



Jefferson Lab Alignment Group

Data Transmittal

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FROM: Elena Balan

Checked: CG

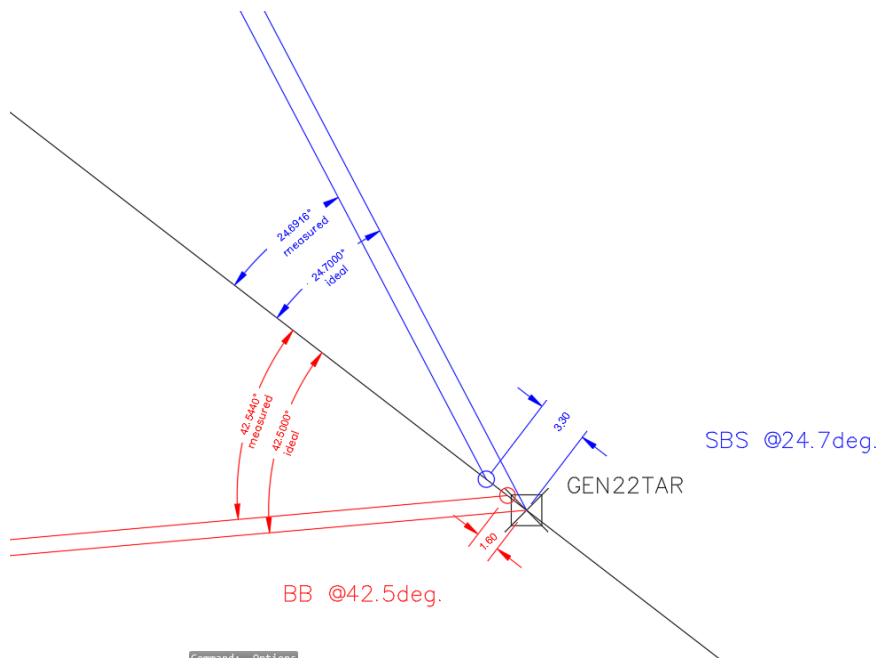
: A2098

DETAILS:

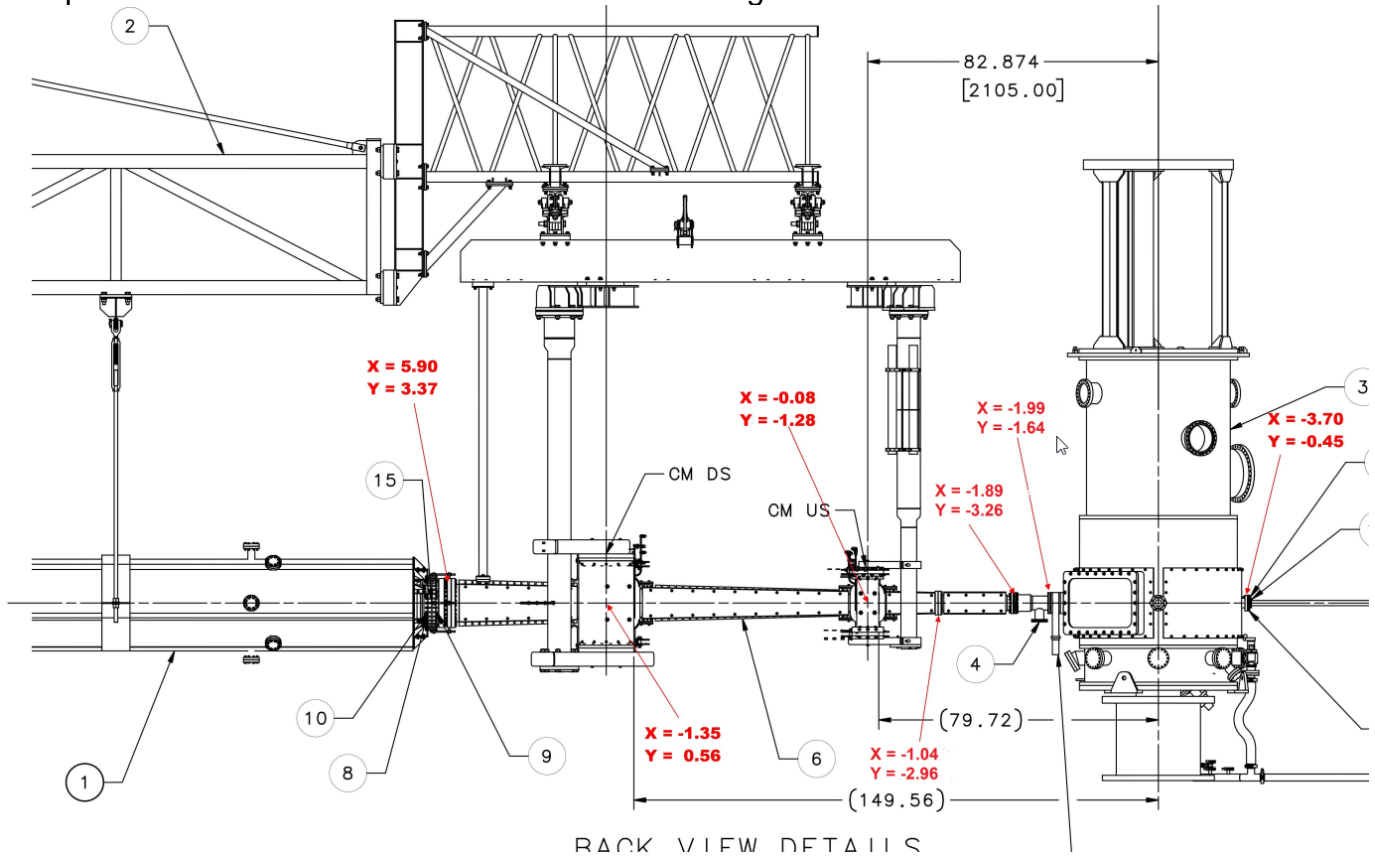
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The survey results for a few of the components before April 2024 run are presented. Locations are in a Beam Following System. In a BFS, a positive dx value is to the beam left looking downstream along beam from the ideal; a positive dy is higher vertically from ideal; a positive dz is downstream from ideal position. Additionally, the deltas from ideal rotation angles are shown in degrees. A positive dYaw is counterclockwise about the +y axis; a negative pitch is clockwise about the +x axis; a positive roll is clockwise about the +z axis.

