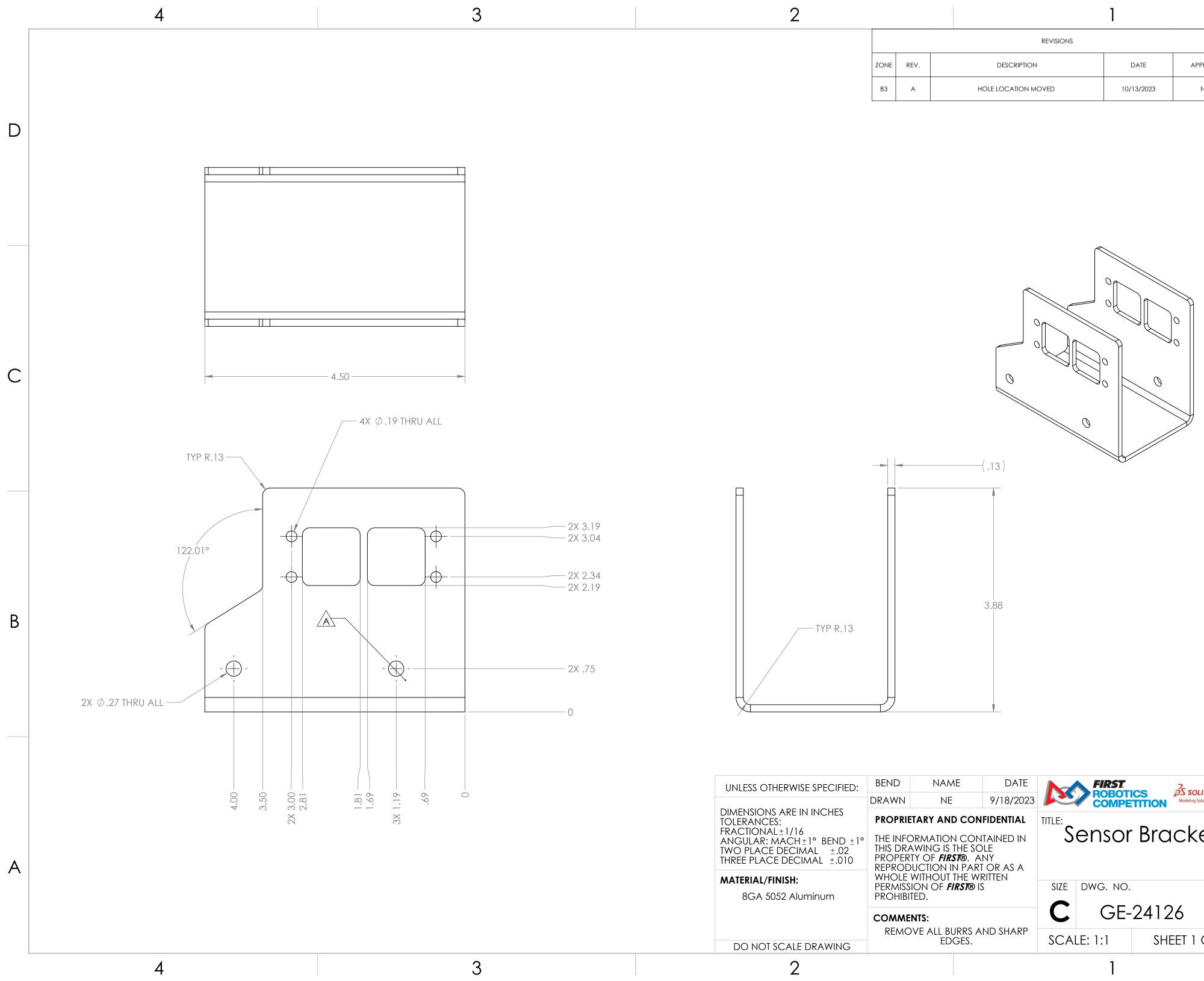
		REVISIONS		
ZONE	REV.	DESCRIPTION	DATE	APPROVED
D2	A	TOTAL PART LENGTH CHANGED	10/13/2023	NWE



С



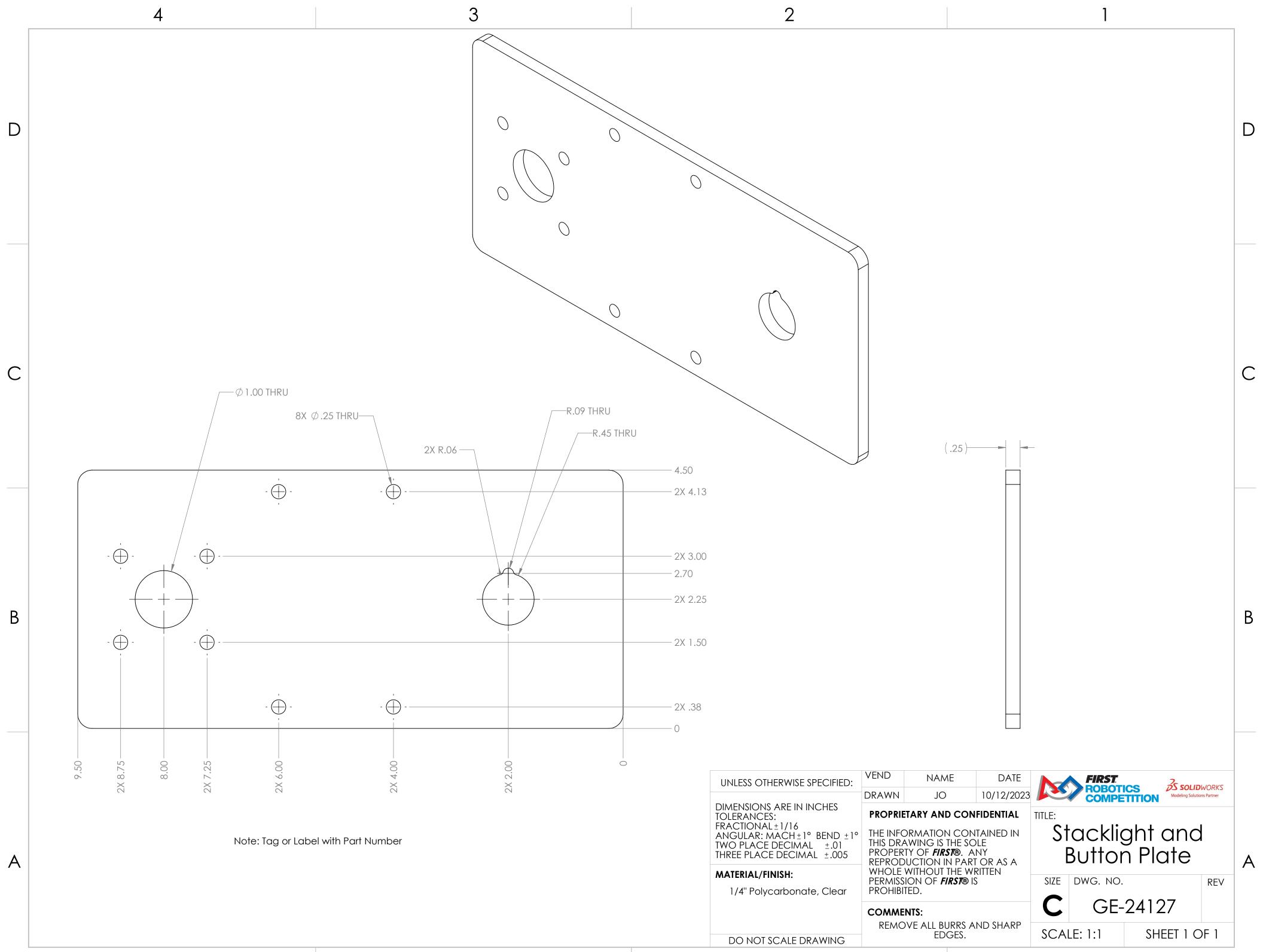
UNLESS OTHERWISE SPECIFIED:	BEND	NAME	1E DATE		FIRST.		25 50117		
	DRAWN	NE	ROBOTICS COMPETITION						
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010	<b>PROPRIETARY AND CONFIDENTIAL</b> THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			Ring Capture Side				<b>)</b>	Δ
MATERIAL/FINISH:				SIZE	dwg. no. GE-24125		REV		
12GA 5052 Aluminum				$\mathbf{C}$			) 5	Λ	
	COMMENTS:			GE-		23	A		
DO NOT SCALE DRAWING	REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:1 SH		SH	eet 1 C	)F 1	
2				1					

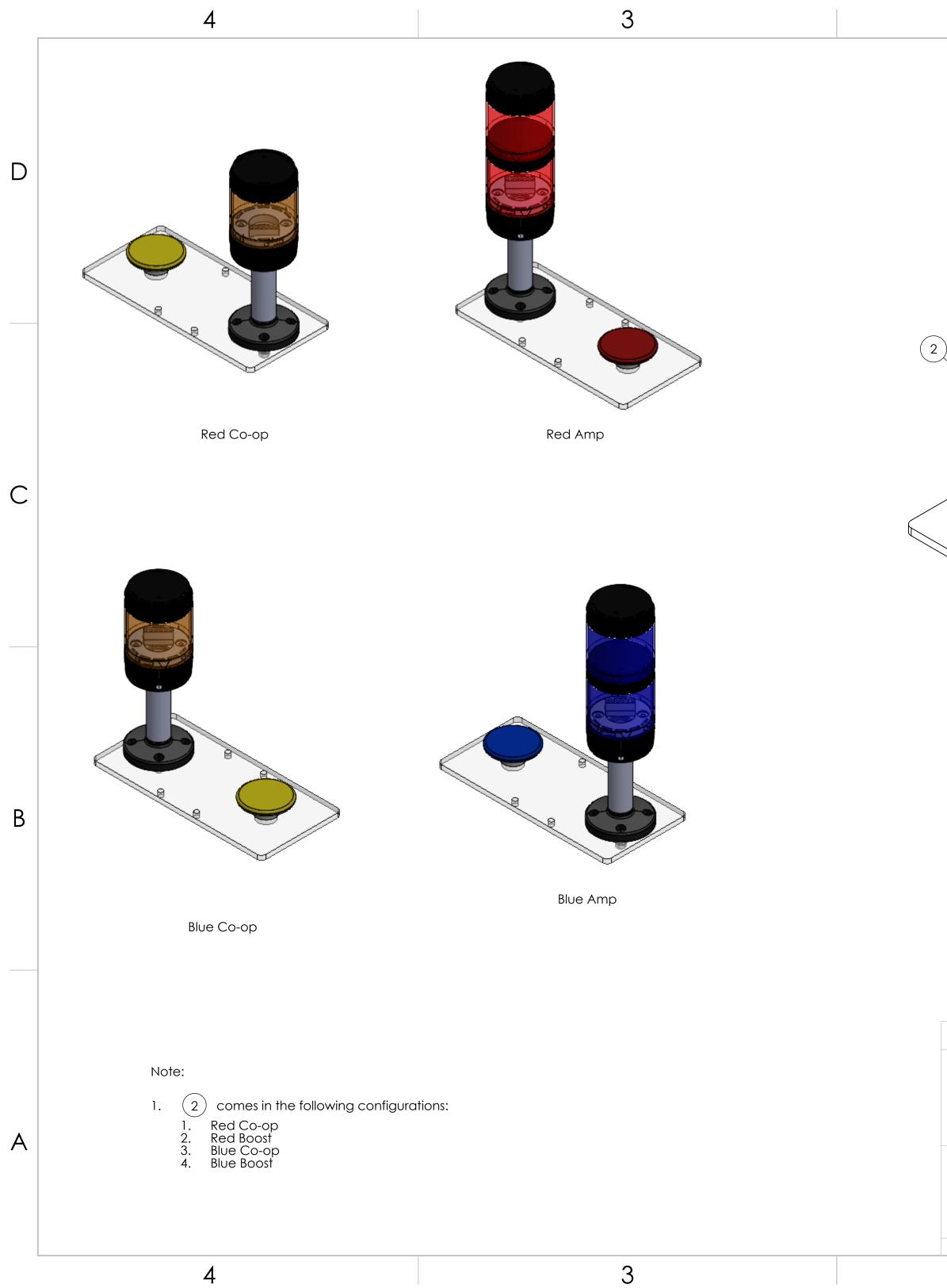


ZONE	REV.		DESCRIPTION	DATE	APPROVED
B3	А		HOLE LOCATION MOVED	10/13/2023	NWE

С

UNLESS OTHERWISE SPECIFIED:	BEND NAME DATE		FIRST. BOBOTICS JS SOLIDWORK					
	DRAWN							
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.		Sensor Bracket					
MATERIAL/FINISH: 8GA 5052 Aluminum				SIZE	DWG. NO.		REV	
	COMMENTS:		С	GE-	24126	A		
	REMOVE ALL BURRS AND SHARP EDGES.				LE: 1:1	SHEET	1 OF 1	
DO NOT SCALE DRAWING	LDGE3.			JCA		JILLI		
•					-			





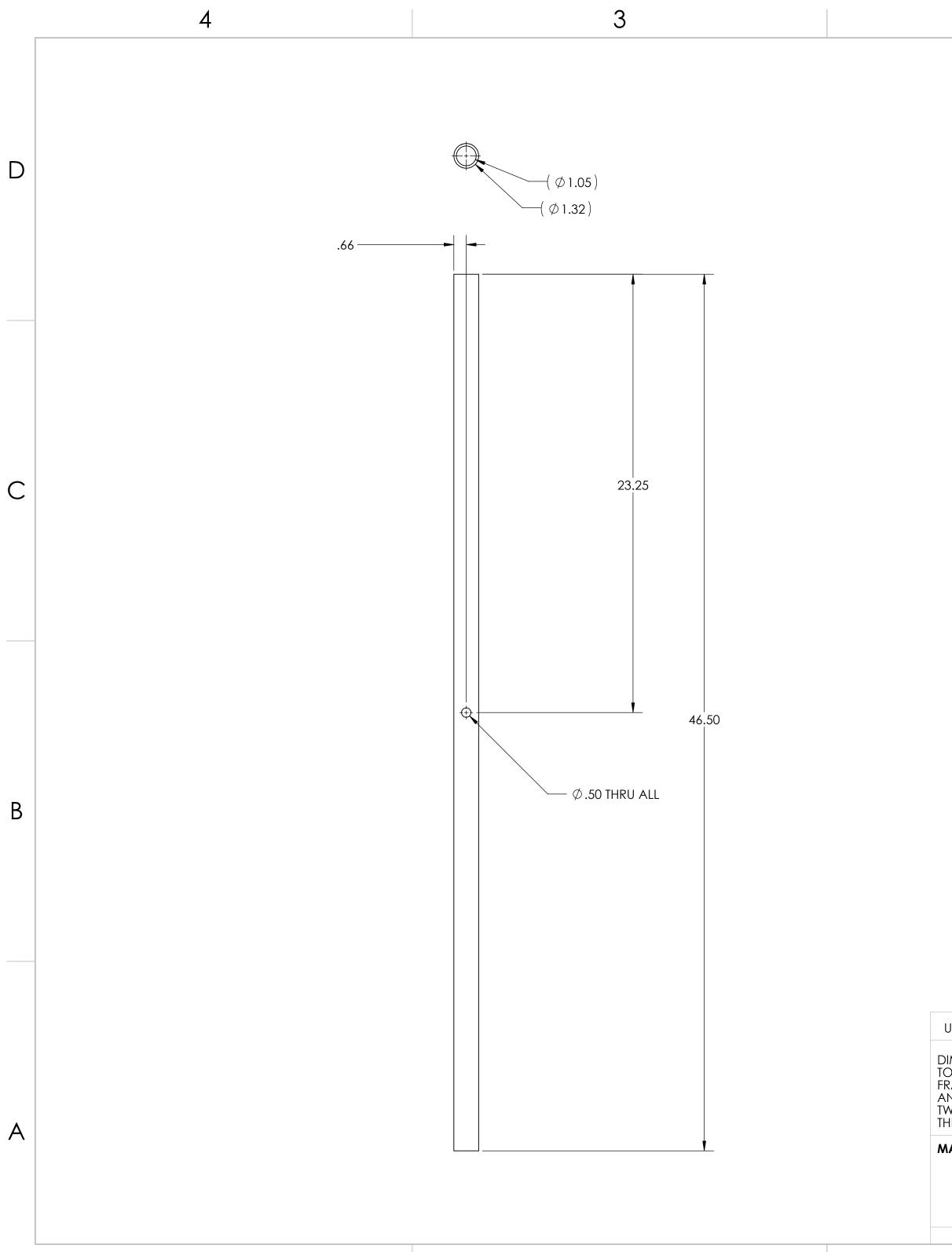
2

	[	1							4
	ITEM NO.	PART	NUMBER	E	DESCRIPTIO	NC	QTY.		
	1	GE-24127		Stacklig	ht and Bu	tton Plate	1		
	2	Amp_Butt	on_Yellow	Butte	on, Push, `	Yellow	1		1
	3	nylock_10	_32	Low-Stren Locknut, Zir	gth Steel c-Plated, Size	Nylon-Insert 10-32 Thread	4		
	4	Pan_phil_	10-32625	25 Pan head		)-32 x 5/8	4		]
	5	StackLigh	t_Assembly	Stac	< Light Ass	sembly	1		1
UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE		FIRST.		WORKS	-
	DRAWN	DF	12/18/202	23	ROBOTI				
DIMENSIONS ARE IN TOLERANCES: FRACTIONAL±1/2 ANGULAR: MACH± TWO PLACE DECIM	<ul> <li>THE INFO THIS DR/ PROPER REPROD</li> </ul>	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <i>FIRST®</i> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN			Butto	ght and n Plate embly		A	
MATERIAL/FINISH:		PERMISS	ION OF <b>FIRS</b>		SIZE	DWG. NO.		REV	
PROHIBITED.					С	GE-	24128		_
			EDGE		SCA	LE: 1:2	SHEET 1 C	DF 1	
DO NOT SCALE DRAWING									1
2					1				

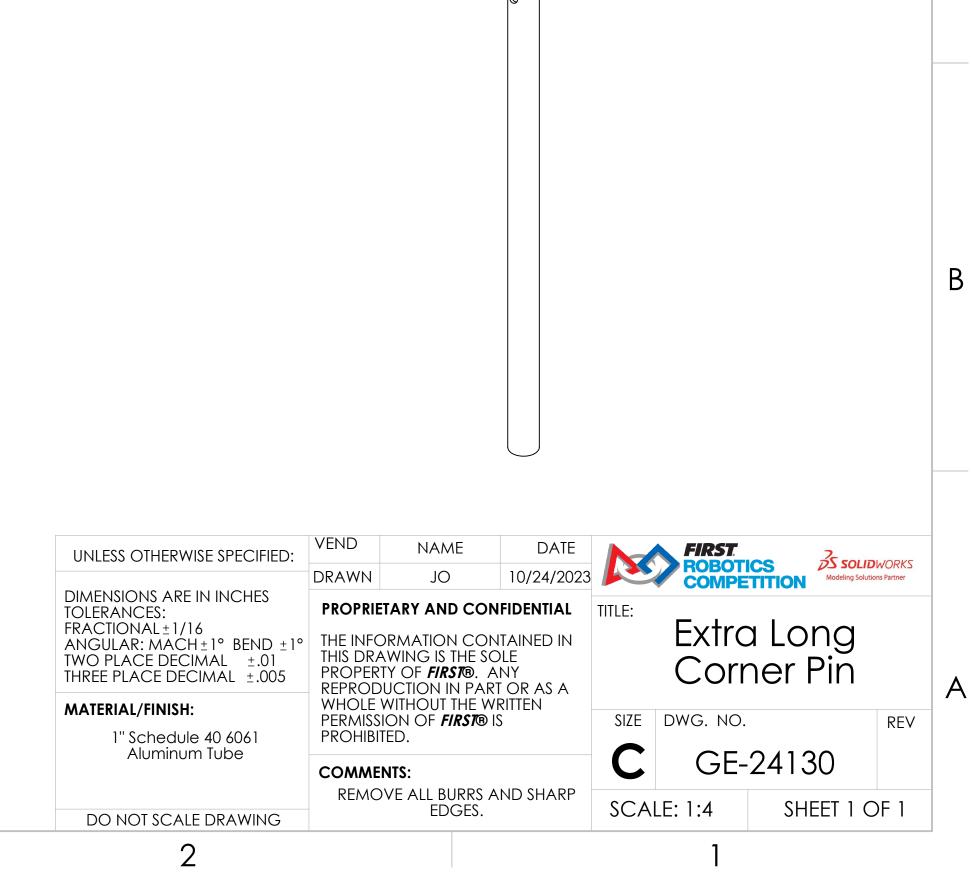
В

D

С

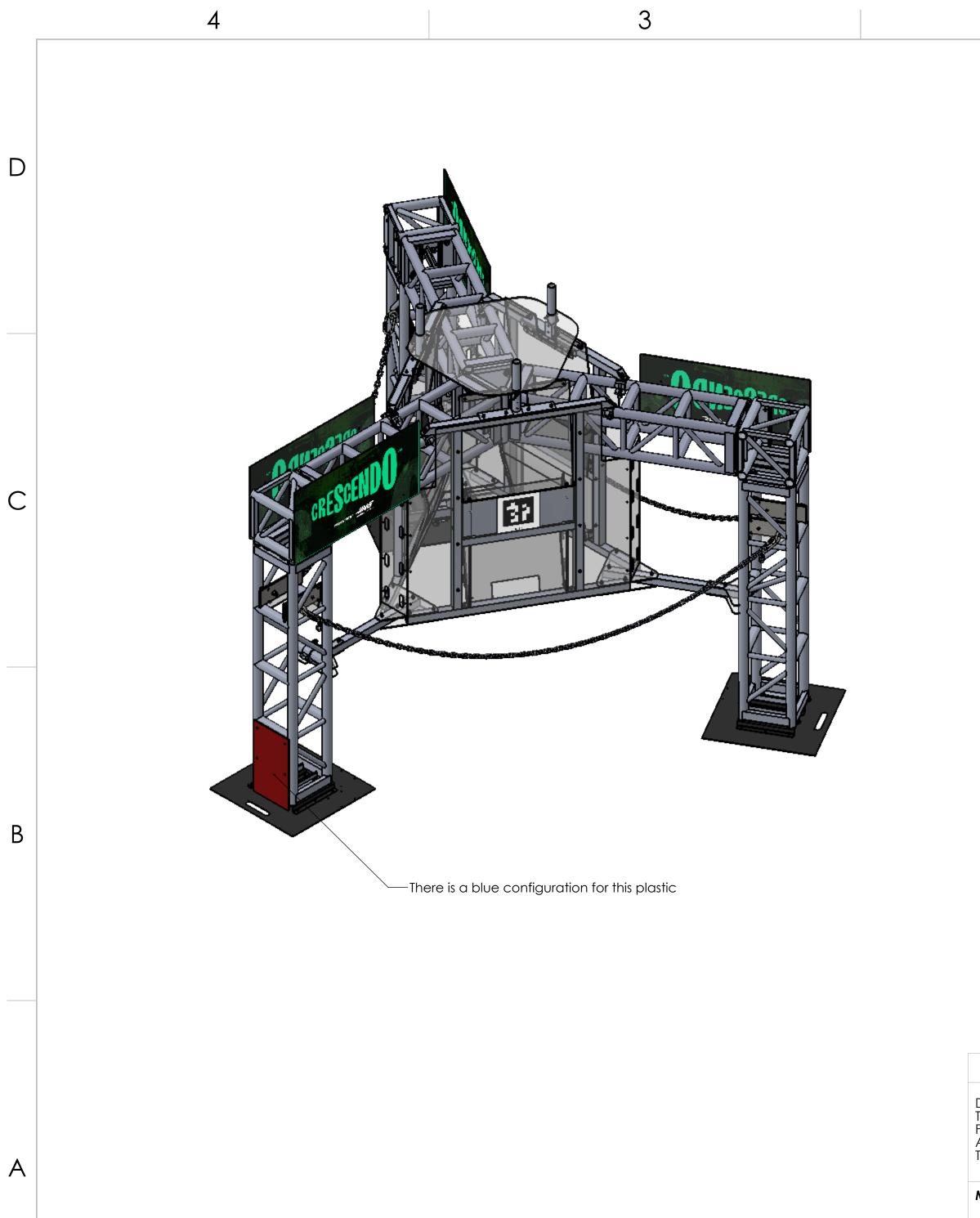


3



D

С



3

								-		
	7	GE-24210			Вс	ise Truss Asse	mbly	1		
	8	GE-24220				Wall Assemb	oly	3	5	
	9	GE-24250			Sta	ge Lateral Su	upport	3	5	
	10	3216T41_Car	abiner	Сс	arabine	r, Locking St	eel, .38 thick	< 6	)	
	11	hex25_20_3	_partial	Ste		Head Screw , partially thr		1:	2	
	12	nylock25_2	0	Ste	eel Nylo	on-Insert Loc	) 1:	2		
	13	pin_wire_lock 75	<25_2.18	1		el Wire Lock 2 3/16'' Usab		3	5	
UNLESS OTHERWISE SPECIFIED	: FIELD	NAME	DAT	E		FIRST.	3	SOLIDWO	סעק	
	DRAWN	DF	12/19/20	023				leling Solutions Par		
DIMENSIONS ARE IN INCHES TOLERANCES:	PROPRIE	TARY AND CO	NFIDENTIA	-						
FRACTIONAL±1/2 ANGULAR: MACH±1° BEND ± TWO PLACE DECIMAL ±.50	THIS DRA	awing is the s ty of <b>first</b> ®.								A
MATERIAL/FINISH:	WHOLE	WITHOUT THE V ION OF <b>FIRST</b> ®	WRITTEN		SIZE	DWG. NO.		R	EV	
	NTS:			С	GE-24200					
	VE ALL BURRS EDGES.	AND SHAR	P	SCA	LE: 1:16	SHEET	1 OF	4		
DO NOT SCALE DRAWING										
2						1				

PART NUMBER

GE-24201

GE-24202

GE-24204

GE-24205

GE-24208

GE-24207-RED

DESCRIPTION

Stage Top

Stage Vinyl Logo

Stage Face Filler Poly

Stage Chain

Podium - Red

Chain Plate with Fasteners

ITEM NO.

1

2

3

4

5

6

D

С

QTY.

1

4

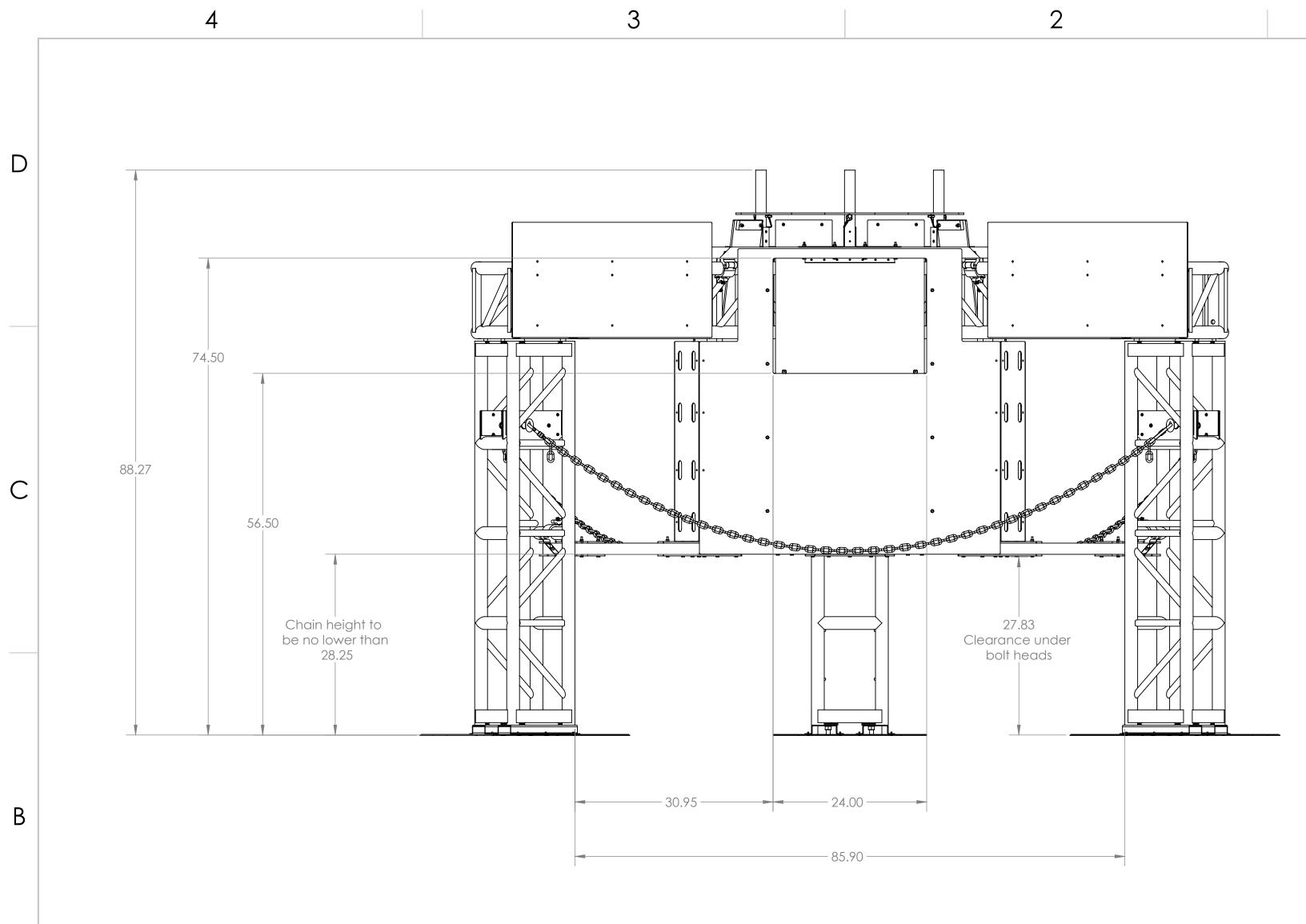
3

3

1

6

В



## Notes:

4

А

1. Dimensions shown are for reference and do not take into account deflection, wear and tear over the course of the season, or damage.

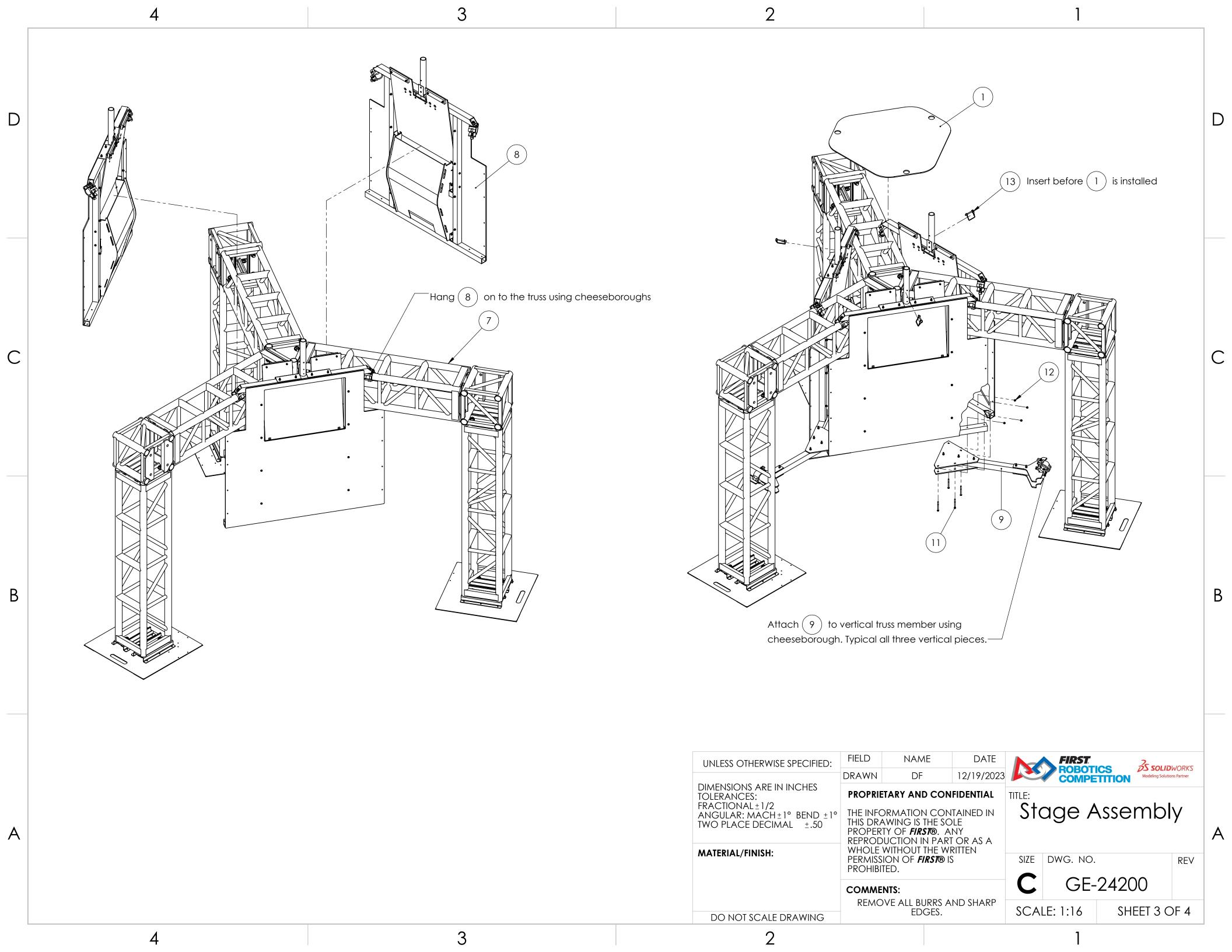
3

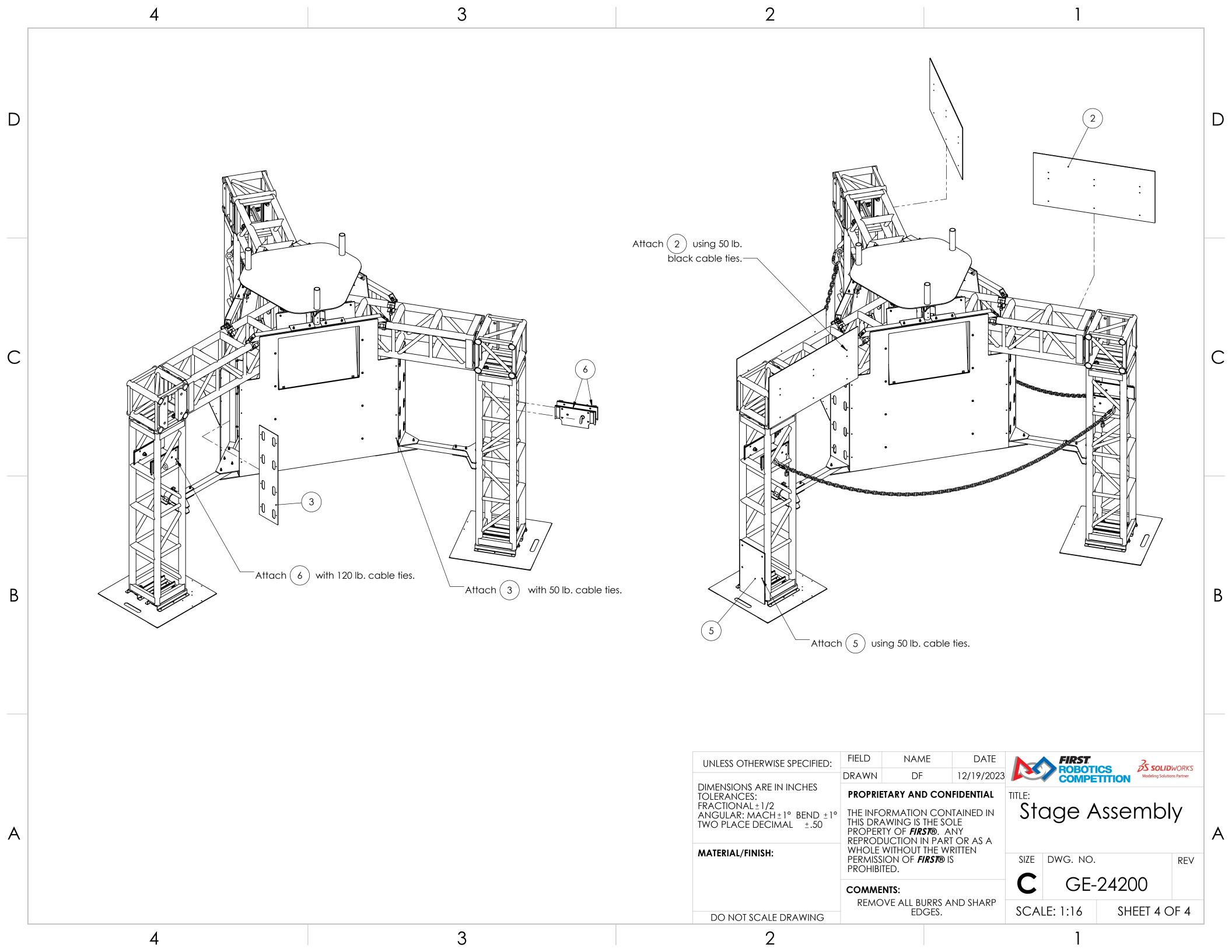
UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE		FIRST. ROBOT	106	25 SOLID	WORKS	
	DRAWN	DF	12/19/2023	COMPETITION Modeling Solutions Partner					
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/2 ANGULAR: MACH±1° BEND±1° TWO PLACE DECIMAL±.50	THE INFO THIS DRA PROPER REPROD	TARY AND CON DRMATION CON AWING IS THE SC TY OF <i>FIRST</i> ®. A UCTION IN PART WITHOUT THE WI	TAINED IN DLE NY OR AS A						A
MATERIAL/FINISH:	-	ION OF <i>FIRST</i> ® IS	SIZE	DWG. NO.			REV	-	
	COMME	NTS:			GE-	-2420	)()		
do not scale drawing	REMC	VE ALL BURRS A EDGES.	ND SHARP	SCALE: 1:16 SHEET 2 OF			)F 4	-	
2				1	1	1			1

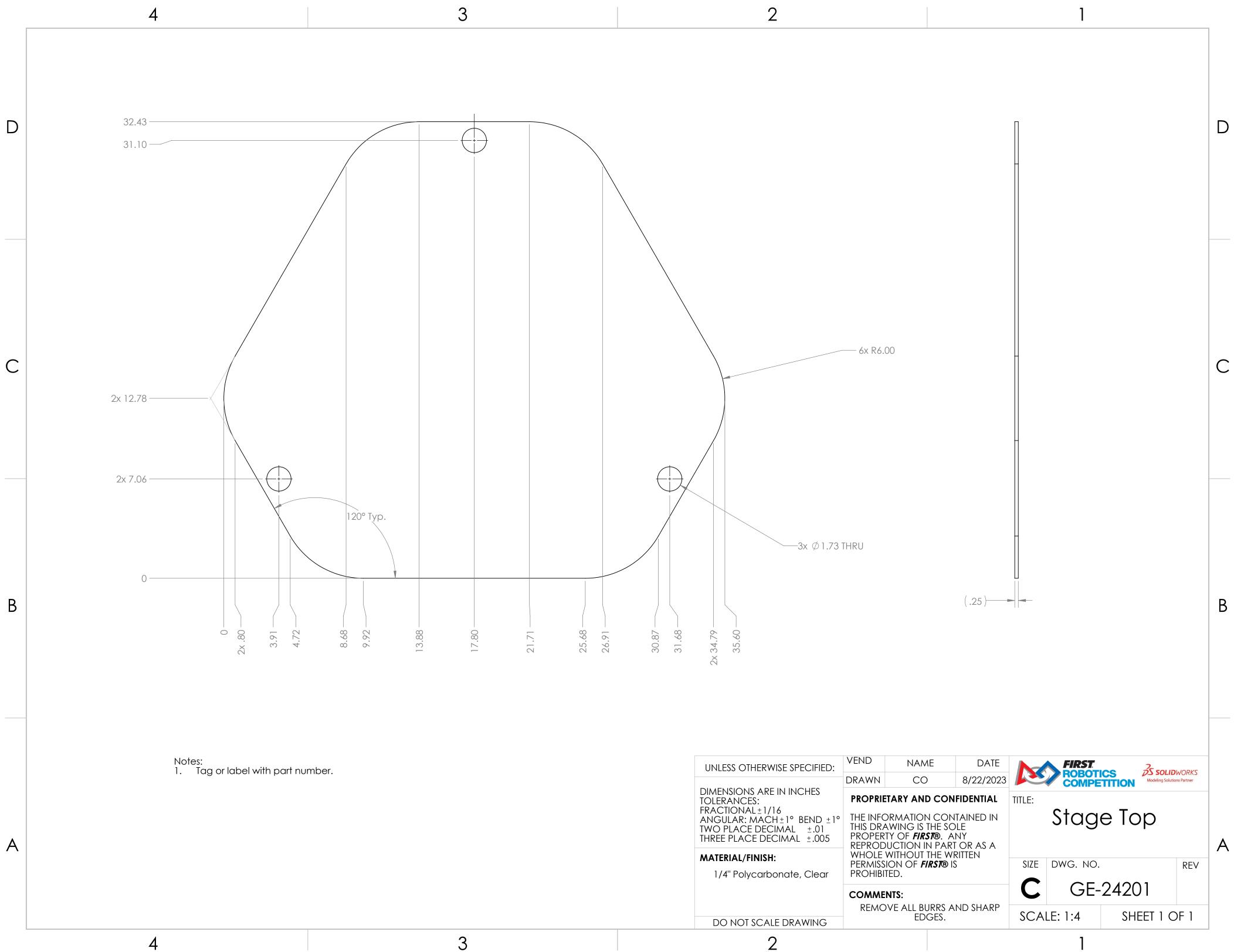
В

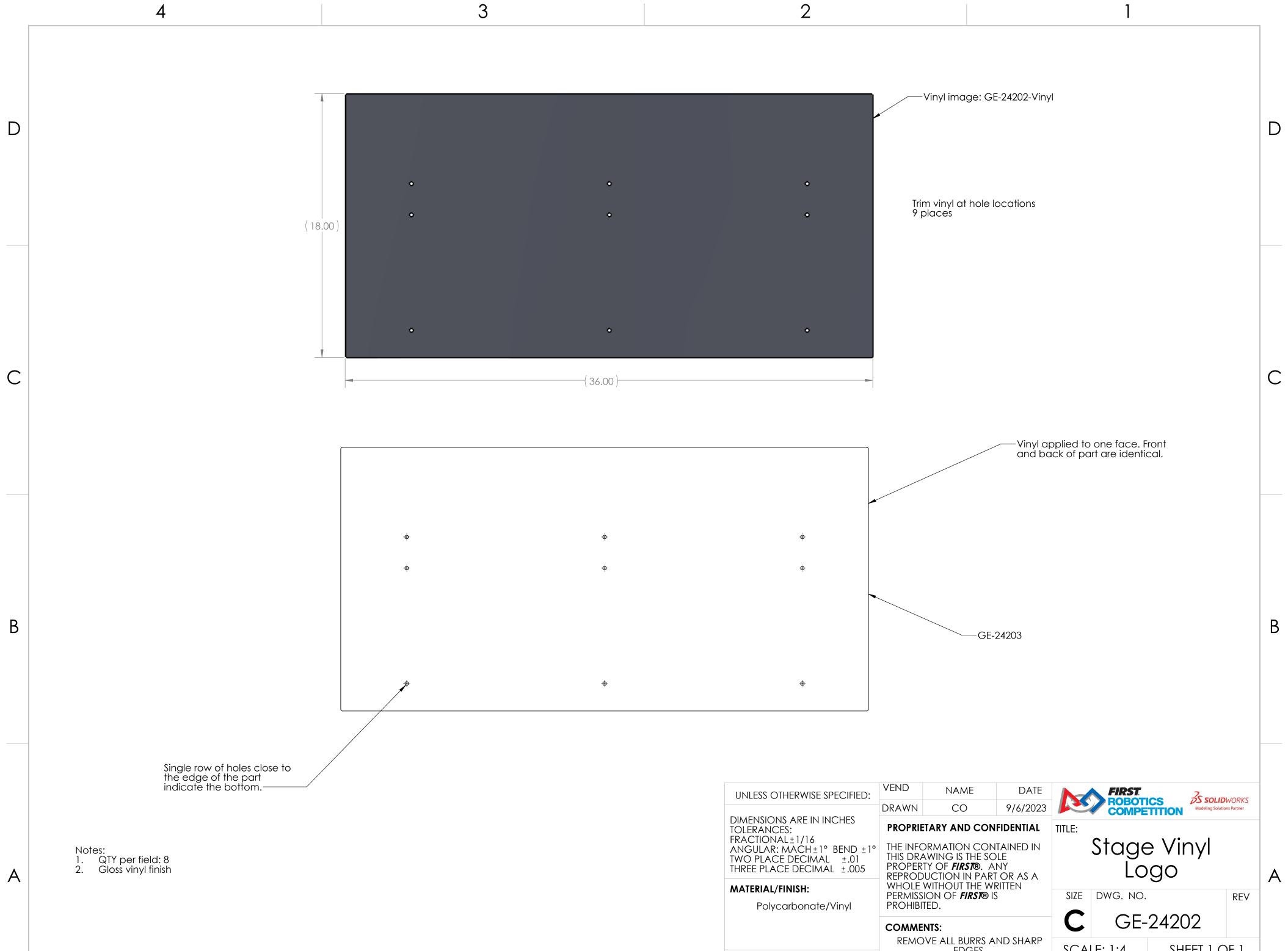
D

С



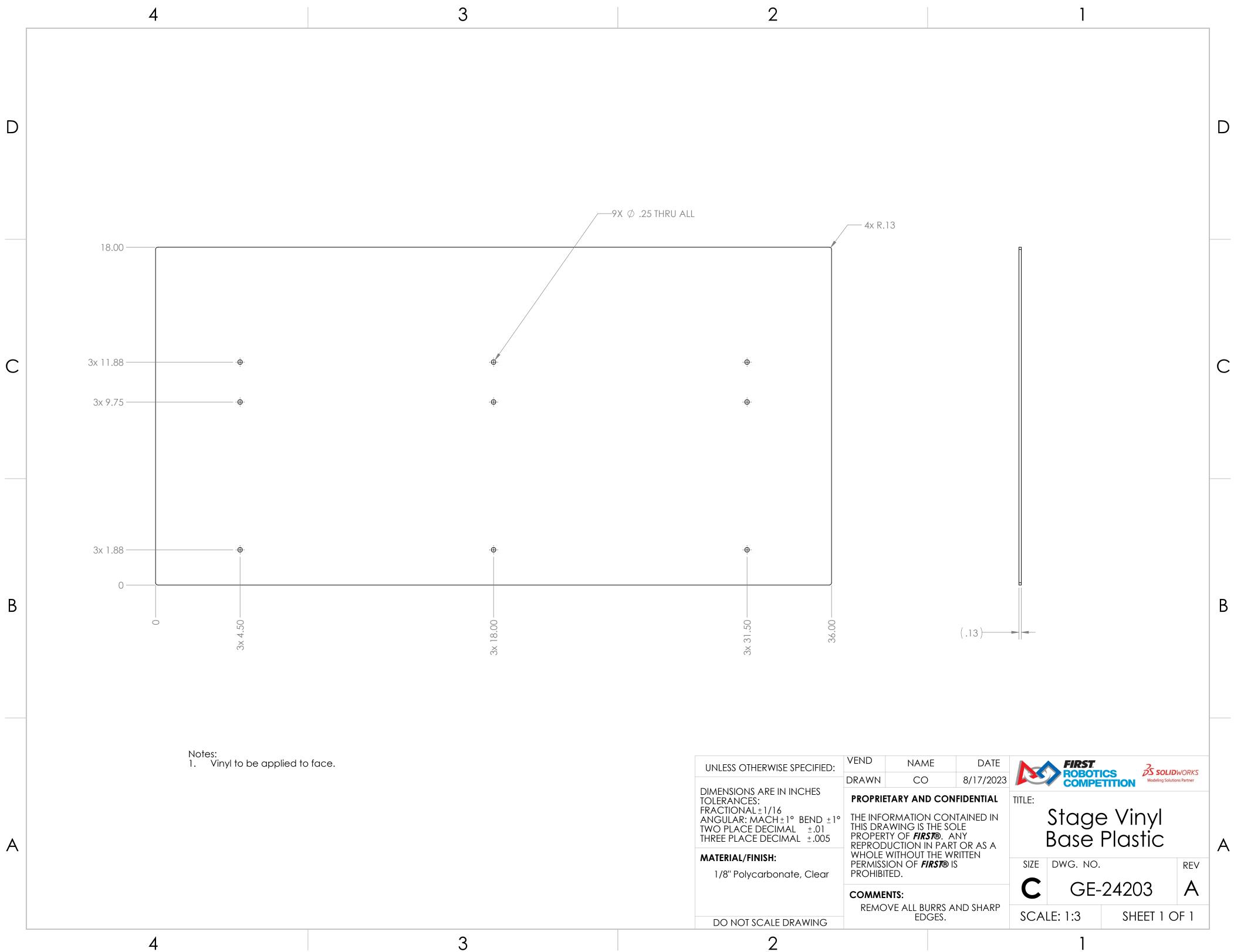


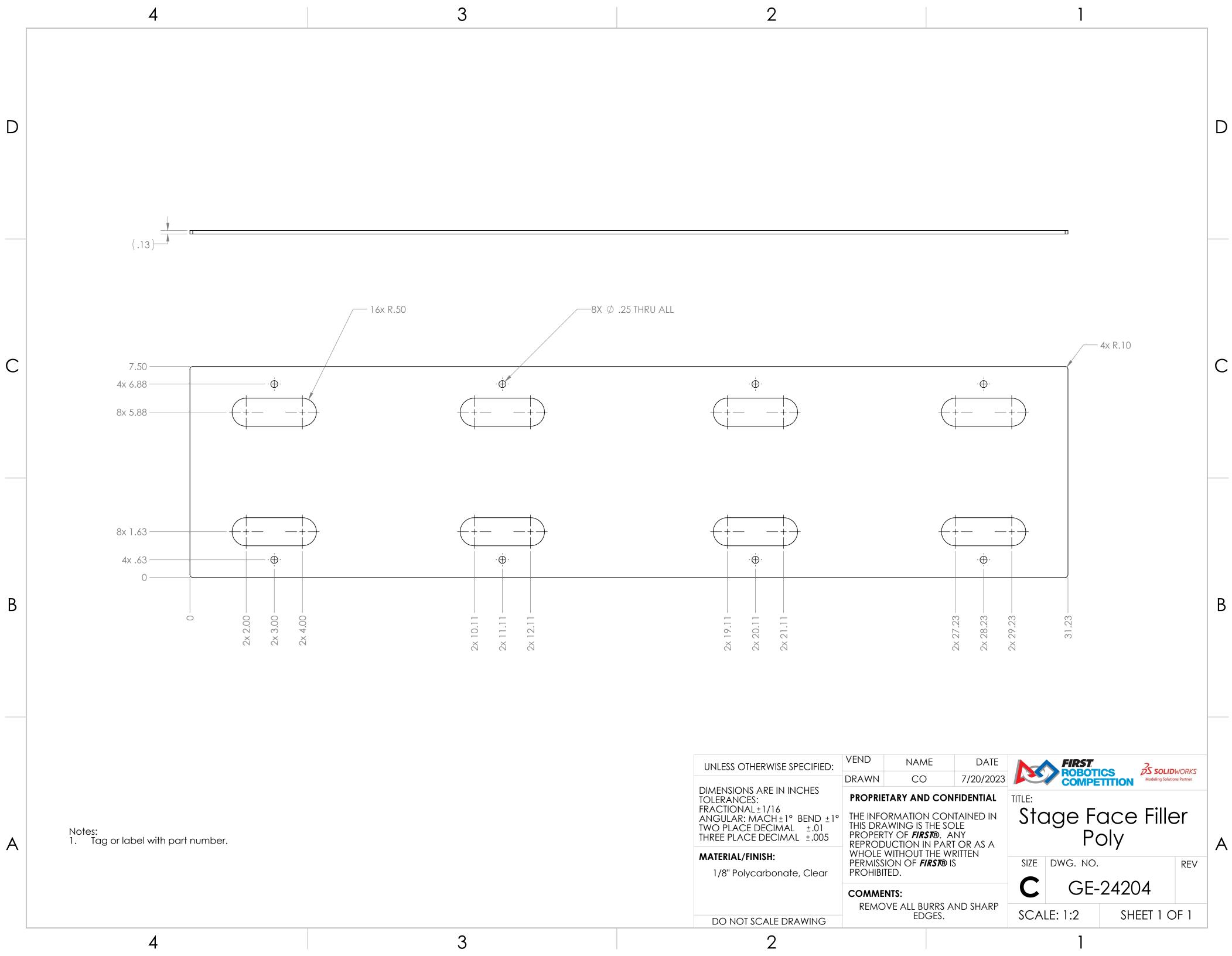


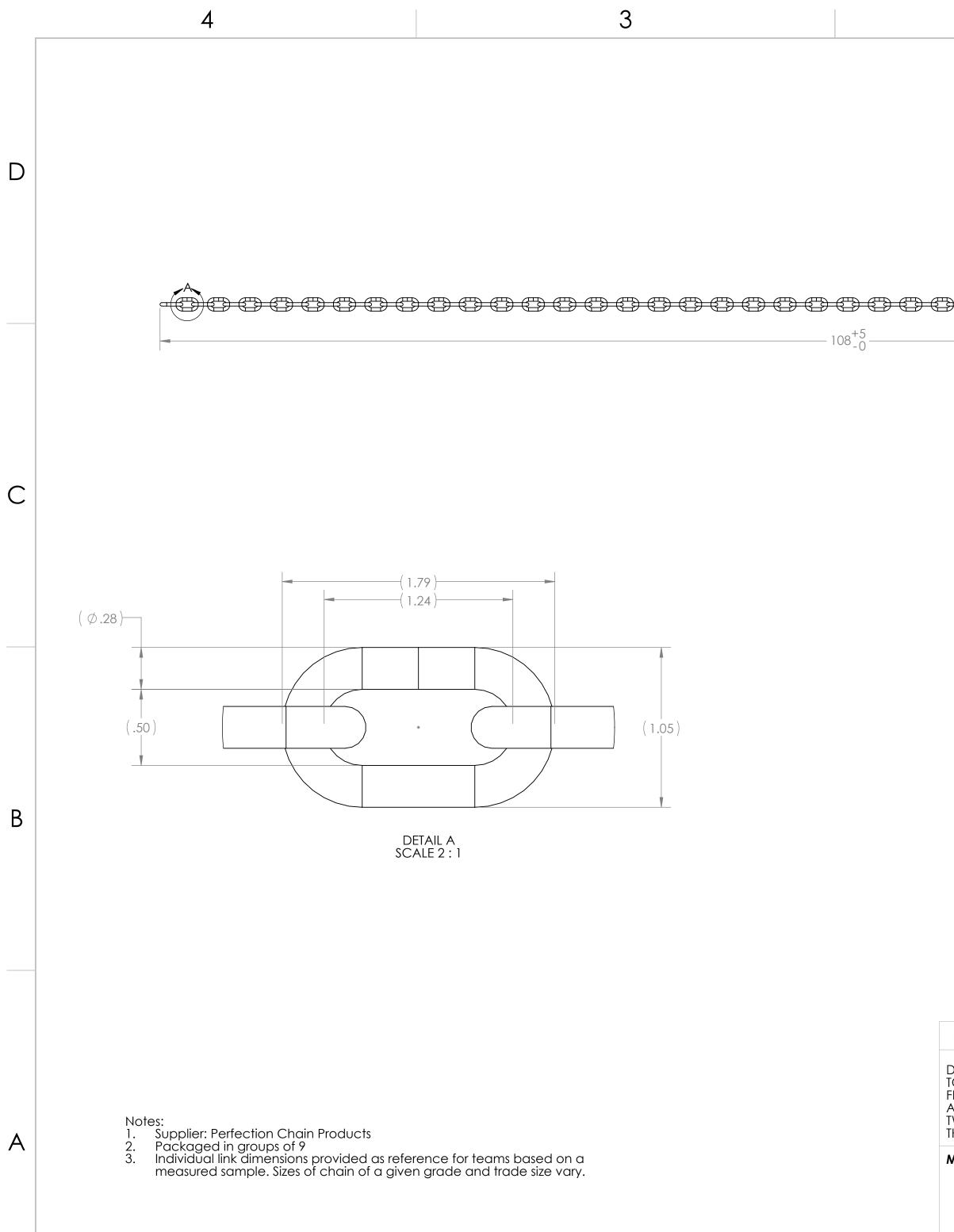




UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE		FIRST. ROBOT		2 DS SOLID	MORKS	
	DRAWN	CO	9/6/2023			ETITION	Modeling Solutio		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	THE INFO THIS DR/ PROPER REPROD	ETARY AND CON DRMATION CON AWING IS THE SO ITY OF <i>FIRST</i> ®. A DUCTION IN PART WITHOUT THE WF	TAINED IN LE NY OR AS A	Stage Vinyl Logo					
MATERIAL/FINISH:	PERMISS	SION OF <b>FIRST</b> ® IS	SIZE	DWG. NO	).		REV	-	
Polycarbonate/Vinyl	PROHIBI	IED.		$\mathbf{C}$		0400			
	COMME	NTS:			GE	-2420	)2		
	REMC	)ve all burrs a Edges.	SCALE: 1:4 SHEET 1			FFT 1 C	OF 1		
do not scale drawing		EDGE3.			JUALLI I.4 JIILLI I ULI				
2					1				







3

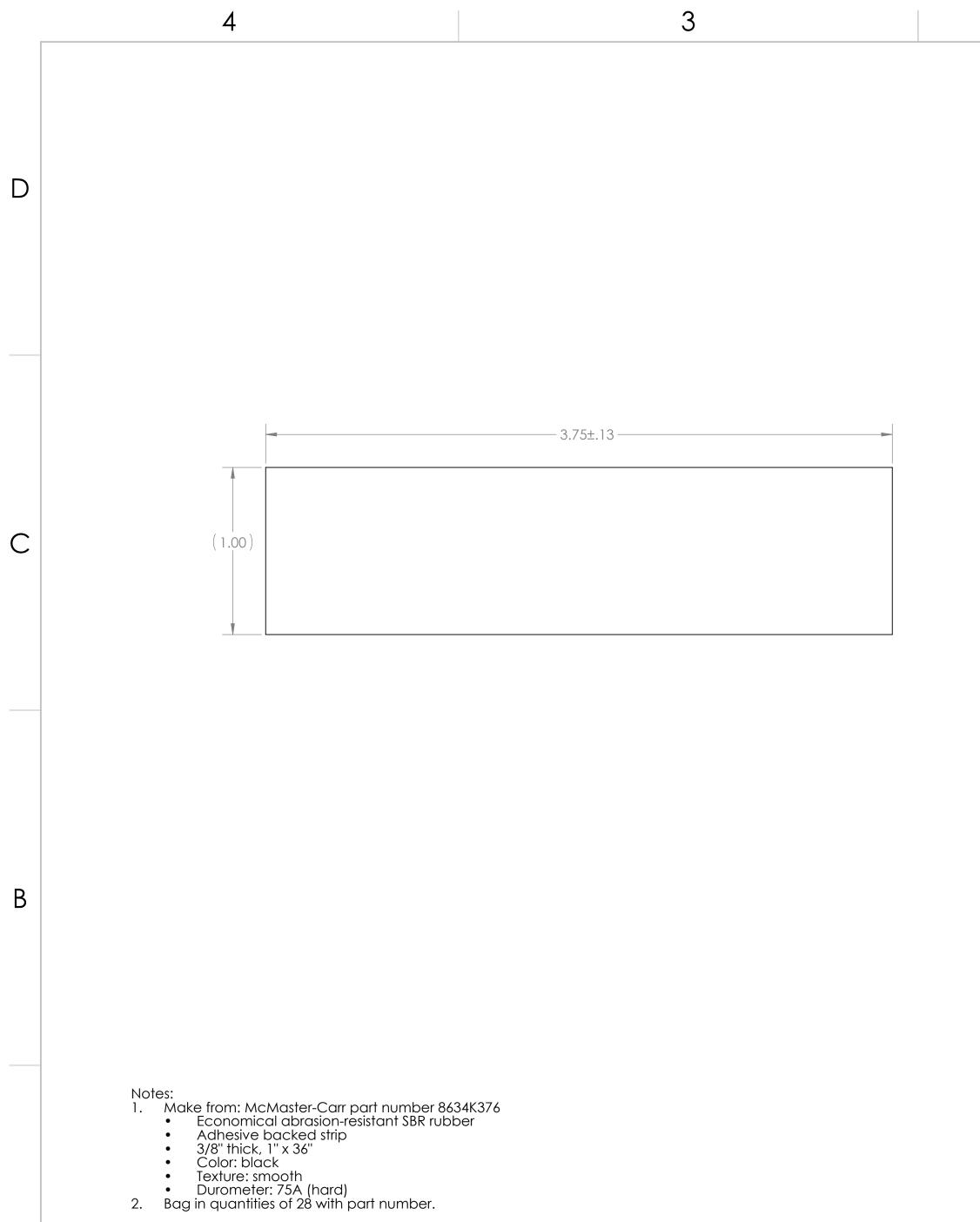
D
마 (마
C
В
UNLESS OTHERWISE SPECIFIED:       VEND       NAME       DATE         DRAWN       CO       9/25/2023       FIRST.       Solidoworks.
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND±1° TWO PLACE DECIMAL±.01 THREE PLACE DECIMAL±.005 MATERIAL/FINISH: PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <i>FIRST®</i> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN DIMENSIONS ARE IN INCHES TITLE: Stage Chain A

Grade 43 Zinc Plated Chain, 1/4" Trade Size

DO NOT SCALE DRAWING

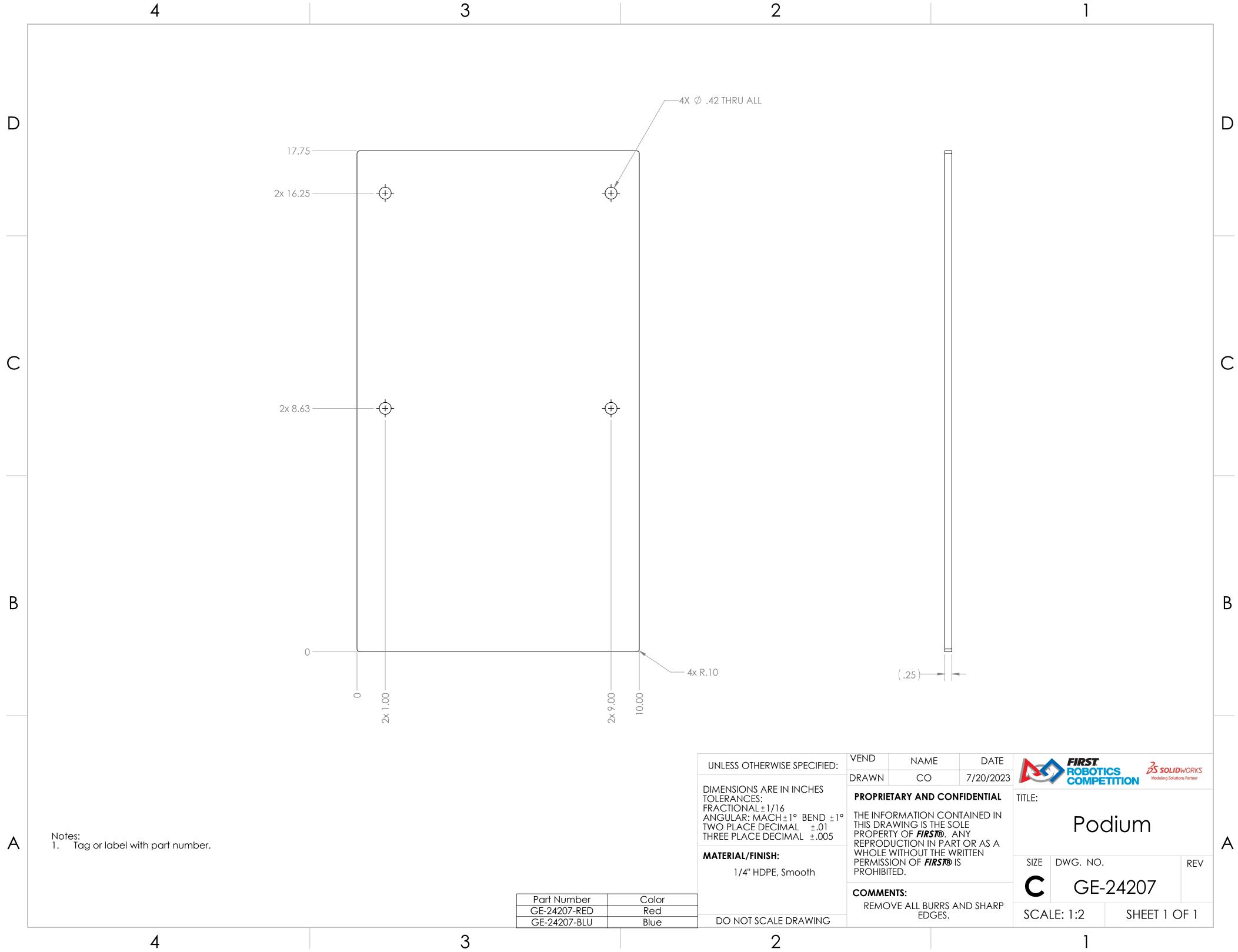
2

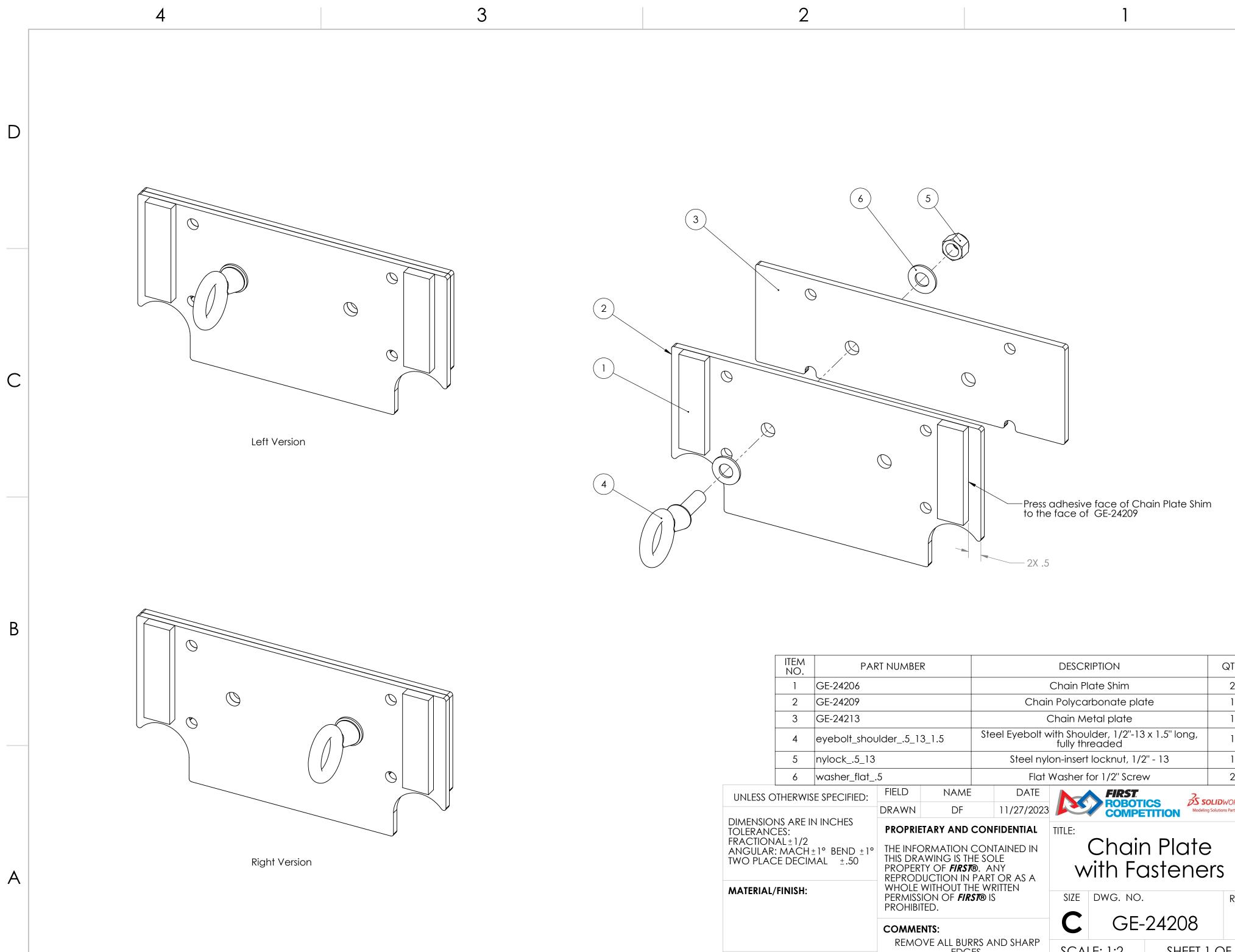
REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF *FIRST*® IS PROHIBITED. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES. STAGE ChainSIZEDWG. NO.CGE-24205-straightSCALE: 1:6SHEET 1 OF 1



А

										D
UNLESS OTHERWISE SPECIFIED:       VEND       NAME       DATE         DIMENSIONS ARE IN INCHES       DRAWN       DF       10/16/2023       DIMENSIONS CONFIDENTIAL       DRAWN       DF       10/16/2023       DIMENSIONS ARE IN INCHES         PROPRIETARY AND CONFIDENTIAL THS INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROPERTY OF FIRST®. SIZE DWG. NO.       TITLE:       Chain Plate Shim       SIZE DWG. NO.       REV         MATERIAL/FINISH:       SBR Rubber       COMMENTS:       SIZE DWG. NO.       REV       GE-244206       SIZE I SHEET 1 OF 1		38)								С
UNLESS OTHERWISE SPECIFIED:       INVINE       DATE       DATE										В
SBR Rubber     PERMISSION OF FIRSTON S     SIZE     DWG. NO.     REV       PROHIBITED.     COMMENTS:     REMOVE ALL BURRS AND SHARP     C     GE-24206       DO NOT SCALE DRAWING     REMOVE ALL BURRS AND SHARP     SCALE: 2:1     SHEET 1 OF 1	DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	DRAWN PROPRIE THE INFO THIS DRA PROPER REPROD WHOLE	DF ETARY AND CO ORMATION CO AWING IS THE S TY OF <i>FIRST</i> ®. DUCTION IN PA WITHOUT THE V	10/16/2023 NFIDENTIAL NTAINED IN OLE ANY RT OR AS A VRITTEN	TITLE:	Chair Shair	n Plc nim	Modeling Solutions	s Partner	A
· ) ]	SBR Rubber		TED. I <b>nts:</b> IVE All Burrs		С	GE-	2420			



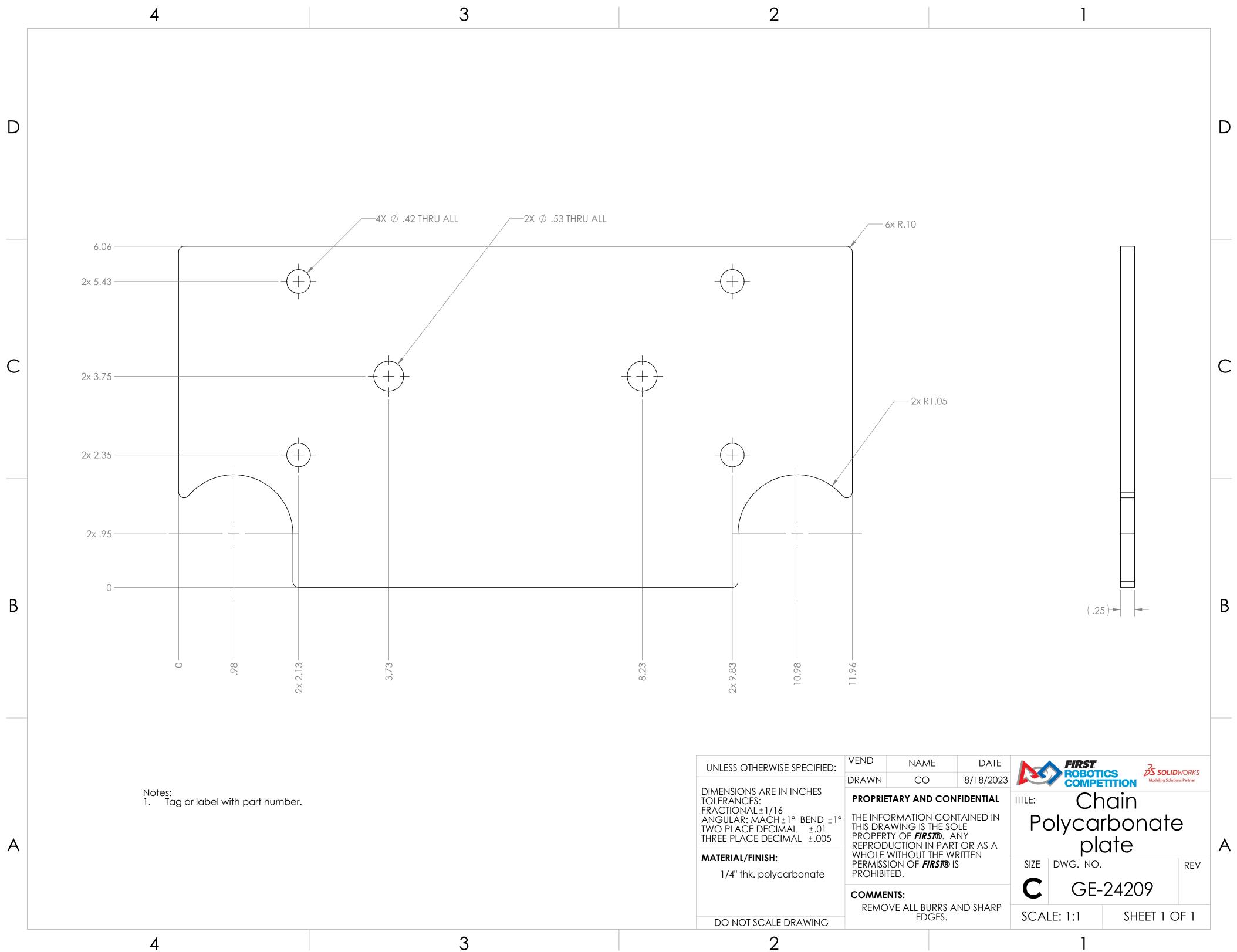


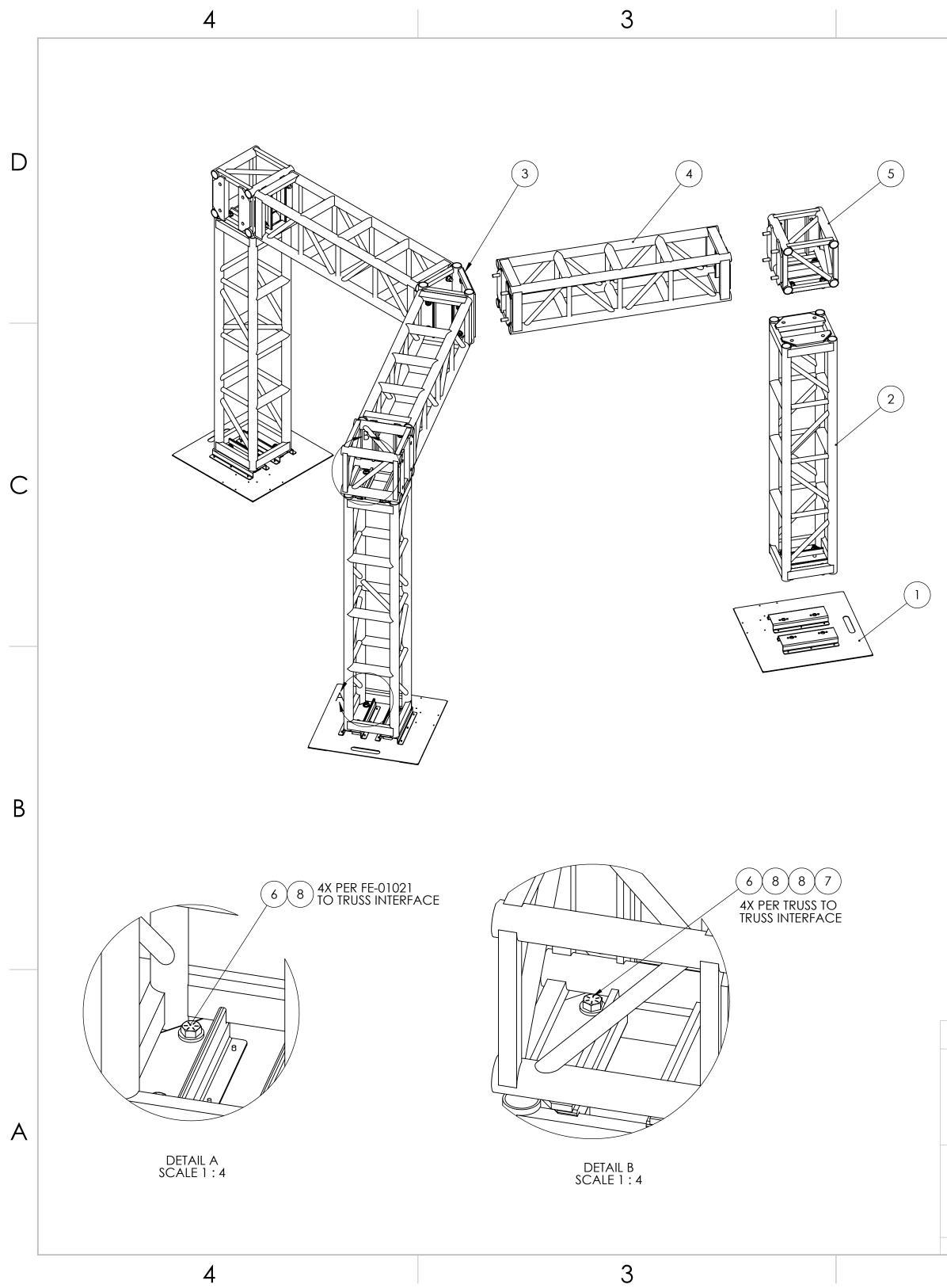
3

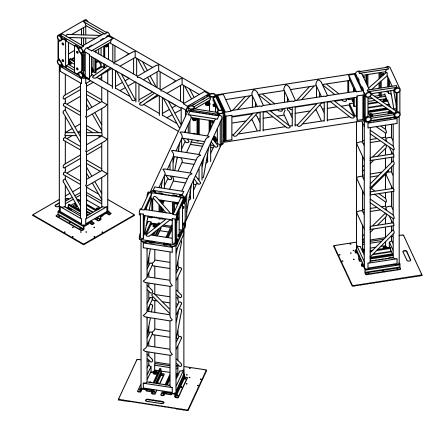
Г		1										1
	ITEM NO.	PA	rt numbe	R			DESCR	RIPTION		(	QTY.	
	1	GE-24206					Chain P	late Shim			2	
	2	GE-24209				Chair	n Polyca	irbonate pla	te		1	
-	3	GE-24213				(	Chain M	etal plate			1	
	4	eyebolt_shou	ulder5_1	3_1.5	Ste	eel Eyebolt v	vith Shou fully th	ulder, 1/2"-13 readed	x 1.5" lon	g,	1	
	5	nylock5_13				Steel nyl	on-inser	locknut, 1/2	13		1	
	6	washer_flat_	.5			Flat	Washer for 1/2" Screw				2	
UNLESS O	ILESS OTHERWISE SPECIFIED: FIELD NAI					DATE		FIRST.	<b>00</b>	ZS SOLID	WORKS	
				DF		11/27/2023	ROBOTICS COMPETITION					
PROPRIETARY AIOLERANCES: RACTIONAL±1/2 NGULAR: MACH±1° BEND±1° WO PLACE DECIMAL±.50THE INFORMATIC THIS DRAWING IS PROPERTY OF FI REPRODUCTION WHOLE WITHOU PERMISSION OF PROHIBITED.			THE INFO THIS DR/ PROPER REPROD	DRMATION AWING IS TI TY OF <b>FIRS</b> DUCTION IN	CON HE SC <b>T®</b> . A I PART	ITAINED IN DLE NY I OR AS A		Chair /ith Fc	-	-		A
			ION OF <b>FIR</b>			SIZE	DWG. NO.	0 4 0 O	0	REV		
COMMENTS:								GE-	2420	0		
DO NOT SCALE DRAWING				IVE ALL BUI		ND SHARP	SCA	LE: 1:2	SHE	et 1 C	)F 1	
2					1							

D

С





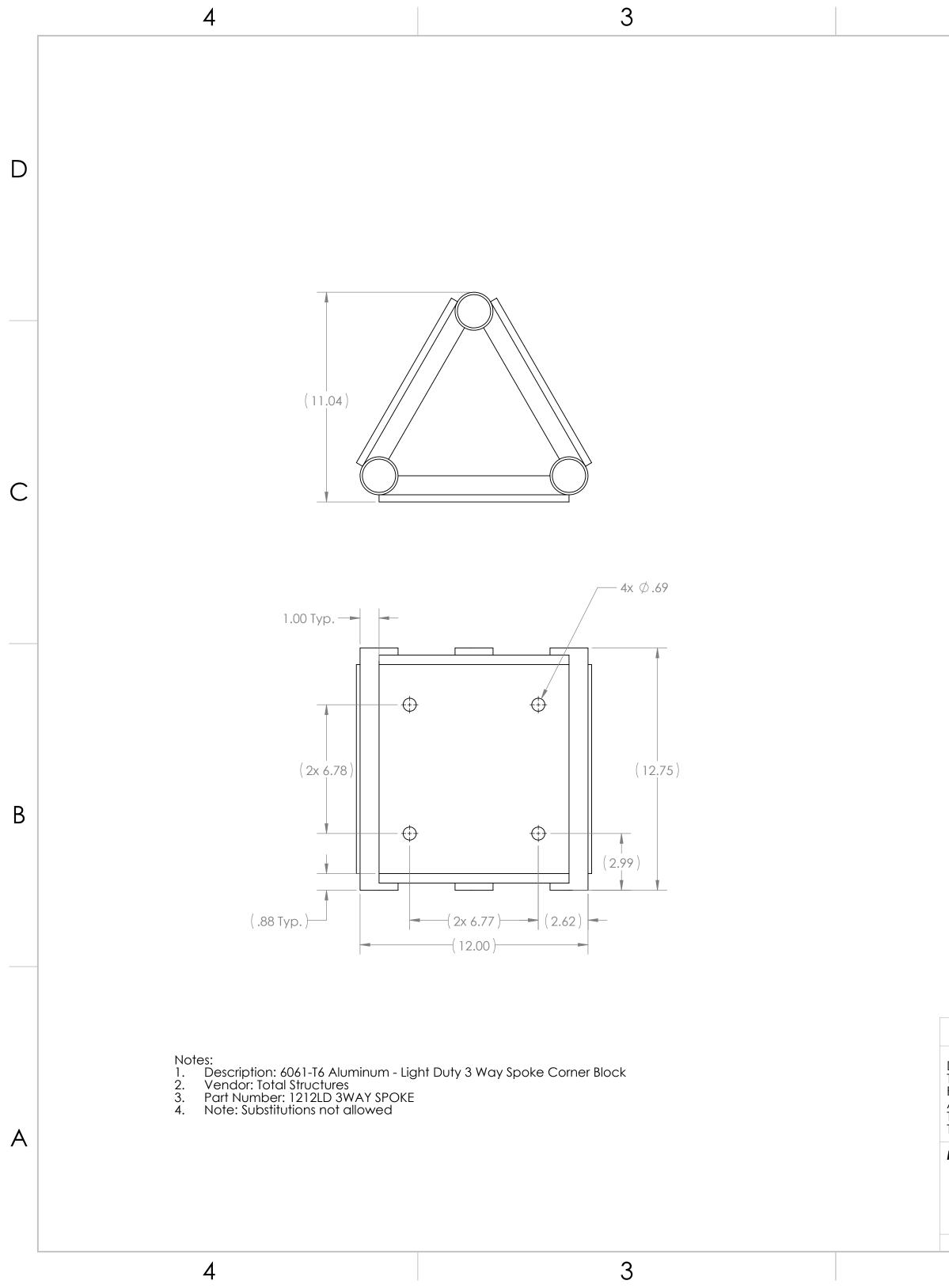


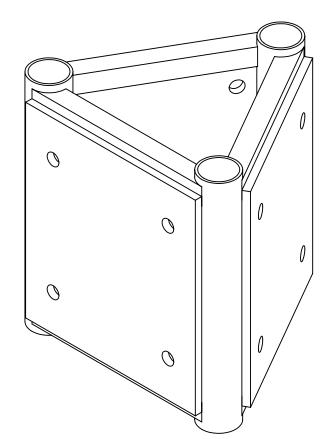
D

С

В

Г									
	ITEM NO.	PART	NUM	BER		DESCRIPTION	1	QTY.	
	1	FE-01021				Truss Base		3	
	2	FE-01003			5' x	1' x 1' Square	Truss	3	
	3	GE-24211			Tric	angular Truss B	llock	1	
	4	FE-01002	2		4' x	1' x 1' Square	Truss	3	
	5	FE-01012	1012		3 Way Corner Block			3	
	6	6 hex625_ 7 hexnut6		25_11_2.00		d Bolt, 5/8"-11 length	Thread, 2"	48	
	7			1		5/8"-11 hex ni	Jt	36	
-	8	washer_flat625			Flat v	vasher for 5/8'	' screw	84	
UNLESS OTHERWISE SPECIFIED:	FIELD	NAME		DAT	E	<b>FIRST</b>	20		
	DRAWN	DF		12/7/20	23 尾			SOLIDWORKS	
DIMENSIONS ARE IN INCHES TOLERANCES:	PROPRIE	PROPRIETARY AND CONFIDENTI			- TITLE:				
FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1 TWO PLACE DECIMAL ±.50	THIS DRA PROPER	wing is th ty of <b>first</b>			1	Base Asse			A
MATERIAL/FINISH:	WHOLE	WITHOUT TH	HE WR	RITTEN	SIZE	, DWG. NO.		REV	
	PROHIBI	IED.					0 4 0 1 0		
	COMME	NTS:			<b>C</b> GE-2421		24210		
	REMO	VE ALL BUR EDG	BURRS AND SHAR			LE: 1:16	СПЕЕЛ	[ ] OF ]	
DO NOT SCALE DRAWING		EDG	⊏ວ.		JCA	LL. 1.10	JILLI		
2						1			

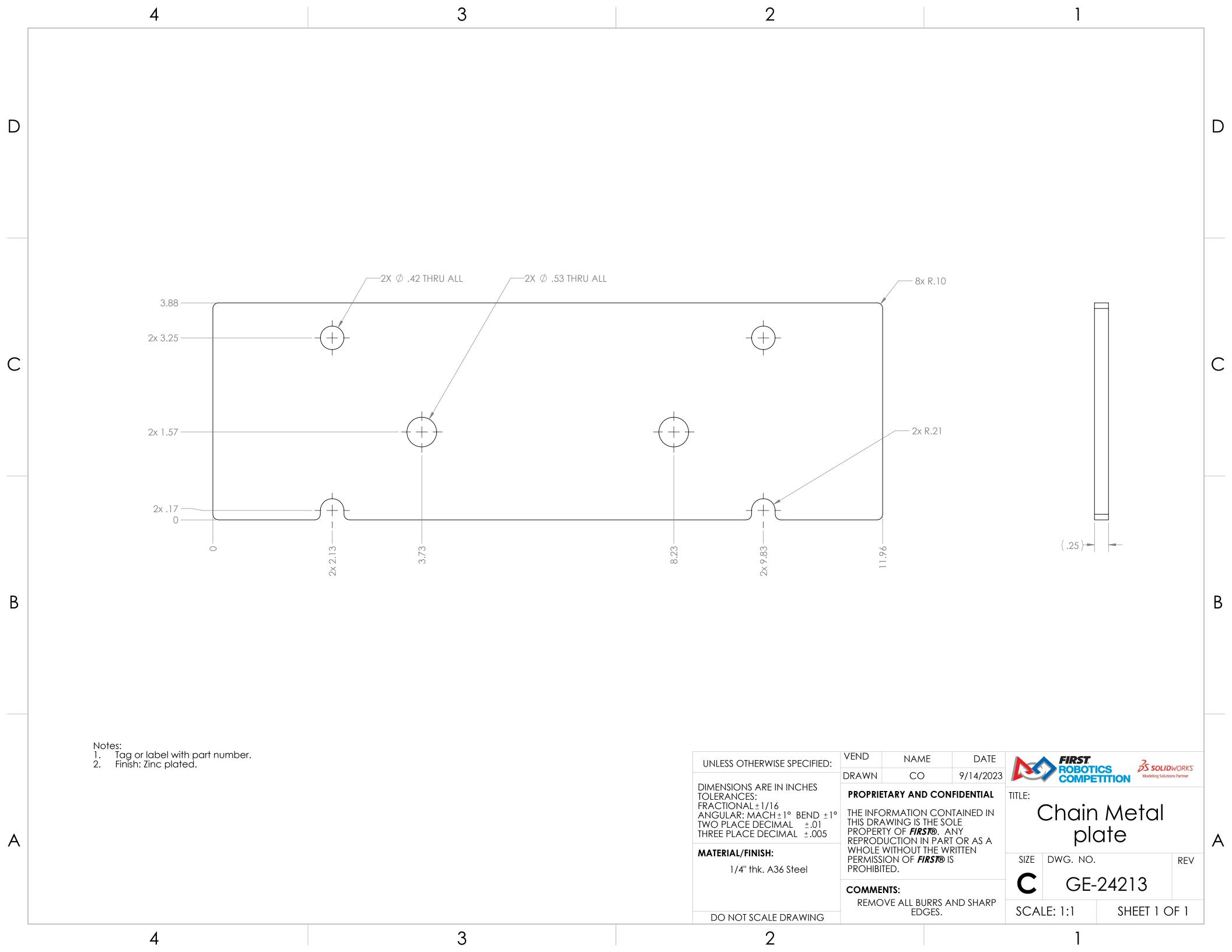


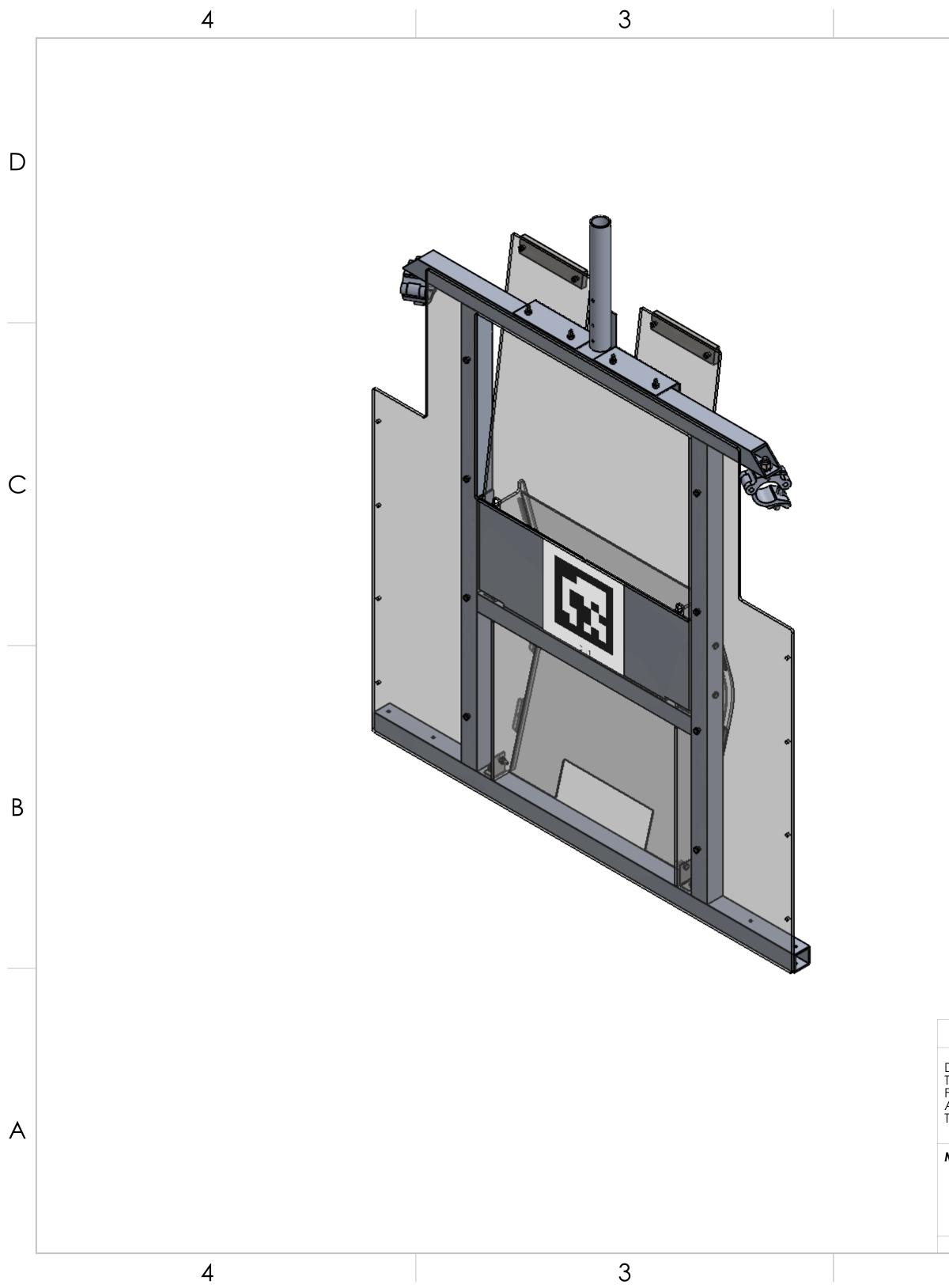


UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE		FIRST.		25 50117		
	DRAWN	СО	7/20/2023	ROBOTICS COMPETITION					
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16		TARY AND CON							
ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	THIS DRA PROPER	DRMATION CON AWING IS THE SC TY OF <b>FIRST®</b> . A PUCTION IN PART	NY	Triangular Truss Block					Δ
MATERIAL/FINISH:	WHOLE	WITHOUT THE WI ION OF <b>FIRST®</b> IS	SIZE	DWG. NO.			REV	7 (	
	COMME	NTS:			GE-	$242^{-1}$			
DO NOT SCALE DRAWING	REMC	VE ALL BURRS A EDGES.	SCALE: 1:4 SHEET 1 OF 1				)F 1		
2					1				

D

С





	4	GE-24240			Chute		1	
	5	GE-24224			Stage AprilTo	g	1	
	6	FE-01016		Cheeseb	orough for Tr	uss_Single	2	
	7	hex25_20_2.5	j_partial		Head Screw ng, partially t		20	
	8	nylock25_20		Steel Nylo	on-Insert Lock	16		
	9	hex5_13_1.25	5		x Head Screv long, fully thr		2	
	10	nylock5_13		steel nylo	n-insert lockr	2		
	11	washer_flat5		Flat V	Vasher for 1/2	2		
UNLESS OTHERWISE SPECIFIED	: FIELD	NAME	DATI		<b>FIRST</b>			
	DRAWN	DF	12/4/20	23 🏴			<b>OLIDWORKS</b> ng Solutions Partner	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/2 ANGULAR: MACH±1° BEND ± TWO PLACE DECIMAL ±.50	1° THE INFO THIS DRA PROPER	PROPRIETARY AND CONFIDENTI THE INFORMATION CONTAINED THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS			Vall As	ssemb	bly	A
MATERIAL/FINISH:	WITHOUT THE WI ION OF <b>FIRST®</b> IS TED.		SIZE	DWG. NO.		REV	-	
	COMMENTS:			C	GE-	24220		
DO NOT SCALE DRAWING			IND SHAKI	SCA	LE: 1:8	SHEET	1 OF 3	
2					1			1

PART NUMBER

GE-24221

GE-24222

GE-24230

ITEM NO.

