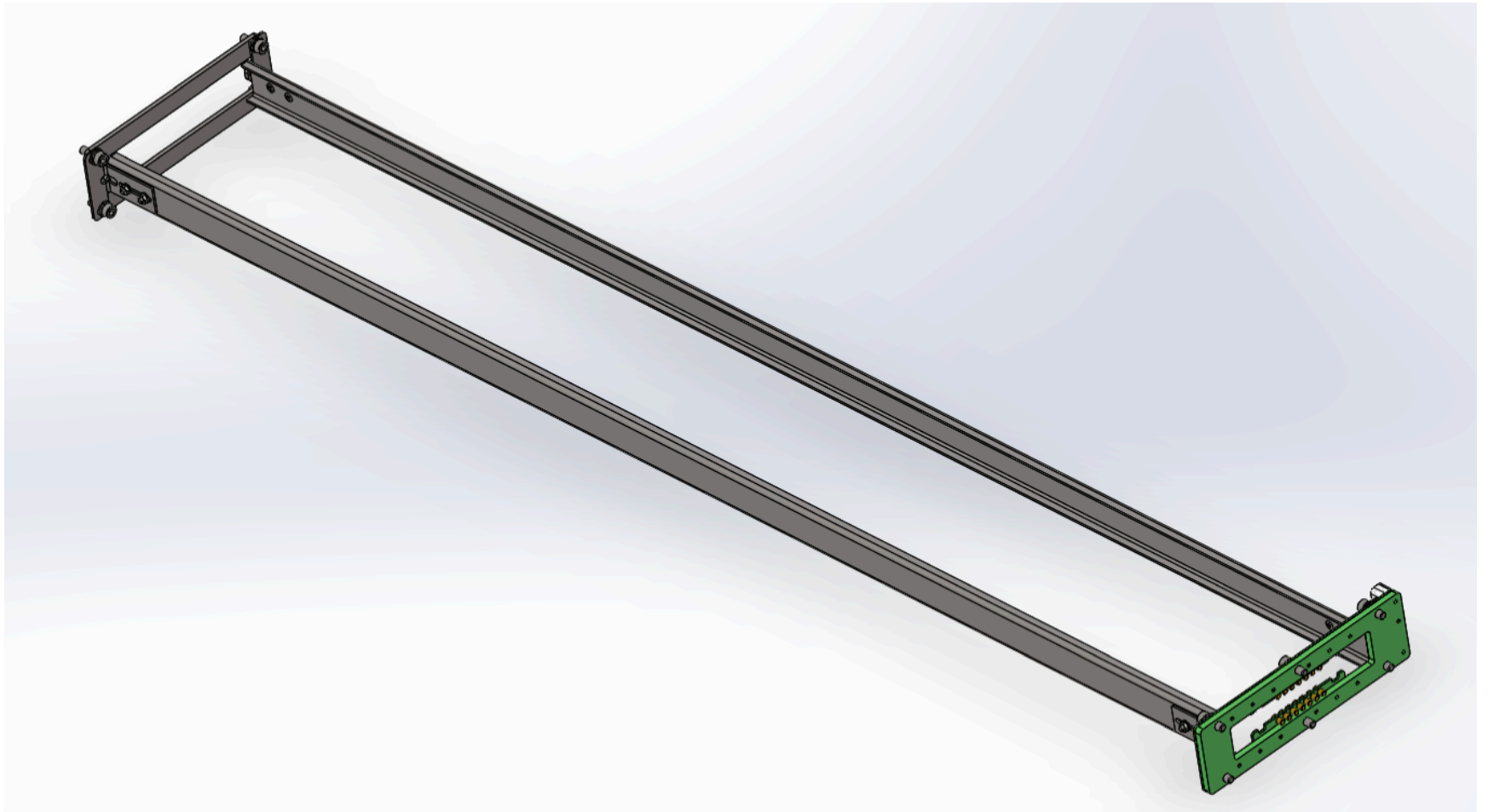


PD Rail Assemblies

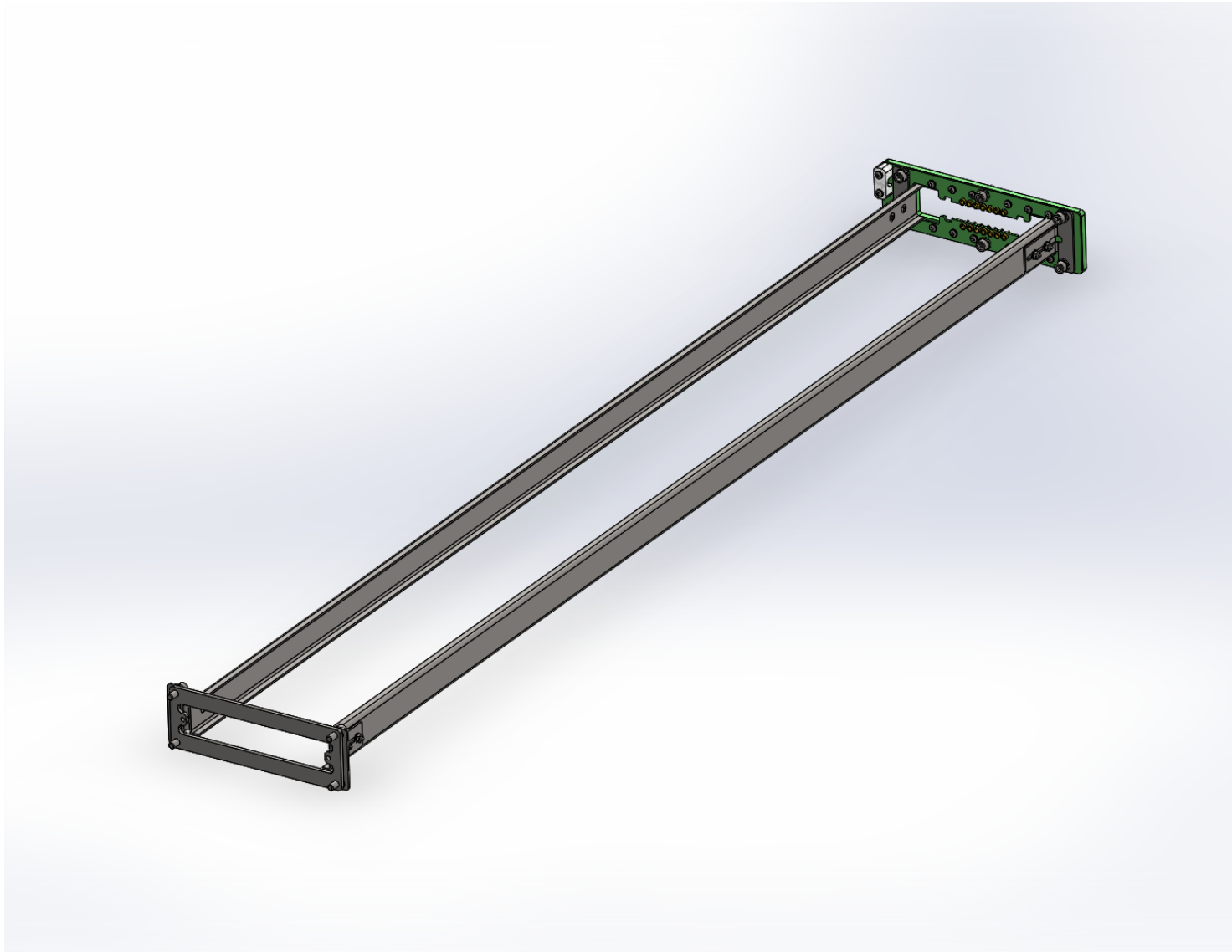
David Warner

5/29/2020

Near Side Rail Assembly (i)



Near Side Rail Assembly (ii)



Near Side Rail Assembly (iii)



Note: Tolerance range here
Indicates adjustment range

