

# Jefferson Lab Alignment Group

## DATA TRANSMITTAL

**TO:** Tim Whitlatch, Brian Carpenter

**DATE:** Nov 7, 2001

**FROM:** Chris Gould

**Checked:** # : Z716

### DETAILS:

Below are the results from the 12Gev Vacuum Vessel 2 inspection performed on Nov 2, 2001. The Z axis of the coordinate system is centered on the upstream and downstream 35" Ø flanges #1 and #4 (located near the supports). Roll was set by aligning the 20"Ø side flanges # 2 and # 6 on the beam right side to an average vertical plane. A positive X is to the beam left. The flanges labeled 1 are toward the upstream end of the vessel and the labels increase in the direction of downstream. All measurements are in millimeters.

### HORIZONTAL MEASUREMENTS

| LOCATION             | X       | LOCATION                          | X      |
|----------------------|---------|-----------------------------------|--------|
| Side flange 1 top    | -481.48 | Top flange 1 upst beam right side | 60.37  |
| bottom               | -481.80 | dnst beam right side              | 60.43  |
| upst                 | -481.75 | Top flange 2 upst beam right side | 59.43  |
| dnst                 | -482.34 | dnst beam right side              | 60.80  |
| Side flange 2 top    | -482.14 | Top flange 3 upst beam right side | 58.07  |
| bottom               | -481.59 | dnst beam right side              | 58.82  |
| upst                 | -483.66 | Top flange 4 upst beam right side | 57.49  |
| dnst                 | -483.56 | dnst beam right side              | 57.54  |
| Side flange 3 top    | -481.83 | Top flange 5 upst beam right side | 56.12  |
| bottom               | -482.09 | dnst beam right side              | 55.90  |
| upst                 | -482.60 | Top flange 6 upst beam right side | 56.26  |
| dnst                 | -482.80 | dnst beam right side              | 57.04  |
| Side flange 4 top    | -482.37 | Inside guide rail 0' (upst end)   | 144.08 |
| bottom               | -482.11 | 1'                                | 143.39 |
| upst                 | -483.08 | 2'                                | 142.35 |
| dnst                 | -482.67 | 3'                                | 142.26 |
| Side flange 5 top    | -481.58 | 4'                                | 141.82 |
| bottom               | -481.46 | 5'                                | 141.96 |
| upst                 | -482.71 | 6'                                | 142.05 |
| dnst                 | -482.78 | 7'                                | 141.69 |
| Side flange 6 top    | -483.80 | 8'                                | 141.26 |
| bottom               | -484.38 | 9'                                | 140.67 |
| upst                 | -484.07 | 10'                               | 140.42 |
| dnst                 | -483.49 | 11'                               | 139.75 |
| Side flange 7 top    | -483.03 | 12'                               | 139.69 |
| bottom               | -483.07 | 13'                               | 140.41 |
| upst                 | -483.23 | 14'                               | 141.40 |
| dnst                 | -482.55 | 15'                               | 142.31 |
| 35"Ø center flange 1 | 0.00    | 16'                               | 142.50 |
| 2                    | -0.22   | 17'                               | 142.67 |
| 3                    | 0.32    | 18'                               | 142.91 |
| 4                    | 0.00    | 19'                               | 143.91 |
|                      |         | 20'                               | 144.08 |
|                      |         | 21' (dnst end)                    | 145.30 |

# Jefferson Lab Alignment Group

## DATA TRANSMITTAL # Z716 (continued)

### DETAILS:

The 35" Ø flanges #1 and #4 were leveled to a horizontal plane to establish the Z-axis and roll was set as stated above. All measurements are relative to the center of these two flanges. A positive value is above centerline.

### VERTICAL MEASUREMENTS

| LOCATION                   | Y      | LOCATION                        | Y       |
|----------------------------|--------|---------------------------------|---------|
| Side flange 1              | 5.07   | Inside guide rail 0' (upst end) | -362.54 |
| 2                          | 8.02   | 1'                              | -362.17 |
| 3                          | 1.40   | 2'                              | -362.09 |
| 4                          | 2.56   | 3'                              | -361.61 |
| 5                          | 3.14   | 4'                              | -361.17 |
| 6                          | 3.32   | 5'                              | -360.99 |
| 7                          | -1.15  | 6'                              | -361.39 |
|                            |        | 7'                              | -361.69 |
| 35" Ø flange 1             | 0.02   | 8'                              | -361.66 |
| 2                          | 0.64   | 9'                              | -361.45 |
| 3                          | 0.92   | 10'                             | -360.70 |
| 4                          | -0.02  | 11'                             | -361.41 |
|                            |        | 12'                             | -361.83 |
| Elliptical upst end flange | -2.74  | 13'                             | -361.73 |
| dnst end flange            | -1.76  | 14'                             | -361.33 |
|                            |        | 15'                             | -360.05 |
| Top flange 1 beam right    | 481.54 | 16'                             | -361.14 |
| beam left                  | 481.68 | 17'                             | -361.61 |
| upst                       | 481.64 | 18'                             | -360.90 |
| dnst                       | 481.71 | 19'                             | -360.70 |
| Top flange 2 beam right    | 482.61 | 20'                             | -360.19 |
| beam left                  | 479.76 | 21' (dnst end)                  | -362.30 |
| upst                       | 480.22 |                                 |         |
| dnst                       | 482.19 |                                 |         |
| Top flange 3 beam right    | 482.58 |                                 |         |
| beam left                  | 482.28 |                                 |         |
| upst                       | 482.26 |                                 |         |
| dnst                       | 482.68 |                                 |         |
| Top flange 4 beam right    | 483.64 |                                 |         |
| beam left                  | 483.36 |                                 |         |
| upst                       | 483.64 |                                 |         |
| dnst                       | 483.45 |                                 |         |
| Top flange 5 beam right    | 482.34 |                                 |         |
| beam left                  | 482.18 |                                 |         |
| upst                       | 482.44 |                                 |         |
| dnst                       | 482.22 |                                 |         |
| Top flange 6 beam right    | 482.26 |                                 |         |
| beam left                  | 482.20 |                                 |         |
| upst                       | 482.30 |                                 |         |
| dnst                       | 482.08 |                                 |         |