1

2

3

QTY.

1

1

1

DESCRIPTION

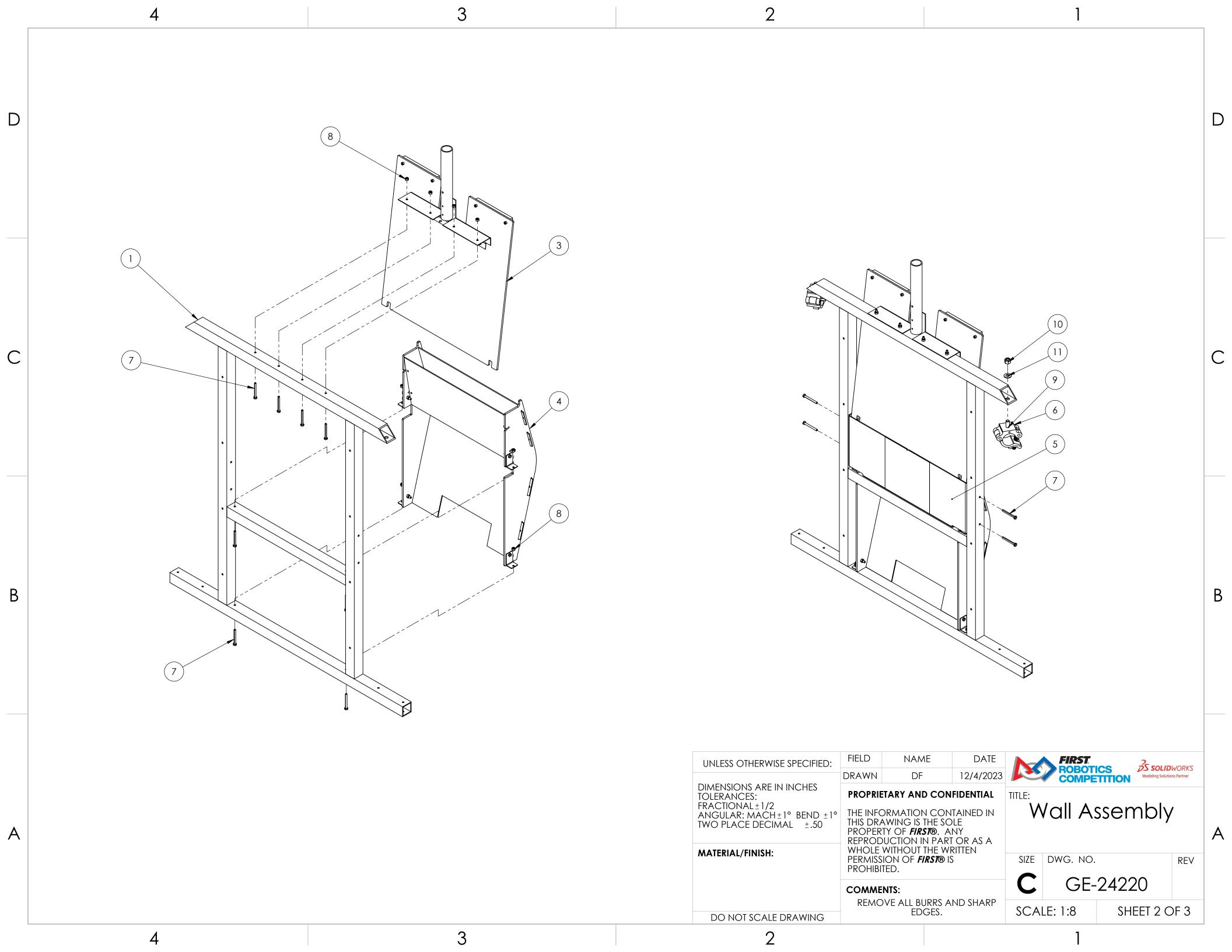
Endgame Weldment

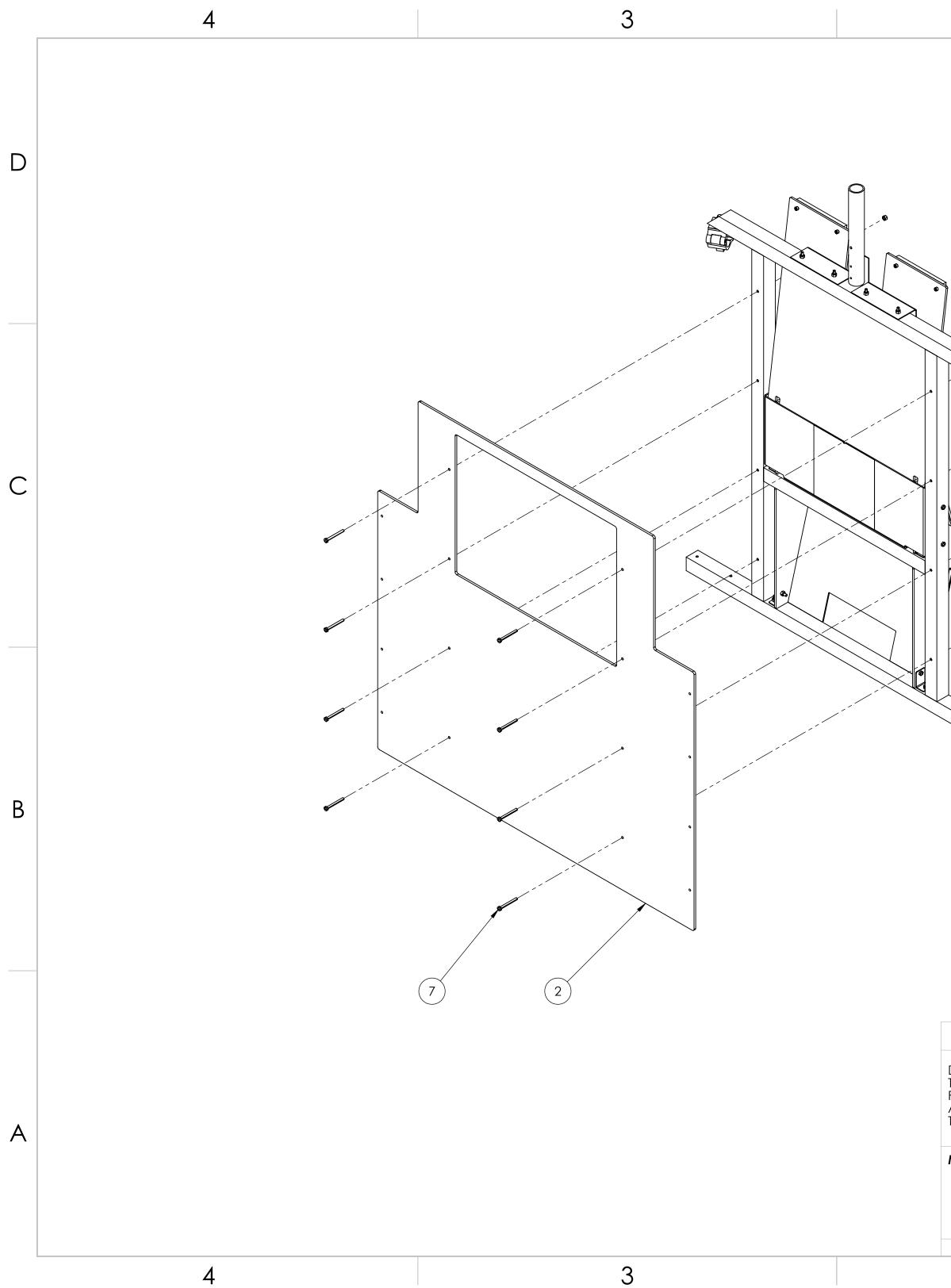
Wall poly

Flap/Pole Assembly

С

D





UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE		FIRST.		25 501121	LODKE	
	DRAWN	DF	12/4/2023	B ROBOTICS COMPETITION					
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/2 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.50	THE INFO THIS DRA PROPER REPROD	TARY AND CON DRMATION CON AWING IS THE SO TY OF <i>FIRST</i> ®. AI UCTION IN PART	TAINED IN LE NY OR AS A	Wall Assembly				,	A
MATERIAL/FINISH:		without the Wr Ion of <b>First®</b> Is Ted.	SIZE	DWG. NO.	0.400		REV		
	COMME		C	GE-	2422	20			
DO NOT SCALE DRAWING	REMC	VE ALL BURRS A EDGES.	SCALE: 1:8		SH	Sheet 3 of 3			

2

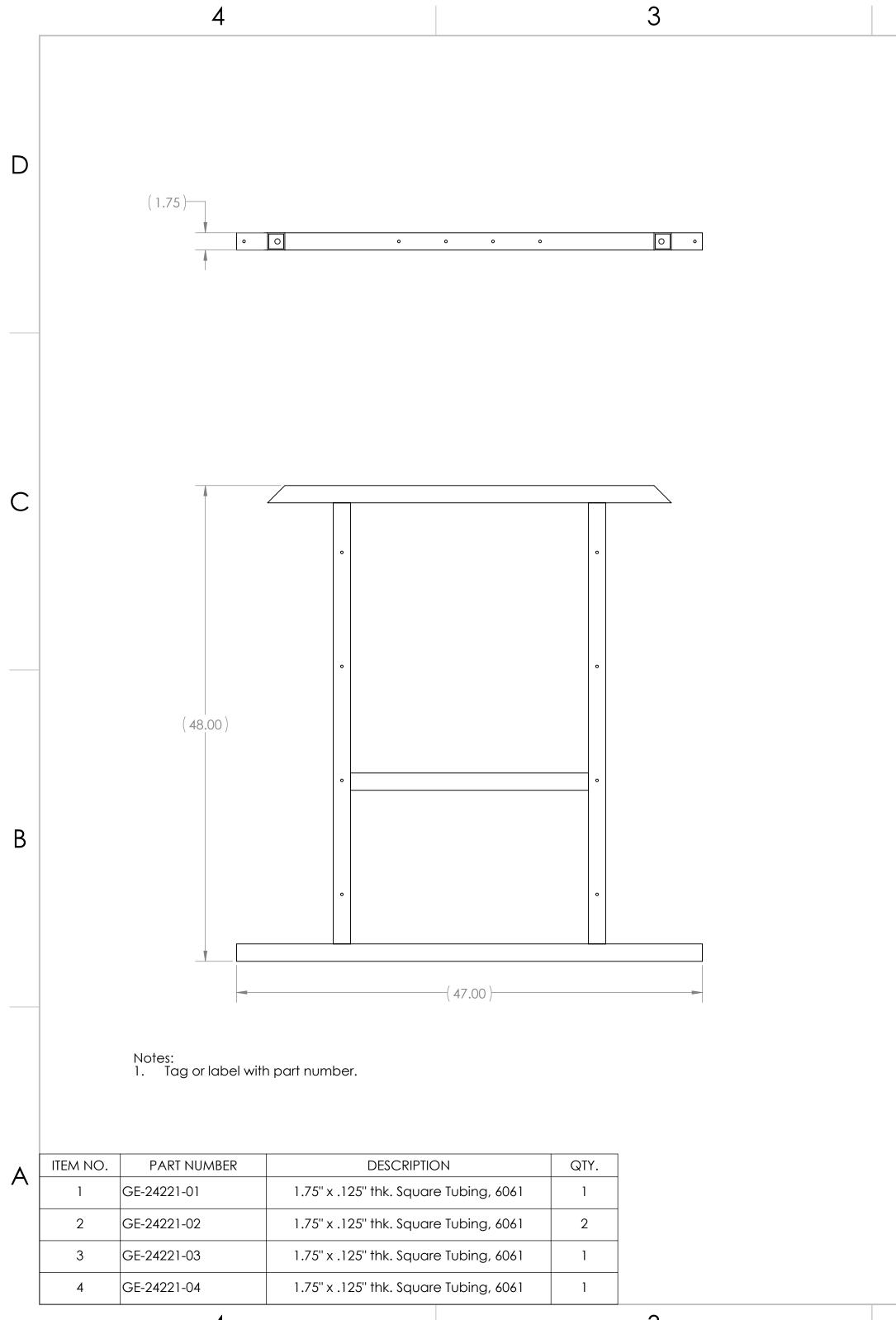
8

2

В

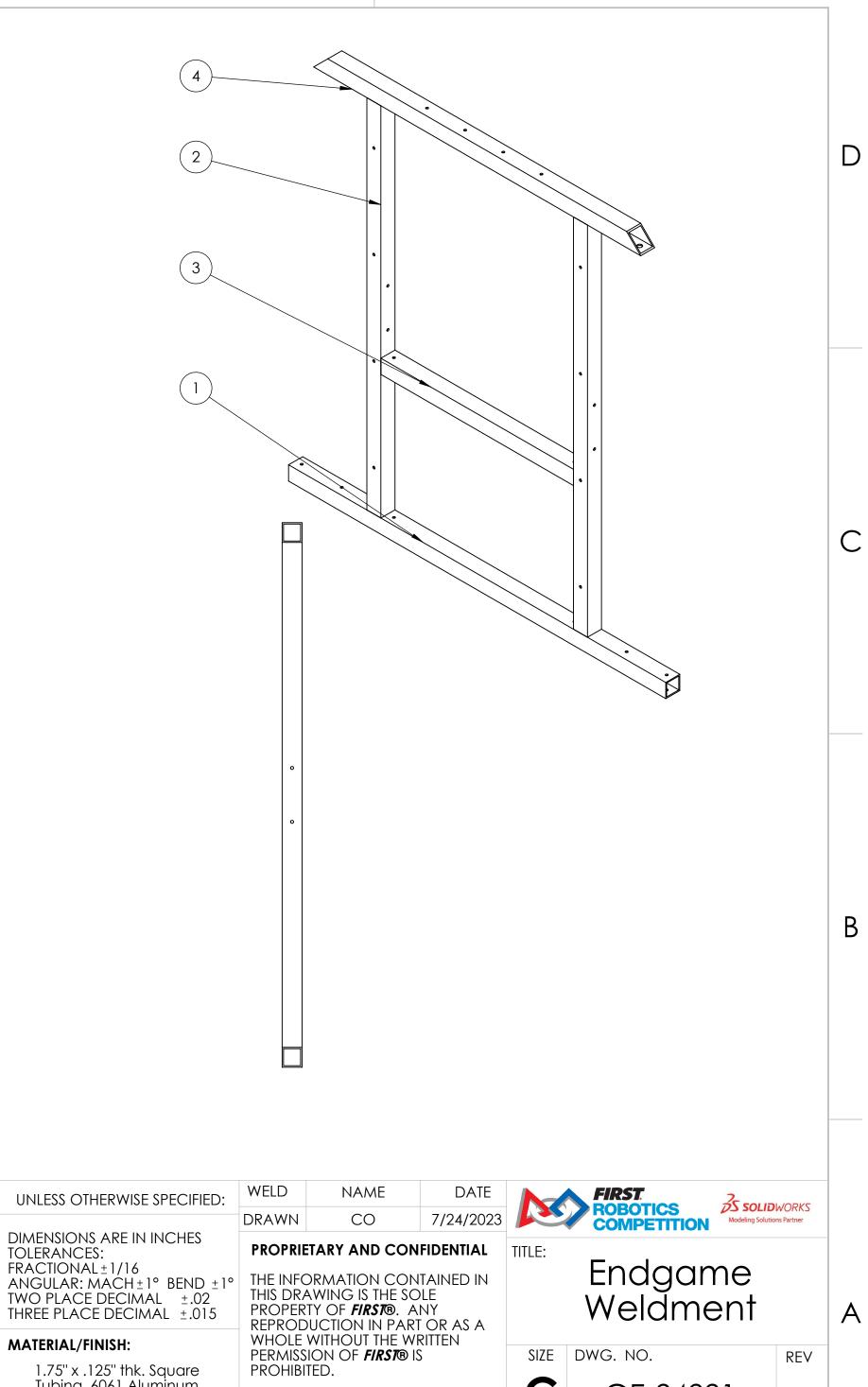
D

С



3





MATERIAL/FINISH:

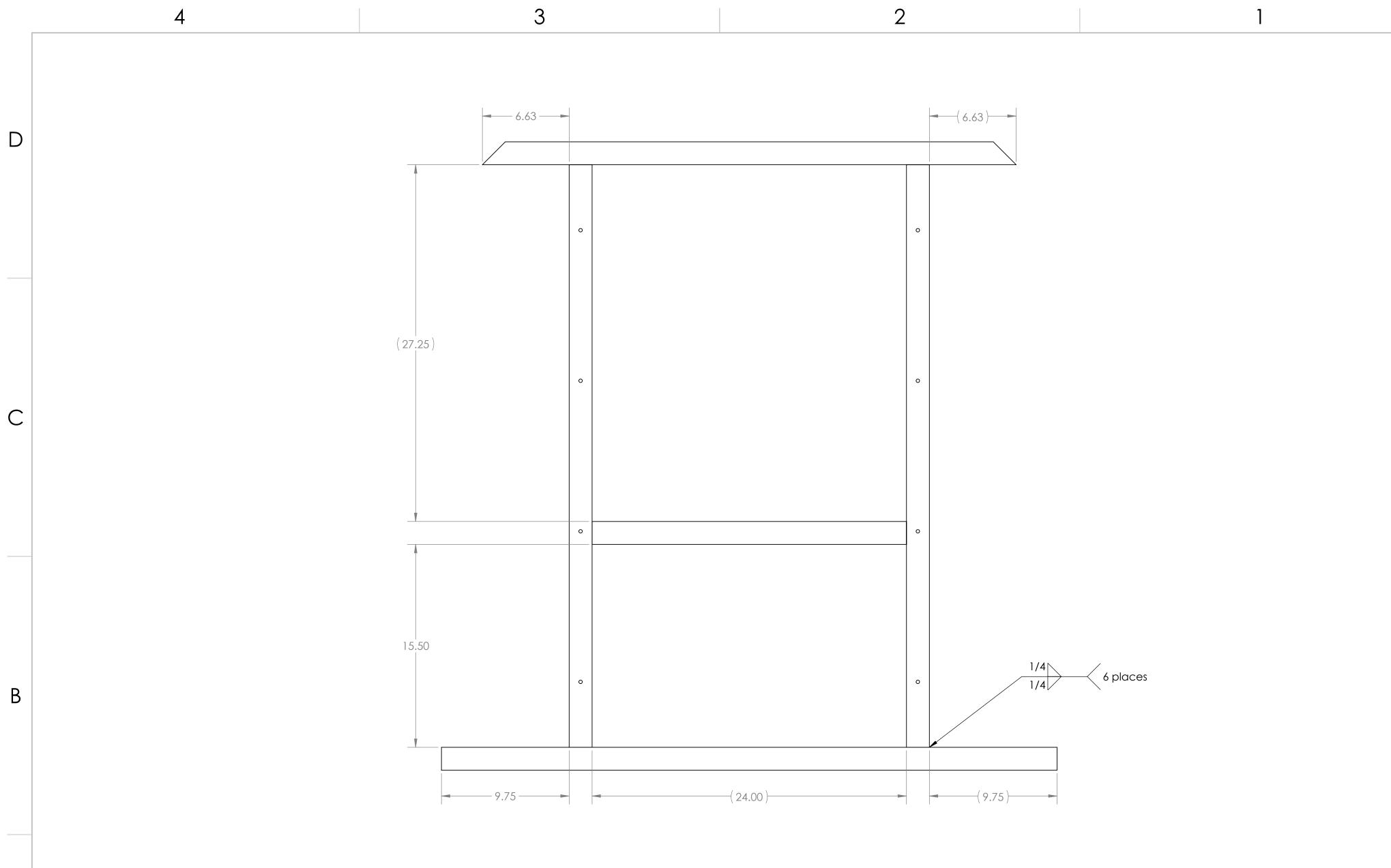
1.75" x .125" thk. Square Tubing, 6061 Aluminum

DO NOT SCALE DRAWING

2

COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.





[ T F 1 ]

4

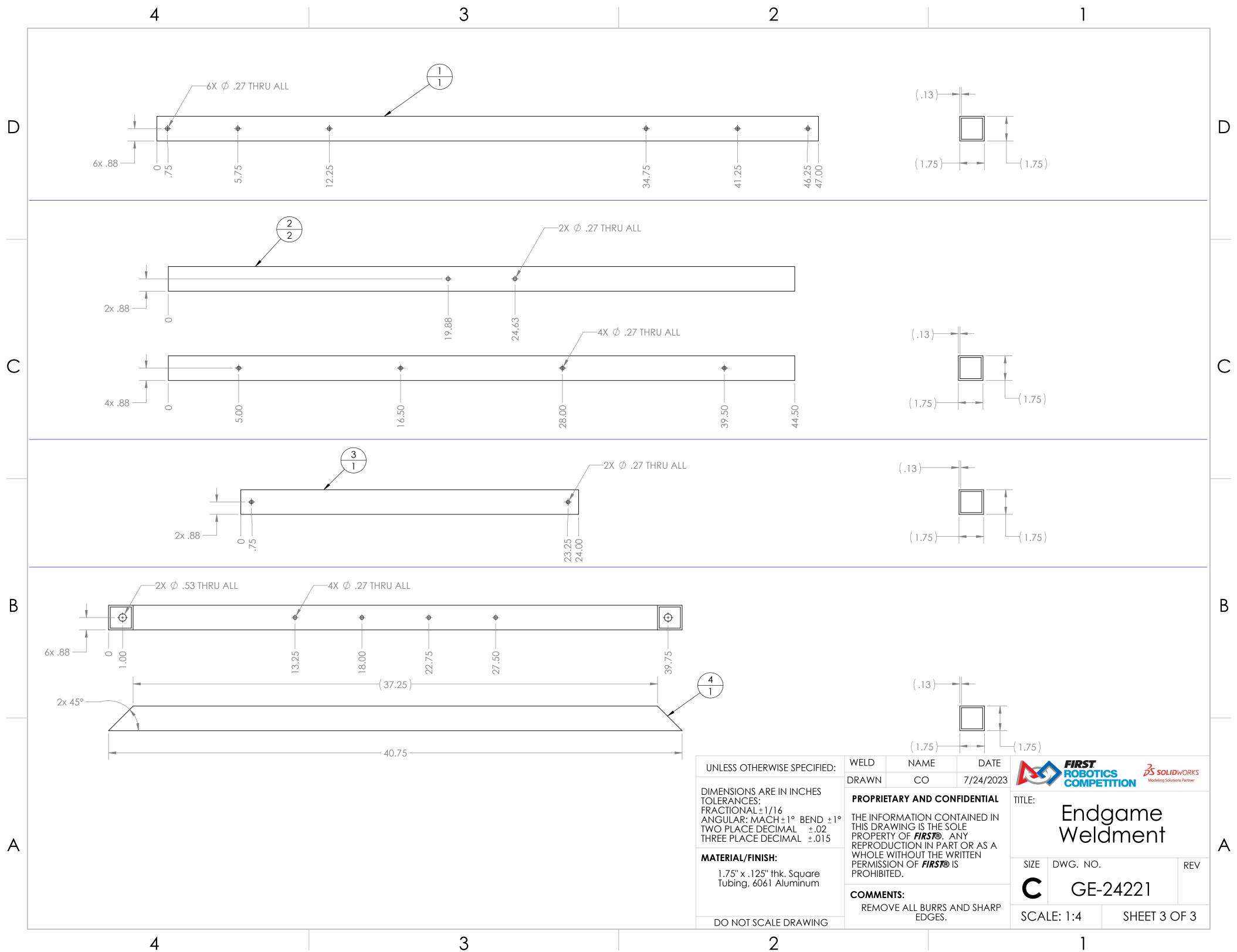
А

3

	WELD	NAME	DATE		<b>FIRST</b>	2		-	
UNLESS OTHERWISE SPECIFIED:	DRAWN	СО			ROBOT		SOLIDWORKS		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND±1° TWO PLACE DECIMAL±.02 THREE PLACE DECIMAL±.015	PROPRIE THE INFO THIS DRA PROPER	TARY AND CON DRMATION CON WING IS THE SC TY OF <i>FIRST</i> ®. A UCTION IN PART	FIDENTIAL TAINED IN DLE NY	Endgame Weldment					
MATERIAL/FINISH: 1.75" x .125" thk. Square Tubing, 6061 Aluminum	WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			SIZE	DWG. NO.		REV	-	
TUDING, 6061 AUMINUM	COMMENTS:			C	GE-	24221			
do not scale drawing	DO NOT SCALE DRAWING REMOVE ALL BURRS AND SH EDGES.					SCALE: 1:5 SHEET 2 OF 3			
2					1			_	

D

С

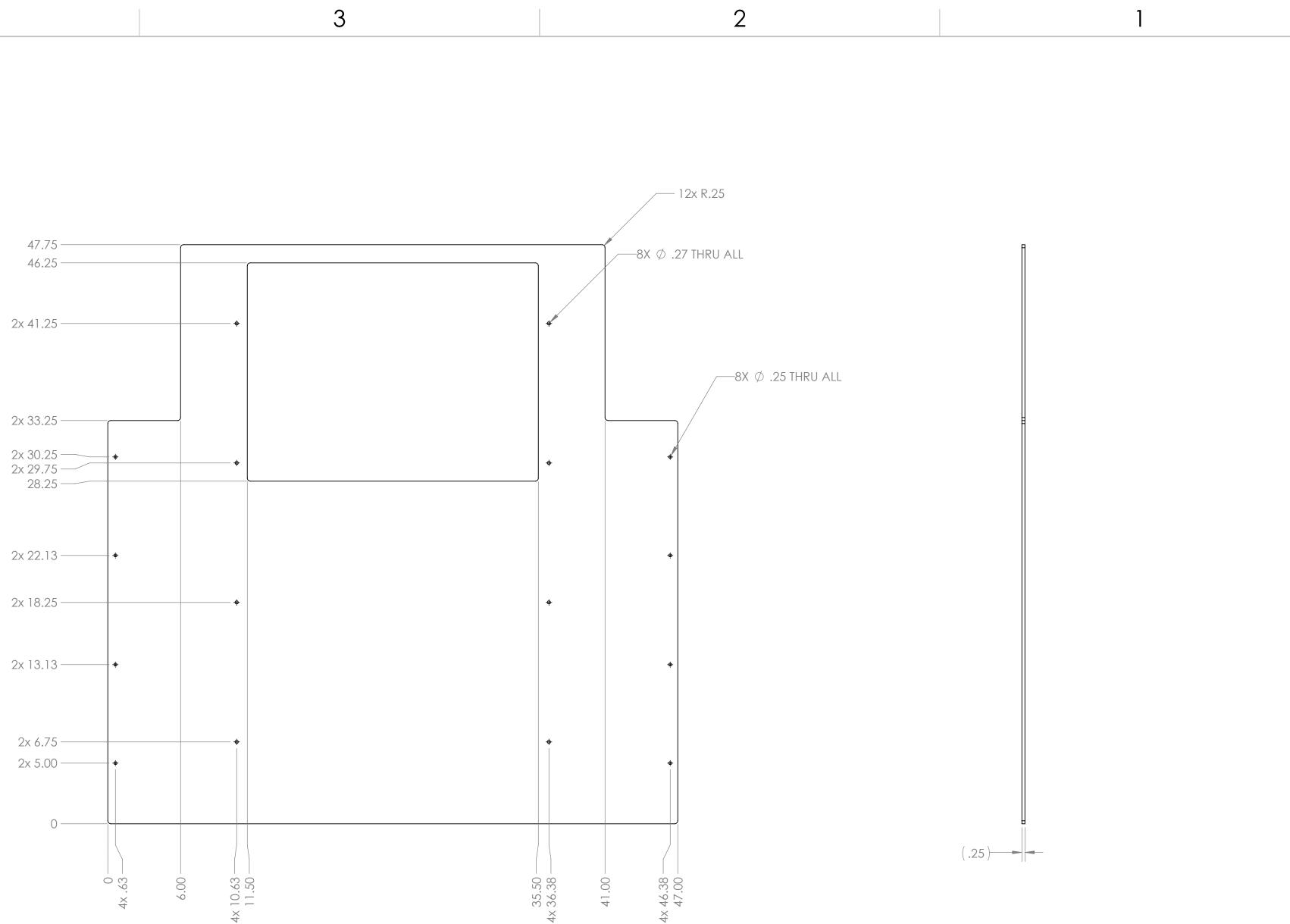


D

С

В

А



Notes: 1. Tag or label with part number.

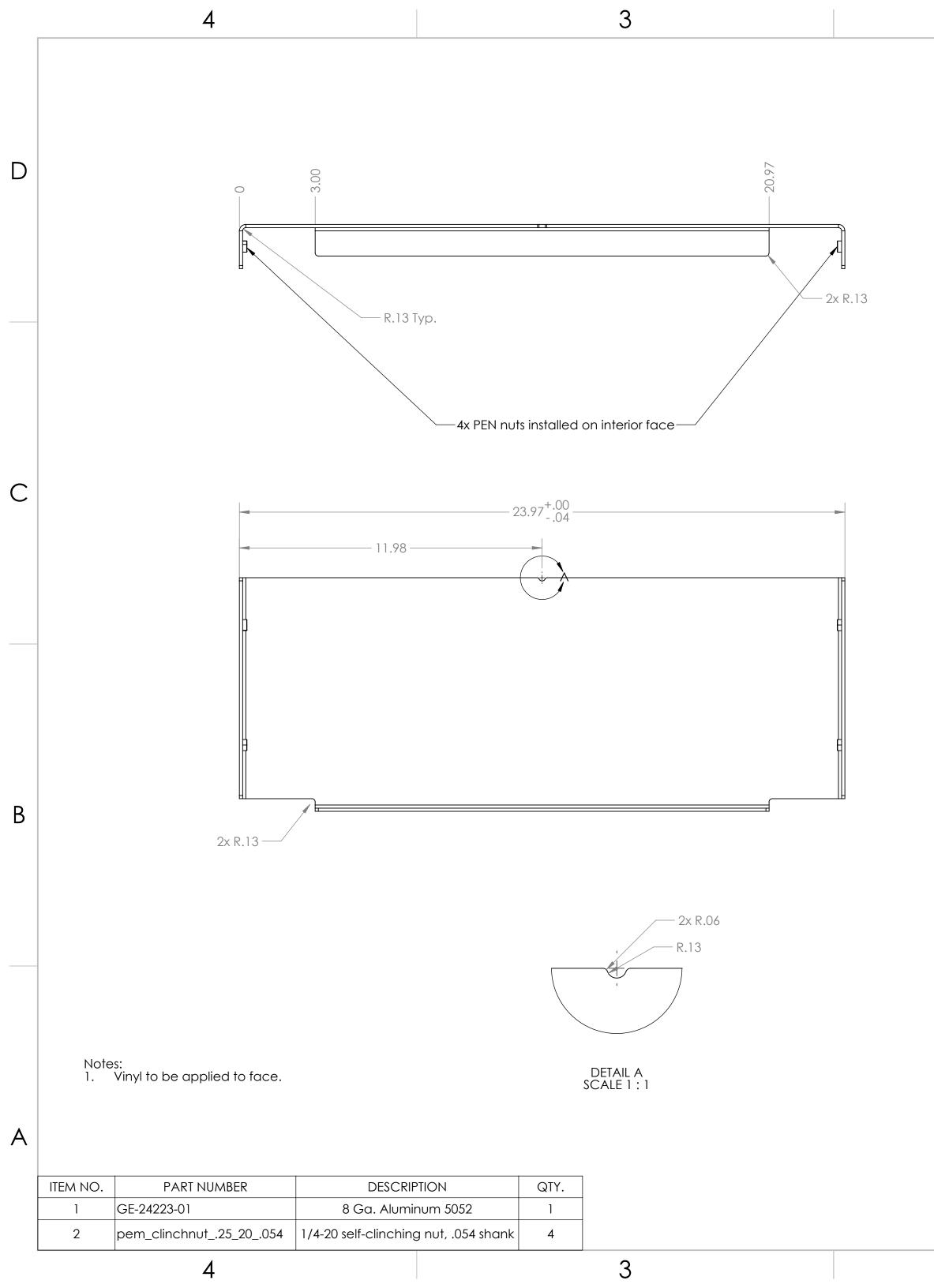
4

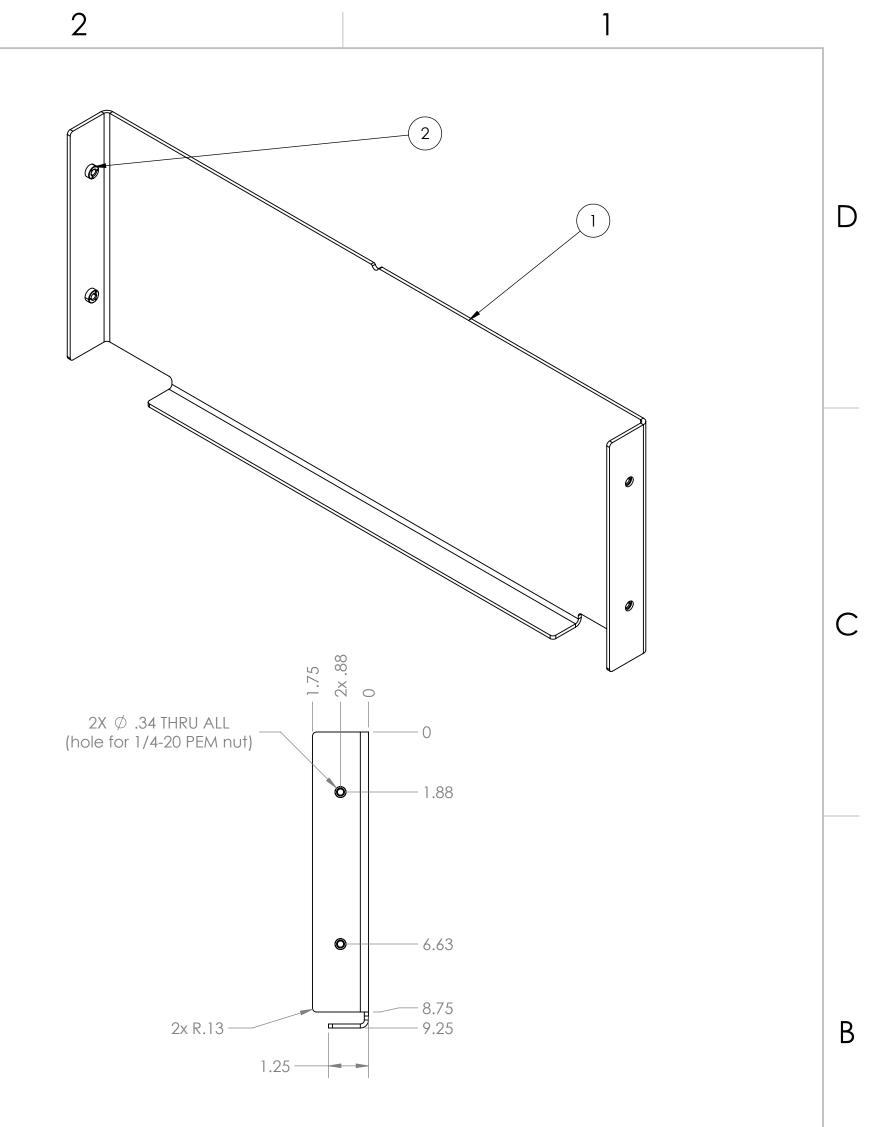
3

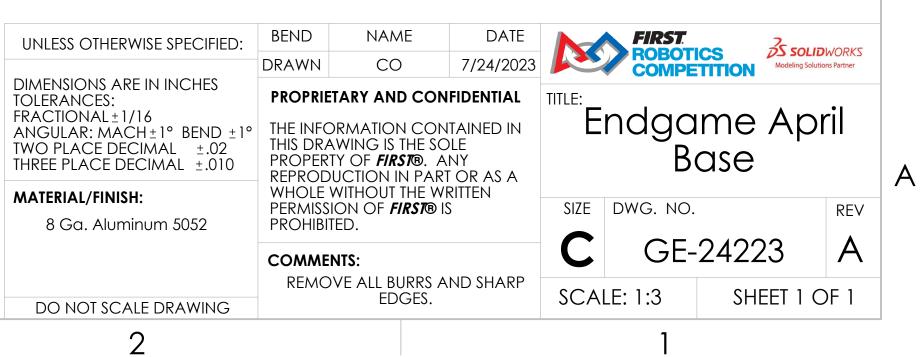
VEND **FIRST** NAME DATE UNLESS OTHERSTOR DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/16 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: Corrbonate, clear UNLESS OTHERWISE SPECIFIED: Solidworks ROBOTICS COMPETITION Modeling Solutions Partner PROPRIETARY AND CONFIDENTIAL TITLE: Wall poly А SIZE DWG. NO. REV С GE-24222 COMMENTS: REMOVE ALL BURRS AND SHARP SCALE: 1:6 SHEET 1 OF 1 EDGES. DO NOT SCALE DRAWING 2

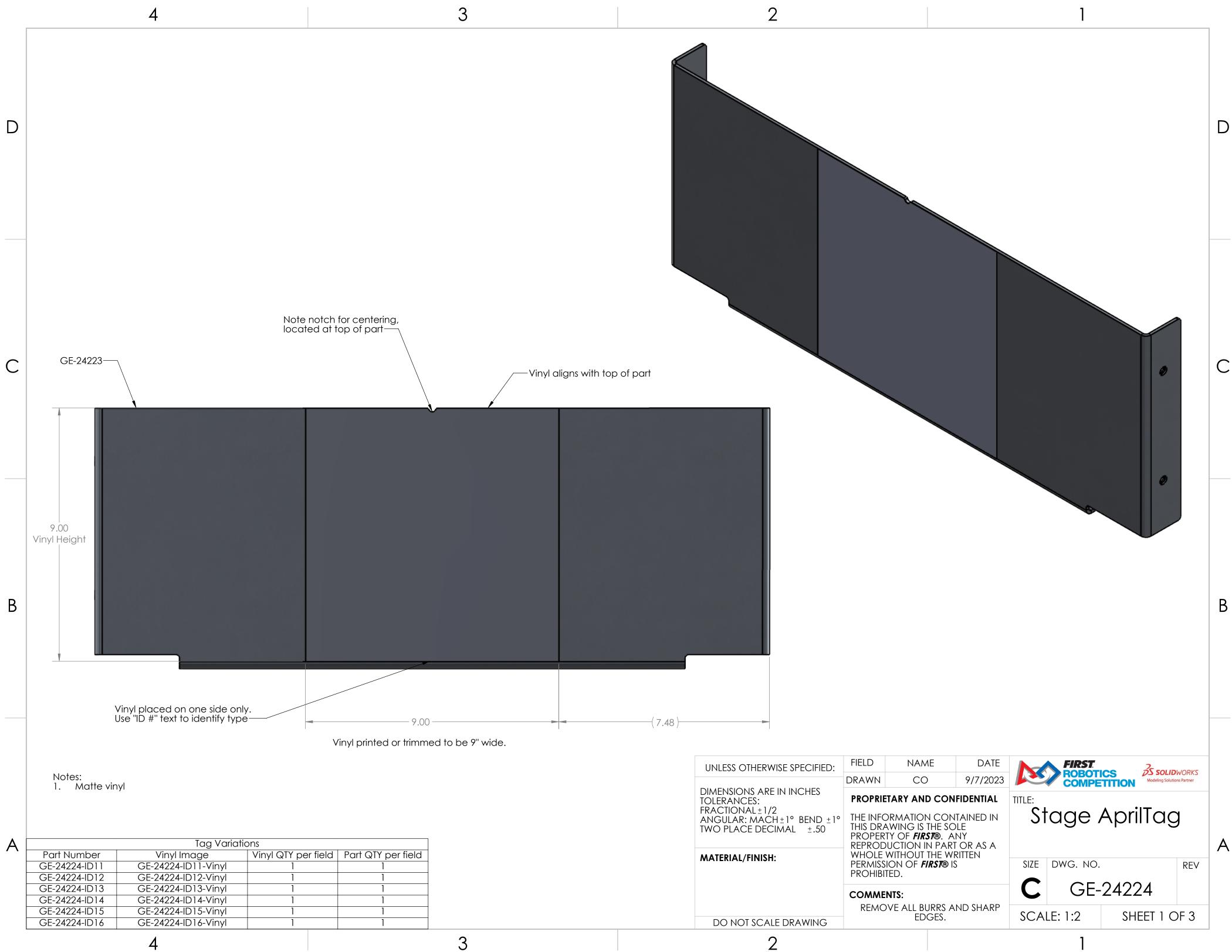
D

С

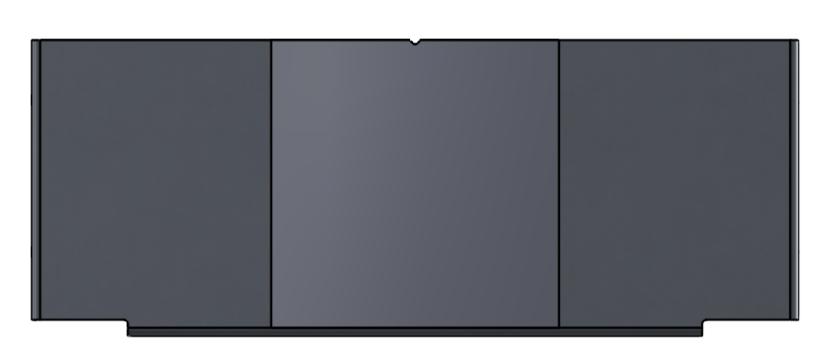




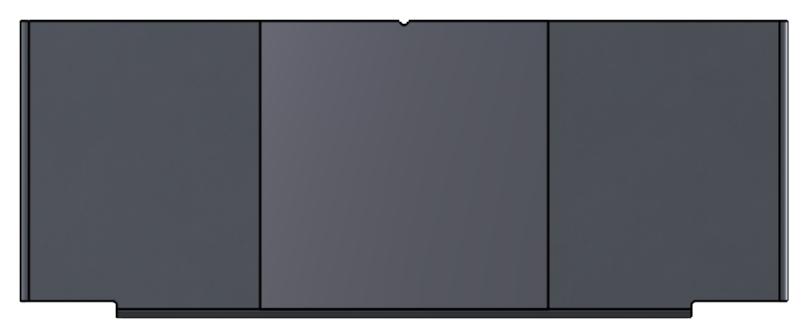




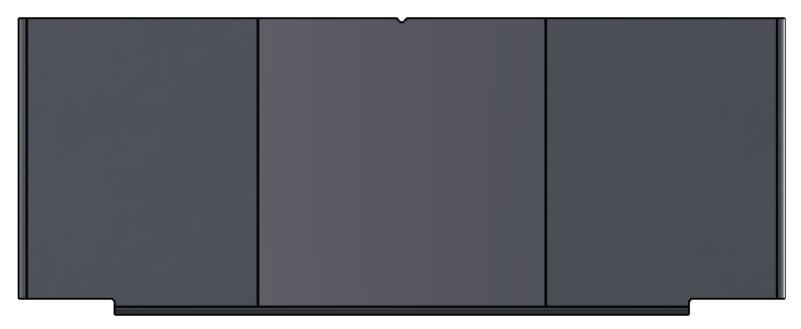
DO NOT	SCALE	DRAWING	G







GE-24224-ID13



GE-24224-ID15

3

4

D

С

В

А

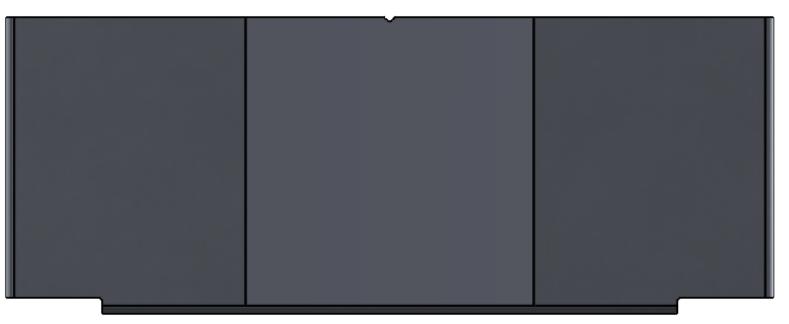


D

С

В



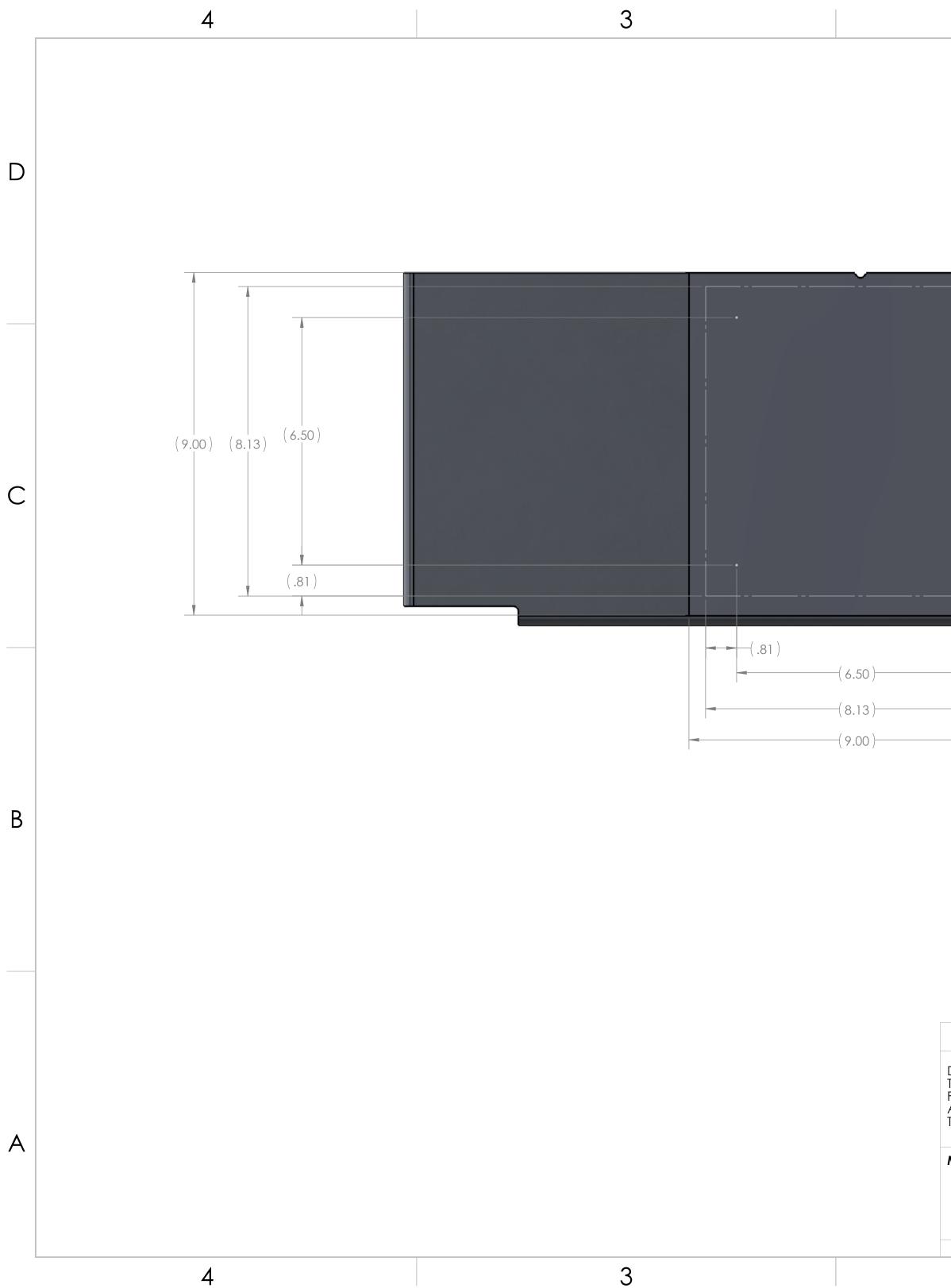


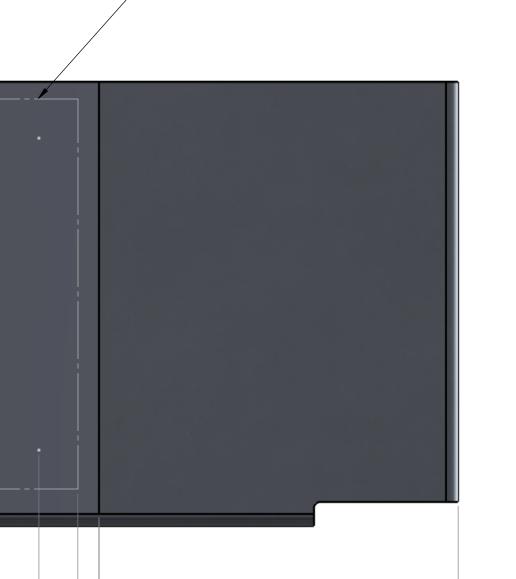
GE-24224-ID14



## GE-24224-ID16

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	FIRST.					
	DRAWN	CO	9/7/2023	ROBOTICS COMPETITION					
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/2 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.50	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			Stage AprilTag				j	A
MATERIAL/FINISH:				SIZE	DWG. NO.			REV	
				C	GE-24224		24		
	REMC	VE ALL BURRS A EDGES.	ND SHARP	SCALE: 1:3		SHEET 2 OF 3		)F 3	
DO NOT SCALE DRAWING		LDOLJ.		SCALL. 1.5 STILLT Z OF 5					
2					1				





(7.48)

2

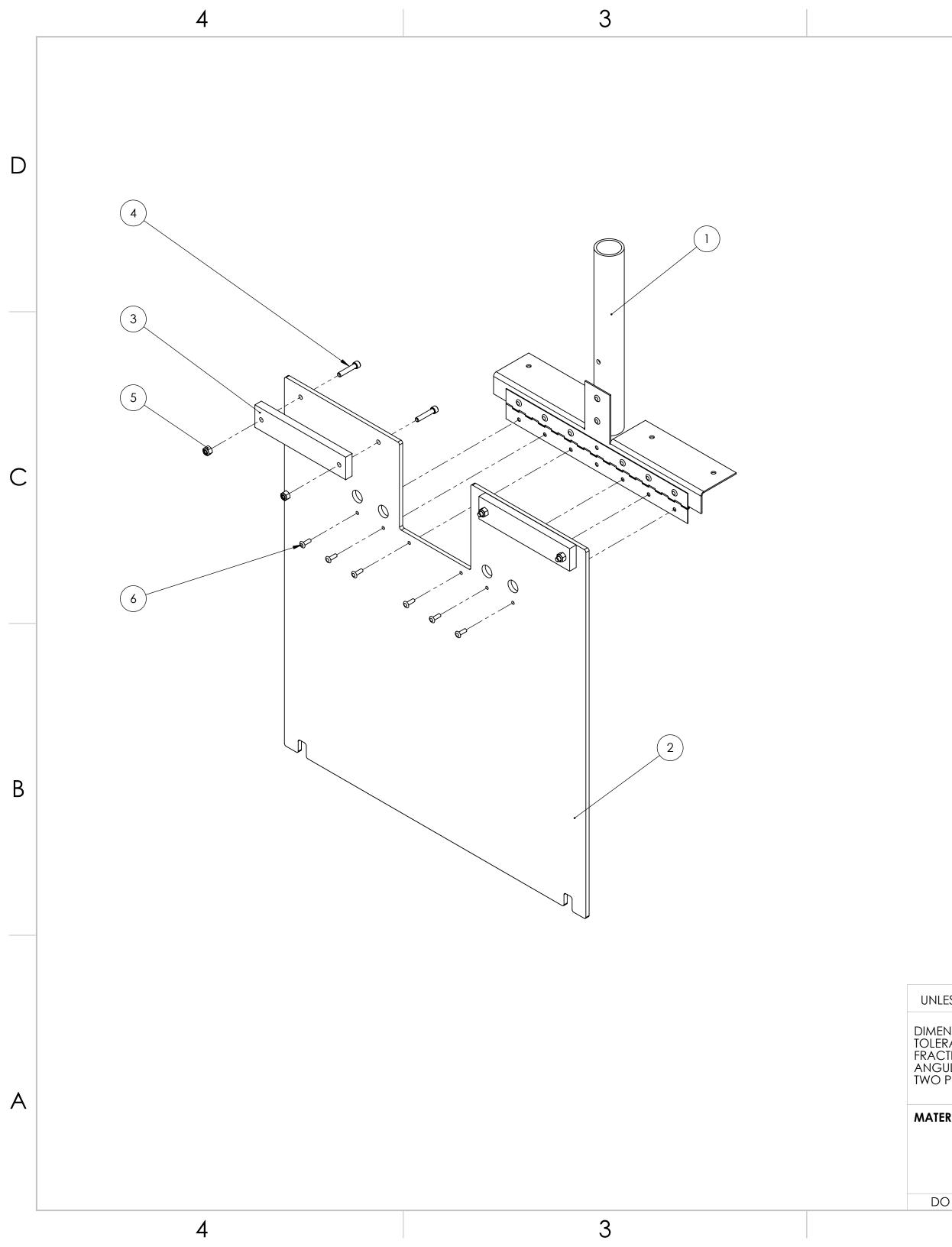
-Square added for reference only. 8.125 in. square represents outer border of AprilTag feature.

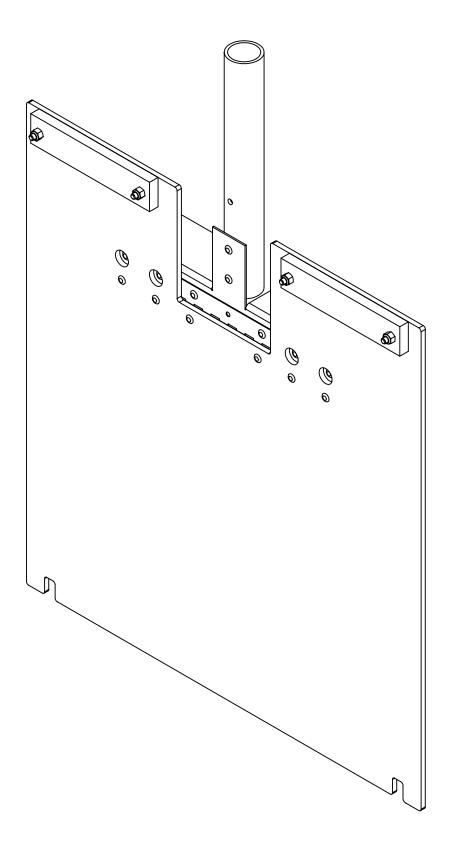
FIELD NAME DATE **FIRST** UNLESS OTHERWISE SPECIFIED: **S SOLID**WORKS ROBOTICS COMPETITION СО 9/7/2023 DRAWN Modeling Solutions Partner DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/2 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.50 PROPRIETARY AND CONFIDENTIAL TITLE: Stage AprilTag THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF **FIRST®**. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF **FIRST®** IS PROHIBITED. А MATERIAL/FINISH: SIZE DWG. NO. REV С GE-24224 COMMENTS: REMOVE ALL BURRS AND SHARP SCALE: 1:2 SHEET 3 OF 3 EDGES. DO NOT SCALE DRAWING

D

С

В

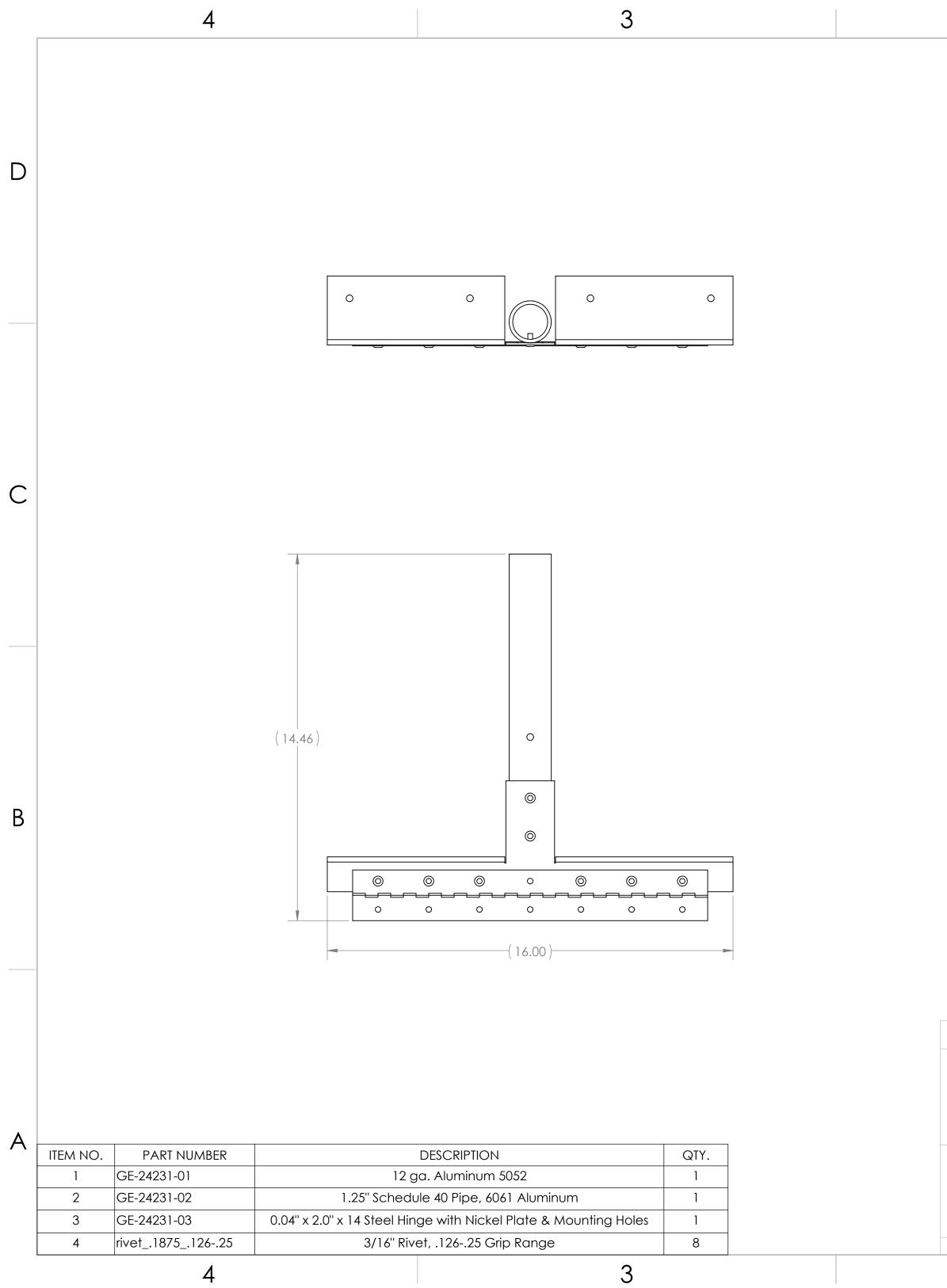


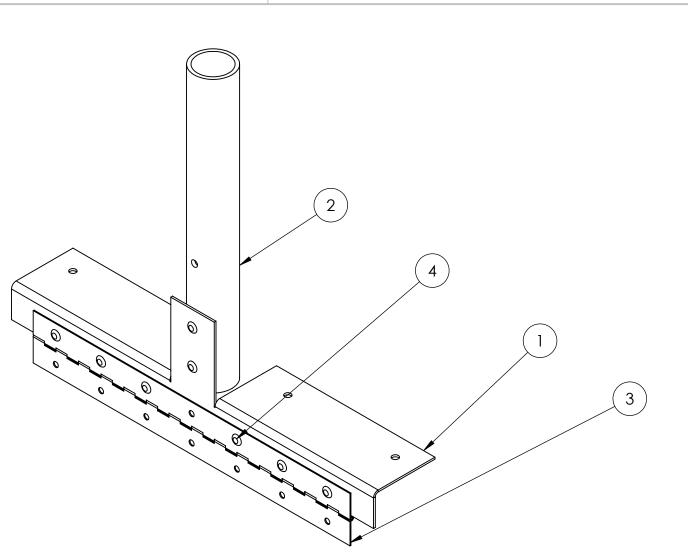


D

С

	ITEM NO.		PART NU	∕IBER		DE	SCRIPTIC	N		QTY.		
	1	GE-242	31			Flap Hin Sul		1				
	2	GE-242	32				Flap			1		
	3	GE-242	4233			Flo	ap Weig	ht		2		
	4	socket	socket_hex25_20_1.25			Socket Head long, t	Screw, fully thre		4			
	5	nylock	25_20			Steel Nylon-Ir	nsert Loc	:knut, 1/4"-20		4		
	6	rivet1	875251-	.375		3/16" Aluminui	3/16" Aluminum Rivet, .251375 Grip Range			6		
LESS OTH	HERWISE SPEC	CIFIED:	FIELD	NAM	١E	DATE		FIRST.	00			
ENSIONS ARE IN INCHES ERANCES: CTIONAL ± 1/2 GULAR: MACH ± 1° BEND ± 1° PLACE DECIMAL ±.50			DRAWN	DF		11/27/2023		<b>ROBOTI</b> COMPE	TITION	Modeling Solut		
			THE INFO THIS DRA PROPER	ORMATION WING IS TY OF <b>FIR:</b>	N C( The <b>St</b> ®.		TITLE:	Flap Asse	/Pol mb	e ly		A
			WHOLE	without <sup>-</sup> Ion of <b>FI</b>	THE	WRITTEN	SIZE	DWG. NO.			REV	
COMMENTS:							C	GE-	2423	50		
O NOT SCALE DRAWING								She	EET 1 C	OF 1		
2					1						,	

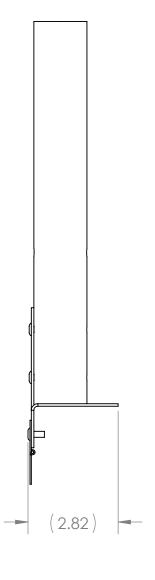




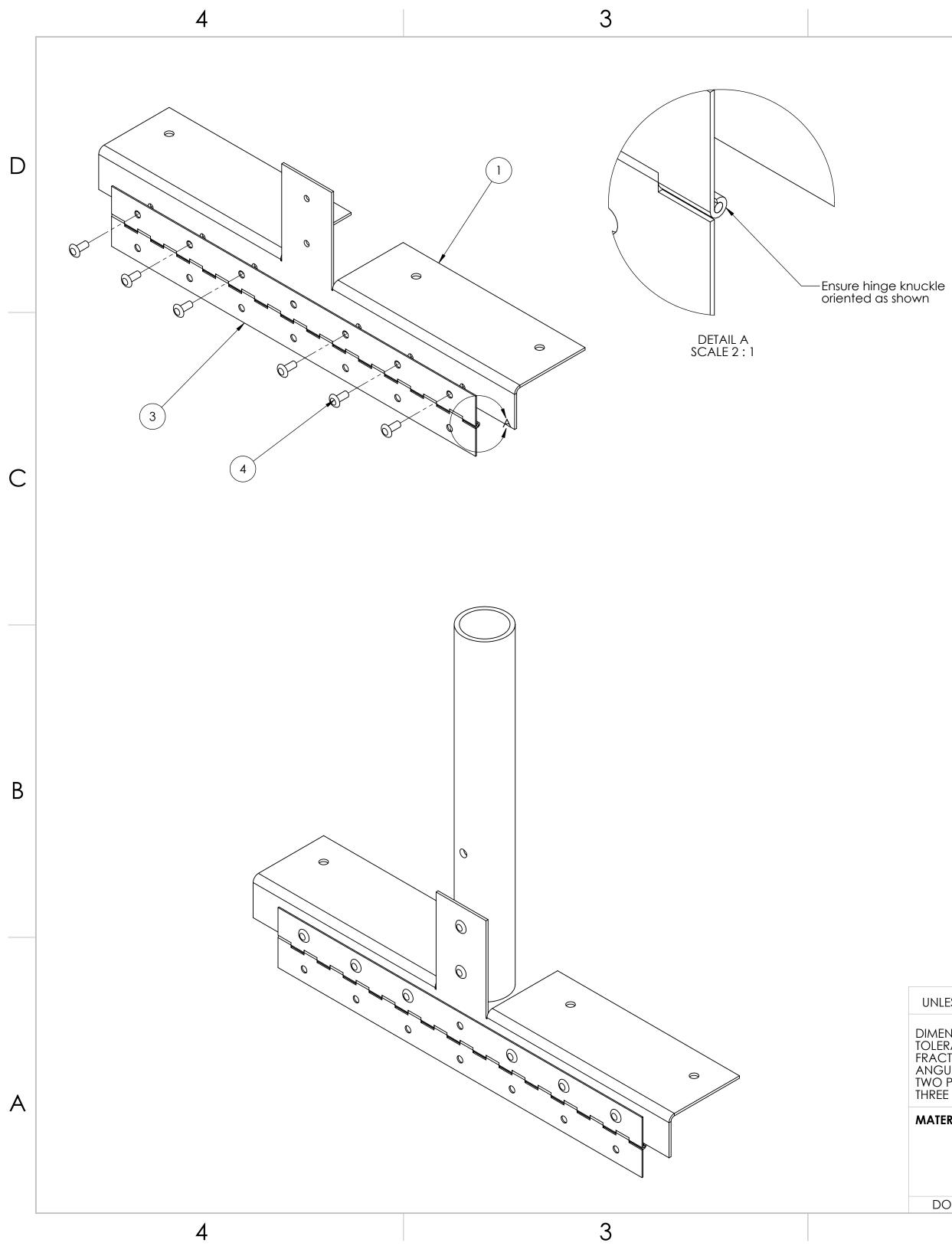
D

С

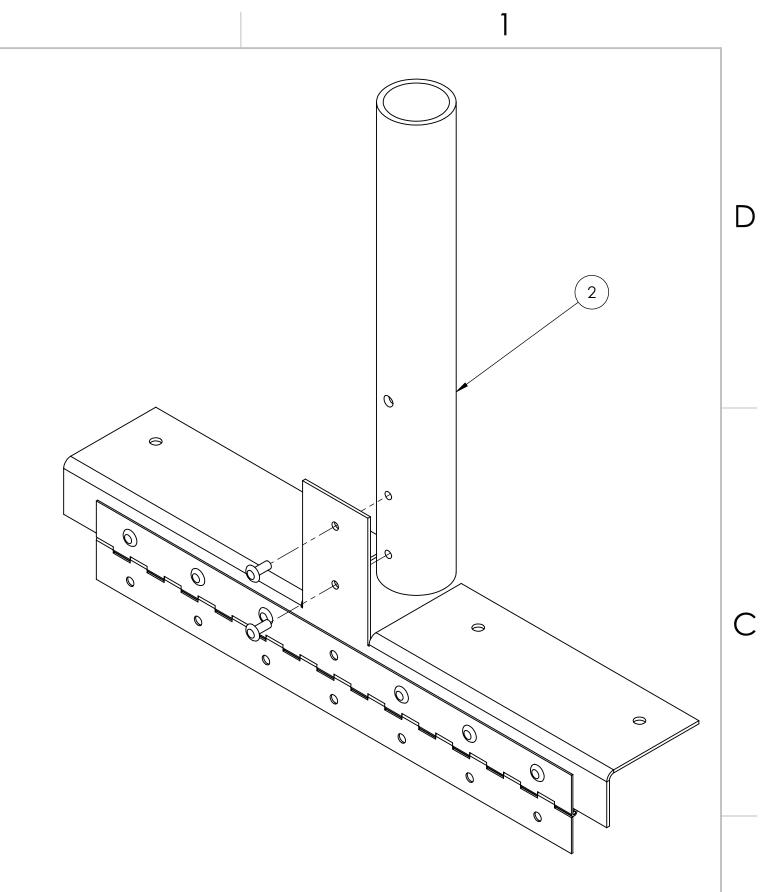
В



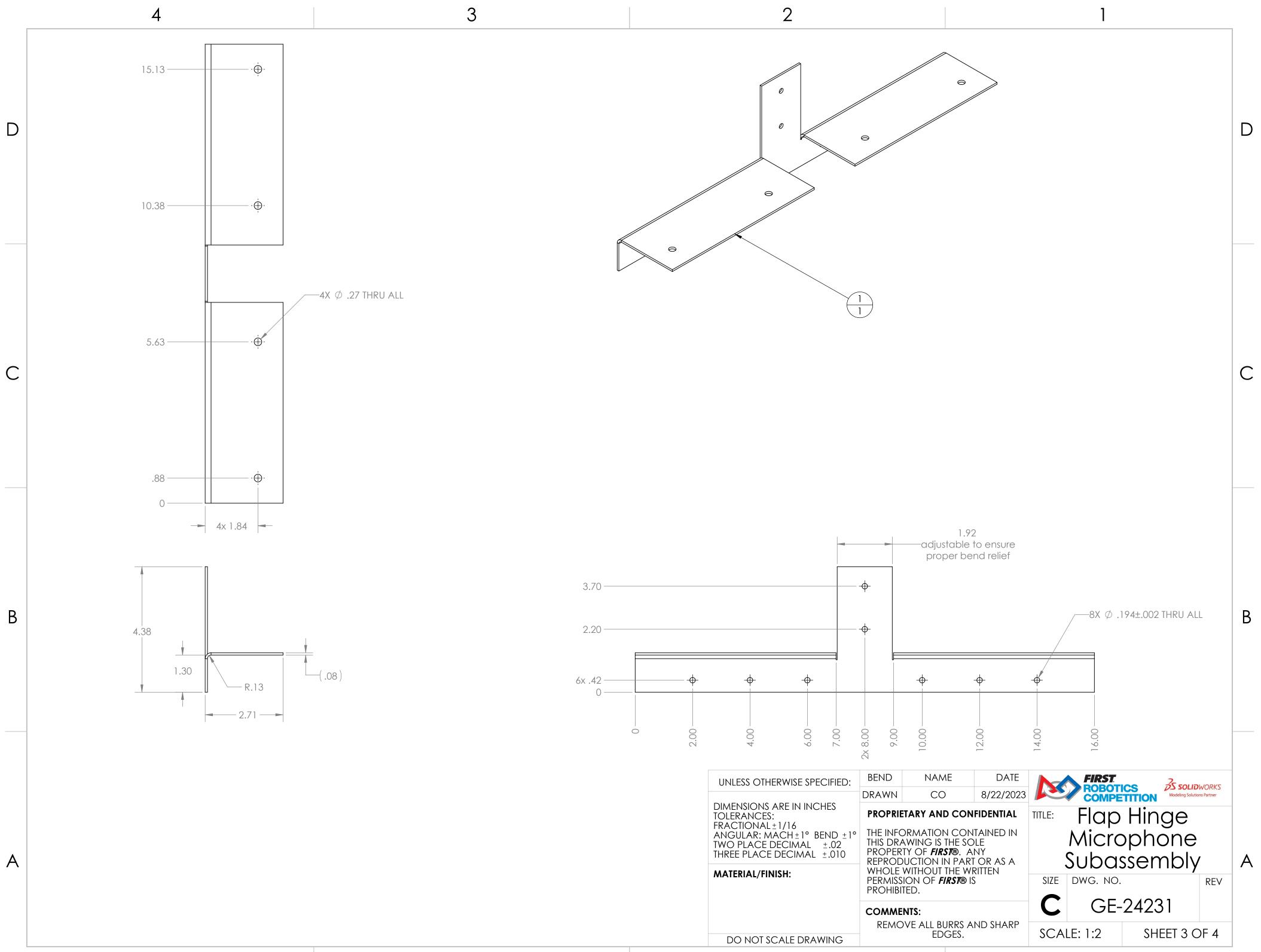
								-
UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE		FIRST.	25 501		]
	DRAWN	CO	8/22/2023	ROBOTICS COMPETITION				
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND±1° TWO PLACE DECIMAL±.02 THREE PLACE DECIMAL±.010	THE INFO THIS DRA PROPER	TARY AND CON DRMATION CON AWING IS THE SC TY OF <i>FIRST</i> ®. A DUCTION IN PART	TAINED IN LE NY	Flap Hinge Microphone Subassembly				A
MATERIAL/FINISH:	WHOLE WITHOUT THE WRITTEN PERMISSION OF <i>FIRST</i> ® IS PROHIBITED. COMMENTS:							_ ``
				SIZE	DWG. NO.		REV	
				C	GE-	24231		
	REMC	REMOVE ALL BURRS AND SHARP			LE: 1:3	:3 SHEET 1 OF 4		1
DO NOT SCALE DRAWING		EDGES.		SCA	LE. 1.3	JUCCI I	Ог 4	
2					1			

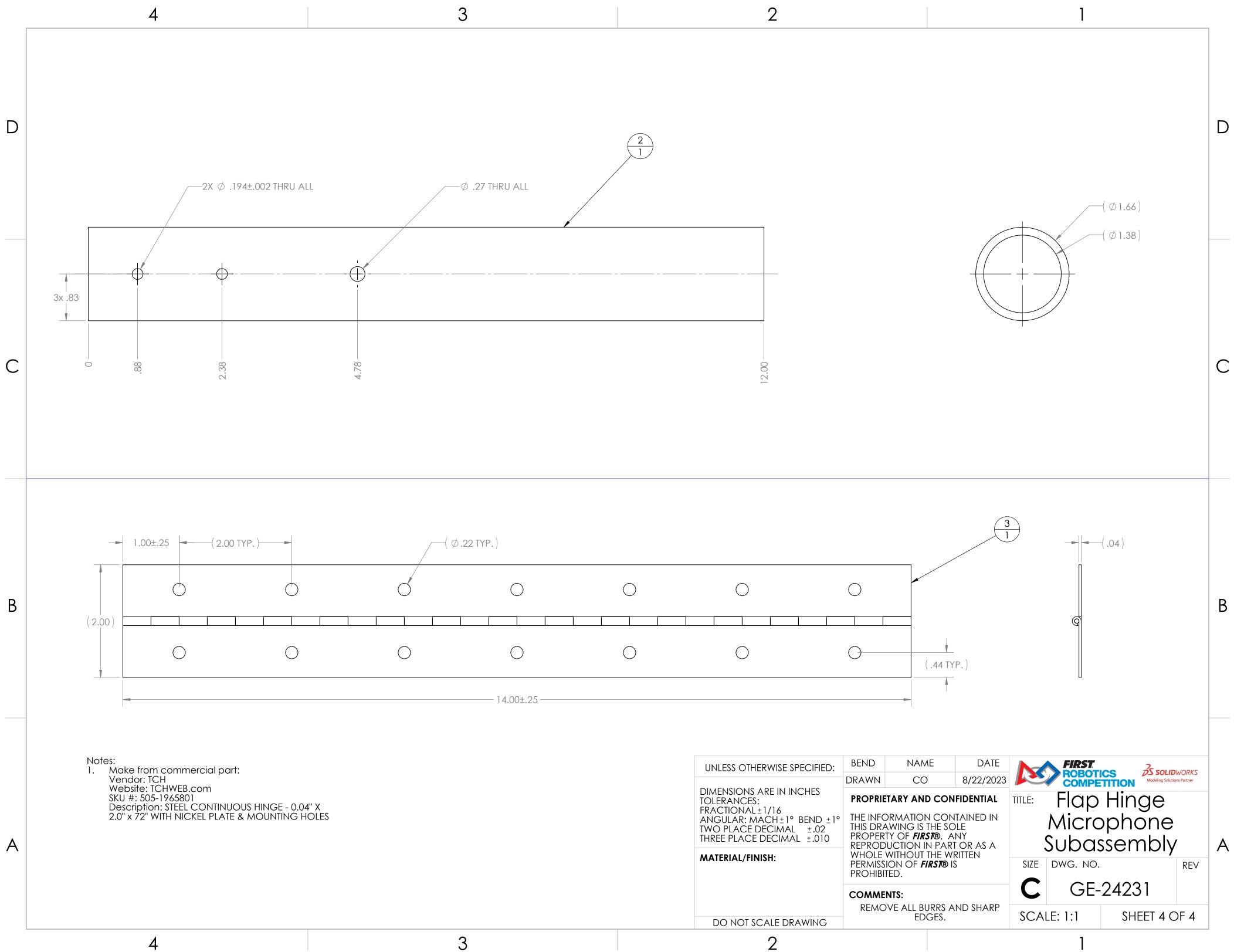






UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE		<b>FIRST</b>		25 50117		
	DRAWN CO 8/22/2023			ROBOTICS COMPETITION					
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010	THE INFO THIS DRA PROPER REPROD	TARY AND CON DRMATION CON AWING IS THE SO TY OF <i>FIRST</i> ®. A DUCTION IN PAR WITHOUT THE W	NTAINED IN DLE ANY PT OR AS A	TILE: Flap Hinge Microphone Subassembly					A
MATERIAL/FINISH:	-	ION OF <i>FIRST</i> ®	SIZE DWG. NO.			REV			
	COMMENTS:			С	GE-	242	31		
DO NOT SCALE DRAWING	REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:2 SHEET 2 OF 4					
DO NOT SCALE DRAWING								]	
2					1				





D

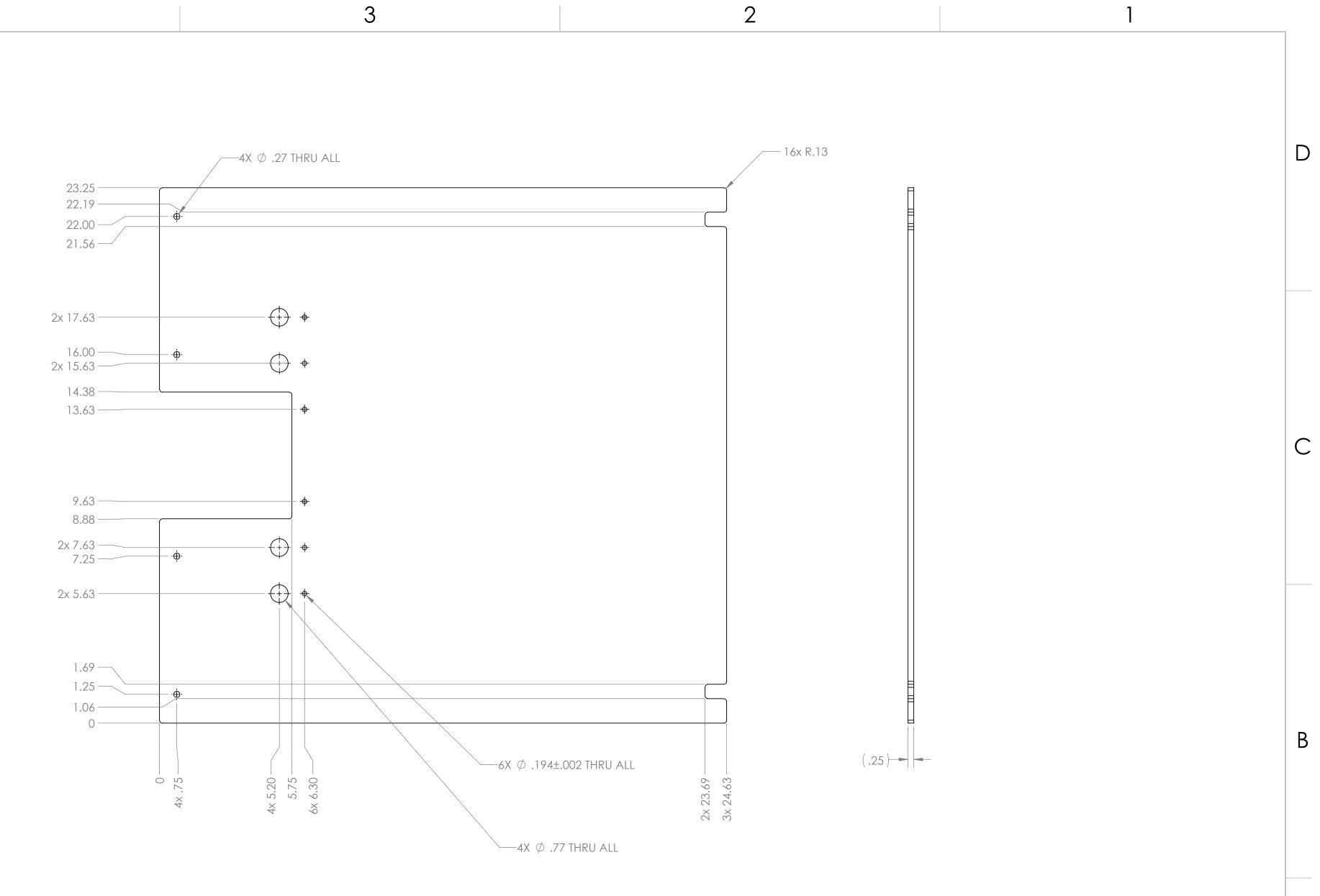
С

В

А

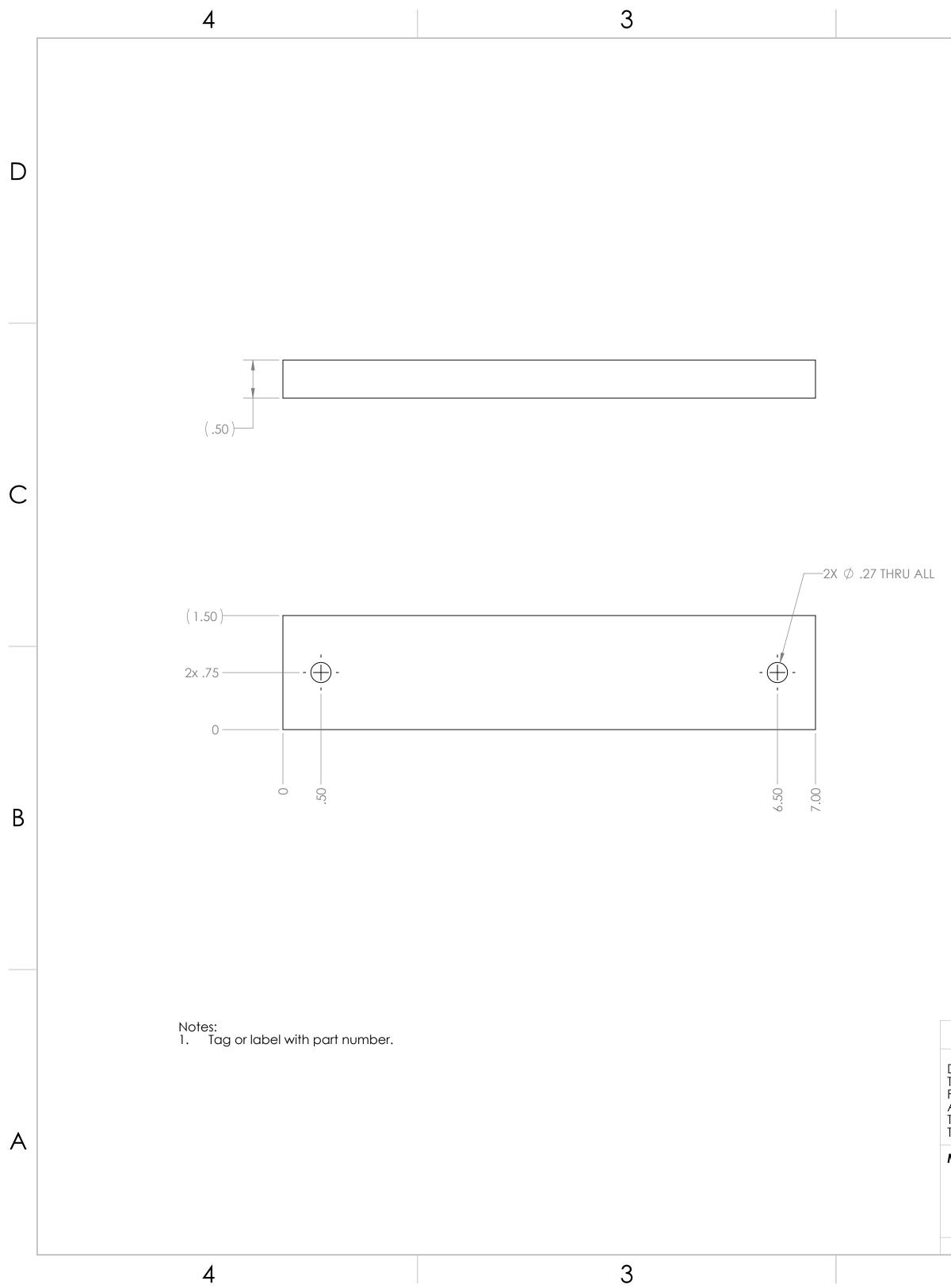
3

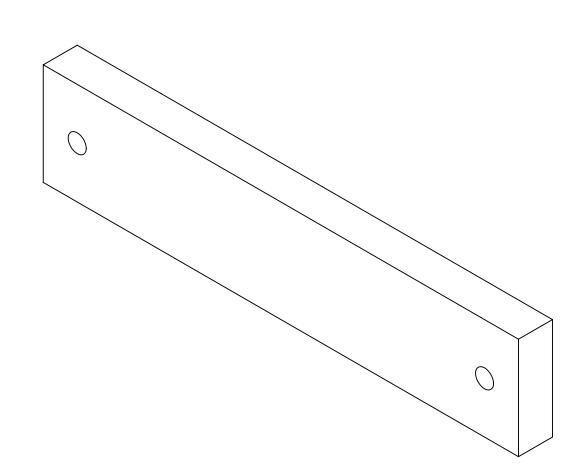
3



Notes: 1. Tag or label with part number.