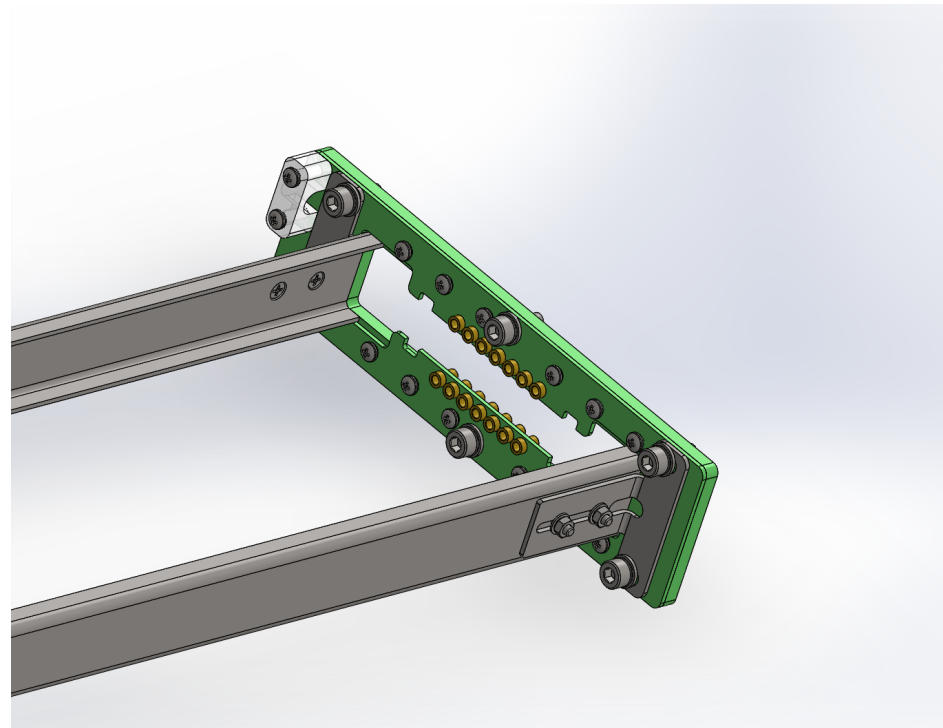
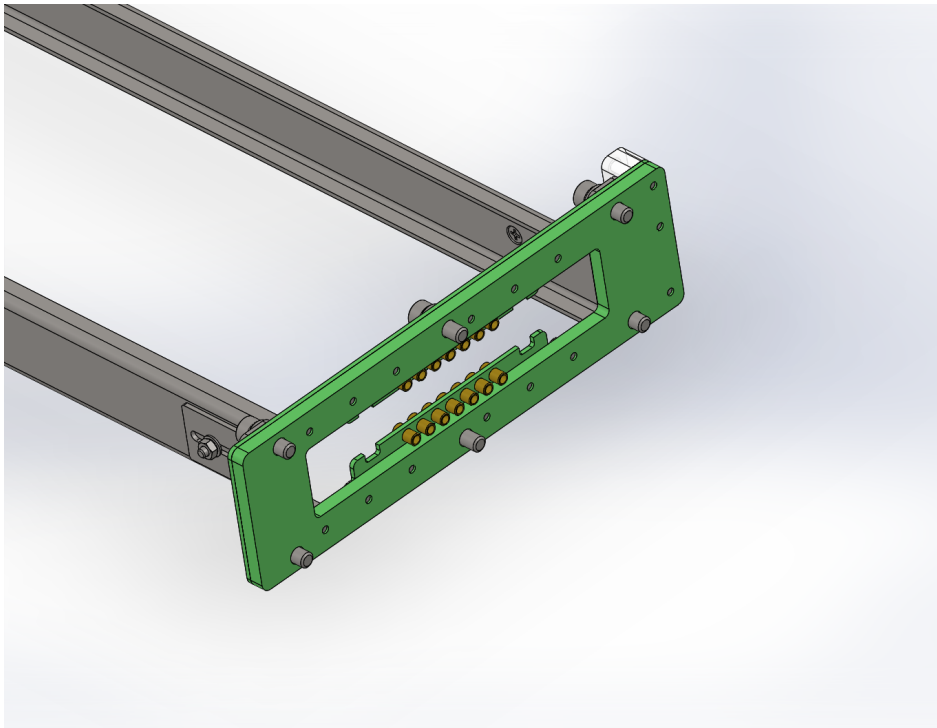
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			INTERPRET GEOMETRIC TOLERANCING PER: MATERIAL					
			FINISH					SIZE DWG. NO. REV
		NEXT ASSY	USED ON					A
	APPLICATION		DO NOT SCALE DRAWING				SCALE: 1:6 SHEET 1 OF 2	

