Jefferson Lab Alignment Group

Data Transmittal

TO: D. Higinbotham, J. Gomez		**DATE:** 03 Jul 2014
FROM: Chris Curtis	**Checked:**	**# :** A1571

DETAILS:

Data: Geonet\BSY\Tracker\Srv16

Given below are the results of the latest survey carried out in Line A of the Beam Switch Yard in order to determine the angle between the superharp pairs. The previous surveys were carried out in July 1998 and August 2000 (DTMs #457 and #624). This survey involved measuring the relative location of the tooling blocks previously located above the external wire reference of each harp.

The data was adjusted such that the line between the first superharps was held fixed. Absolute and relative error ellipses from this adjustment were used to indicate the accuracy of the measurements; semi major (A) and semi minor (B) axes are shown. Harp coordinates (meters) and calculated azimuths and angles are given below.

An adjustment holding control points fixed was used to determine the location of the tooling ball blocks with respect to the ideal beam position. From this adjustment an offset to the beamline was calculated ("Bmline Offset"). The offsets and ellipse values below are given in millimeters.

POINT	Z	X	A	B	Bmline Offset
HARP 07A	-309.03546	-78.94520	0.00	0.00	235.4
HARP 07B	-313.00208	-78.72287	0.02	0.00	234.8

Azimuth 07A-B : 176.7919 deg

HARP 18A	-355.58120	-61.99060	0.16	0.02	233.8
HARP 18B	-358.52670	-59.73316	0.18	0.02	235.8

Azimuth 18A-B : 142.5333 deg

Angle (07A-B) to (18A-B) : 34.2586 deg

Estimated accuracy (1 sigma): 1.6 seconds or 0.0005 deg