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE		FIRST.		S SOLIDI		
	DRAWN								
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	THE INFO THIS DRA PROPER REPROD	TARY AND CON DRMATION CON AWING IS THE SC TY OF <b>FIRST®</b> . A DUCTION IN PART	TAINED IN DLE NY I OR AS A	TITLE: Flap					A
MATERIAL/FINISH:		WITHOUT THE WI ION OF <b>FIRST</b> ® IS	SIZE DWG. NO.			REV			
1/4" Polycarbonate, Clear	PROHIBI		-						
	COMME	NTS:	C	GE-	2423	2			
	REMC	VE ALL BURRS A			сПЕ				
DO NOT SCALE DRAWING		EDGES.		SCALE: 1:3 SHEET 1 OF 1				'I I	
2					1				



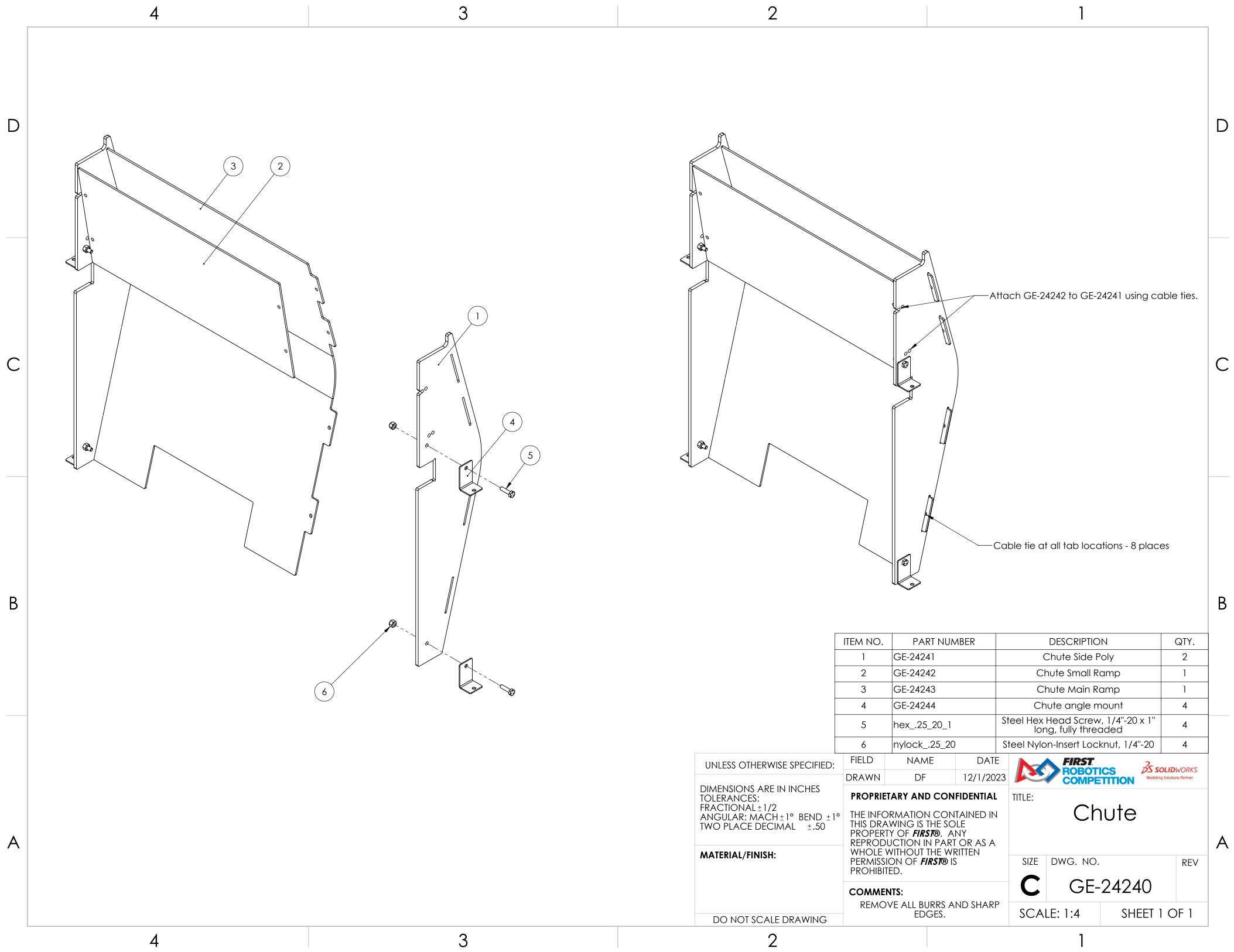


D

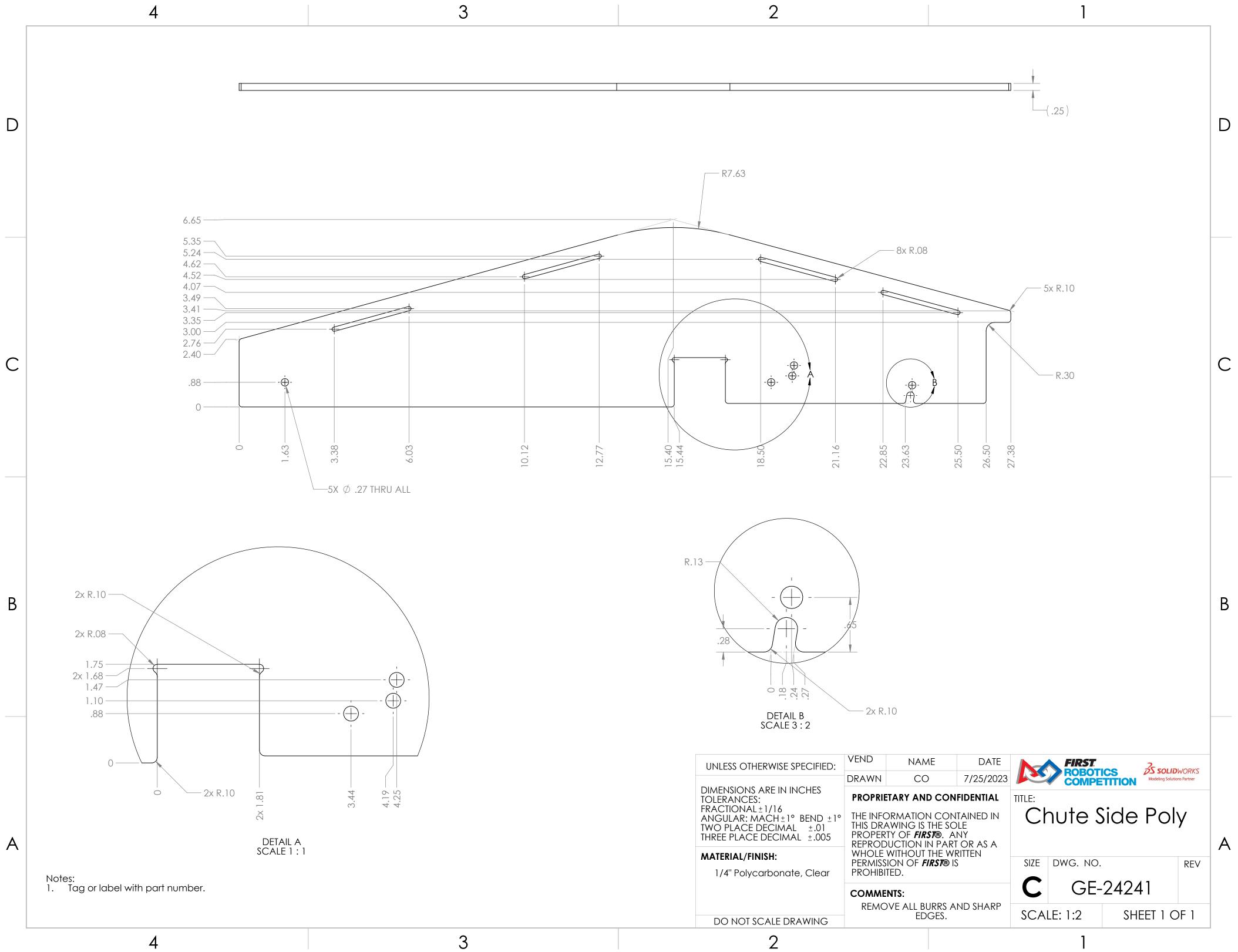
С

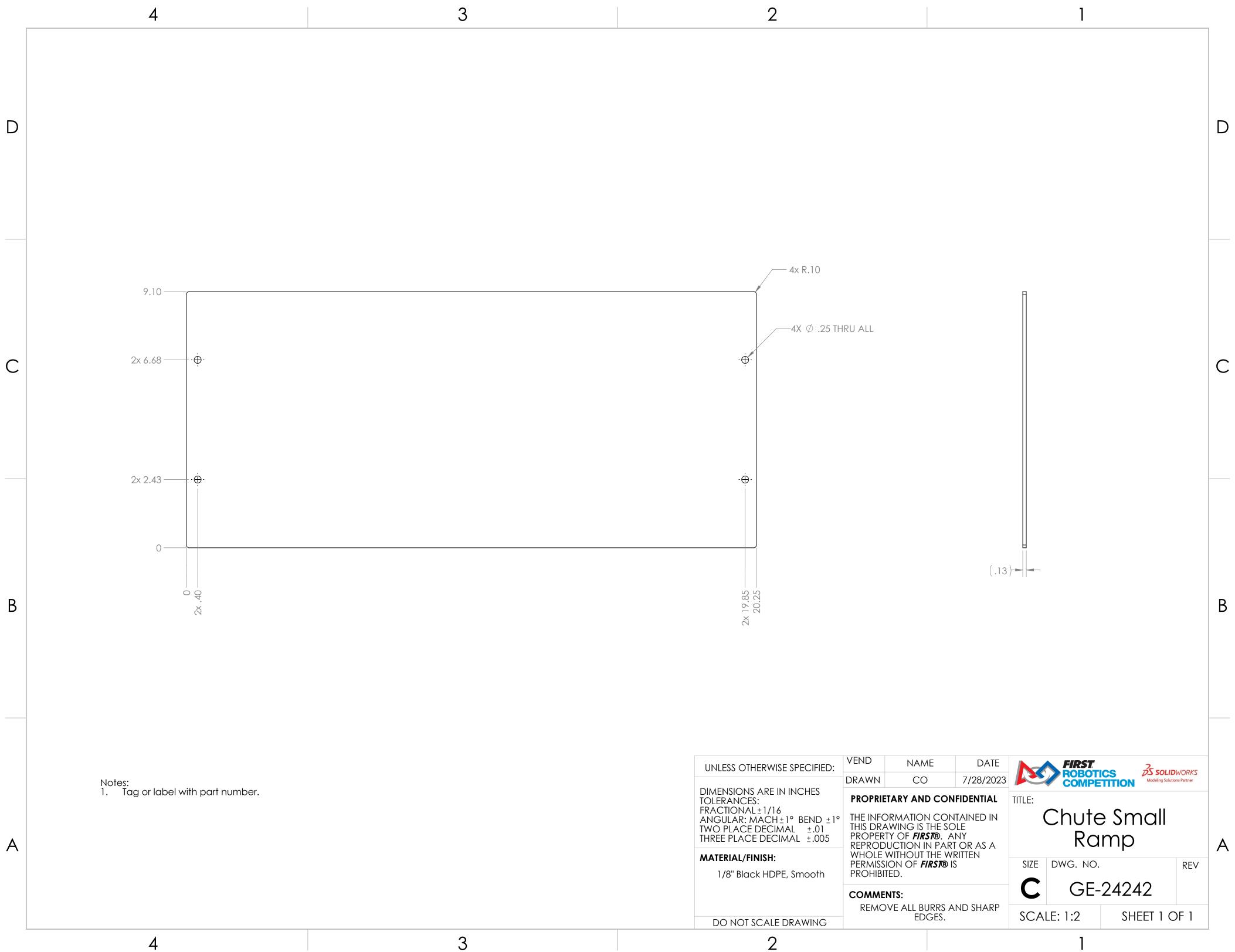
В

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE		FIRST.		35 50110	MORKS	
	DRAWN	DRAWN CO 7/31/2023 ROBOTICS SOLIDWORKS							
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	THE INFO THIS DRA PROPER	TARY AND CON DRMATION CON AWING IS THE SC TY OF <i>FIRST</i> B. A DUCTION IN PAR	Vei	ght		Δ			
MATERIAL/FINISH:	WHOLE PERMISS	without the wi Ion of <b>first</b> ® I:	SIZE DWG. NO. RE			REV	/ \		
1.5" x 0.5" Cold Rolled Steel Bar	PROHIBI COMME	·	<b>C</b> GE-24233						
do not scale drawing	REMC	VE ALL BURRS A EDGES.	ND SHARP	SCALE: 1:1 SHEET 1 OF 1			DF 1		
2					1				



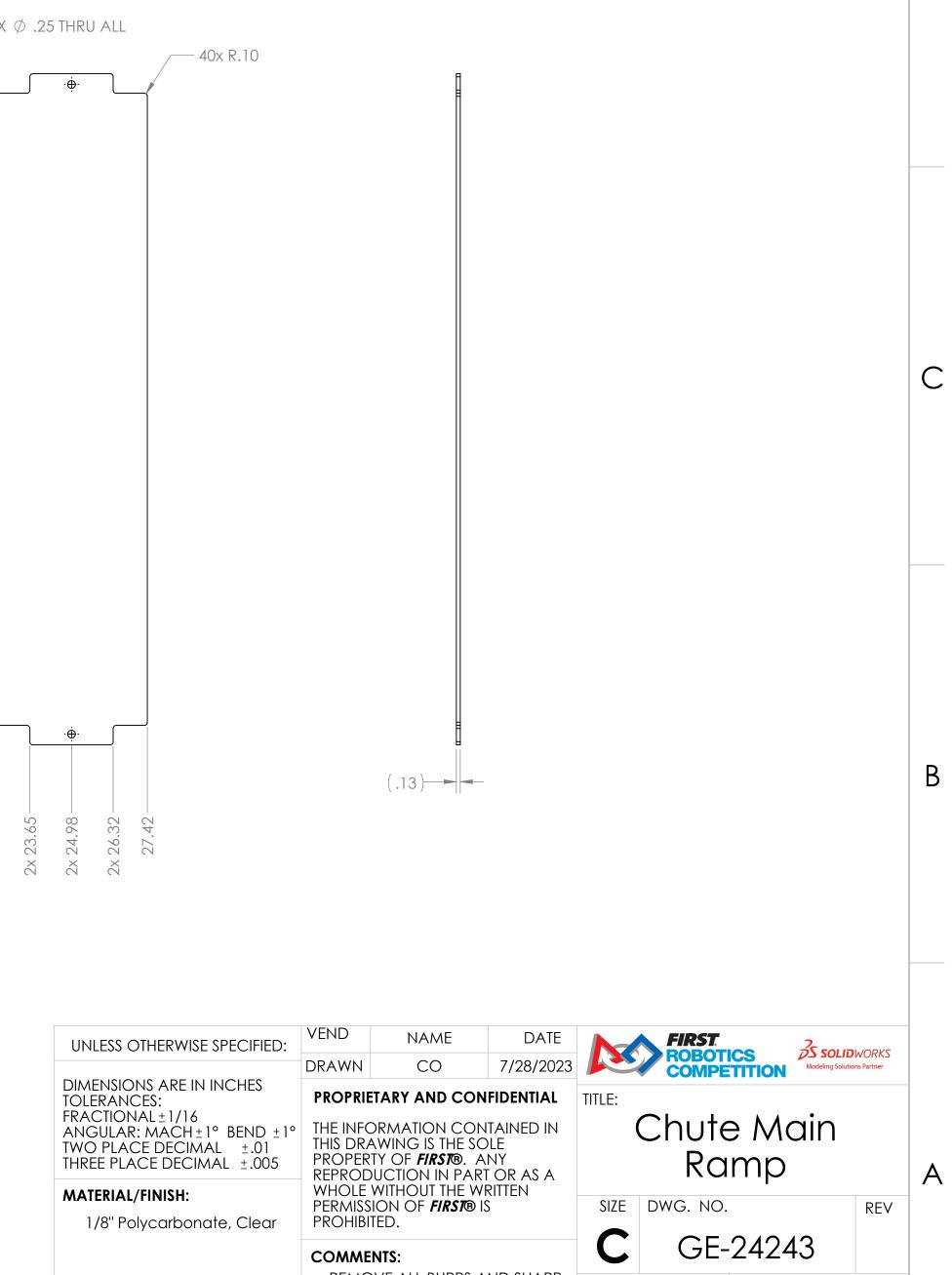
	ITEM NO.						DESCRIPTIO	N		QTY.	]
	1	GE-242	41			(	Chute Side P	oly		2	1
	2	GE-242	42			Cl	hute Small Ro	amp		1	1
	3	GE-242	43			С	hute Main Ro	amp		1	1
	4	GE-242	44			Chute angle mount					1
	5	11ex25_20_1			Steel H	teel Hex Head Screw, 1/4"-20 x 1" long, fully threaded					
	6	nylock_	25_20	)	Steel N	lylc	on-Insert Lock	nut, 1/4	20	4	]
UNLESS OTHERWISE SPECIFIED:	FIELD	ELD NAME DATE					<b>FIRST</b>		JS SOLIE		
DRAWN				12/1/20				Modeling Soluti			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/2 ANGULAR: MACH±1° BEND±1 TWO PLACE DECIMAL±.50	<ul> <li>THE INFC THIS DRA PROPERT</li> </ul>	PROPRIETARY AND CONFIDENTIALTHE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.COMMENTS:			1	TITLE: Chute					
MATERIAL/FINISH:	WHOLE V PERMISSI				SIZ	Έ ►	DWG. NO.	• • •	4.0	REV	-
							GE-	2424	10		
REMOVE ALL BURRS / EDGES.				ND SHARI		À.	LE: 1:4	SH	EET 1 C	)F 1	1
DO NOT SCALE DRAWING		EDGES.			50					×1 1	
$\circ$							1				





3 4 D –8X otin .25 Thru all 4x 21.50 -4x 21.16 ٠Ð٠ 5x 20.88 -15.75 -С 5.75 -5x .63 -4x .35 -٠ۻ ٠÷ ٠Ð 0 — В 3.50 -2x 3.56 -2x 4.90 -2x 6.23 -2x 11.90 -2x 13.23 -2× 19.15 -2x 20.48 -2x 23.65 -2x 10.56 2x 21.82 2x 24.98  $\bigcirc$ Notes: 1. Tag or label with part number. Α 3 4





D

DO NOT SCALE DRAWING

2

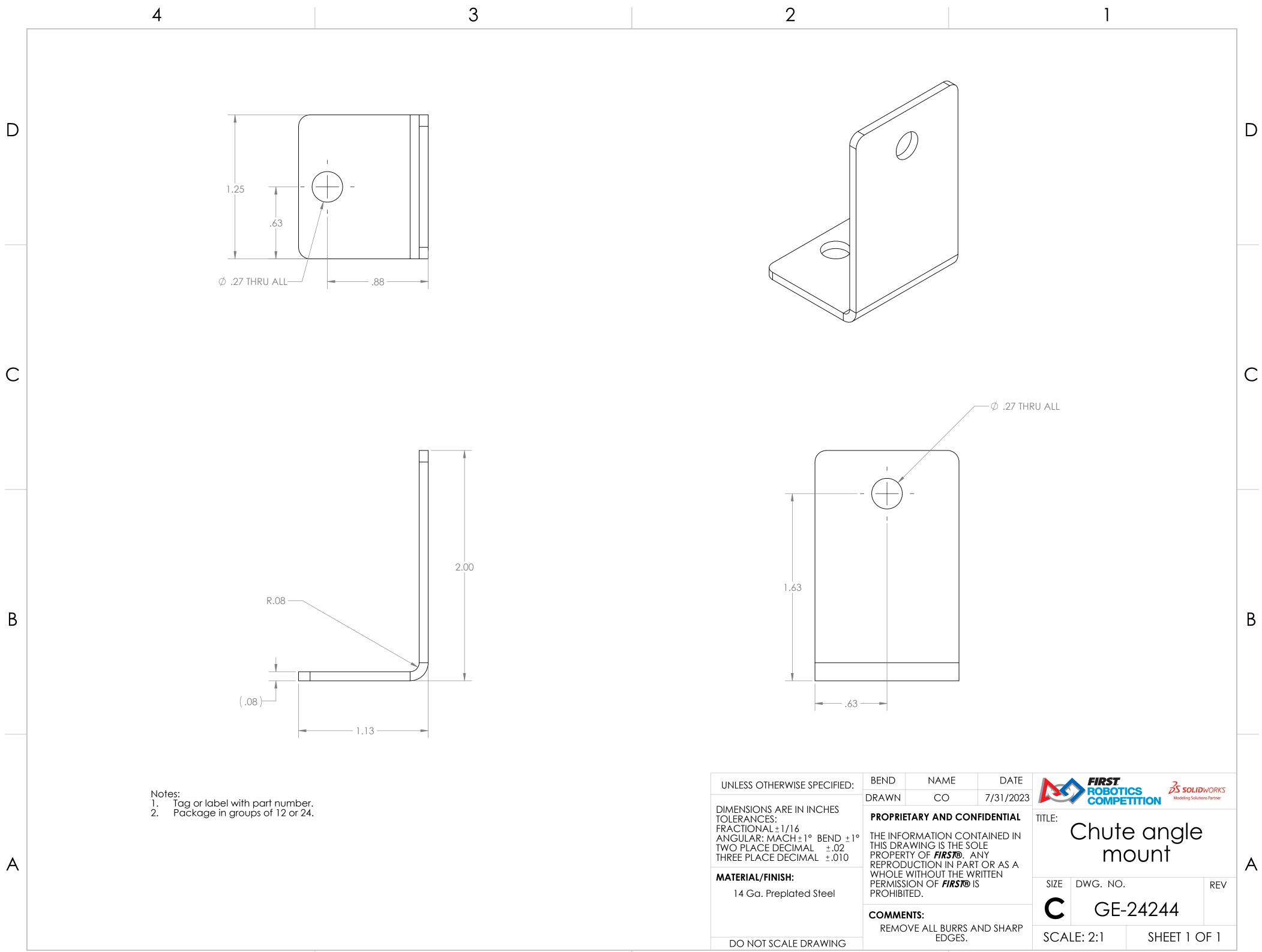
COMMENTS:

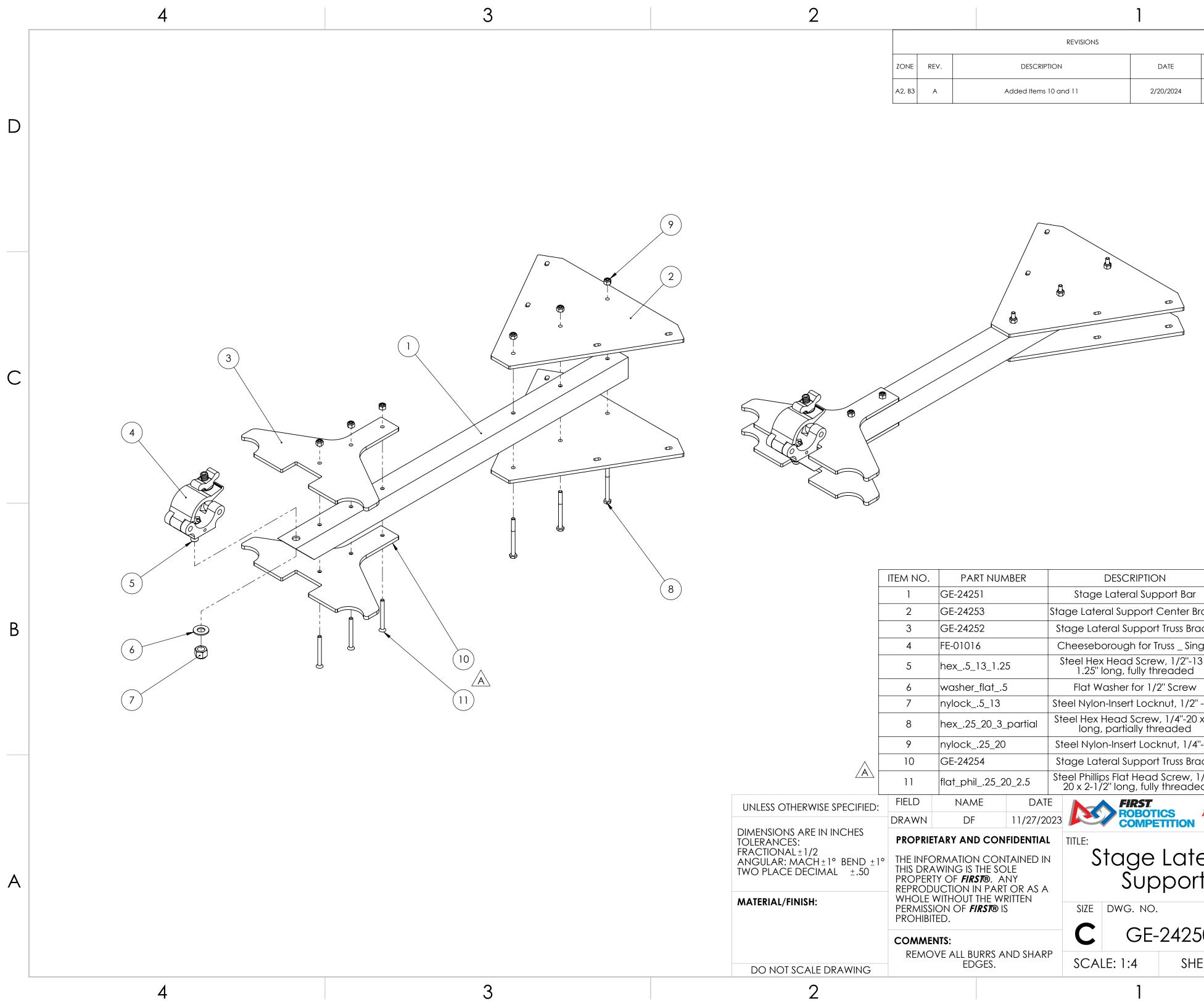
REMOVE ALL BURRS AND SHARP

EDGES.

SCALE: 1:3

SHEET 1 OF 1



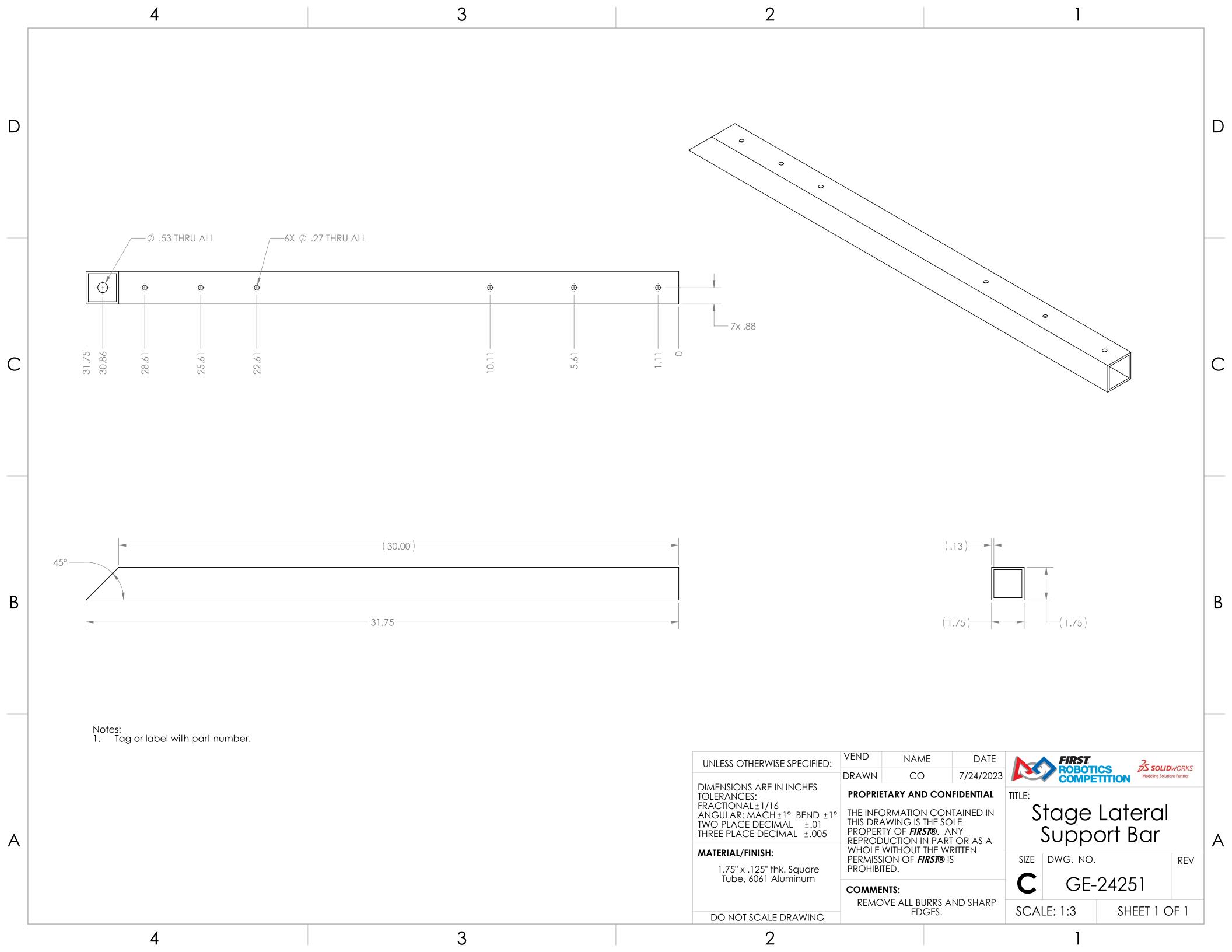


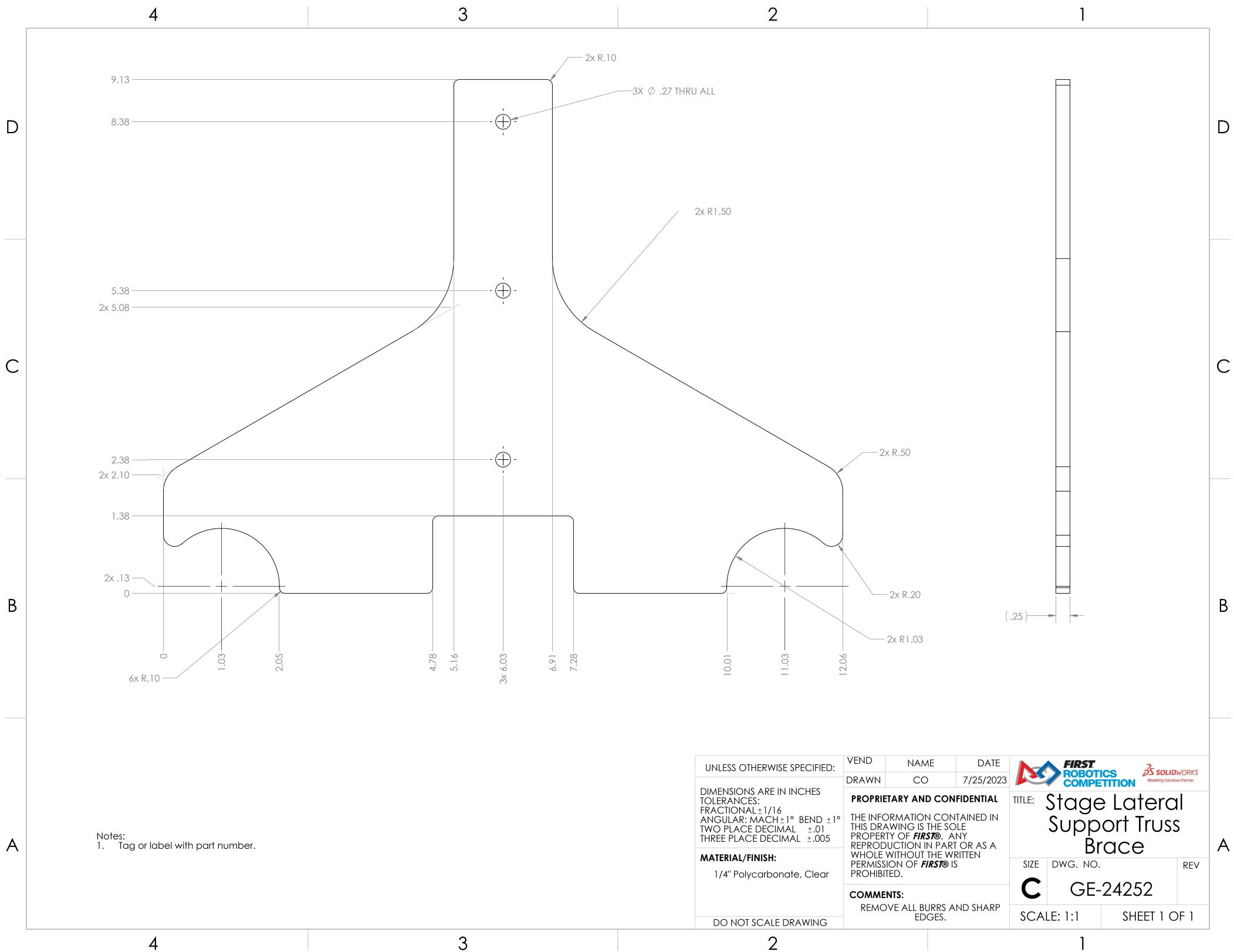
			I	
		REVISIONS		
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A2, B3	А	Added Items 10 and 11	2/20/2024	DAF

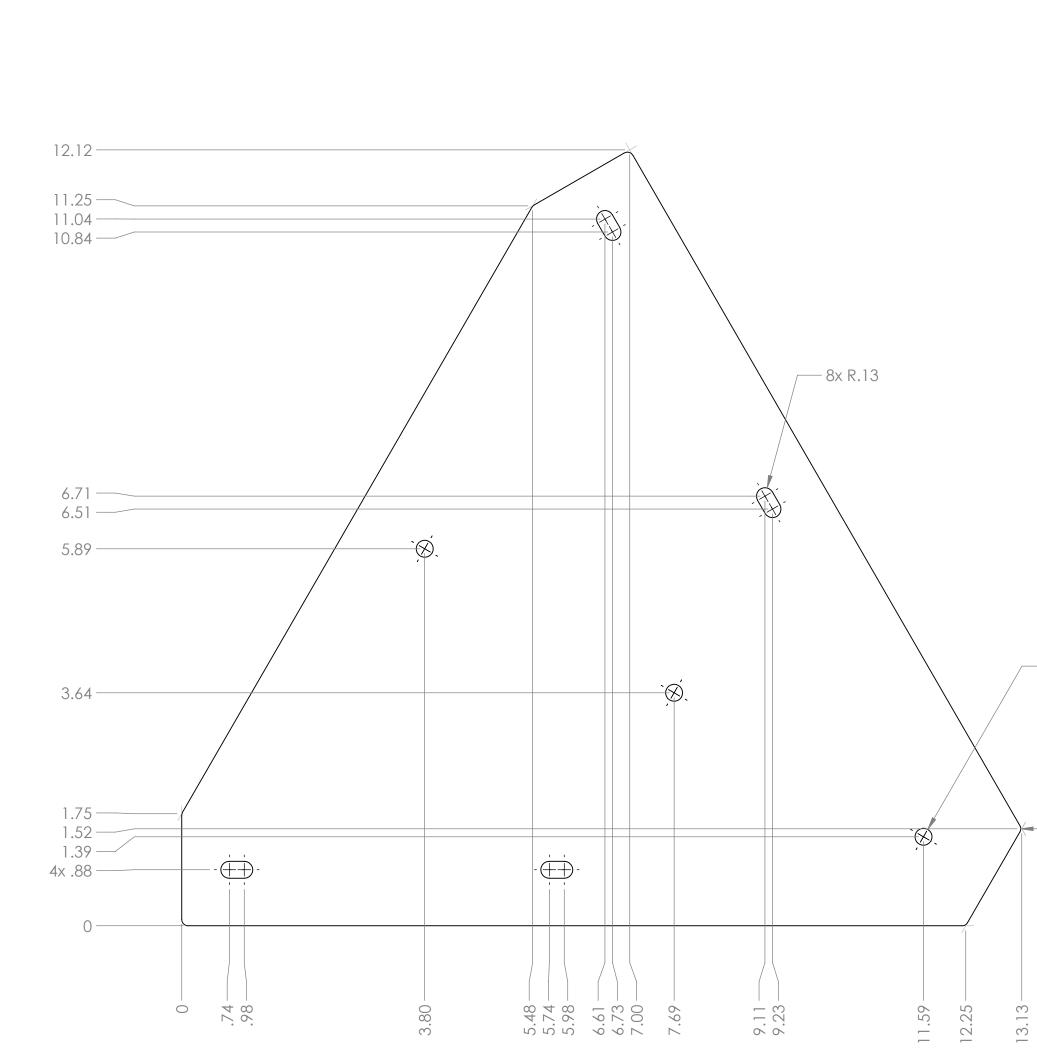
D

С

Г							ΟΤΥ	1
_	ITEM NO.		MBER		DESCRIPTIC		QTY.	-
-		GE-24251		_	Lateral Sup		-	-
	2	GE-24253		Stage Late	ral Support	Center Brace	2	
	3	GE-24252		Stage Lat	eral Suppor	t Truss Brace	1	B
_	4	FE-01016		Cheeseb	Cheeseborough for Truss _ Single			
_	5	hex5_13_1.2	25		 Head Screilong, fully th		1	
	6	washer_flat	5	Flat W	asher for 1/	2" Screw	1	
_	7	nylock5_13		Steel Nylor	n-Insert Lock	nut, 1/2'' - 13	1	
_	8	hex25_20_3	_partial		Head Screw , partially thi	v, 1/4"-20 x 3" readed	3	
	9	nylock25_20		Steel Nylo	n-Insert Loc	6		
$\wedge$	10	GE-24254		Stage Lat	eral Suppor	t Truss Brace	1	
			20_2.5	Steel Phillip 20 x 2-1/	os Flat Head '2'' long, fully	Screw, 1/4"- threaded	3	
UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DAT	E	<b>FIRST</b>	25 -		
	DRAWN	DF	11/27/20	023 尾	ROBOT		<b>OLIDWORKS</b> g Solutions Partner	
DIMENSIONS ARE IN INCHES TOLERANCES:	PROPRIE	TARY AND CON		L TITLE:				
FRACTIONAL±1/2 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.50	<ul> <li>THE INFC THIS DRA PROPERT</li> </ul>	ORMATION CON WING IS THE SC TY OF <b>FIRST®</b> . A UCTION IN PAR	NTAINED IN DLE NNY	s S	tage Sup	Latero port	al	A
MATERIAL/FINISH:	WHOLE V PERMISSI	without the w Ion of <b>First</b> ® I	RITTEN	SIZE	DWG. NO.		REV	
PROHIBITED.		IED.				04050	•	
	COMME	NTS:			GE-	24250	A	
	REMO	VE ALL BURRS A	ND SHAR	P		CULET		
do not scale drawing		EDGES.		3CA	LE: 1:4	SHEET		
2					1			







3

Notes: 1. Tag or label with part number.

4

D

С

В

А

4



 $-3X \ \phi$  .27 Thru all

– 6x R.10

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE		<b>FIRST</b>		S SOLIDI		
	DRAWN	СО	7/25/2023			TITION	Modeling Solution		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16	PROPRIE	TARY AND CON	FIDENTIAL	TITLE:	Stage	e La	tera		
ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	THIS DRA PROPER	DRMATION CON AWING IS THE SC TY OF <b>FIRST®</b> . A JUCTION IN PART	Support Center Brace					Α	
MATERIAL/FINISH:	WHOLE	WITHOUT THE WI ION OF <b>FIRST®</b> IS	SIZE	DWG. NO.		ر ا	REV		
1/4" Polycarbonate, Clear	PROHIBI		)	SIZE	Divo. no.			κeν	
	COMME	NTS:	C	GE-	2425	53			
do not scale drawing	REMC	VE ALL BURRS A EDGES.	ND SHARP	SCA	LE: 2:3	SH	eet 1 C	)F 1	
2					1				

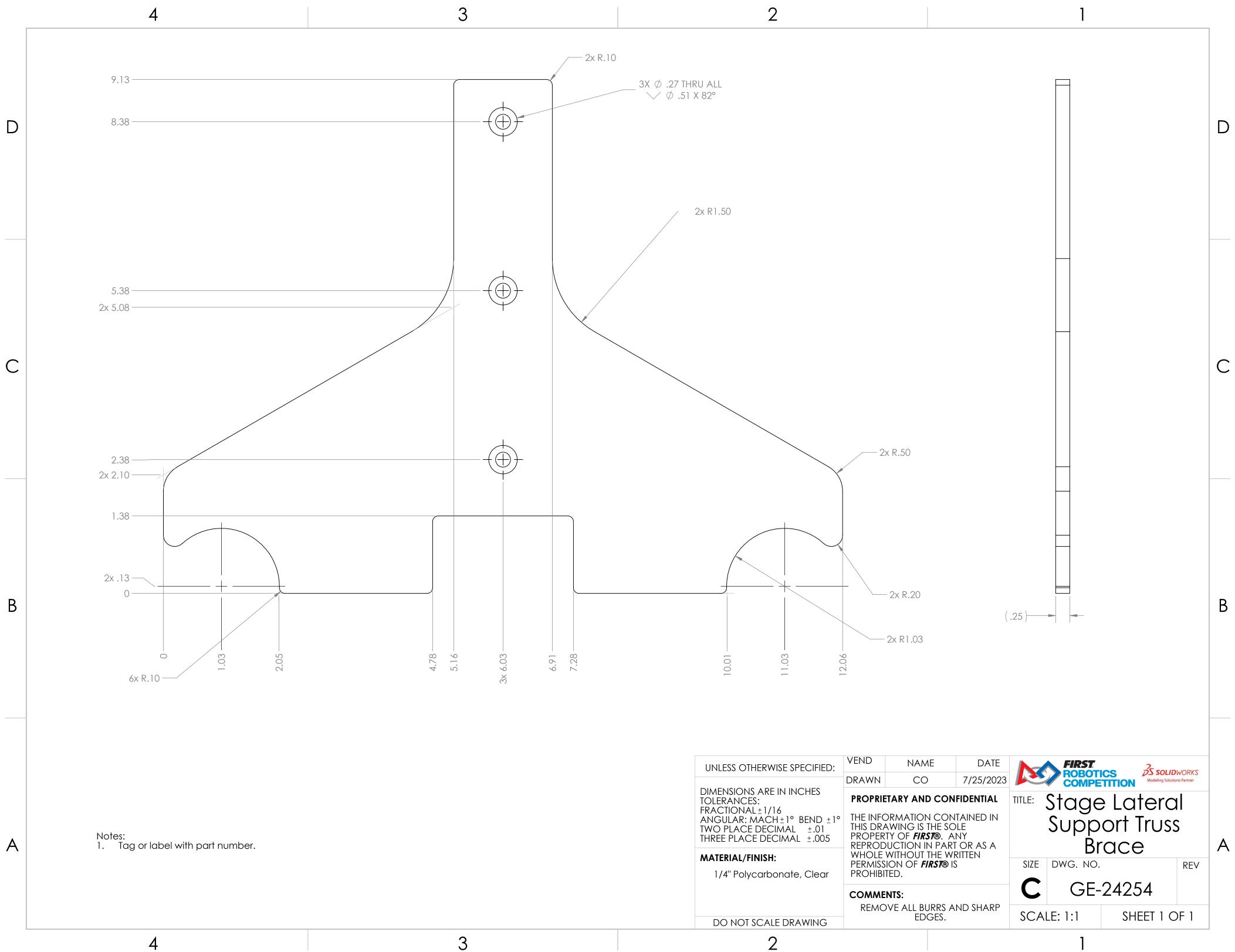
(12.09)

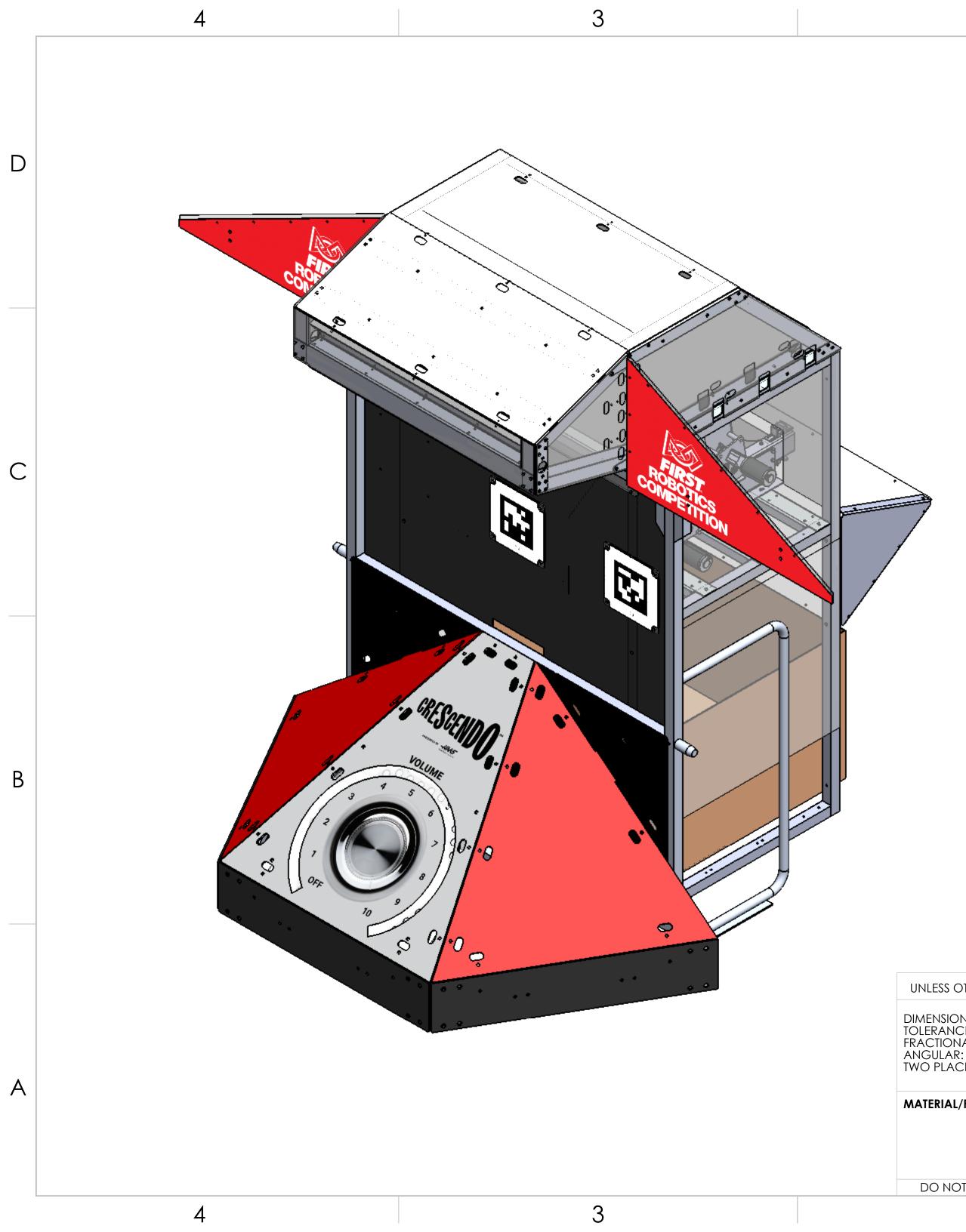
(.25)

D

С

В

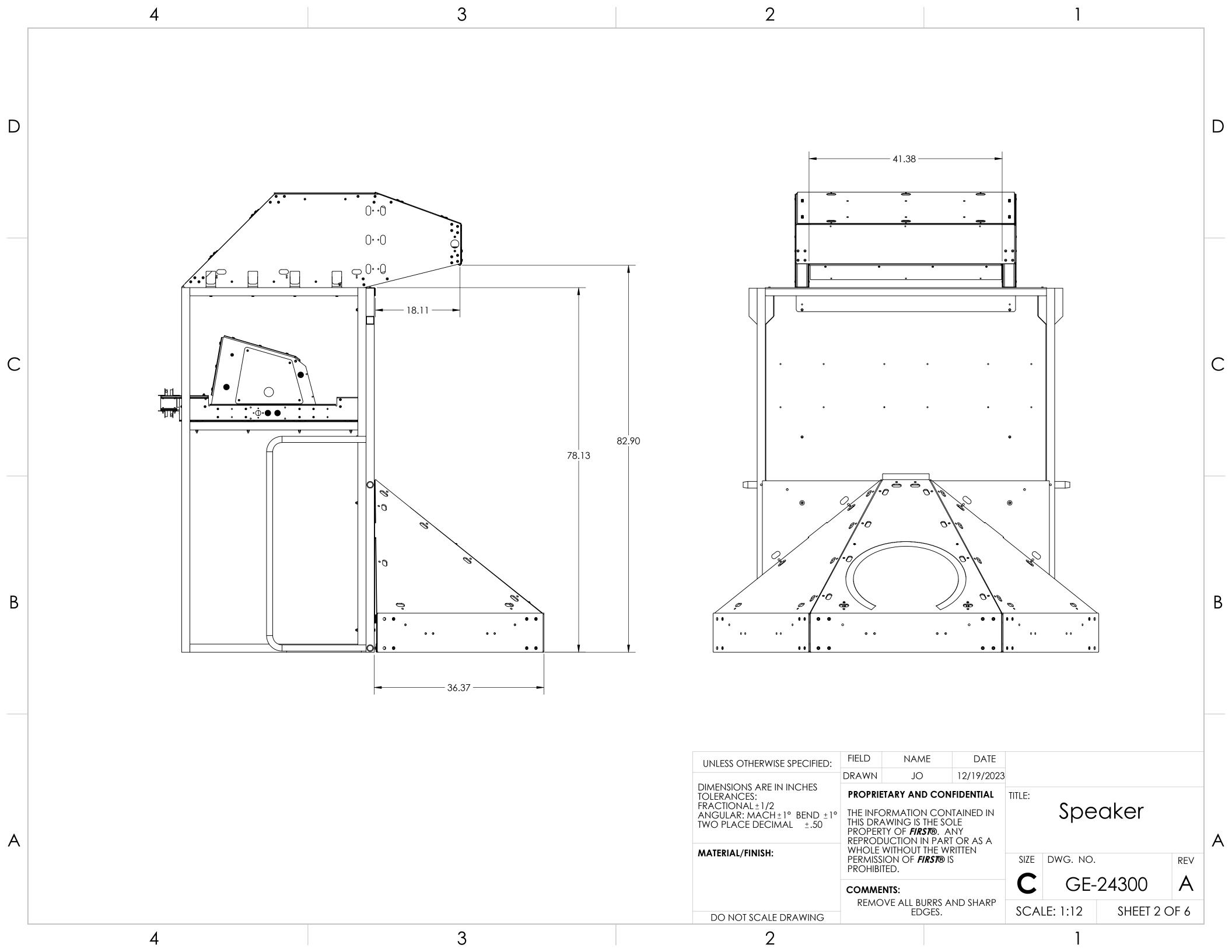


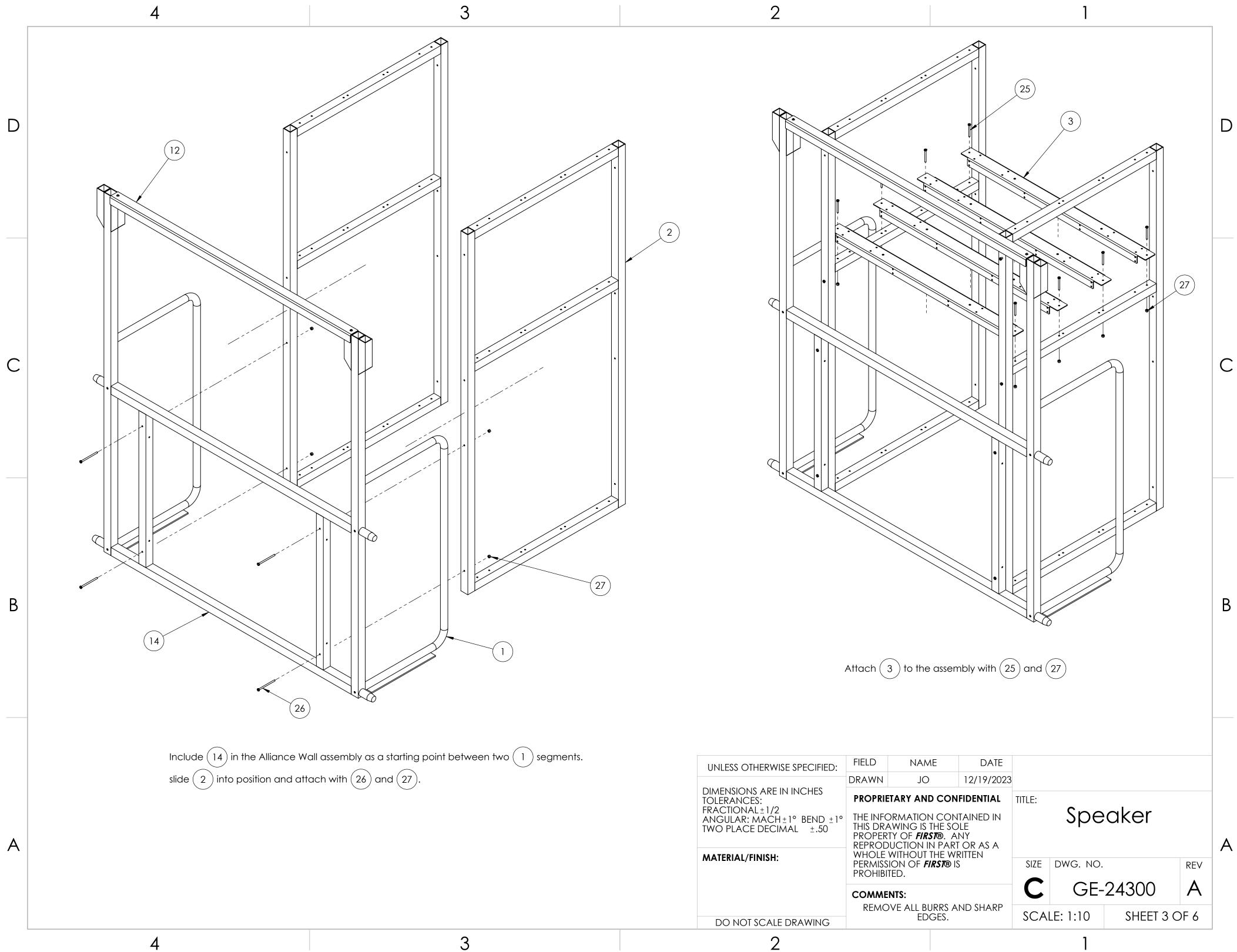


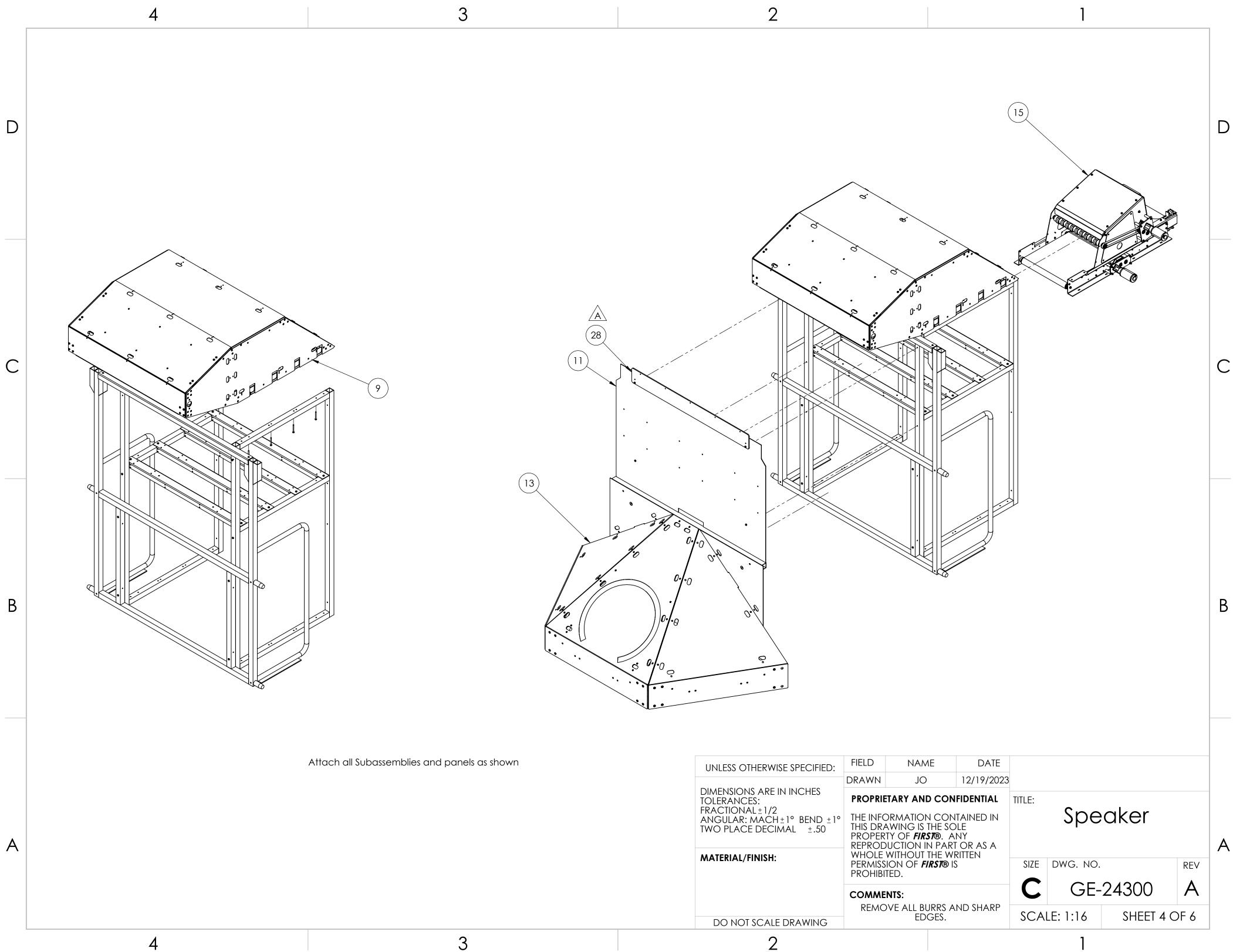
		REVISIONS		
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A2, 4- C3	А	GE-24394 added to assembly	2/21/2024	Oſ

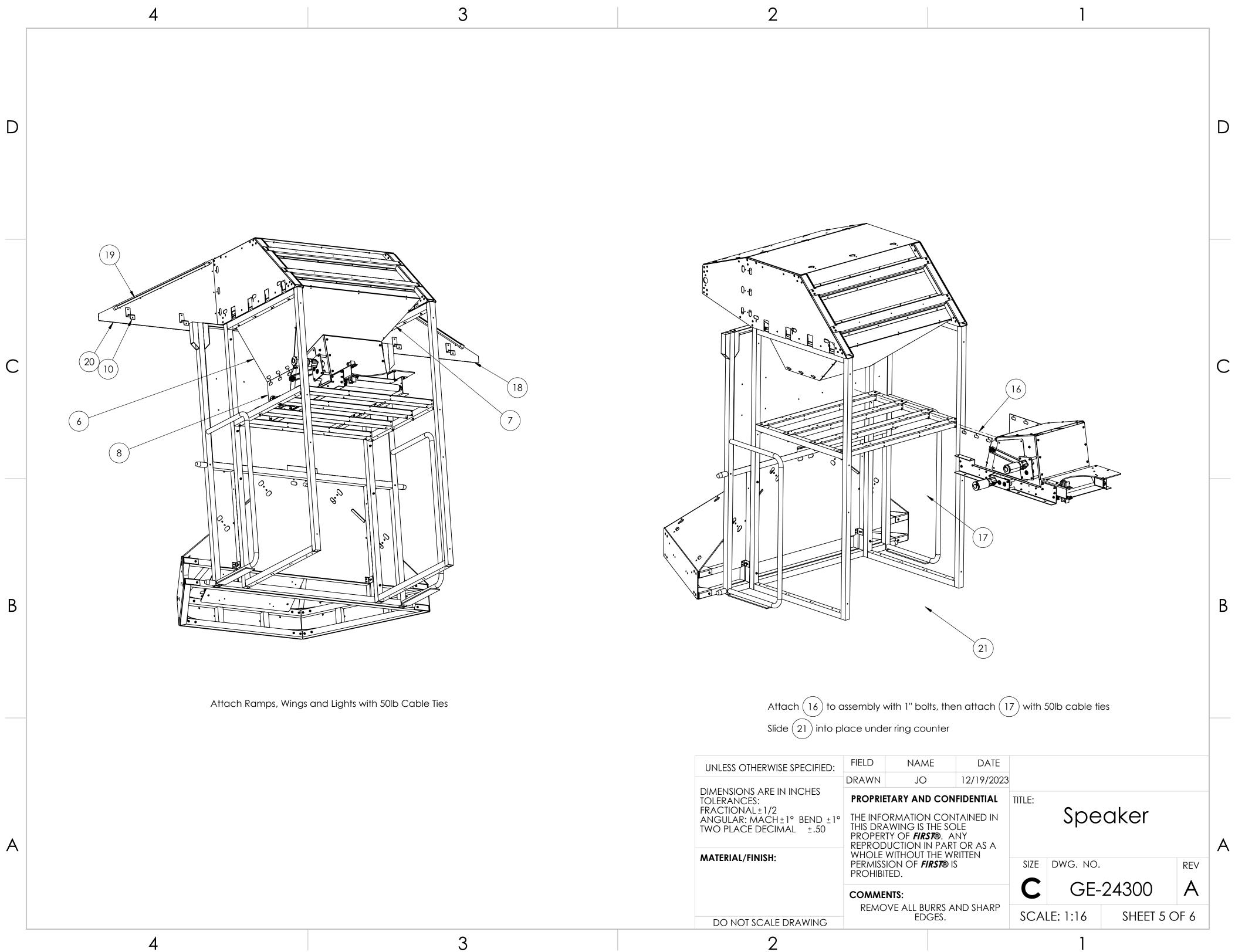
D

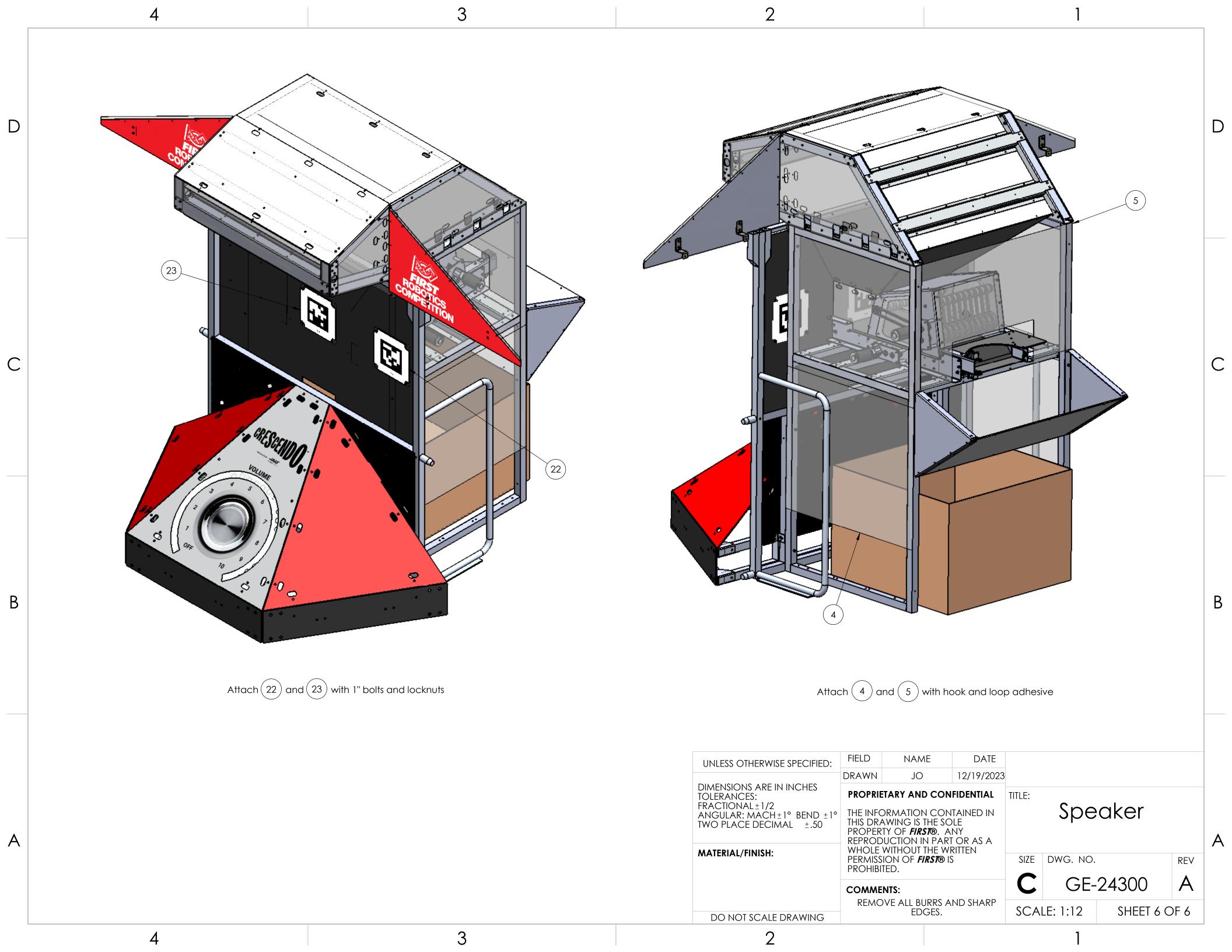
	ITEM NO.	PART N	UMBER	DE	SCRIPTION	QTY.		
	1	FE-00001		Drivers	Station Support	2		
	2	GE-24301		Speak	er Side Frame	2		
	3	GE-24302		Speaker Cro	ossbeams with PEMs	4		
	4	GE-24303		Side	Guard Walls	4	$\sim$	
	5	GE-24306		Speak	er Back Cover	1		
	6	GE-24307		Speaker	Inner Side Ramp	2		
•	7	GE-24308		Speaker	Inner Back Ramp	1		
	8	GE-24309		Speake	r Inner Side Wall	2		
	9	GE-24310		Speal	ker Top Frame	1		
	10	GE-24321		Backk	ooard Bracket	4		
	11	GE-24322		Speaker A	lliance Wall Plastic	1		
	12	GE-24325		Briweld Field	Crossbeam Assembly	1		
	13	GE-24330		S	ubwoofer	1		
•	14	GE-24331		Wall Goal	Frame Weldment	1		
·	15	GE-24350		Rir	ig Counter	1		
	16	GE-24391		Collectic	n Ramp w/ PEMs	2		
	17	GE-24392		Colle	ection Ramp	1		
	18	GE-24328-L	eftRed	Speaker Wi	ng Plastic with Vinyl	1		
	19	barLight-36				3	B	
	20	GE-24328-R	ightRed	Speaker Wi	ng Plastic with Vinyl	1		
Î	21	S-4478		Car	dboard Box	1		
Î	22	FE-00083-ID	3		AprilTag	1		
Ĩ	23	FE-00083-ID	4		AprilTag	1		
Î	24	Configurat	ole Bolt	1" Long 1/4	4-20 Hex Head Bolt	28		
	25	Configurat	ole Bolt	2.5" Long 1,	4-20 Hex Head Bolt	24		
	26	Configurat	ole Bolt	1/4-20 Hex	Head Bolt 4" Long	4		
~	27	nylock25_	_20	Steel Nylon-Ir	nsert Locknut, 1/4"-20	32		
	28	GE-24394		Speaker F	ront Wall Addition	1		
OTHERWIS	E SPECIFIED:	FIELD	NAME	DATE	FIRST. ROBOTI		אפער	
		DRAWN	JO	12/19/2023	COMPE			
DNS ARE IN ICES:	N INCHES	PROPRIET	ARY AND C	ONFIDENTIAL	TITLE:			
NAL±1/2 R: MACH+	1° BEND ±19			ONTAINED IN	Spe	aker		
CE DECIN		THIS DRAV	wing is the Y of <b>first</b> ®.		-1			
		REPRODU		ART OR AS A			A	
L/FINISH:	'FINISH:		ON OF <b>FIRST</b>		SIZE DWG. NO.		REV	
		PROHIBITE				GE-24300 A		
						24000	/ \	
		KE/VIOV	EDGES	S AND SHARP	SCALE: 1:10	Sheet 1 Of	6	
DT SCALE DRAWING								

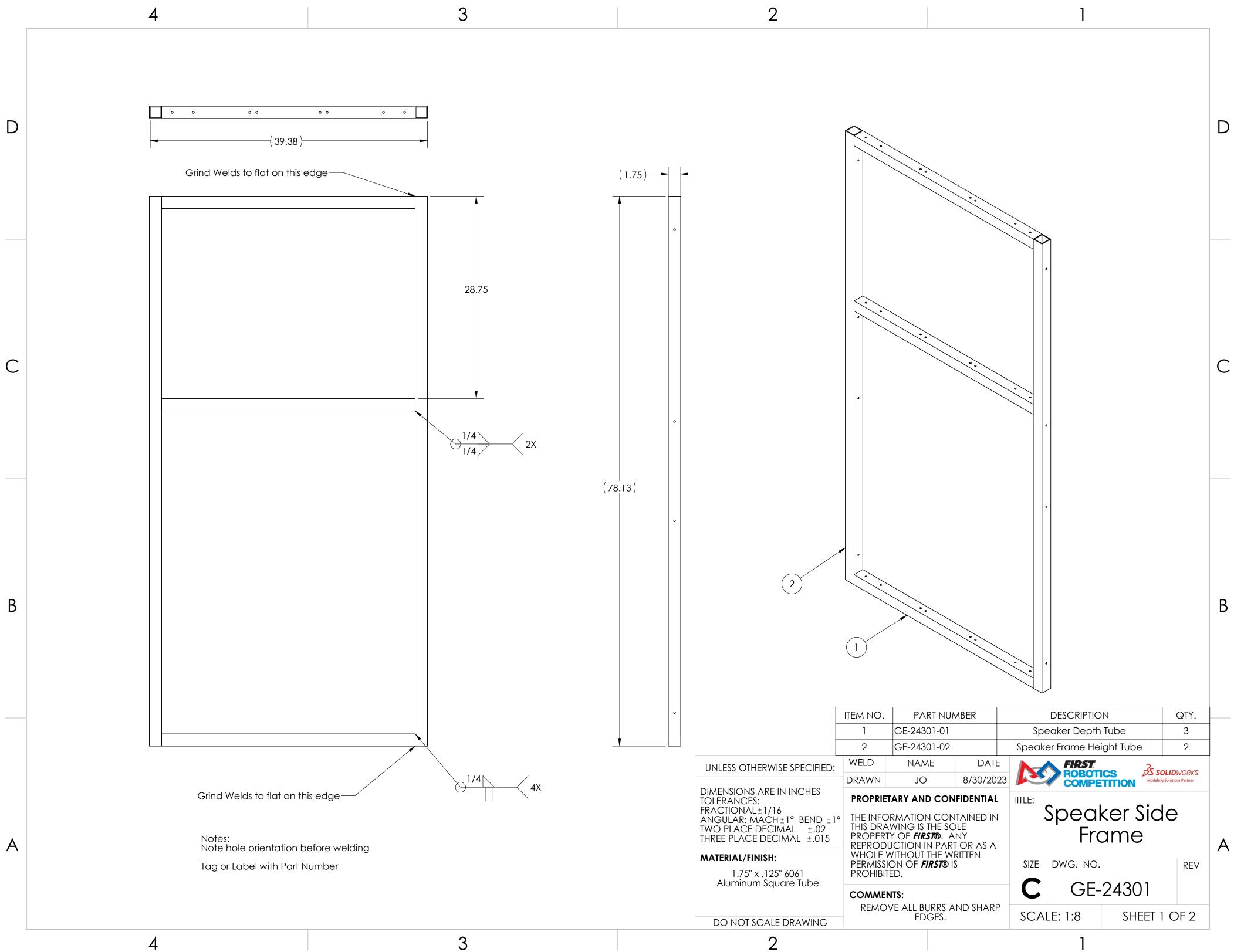


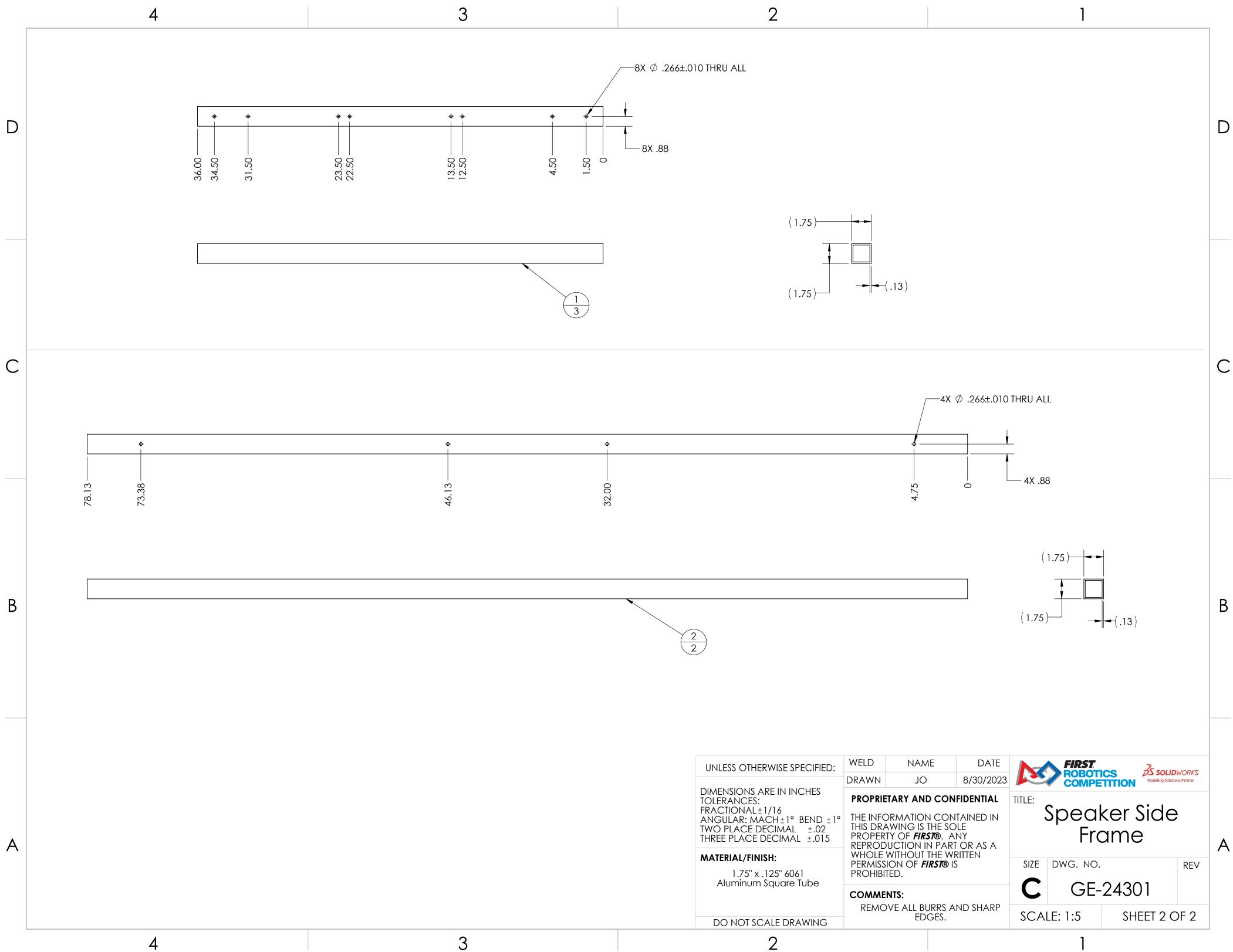




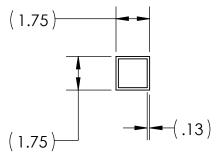


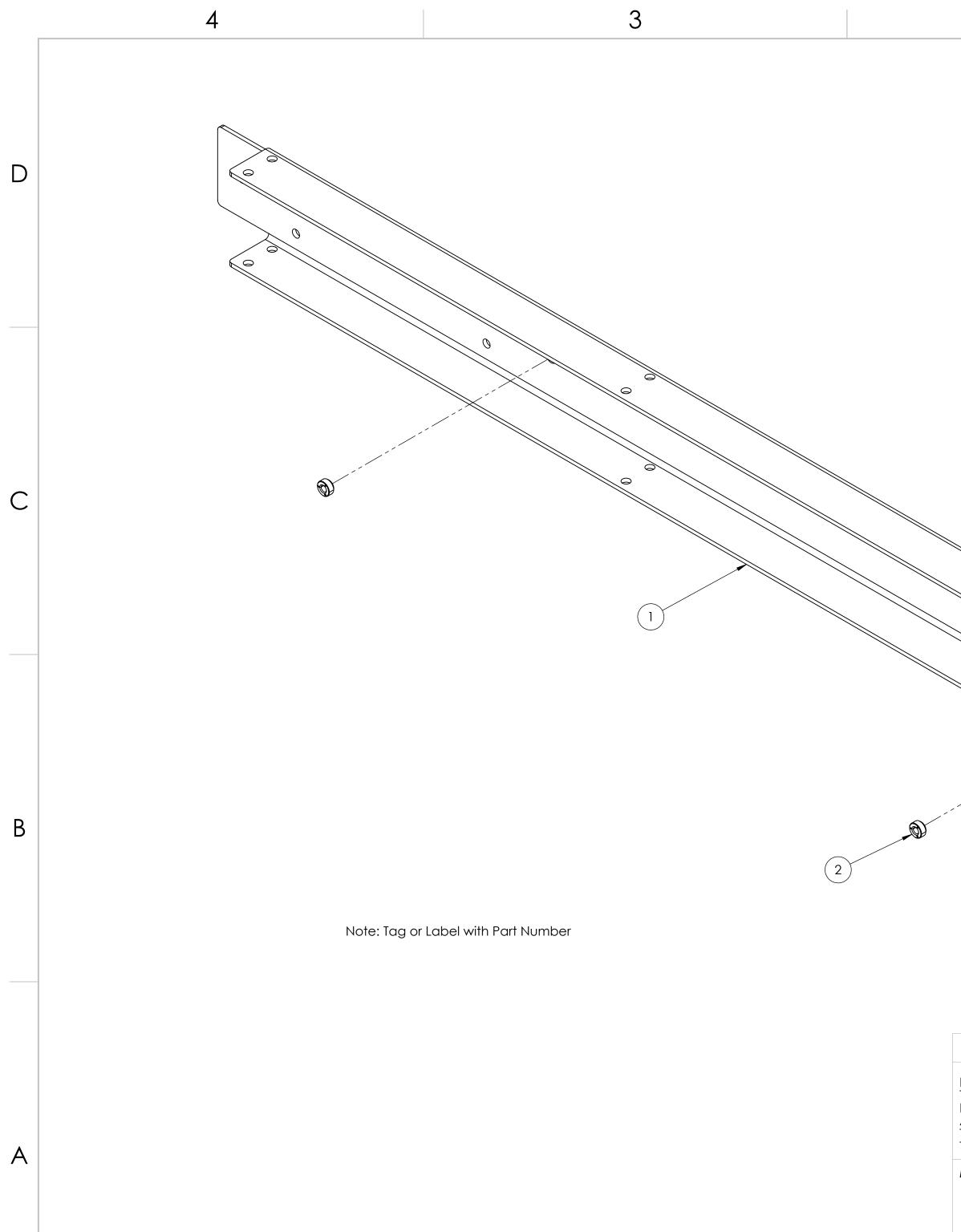












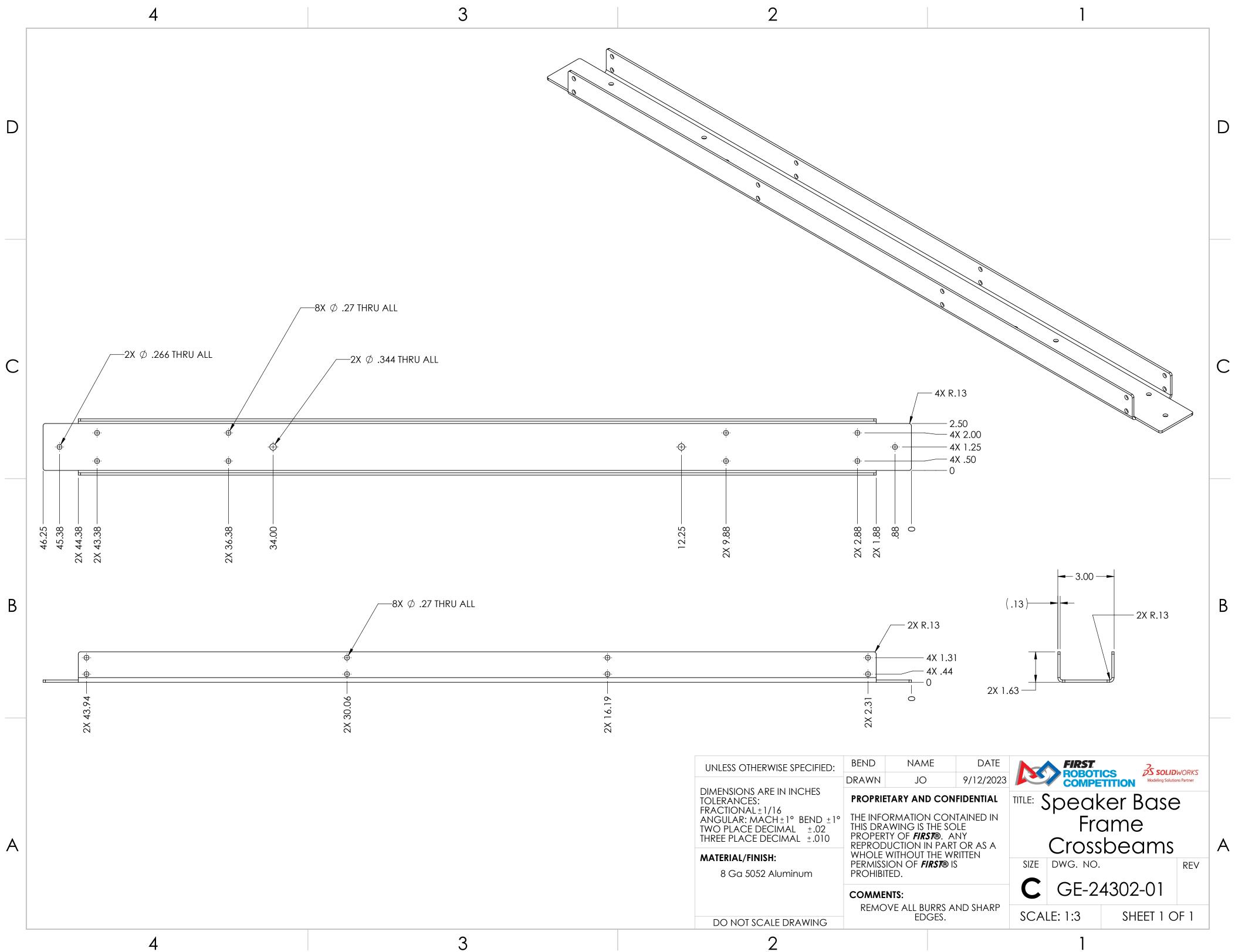
					0						
	ITEM NO.	PAR		IBER			DESCRIPTIO	N		QTY.	1
_	1	GE-24302	2-01		Sp	beaker E	Base Frame (	Crossbeams	\$	1	
_	2	pem_clir 054	nchnut	t25_20	1/4	4-20 self-	clinching nu	ıt, .054 shar	ık	2	
UNLESS OTHERWISE SPECIFIED:	VEND	NAM	E	DATE	Ξ		FIRST. ROBOTI	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	SOLIT	<b>W</b> ORKS	]
	DRAWN	JO		10/6/20	23		COMPE		deling Solution		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND±1 TWO PLACE DECIMAL±.01 THREE PLACE DECIMAL±.005	<ul> <li>THE INFC THIS DRA PROPERT REPROD</li> </ul>	PRIETARY AND CONFIDENTIAL NFORMATION CONTAINED IN DRAWING IS THE SOLE PERTY OF <i>FIRST</i> ®. ANY ODUCTION IN PART OR AS A			1	TITLE: Speaker Crossbeams with PEMs					A
MATERIAL/FINISH:	PERMISSI	HOLE WITHOUT THE WRITTEN RMISSION OF <b>FIRST®</b> IS OHIBITED.			SIZE	DWG. NO.	24302		REV		
	COMME						GE-	Z430Z			
DO NOT SCALE DRAWING	REMO	VE ALL BU EDC		nd sharf	>	SCAI	_E: 1:2	SHEET	<sup>-</sup> 1 C	)F 1	
2							1				