Near Side Rail Assembly (iv)

Insertion End Views

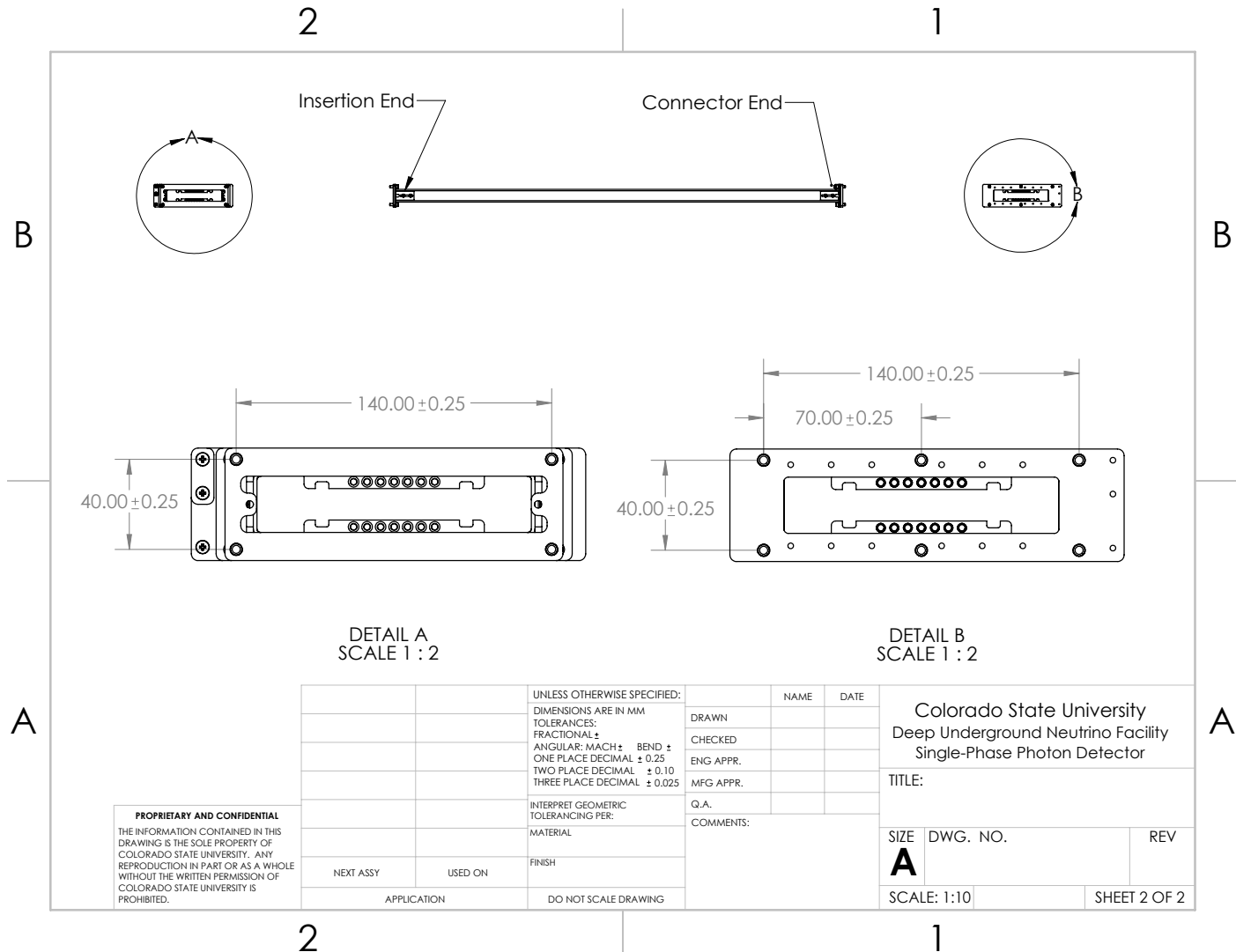


Near Side Rail Assembly (v) Readout End Views



Near Side Rail Assembly (vi)