	Ideal Dist. From Tgt [m]	Beam Following (mm)			Rotations from Ideal (Degrees)			
		dX	dY	dZ	RX(pitch)	RY(yaw)	RZ(roll)	
Big Bite @ 42.5Deg.								
BigBite Mag	1.550	0.13	-1.29	1.49	-0.0464	0.0440	-0.0206	
BigBite Det	4.839	21.13	6.68	90.29	0.2370	-0.2997	-0.2879	
Super Big Bite								
SBS Mag @24.7 Deg	2.250	1.72	6.18	-1.24	-0.0014	0.0084	-0.0613	
HCAL @ 24.7 Deg	9.000	-0.57	0.61	6.96	0.1856	-0.0637	0.0298	
PRD @24.7 Deg	5.950	5.04	6.36	-1.99	-0.0032	-0.0160	-0.1051	
CE @24.7 Deg	4.760	2.64	6.35	4.62	-0.0261	-0.0124	-0.0533	

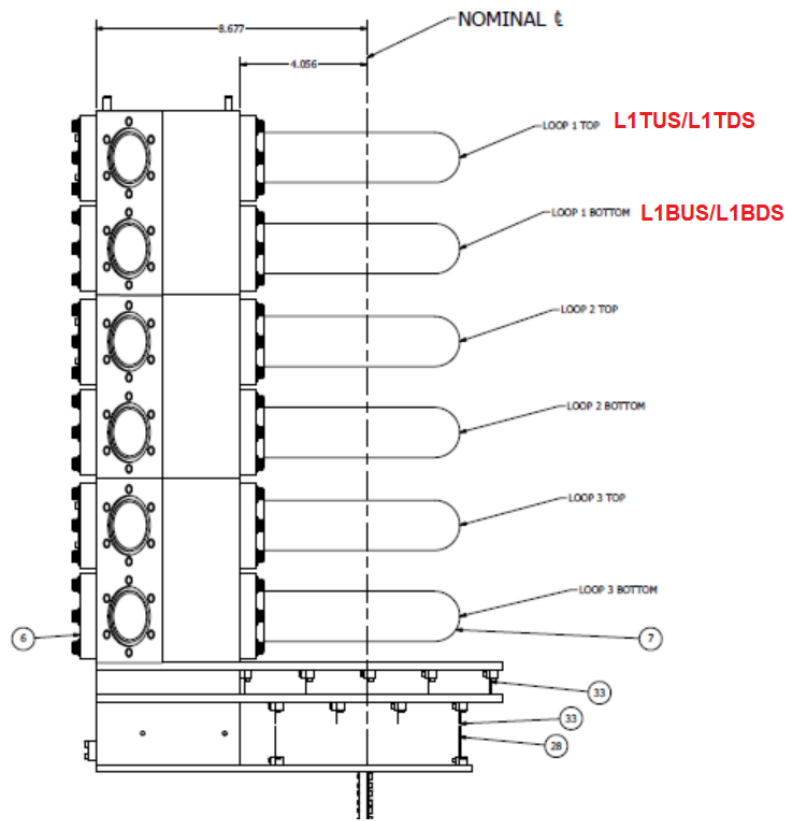


The position for the two correctors and beamline flanges are as follows:



The following locations are referenced only to the target ladder. For the Carbon Hole location, the ladder was positioned at the ideal height. The deltas are relative to ideal in mm.

Component	Beam Following (mm)			Rotations from Ideal (Degrees)		
	dX	dY	dZ	RX(pitch)	RY(yaw)	RZ(roll)
SBSCAN	0.00	-0.61	0.29	-0.0289	0.0063	0.0003
CARBON_HOLE	-1.01	-0.16	3.03	-0.1836	-0.7261	
Stack GMn Target Assembly						
L1TUS	-0.22	0.19	-220.85			
L1TDS	-0.19	-0.06	-103.69			
L1BUS	-0.10	0.02	-220.89			
L1BDS	-0.11	-0.18	-103.71			
L2TUS	-0.18	0.27	-220.79			
L2TDS	-0.10	0.01	-103.55			
L2BUS	-0.17	0.20	-220.71			
L2BDS	-0.16	0.04	-103.51			
L3TUS	-0.11	0.17	-220.44			
L3TDS	0.15	0.02	-103.20			
L3BUS	-0.01	-0.01	-220.43			
L3BDS	0.34	-0.19	-103.20			



The two superharps on the diagnostic girder upstream of the Hall A target were also surveyed.

Component	Beam Following (mm)			Rotations from Ideal (Degrees)		
	dX	dY	dZ	RX(pitch)	RY(yaw)	RZ(roll)
IHA1H04A	-0.06	-0.21	-3.33		0.0026	-0.0128
IHA1H04B	-0.17	0.22	6.79		-0.0037	-0.0228