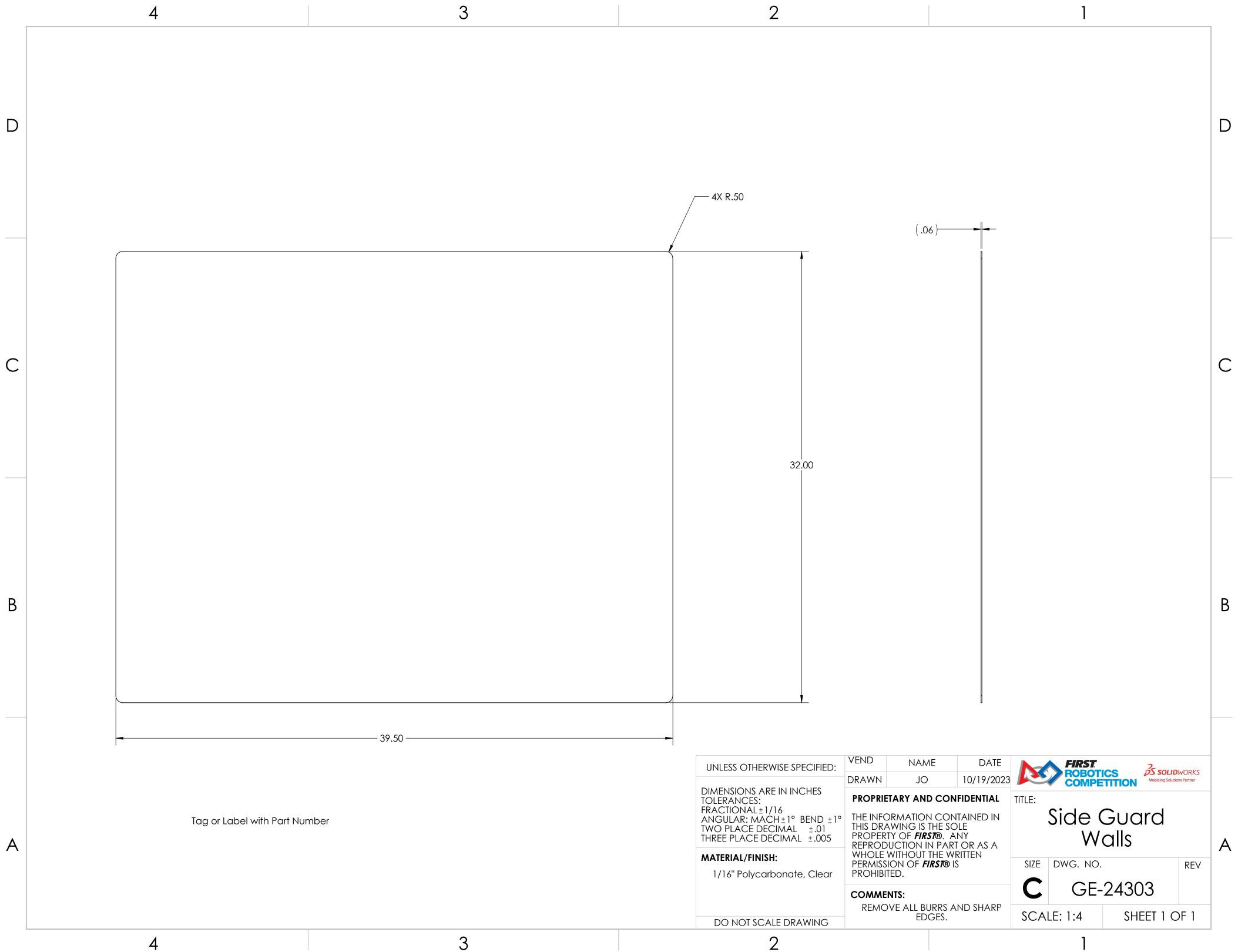
## 

В

D

С

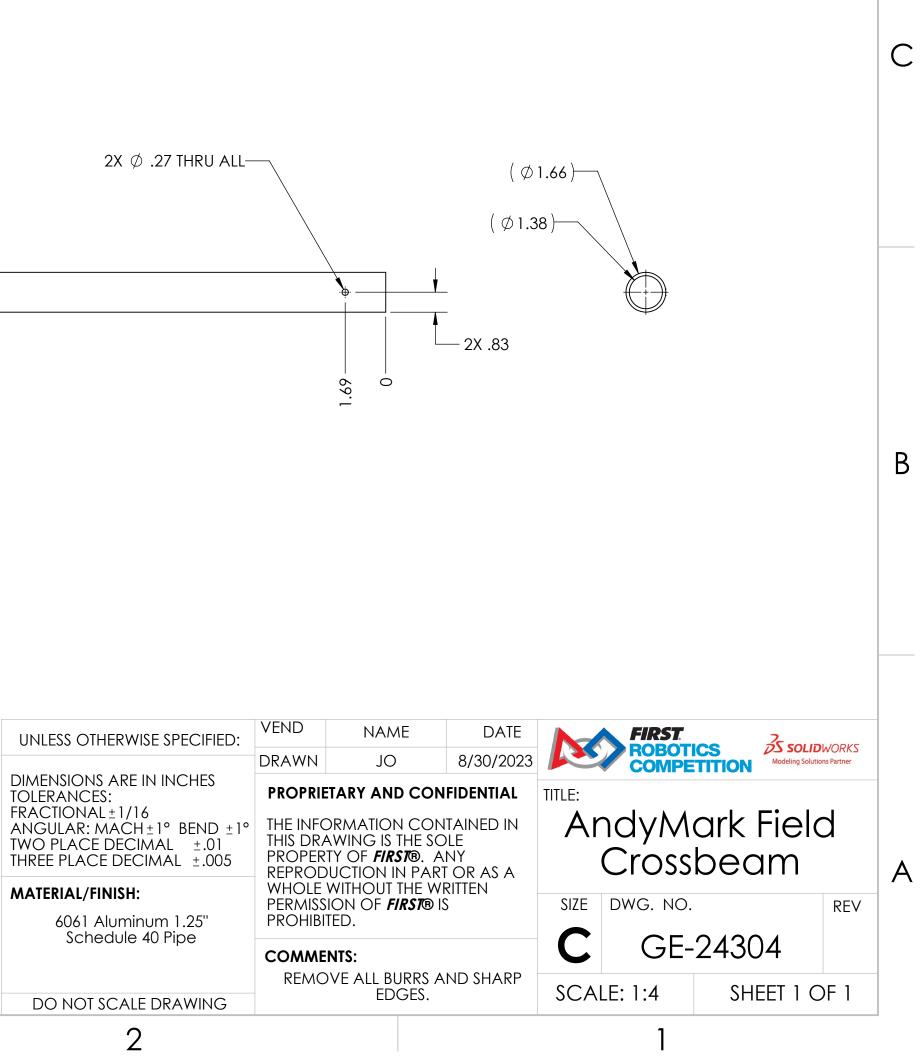




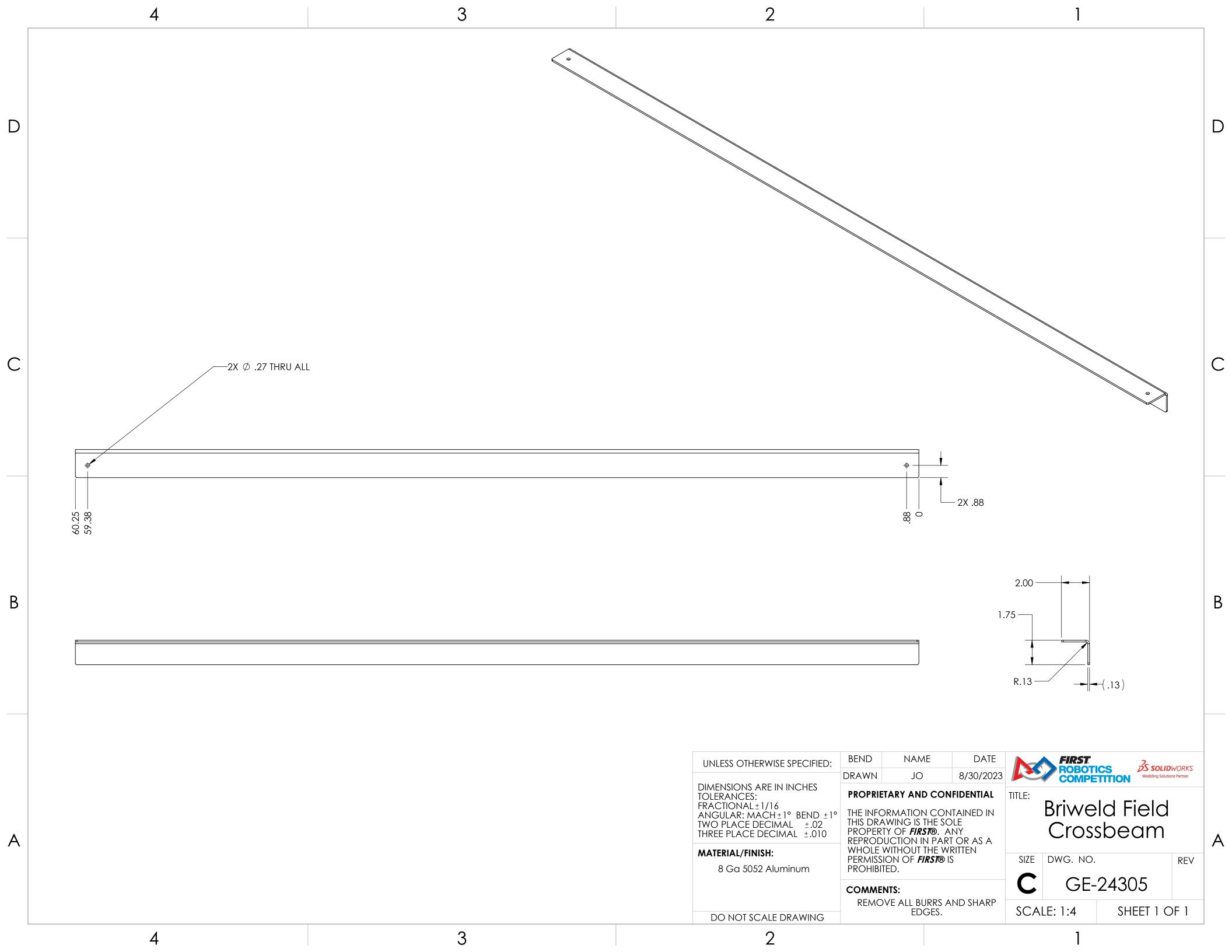
3 4 D С 60.25 58.56 В Tag or Label with Part Number А

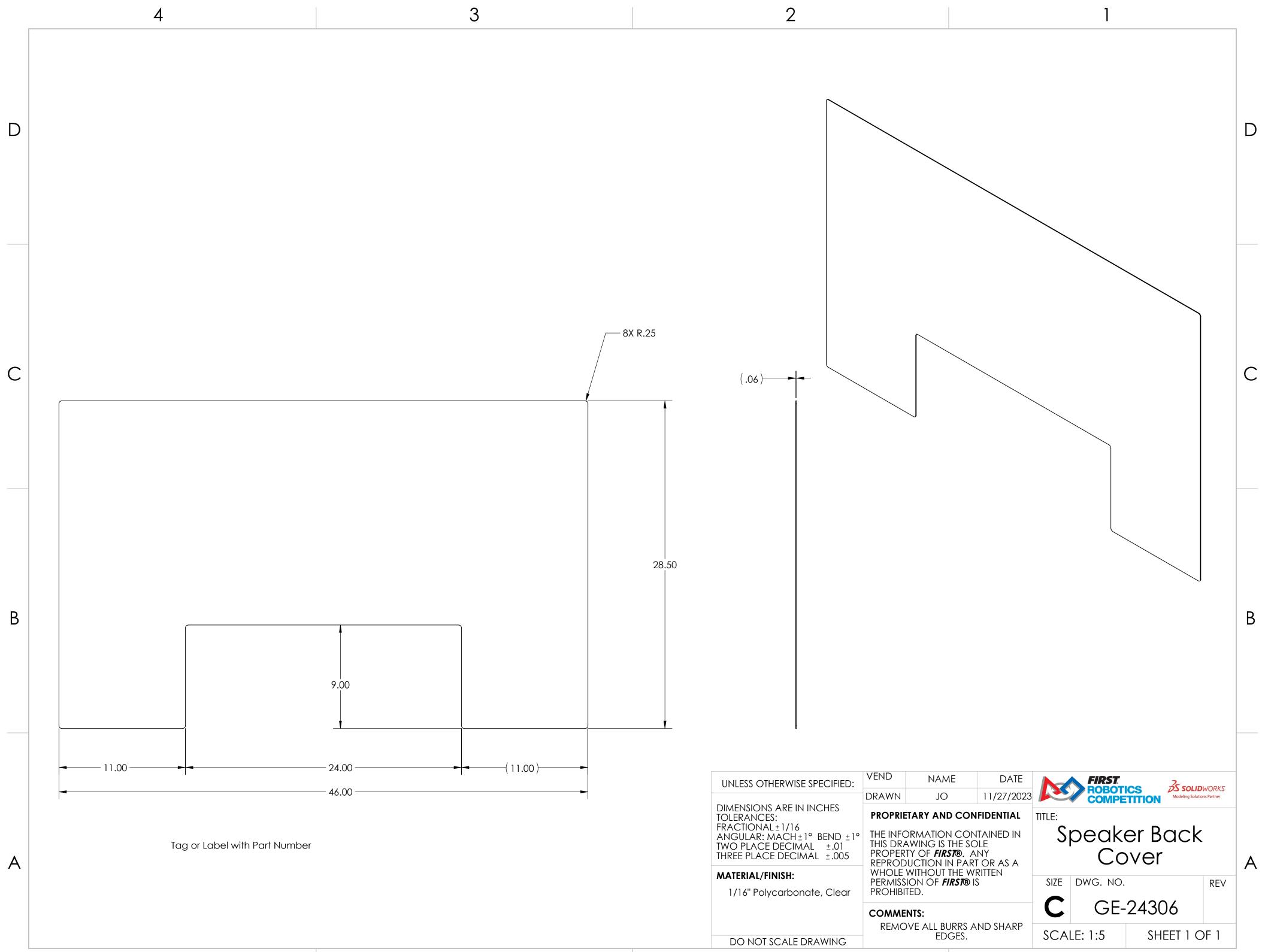
4

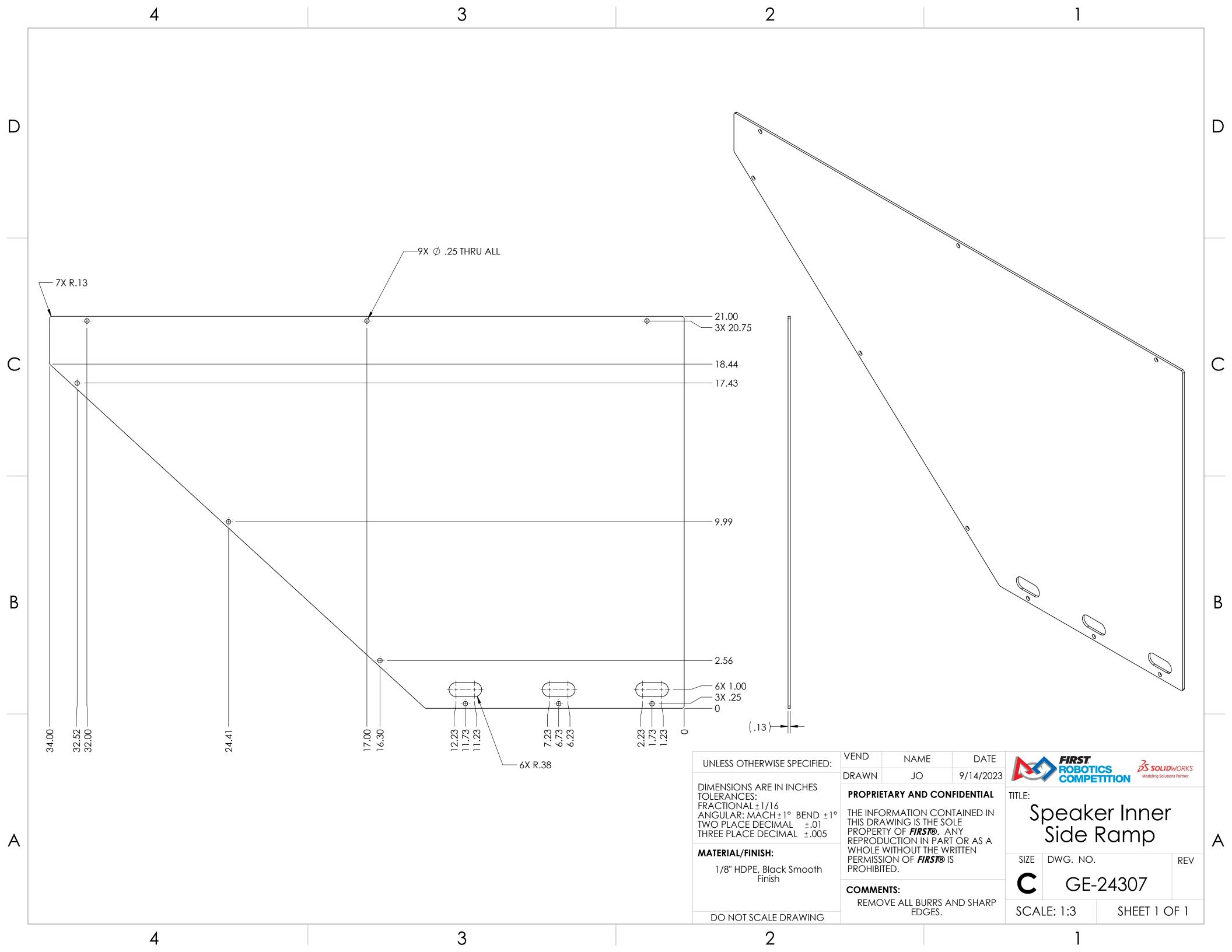
3

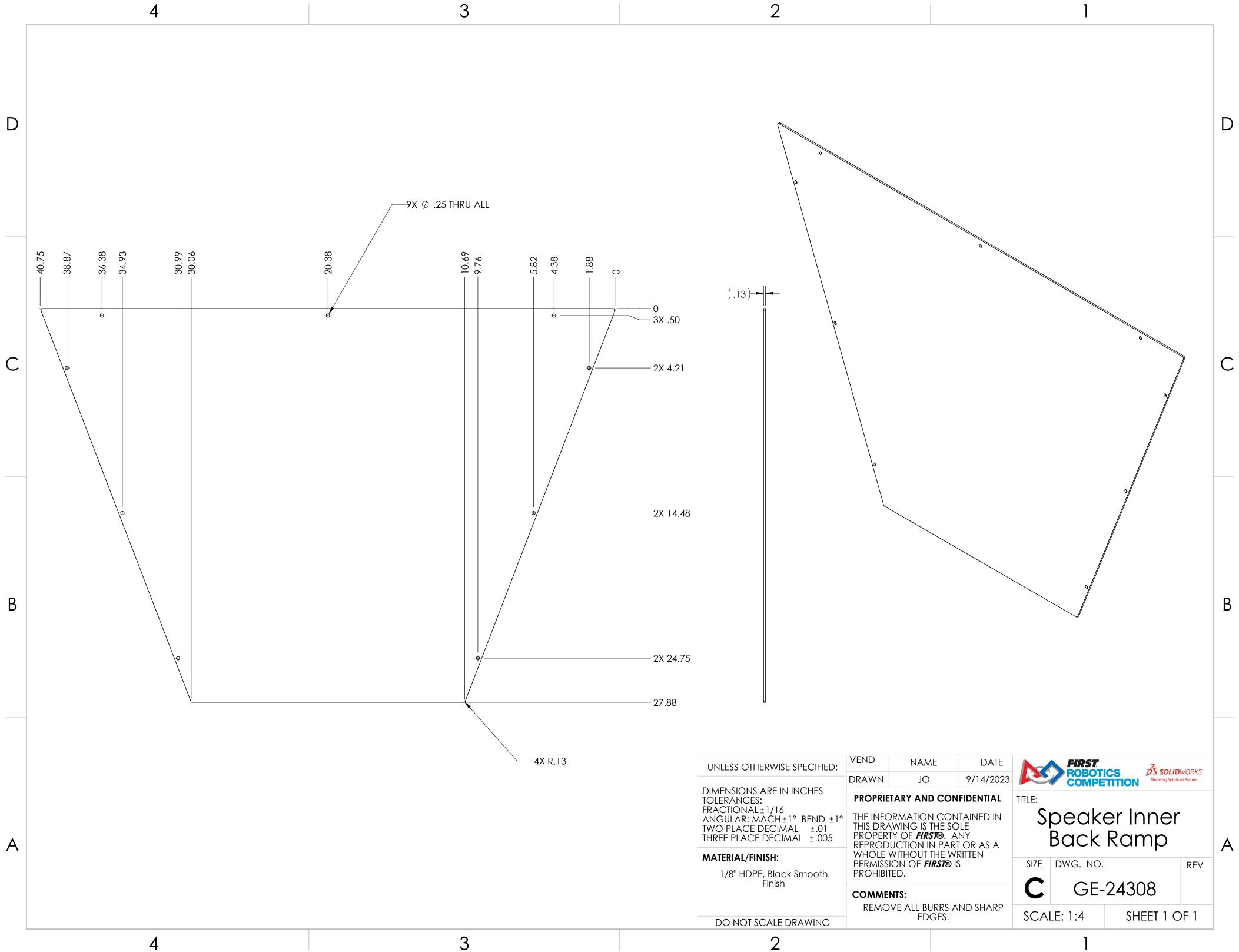


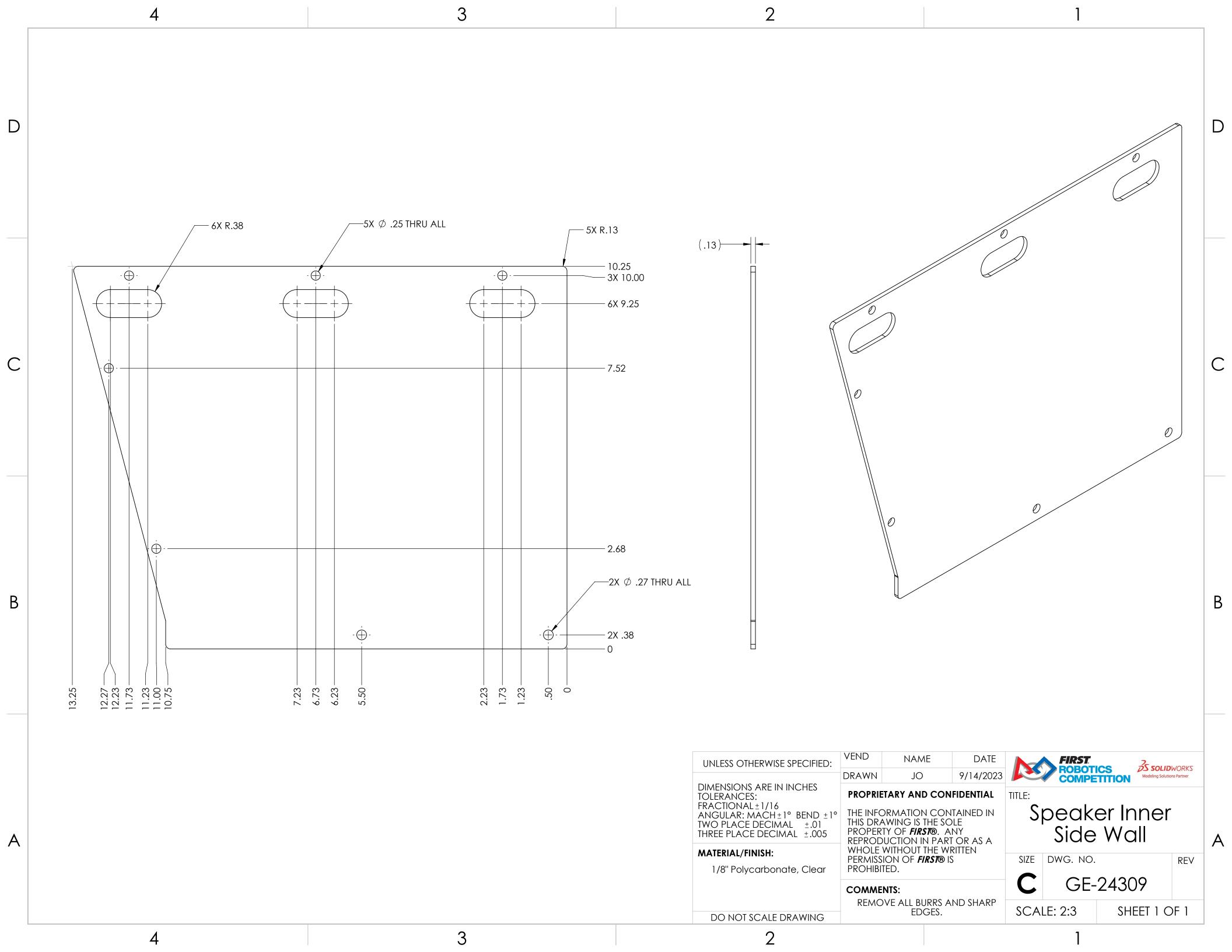
D

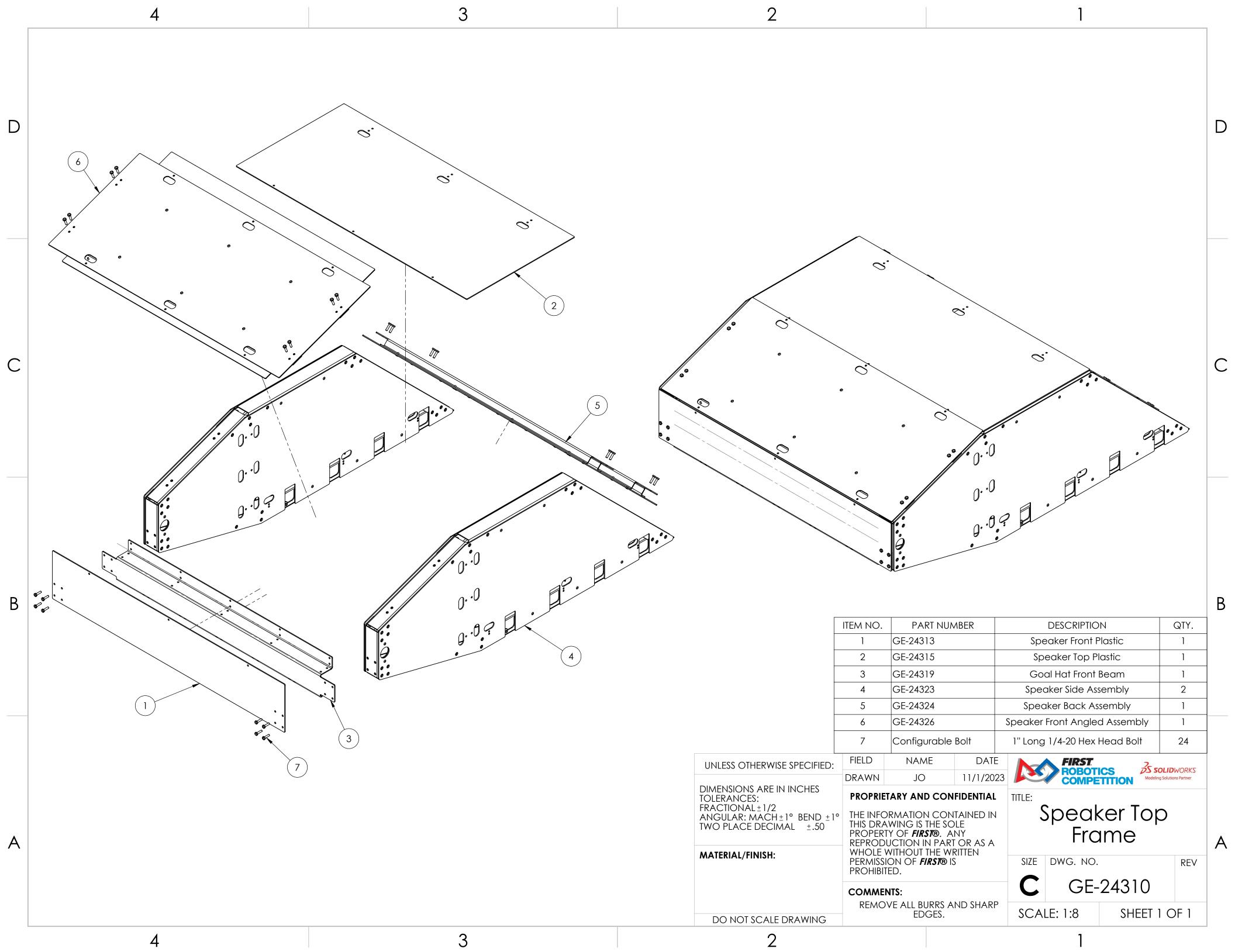




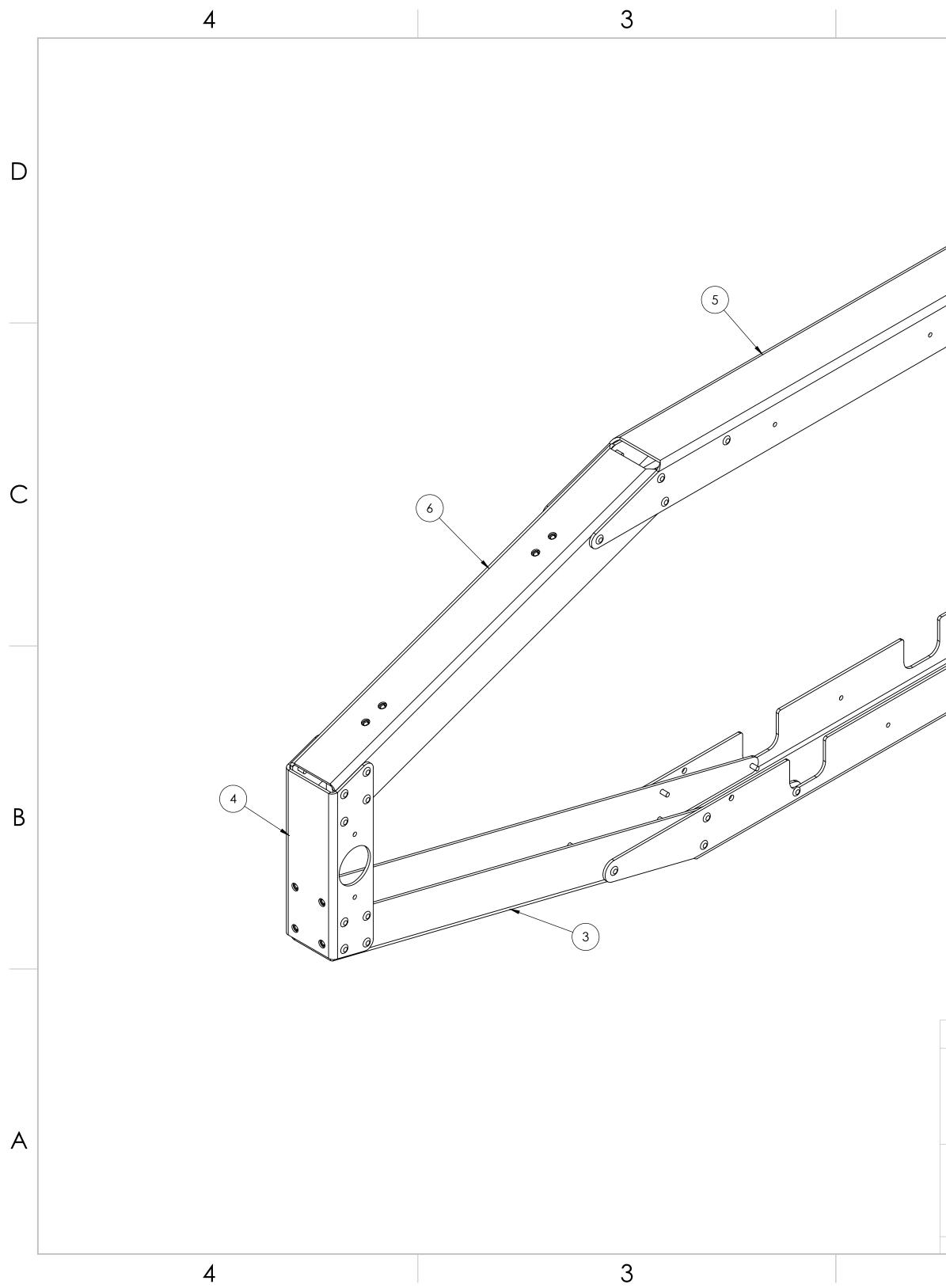








	ITEM NO.	PA	RT NUN	/BER		DESCRIPTIC	)N		QTY.	]
	1	GE-243	13		Sp	beaker Front I	Plastic		1	1
	2	GE-243	15	5		Speaker Top Plastic			1	1
	3	GE-243	19		Goal Hat Front Beam				1	1
	4	GE-243	23		Spe	Speaker Side Assembly Speaker Back Assembly				
	5	GE-243	24		Spe					
	6	6 GE-24326				Speaker Front Angled Assembly				1
	7	Configu	urable Bolt		1'' Lon	g 1/4-20 Hex	Head Bo	,l†	24	
UNLESS OTHERWISE SPECIFIED:	FIELD	NAN	٨E	DATE		<b>FIRST</b>		S SOLID		
	DRAWN	JO	)	11/1/202	23 尾	ROBOT	Modeling Solution			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/2 ANGULAR: MACH±1° BEND ±1 TWO PLACE DECIMAL ±.50	• THE INFC THIS DRA PROPER	<b>PROPRIETARY AND CONFIDENTIAL</b> THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <i>FIRST</i> ®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <i>FIRST</i> ® IS PROHIBITED.				Speaker Top Frame				
MATERIAL/FINISH:	WHOLE PERMISS					SIZE DWG. NO.			REV	
COMMENTS:					C	GE-	2431	0		
do not scale drawing		EDGES.				SCALE: 1:8 SHEET 1 OF 1				
0						1				



0 0 0								
								В
	ITEM NO.	PART NUA	ИBER		DESCRIPTIO	N	QTY.	
-	1	GE-24311-01		Speaker Bo	ottom Chani	nel with PEMs	1	1
-	2	GE-24311-02		Speaker E	Back Chann	el with PEMs	1	1
_	3	GE-24311-03		Speaker	Front Bottor	n Channel	1	
_	4	GE-24311-04		Speaker F	ront Chann	el with PEMs	1	
-	5	GE-24311-05		•	aker Top Ch		1	
	6	GE-24311-06		Speaker	Front Top Ct PEMs	nannel with	1	
-	7	rivet18752	51375	3/16" Alum	inum Rivet, . Range	251375 Grip	48	
UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DAT	E				]
	DRAWN	JO	8/30/20	)23				
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH:	THE INFO THIS DRA PROPER REPROD WHOLE	TARY AND CON DRMATION CON WING IS THE SC TY OF <i>FIRST®</i> . A UCTION IN PART WITHOUT THE WI ION OF <i>FIRST®</i> IS TED.	ITAINED IN DLE NY I OR AS A RITTEN	s S	Śheet dwg. NO.	er Side metal		A
	COMME				GE-	24311		
DO NOT SCALE DRAWING	KEMO	VE ALL BURRS A EDGES.	IND SHAR	SCA	LE: 1:3	SHEET 1	OF 2	

D

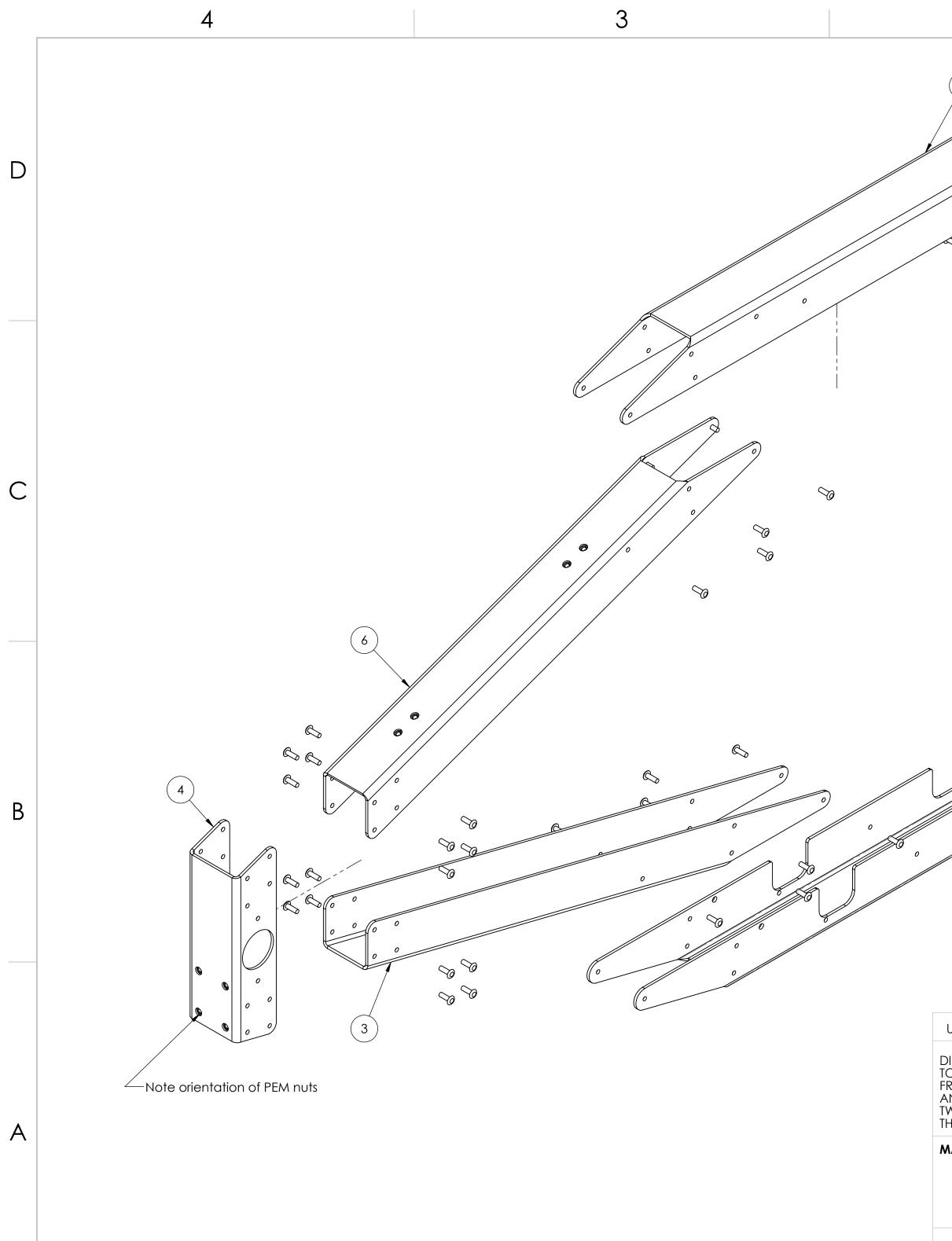
С

1

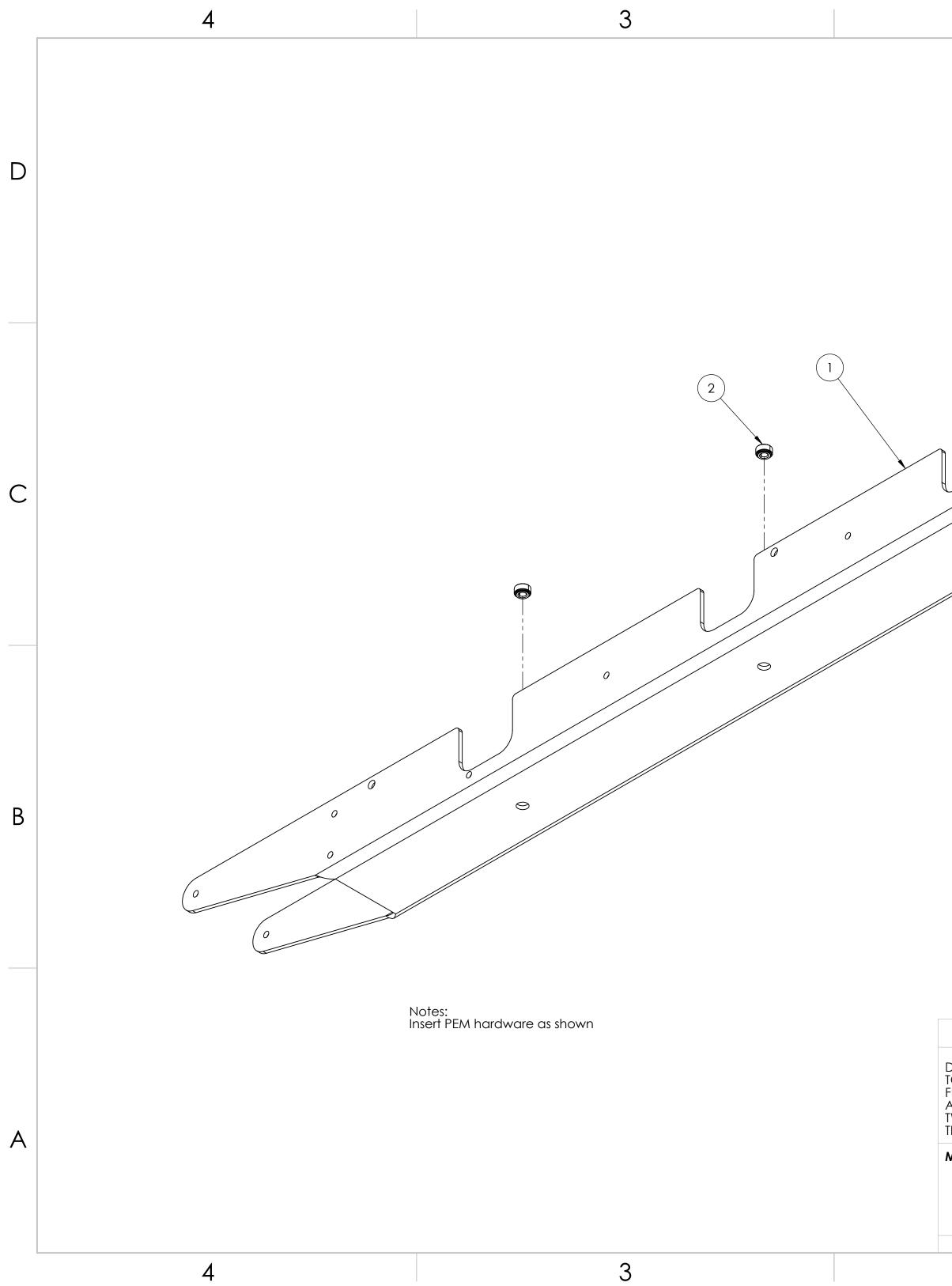
2
7

2

DO NOT SCALE DRAWING



2			1		
5					D
	0	2			
				7	С
0	°		0		
					В
UNLESS OTHERWISE SPECIFIED:		ME DATE O 8/30/2023	FIRST ROBOTICS COMPETI		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 <b>MATERIAL/FINISH:</b>	The Information This Drawing Property of <b>F</b>	<b>IRST®</b> . ANY I IN PART OR AS A IT THE WRITTEN	TITLE: Speake Sheetr SIZE DWG. NO.	REV	А
DO NOT SCALE DRAWING		BURRS AND SHARP DGES.	<b>C</b> GE-2 SCALE: 1:3	<b>4311</b> Sheet 2 of 2	

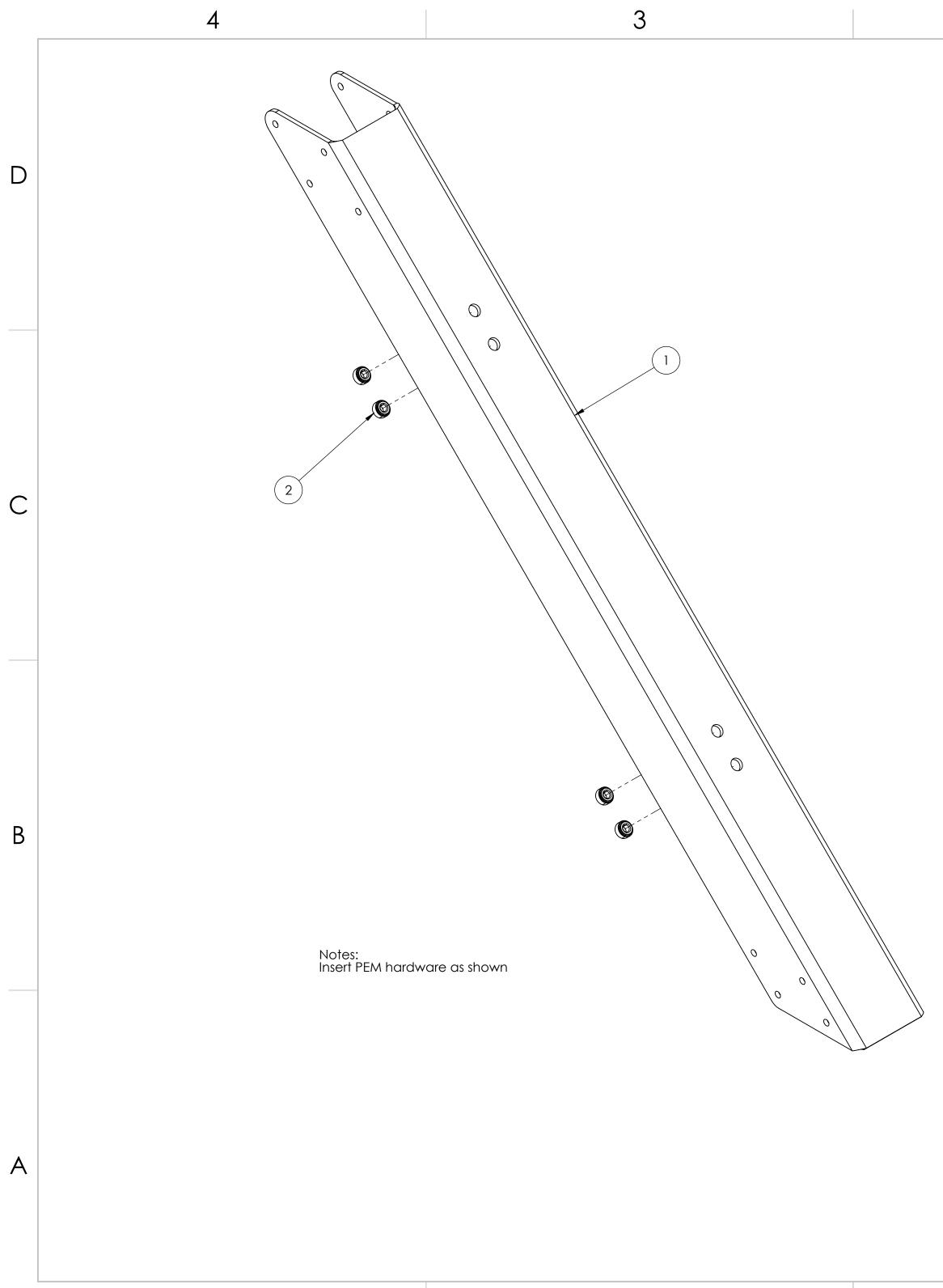


	ITEM NO.	PART NUM	1BER		DESCRIPTIC	N	QTY.	]
	1	GE-24311-07			aker Bottom (	Channel	1	
	2	034			f-clinching n	ut, .054 shank	4	
UNLESS OTHERWISE SPECIFIED	VEND	NAME	DATI	E	FIRST. BOBOTICS			Ī
	DRAWN	WN JO 8/30/2023			COMPE		Solutions Partner	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ± TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	1° THE INFO THIS DRA PROPER REPROD	<b>PROPRIETARY AND CONFIDENTIAL</b> THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A		1	Char	er Bot nnel w PEMs		A
MATERIAL/FINISH: WHOLE W		ION OF FIRST® IS		SIZE	DWG. NO.		REV	
	COMME			C	GE-2	4311-01		
DO NOT SCALE DRAWING	EDGES.	ND SHARI	SCA	LE: 1:2	SHEET 1	OF 1		
2				1			-	

В

D

С

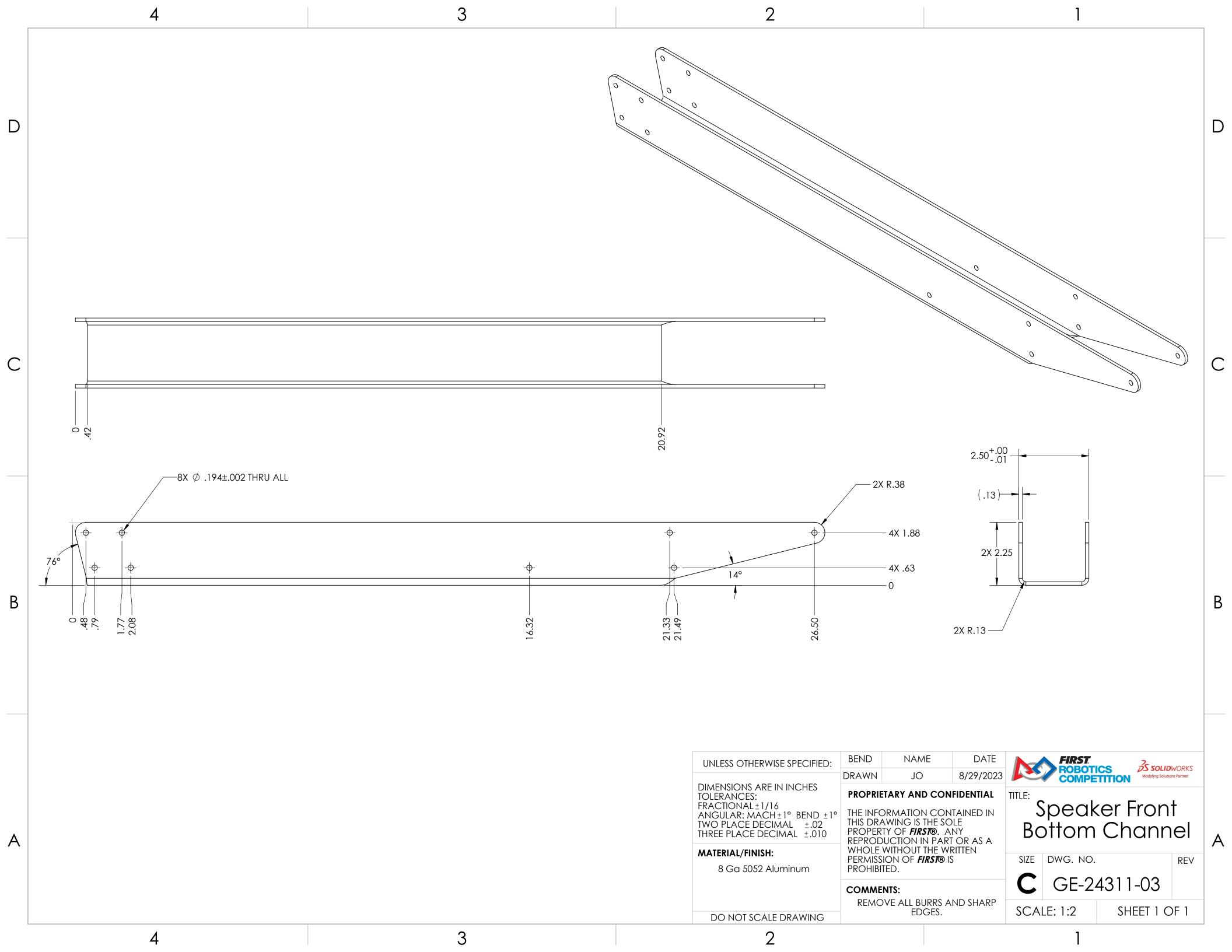


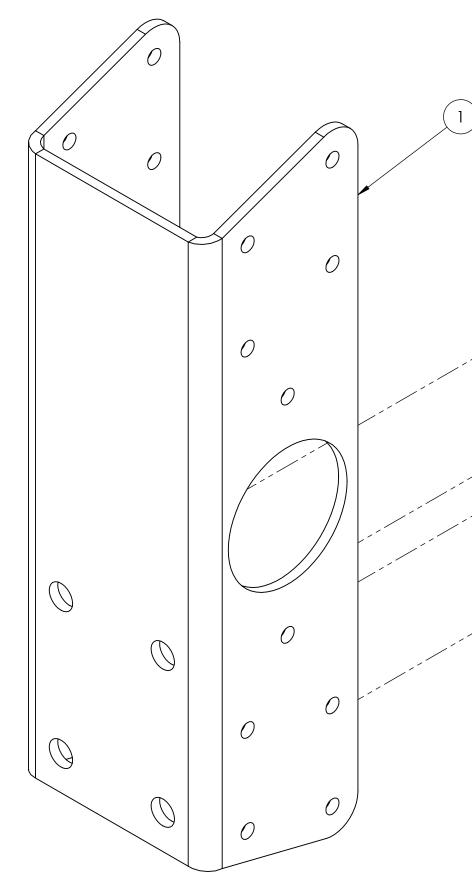
3

D

С

	ITEM NO.	ITEM NO. PART NUM			DESCRIPTION				
	1	GE-24311-08		Spe	Speaker Back Channel				
	2	pem_clinchnut25_20 054		1/4-20 self	4-20 self-clinching nut, .054 shank				
UNLESS OTHERWISE SPECIFIED	: VEND	NAME	DAT	E	FIRST. ROBOTICS			DWORKS	
	DRAWN	JO	8/30/20	23	iolutions Partner				
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ± TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH:	1° THE INFO THIS DRA PROPER REPROD	TARY AND CC DRMATION CC AWING IS THE S TY OF <i>FIRST</i> ®. DUCTION IN PA WITHOUT THE Y	NTAINED IN SOLE ANY RT OR AS A		TILE:Speaker Back Channel with PEMs				
	PERMISS PROHIBI	ION OF <i>FIRST</i> E TED.	) IS	SIZE	DWG. NO.		REV		
		COMMENTS:			GE-24	311-02			
DO NOT SCALE DRAWING	REMO	VE ALL BURRS EDGES.	and shar	P SCA	SCALE: 1:2 SHEE		T 1 OF 1		
2					1				





Notes: Insert PEM hardware as shown

4

4

D

С

В

А

3

	ITEM NO.	TEM NO. PART NUMBER		DESCRIPTION			(	QTY.	
-	1	GE-24311-09 pem_clinchnut25_20 054		Speaker Front Channel				1	
-	2			1/4-20 self-clinching nut, .054 shank			nk	4	1
UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DAT					DWORKS	
	DRAWN	JO	8/30/20	23	<b>ROBOTI</b> COMPE		Adeling Solution		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND±1 TWO PLACE DECIMAL±.01 THREE PLACE DECIMAL±.005	• THE INFO THIS DR/ PROPER REPROD	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <i>FIRST®</i> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <i>FIRST®</i> IS PROHIBITED.			TILE:Speaker Fron Channel with PEMs				A
MATERIAL/FINISH:	PERMISS				DWG. NO.			REV	
	COMME	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			GE-24	24311-04			
do not scale drawing	REMC				SCALE: 1:1 SHEET 1		T 1 O	F 1	
2				1					



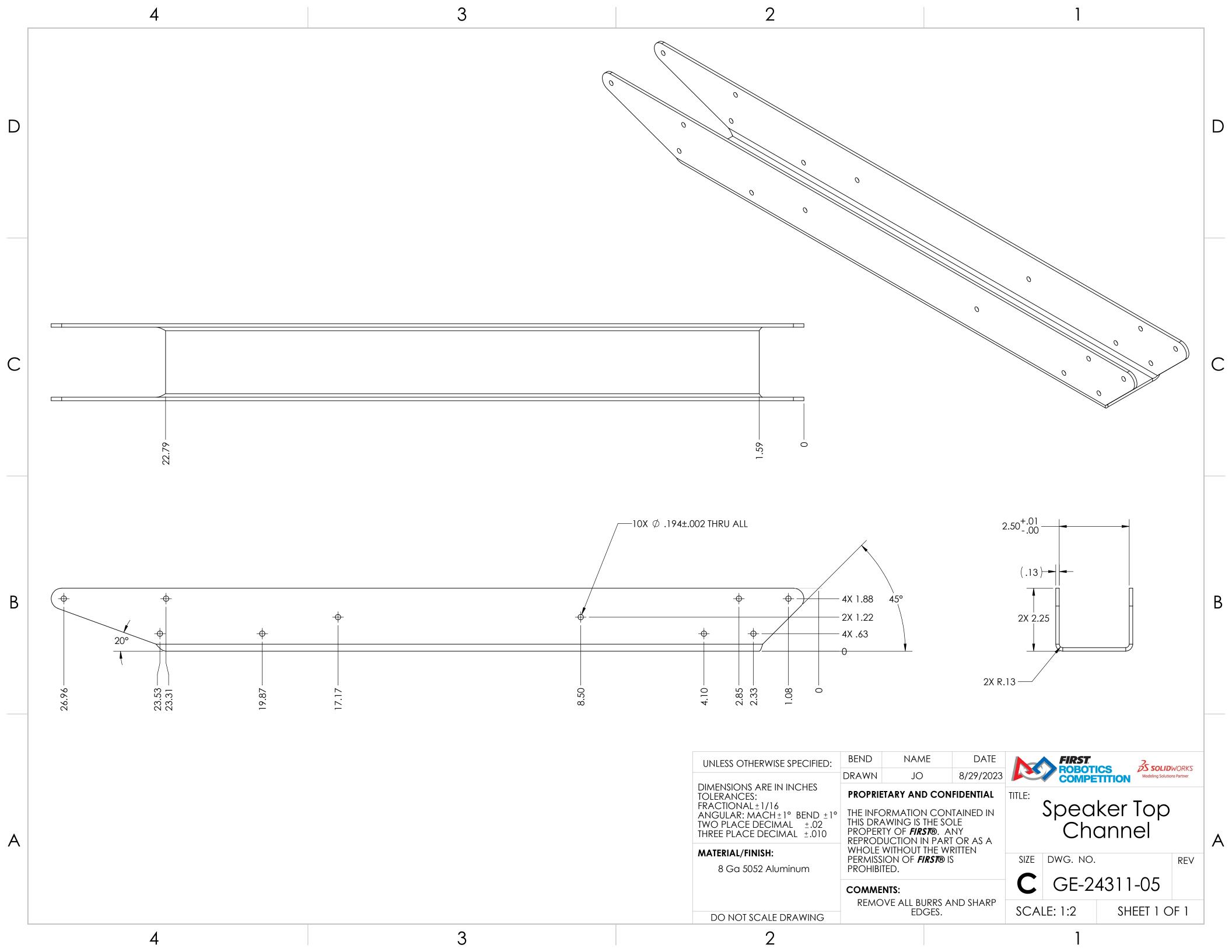
2

Ã

В

D

С



А

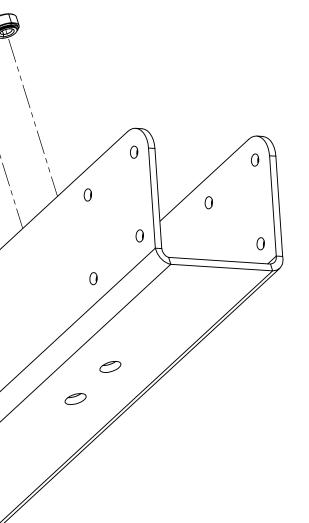
3

Notes: Insert PEM hardware as shown

4

4

3



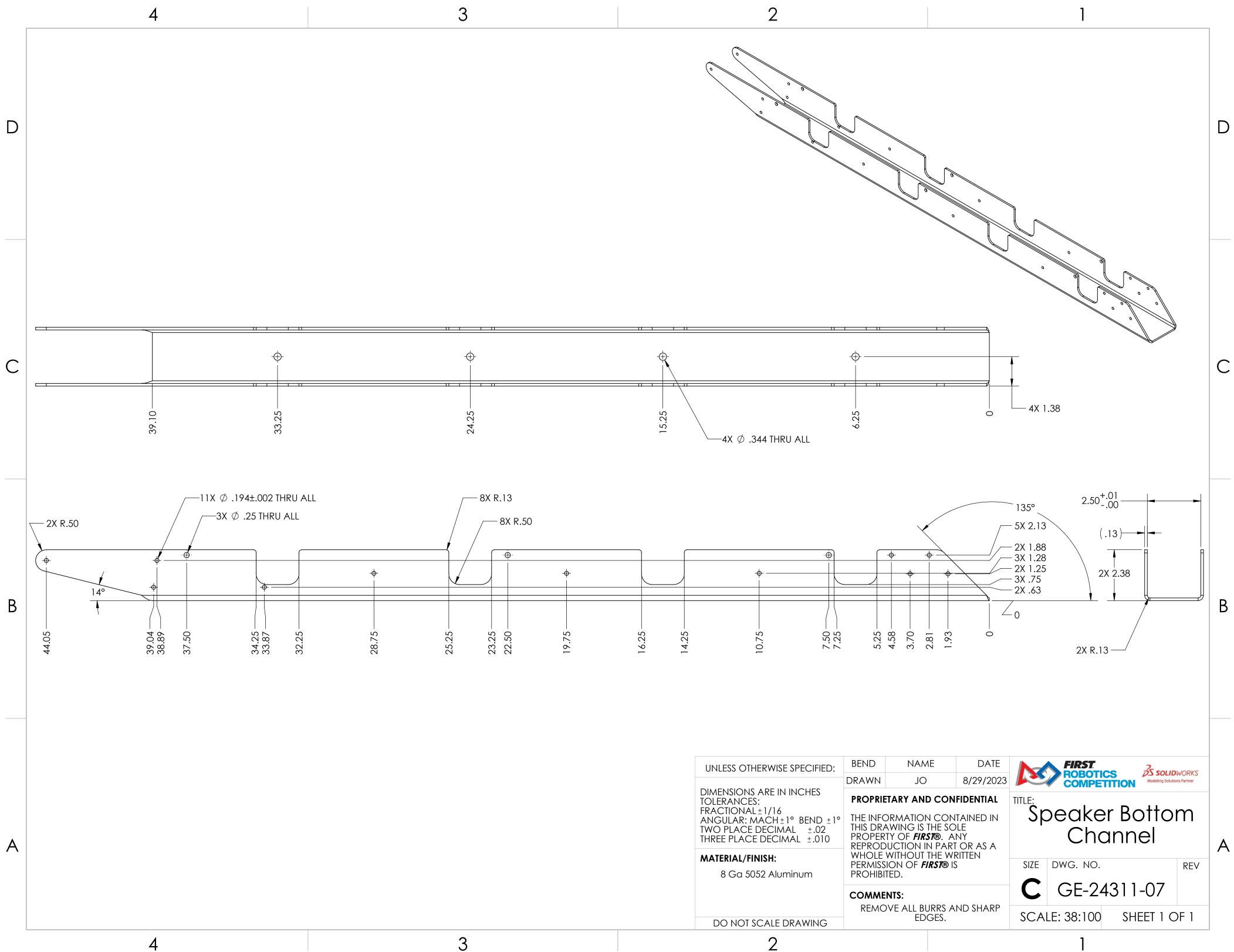
2

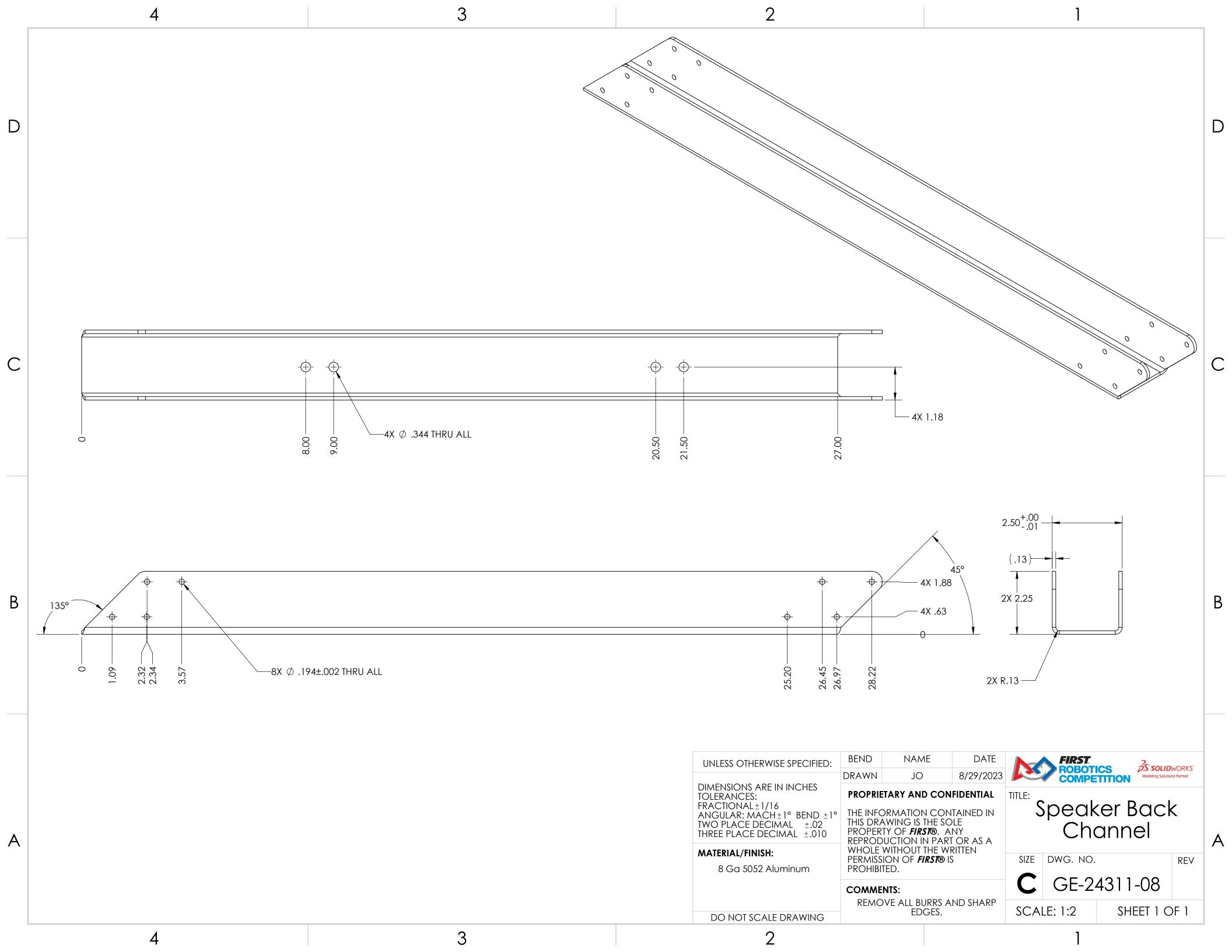
	ITEM NO. PART NUMBER				QTY.			
	1	GE-24311-10		Speaker Front Top Channel			1	
	2	pem_clinchnut25_20 1/ 054		1/4-20 self-	-clinching nu	4		
UNLESS OTHERWISE SPECIFIED	: VEND	NAME	DAT	E				
	DRAWN	JO	8/30/20	23				
FRACTIONAL ± 1/16 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL /FINISH: THE INFORMATI THE INFORMATI THE INFORMATI THIS DRAWING PROPERTY OF / REPRODUCTION WHOLE WITHOUT			N CONTAINED IN 5 THE SOLE <b>RST®</b> . ANY IN PART OR AS A 1 THE WRITTEN		Top Channe with PEMs			A
	PROHIBI	ION OF <b>FIRST®</b> I. Ted.	3	SIZE	DWG. NO.		REV	
		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			GE-24	4311-08	5	_
DO NOT SCALE DRAWING					SCALE: 2:3 SHEET		1 OF 1	
2					1			-