End View Dimensions

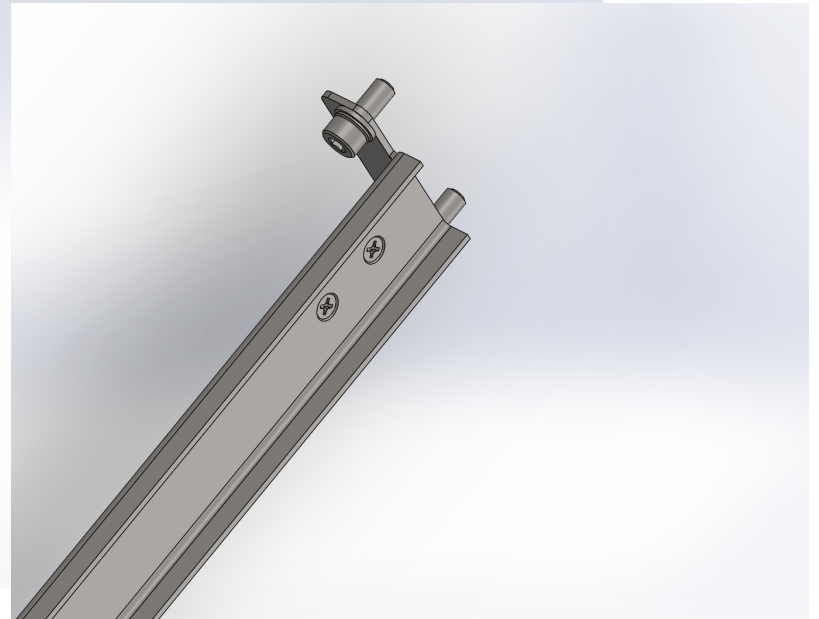


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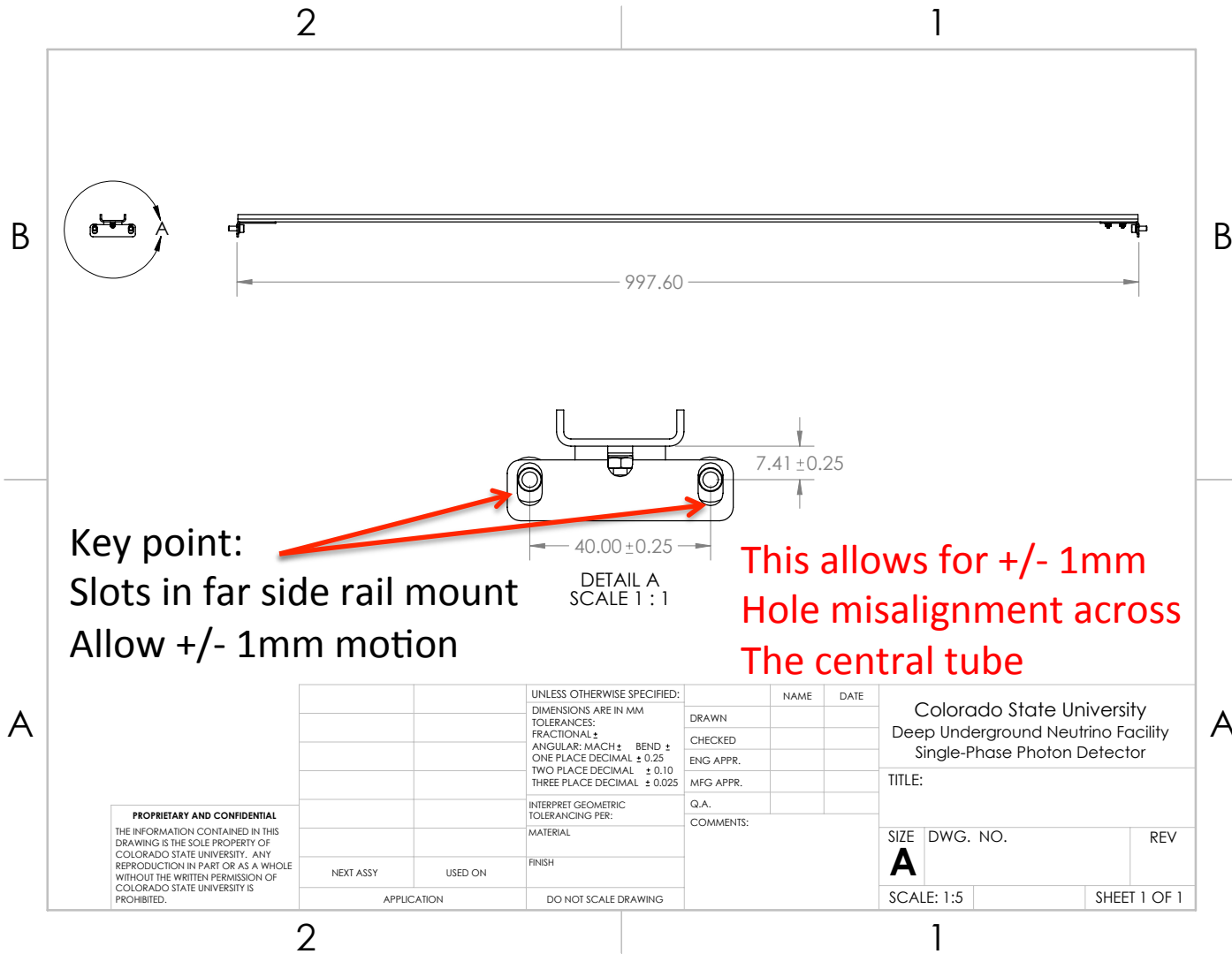
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		ANGULAR: MACH ±		MFG APPR.	
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		TWO PLACE DECIMAL ± 0.10		COMMENTS:	
		THREE PLACE DECIMAL ± 0.025			
		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			

Colorado State University Deep Underground Neutrino Facility Single-Phase Photon Detector		
TITLE:		
SIZE	DWG. NO.	REV
A		
SCALE: 1:10		SHEET 2 OF 2

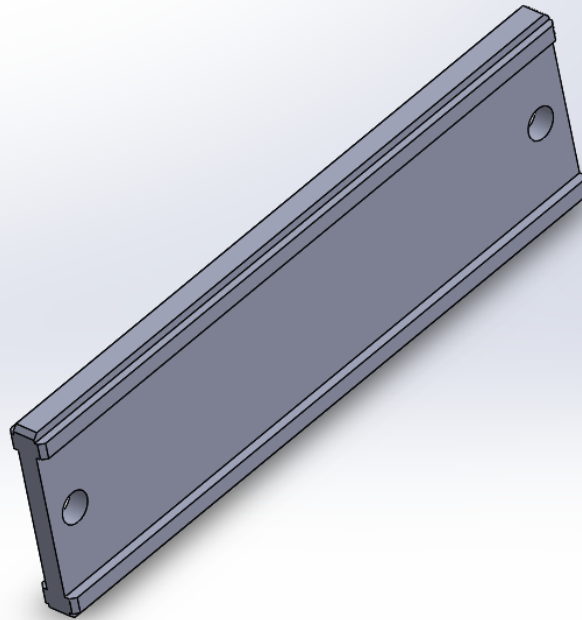
Far Side Rail Assembly (i)



