



Jefferson Lab Alignment Group

Data Transmittal

TO: B. Metzger **DATE:** 12 Jun 2015

FROM: Kelly Tremblay **Checked:** cwg **# :** C1651 rev

DETAILS: data: inspection\hallc\hms12GeV\hut\150605a

The Hall C HMS detector frame corners were surveyed June 5th, 2015. The results are shown below in meters and inches based on the found spectrometer beamline from the target and from the dipole exit point. Additionally the coordinates are shown in the Cebaf coordinate system in meters only. Only three points were shot on detector 2 due to visibility issues. D1 refers to the upstream detector and D2 to the downstream detector. BL is beam left and BR is beam right.

The points on the sleds are also shown.

BFS refers to beam following system. From the target center it is based on the beam traveling from the target in line with the dipole entrance and x and y transverse to beam, x being beam left and y being up. Similarly the second set of coordinates follow beam but in a pitched angle from the dipole exit towards the ideal center of detectors.

Coordinates From Target Center along the 'Found' Beamline (BFS)							
Target	x[m]	y[m]	z[m]	Target	x[inch]	y[inch]	z[inch]
D1 Bot_BL	0.2779	2.9894	22.1933	D1 Bot_BL	10.94	117.69	873.75
D1 Bot_BR	-0.2770	2.9885	22.1933	D1 Bot_BR	-10.90	117.66	873.75
D1 Top_BL	0.2765	4.2173	21.6241	D1 Top_BL	10.89	166.04	851.34
D1 Top_BR	-0.2775	4.2172	21.6213	D1 Top_BR	-10.92	166.03	851.23
D2 Bot_BL	0.2663	3.2704	22.7739	D2 Bot_BL	10.48	128.76	896.61
D2 Bot_BR	-0.2889	3.2708	22.7720	D2 Bot_BR	-11.37	128.77	896.53
D2 Top_BR	-0.2938	4.4929	22.1991	D2 Top_BR	-11.57	176.89	873.98

Coordinates From Dipole Exit along beamline (BFS)							
Target	x[m]	y[m]	z[m]	Target	x[inch]	y[inch]	z[inch]
D1 Bot_BL	0.2767	-0.6592	5.8143	D1 Bot_BL	10.89	-25.95	228.91
D1 Bot_BR	-0.2781	-0.6599	5.8139	D1 Bot_BR	-10.95	-25.98	228.89
D1 Top_BL	0.2755	0.6942	5.8174	D1 Top_BL	10.84	27.33	229.03
D1 Top_BR	-0.2785	0.6953	5.8147	D1 Top_BR	-10.97	27.38	228.93
D2 Bot_BL	0.2650	-0.6499	6.4593	D2 Bot_BL	10.43	-25.58	254.30
D2 Bot_BR	-0.2901	-0.6487	6.4576	D2 Bot_BR	-11.42	-25.54	254.24
D2 Top_BR	-0.2949	0.7011	6.4549	D2 Top_BR	-11.61	27.60	254.13

(*** revised copy reflects correct projection of detector frame 1 ***)

Coordinates in Cebaf Mechanical System			
Target	x[m]	y[m]	z[m]
D1 Bot_BL	-138.3583	102.9918	-405.7277
D1 Bot_BR	-137.9182	102.9909	-406.0656
D1 Top_BL	-138.0105	104.2196	-405.2770
D1 Top_BR	-137.5693	104.2195	-405.6121
Coordinates in Cebaf Mechanical System			
Target	x[m]	y[m]	z[m]
D2 Bot_BL	103.2729	-138.7026	-406.1953
D2 Bot_BR	103.2732	-138.2611	-406.5319
D2 Top_BR	104.4953	-137.9083	-406.0803

Sled Points Relative to the Dipole Exit (BFS)							
Target	x[m]	y[m]	z[m]	Target	x[inch]	y[inch]	z[inch]
SLEDA	-0.6216	-0.9463	5.1742	SLEDA	-24.47	-37.26	203.71
SLEDB	0.6229	-0.9505	5.1767	SLEDB	24.52	-37.42	203.81
SLEDG	-0.6212	-0.9484	6.3745	SLEDG	-24.46	-37.34	250.97
SLEDV	-0.6232	-0.9567	9.0752	SLEDV	-24.54	-37.66	357.29
SLEDW	-0.6228	-0.9545	8.4750	SLEDW	-24.52	-37.58	333.66
SLEDX	-0.6210	-0.9468	4.7740	SLEDX	-24.45	-37.28	187.95
SLEDY	-0.6213	-0.9484	5.9745	SLEDY	-24.46	-37.34	235.22
SLEDZ	-0.6223	-0.9516	7.7749	SLEDZ	-24.50	-37.46	306.10

Sled Points Relative to the target center (BFS)							
Target	x[m]	y[m]	z[m]	Target	x[inch]	y[inch]	z[inch]
SLEDA	-0.6206	2.4587	21.7346	SLEDA	-24.43	96.80	855.69
SLEDB	0.6240	2.4559	21.7385	SLEDB	24.56	96.69	855.85
SLEDG	-0.6200	2.9640	22.8234	SLEDG	-24.41	116.69	898.56
SLEDV	-0.6216	4.0979	25.2745	SLEDV	-24.47	161.33	995.06
SLEDW	-0.6214	3.8462	24.7296	SLEDW	-24.46	151.42	973.61
SLEDX	-0.6200	2.2890	21.3721	SLEDX	-24.41	90.12	841.42
SLEDY	-0.6201	2.7950	22.4608	SLEDY	-24.41	110.04	884.28
SLEDZ	-0.6209	3.5530	24.0939	SLEDZ	-24.44	139.88	948.58

Sled Points in the Cebaf Mechanical system			
Target	x[m]	y[m]	z[m]
SLEDA	-137.3664	102.4610	-405.9111
SLEDB	-138.3559	102.4583	-405.1563
SLEDG	-138.0299	102.9665	-406.7743
SLEDV	-139.5213	104.1007	-408.7193
SLEDW	-139.1897	103.8489	-408.2870
SLEDX	-137.1461	102.2913	-405.6233
SLEDY	-137.8090	102.7974	-406.4868
SLEDZ	-138.8029	103.5556	-407.7825