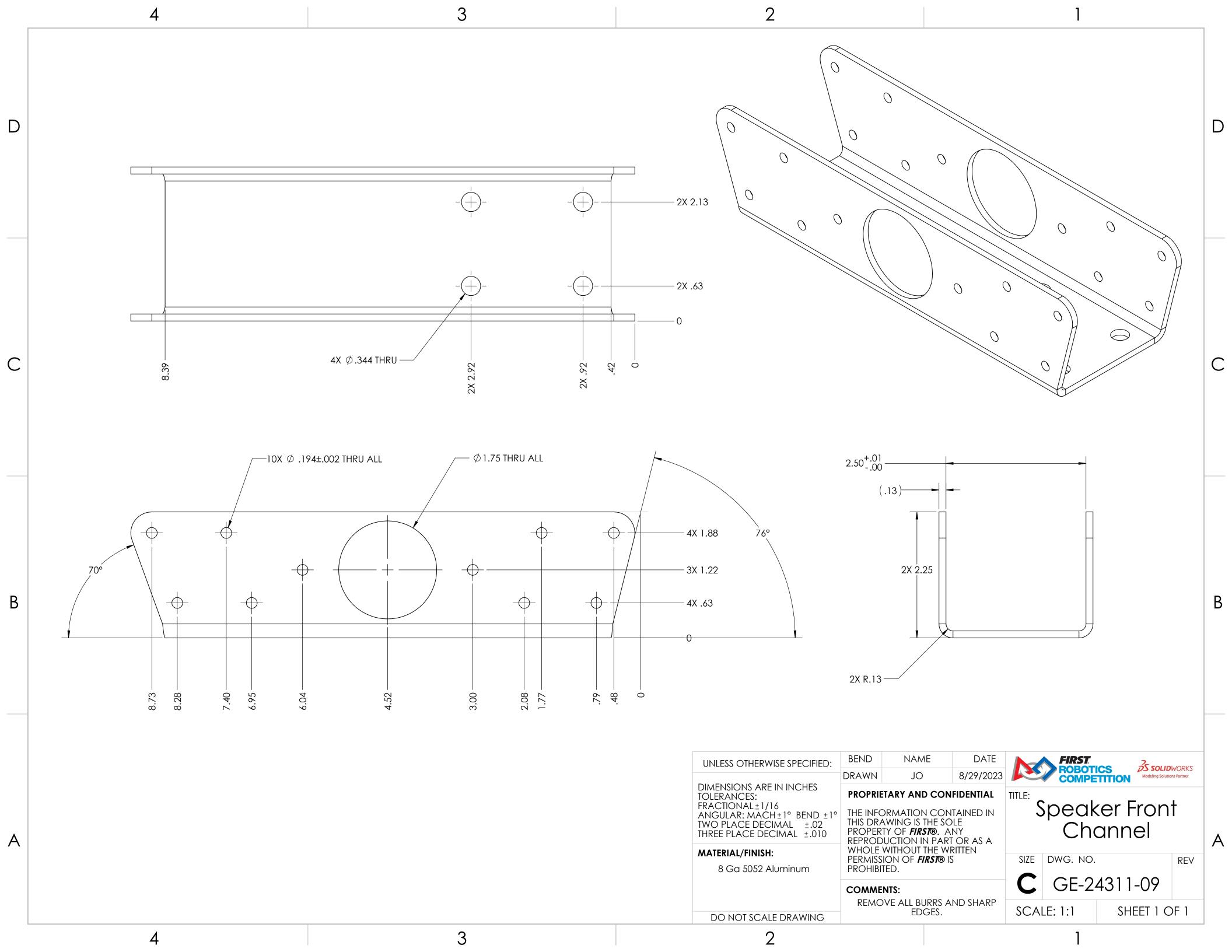
D

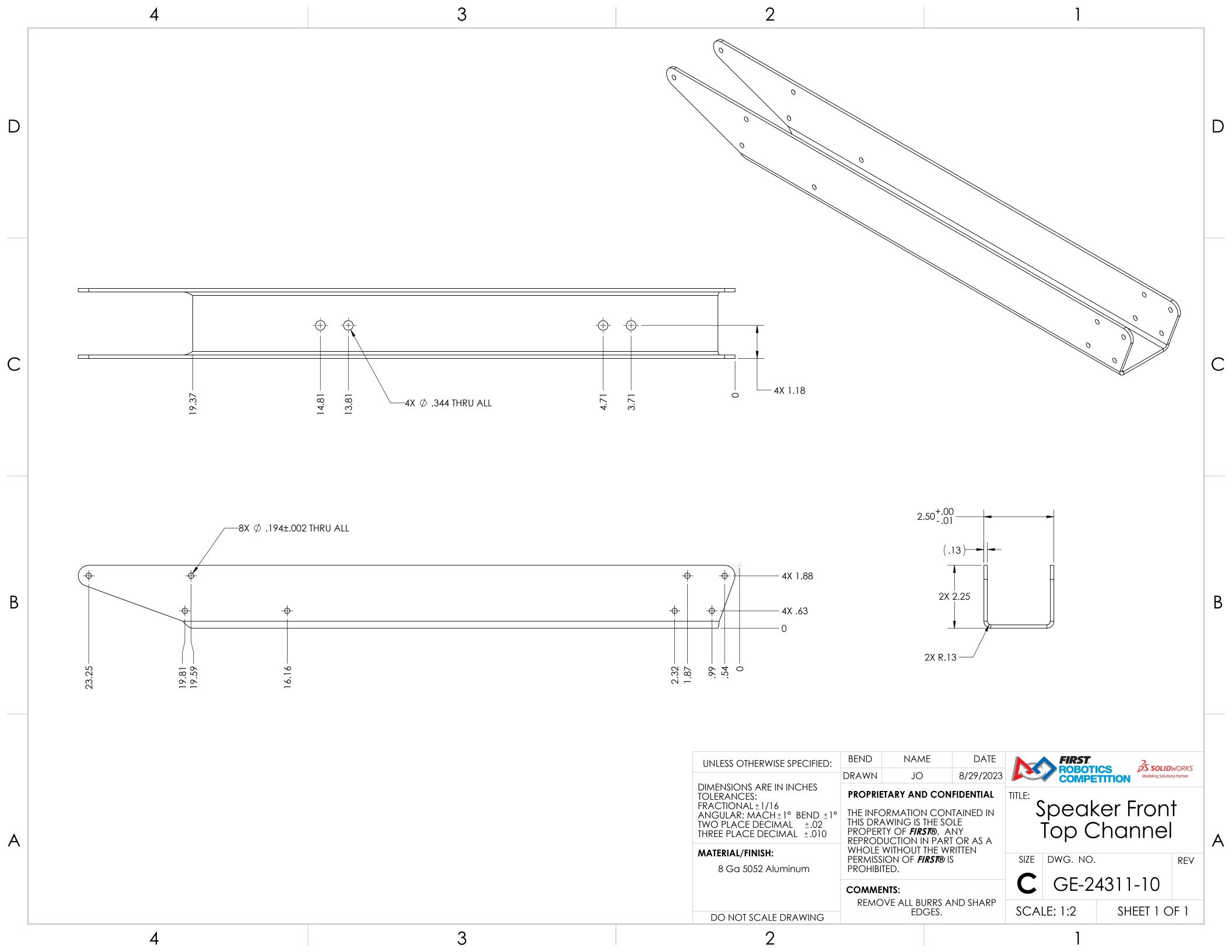
С

В

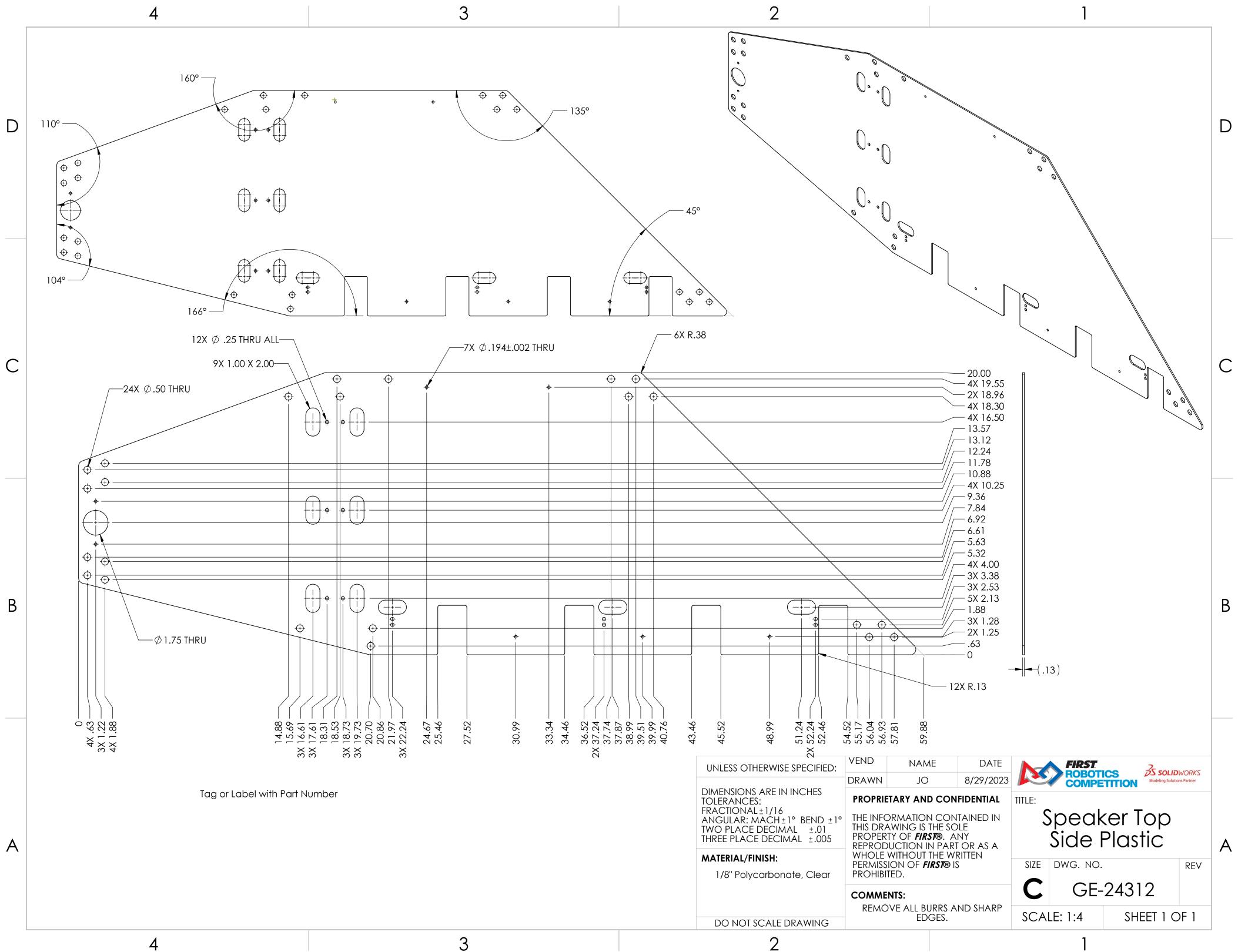


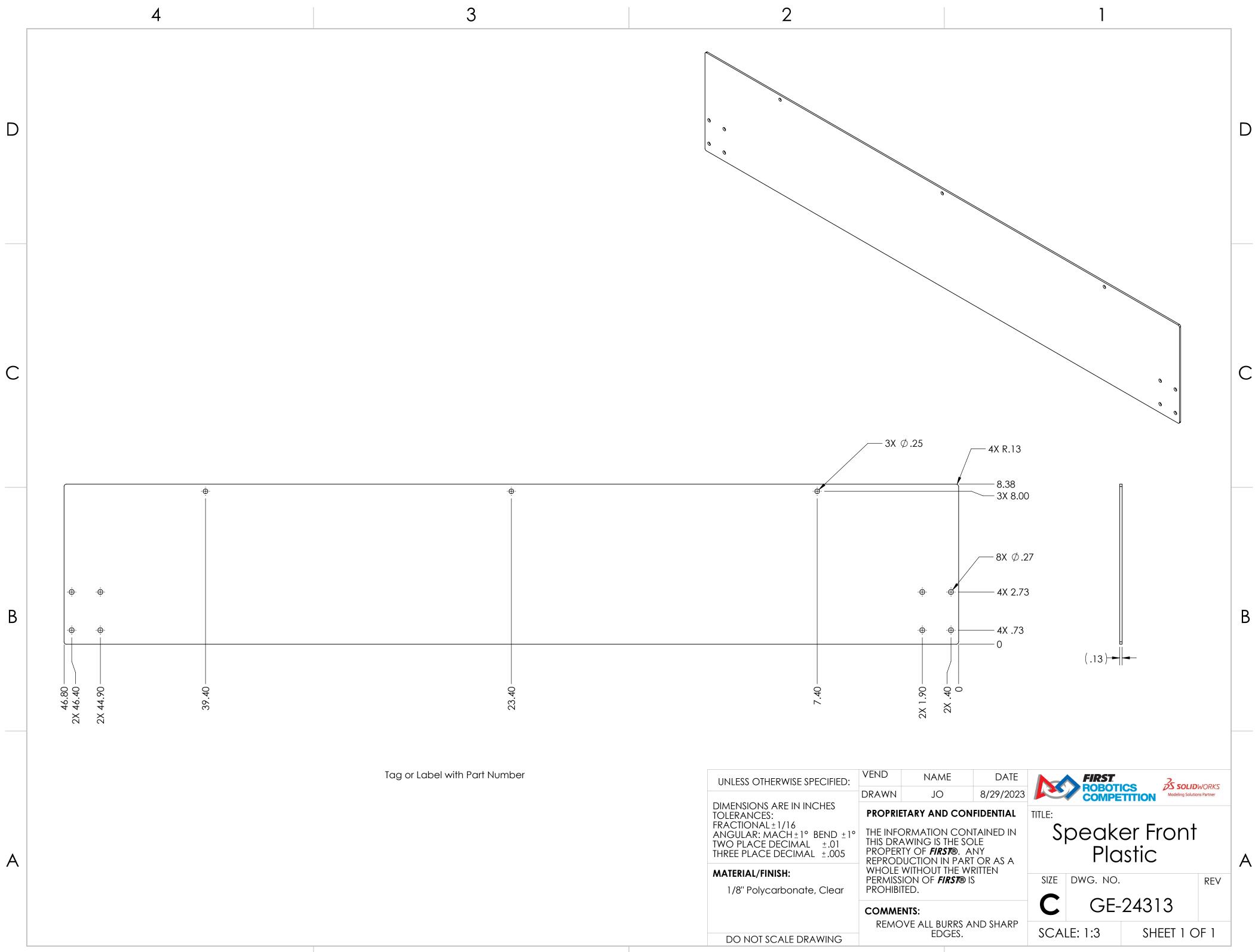


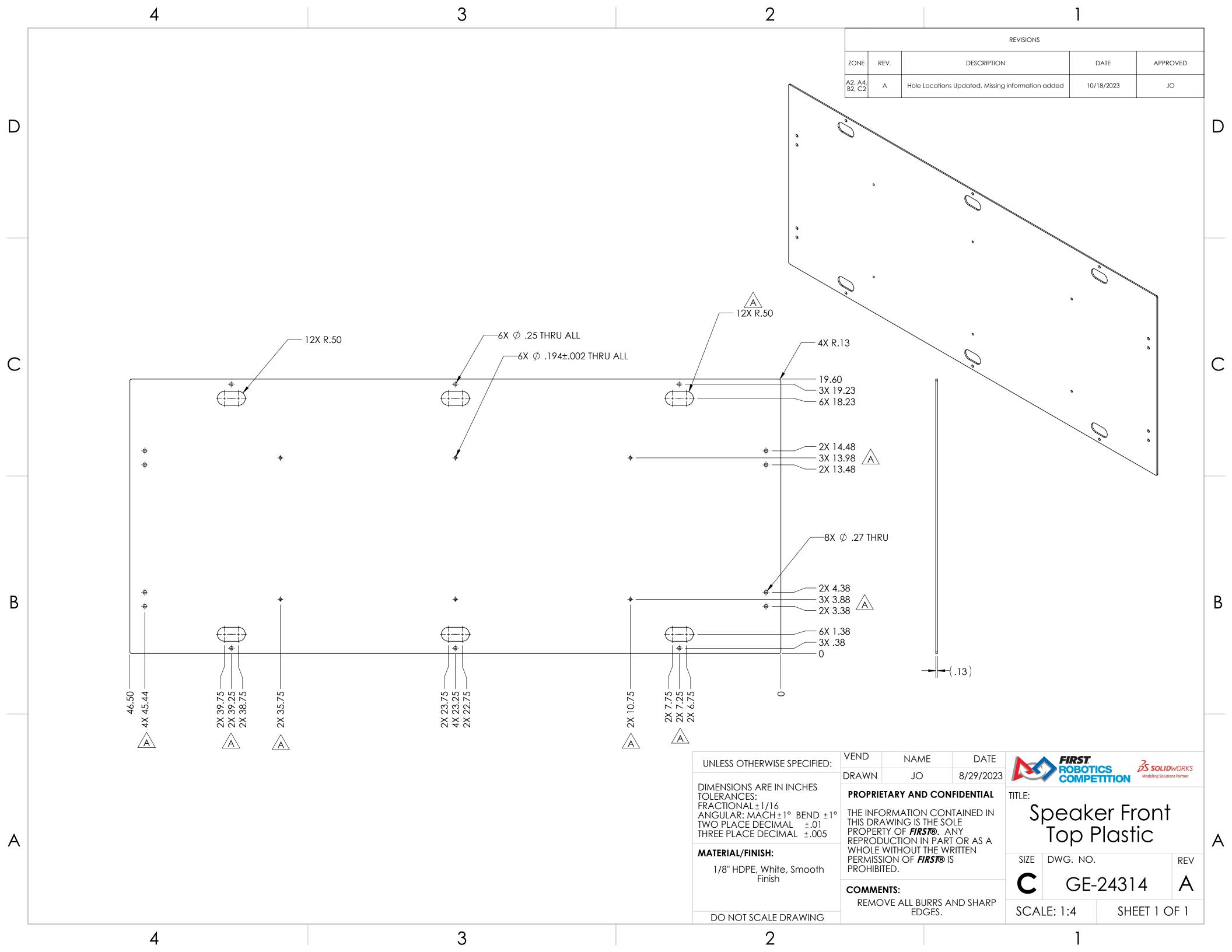


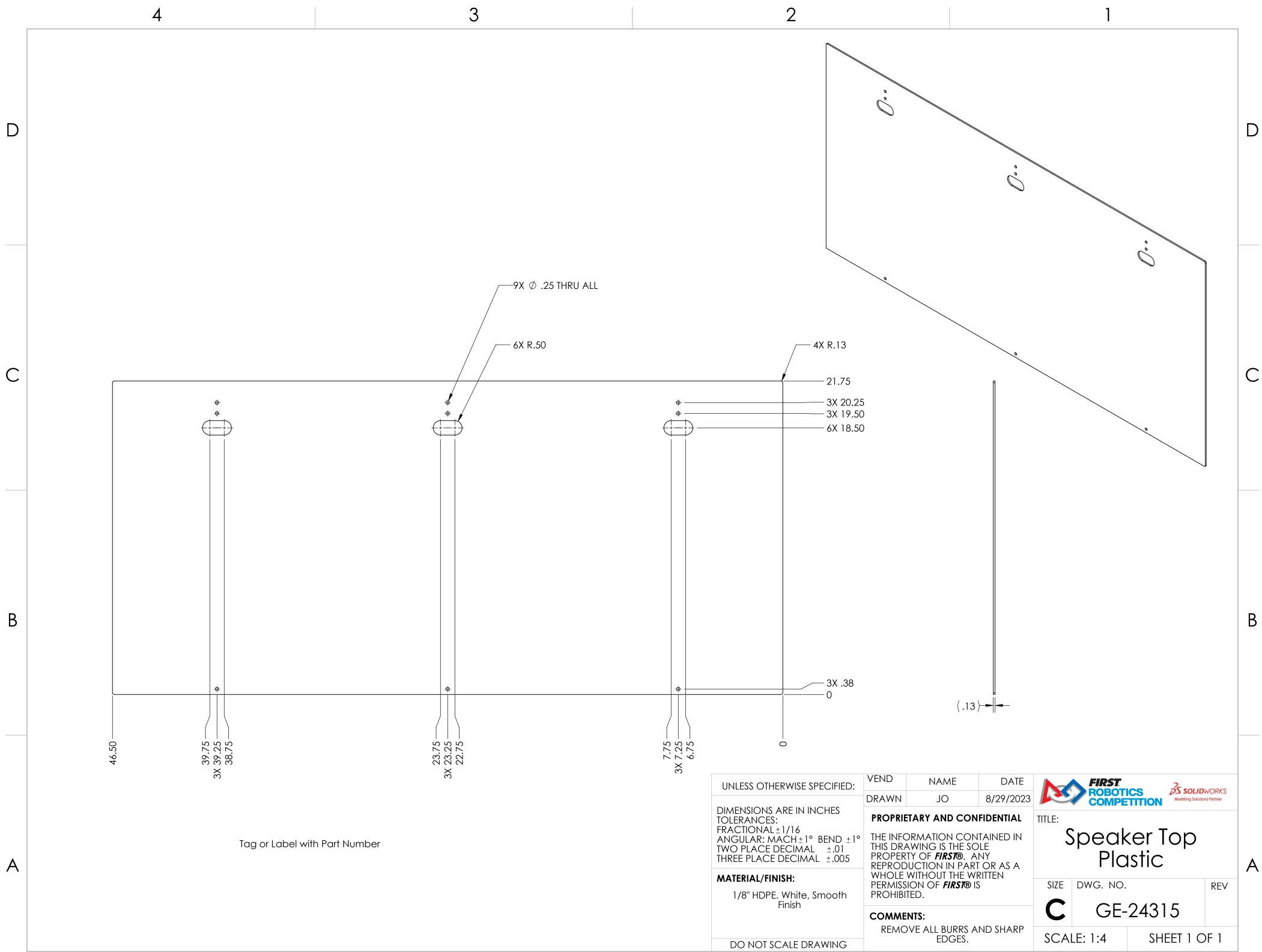


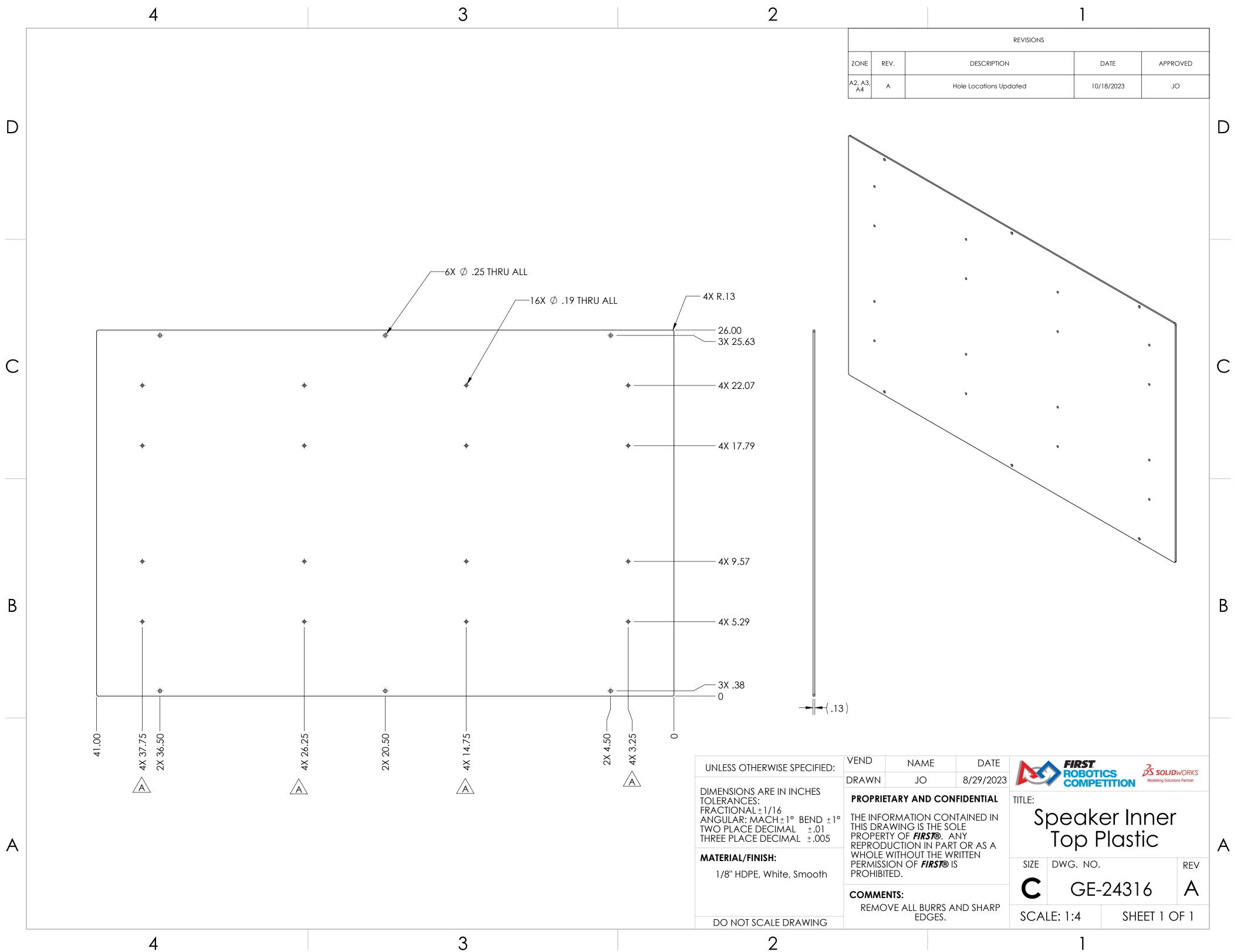


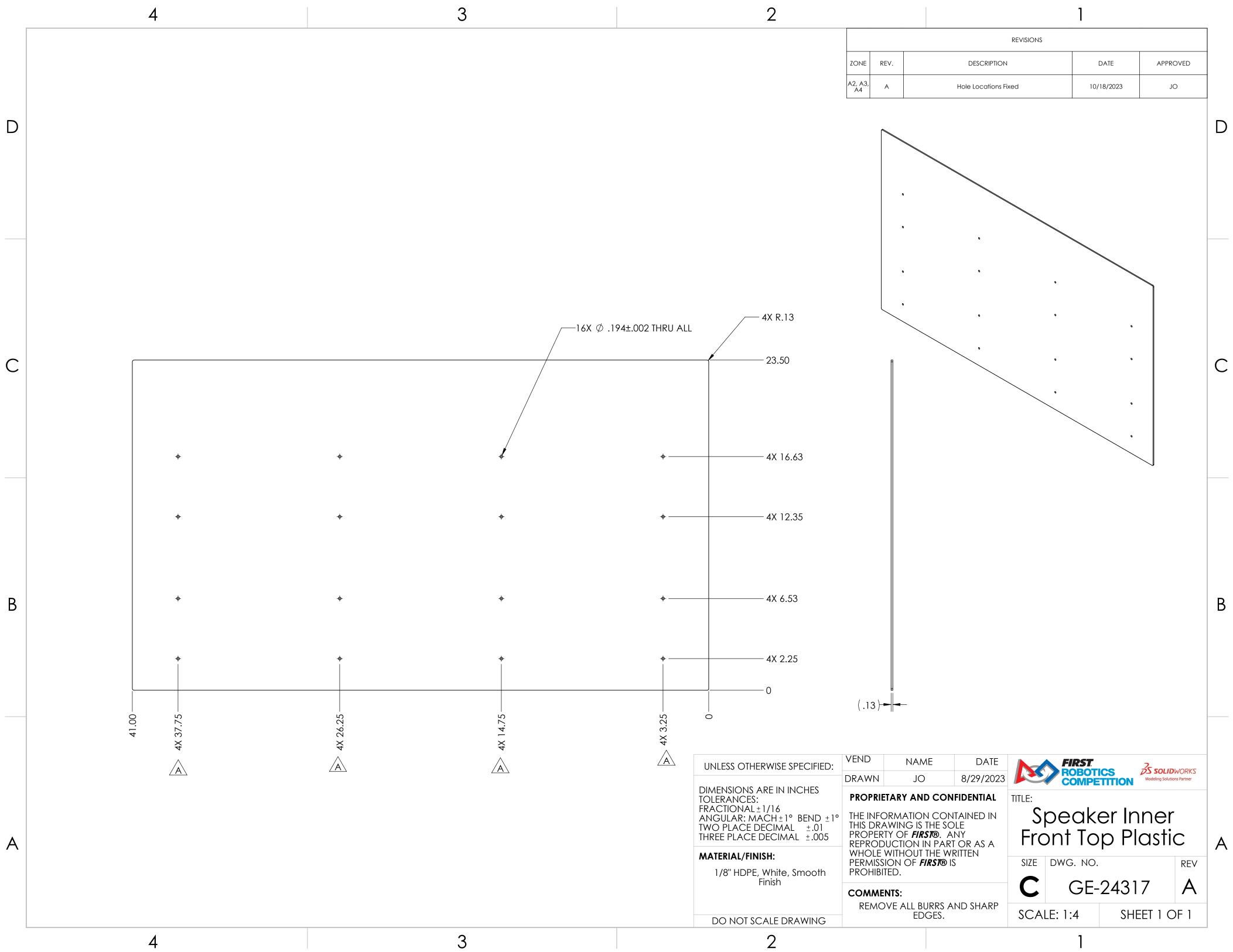


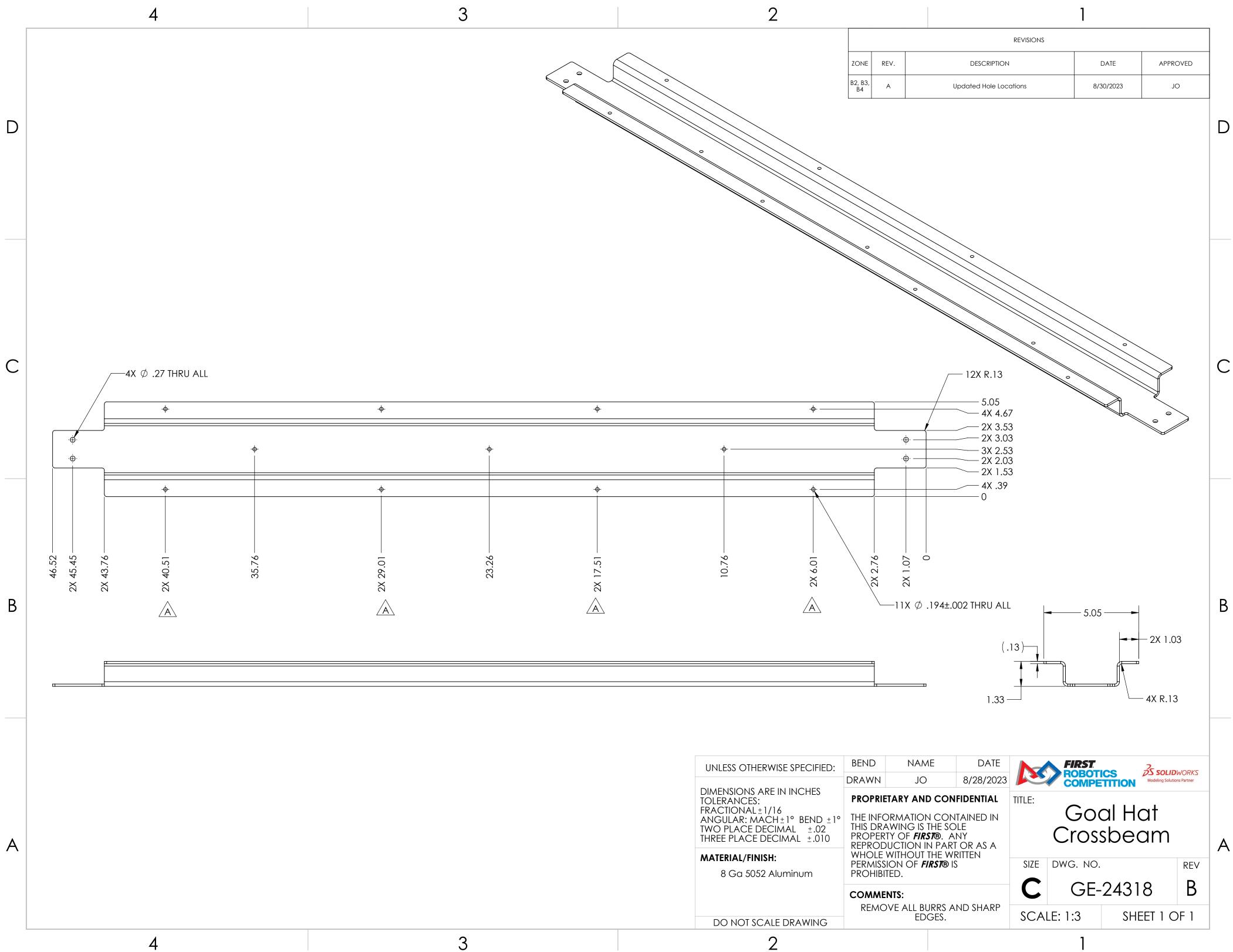


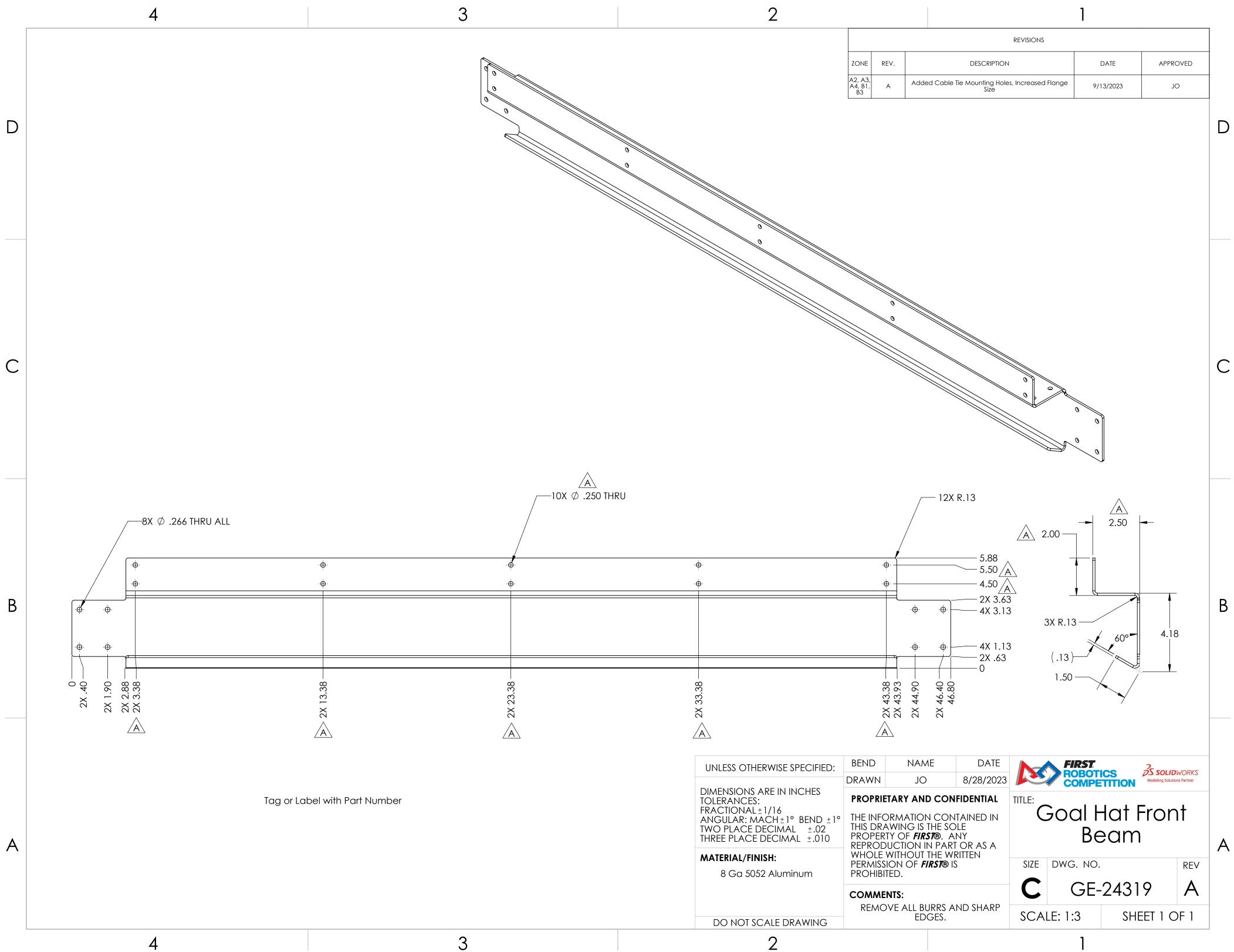




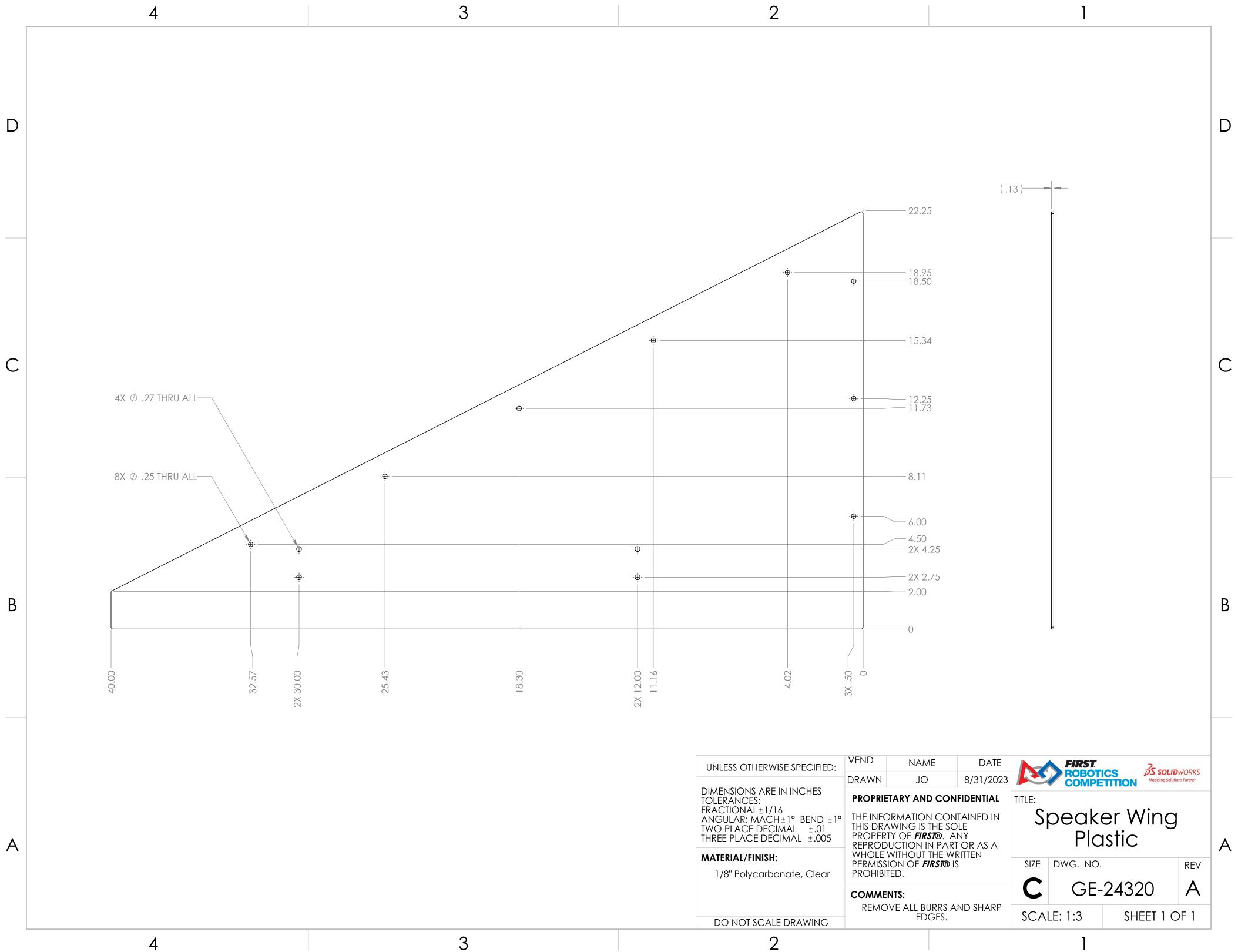


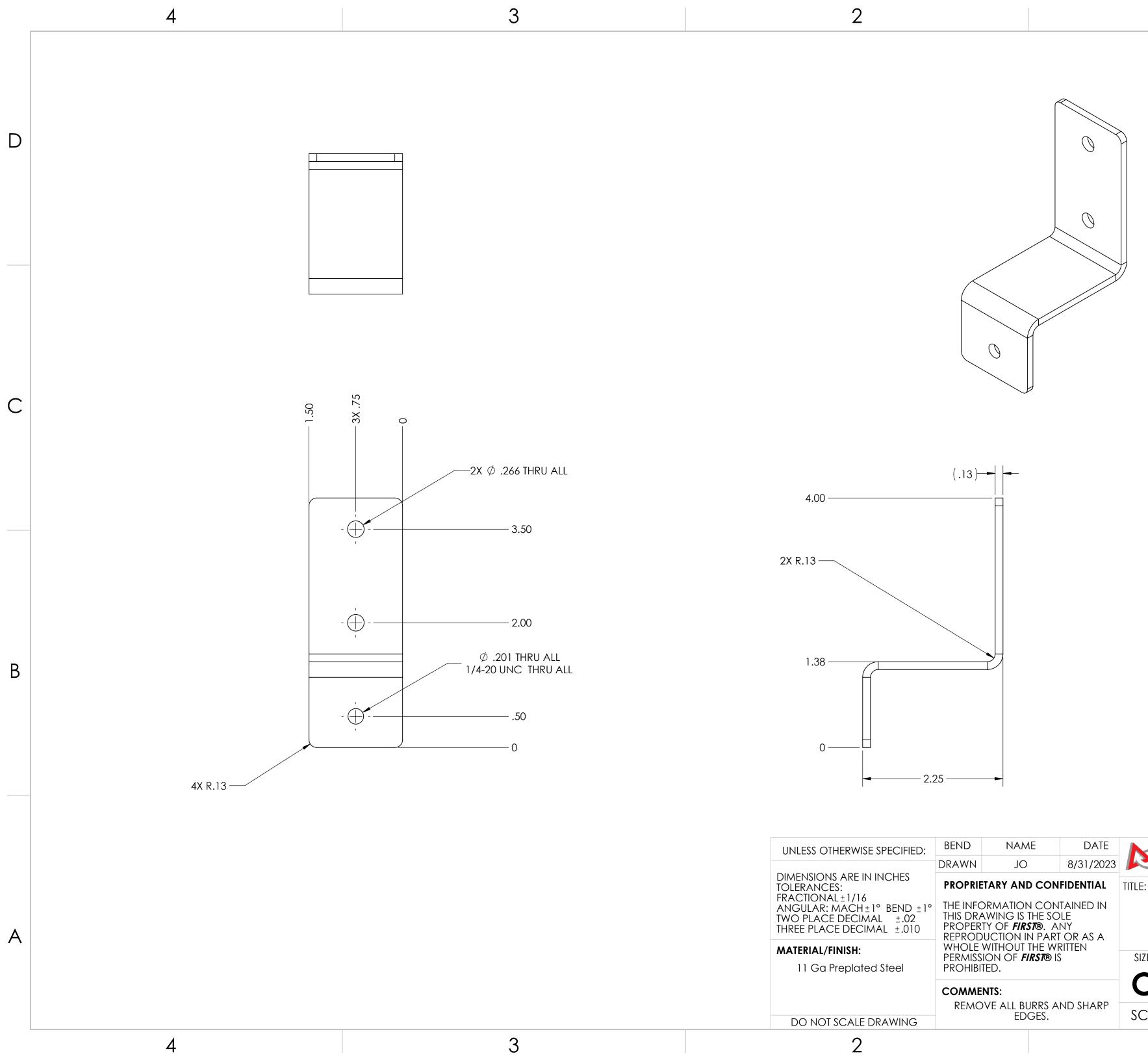






			1								
	REVISIONS										
ZONE	REV.	DESCRIPTION	DATE	APPROVED							
A2, A3, A4, B1, B3	A	Added Cable Tie Mounting Holes, Increased Flange Size	9/13/2023	Oſ							



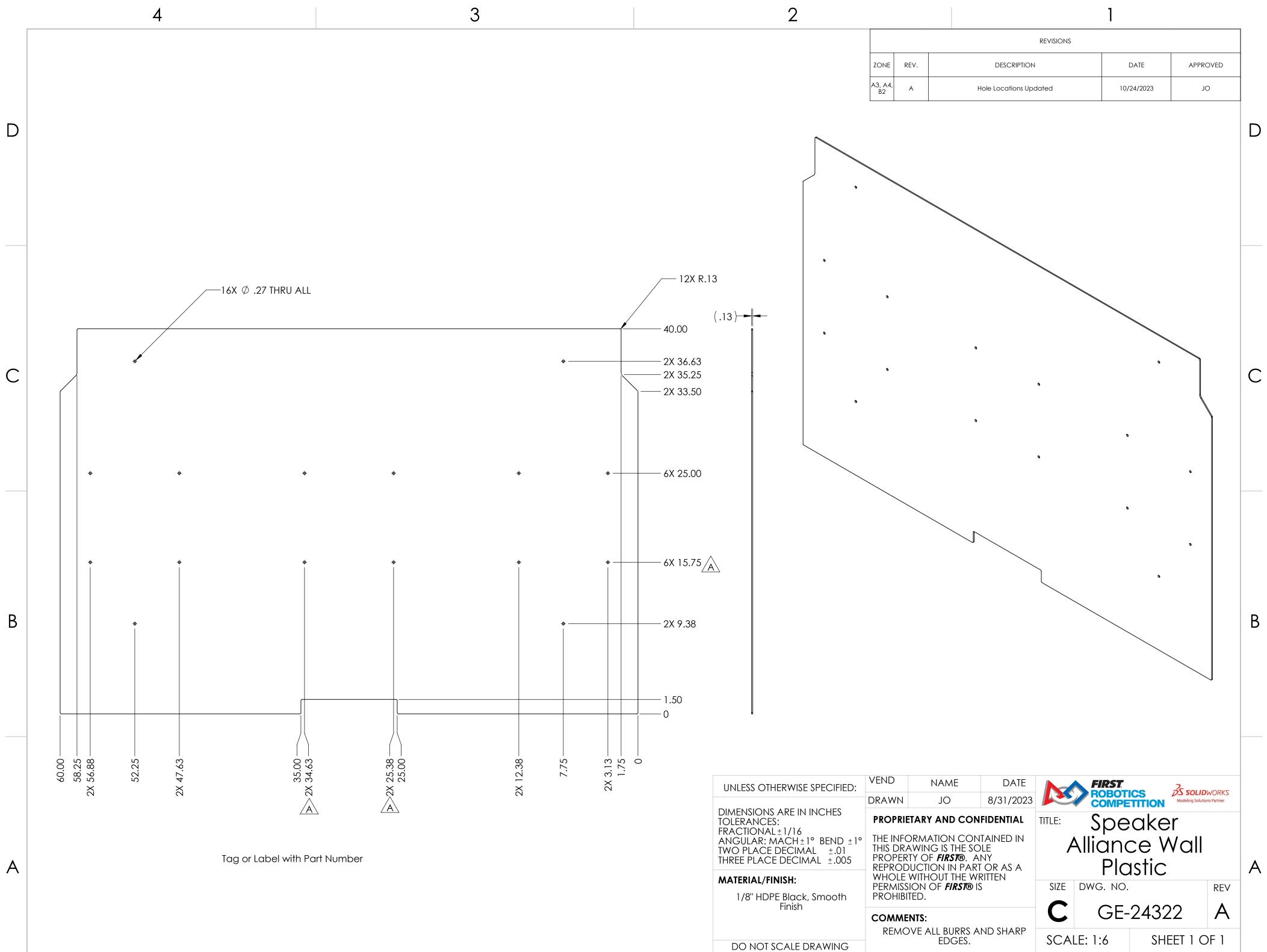


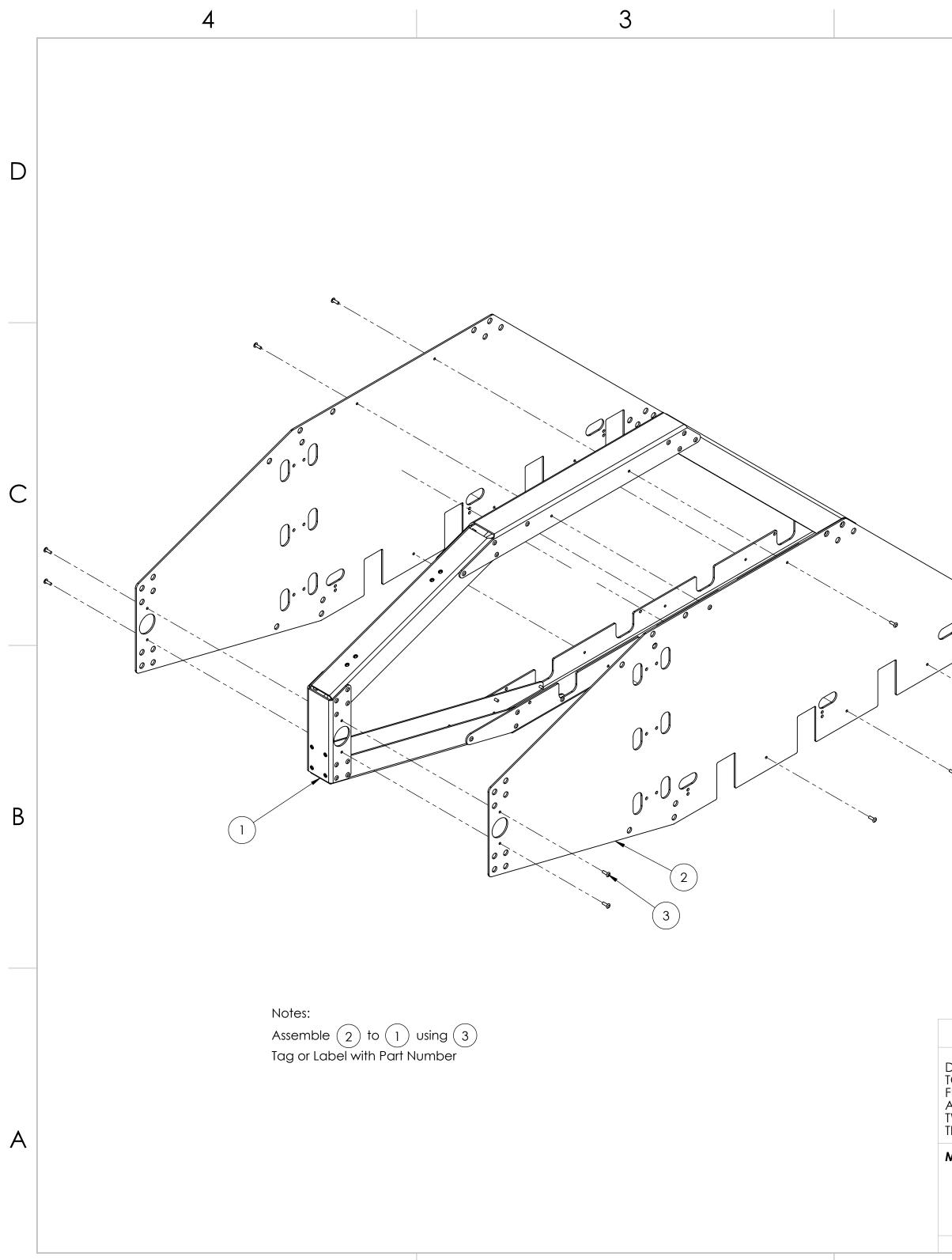
UNLESS OTHERWISE SPECIFIED:	BEND NAME		DATE		<b>FIRST</b>		<b>3</b> solidworks		
	DRAWN	JO	8/31/2023	ROBOTICS COMPETITION					
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010	THE INFO THIS DRA PROPER	TARY AND CON DRMATION CON WING IS THE SC TY OF <b>FIRST®</b> . A UCTION IN PART	Backboard Bracket					A	
MATERIAL/FINISH:	WITHOUT THE WI ION OF <b>FIRST</b> ® IS	RITTEN	SIZE	DWG. NO	G. NO.		REV		
11 Ga Preplated Steel	PROHIBI	PROHIBITED.					~ 1		
	COMME	COMMENTS:			GE-	-243	21		
DO NOT SCALE DRAWING	VE ALL BURRS A EDGES.	SCALE: 1:1		SH	SHEET 1 OF 1				
2				1					

D

С

В





3

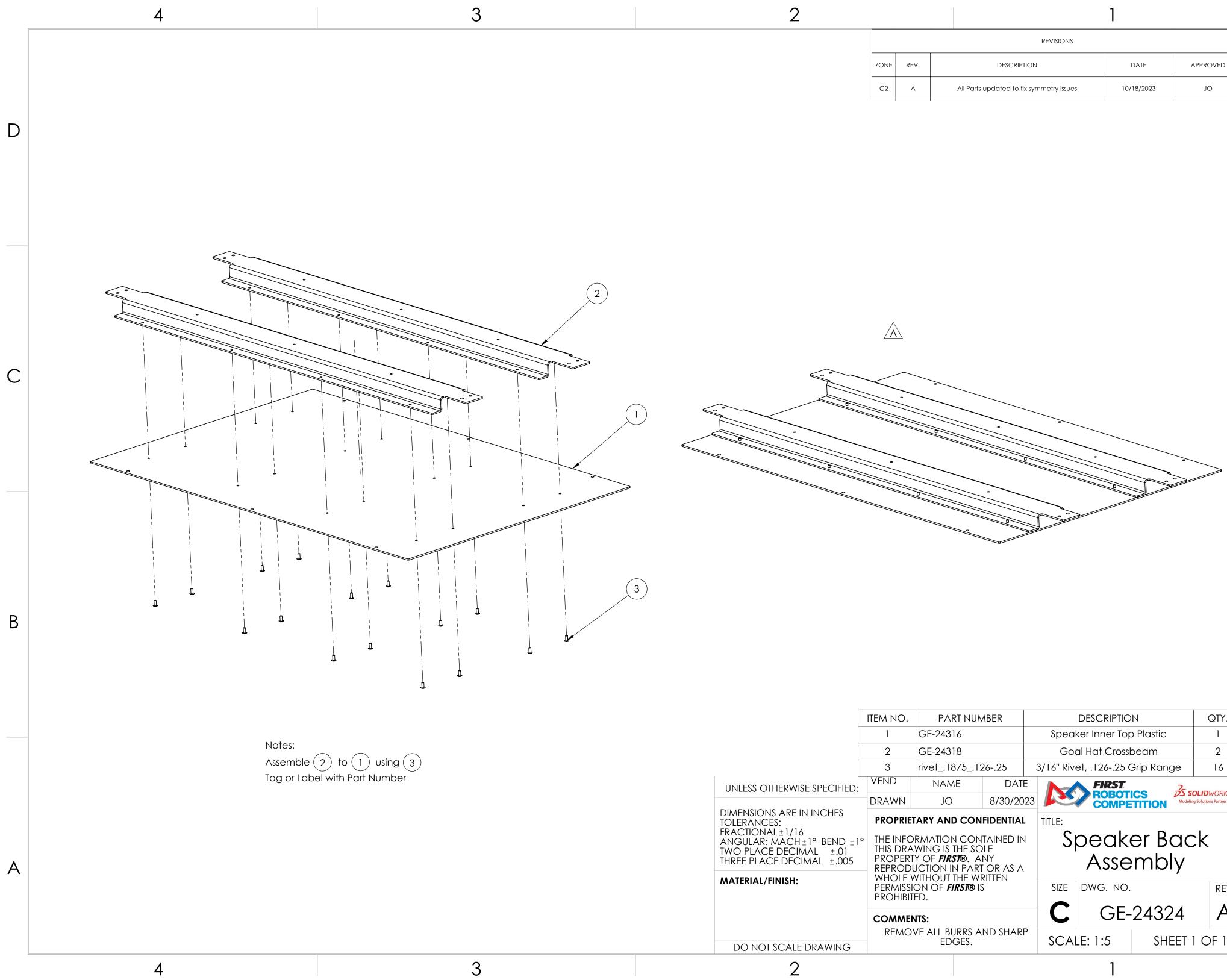
F				1					
	ITEM NO.	PART NU	MBER		DESCRIPTION			QTY.	
	1	GE-24311			Speaker Side Sheetmetal			1	
	2	GE-24312			Speaker Top Side Plastic			2	
_	3	rivet18752	el10/52515/5		6" Aluminum Rivet, .251375 Grip Range			14	
UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DAT	E		FIRST.	25.50	LIDWORKS	
	DRAWN	JO	8/30/20	23		<b>ROBOTI</b> COMPE		Solutions Partner	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTI THE INFORMATION CONTAINED THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS WHOLE WITHOUT THE WRITTEN			1	<sup>TLE:</sup> S		er Side mbly	e	A
MATERIAL/FINISH:	-	ON OF FIRST® I			SIZE	DWG. NO.	0 40 0 0	REV	
		<b>NTS:</b> VE ALL BURRS A		P	C	GE-	24323		_
DO NOT SCALE DRAWING	EDGES.			SCAI	LE: 1:6	SHEET 1	OF 1		
2					1				



В

D

С



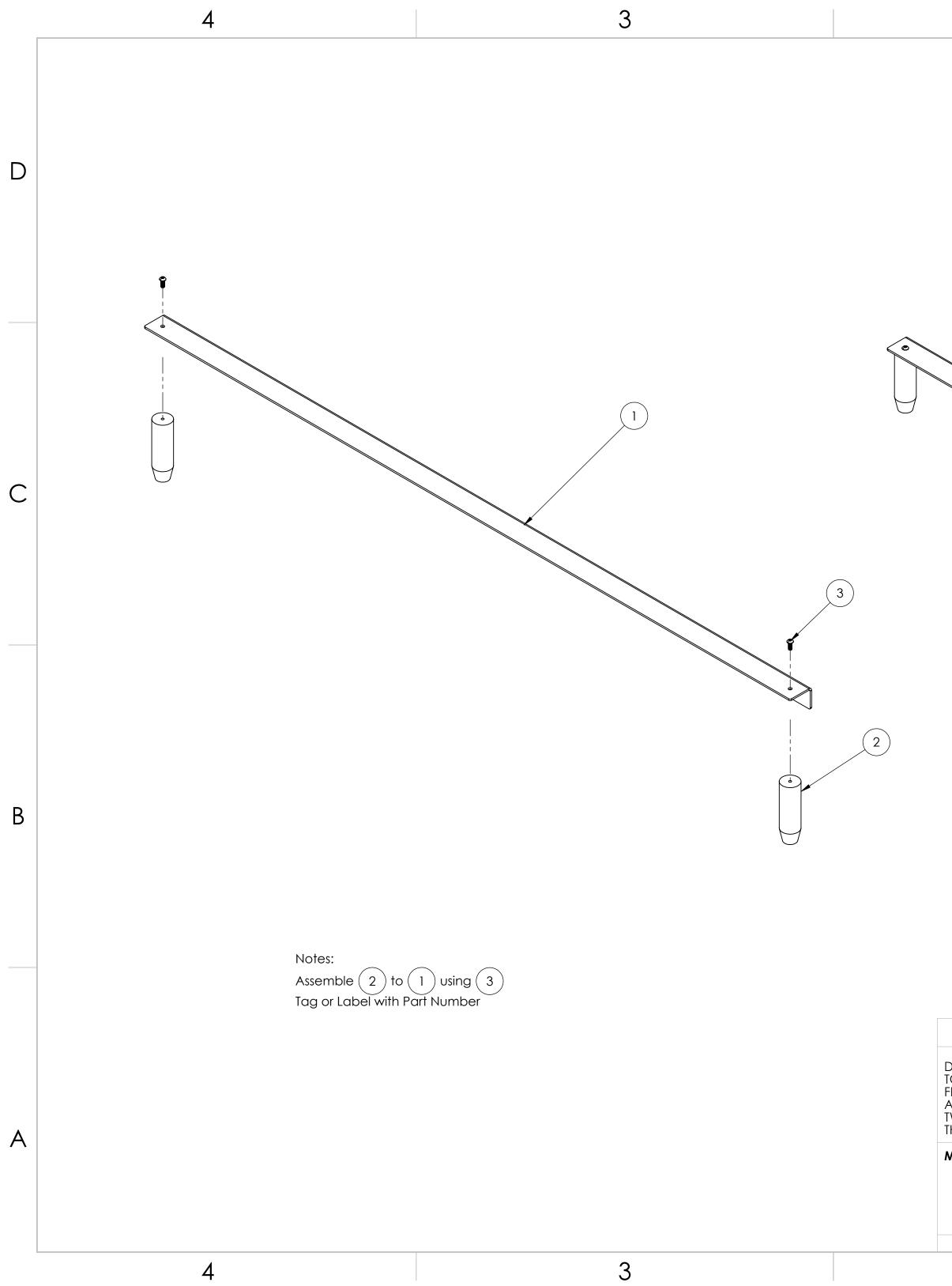
			I	
		REVISIONS		
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C2	А	All Parts updated to fix symmetry issues	10/18/2023	OL

D

С

В

	ITEM NO.	PART NUM	<b>ABER</b>		DESCRIPTIO	Ν	QTY.	
	1	GE-24316		Spea	Speaker Inner Top Plastic			
	2	GE-24318		Go	Goal Hat Crossbeam			1
	3	rivet187512	2625	3/16" Riv	3/16" Rivet, .12625 Grip Range			1
UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE		<b>FIRST</b>	25		1
	DRAWN	JO	8/30/202	3			SOLIDWORKS eling Solutions Partner	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ±1 TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH:	<ul> <li>THE INFC THIS DRA PROPERT REPROD WHOLE V PERMISSI</li> </ul>	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <i>FIRST</i> ®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <i>FIRST</i> ® IS PROHIBITED.			DWG. NO.	mbly	REV	
	<b>NTS:</b> VE ALL BURRS A	ND SHARP	C		24324		_	
DO NOT SCALE DRAWING	EDGES.		SCA	LE: 1:5	SHEET	1 OF 1		
2					1			-

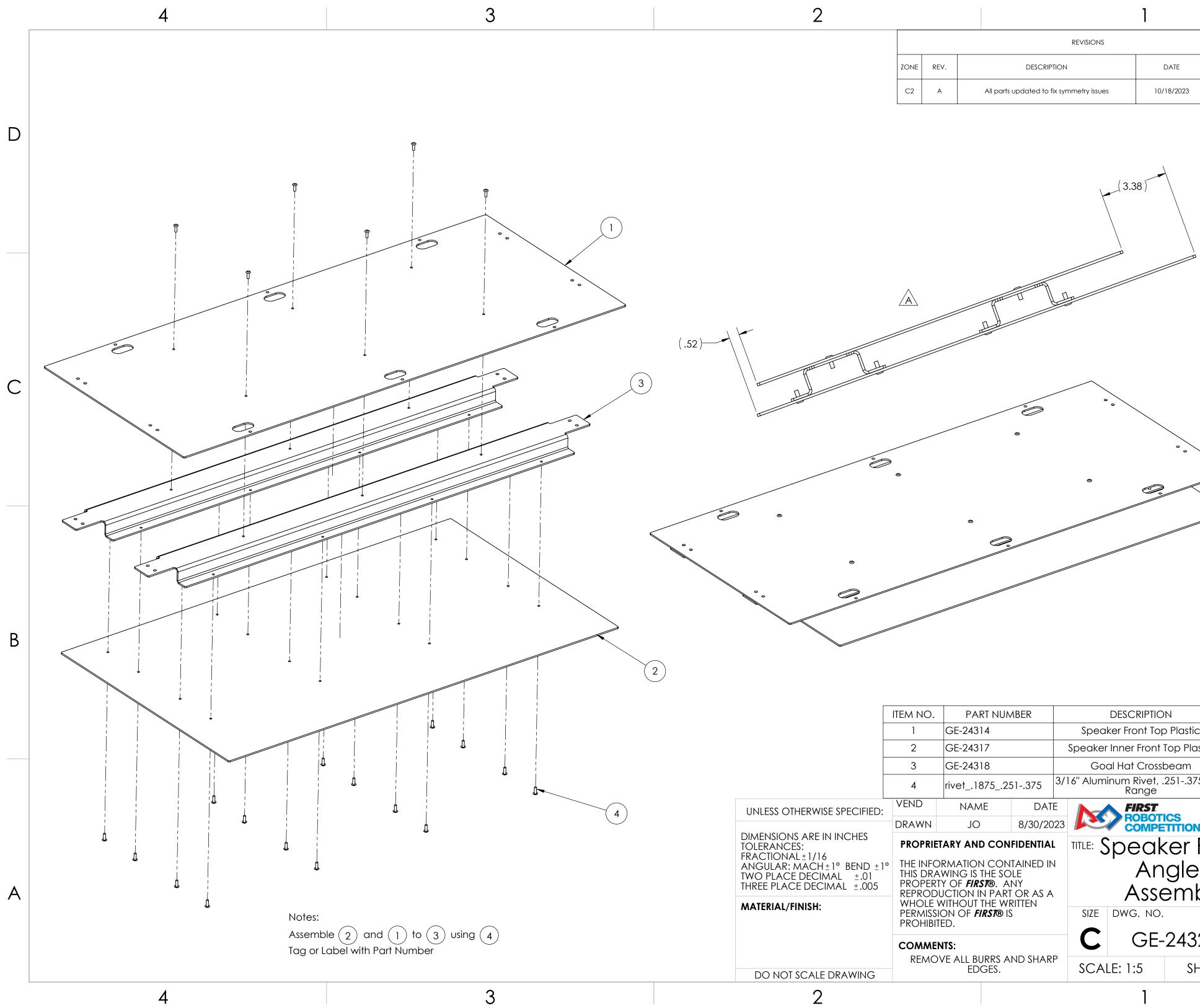


	ITEM NO.	PART NUN	<b>/</b> BER		DESCRIPTIC	N	QTY.	
	1	GE-24305		Briwe	eld Field Cro	ssbeam	1	]
	2	FE-00060			Top Rail, Pc	ost	2	1
	3	button_hex2 25			/4-20 x 5/8" Long Button Head Cap Screw			
UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DAT	E	FIRST.	25.50	<b>DLID</b> WORKS	1
	DRAWN	JO	8/30/20	23	<b>ROBOT</b> COMPE		Solutions Partner	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ±1 TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH:	<ul> <li>THE INFC THIS DRA PROPERT REPROD WHOLE V</li> </ul>	TARY AND CON ORMATION CON WING IS THE SC IY OF <b>FIRST®</b> . A UCTION IN PART WITHOUT THE WE ON OF <b>FIRST®</b> IS	TAINED IN DLE NY OR AS A RITTEN	1	Crossbeam			A
	PROHIBIT		)		DWG. NO.		REV	
	COMME	NTS:		C	GE-	24325		
	VE ALL BURRS A EDGES.	ALL BURRS AND SHARP		LE: 1:5	SHEET 1	OF 1	-	
DO NOT SCALE DRAWING								
2				1				

D

С

В



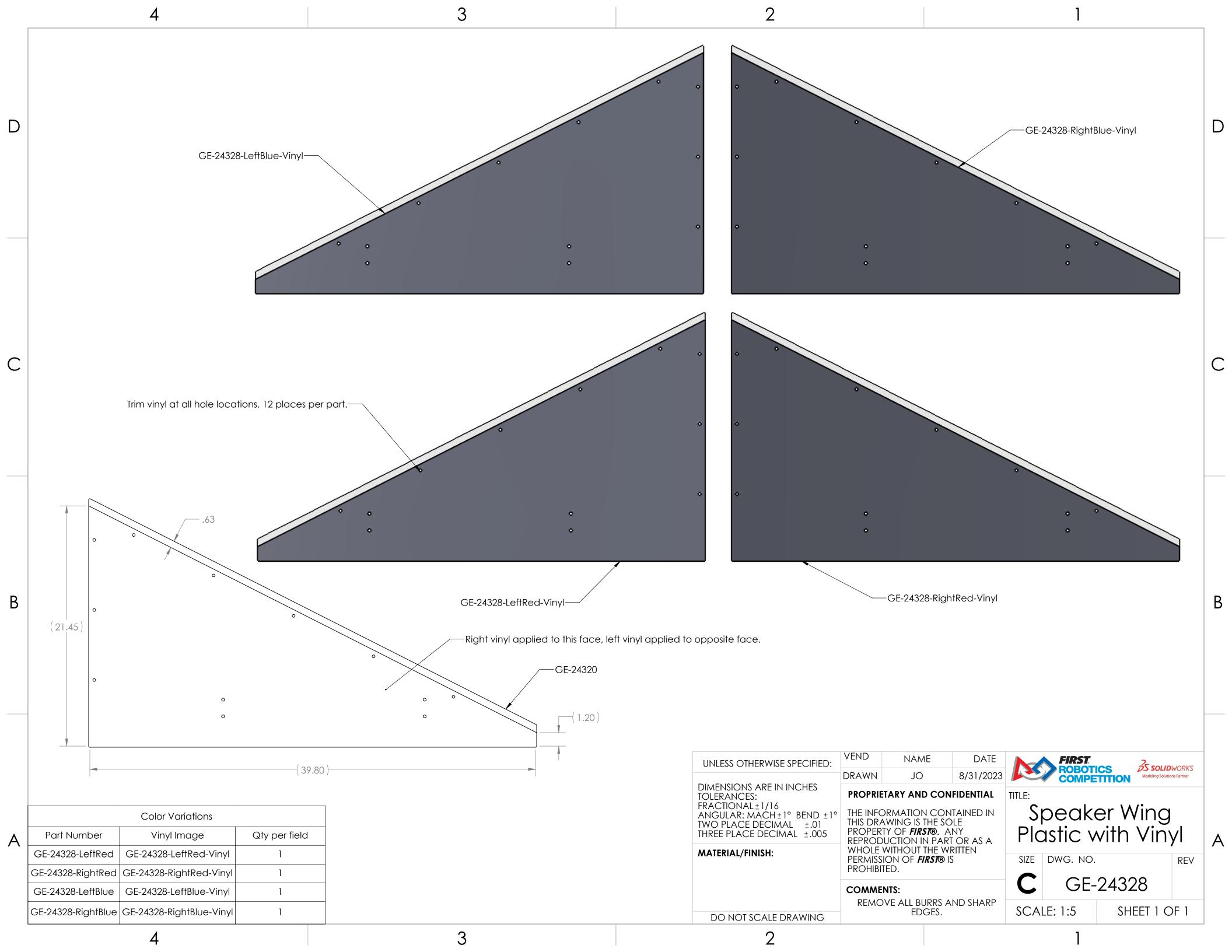
			•								
	REVISIONS										
ZONE	REV.	DESCRIPTION	DATE	APPROVED							
C2	A	All parts updated to fix symmetry issues	10/18/2023	OC							

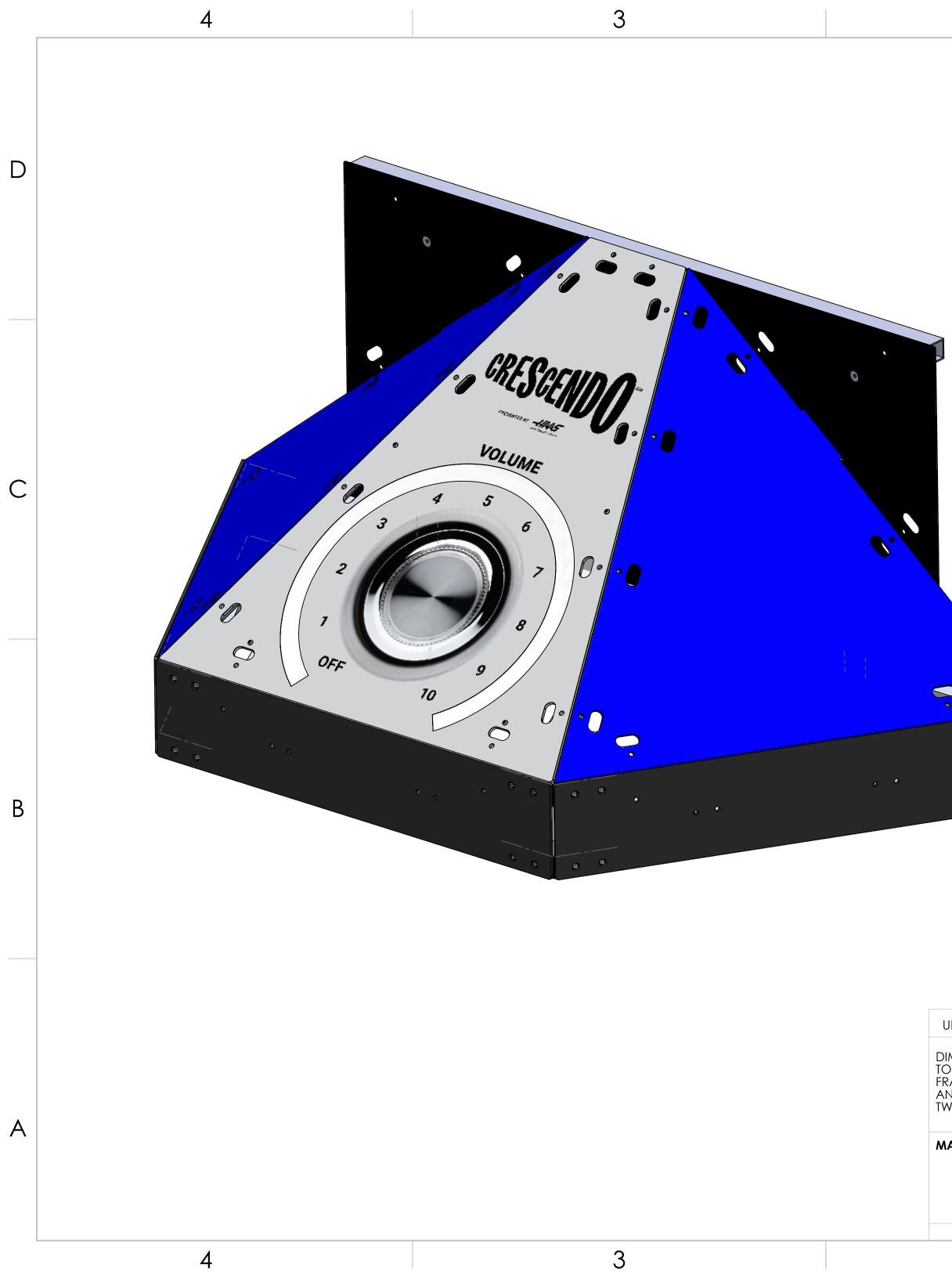
	ITEM NO.	PART NU	JMBER		DESCRIPTIO	N	QTY.	
	1	GE-24314		Spea	ker Front Top	Plastic	1	
	2	GE-24317		Speaker	Inner Front 1	op Plastic	1	
	3	GE-24318		Go	al Hat Crossk	2		
	4	rivet1875	rivet1875251375		3/16" Aluminum Rivet, .251375 Grip Range			
UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DAT	E	<b>FIRST</b>		SOLIDWORKS	
	DRAWN	JO	8/30/20				deling Solutions Partner	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/16	PROPRIE	TARY AND CO	NFIDENTIA	L TITLE: S	Speaker Hom			
ANGULAR: MACH±1° BEND±1 TWO PLACE DECIMAL ±.01	THIS DRA	ORMATION CO AWING IS THE S	OLE	1				
THREE PLACE DECIMAL ±.005	REPROD	TY OF <b>FIRST®</b> . UCTION IN PA	rt or as a	<b>\</b>				
MATERIAL/FINISH:		without the v Ion of <b>First</b> ®		SIZE	DWG. NO.		REV	-
	PROHIBI	TED.				~ . ~ ~	•	
	COMME	NTS:			GE-	24326	A	
	REMO	REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:5 SHEET 1 OF			-
do not scale drawing								
-					_			

В

D

С





0	
٢	•
	•

ITEM NO.

1

2

2

			-						-
	3	GE-243	33		Su	bwoofer Sic	le Panel	2	4
	4	GE-2433	35		S	ubwoofer B	umper	3	
	5	GE-2433	36		Sub	woofer Sm	all Frame	3	
	6	GE-2433	38		Sub	woofer Bac	k Bracket	4	
•	7	GE-2433	GE-24339		Front Subwoofer Bracket			4	1
	8	GE-2434	41		Sub	woofer Sup	port Pipe	2	1
۰	9	GE-2434	42		Subw	oofer Back Bracke		1	B
	10	GE-2434	43		Subwoof	er Middle P	anel with Vinyl	1	
	11	GE-2434	45		Subwoo	ofer Light Po	nel Assembly	1	
	12	Configu	urable	Bolt	.75" Long	1/4-20 Butt Screw	on Head Cap	8	
	13	Configu	vrable	Bolt	2.25" Lo	2.25" Long 1/4-20 Hex Head Bolt			
	14	nylock_	nylock25_20			on-Insert Lc	cknut, 1/4''-20	24	
	15	Threade	91780A363_Female Threaded Hex Standoff			Threaded I 1/4-20 x 1"	Hex Standoff, Long	4	- 
	16	98320A	98320A143		Zinc-Plat	ed Steel Rir Release	ng-Grip Quick- Pin	2	-
UNLESS OTHERWISE SPECIFIED:	FIELD	NAM	1E						
	DRAWN	OL /		11/1/20	023 尾			Solutions Partner	
DIMENSIONS ARE IN INCHES OLERANCES: RACTIONAL±1/2		RIETARY ANI							_
NGULAR: MACH±1° BEND ±1 WO PLACE DECIMAL ±.50	THIS D PROPE REPRO	Formation Rawing IS Erty of <b>Fir.</b> Dduction I	the SC <b>St</b> ®. A N PAR	dle Ny T OR AS A		200,	woofer		A
AATERIAL/FINISH:		.e without Ssion of <b>f</b> i			SIZE	DWG. N	D.	REV	
	PROHI	BITED.					- 0 4000		
	AENTS:				GE	-24330			
		BURRS AND SHARP		P	SCALE: 1:6 SHEET				
DO NOT SCALE DRAWING		ED	ges.		307	NLL. 1.0	JILLI		
2						1			

PART NUMBER

GE-24331

GE-24332

DESCRIPTION

Wall Goal Frame Weldment

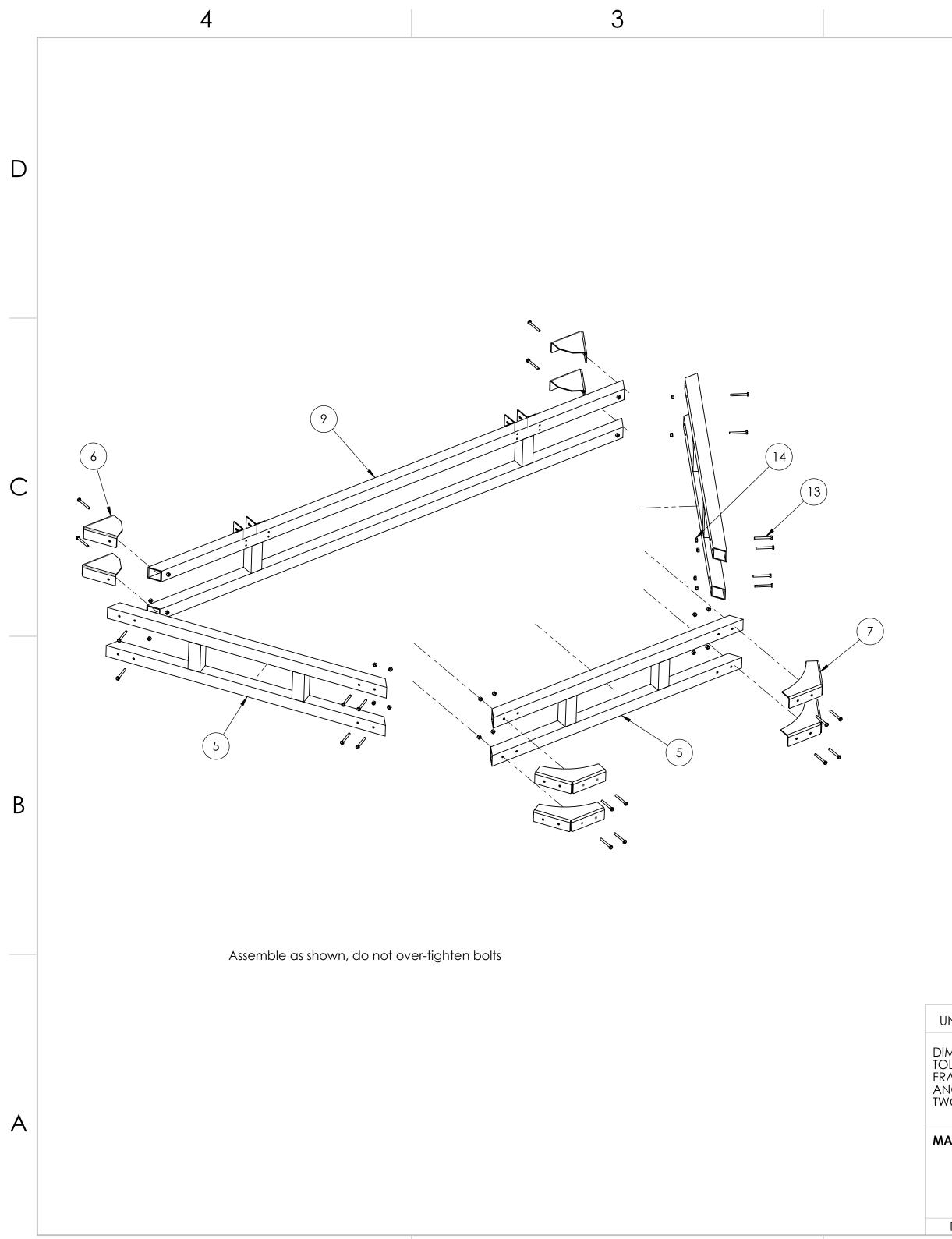
Subwoofer Backboard

D

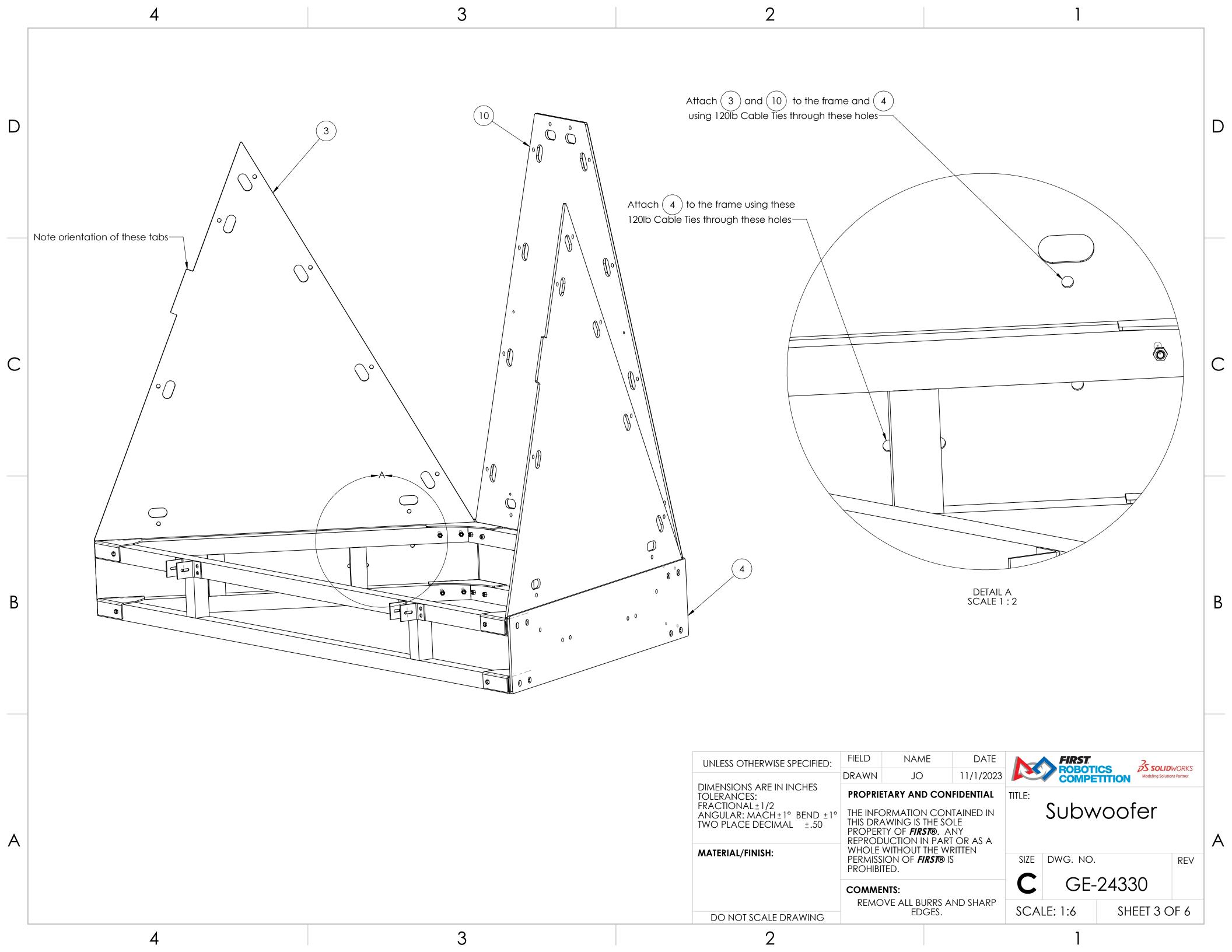
С

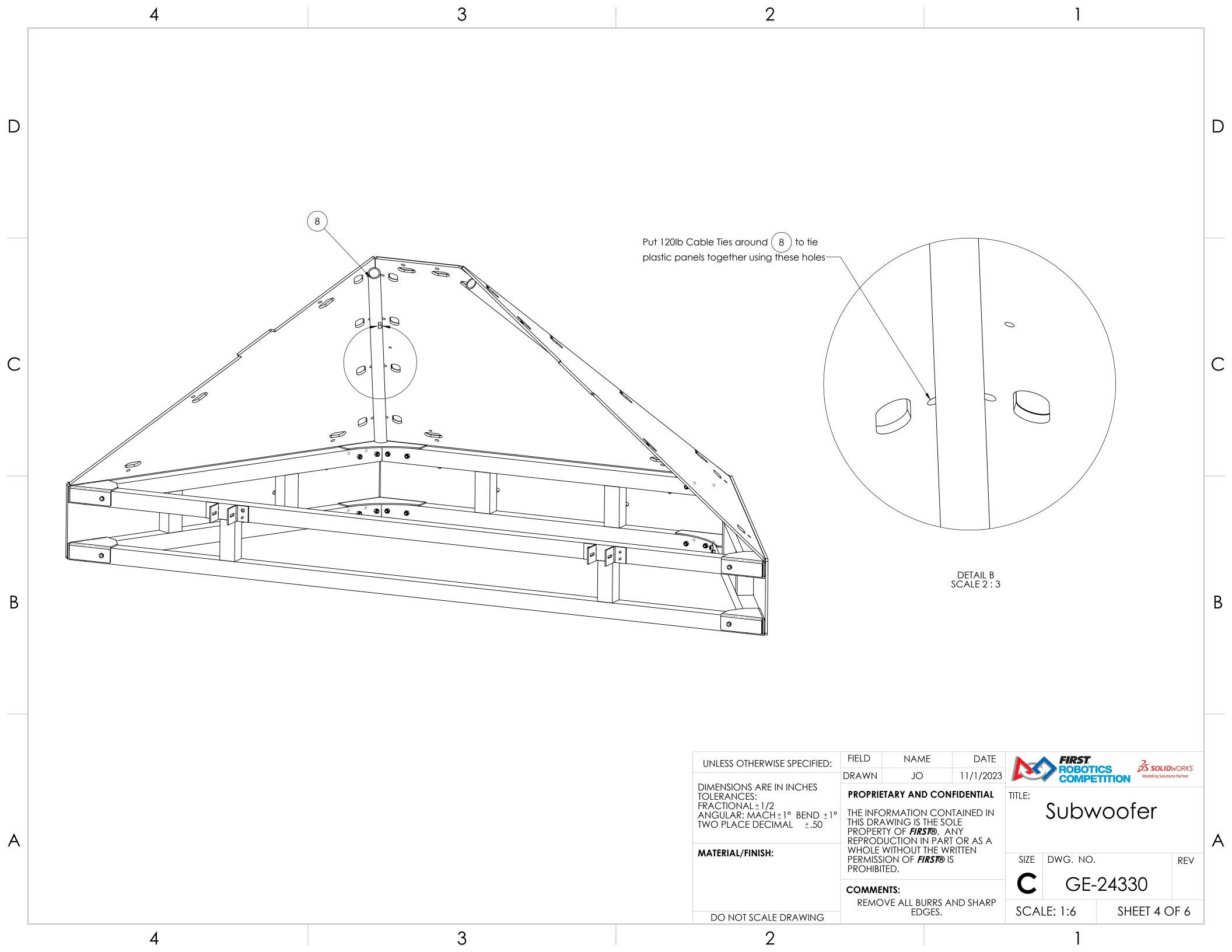
QTY.

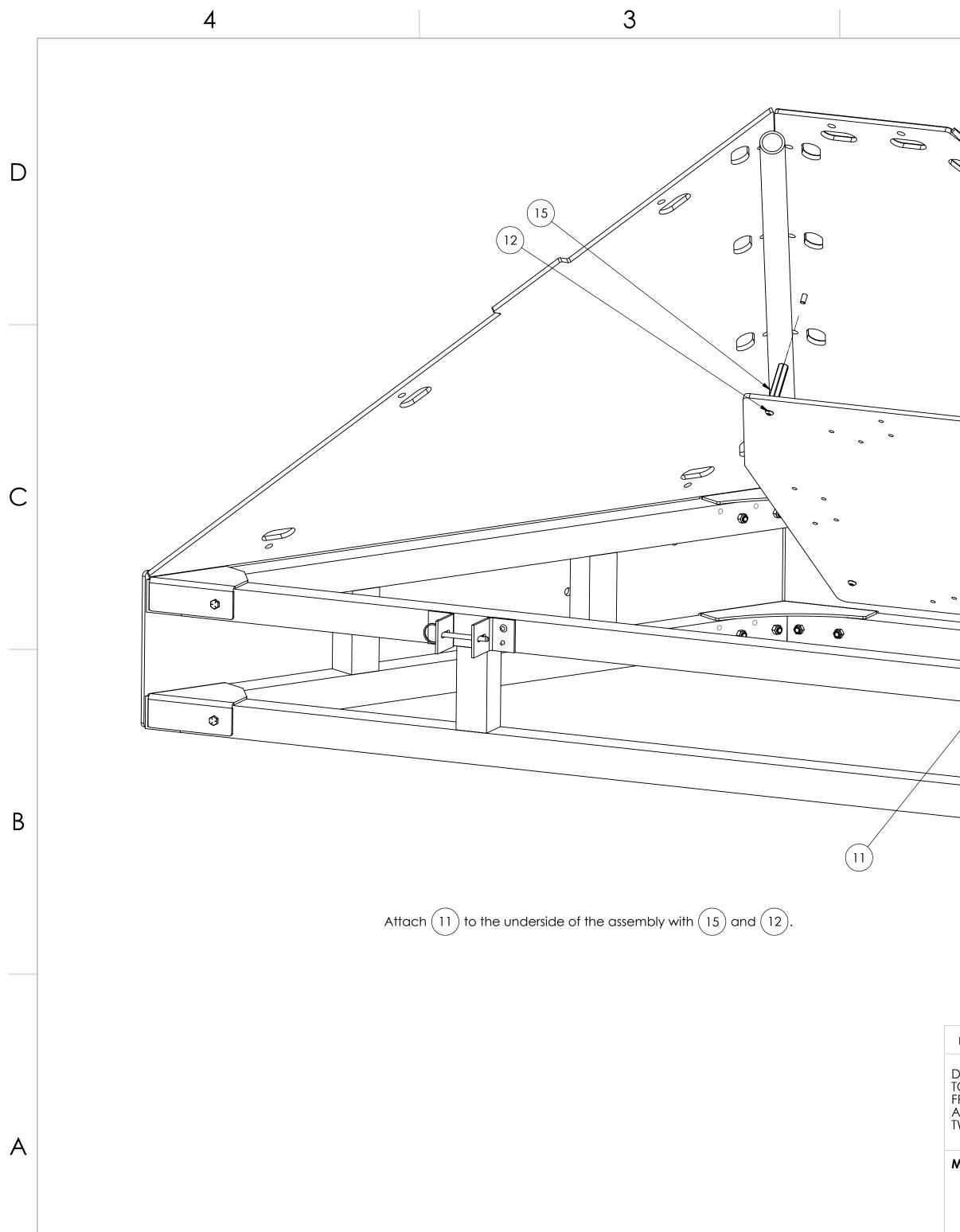
1



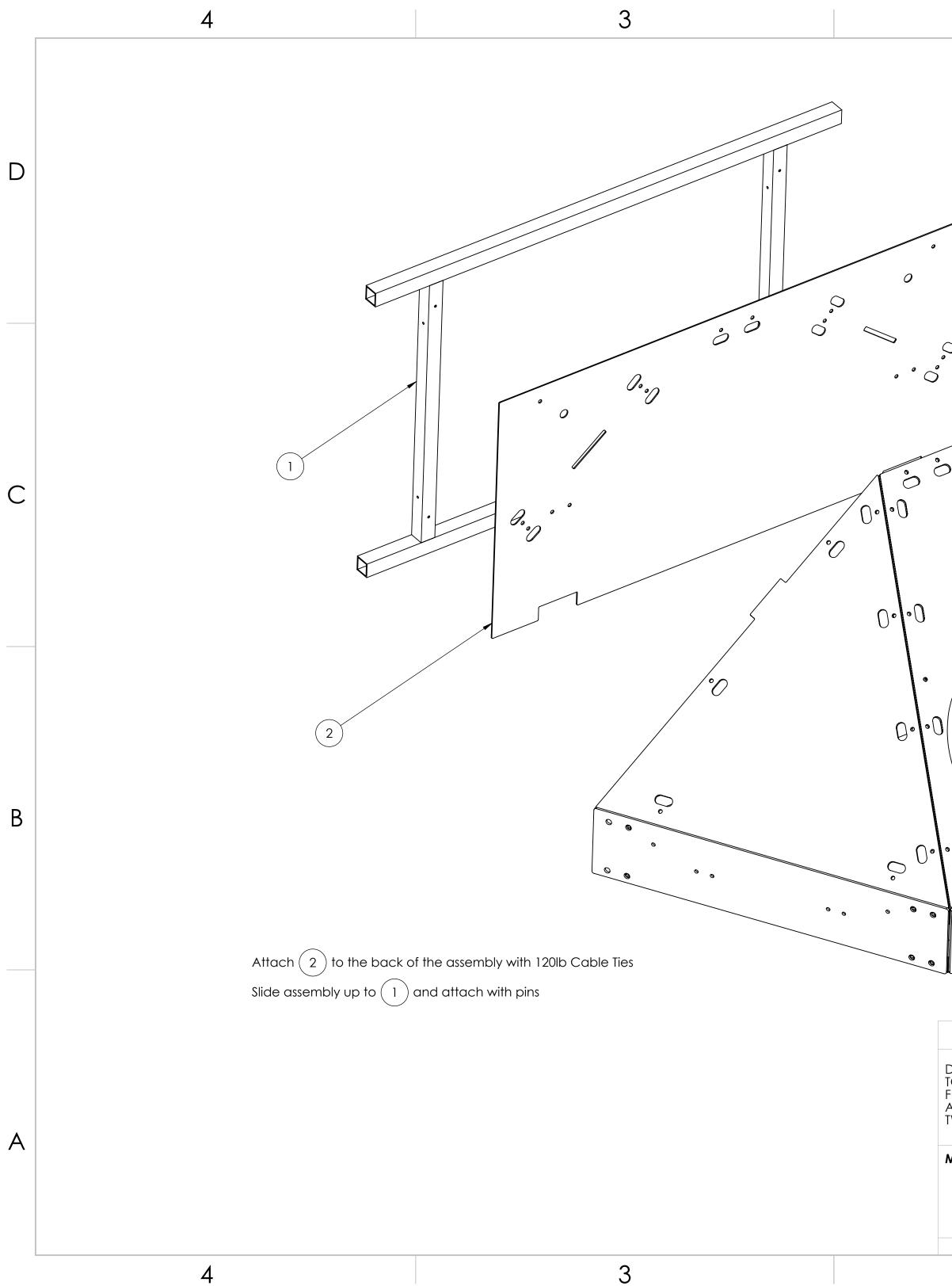
2			1	
				D
	•			С
				В
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES OLERANCES: RACTIONAL ± 1/2 NGULAR: MACH ± 1° BEND ± 1° WO PLACE DECIMAL ±.50 AATERIAL/FINISH: DO NOT SCALE DRAWING		11/1/2023 D CONFIDENTIAL N CONTAINED IN THE SOLE ST®. ANY N PART OR AS A THE WRITTEN	Size       Dwg. NO.       REV         GE-24330       Sheet 2 of 6	/ A



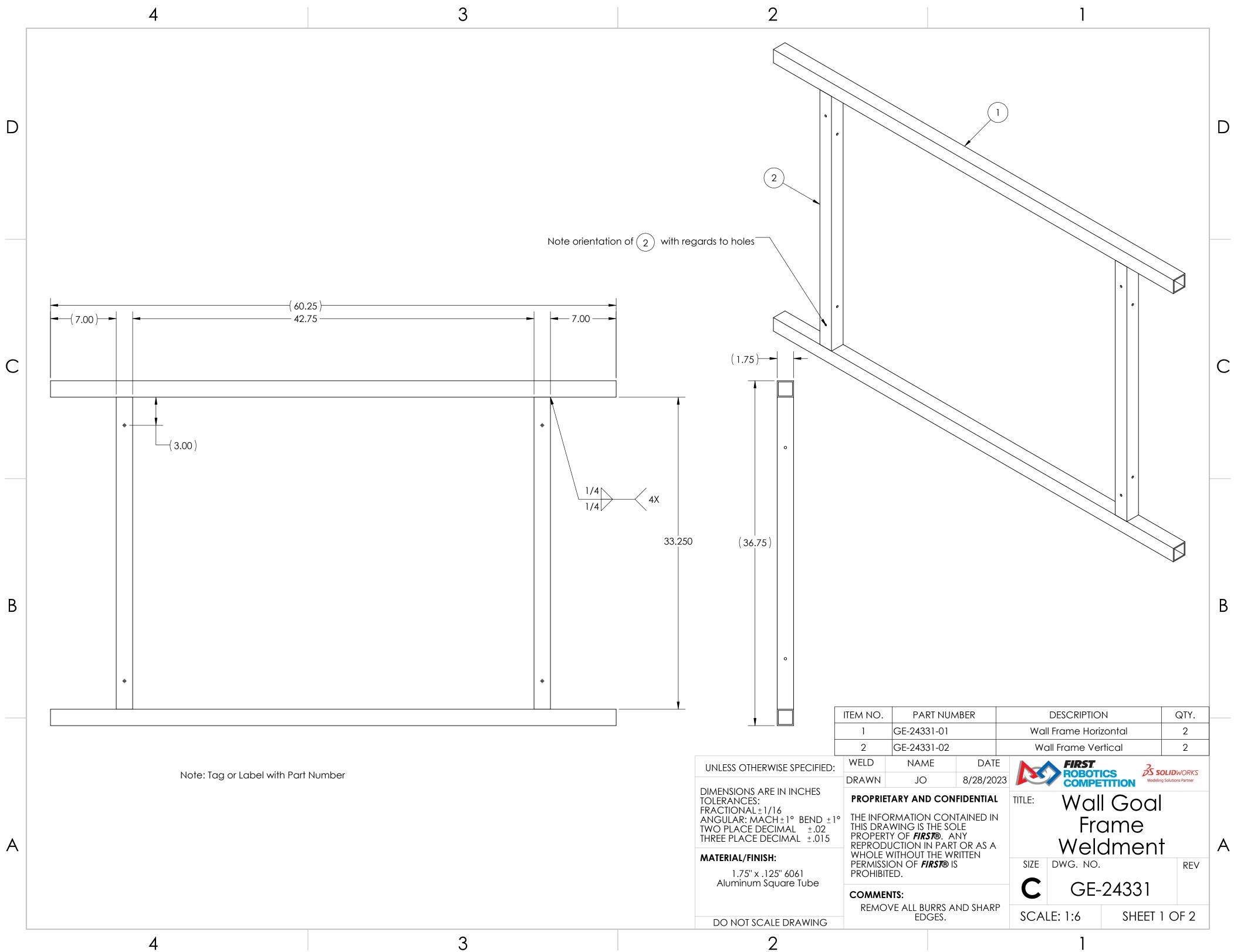


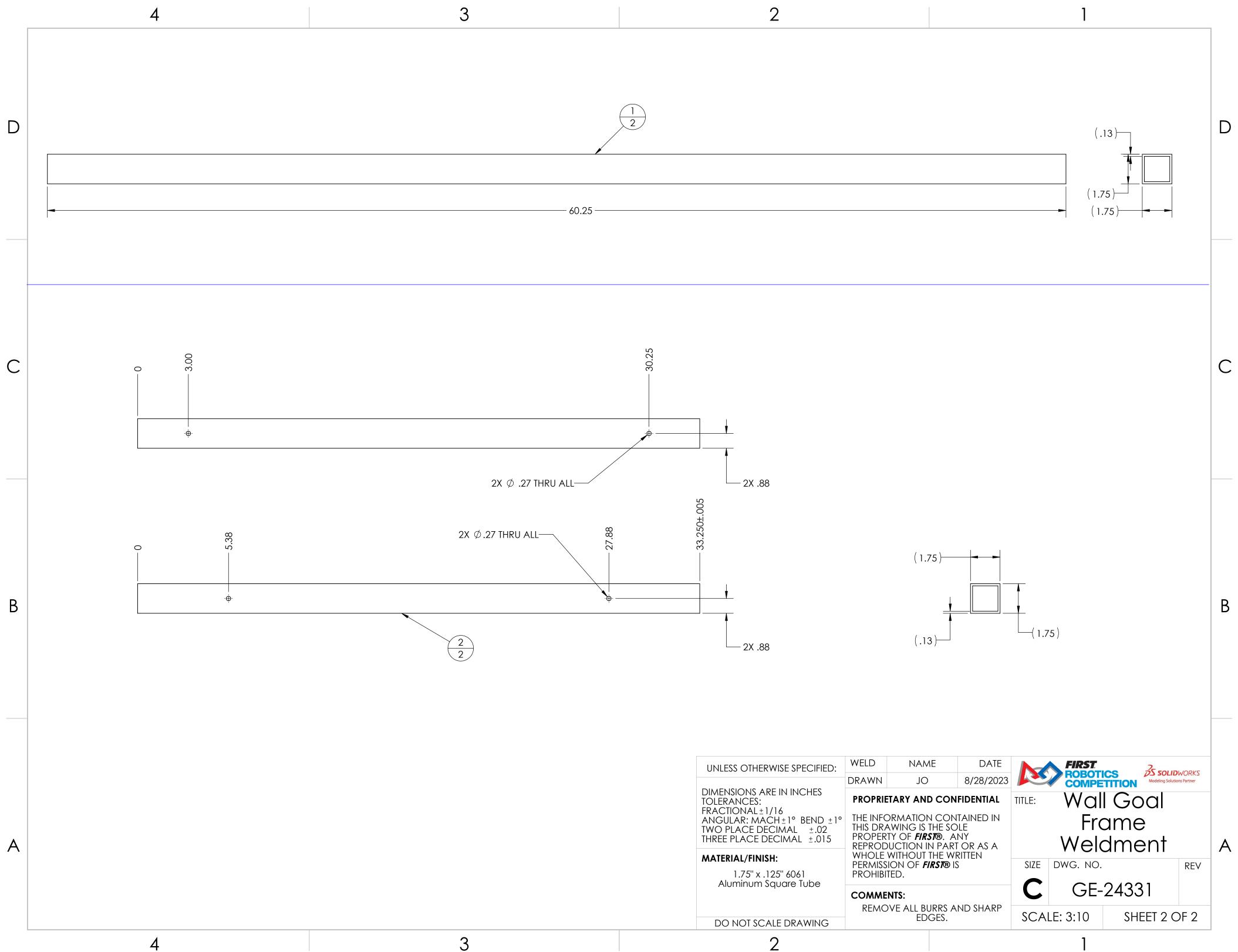


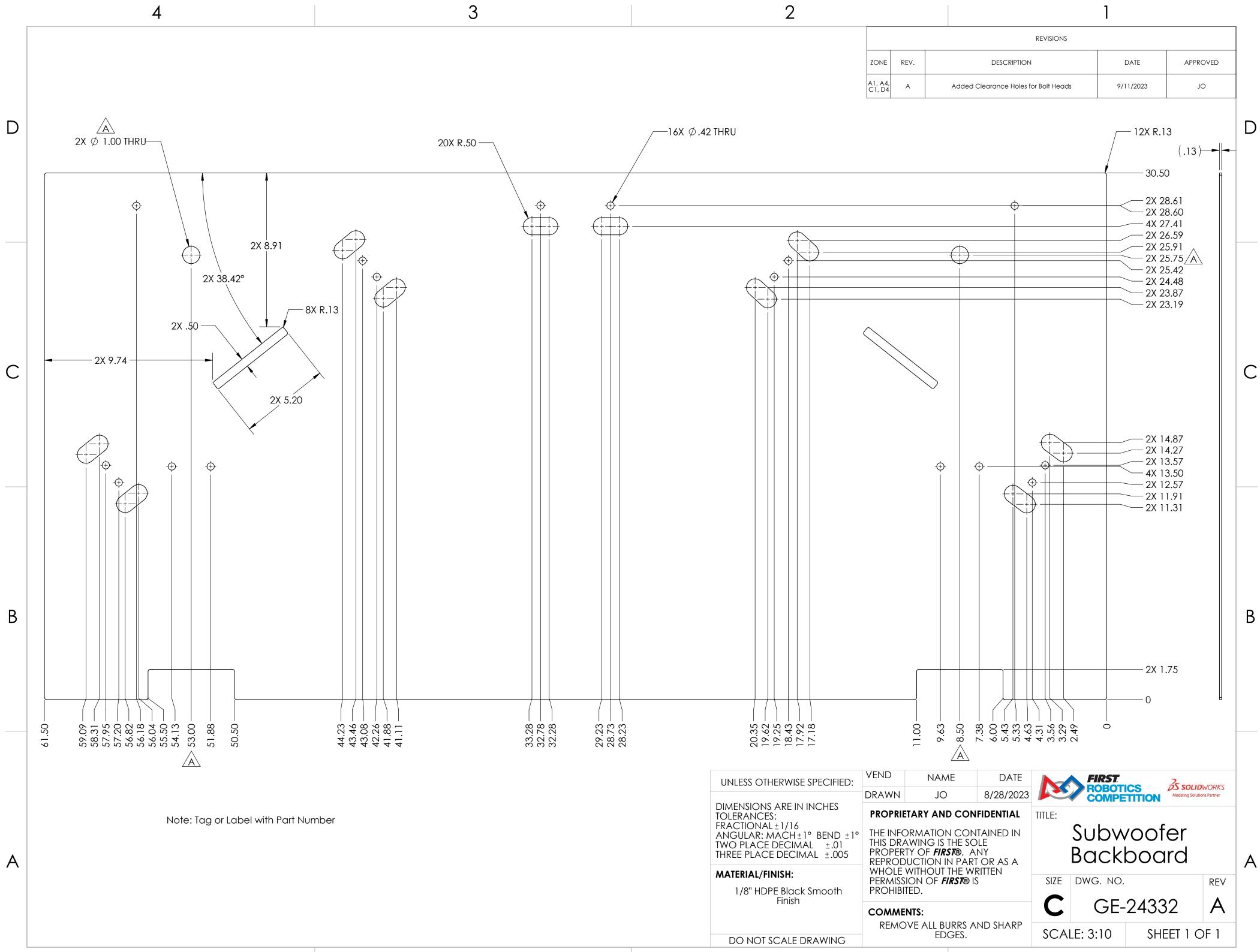
2					1			
								D
o o o o o o	0			0				С
								В
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/2 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.50 MATERIAL/FINISH:	THE INFO THIS DRA PROPER REPROD WHOLE	NAME JO TARY AND CONI ORMATION CON WING IS THE SO TY OF <i>FIRST®</i> . AT UCTION IN PART WITHOUT THE WR ION OF <i>FIRST®</i> IS IED.	TAINED IN LE NY OR AS A RITTEN	TITLE:	DWG. NO.	/oofer		A
do not scale drawing	COMME REMO	NTS: Ve all burrs at Edges.	ND SHARP	<b>C</b> SCAI	GE- LE: 1:4	24330 SHEET 5 C	DF 6	

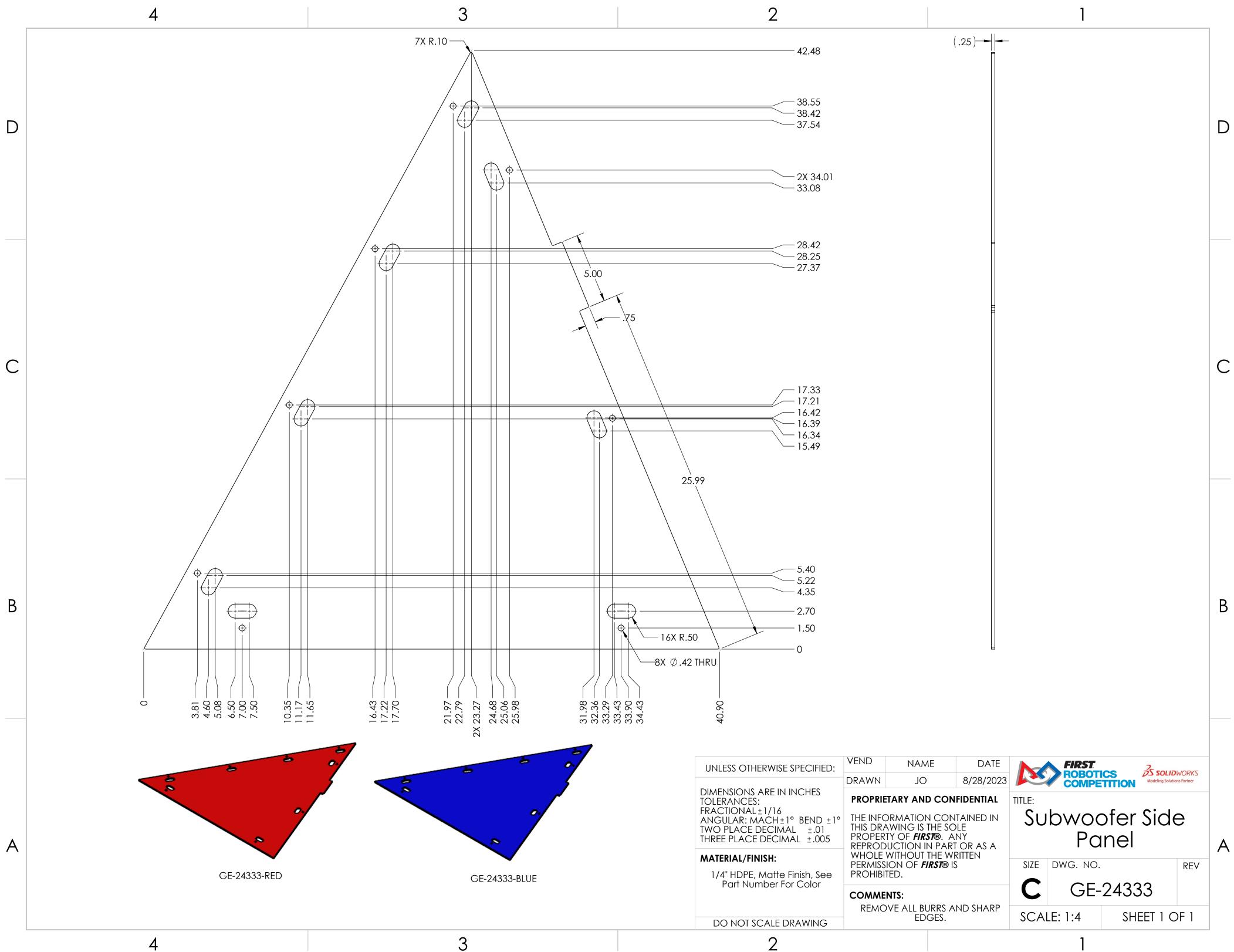


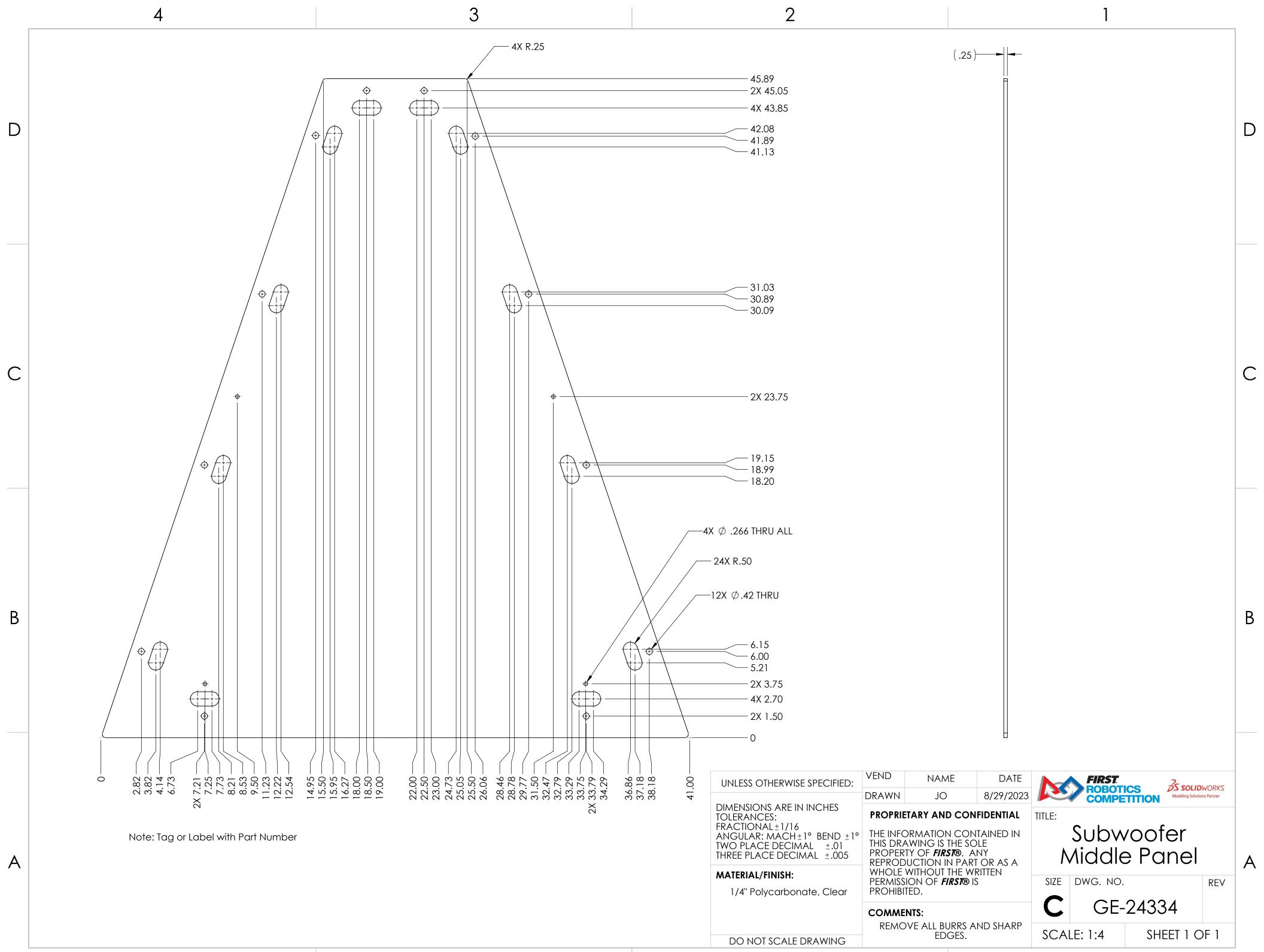
D  $\circ$ С Ø V°  $\bigcirc$ В • ()  $\mathcal{O}$ Ø 000 **FIRST** ROBOTICS COMPETITION FIELD NAME DATE UNLESS OTHERWISE SPECIFIED: Solidworks Modeling Solutions Partner PROPRIETARY AND CONFIDENTIAL TITLE:

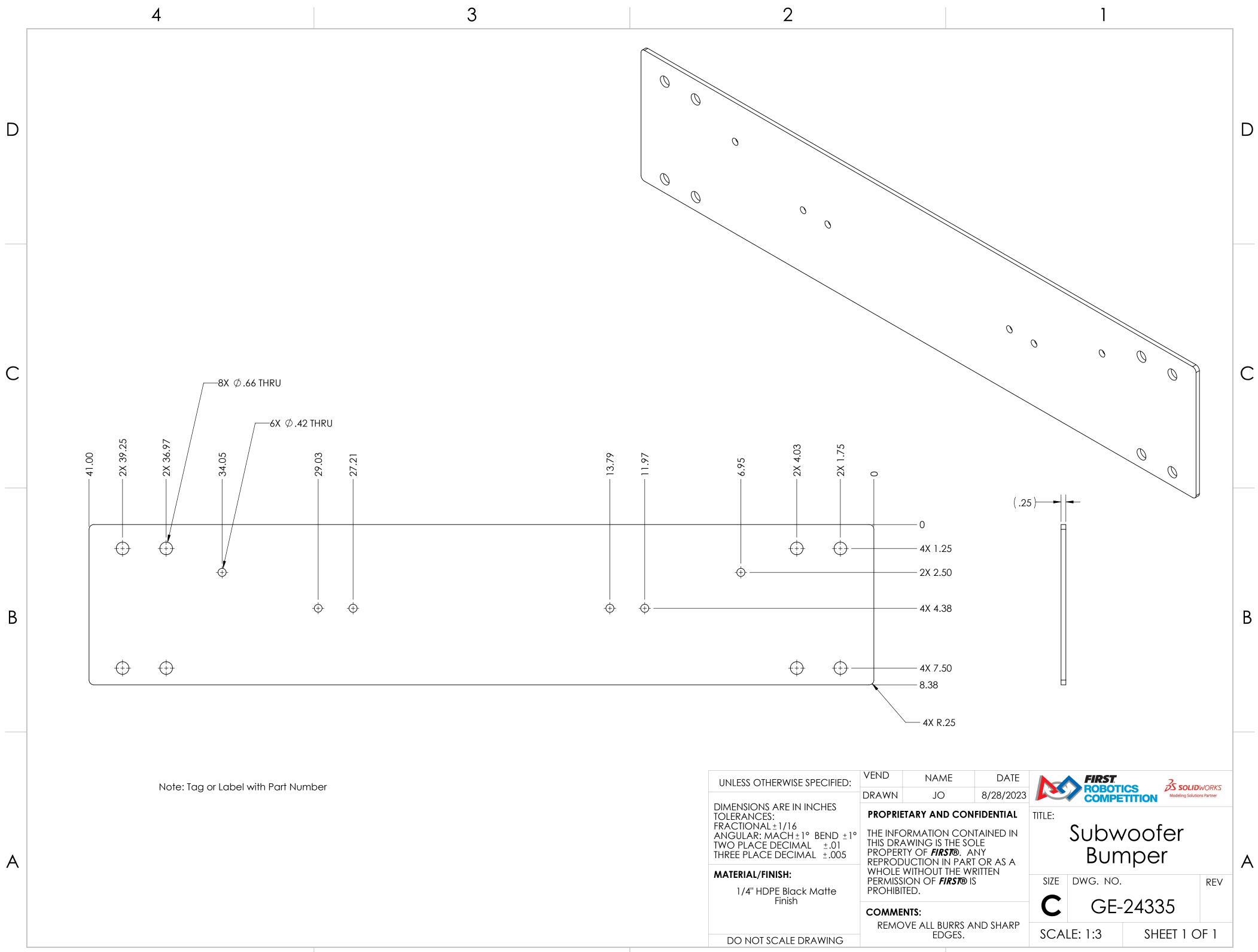


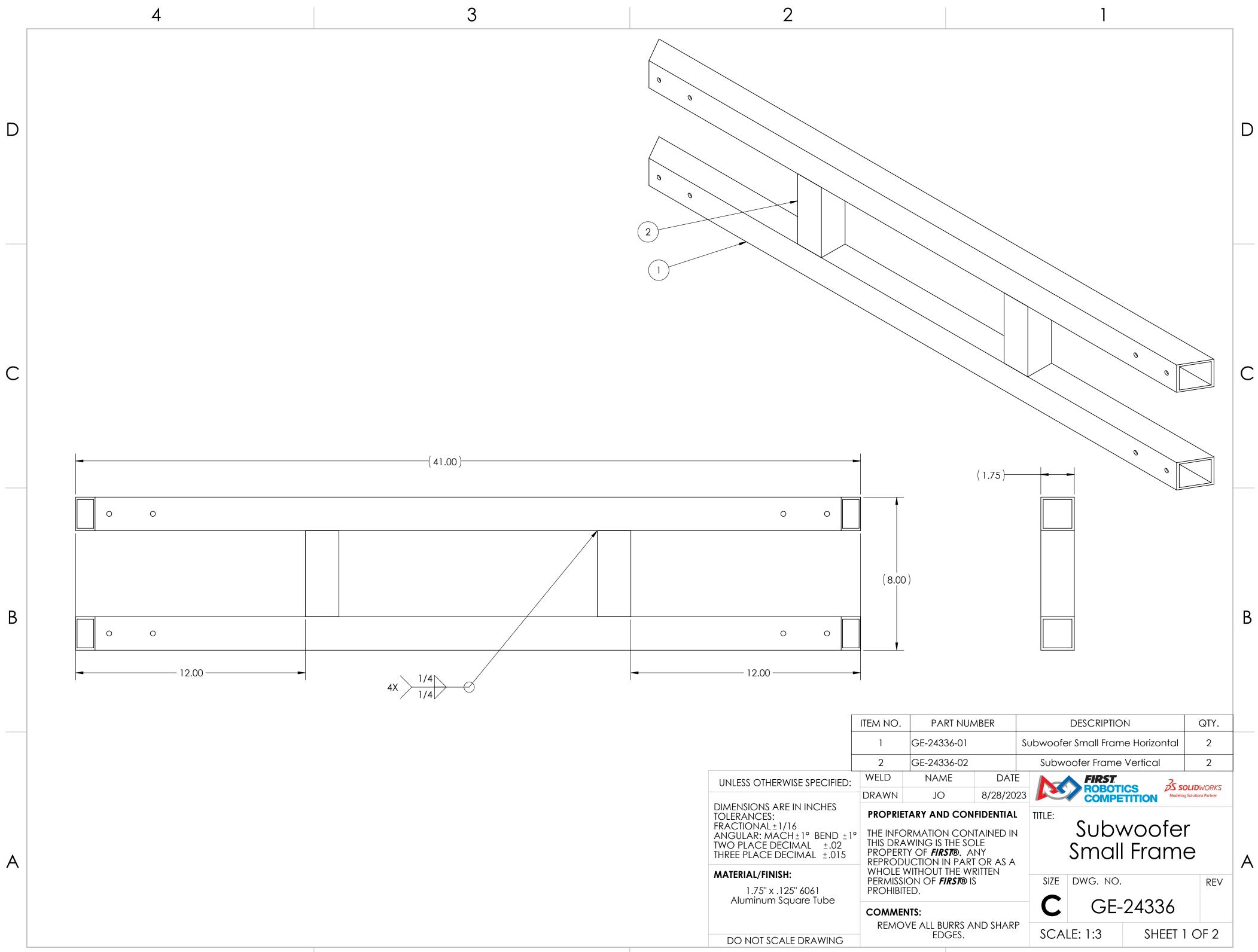


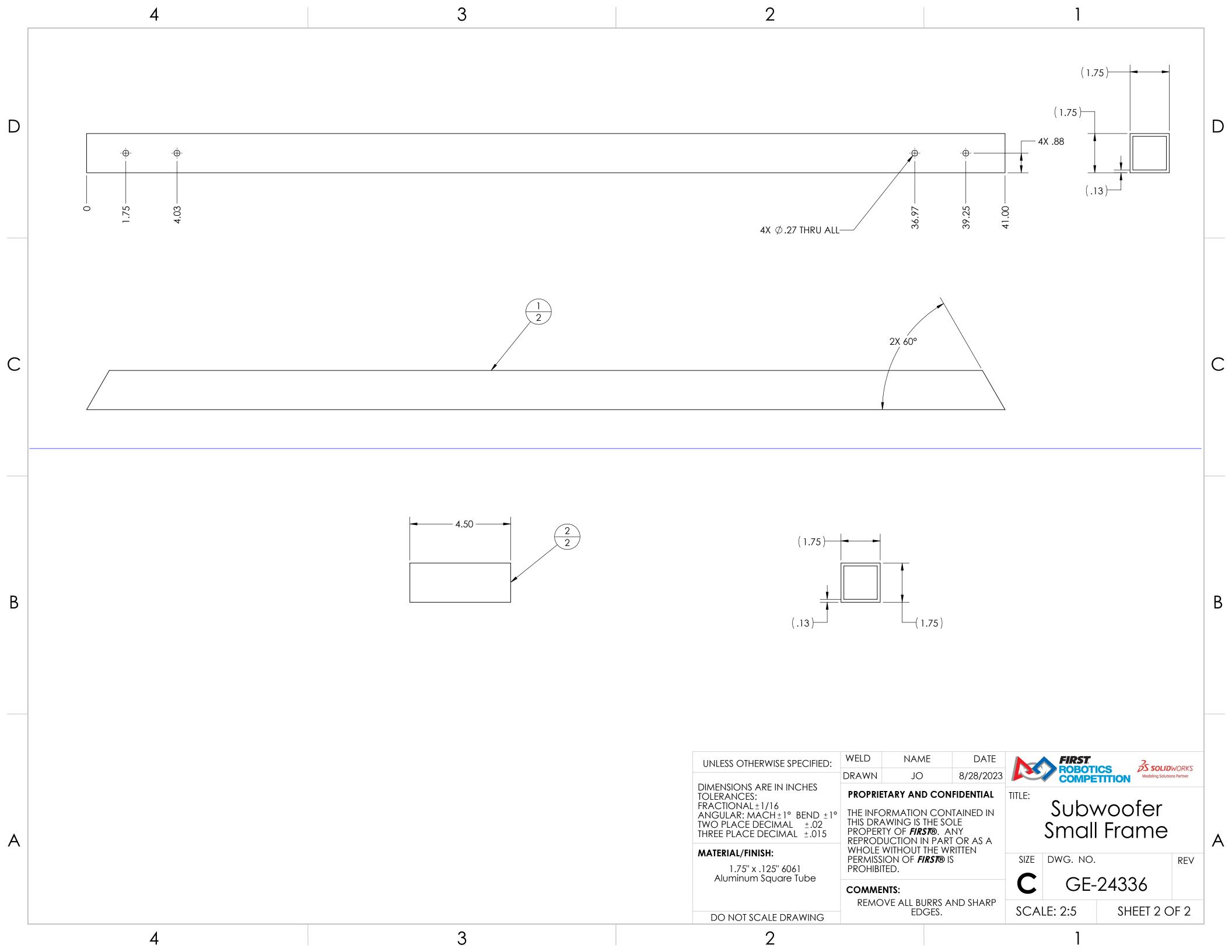


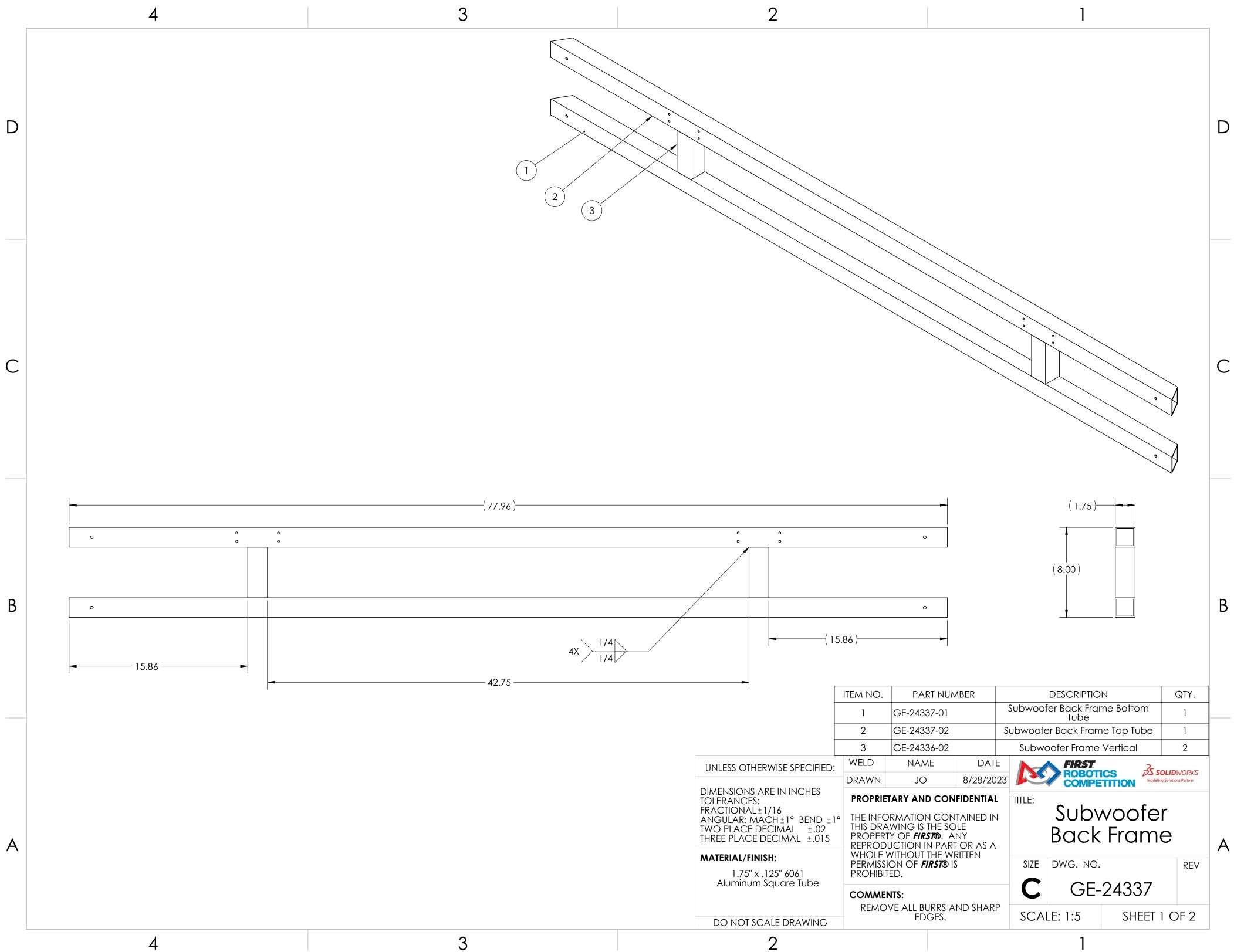


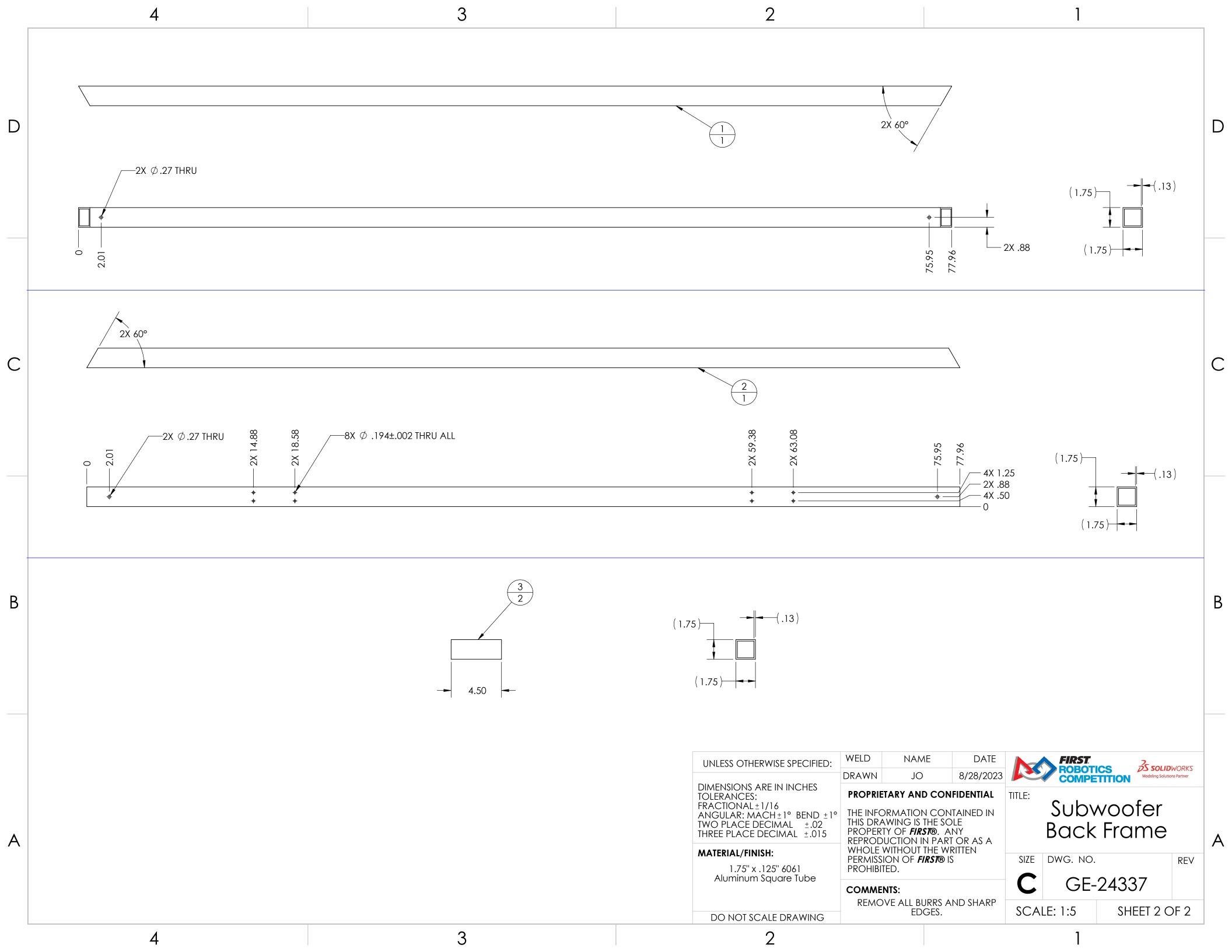


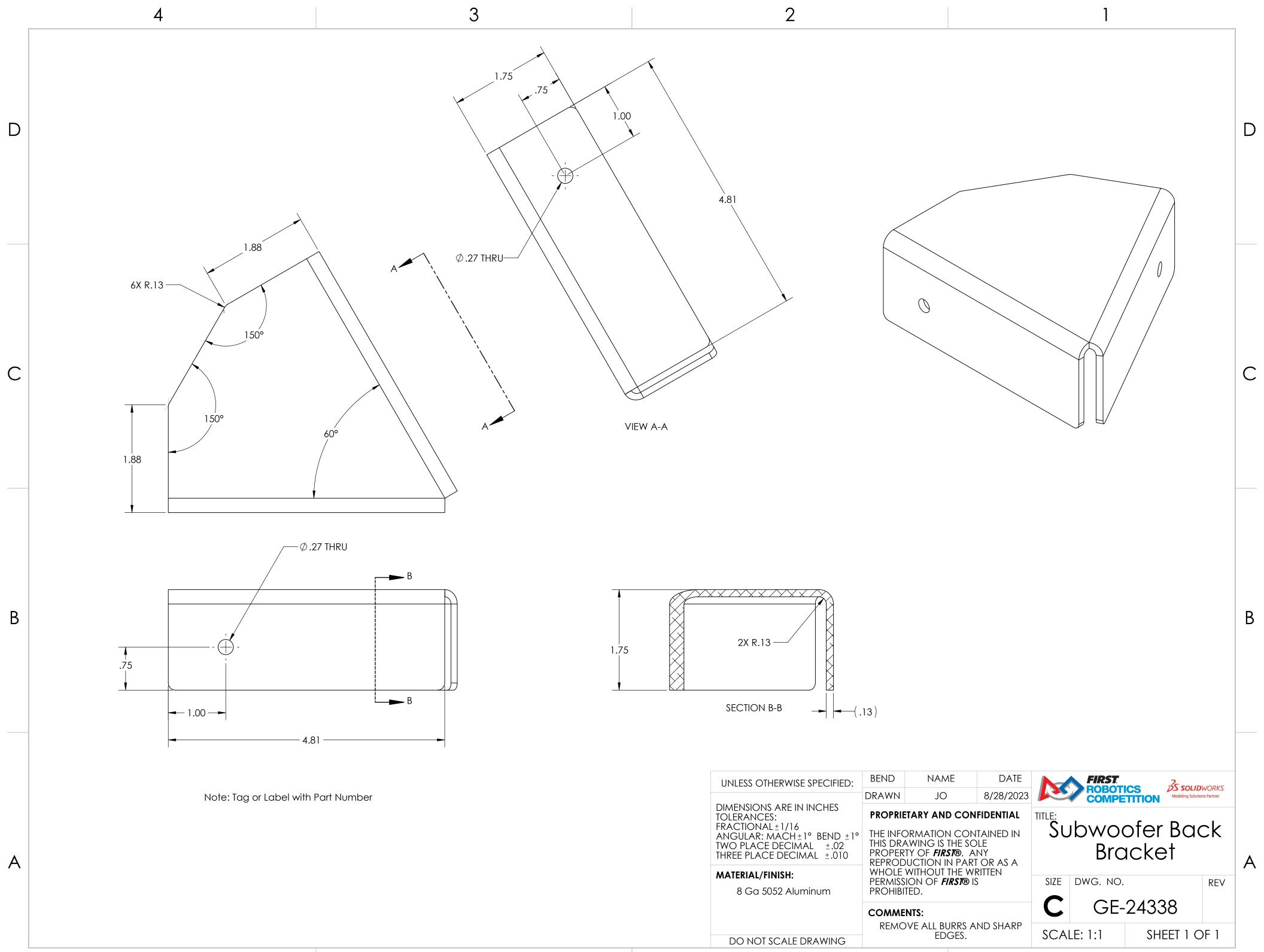


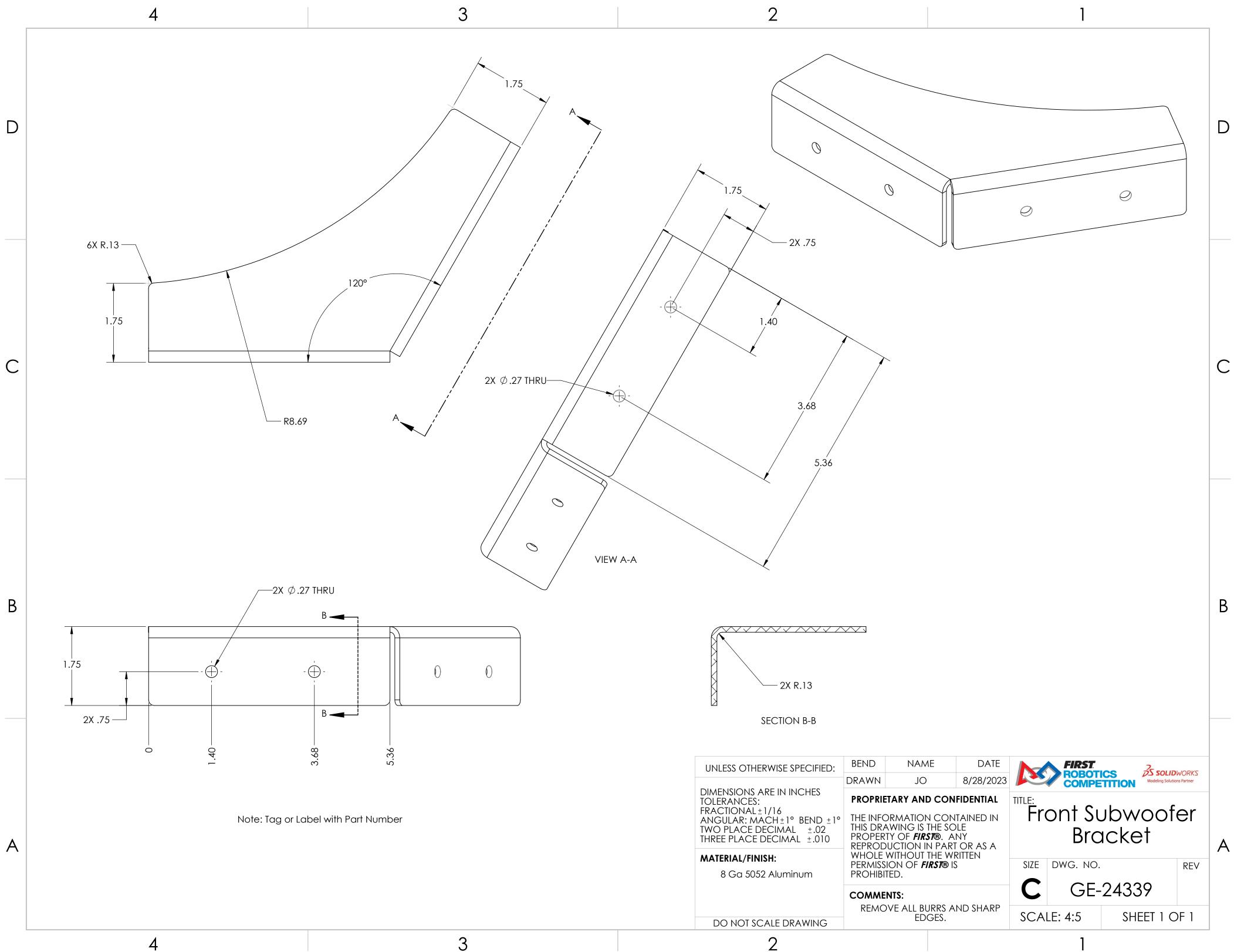












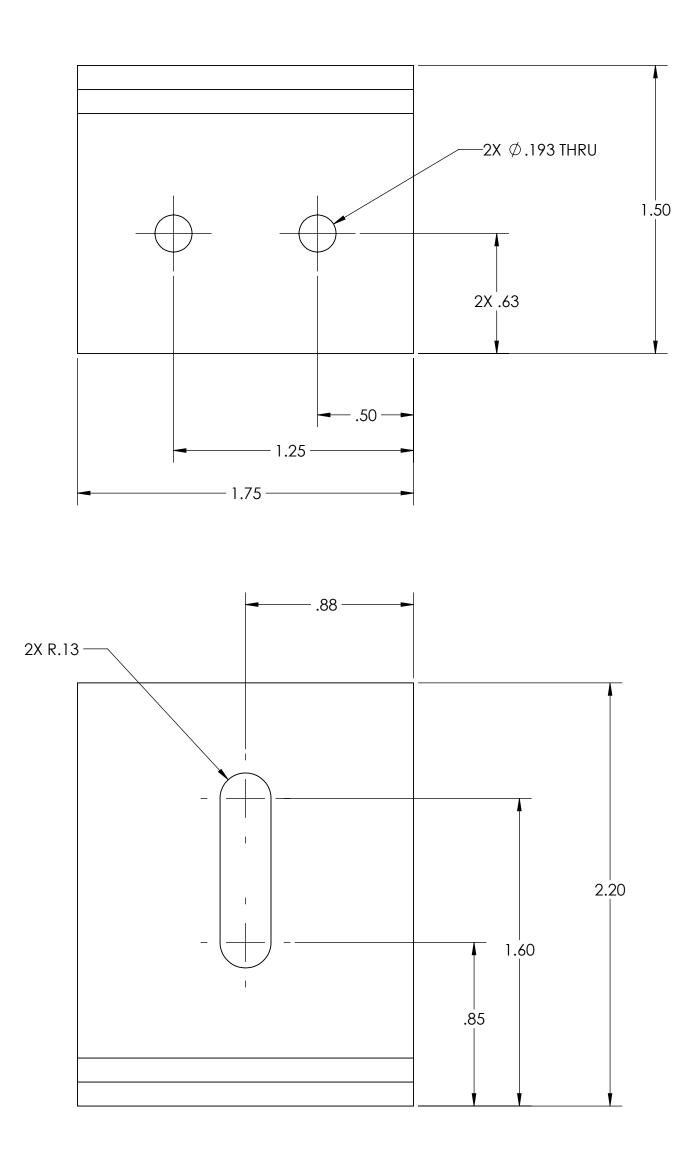
D

С

В

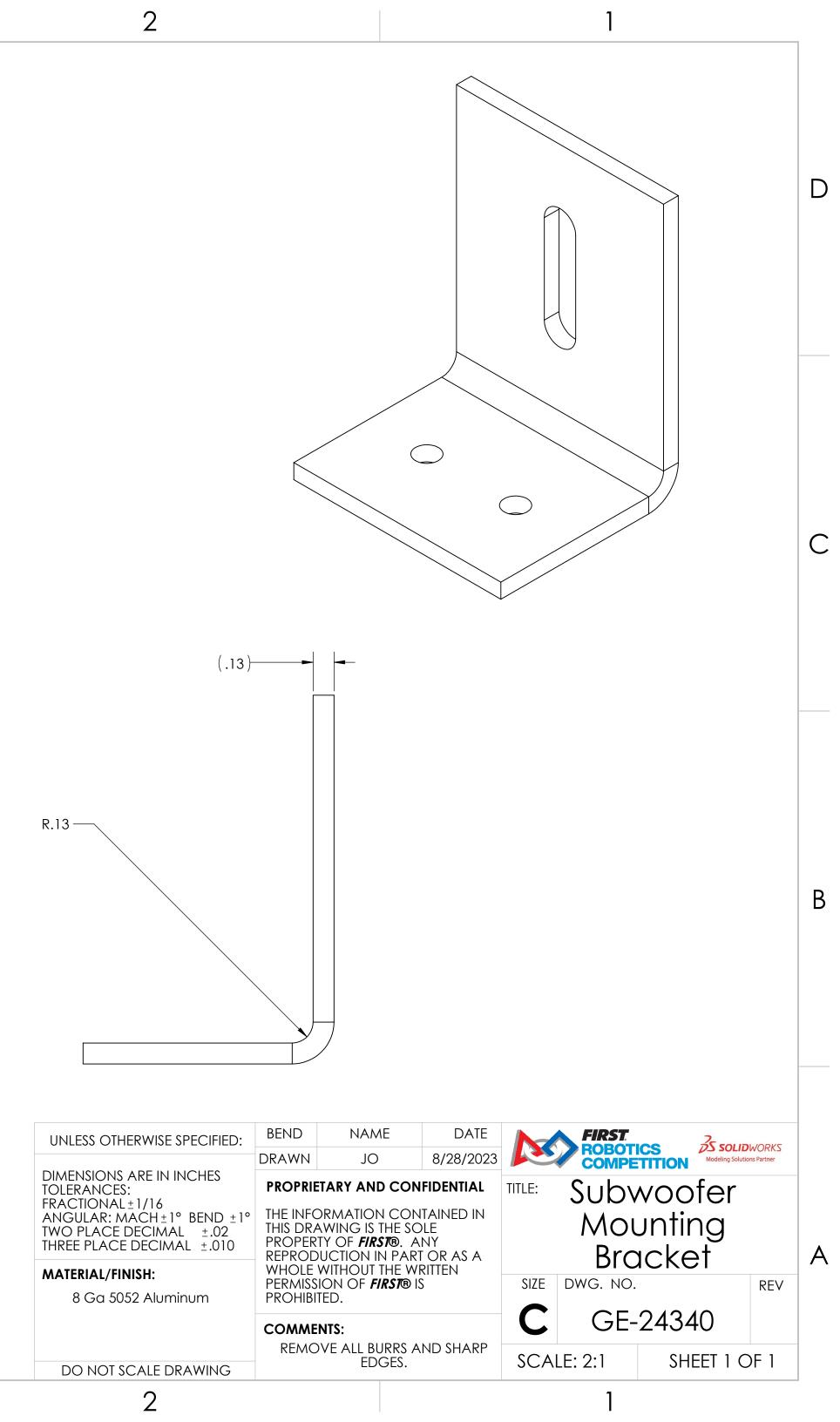
А

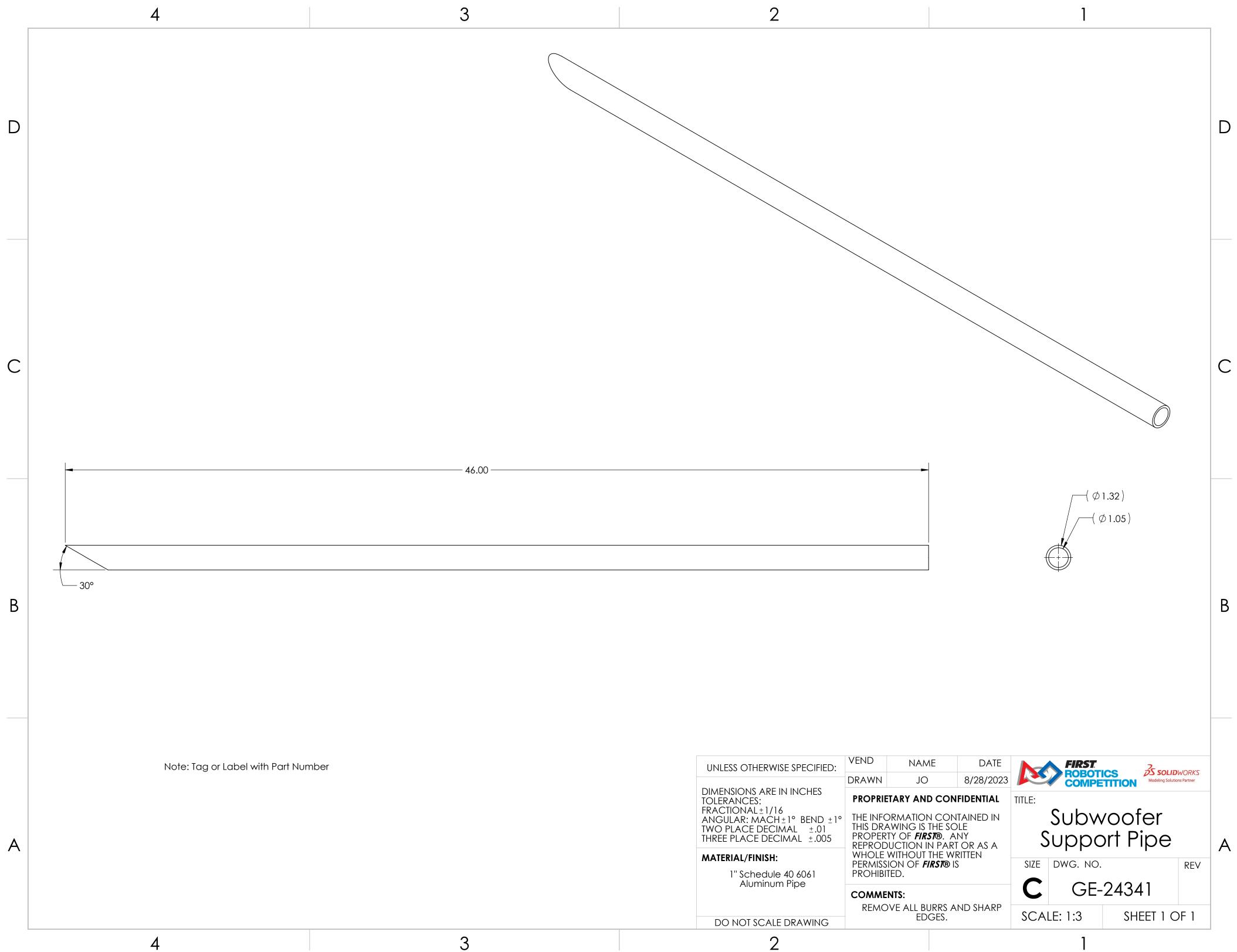
3

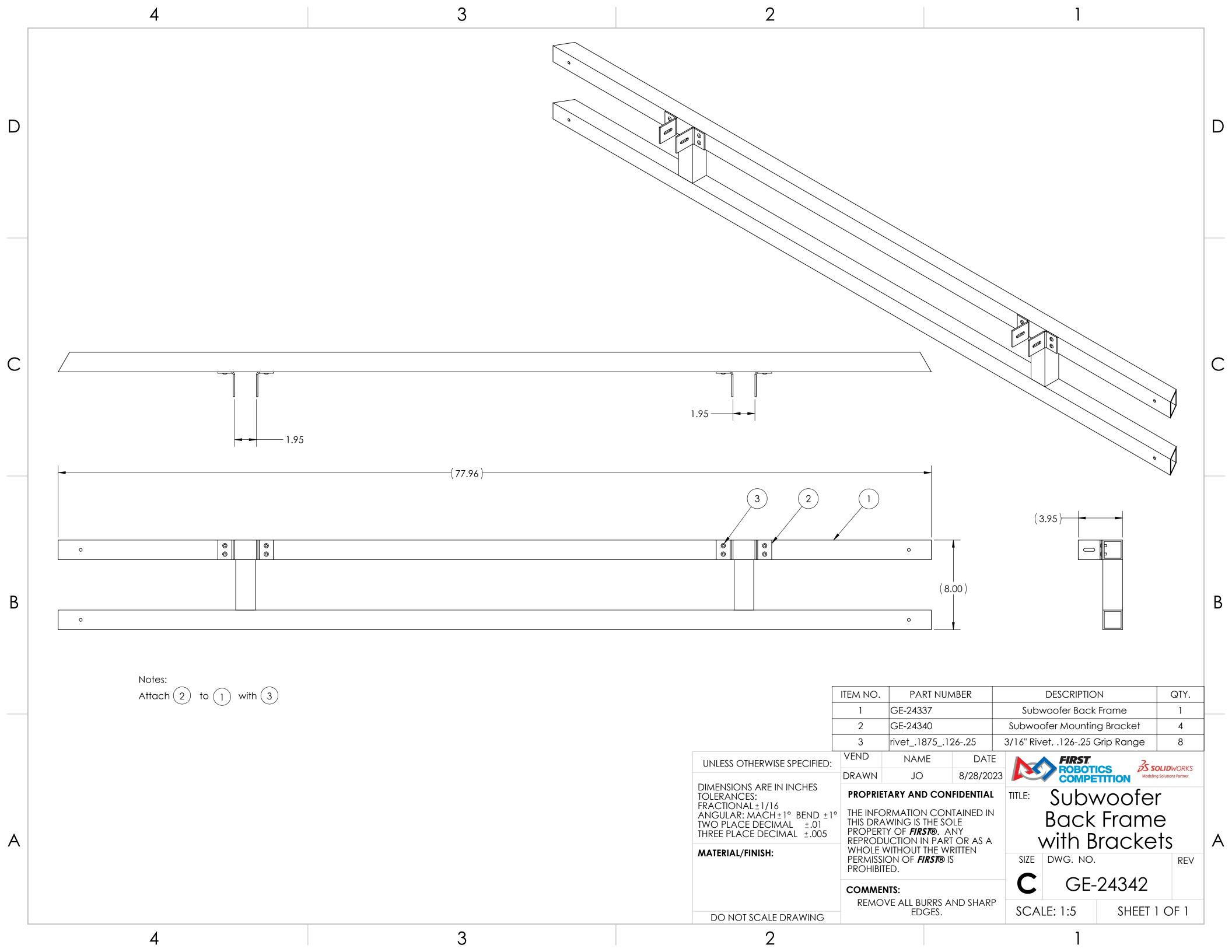


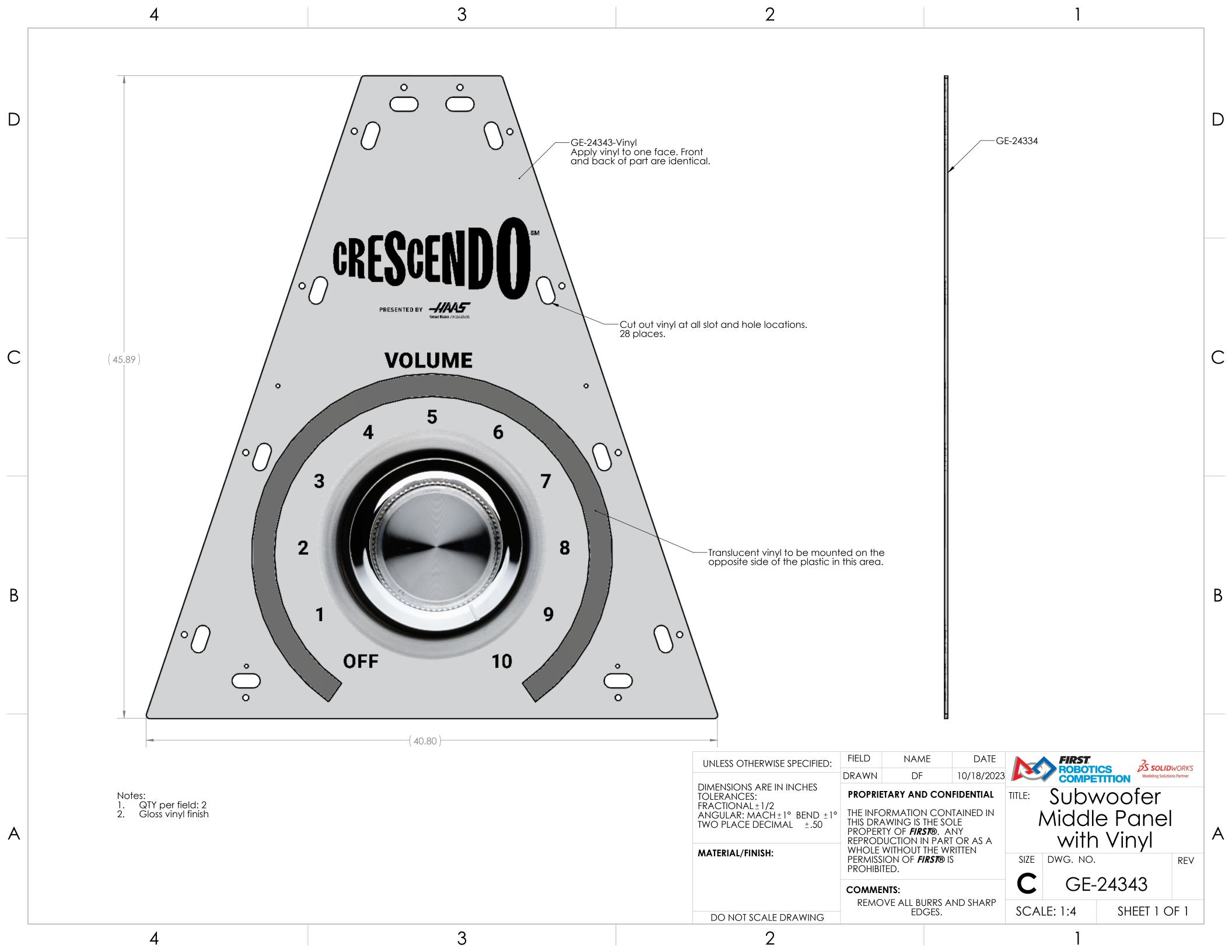
3

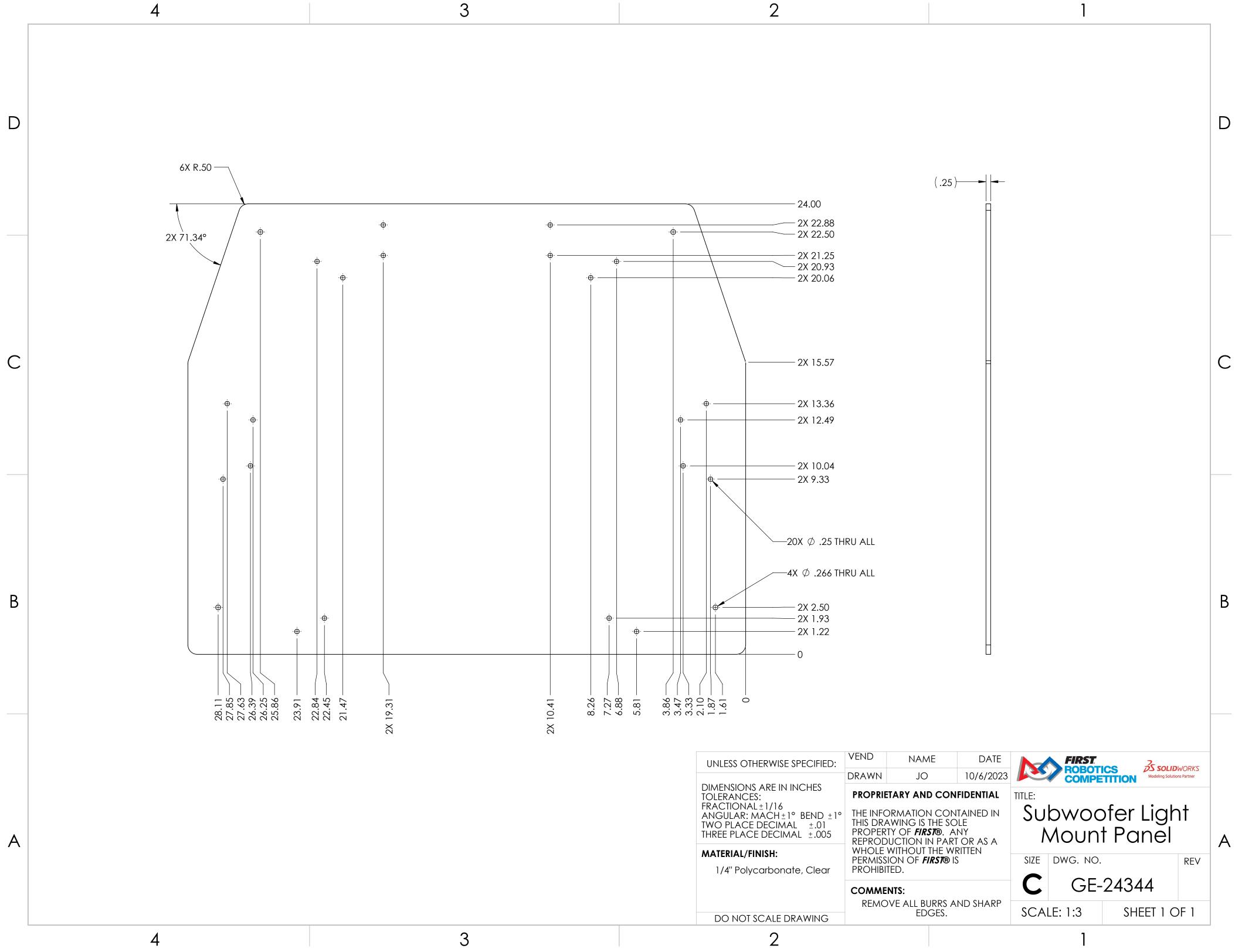
Note: Tag or Label with Part Number

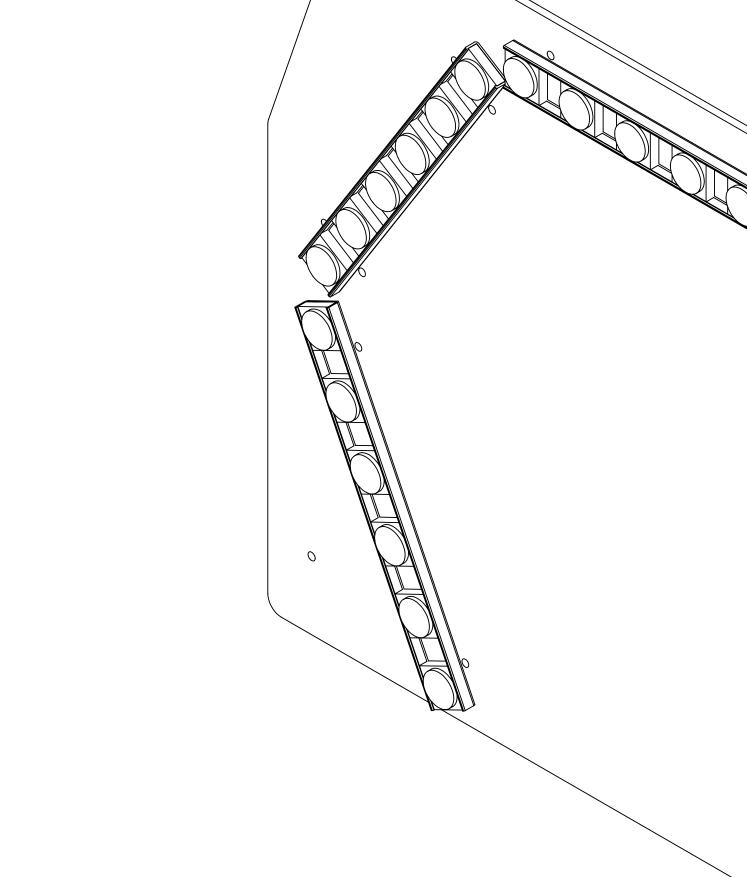












3

Attach Ligths as shown with 50lb Cable Ties

[ רְ | |

4

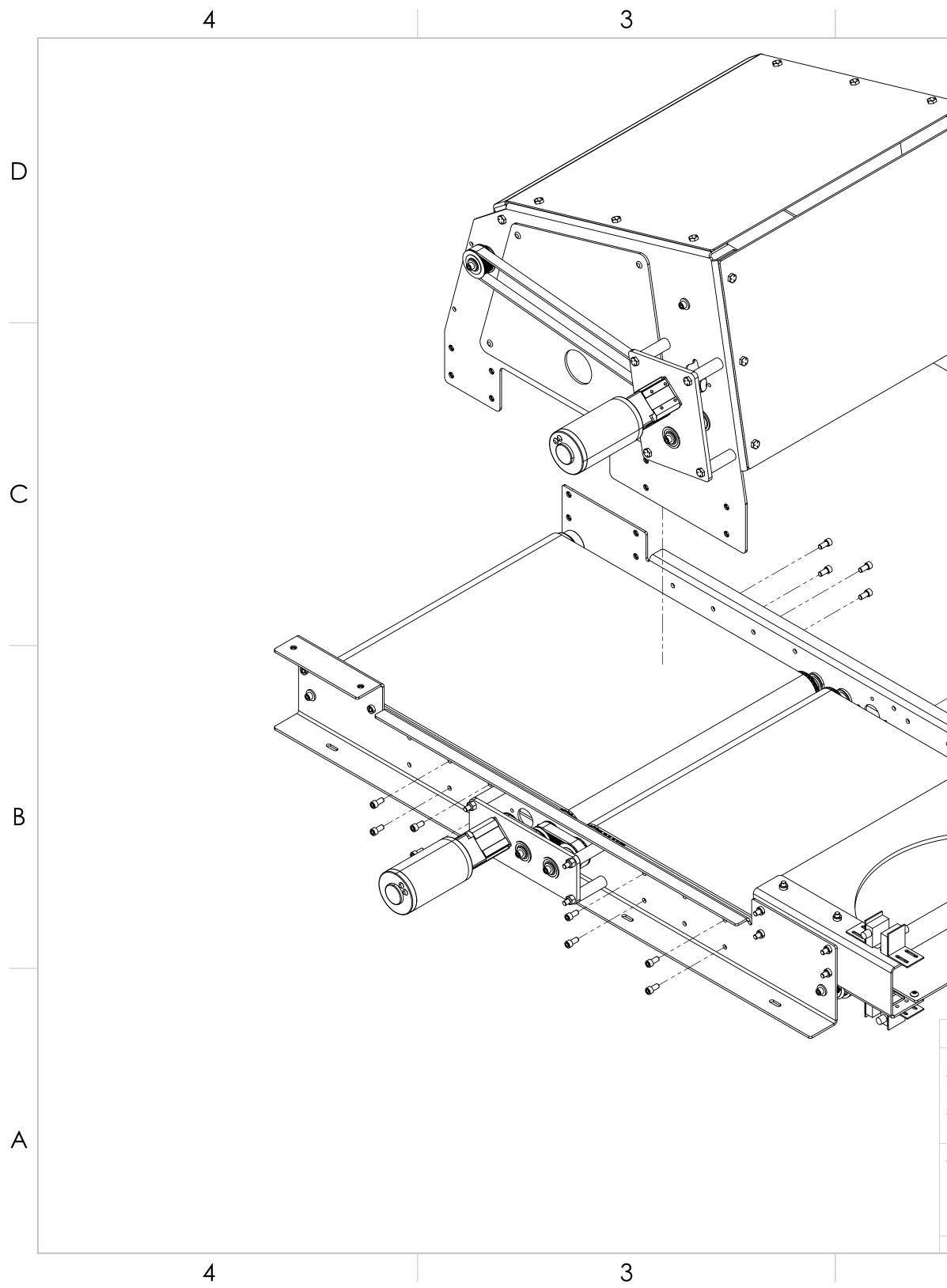
D

С

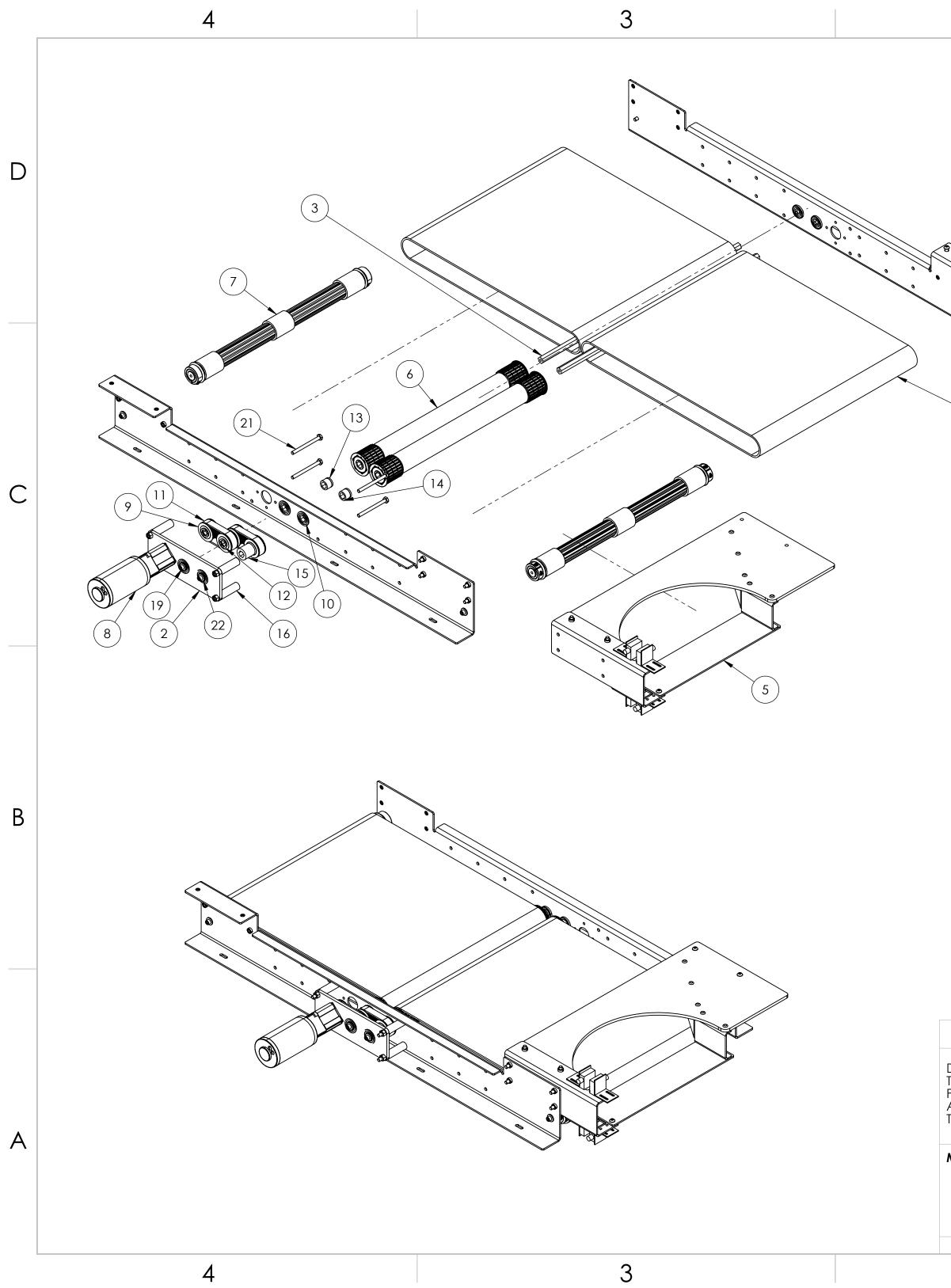
В

А

2			1		
					D
					С
	ITEM NO. PAR 1 GE-2434	RT NUMBER	DESCRIPTION Subwoofer Light Mount Panel	QTY.	В
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES:	2 lightTrac uckbill FIELD NAM DRAWN JO PROPRIETARY ANI	12/19/20	23 ROBOTICS ON Modelin TITLE:	5 OLIDWORKS ag Solutions Partner	
FRACTIONAL±1/2 ANGULAR: MACH±1° BEND±1° TWO PLACE DECIMAL±.50 PROPERTY C REPRODUCT		<b>ST®</b> ). ANY N PART OR AS A THE WRITTEN	SIZE DWG. NO.	ght oly REV	A
do not scale drawing		JRRS AND SHARP GES.	C GE-24345 SCALE: 1:2.5 SHEET	1 OF 1	
2			<u> </u>		



2			1			
						D
						С
	ITEM NO. PA	RT NUMBER	DESCRIPTI	ON	QTY.	В
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/2 ANGULAR: MACH±1° BEND±1 TWO PLACE DECIMAL±.50	<ul> <li>FIELD NAM</li> <li>DRAWN JO</li> <li>PROPRIETARY AND</li> <li>THE INFORMATION</li> <li>THE INFORMATION</li> <li>THIS DRAWING IS</li> <li>PROPERTY OF FIR</li> </ul>	70 Jrable Bolt AE DATE 12/19/20 D CONFIDENTIAL N CONTAINED IN THE SOLE ST®. ANY	23 ROBO COMP	Assembly et Head Cap	1 1 16 DLIDWORKS g Solutions Partner	
MATERIAL/FINISH: DO NOT SCALE DRAWING 2	REPRODUCTION I WHOLE WITHOUT PERMISSION OF <b>F</b> PROHIBITED. <b>COMMENTS:</b> REMOVE ALL BI	N PART OR AS A THE WRITTEN		). - <b>24350</b> Sheet 1	Rev OF 1	A

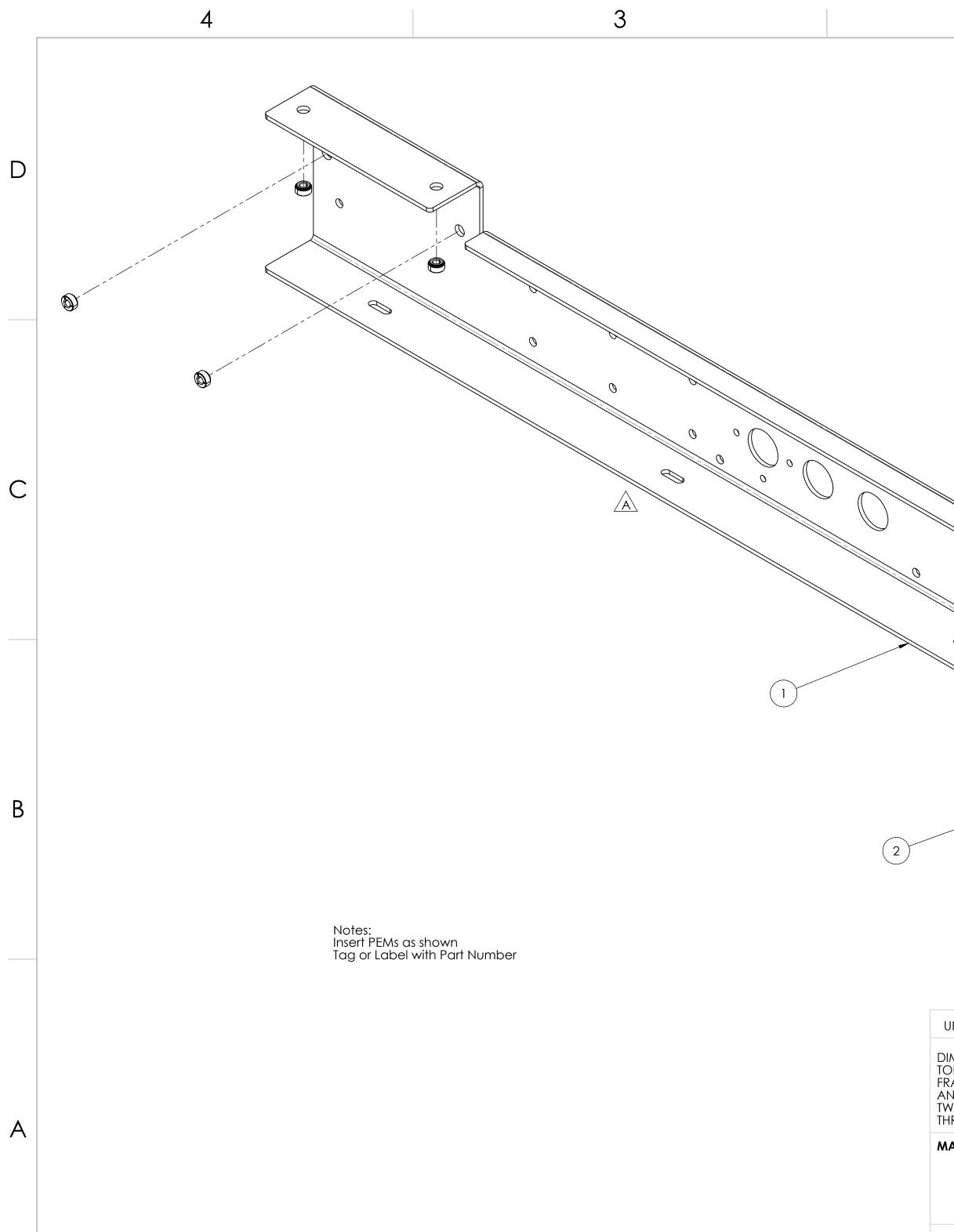


<u>(4)</u>	ITEM NO.	PART NUM	1BER		DESCRIPTIC	N	QTY.	1
	1	GE-24352		Count	er Side Plate	e w/ PEMs	2	1
	2	GE-24353		Speaker	Counter Bo Plate	ttom Motor	1	
	3	GE-24354		Note Co	unter Bottor	n Hex Shaft	2	C
	4	GE-24355		С	ustom Wide	Belt	2	1
	5	GE-24361		Ring	Counter Ser	nsor Box	1	1
	6	GE-24383		Live Sh	aft - Bottom	Assembly	2	1
	7	GE-24384		Dead SI	naft - Botton	n Assembly	2	1
_	8	2 Stage Gearn	notor	12:1 Sport	Gearbox ar	nd CIM Motor	1	1
	9	am-4626 24T 5 500IN Hex 15m Bore Pulley	mm HTD	<u>.</u>			4	
	10	0.500 Hex ID x x 0.313 WD (Flc Bearing v2) (2	1.125 OD anged 17-3875)				6	
	11	225-5m-15 Belt					2	
	12	.0625 Hex Spac	.0625 Hex Spacer				4	1
	13	.125 Hex Spac	er				5	1
	14	.5 Hex Spacer					4	1
	15	1 in hex space	r				1	
	16	2.25 Bolt Space	er				4	B
	17 91255A261_Butto Head Hex Drive S						1	
	18 washer_flat_10_oversiz d		Oversized	flat Washer	for #10 Screw	1		
	19	Configurable I	Bolt	.5" Long 1	/4-20 Socke Screw	t Head Cap	8	
	20	Configurable Bolt		.75" Long 1/4-20 Button Head Cap Screw		n Head Cap	6	1
	21	Configurable Bolt		3" Long	1/4-20 Hex	Head Bolt	4	Ī
	22	washer_flat2	5	Flat W	/asher for 1/	4" Screw	8	1
	23	nylock25_20		Steel Nylo	on-Insert Loc	knut, 1/4''-20	4	1
UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE		FIRST.	35 50	LIDWORKS	Ī
	DRAWN	JO	12/19/202	23 🏴	ROBOT		olutions Partner	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/2 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.50	THE INFO THIS DRA PROPER	TARY AND CON DRMATION CON WING IS THE SC TY OF <b>FIRST®</b> . A	TAINED IN DLE NY	TITLE:	Bo	Counte ttom	er	
MATERIAL/FINISH:	WHOLE	UCTION IN PART WITHOUT THE WI	RITTEN			embly		A
	PERMISS PROHIBI	ION OF <b>FIRST®</b> IS TED.	5	SIZE	DWG. NO.	0 10 5 5	REV	
	COMME	NTS:			GE-	24351		
	REMC		ND SHARP		_E: 1:6	SHEET 1		-
DO NOT SCALE DRAWING		EDGES.		JUA	_L. I.O	SHEELI		1

D

2

(20)



3

			1	
		REVISIONS		
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C3	А	Visual Changes to GE-24352-01	10/12/2023	OL

D

С

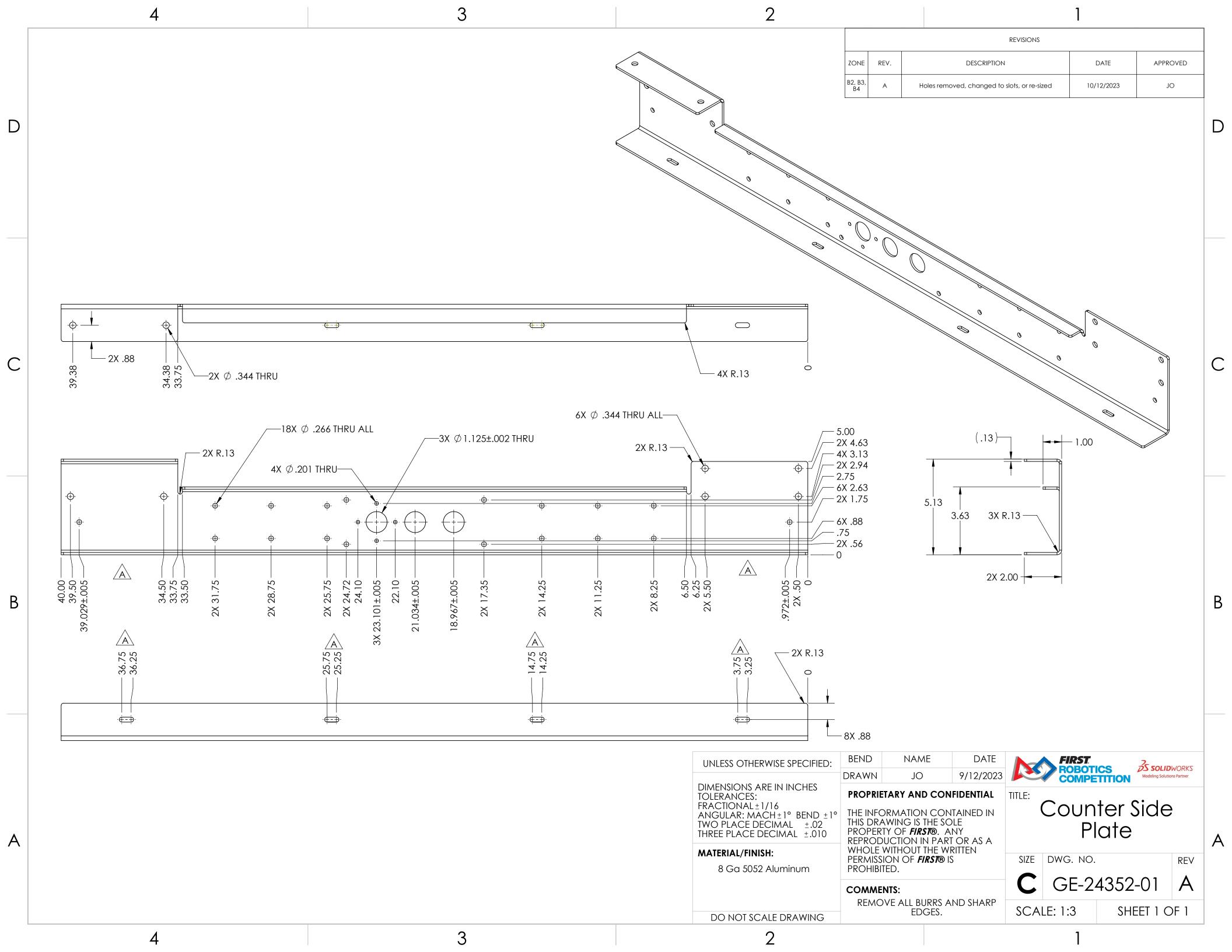
В

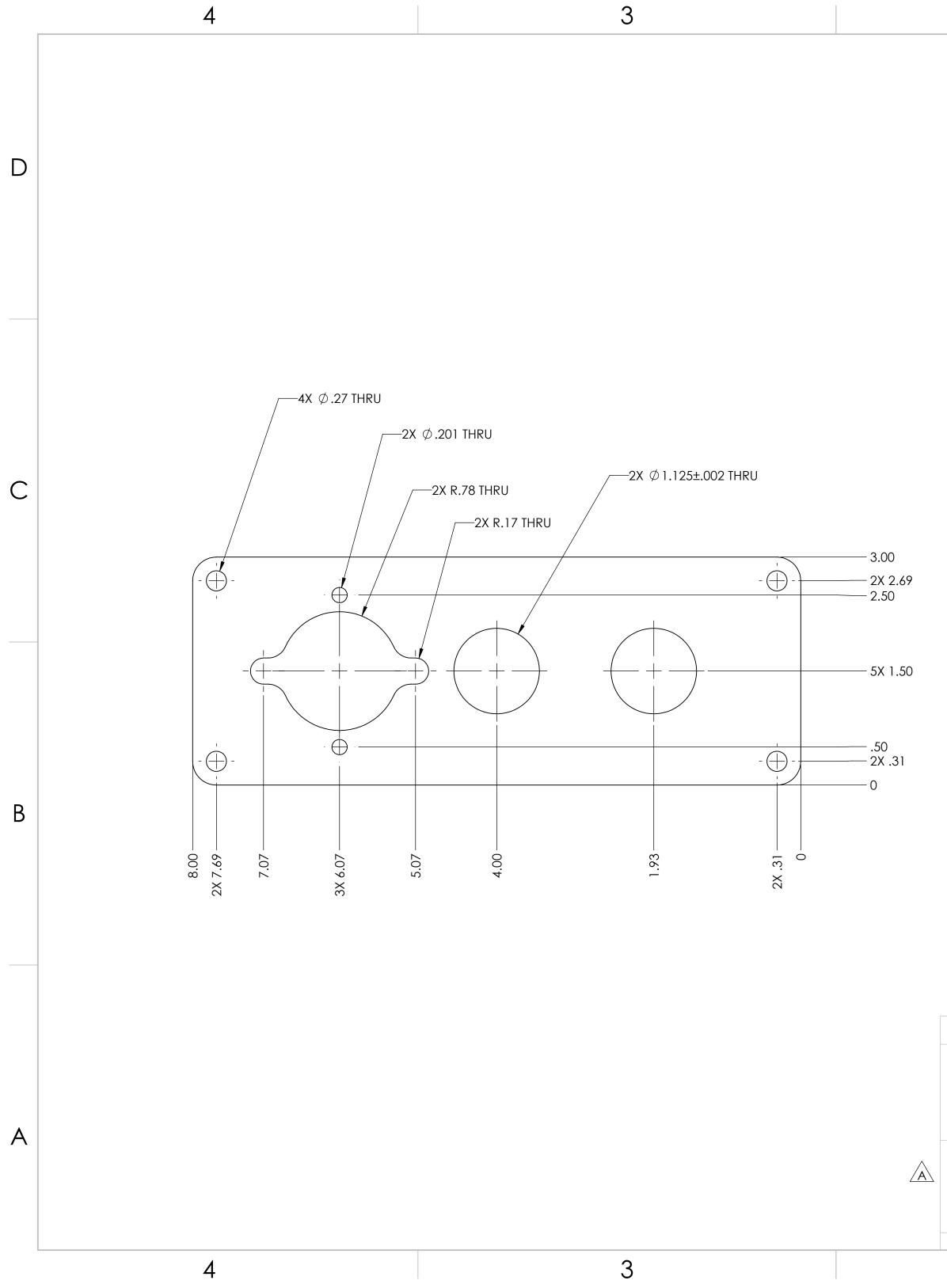
	0	
		0
Ð		

2

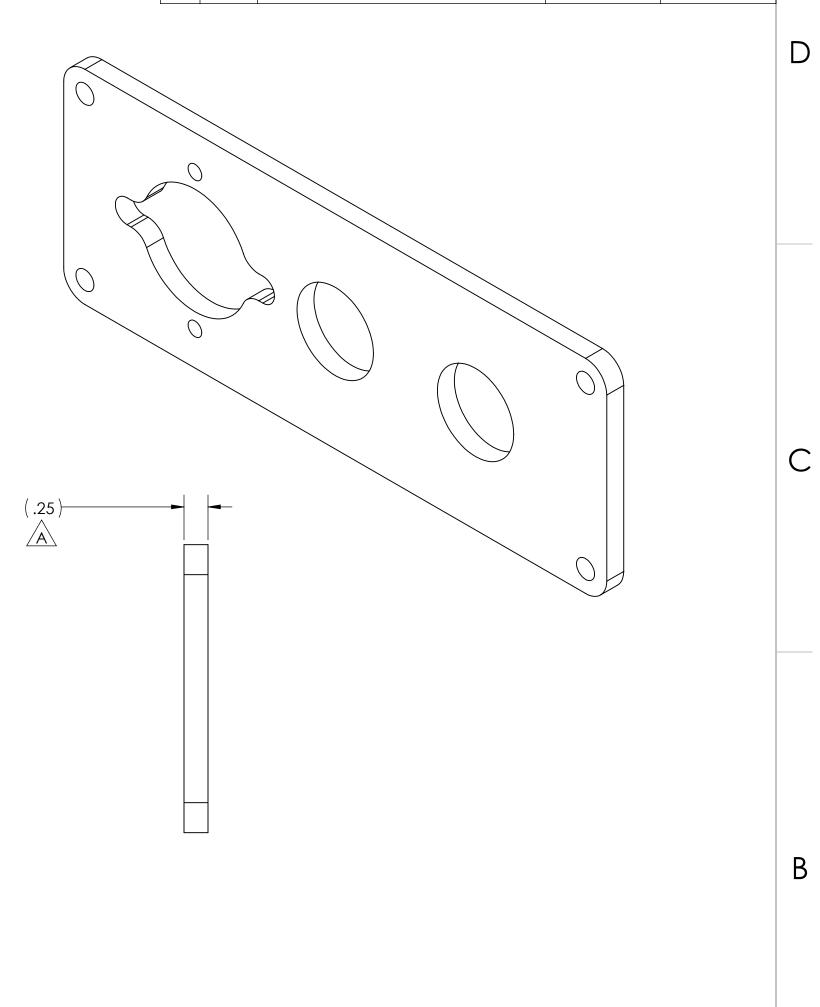
2

ITEM NO. PART NUMBER DESCRIPTION QTY. GE-24352-01 Counter Side Plate 1 1 pem\_clinchnut\_.25\_20 \_.054 1/4-20 self-clinching nut, .054 shank 2 8 VEND FIRST. ROBOTICS COMPETITION NAME DATE UNLESS OITERS. DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/16 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: DIMENSION OF FIRST® ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED. UNLESS OTHERWISE SPECIFIED: 35 SOLIDWORKS Modeling Solutions Partner PROPRIETARY AND CONFIDENTIAL TITLE: Counter Side Plate w/ PEMs А SIZE DWG. NO. REV С GE-24352 Α COMMENTS: REMOVE ALL BURRS AND SHARP EDGES. SCALE: 1:2 SHEET 1 OF 1 DO NOT SCALE DRAWING

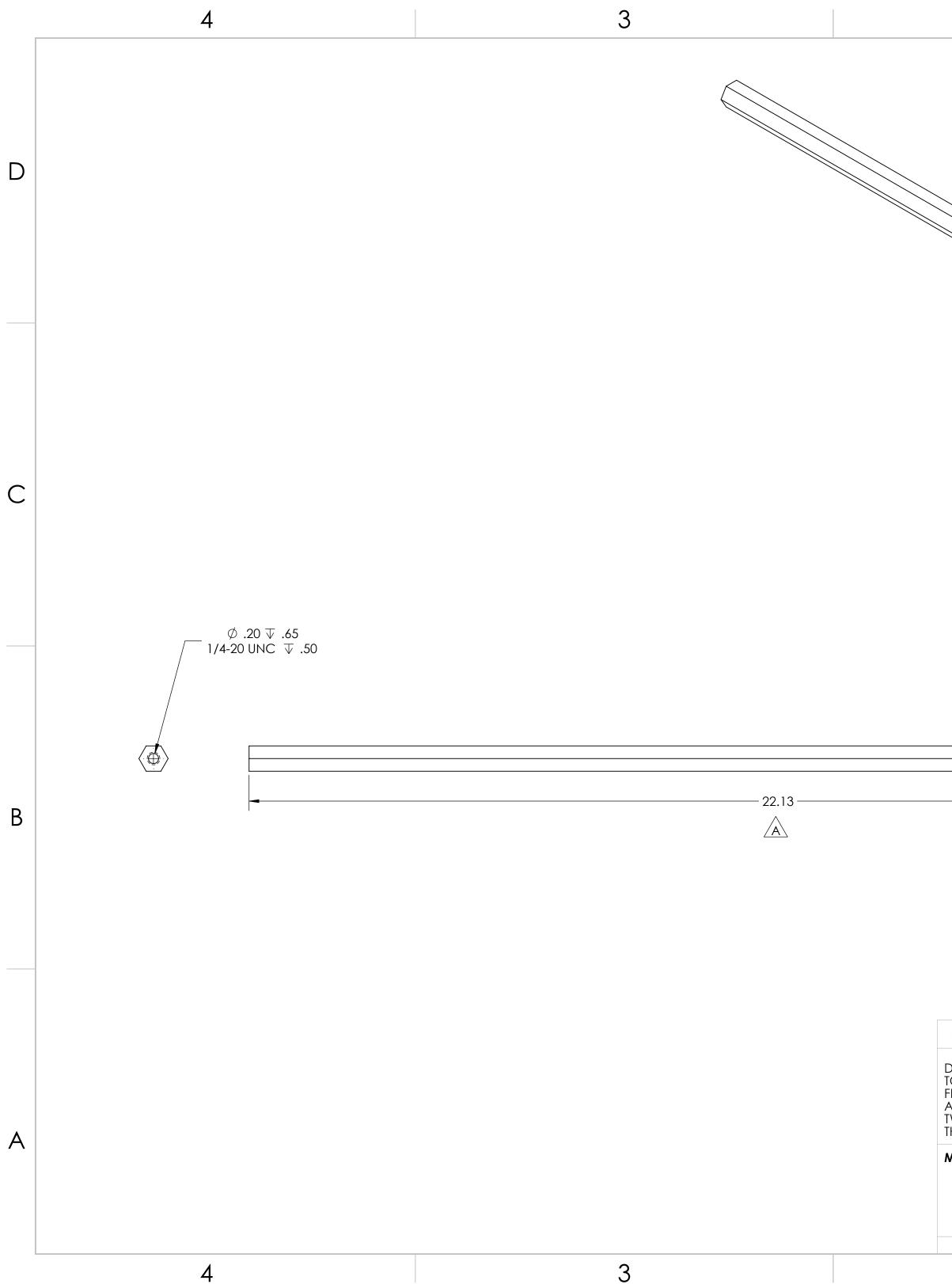




			1	
		REVISIONS		
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A2, C2	А	Thickness Increased	10/11/2023	JO



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE		FIRST. ROBOT	35	<b>SOLID</b> WORKS	
	DRAWN	DRAWN JO 9/14/2023					eling Solutions Partner	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16		TARY AND CON		TITLE:	TITLE: Speaker			-
ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	L ±.01 AL ±.005 THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY					Counter Bottom Motor Plate		Δ
MATERIAL/FINISH:	WHOLE	WHOLE WITHOUT THE WRITTEN						_
1/4" 6061 Aluminum	PERMISS	ION OF <b>FIRST®</b> IS TED.	)	SIZE	DWG. NO		REV	
		COMMENTS:		C	GE-	24353	A	
	REMC	REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:1 SHEET 1		1 OF 1	
DO NOT SCALE DRAWING								
2					1			



			1	
		REVISIONS		
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B3	А	Adjusted Length	10/11/2023	JO

Ø .20 ↓ .65 / 1/4-20 UNC ↓ .50

 $\langle \bigoplus \rangle$ 

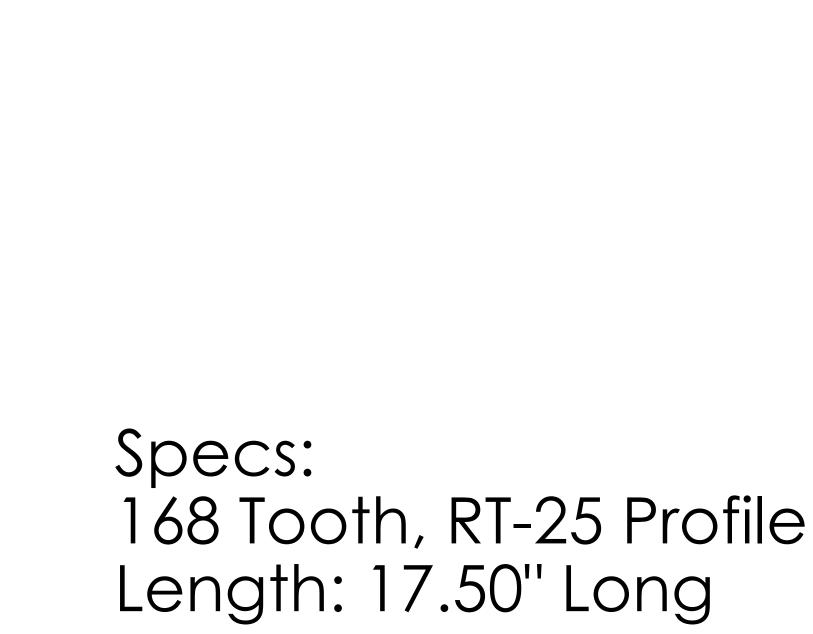
- .500<sup>+.000</sup> HEX

D

С

В

VEND FIRST. ROBOTICS COMPETITION Solutions Partner Modeling Solutions Partner NAME DATE UNLESS OTHERSTOR DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND±1° TWO PLACE DECIMAL±01 THREE PLACE DECIMAL±005 MATERIAL/FINISH: THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF *FIRST*®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF *FIRST*® IS PROHIBITED. UNLESS OTHERWISE SPECIFIED: **3** SOLIDWORKS **IITLE:** Note Counter Bottom Hex Shaft А SIZE DWG. NO. REV С GE-24354 Α COMMENTS: REMOVE ALL BURRS AND SHARP SCALE: 2:3 SHEET 1 OF 1 EDGES. DO NOT SCALE DRAWING 2



3

4

4

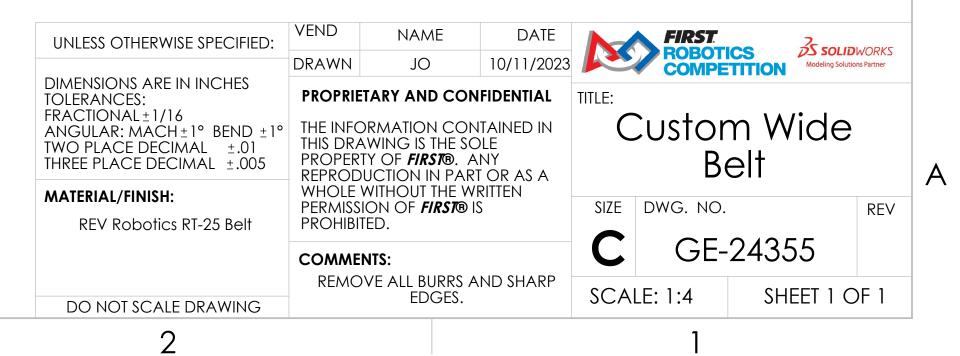
D

С

В

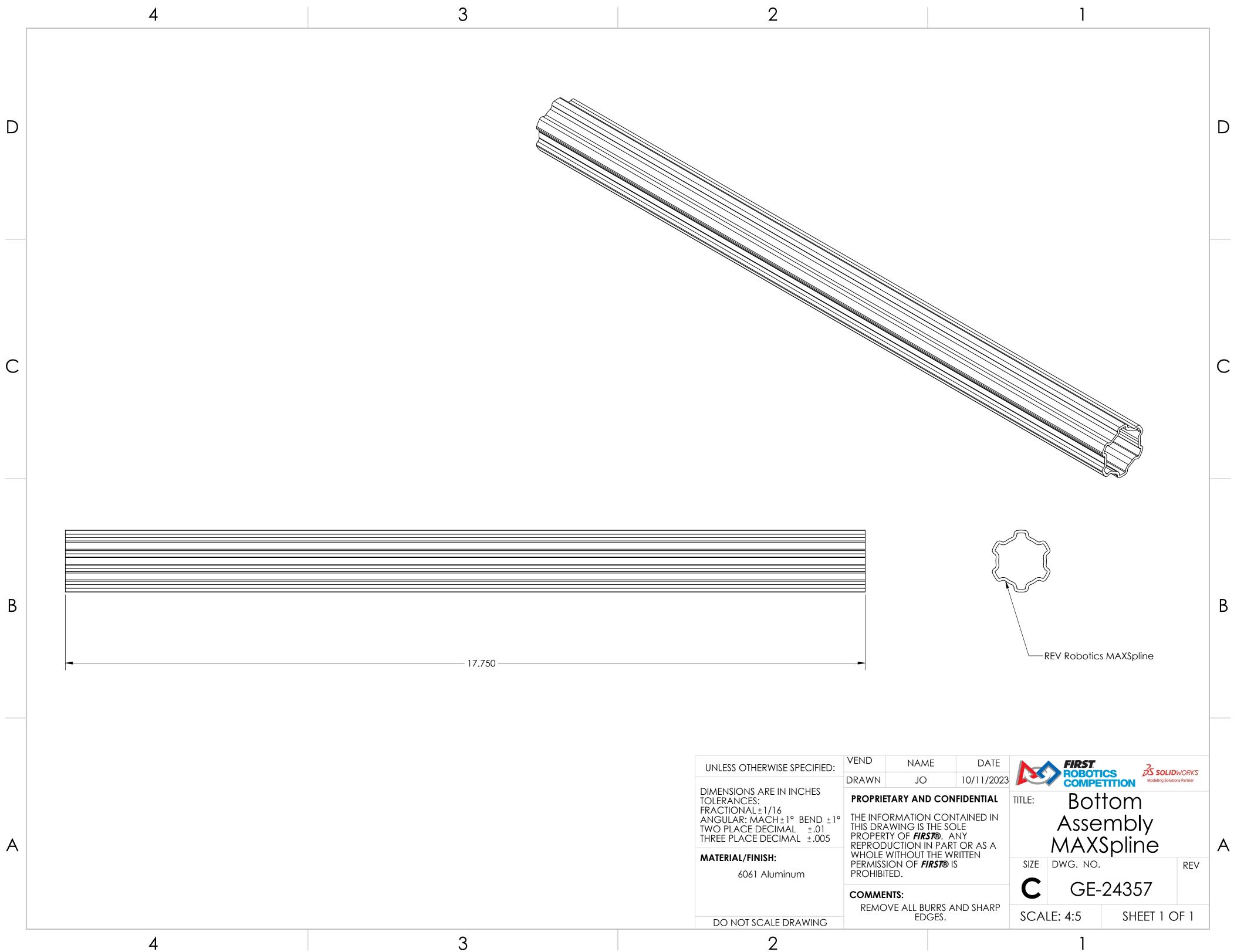
Α

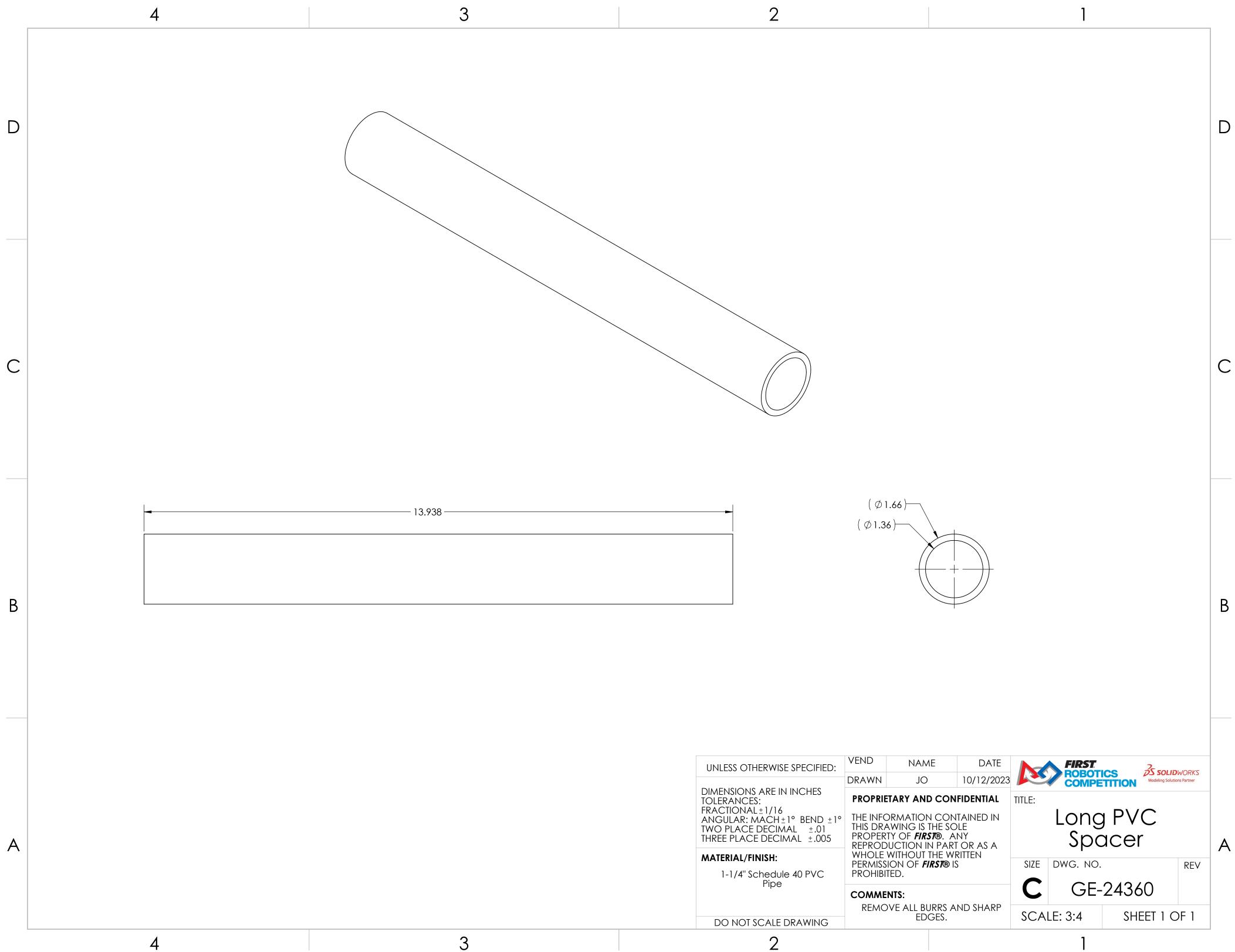
2

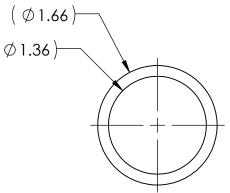


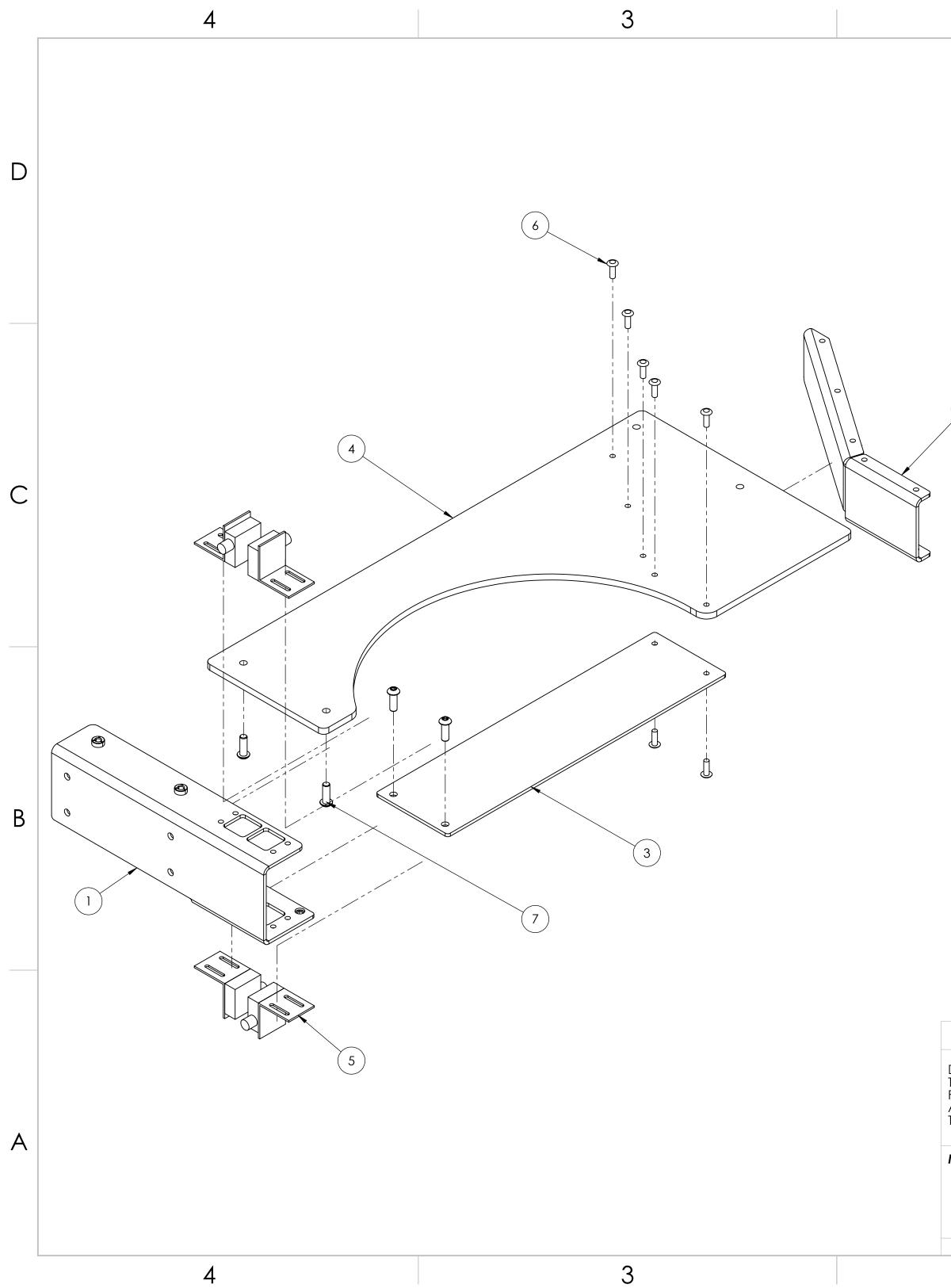
D

С









2					
					D
					C
	1       GE-2436         2       GE-2436         3       GE-2436         4       GE-2436         5       42SMR         6       rivet18         7       Configure	53 54 55 875251375 rable Bolt	DESCRI Counting Sensor E Counting Sensor Counter Se Counting Se Beam I 3/16" Aluminum Riv Ran .75" Long 1/4-20 Bo Scre	Bracket w/ PEMs or Far Bracket nsor Floor ensor Roof Break ret, .251375 Grip ge utton Head Cap	B QTY. 1 1 1 1 1 4 7 4
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/2 ANGULAR: MACH±1° BEND±1° TWO PLACE DECIMAL ±.50	FIELD NAM DRAWN JC PROPRIETARY AN THE INFORMATION THIS DRAWING IS PROPERTY OF <i>FIR</i> REPRODUCTION I WHOLE WITHOUT PERMISSION OF <i>F</i> PROHIBITED.	D CONFIDENTIAL N CONTAINED IN THE SOLE ST®. ANY N PART OR AS A THE WRITTEN	D23 TITLE: Ring	Counter Isor Box	ons Partner

INTERESTION OF **FIRST** IS PROHIBITED. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.