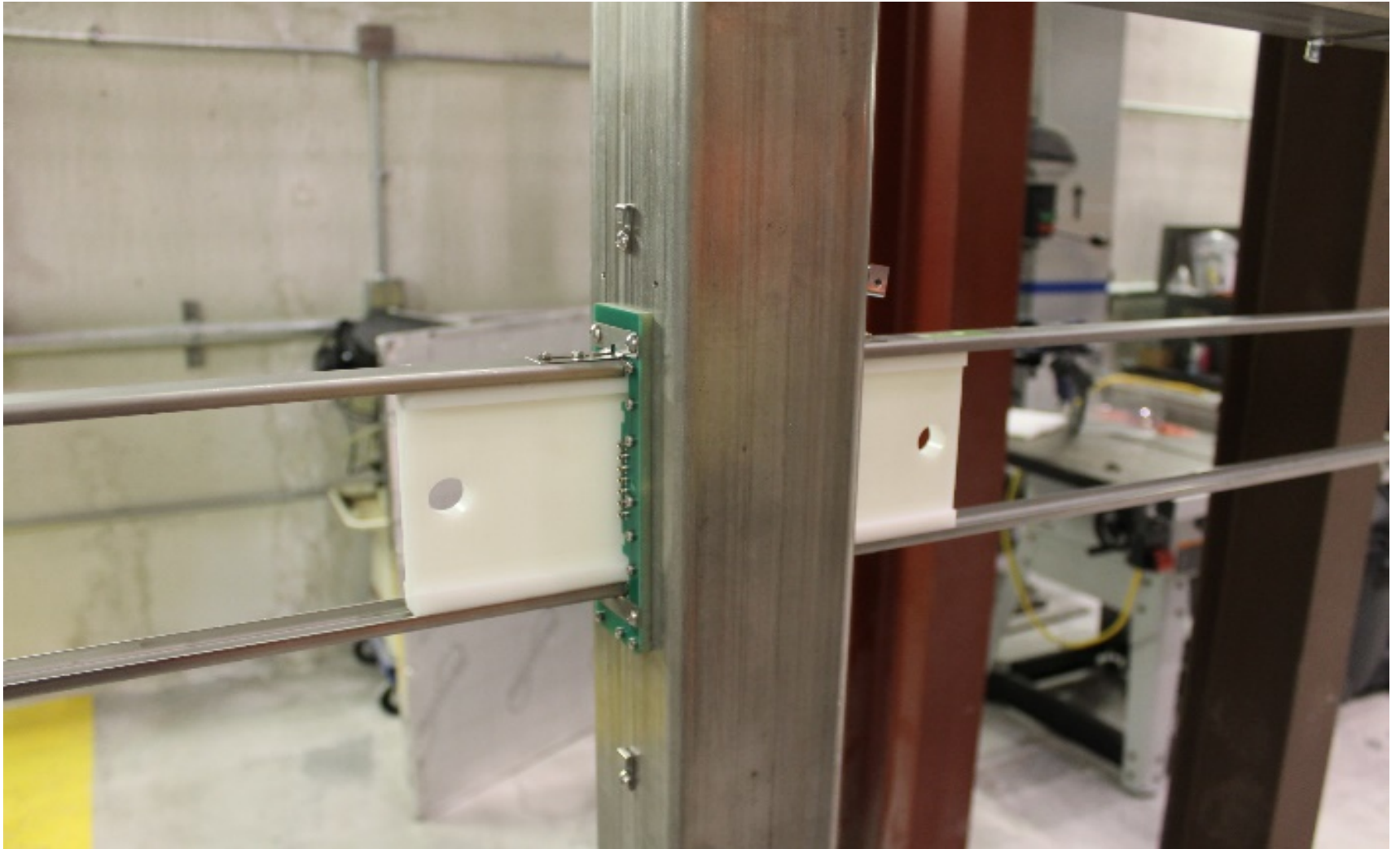
Far Side Rail Assembly (ii)



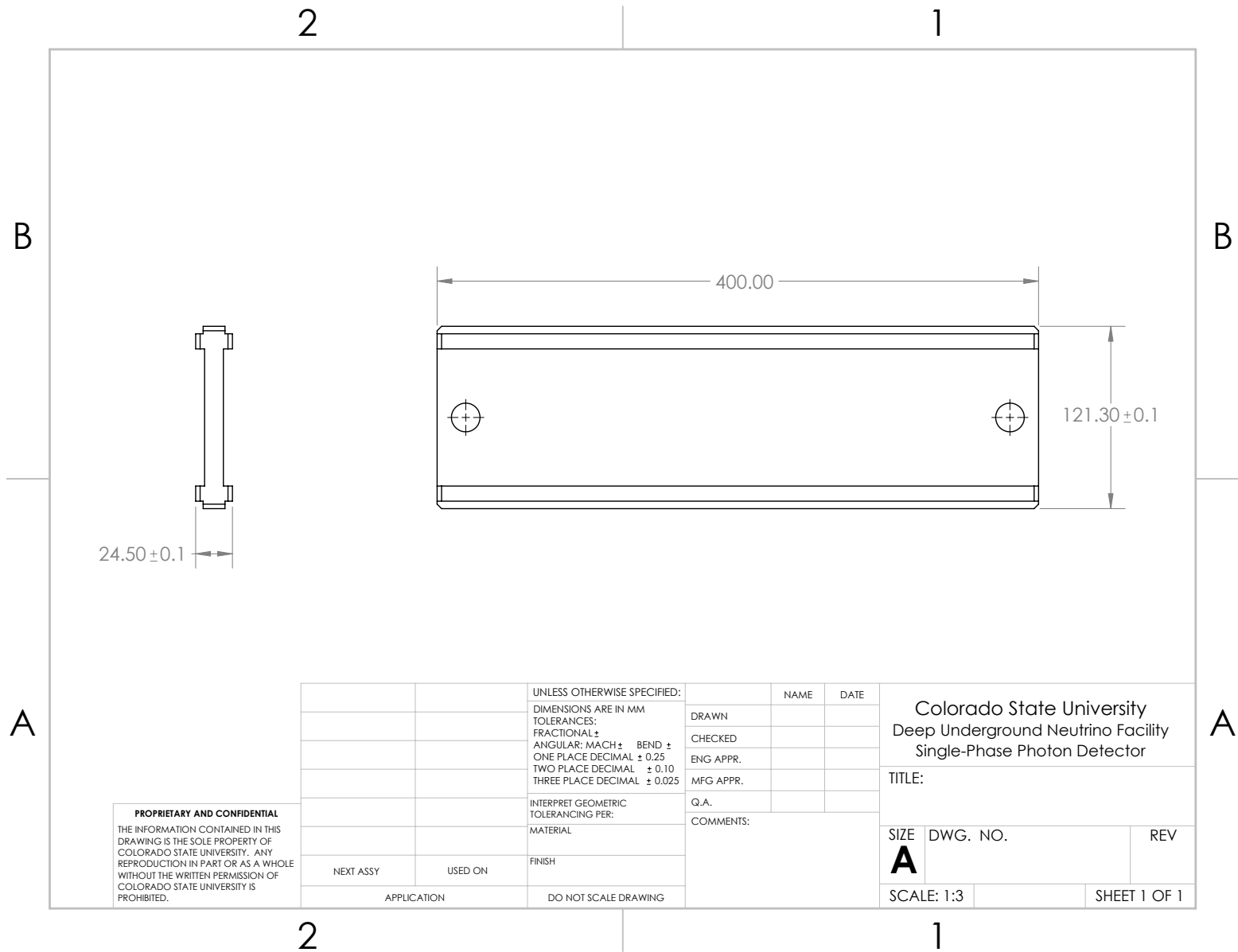
Middle Alignment Tool (i)