С

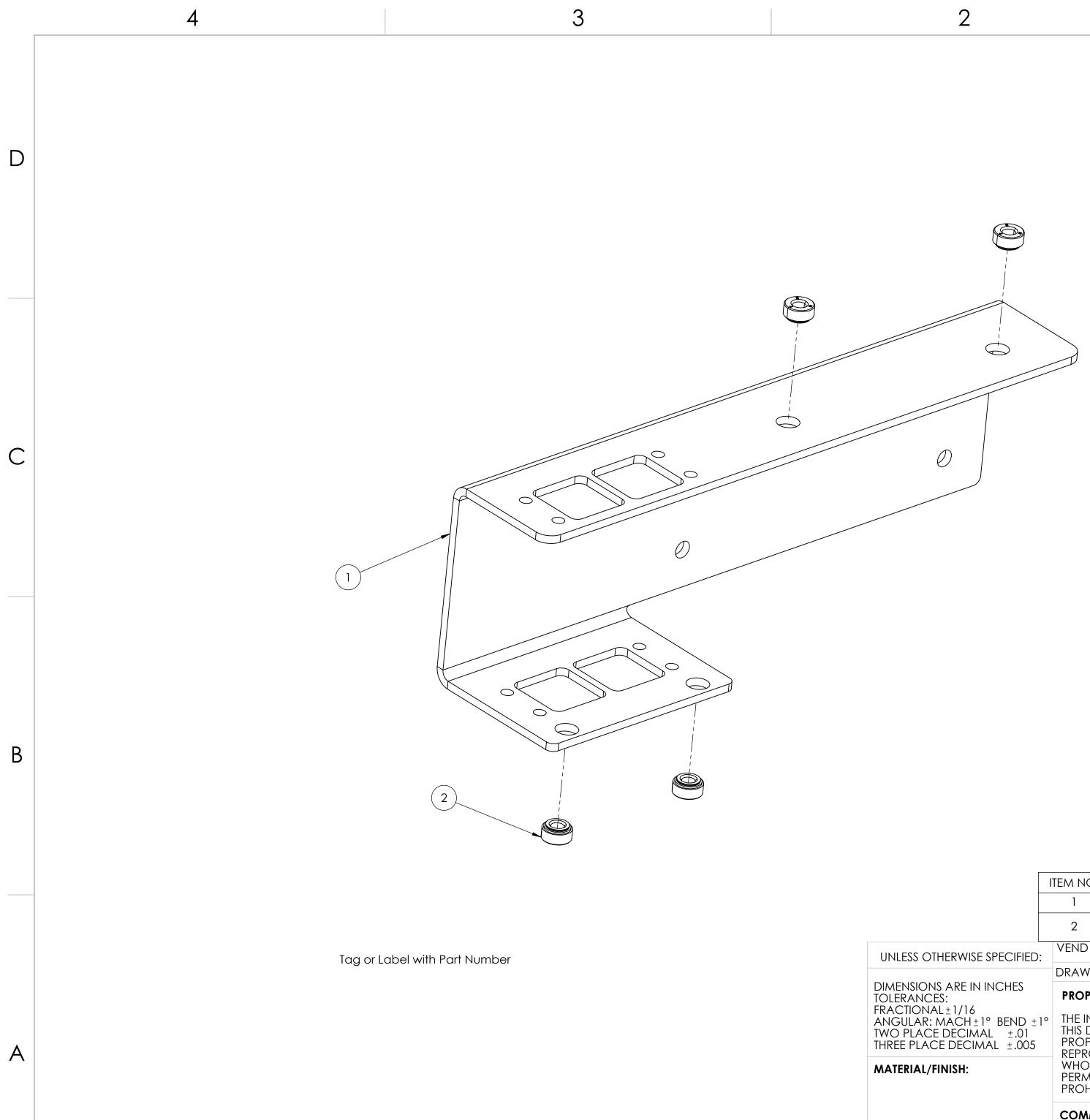
SCALE: 1:2.6

1

GE-24361

Sheet 1 of 1

DO NOT SCALE DRAWING

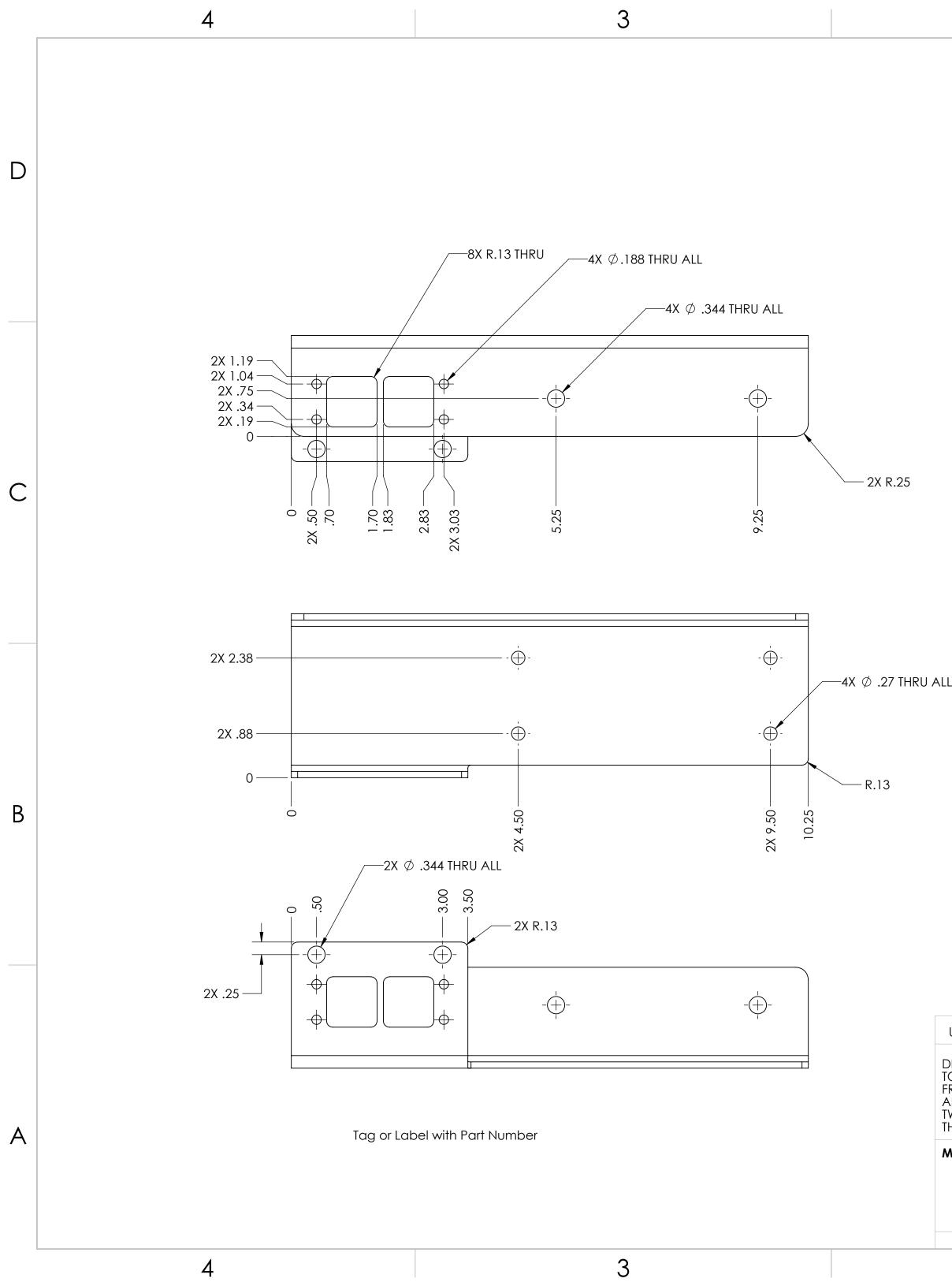


3

	ITEM NO.	PART NUMBER		DESCRIPTION		QTY.		
	1	GE-24362-01		Cour	nting Sensor	Bracket	1	
_	2	pem_clinchnu 054	t25_20	1/4-20 self	-clinching nu	ut, .054 shar	nk 4	
UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE		<b>FIRST</b>	3	SOLIDWORKS	
	DRAWN	JO	10/19/20	23 尾			deling Solutions Partner	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ±1 TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH:	TIONAL ± 1/16 ULAR: MACH ± 1° BEND ± 1° PLACE DECIMAL ±.01 E PLACE DECIMAL ±.005 REPRODUCTION		F <b>FIRST</b> ®. ANY ON IN PART OR AS A		™LE:Counting Ser Bracket w PEMs		~/	А
		PERMISSION OF <b>FIRST</b> ® IS PROHIBITED.			SIZE DWG. NO.		REV	
		COMMENTS:			GE-	24362		
			E ALL BURRS AND SHARP EDGES.		LE: 1:1	SHEET	[ 1 OF 1	
2					1			-

D

С



Junitess otherwise specified:       BEND       NAME       DATE         UNITESS OTHERWISE SPECIFIED:       BEND       NAME       DATE         DIMENSIONS ARE IN INCHES       DRAWN       JO       8/28/2023       Reference	2			1		
UNLESS OTHERWISE SPECIFIED:       BEND       NAME       DATE         DIMENSIONS ARE IN INCHIS       TOPERETARY AND CONJUNCTION       NOT SCALE       TOPERETARY AND CONJUNCTION       NOT SCALE         MATERNALTINSH:       BOAWING IS INESCUE       TOPERETARY AND CONJUNCTION IN PART OF NAME TO PART						D
Junitess otherwise specified:       BEND       NAME       DATE         UNITESS OTHERWISE SPECIFIED:       BEND       NAME       DATE         DIMENSIONS ARE IN INCHES       DRAWN       JO       8/28/2023       Reference						С
UNLESS OTHERWISE SPECIFIED:       DRAWN       JO       8/28/2023       Image: Completion of the second	2X R.13	2.50				В
	DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010 <b>MATERIAL/FINISH:</b> 8 Ga 5052 Aluminum	DRAWN JO PROPRIETARY AND THE INFORMATION THIS DRAWING IS T PROPERTY OF FIRS REPRODUCTION IN WHOLE WITHOUT T PERMISSION OF FIN PROHIBITED. COMMENTS: REMOVE ALL BU	8/28/2023 CONFIDENTIAL CONTAINED IN HE SOLE TOB. ANY N PART OR AS A HE WRITTEN RSTOB IS	SIZE DWG. NO.	Modeling Solutions Partner	A

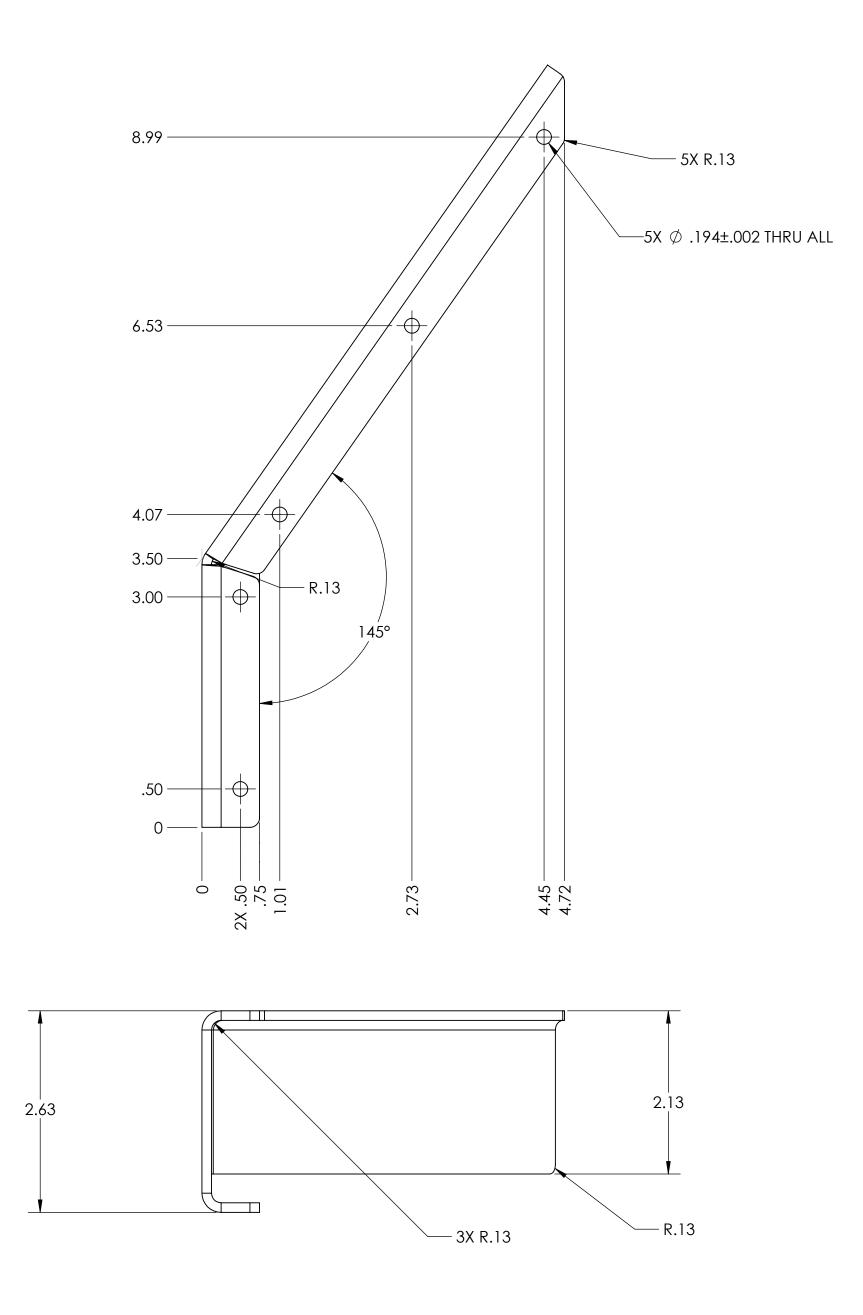
D

С

В

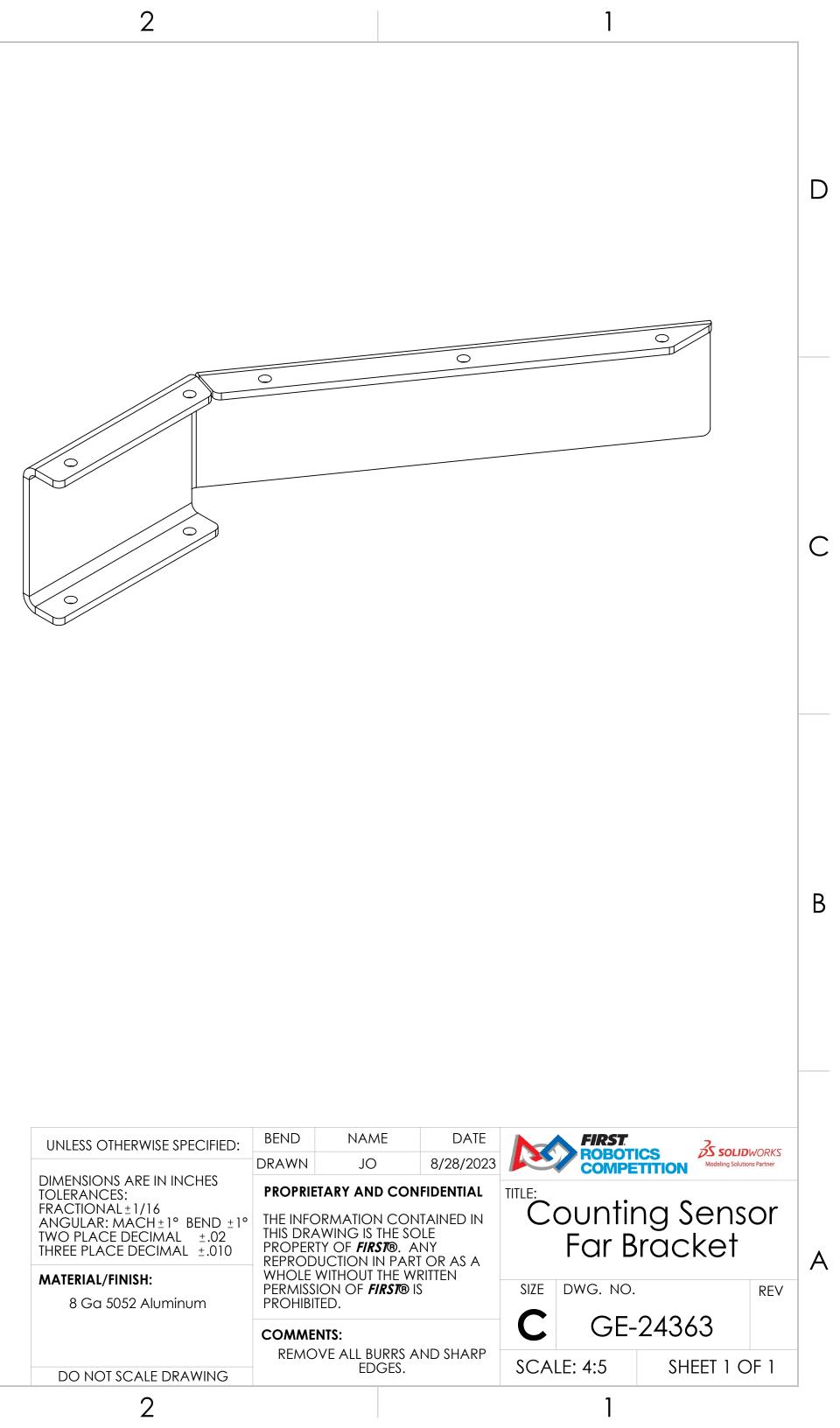
А

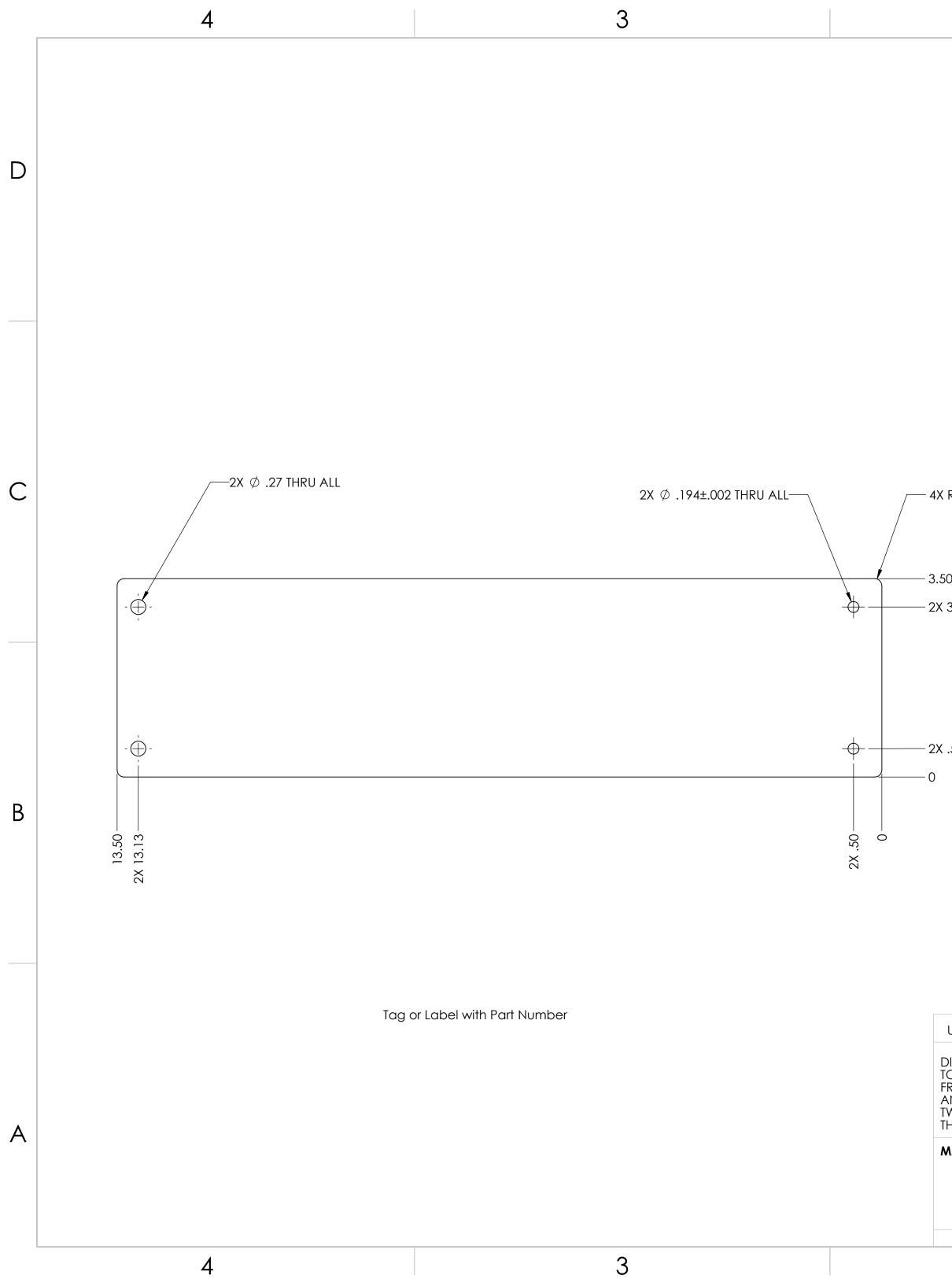
3



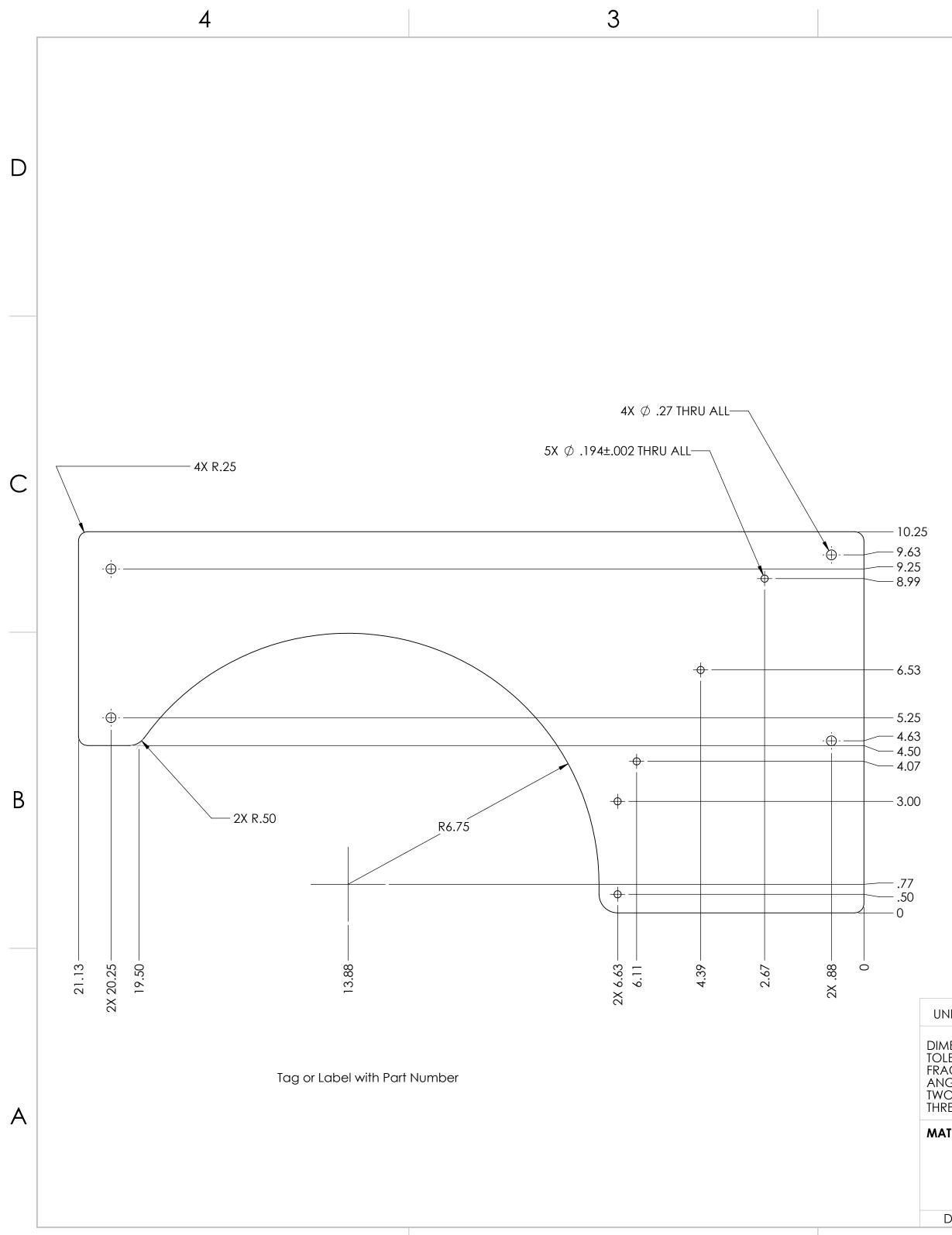
Tag or Label with Part Number

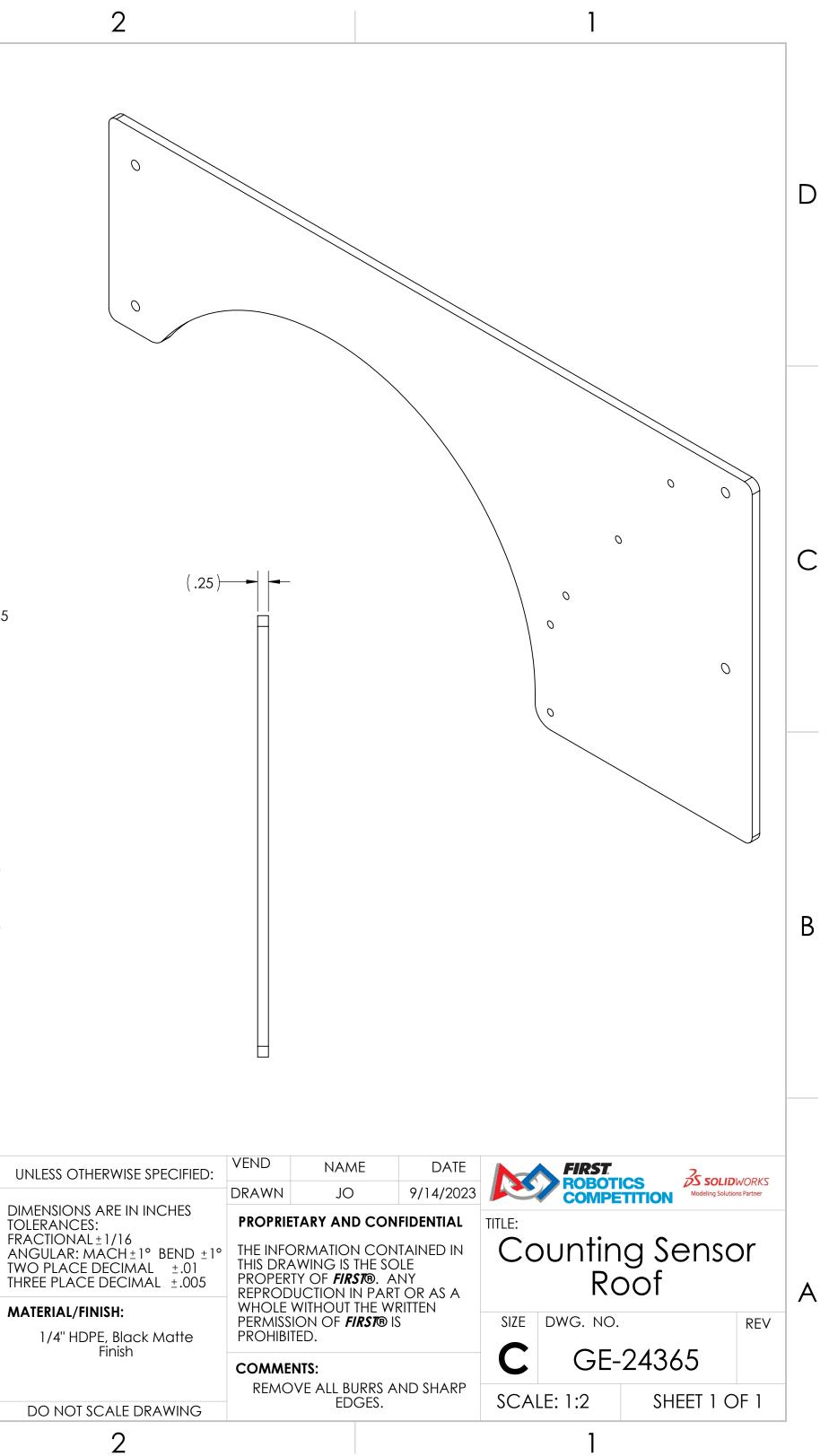
3

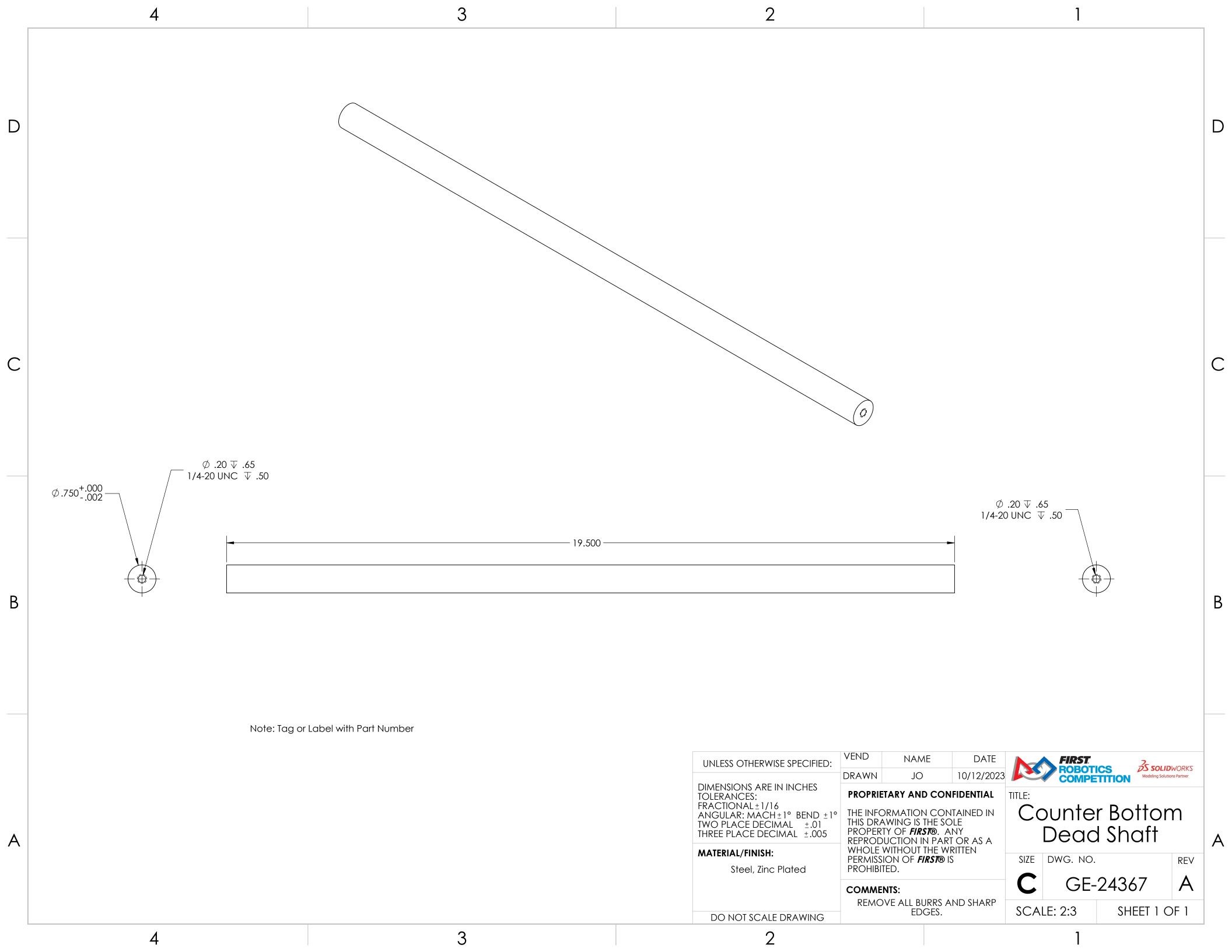


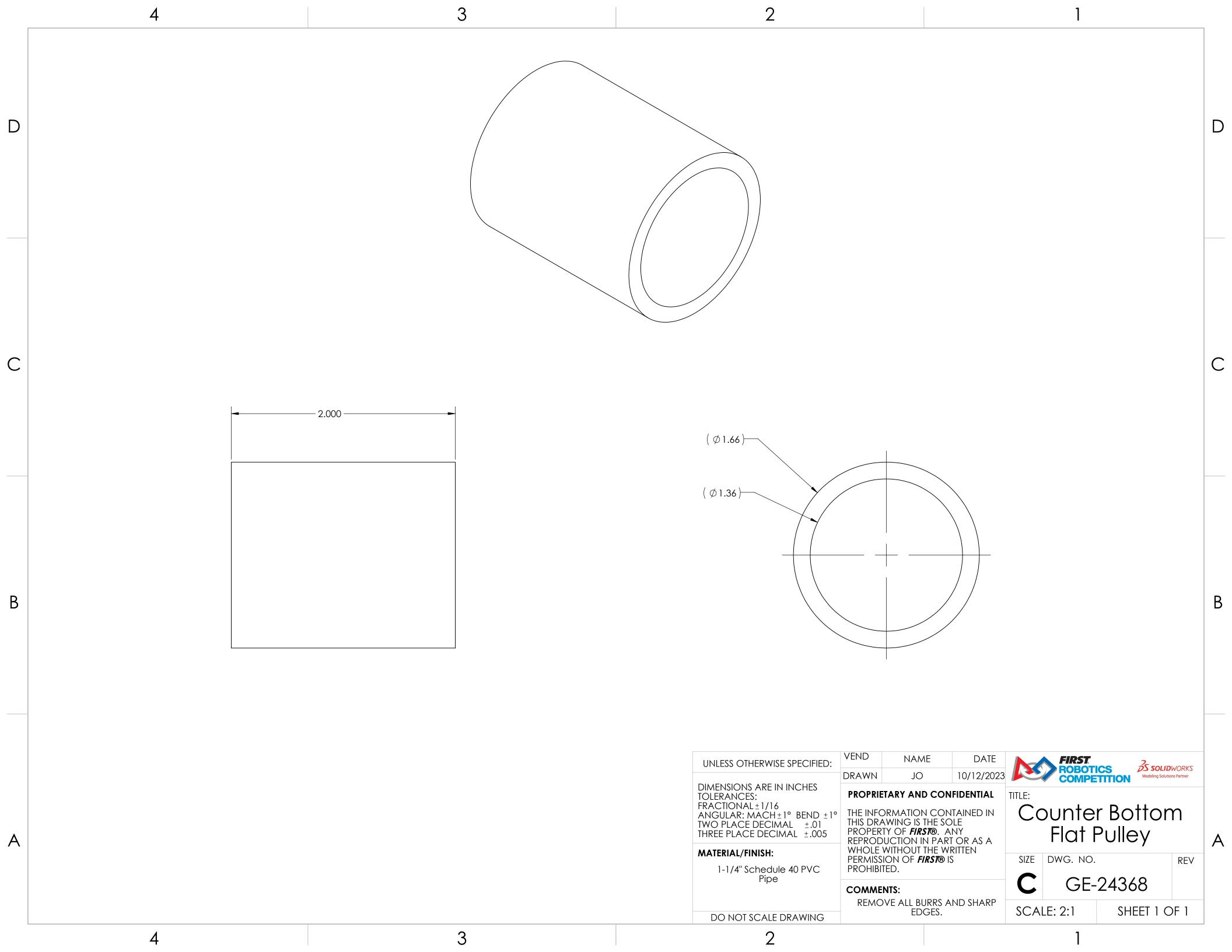


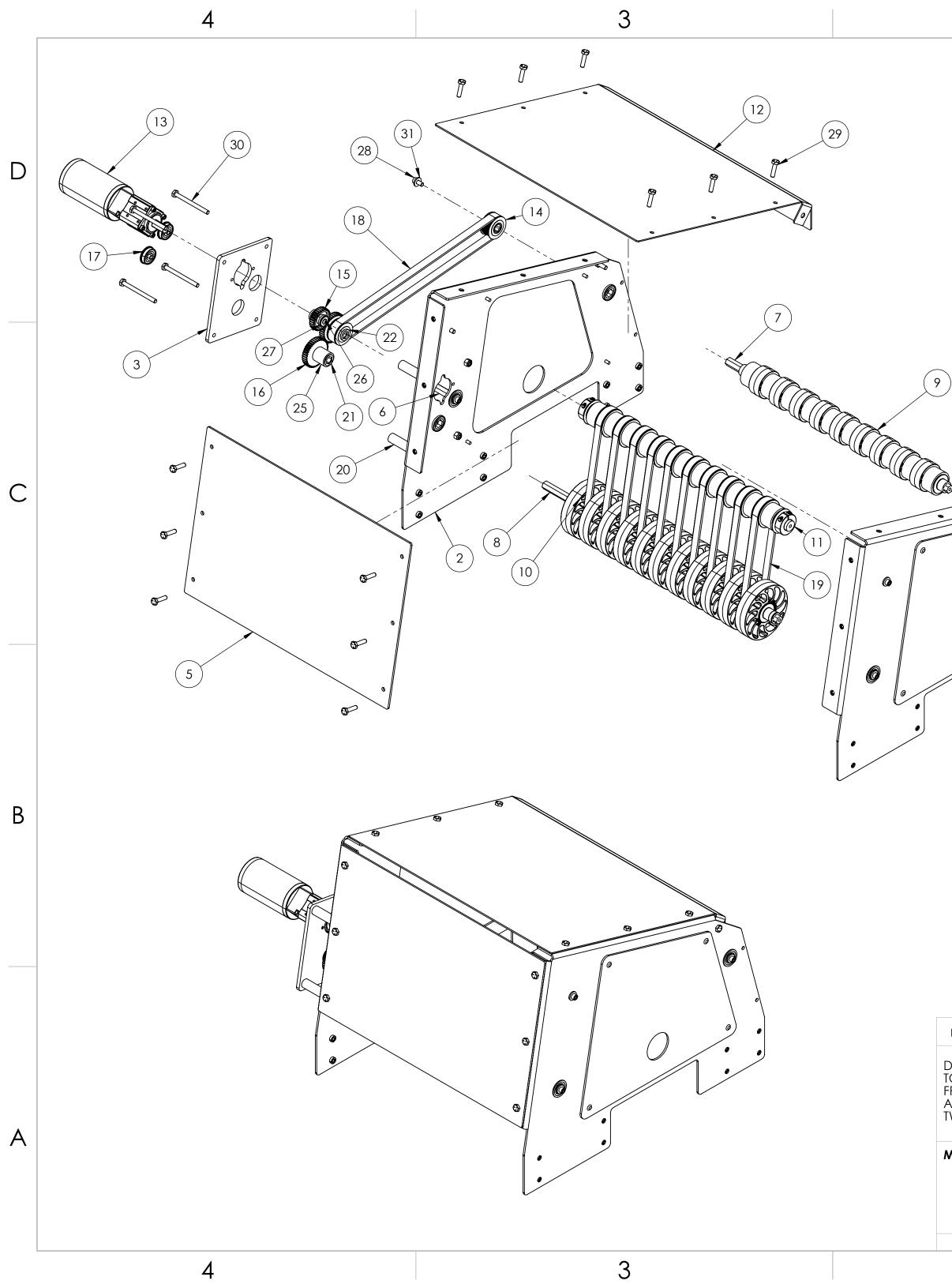
2		1		
				D
Ø				
X R.13 (.13)- .50 X 3.00			0	С
X .50				B
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND±1° TWO PLACE DECIMAL±.01 THREE PLACE DECIMAL±.005 <b>MATERIAL/FINISH:</b> 1/8" HDPE, Black Smooth Finish DO NOT SCALE DRAWING	9/14/2023 D CONFIDENTIAL N CONTAINED IN THE SOLE ST®. ANY N PART OR AS A THE WRITTEN	FIRST COMPET TITLE: COUNTER FIO SIZE DWG. NO. GE-2 SCALE: 3:4	Nodeling Solutions Partner	A



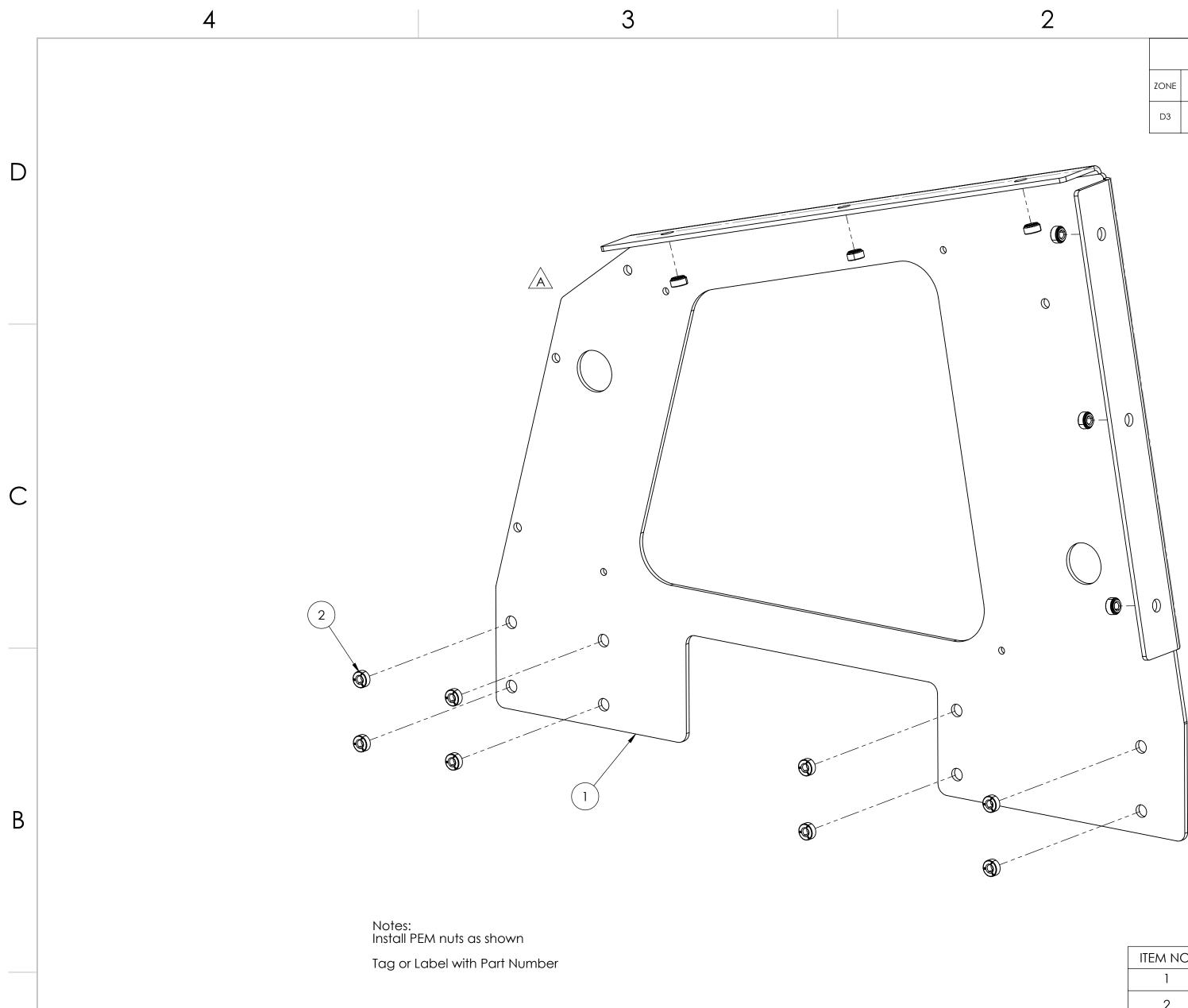








				D		
	ITEM NO.	PART NUMBER	DESCRIPTION	QTY.		
_	1	GE-24371	Counter Top Left Plate w/ PEMs	1		
_	2	GE-24372	Counter Top Right Plate w/ PEMs	1		
_	3	GE-24373	Counter Upper Motor Plate	1		
	4	GE-24374	Speaker Counter Side Shield	2		
	5	GE-24375	Speaker Counter Back Cover	1		
_	6	GE-24377	Counter Top Short Hex Shaft	1		
_	7	GE-24378	Counter Top Medium Hex Shaft	1		
	8	GE-24379	Counter Top Long Hex Shaft	1		
	9	GE-24385	Roller Shaft - Top Assembly	1		
	10	GE-24386	Live Shaft - Top Assembly	1		
_	11	GE-24387	Dead Shaft - Top Assembly	1		
_	12	GE-24390	Counter Roof w/ PEMs	1		
	13	2 Stage Gearmotor	12:1 Sport Gearbox and CIM Motor			
33	14	am-4626 24T 5mm HTD 500IN Hex 15mm Wide Bore Pulley		2 C		
	15	am-4215 30T 20DP 500hex 375 FW		1		
	16	am-4710 40T 20DP 500hex 375 FW		2		
	17	0.500 Hex ID x 1.125 OD x 0.313 WD (Flanged Bearing v2) (217-3875)		7		
	18	850-5m-15 Belt		1		
	19	80 tooth RT-25 Belt		10		
(1)	20	2.25 Bolt Spacer		4		
(4)	21	.0625 Hex Spacer		4		
	22	.125 Hex Spacer		6		
	23	.25 Hex Spacer		5		
	24	.5 Hex Spacer		4		
	25	1 in hex spacer				
	26	91255A261_Button Head Hex Drive Screw		1 B		
	27	washer_flat_10_oversiz	Oversized flat Washer for #10 Screw	1		
	28	Configurable Bolt	.5" Long 1/4-20 Socket Head Cap Screw	8		
	29	Configurable Bolt	1" Long 1/4-20 Hex Head Bolt	14		
	30	Configurable Bolt	3" Long 1/4-20 Hex Head Bolt	4		
	31	washer_flat25	Flat Washer for 1/4" Screw	8		
	32	nylock25_20	Steel Nylon-Insert Locknut, 1/4"-20	4		
	33	rivet1875251375	3/16" Aluminum Rivet, .251375 Grip Range	8		
UNLESS OTHERWISE SPECIFIED:	FIELD	NAME DATI		.IDWORKS		
	DRAWN	JO 12/19/20		olutions Partner		
DIMENSIONS ARE IN INCHES TOLERANCES:	PROPRIE	TARY AND CONFIDENTIAL				
FRACTIONAL±1/2 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.50	THIS DRA PROPER	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A				
MATERIAL/FINISH:	WHOLE	without the written Ion of <b>First</b> ® Is	SIZE DWG. NO.	Y A		
	COMME	NTS:	<b>C</b> GE-24370			
do not scale drawing	REMO	VE ALL BURRS AND SHARI EDGES.	SCALE: 1:5 SHEET 1	OF 1		
_						
2						



[ 7 F /

4

А

3

			1	
		REVISIONS		
ZONE	REV.	DESCRIPTION	DATE	APPROVED
D3	А	Visual Changes from GE-24371-01	10/12/2023	JO

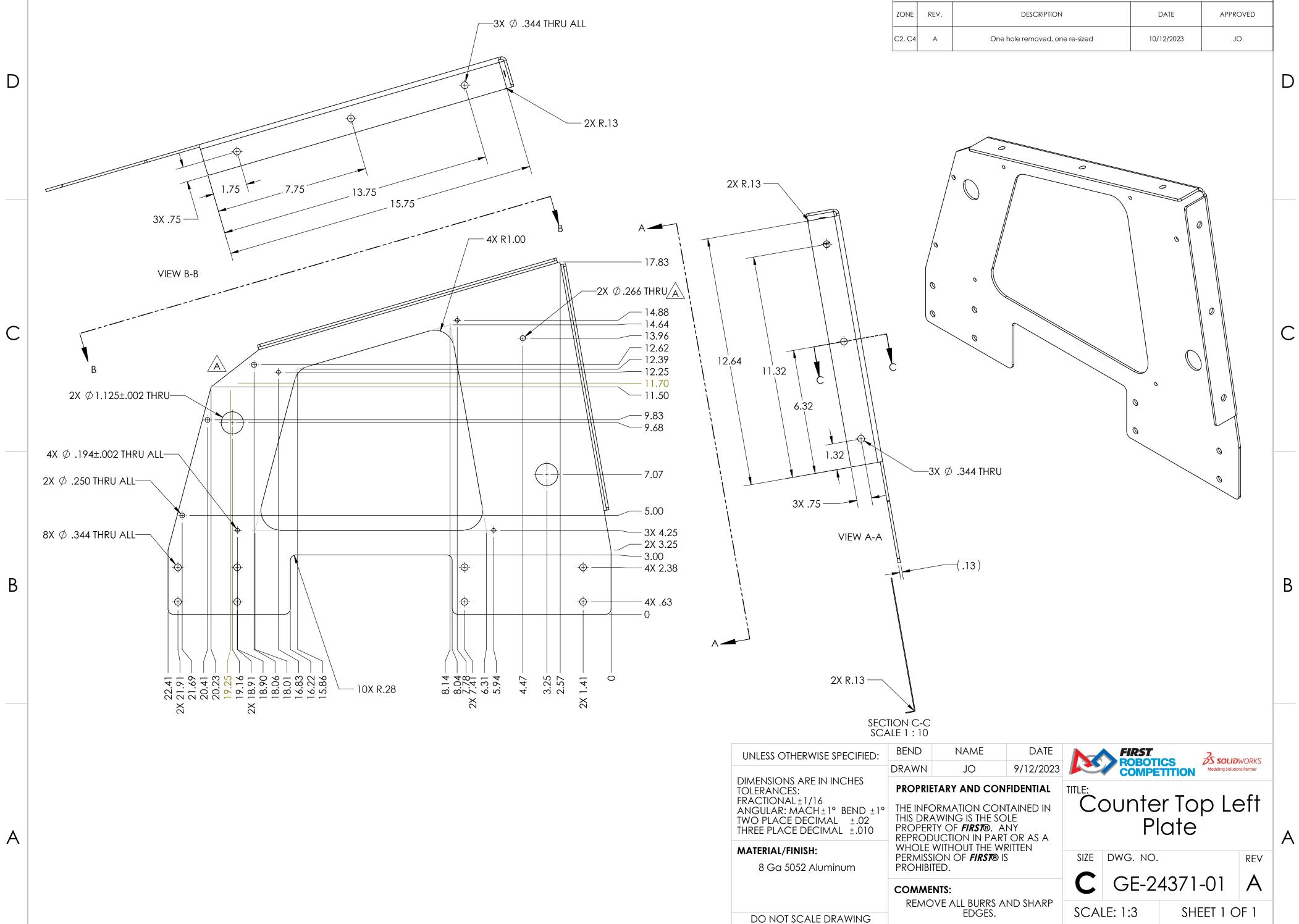
D

С

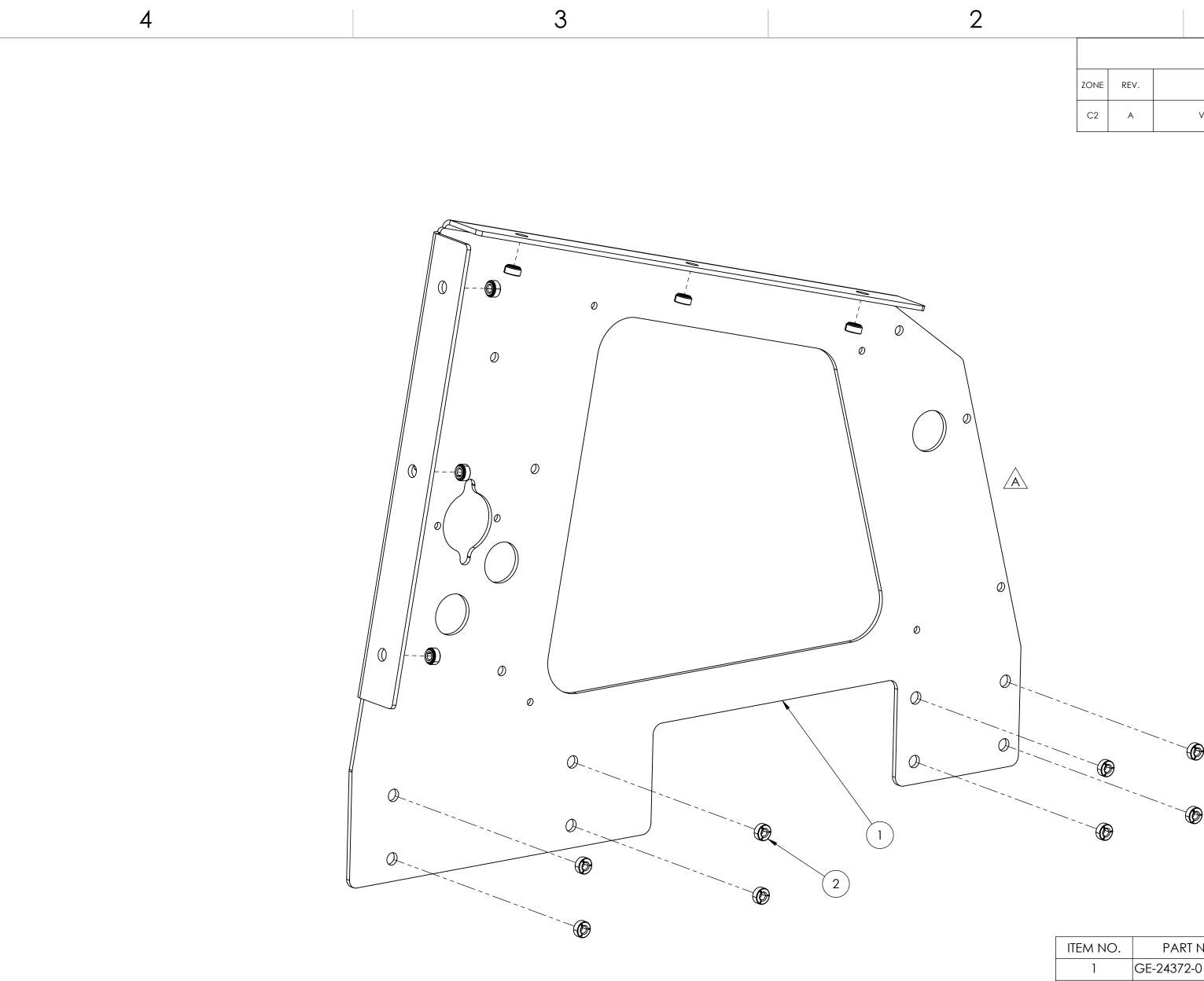
_								
	ITEM NO. PART N		RT NUMBER		DESCRIPTION			
_	1	GE-24371-01		Cou	inter Top Lef	t Plate	1	
_	2	pem_clinchnu 054	t25_20	1/4-20 self-	-clinching nu	ut, .054 shai	nk 14	
UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE		FIRST.	2		_
	DRAWN	JO	9/12/202	23	<b>ROBOTI</b> COMPE		<b>S SOLID</b> WORKS Modeling Solutions Partner	·
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND±1 TWO PLACE DECIMAL±.01 THREE PLACE DECIMAL±.005 MATERIAL/FINISH:	<ul> <li>THE INFC THIS DRA PROPER REPROD</li> </ul>	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <i>FIRST</i> ®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN		Left Plate w/				A
MATERIAL/ FINISH.	PERMISS	PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			DWG. NO.		REV	/
COMM		·				24371		<b>L</b>
DO NOT SCALE DRAWING EDGES.			SCAI	E: 1:2	SHEE	t 1 OF 1		
2			·	1				







			1	
		REVISIONS		
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C2, C4	А	One hole removed, one re-sized	10/12/2023	JO



Note: Tag or Label with Part Number

4

D

С

В

А

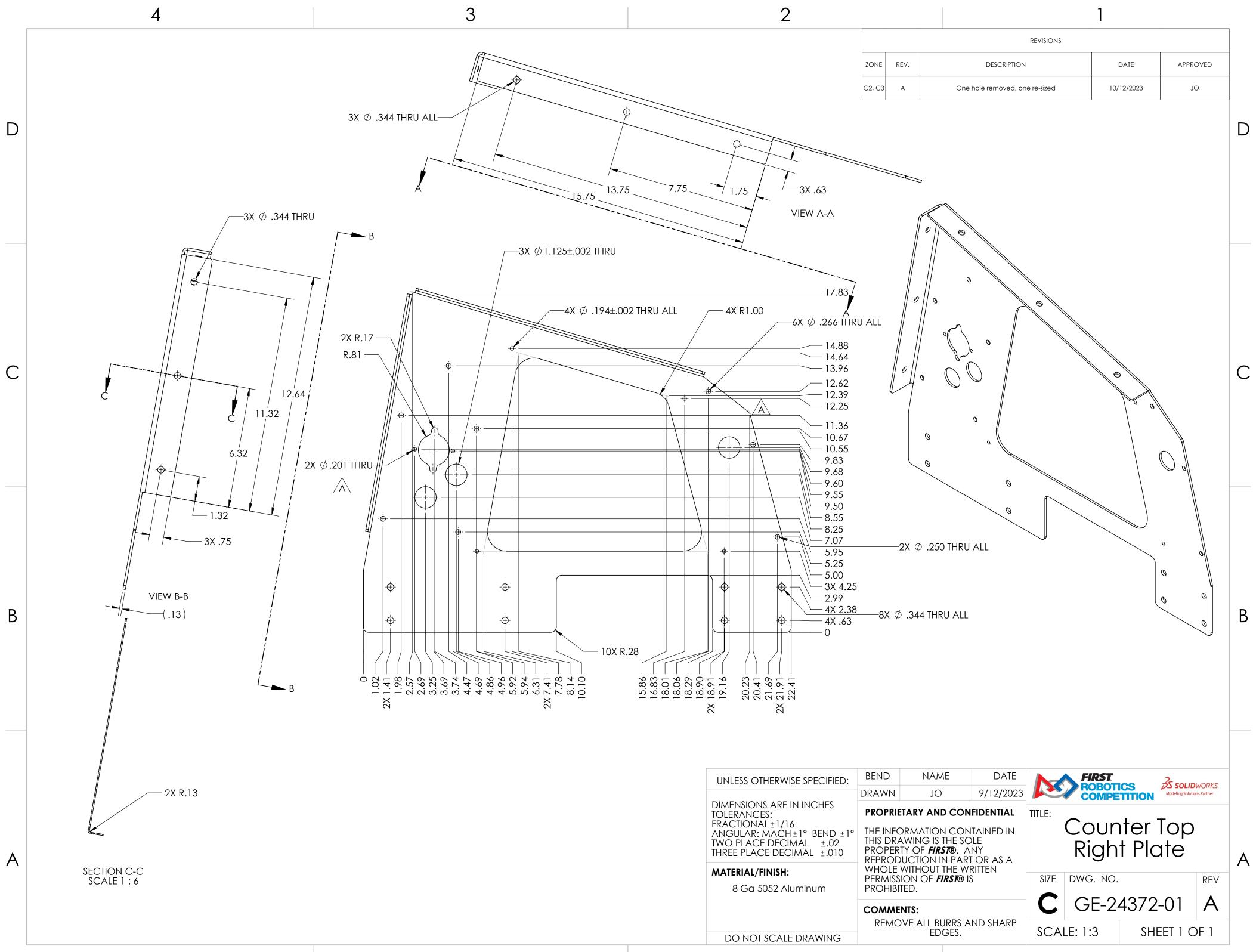
3

			1	
		REVISIONS		
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C2	А	Visual Changes from GE-24372-01	10/12/2023	JO

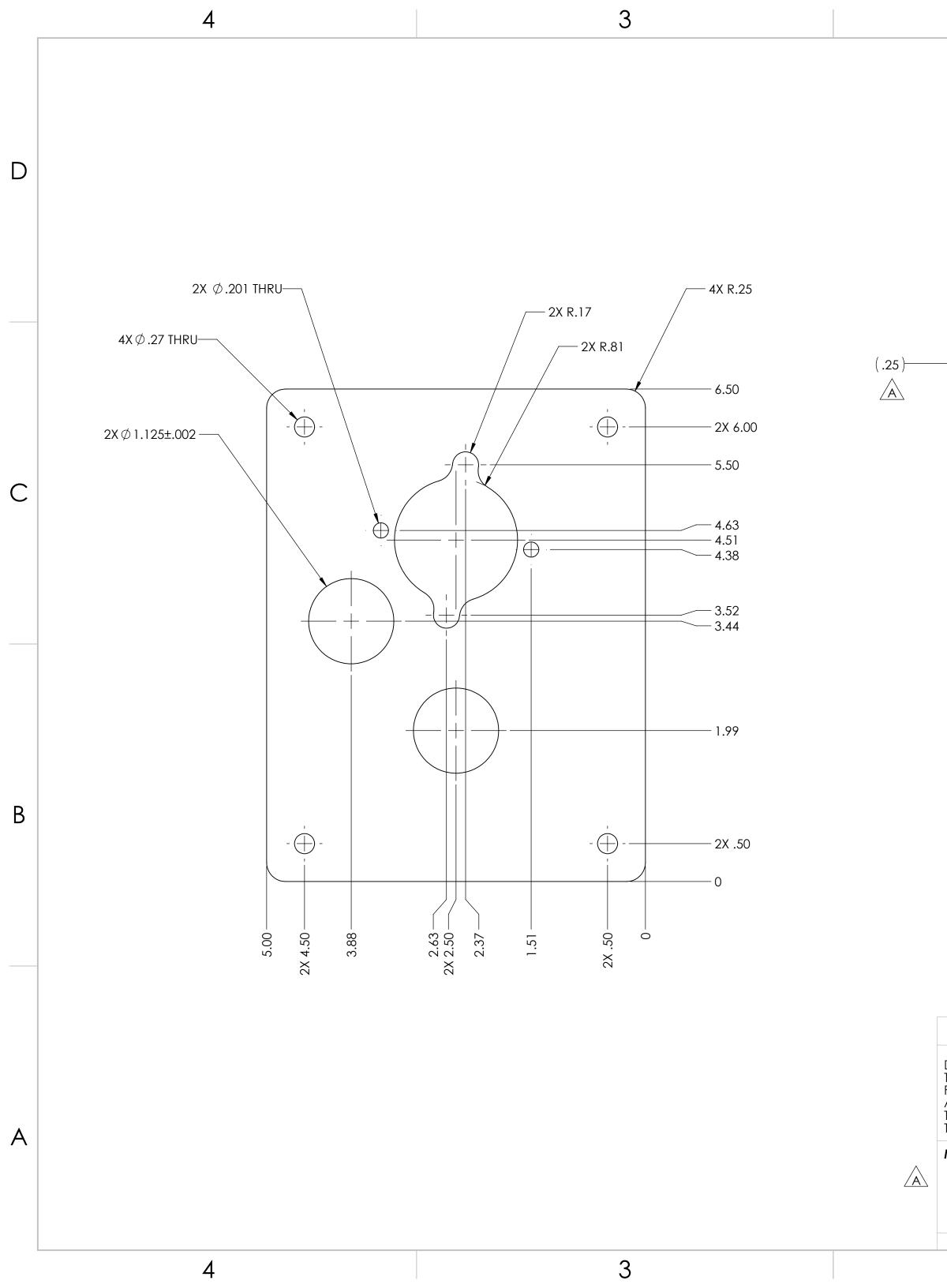
D

С

	ITEM NO.	PART NUM	PART NUMBER GE-24372-01		DESCRIPTION			QTY.	
	1	GE-24372-01			nter Top Rigl	nt Plate		1	•
	2	pem_clinchnu 054	ut25_20	1/4-20 self	-clinching nu	ut, .054 sh	ank	14	
UNLESS OTHERWISE SPECIFIED	VEND	NAME					ZS SOLIDI		
	DRAWN	JO	9/12/20	23	ROBOT	TITION		ng Solutions Partner	
FRACTIONAL ± 1/16 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 REPRODUCT		ETARY AND CONFIDENTIAL ORMATION CONTAINED IN AWING IS THE SOLE BTY OF <i>FIRST</i> ®. ANY DUCTION IN PART OR AS A WITHOUT THE WRITTEN						A	
MATERIAL/FINISH:		PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			DWG. NO.			REV	
	NTS: VE ALL BURRS AND SHARP				2437	2	A		
DO NOT SCALE DRAWING				SCA	LE: 1:2	SHE	et 1 O	F 1	
2					1				



•

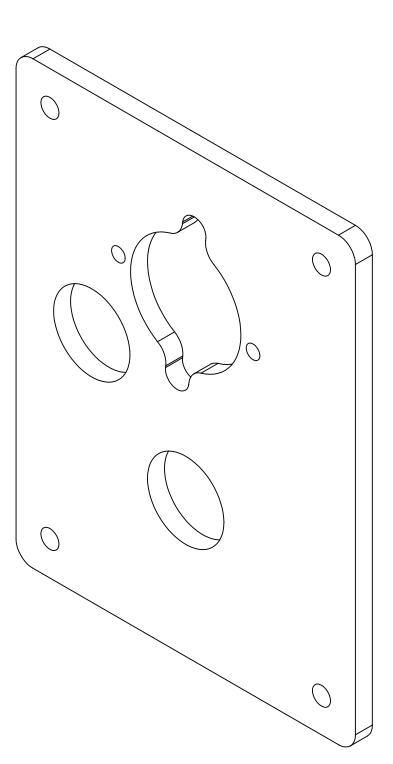


			1	
		REVISIONS		
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A2, C2	A	Thickness Increased	10/11/2023	JO

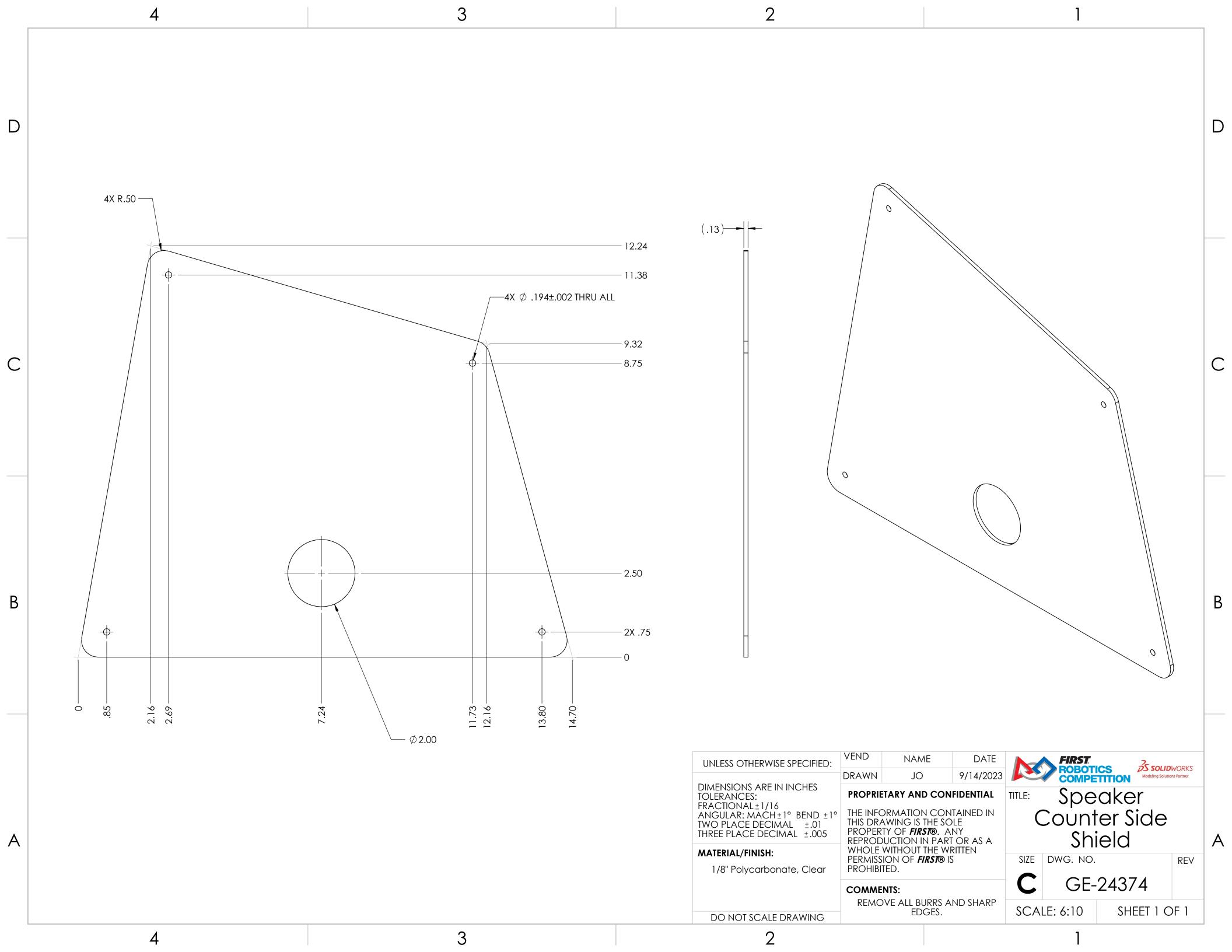
D

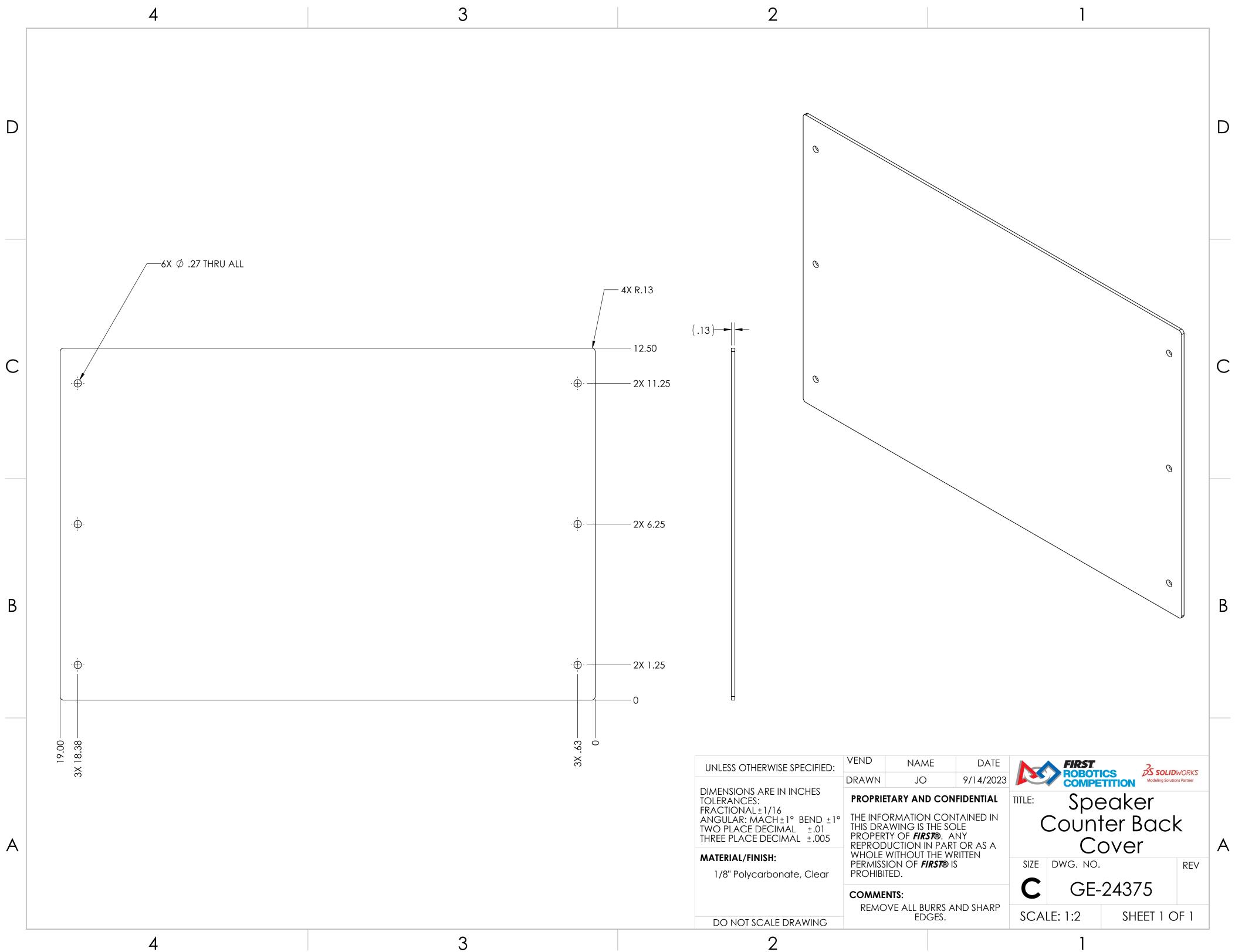
С

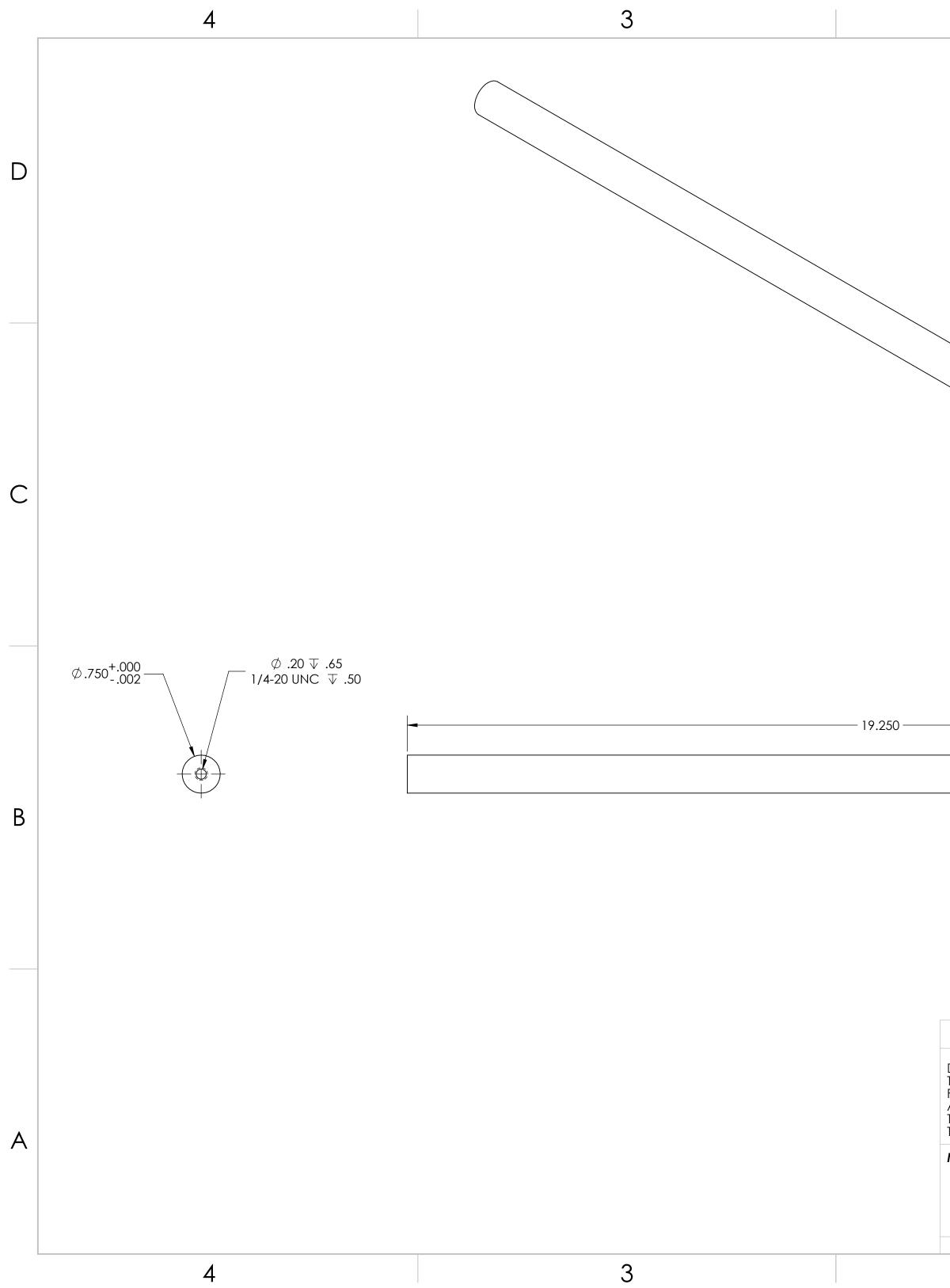
В



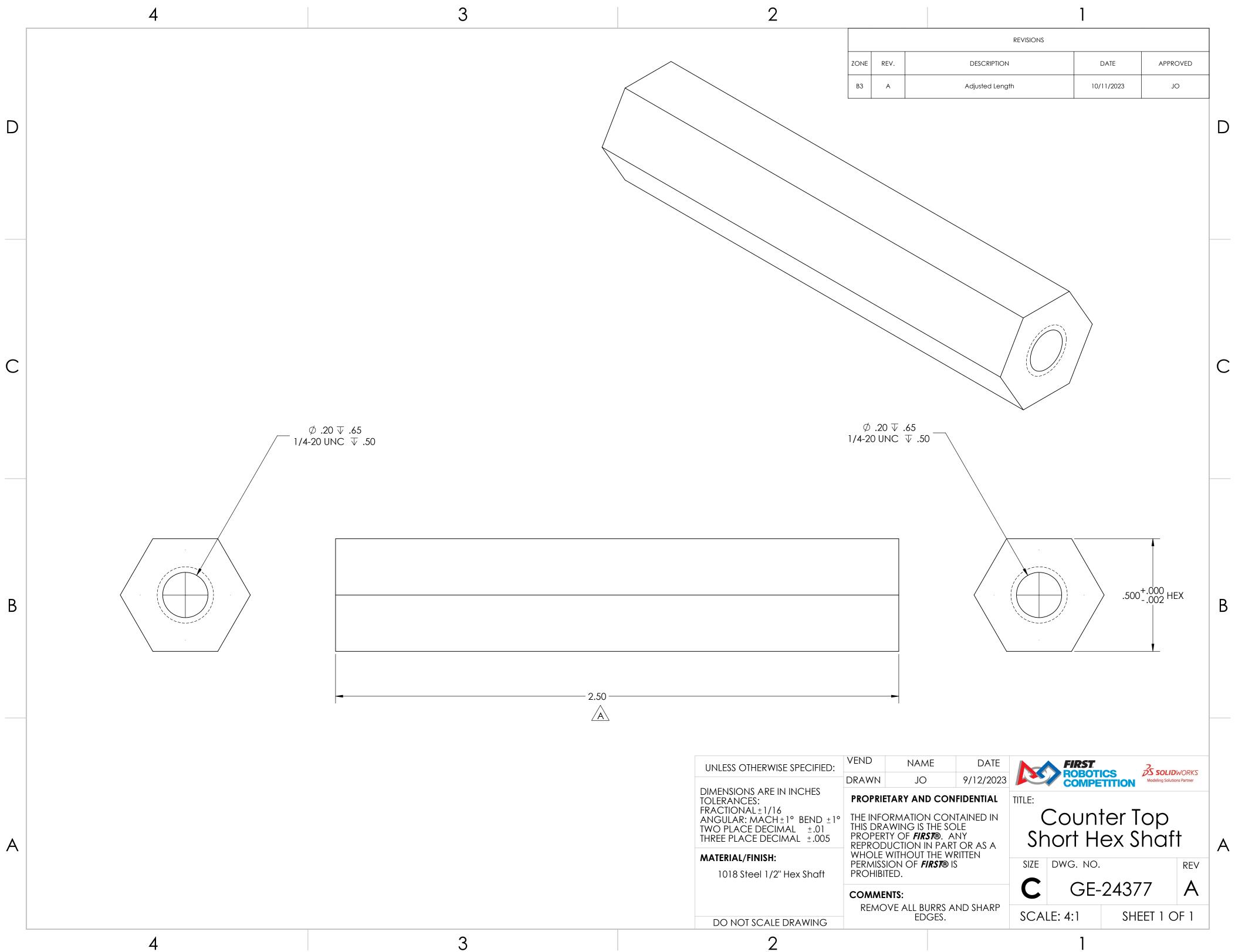
									_
UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE		<b>FIRST</b>		ZS SOLID		
	DRAWN	JO	9/14/2023		ROBOT	ETITION	Modeling Solution		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND±1° TWO PLACE DECIMAL±.01 THREE PLACE DECIMAL±.005	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <i>FIRST</i> ®. ANY REPRODUCTION IN PART OR AS A			Counter Upper Motor Plate					A
MATERIAL/FINISH:	WHOLE		SIZE	DWG. NO			REV	-	
1/4" 6061 Aluminum		PERMISSION OF <b>FIRST</b> ® IS PROHIBITED.					_	KL V	
	COMME	COMMENTS:		C	GE-	-2437	73	A	
do not scale drawing	REMC	REMOVE ALL BURRS AND SHARP EDGES.			P SCALE: 1:1 SHEET		EET 1 C	T 1 OF 1	
DO NOT SCALL DRAWING									
2					1				