Middle Alignment Tool (ii)



Middle Alignment Tool (iii)

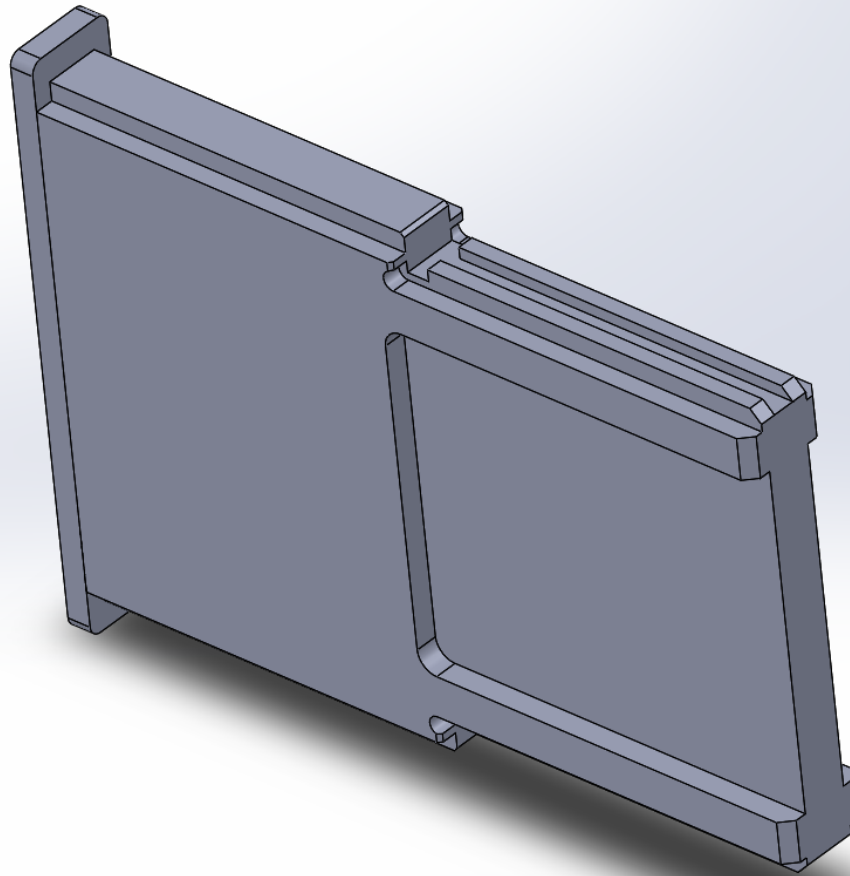


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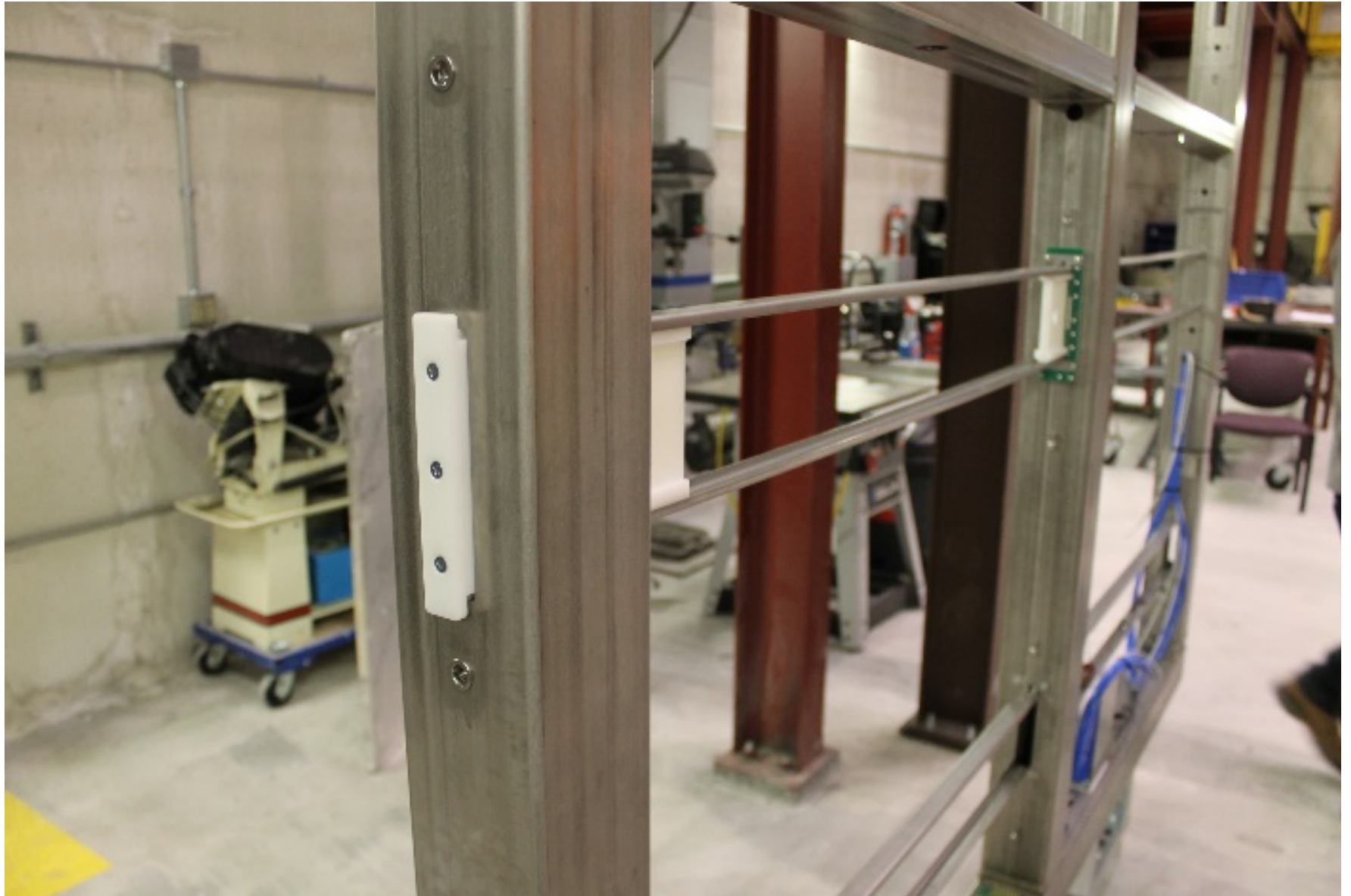
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		ONE PLACE DECIMAL ± 0.25	Q.A.		
		TWO PLACE DECIMAL ± 0.10	COMMENTS:		
		THREE PLACE DECIMAL ± 0.025			
		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			

Colorado State University Deep Underground Neutrino Facility Single-Phase Photon Detector		
TITLE:		
SIZE A	DWG. NO.	REV
SCALE: 1:3		SHEET 1 OF 1

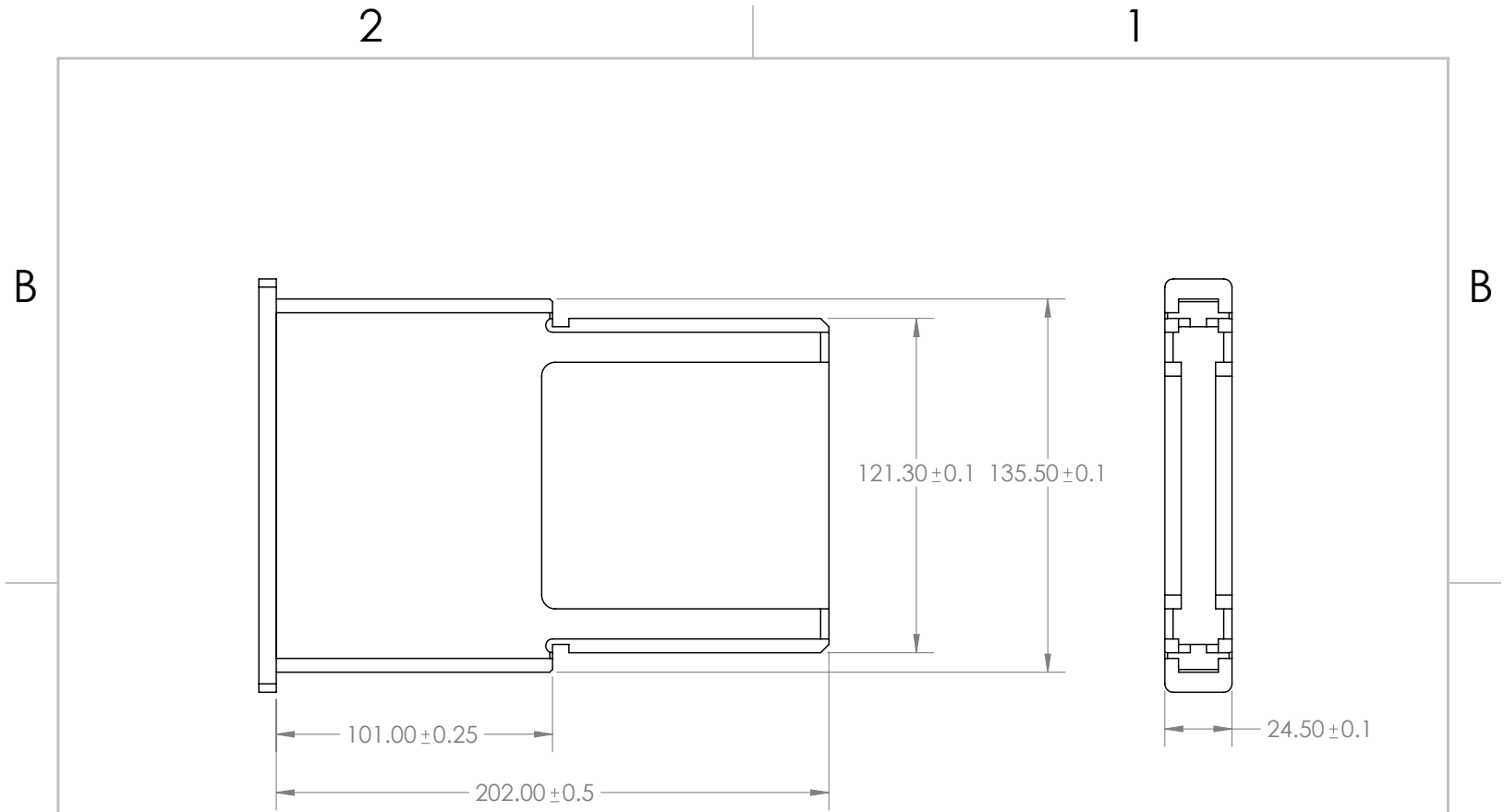
End Alignment Tool (i)