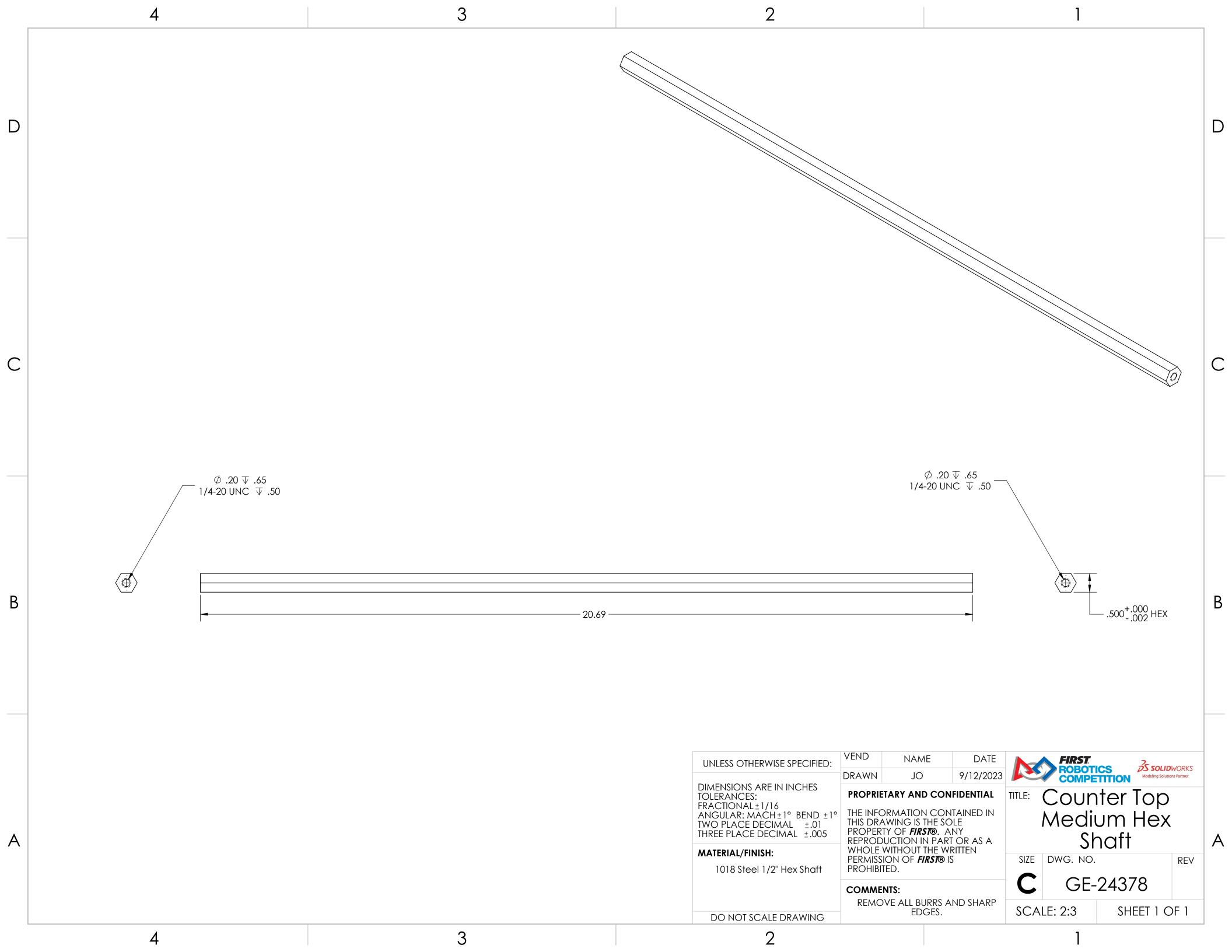


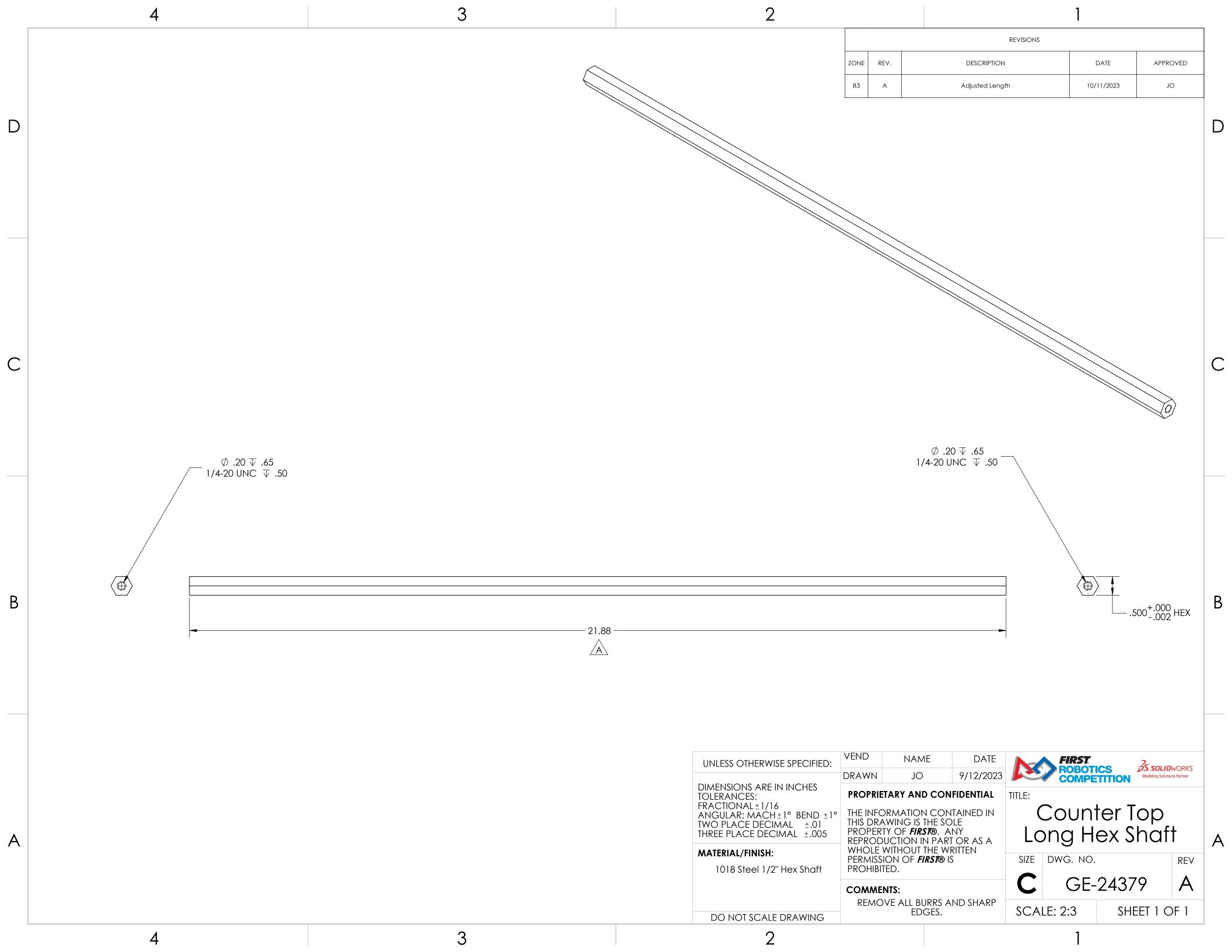


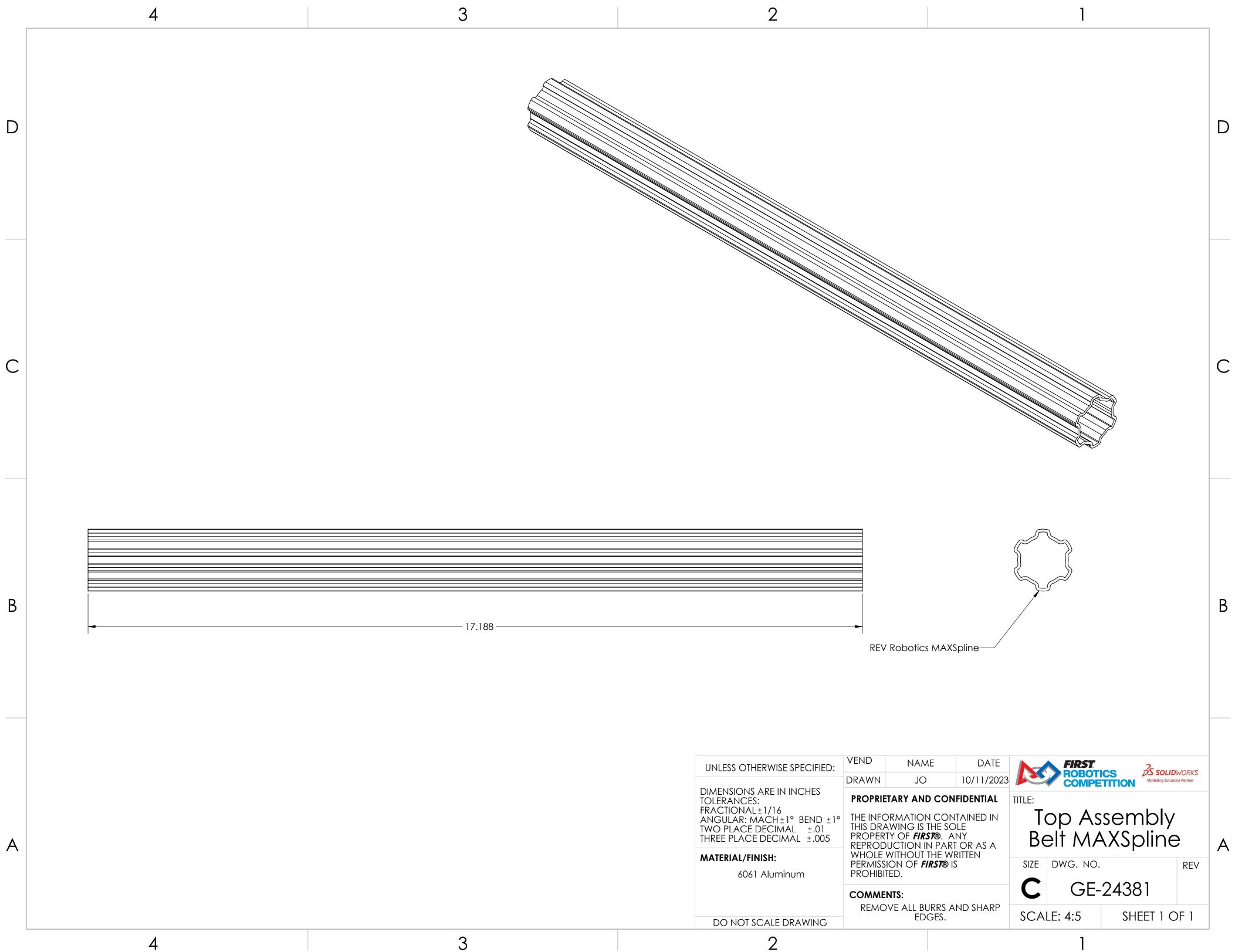


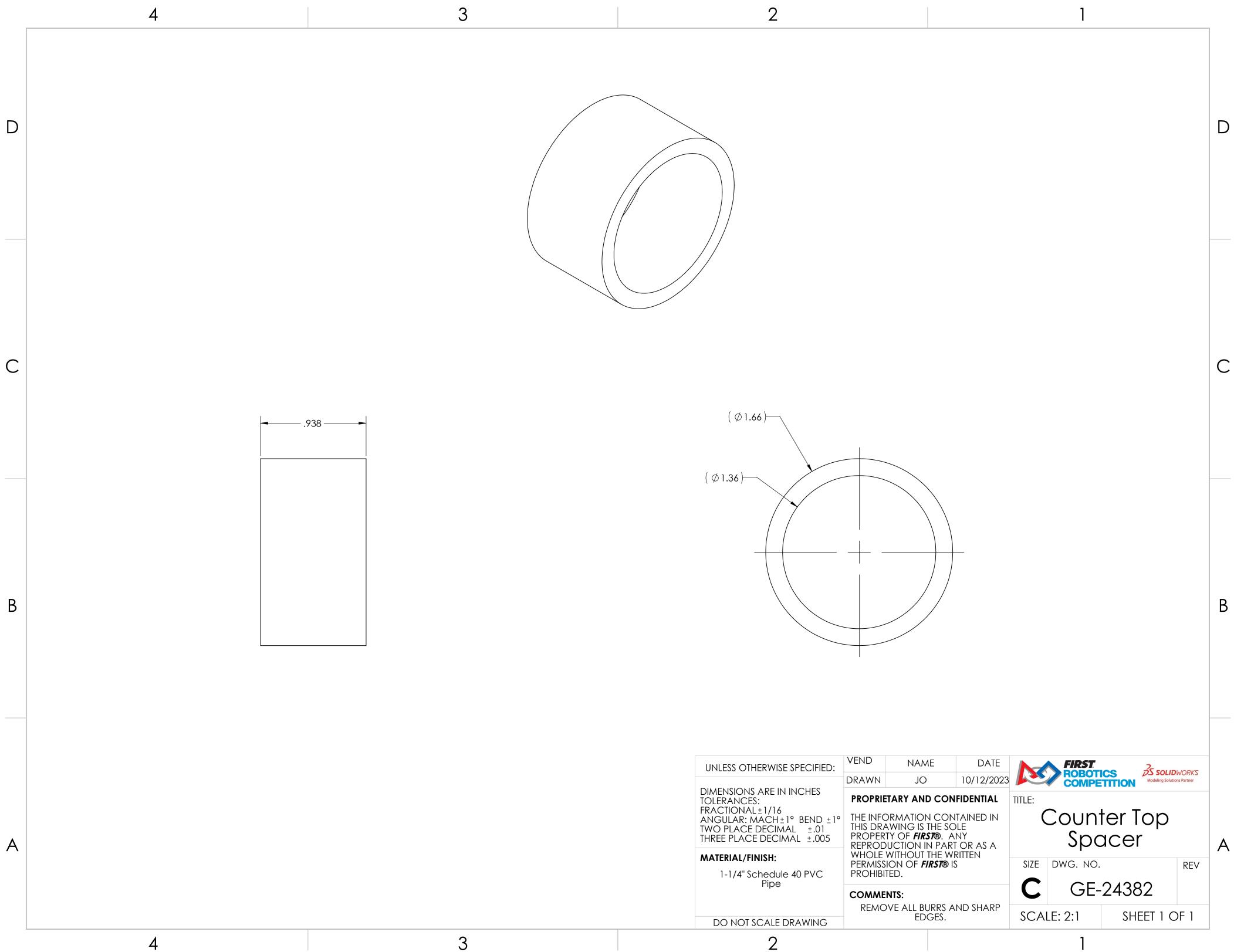
2		1	
			D
	1	Ø.20 ↓.65 /4-20 UNC ↓.50	С
			В
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/16 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: Steel, Zinc Plated DO NOT SCALE DRAWING	VENDNAMEDATEDRAWNJO10/12/202PROPRIETARY AND CONFIDENTIALTHE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.	ITTLE:   SIZE   DWG. NO.   REV   C   GE-24376   SCALE: 2:3   K	A

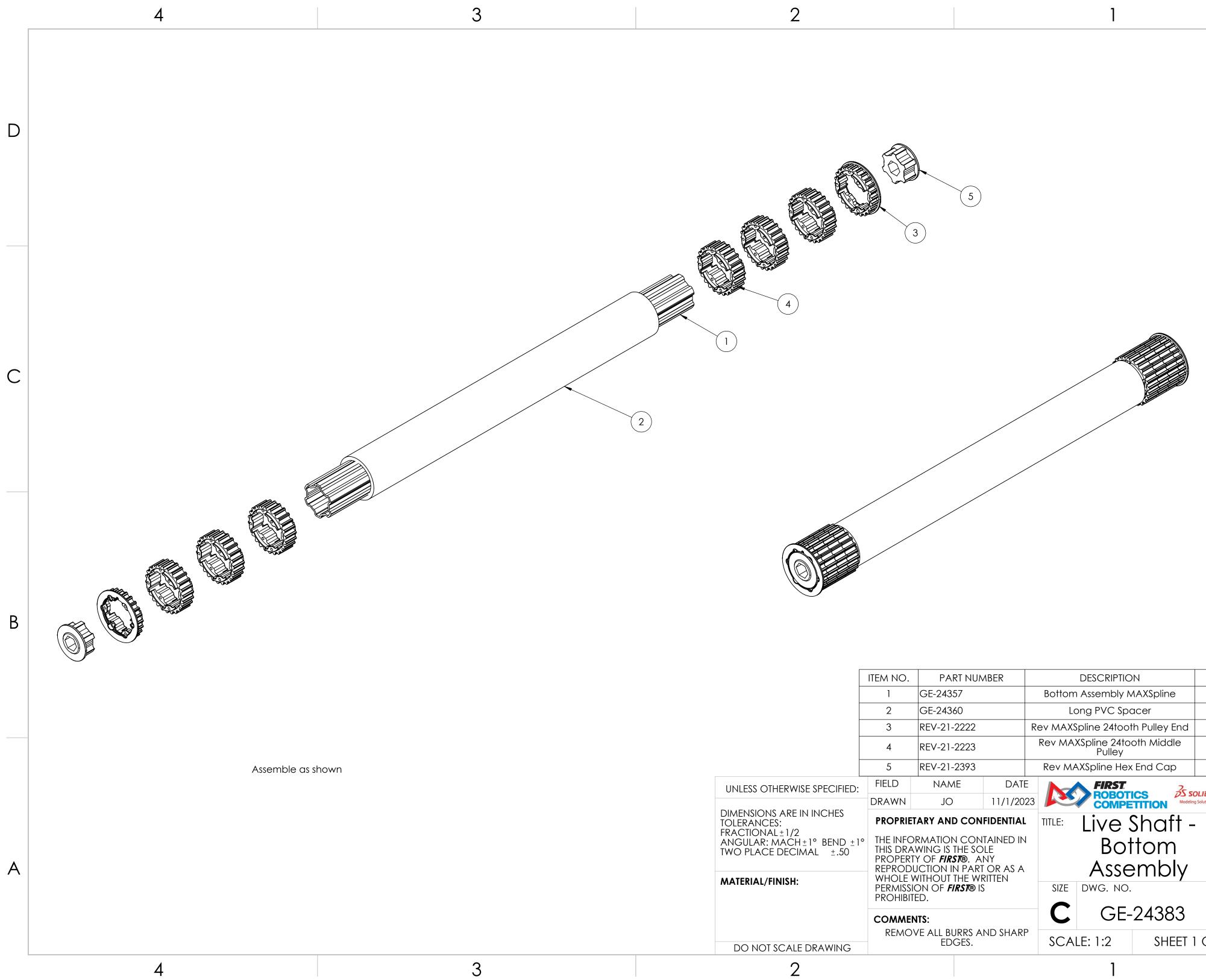








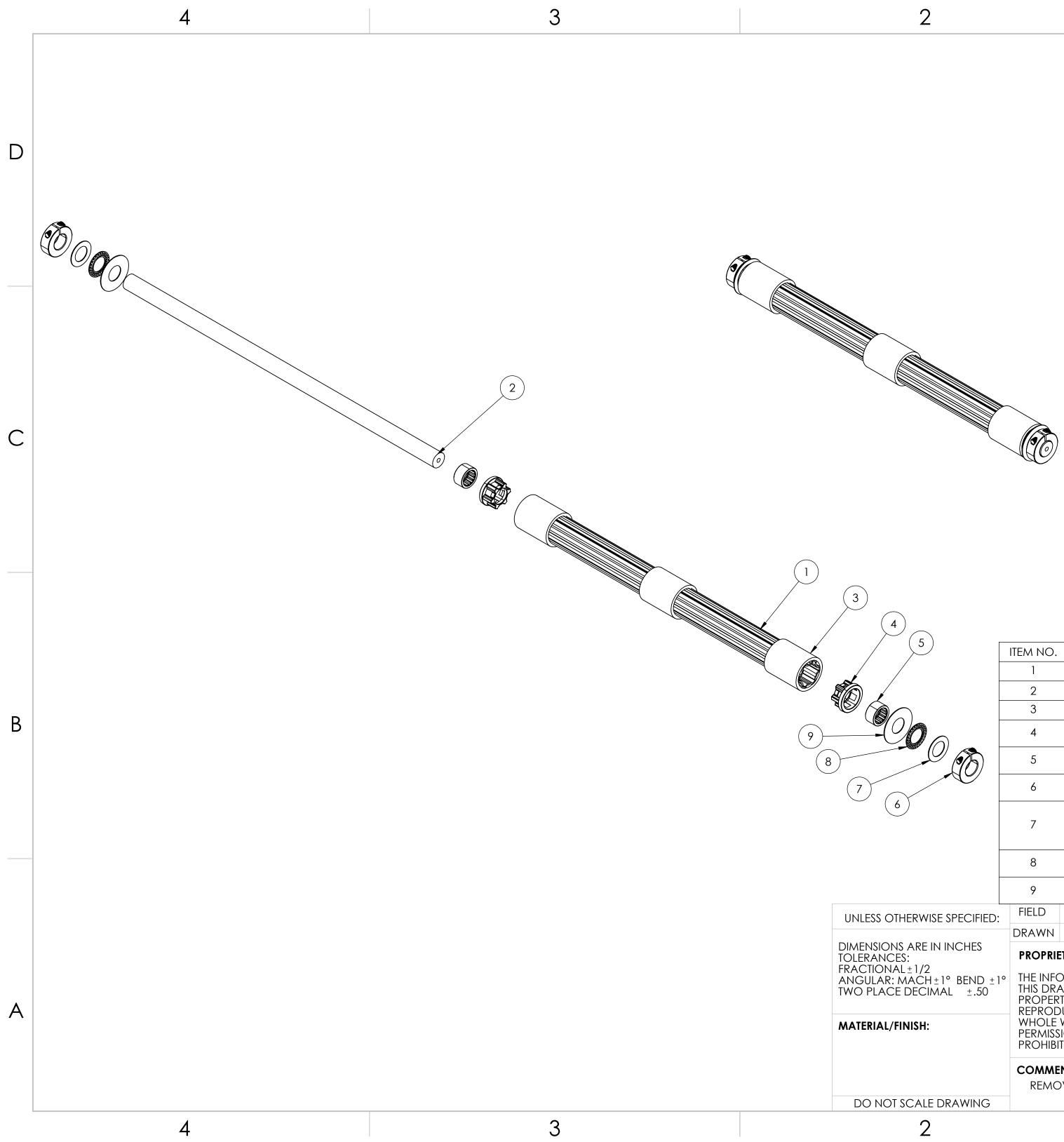




	ITEM NO.	PART NU	MBER		DESCRIPTIO	Ν	QTY.	
	1	GE-24357		Bottom	Assembly N	1AXSpline	1	1
	2	2 GE-24360		Lo	ong PVC Spa	acer	1	1
	3	REV-21-2222		Rev MAXS	Spline 24toot	h Pulley End	2	1
	4	REV-21-2223		Rev MA	XSpline 24to Pulley	oth Middle	6	
	5	REV-21-2393		Rev MA	AXSpline Hex	End Cap	2	1
UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE		FIRST.	2550	DLIDWORKS	
	JO	11/1/202	23	3 ROBOTICS COMPETITION Define Sol				
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/2				TITLE:	TITLE: Live Shaft -			-
ANGULAR: MACH±1° BEND ±1 TWO PLACE DECIMAL ±.50	THIS DRA	RMATION CON WING IS THE SC Y OF <b>FIRST®</b> . A			Bottom			
		UCTION IN PAR WITHOUT THE W			Asse	embly		<i>F</i>
MATERIAL/FINISH:		ON OF FIRST® I		SIZE	IZE DWG. NO.		REV	-
	COMMENTS:			C	GE-	24383		
DO NOT SCALE DRAWING			ND SHARF	SCA	LE: 1:2	SHEET 1	OF 1	-
2					1			

D

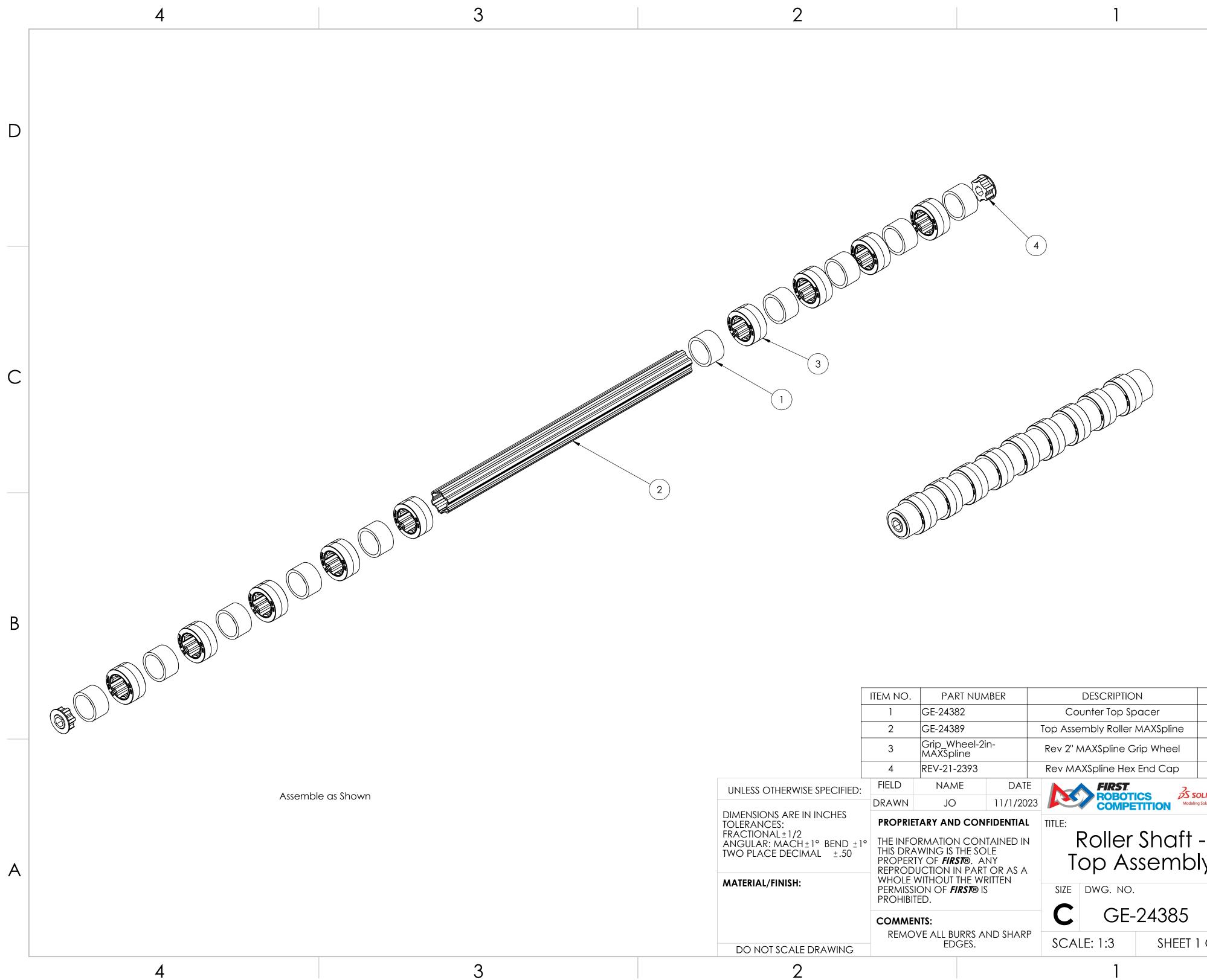
С



3 (4)									
5	ITEM NO.	PART NUM	1BER			DESCRIPTIO	٧	QTY.	
	1	GE-24357			Bottom	Assembly M	AXSpline	1	_
	2	GE-24367			Counte	er Bottom De	ad Shaft	1	
	3	GE-24368			Count	er Bottom Flo	at Pulley	3	
	4	REV-21-2385		F	Rev MAX	(Spline Need Housing	le Bearing	2	
	5	REV-21-2386			Rev MA	XSpline Nee Bearing	dle Roller	2	
7	6	6435K16_Clan Shaft Collar	nping	٨	McMaste	er 3/4" Clam Collar	oing Shaft	2	
6	7	5909K46_0.032 Washer for 3-4 Diameter Nee Roller Thrust Be	Shaft dle-		McMas B	ter 3/4" Need Searing Wash	dle Roller ber	2	
	8	5909K33_Need Roller Thrust Be		Mo	cMaster	3/4" Needle Bearing	Roller Thrust	2	
	9	GE-24393			Cus	tom Thrust W	asher	2	
UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DAT	E		<b>FIRST</b>		<b>DLID</b> WORKS	
	DRAWN	JO	11/1/20	23		ROBOTI		Solutions Partner	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/2 ANGULAR: MACH±1° BEND±1 TWO PLACE DECIMAL ±.50	• THE INFC THIS DRA	TARY AND CON RMATION CON WING IS THE SO	tained in Le		TITLE:	Bot	Shaft tom	-	
	REPROD	TY OF <b>FIRST®</b> . AI UCTION IN PART	OR AS A	<b>\</b>		Asse	embly		A
MATERIAL/FINISH:	PERMISSI	NITHOUT THE WE ON OF <b>FIRST®</b> IS			SIZE	DWG. NO.	/	REV	
	PROHIBIT	ED.			$\mathbf{C}$		24384		
	COMME					GL-	24004		
do not scale drawing	REMO	REMOVE ALL BURRS AND SHARP EDGES.		P	SCA	LE: 1:3	SHEET 1	OF 1	
2						1			

D

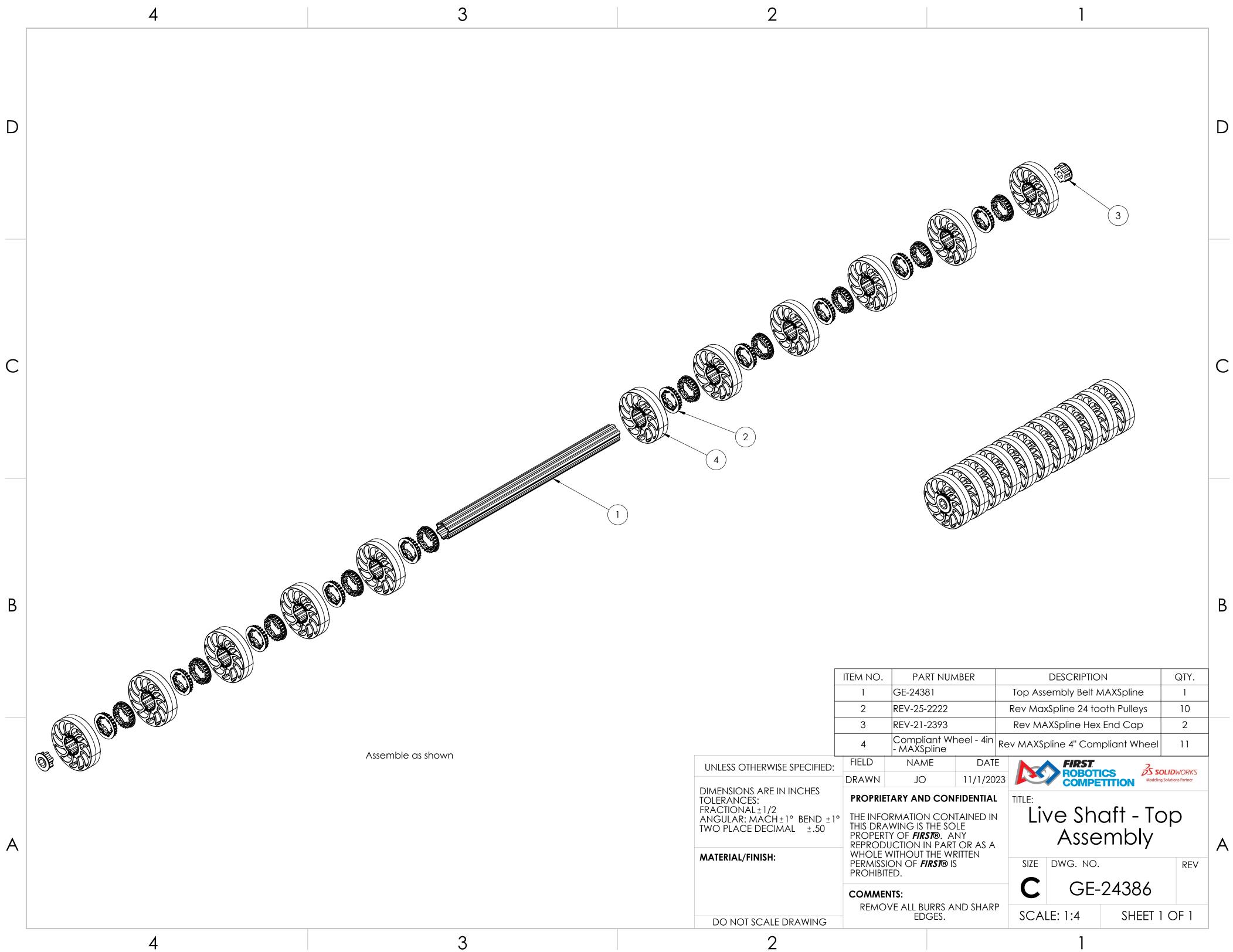
С



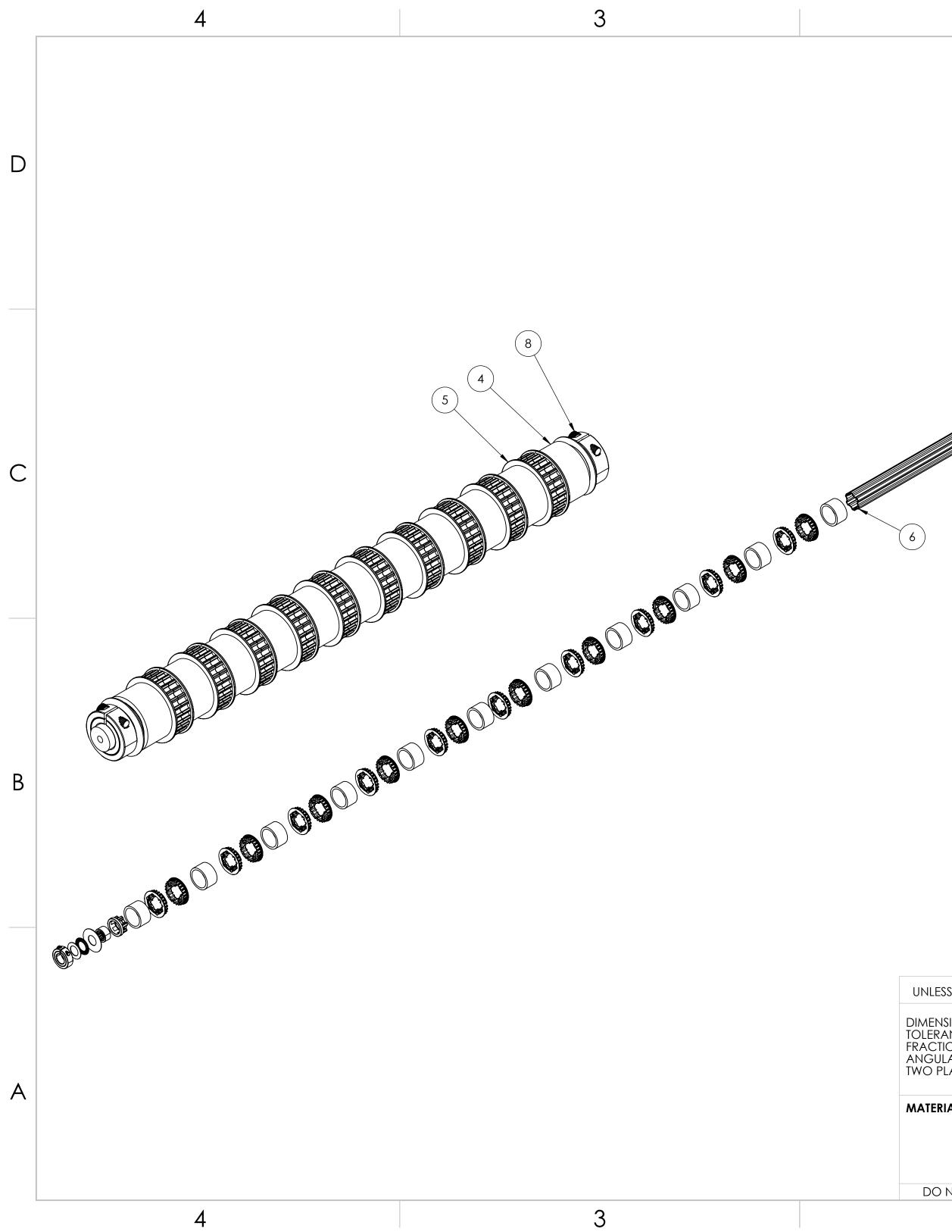
	ITEM NO.	EM NO. PART NUMBER				DESCRIPTION				
-	1	GE-24382			Сс	ounter Top Sp	acer		10	
-	2	GE-2438	39		Top Asse	embly Roller	MAXSpline		1	1
-	3	Grip_Wł MAXSpli		n-	Rev 2" I	MAXSpline G	rip Wheel		9	
-	4	REV-21-2	2393		Rev MA	XSpline Hex	End Cap		2	
UNLESS OTHERWISE SPECIFIED:	FIELD	NAM	١E	DATE		<b>FIRST</b>		SOLIDI	10.01/15	
	DRAWN	JO		11/1/202	3			deling Solution		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/2 ANGULAR: MACH ± 1° BEND ± 1 TWO PLACE DECIMAL ±.50	<ul> <li>THE INFC THIS DRA PROPERT</li> </ul>	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <i>FIRST</i> ®. ANY REPRODUCTION IN PART OR AS A			Roller Shaft -					A
MATERIAL/FINISH:		on of <b>FI</b>			SIZE	DWG. NO.			REV	
	COMMENTS:					GE-	24385			
do not scale drawing	NOT SCALE DRAWING			ND SHARP	SCA	LE: 1:3	SHEE	ET 1 OF 1		
)					1				-	

D

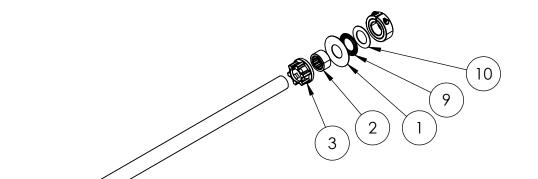
С



	ITEM NO.	PART NU	MBER		DESCRIPTIC	N	QTY.	
	1	GE-24381		Top As	sembly Belt N	NAXSpline	1	
	2	REV-25-2222		Rev Mo	axSpline 24 to	oth Pulleys	10	
	3	REV-21-2393		Rev M	AXSpline Hex	End Cap	2	
	4	Compliant W - MAXSpline	heel - 4in	Rev MAX	Spline 4" Com	pliant Wheel	11	
UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DAT		<b>FIRST</b>	25.50	LIDWORKS	
	DRAWN	JO	11/1/20	23 尾			Solutions Partner	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/2 ANGULAR: MACH ± 1° BEND ± 1 TWO PLACE DECIMAL ±.50	• THE INFC THIS DRA	TARY AND CON DRMATION CON WING IS THE SC	ITAINED IN DLE			aft - Tc	p	
		IY OF <b>FIRST®</b> . A UCTION IN PAR			Assembly			
MATERIAL/FINISH:	WHOLE	without the W Ion of <b>First</b> ® I:	RITTEN	SIZE	DWG. NO.		REV	
COMMENTS:				C	<b>C</b> GE-24386			
DO NOT SCALE DRAWING			ND SHAR	SCA	LE: 1:4	SHEET 1	OF 1	
0					1			



	ITEM NO.	PART NUA	VREK		DESCRIPTIO	N	QTY.	-
	1	GE-24393		Cus	tom Thrust W	'asher	2	
	2	REV-21-2386		Rev MAXSpline Needle Roller Bearing			2	
	3	REV-21-2385	REV-21-2385		(Spline Neec Housing	lle Bearing	2	
	4	GE-24382		Со	unter Top Sp	acer	11	B
	5	REV-25-2222		Rev Max	Spline 24 to	oth Pulleys	10	1
	6	GE-24381		Top Ass	embly Belt N	1AXSpline	1	1
	7	GE-24376		Cour	Counter Top Dead Shaft			1
	8	6435K16_Clar Shaft Collar			McMaster 3/4" Clamping Shaft Collar			
	9	5909K33_Nee Roller Thrust B			McMaster 3/4" Needle Roller Thrust Bearing			
	10	Washer for 3-4 Diameter Nee			McMaster 3/4" Needle Roller Bearing Washer			
UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATI		LIDWORKS	1		
	DRAWN	JO	11/1/20	23 찬	<b>ROBOTI</b> COMPE		Solutions Partner	
DIMENSIONS ARE IN INCHES TOLERANCES:	PROPRIE	TARY AND CON	FIDENTIAL	TITLE:				
FRACTIONAL±1/2 ANGULAR: MACH±1° BEND ±1	• THE INFO	DRMATION CON	TAINED IN	, İ 🔤	Dead	Shaft	_	
TWO PLACE DECIMAL ±.50	THIS DRA	AWING IS THE SC TY OF <b>FIRST</b> ®. A						
	REPROD	UCTION IN PART	or as a		op As	sembl	У	A
MATERIAL/FINISH:	PERMISS	ION OF <i>FIRST</i> ® IS		SIZE	DWG. NO.		REV	
	PROHIBI	IED.				01207		
		COMMENTS:			GE-	24387		
DO NOT SCALE DRAWING	REMC	REMOVE ALL BURRS AND SHARP EDGES.		SCA	LE: 1:5	SHEET 1	OF 1	
0	I				1			
2					I			

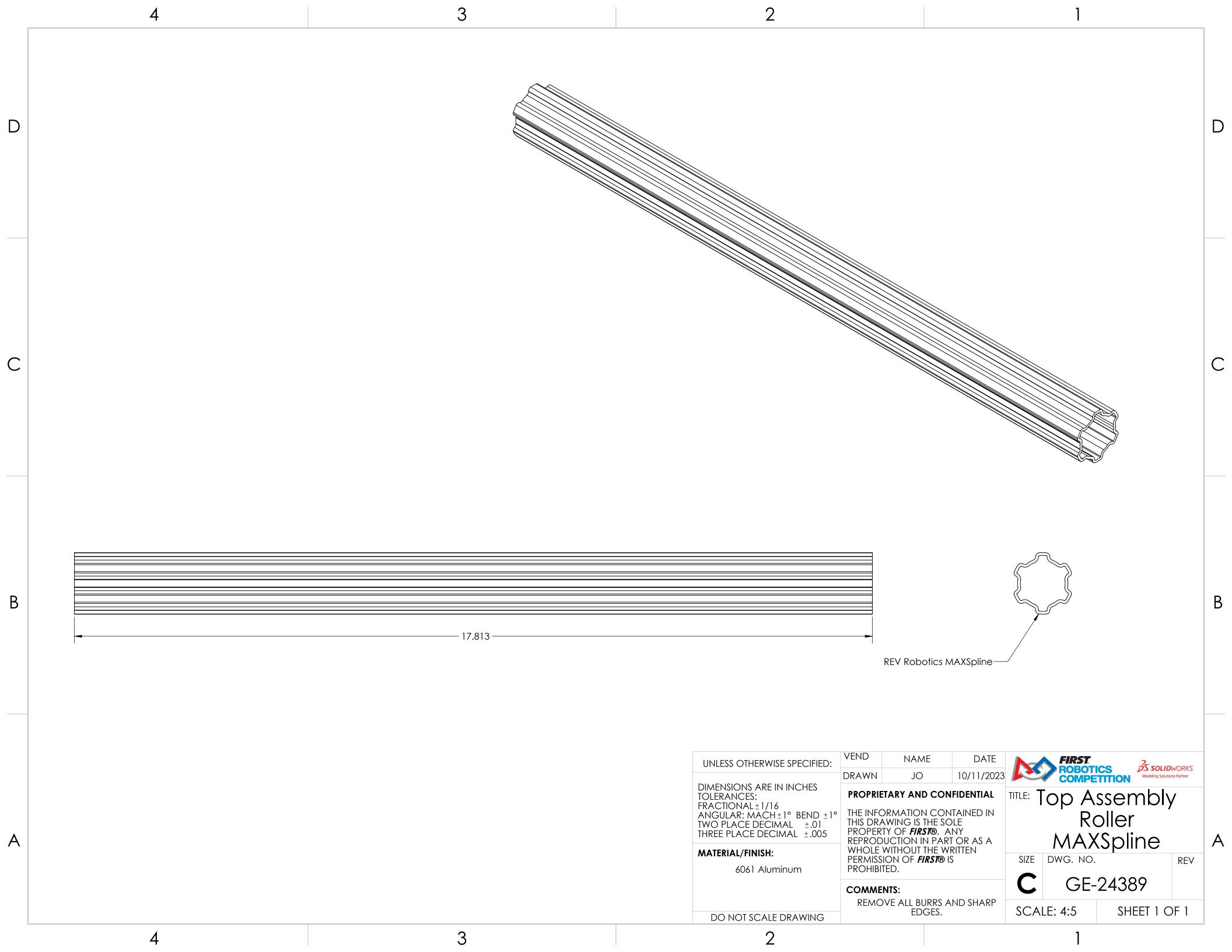


(7)

1

D

С





А

3

Note: Tag or Label with Part Number

4

4

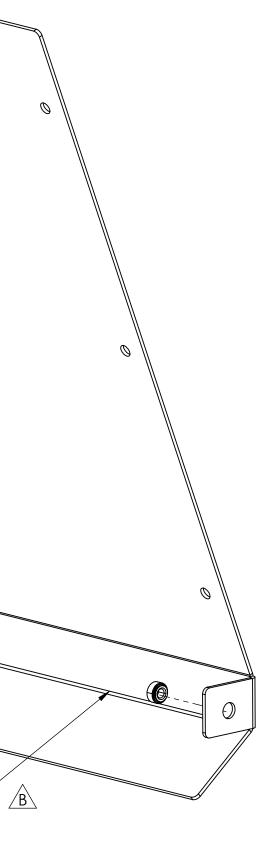
3

2	

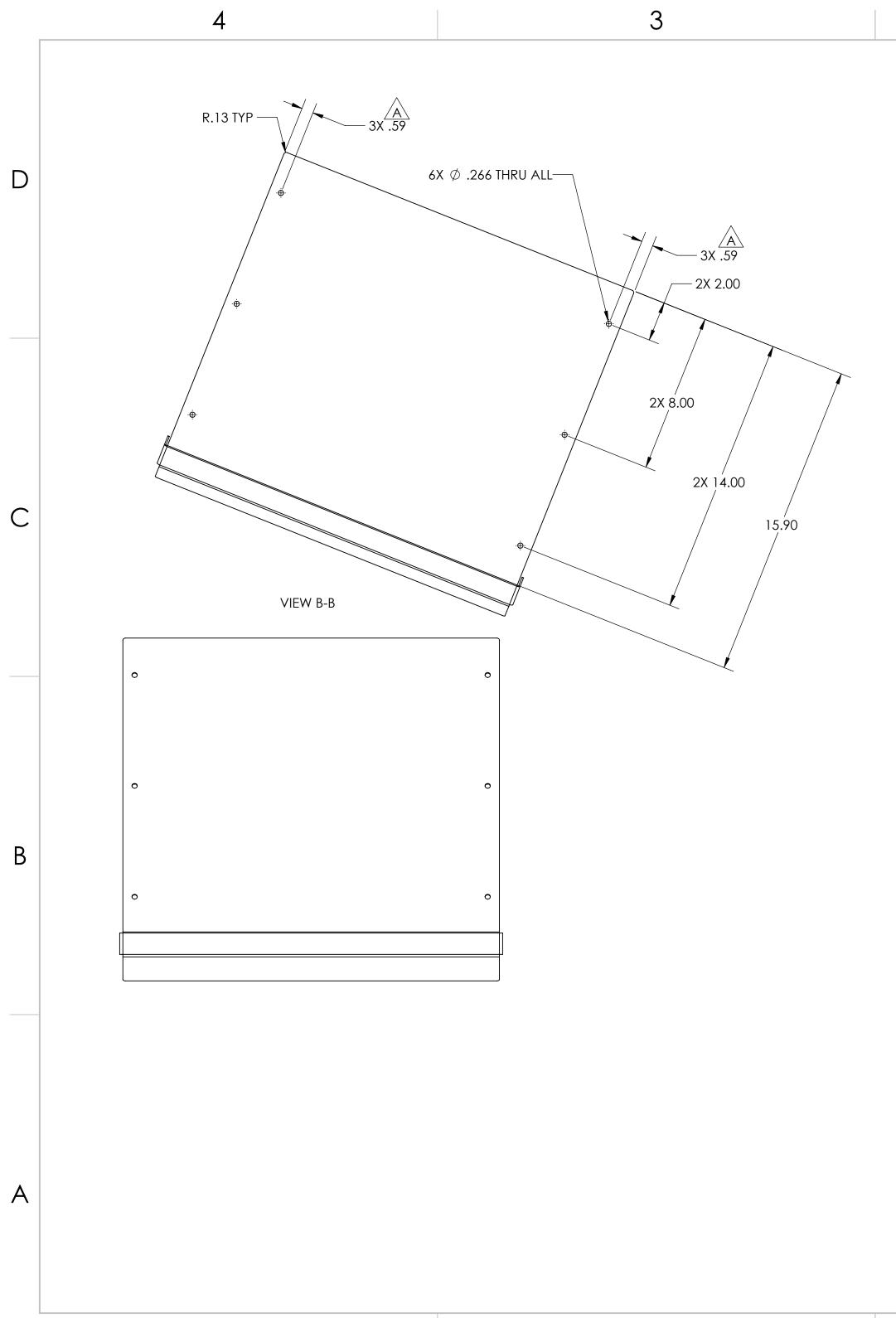
		REVISIONS		
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B3	А	Visual Geometry Changes from GE-24390-01	10/16/2023	JO
B2	В	Visual Geometry Changes from GE-24390-01	10/17/2023	JO

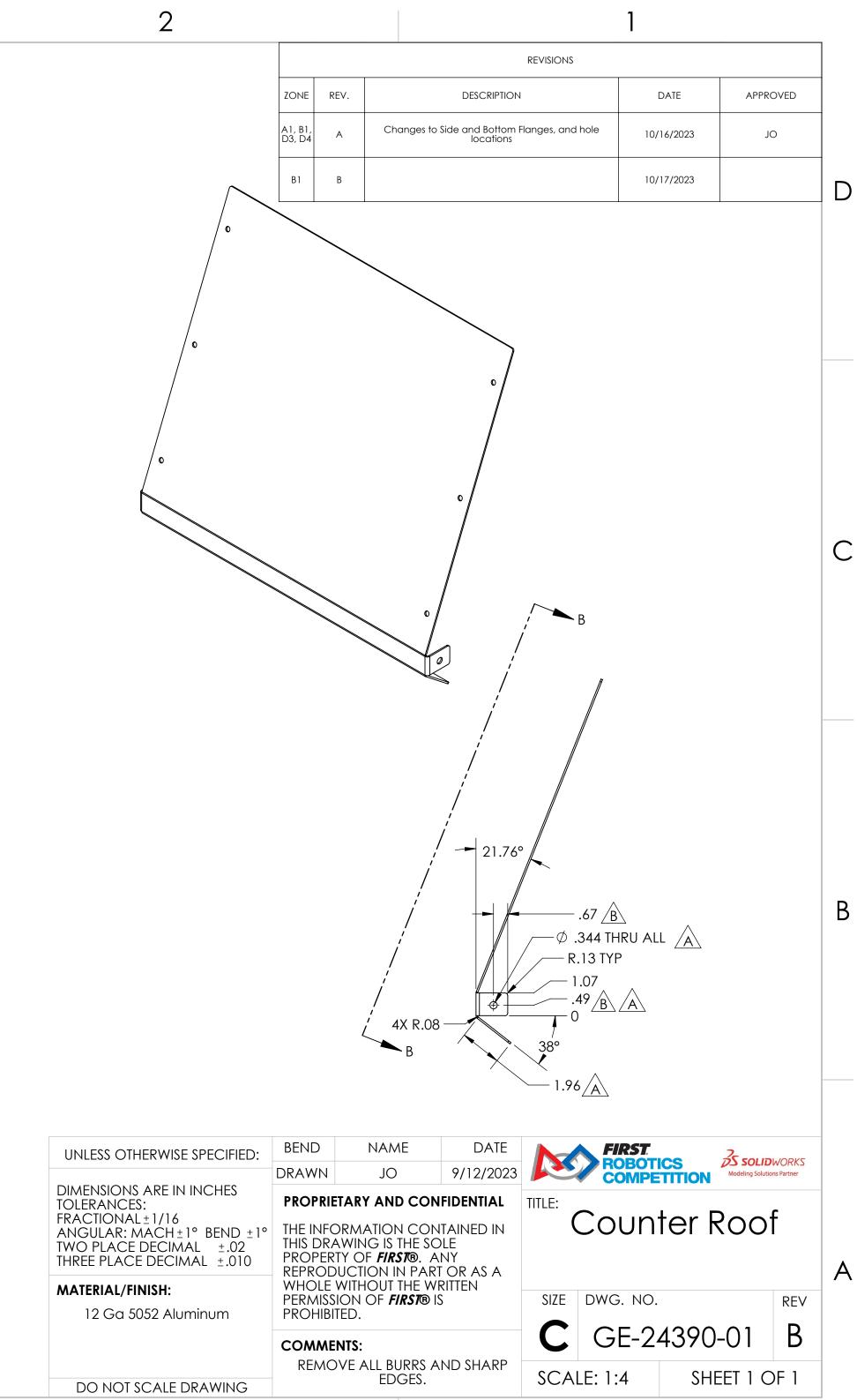
D

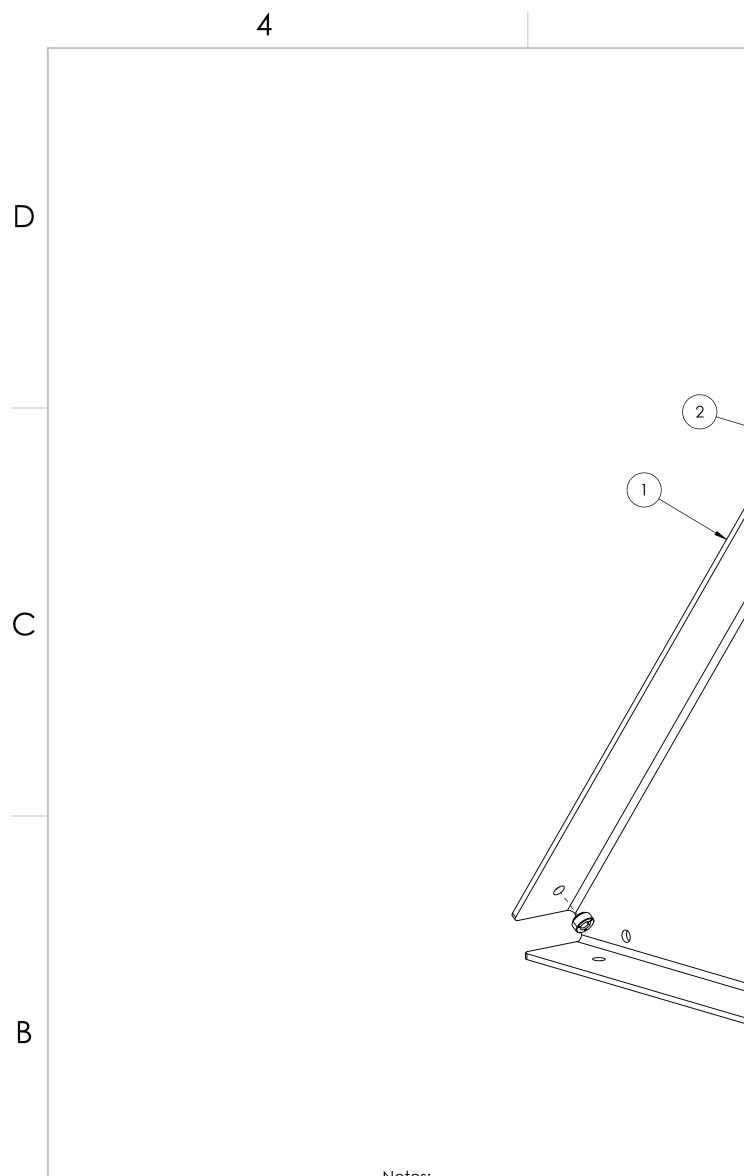
С



	ITEM NO.	PART NUM	<b>1</b> BER		DESCRIPTIC	N	QTY.	
	1	GE-24390-01			Counter Ro	oof	1	1
	2	pem_clinchnu 054	t25_20	1/4-20 s∈	4-20 self-clinching nut, .054 shank			]
UNLESS OTHERWISE SPECIFIED	VEND	NAME	DATE		<b>FIRST</b>	35	<b>OLID</b> WORKS	]
	DRAWN	JO	9/12/20	23	ROBOT COMPE		g Solutions Partner	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND ± TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH:	1° THE INFO THIS DRA PROPER REPROD WHOLE	TARY AND CON DRMATION CON AWING IS THE SO TY OF <i>FIRST</i> ®. A UCTION IN PART WITHOUT THE WF	TAINED IN DLE NY T OR AS A RITTEN		Counter Roof w/ PEMs			
		PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			SIZE DWG. NO.		REV	
	COMMENTS:			C	GE-	24390	В	
do not scale drawing	REMO	VE ALL BURRS A EDGES.	ND SHARF	SC/	ALE: 1:2	SHEET 1	I OF 1	
2					1			-





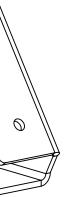


А

4

Notes: Assemble as shown Tag or Label with Part Number

2



2

3

0

3

KØ

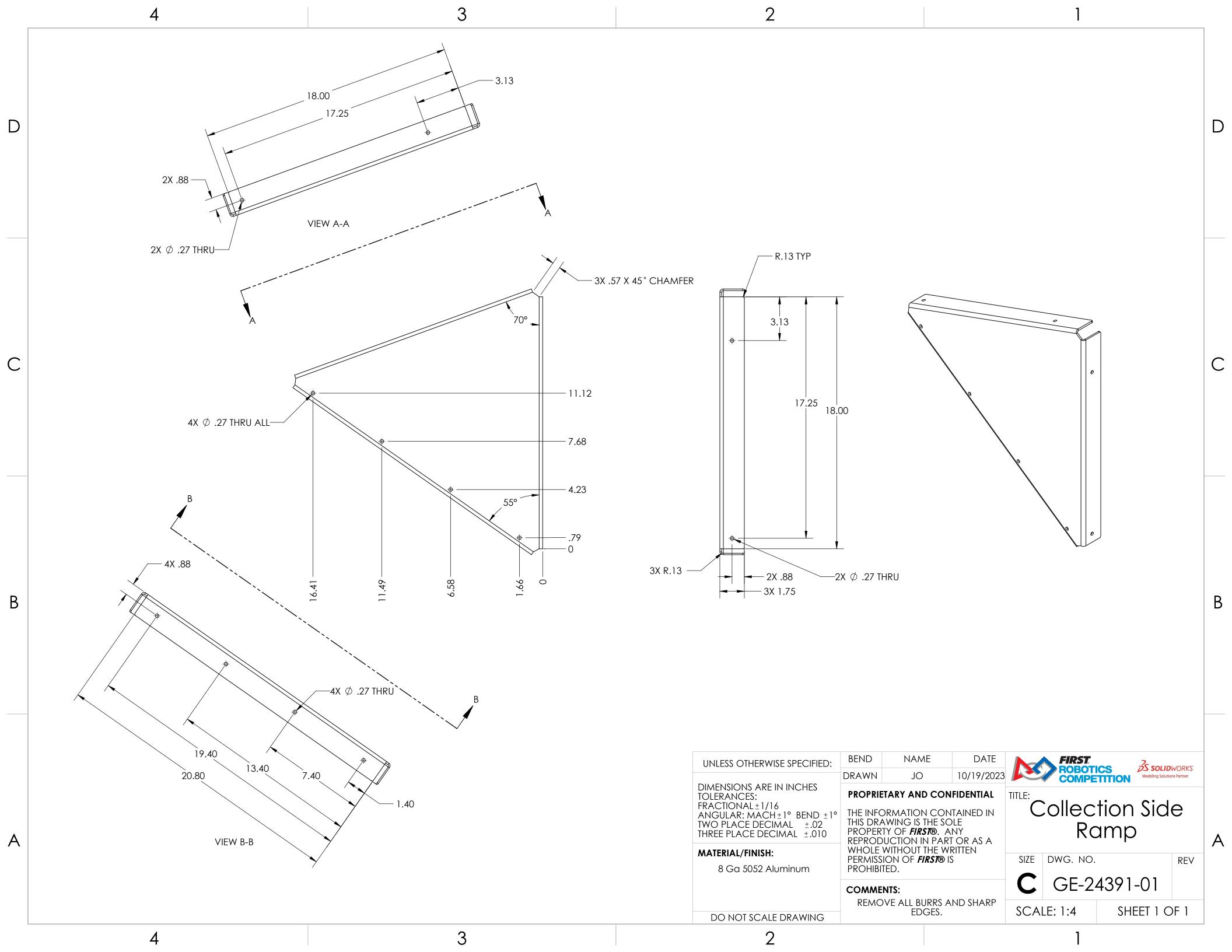
 $\oslash$ 

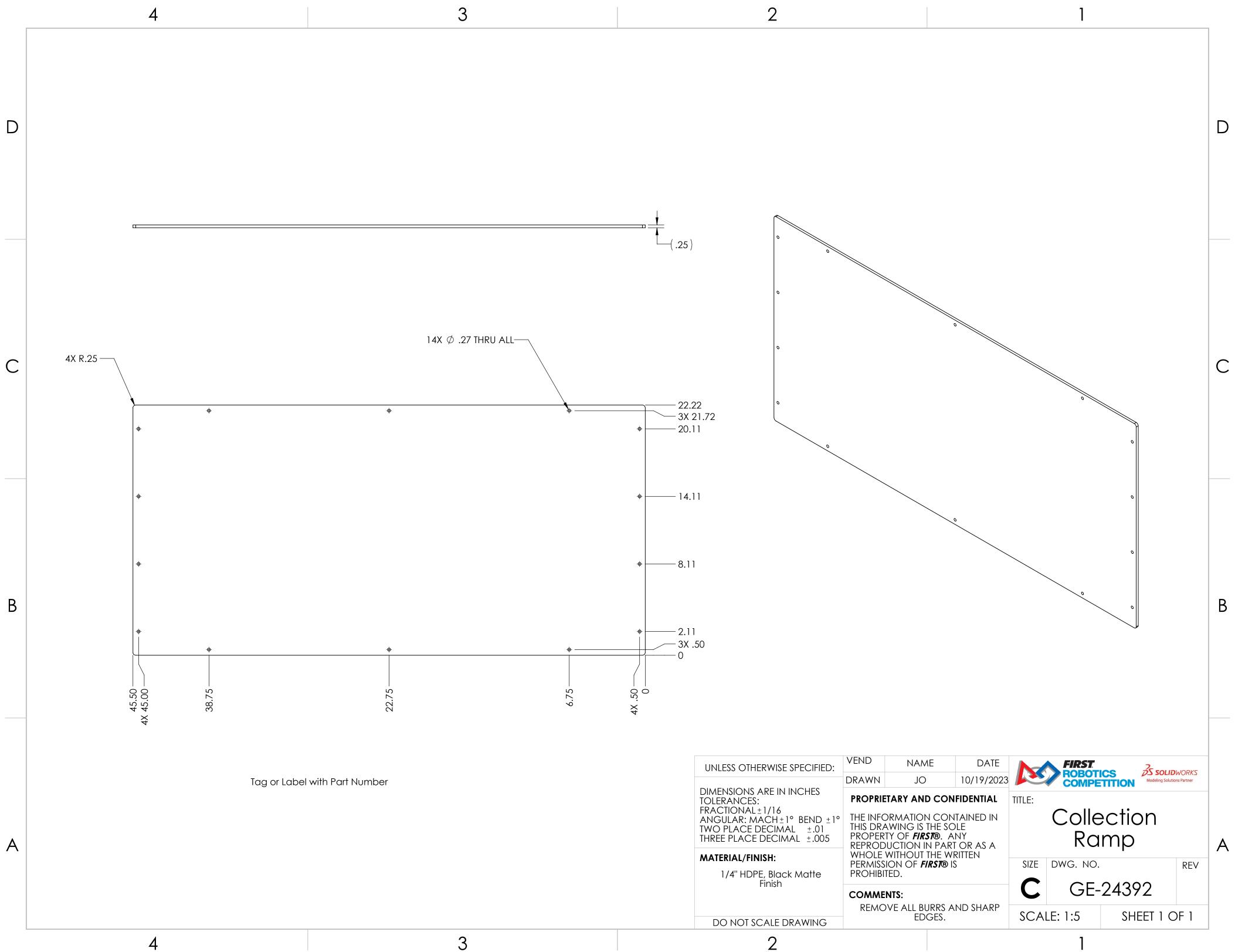
	ITEM NO.	PART NUM	1BER		DESCRIPTIO	N	QTY.	
	1	GE-24391-01		Co	llection Side	Ramp	1	
-	2	pem_clinchnu 054	.034		-clinching nu	ut, .054 shank	4	
UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DAT		FIRST ROBOTI	2	<b>OLID</b> WORKS	
	DRAWN	JO	10/19/20	23 퉫			ng Solutions Partner	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND±1 TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	<ul> <li>THE INFO THIS DRA PROPER REPROD</li> </ul>	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <i>FIRST</i> ®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <i>FIRST</i> ® IS PROHIBITED. COMMENTS: REMOVE ALL BURRS AND SHARF			Collection Ramp w/ PEM			A
MATERIAL/FINISH:	PERMISS			SIZE			REV	
					GE-	24391		
DO NOT SCALE DRAWING	REMO	EDGES.	ND 2HARI	SCA	LE: 1:2	SHEET	1 OF 1	

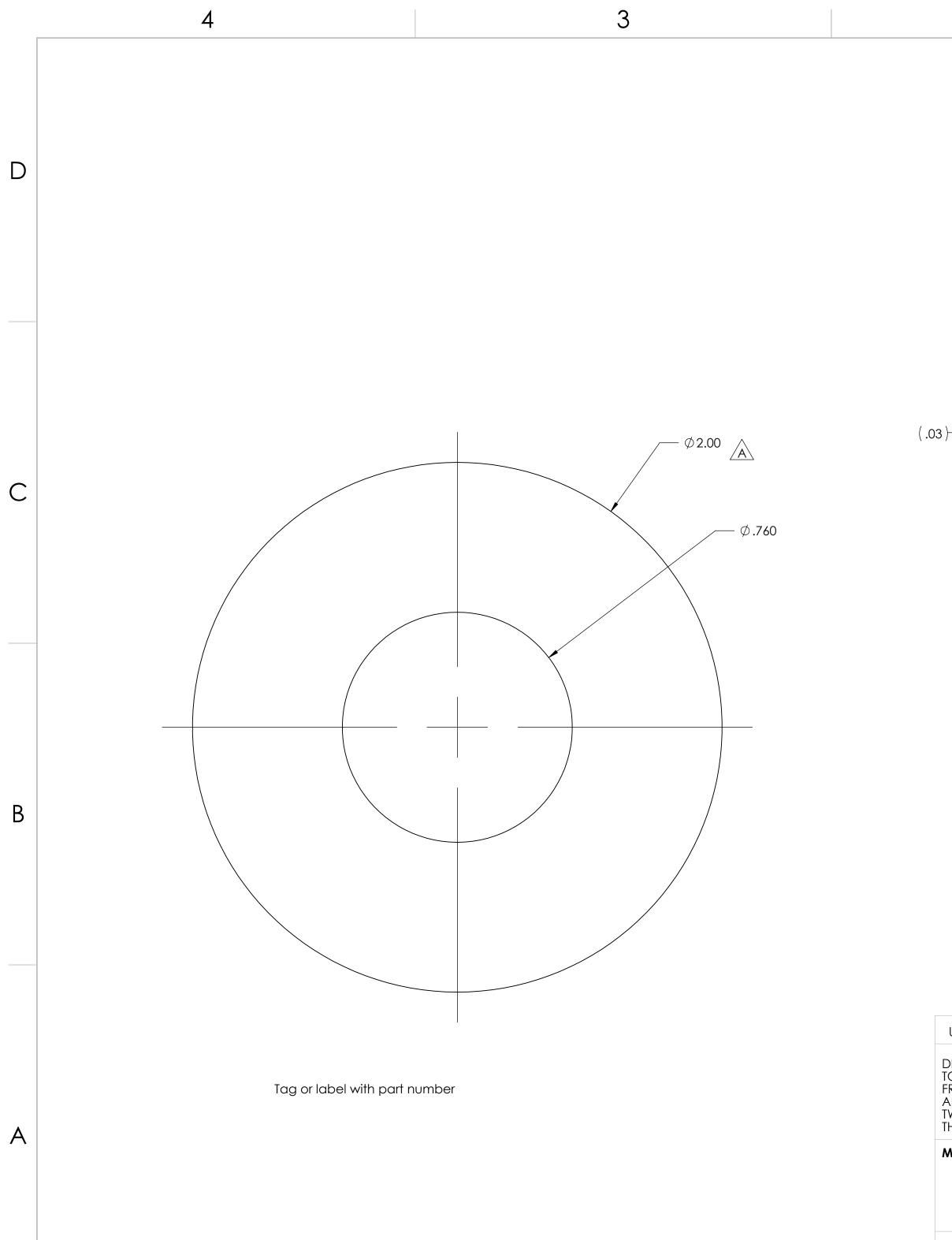
1

D

С





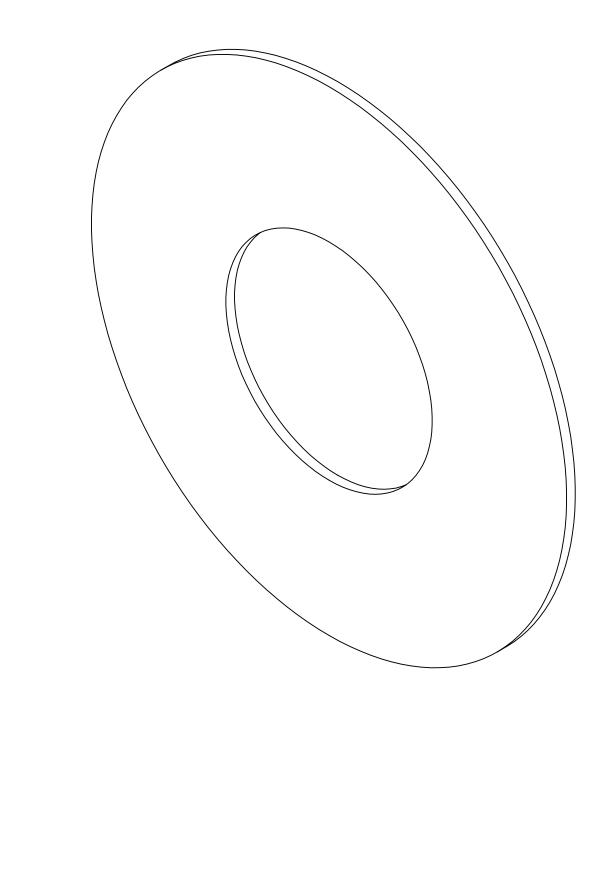


3

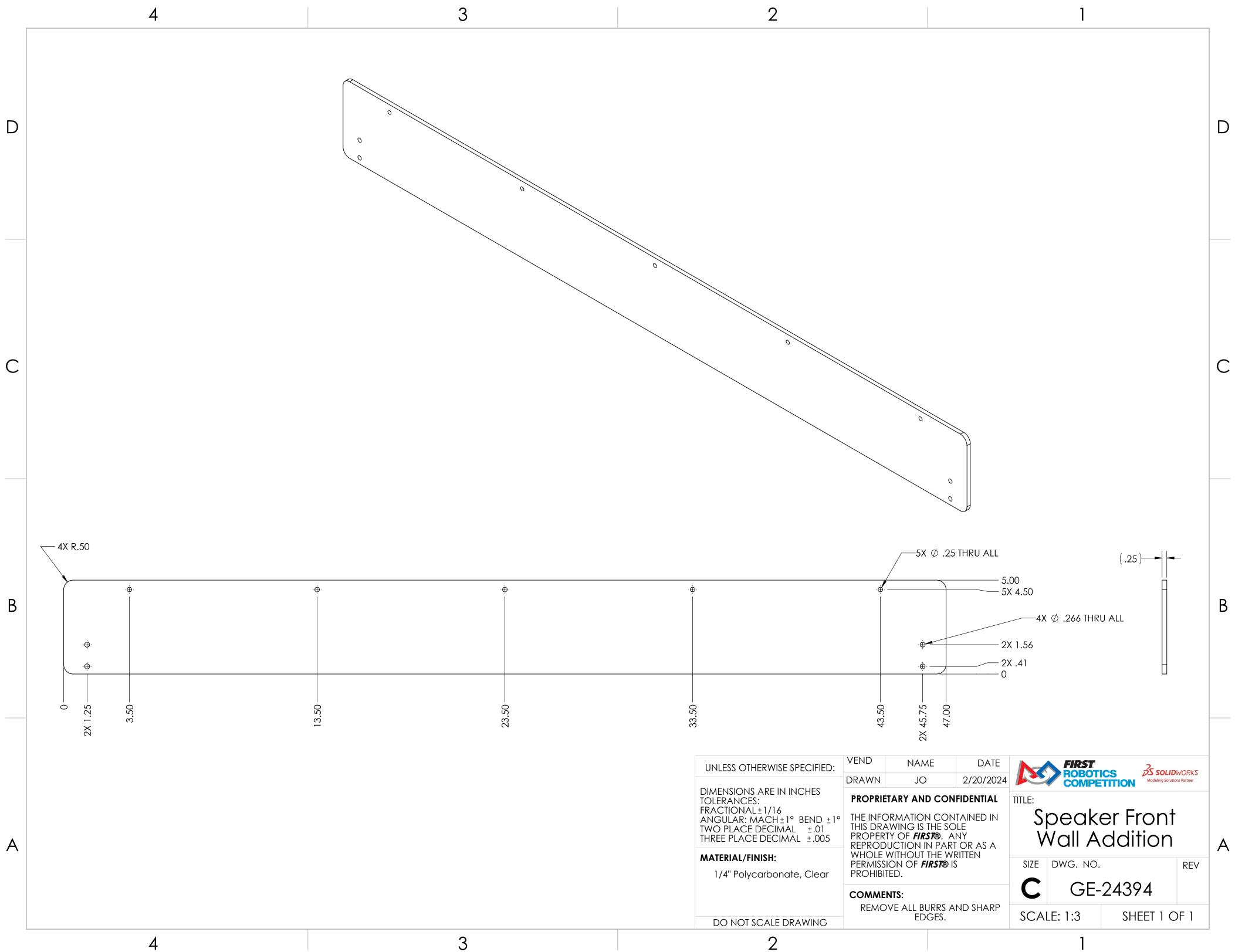
			1	
		REVISIONS		
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C3	А	Outer Diameter Increased	12/20/2023	OC

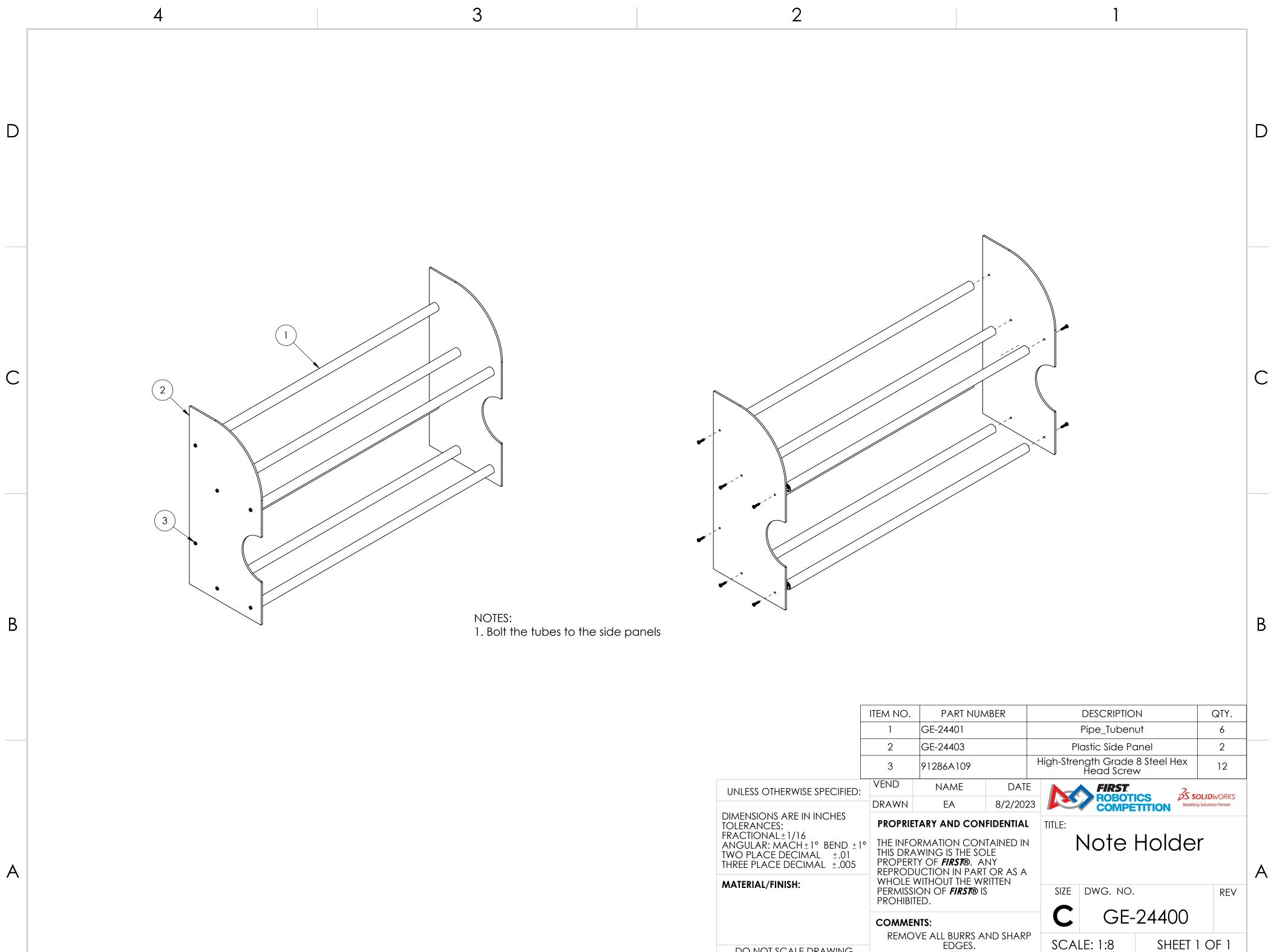
D

С



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE		FIRST. ROBOT		S SOLIDW		
	DRAWN	JO	11/27/2023		s Partner				
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND±1° TWO PLACE DECIMAL±.01 THREE PLACE DECIMAL±.005	TARY AND CON DRMATION CON AWING IS THE SO TY OF <i>FIRST</i> ®. A DUCTION IN PART	TAINED IN DLE NY	Custom Thrust Washer					A	
MATERIAL/FINISH:		WITHOUT THE WE ION OF <b>FIRST</b> ® IS		SIZE	DWG. NO.			REV	
22 Ga Stainless Steel	PROHIBI	TED.		<b>C</b> GE-24393 Rev A					
	COMME	NTS:			F-243	393 k	Rev A	A	
do not scale drawing	VE ALL BURRS A EDGES.	ND SHARP	SCAL	E: 4:1	SH	eet 1 Oi	F 1		
2					1				

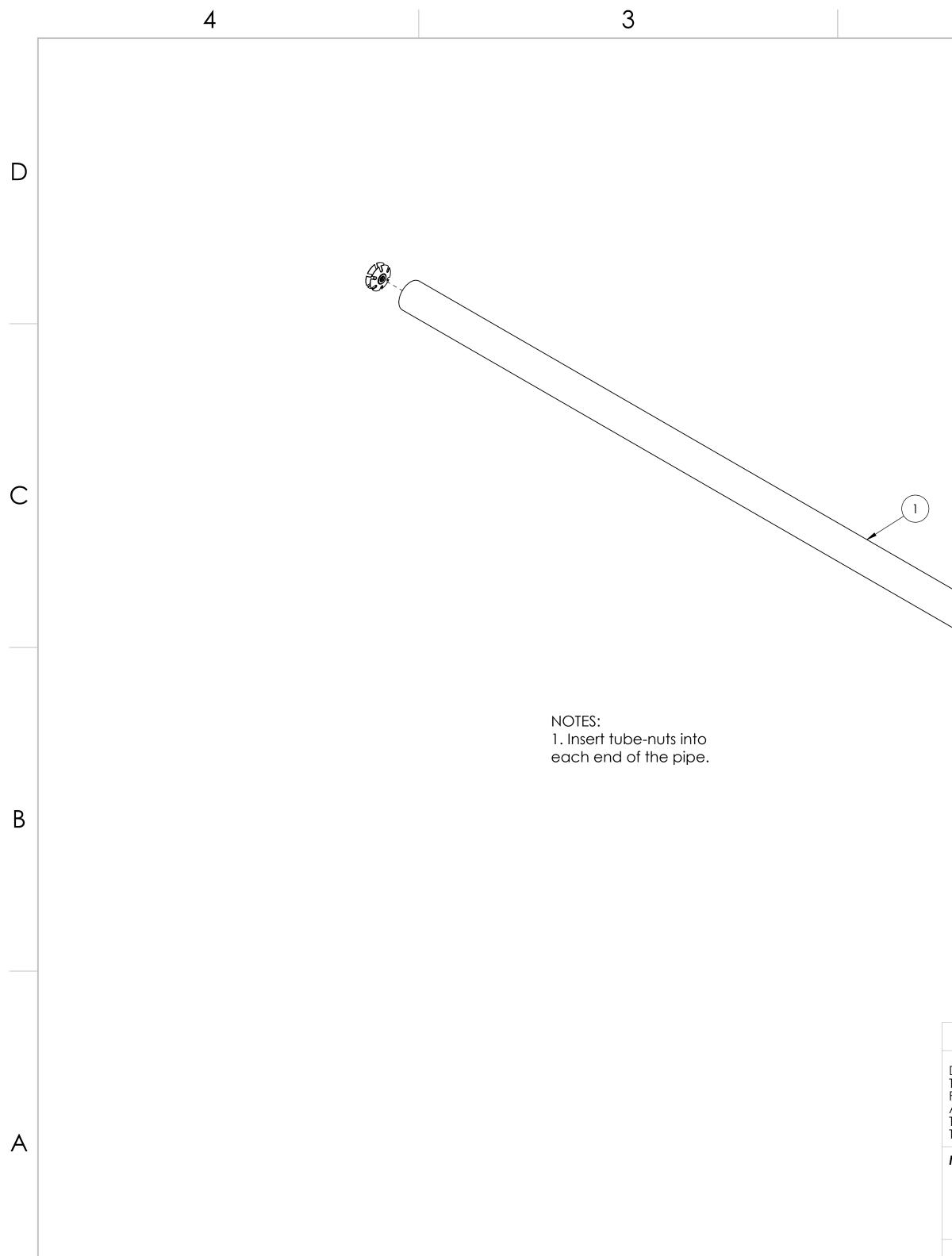




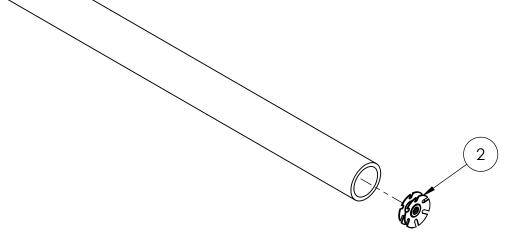
3

EDGES.

DO NOT SCALE DRAWING



3



2

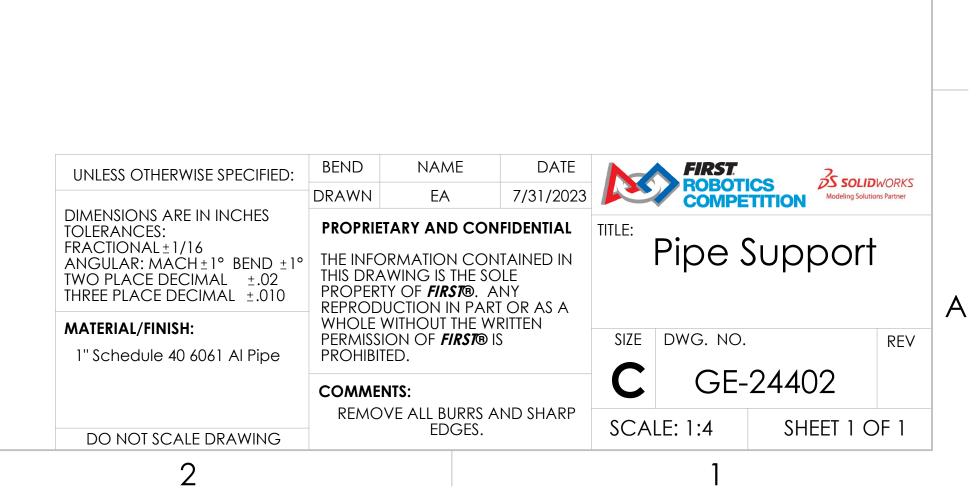
_									
	ITEM NO.	PART NUN	ABER		DESCRIPTIO	Ν		QTY.	
	1	1 GE-24402			Pipe Support			1	
	2	94290A557	24290A557		Tube-Connecting Nut			2	
UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE			ZS SOLI			
	DRAWN	EA	8/2/2023	3	<b>ROBOTI</b> COMPE	<b>CS</b> TITION	Modeling Solu		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL±1/16 ANGULAR: MACH±1° BEND±1 TWO PLACE DECIMAL±.01 THREE PLACE DECIMAL±.005 MATERIAL/FINISH:	<ul> <li>THE INFC THIS DRA PROPER REPROD WHOLE</li> </ul>	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <i>FIRST</i> ®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN		TITLE: P SIZE	Pipe_Tubenu		nut		A
	PROHIBIT	PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			DWG. NO.	E-24401		REV	
	<b>NTS:</b> VE ALL BURRS A			OL		/ 1		_	
DO NOT SCALE DRAWING			ND JHAKF	SCA	LE: 1:3	SHI	EET 1 (	OF 1	
2					1				_

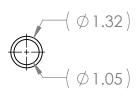
D

С

3 4 D С 46.50 В NOTES: 1. Tag or label with part number А

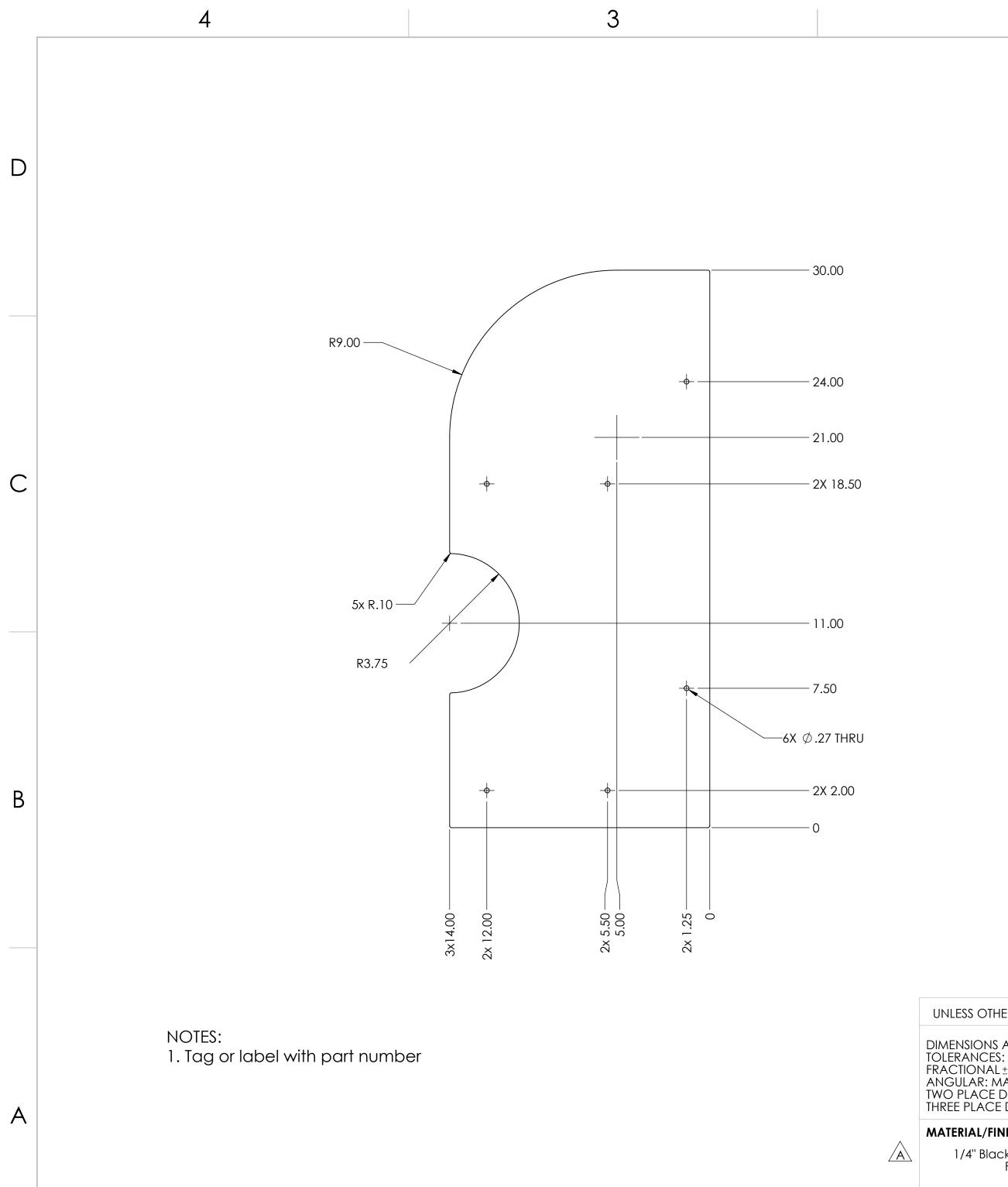
3



D

С



3

0

→ | ----(.25)

REVISIONS						
ZONE	REV.		DESCRIPTION	DATE	APPROVED	
A2	А		Material Finish	10/26/2023	Oſ	

1

D

							С
							В
UNLESS OTHERWISE SPECIFIED.DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/16 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005DRAWNEAPROPRIETARY ANI THE INFORMATION THIS DRAWING IS PROPERTY OF FIR. REPRODUCTION I WHOLE WITHOUT PERMISSION OF FINISSION		DRMATION CC AWING IS THE S TY OF <i>FIRST</i> ®. DUCTION IN PA WITHOUT THE N ION OF <i>FIRST</i> ® TED. NTS:	ONTAINED IN SOLE ANY RT OR AS A WRITTEN D IS AND SHARP	FIRST       Soldword         TITLE:       Plastic Side         SIZE       DWG. NO.         GE-24403       A         SCALE: 1:4       SHEET 1 OF			A
2				1			