End Alignment Tool (ii)



End Alignment Tool (iii)



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		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
		FINISH			
NEXT ASSY	USED ON		COMMENTS:		
APPLICATION		DO NOT SCALE DRAWING			

Colorado State University Deep Underground Neutrino Facility Single-Phase Photon Detector		
TITLE:		
SIZE	DWG. NO.	REV
A		
SCALE: 1:2		SHEET 1 OF 1

2

1

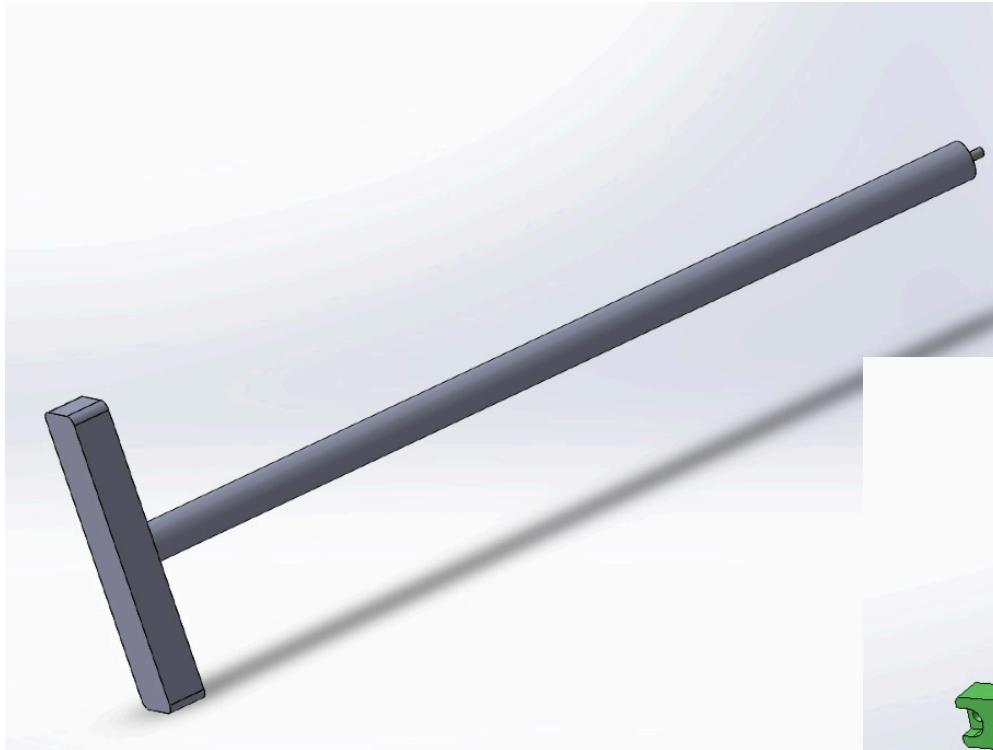
Alignment Summary (By the numbers):

- Module maximum width (at nose): 119mm +/- 0.25mm
- Rail separation: 121.3mm (-0/+ 0.5mm, set by fixture during installation)
- Minimum gap (module/rail): 2mm (1mm per side)
- Allowed vertical motion to adjust across central tube and maintain rail alignment: +/- 1mm
- Rail length adjustment: +/- 2.5mm
- Rail mounts designed for 0.1mm relative hole position tolerance (within 1 mount position)-- can increase clearance if necessary to match frame tolerances.
- Miss-alignment between APA side rail and central rail which can be absorbed by PD deflection > +/-2mm

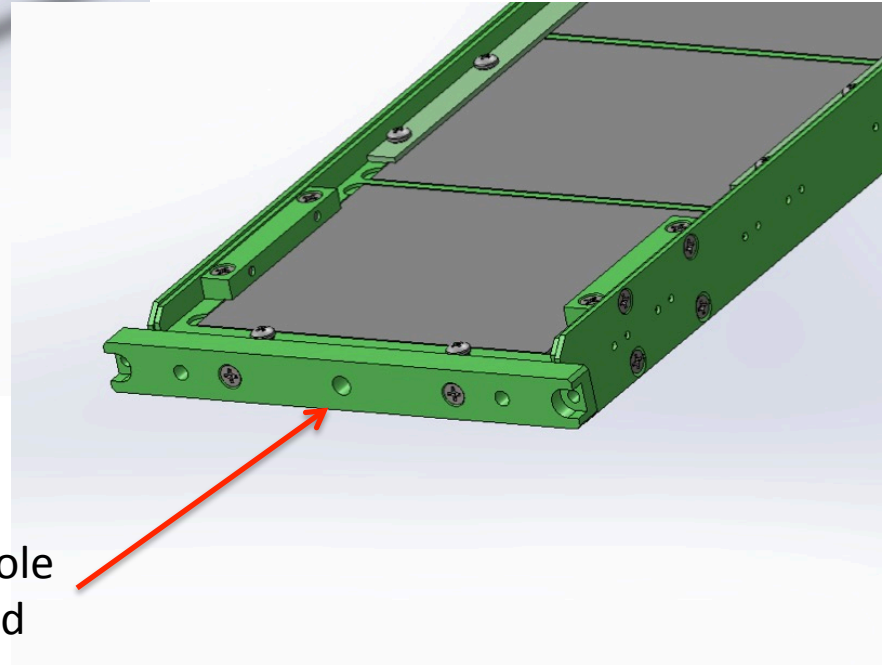
Manual Module Insertion



Manual Module Tool



M6 threaded stud



M6 tapped hole
In module end