

BTS IN BETWEEN  
RFTT & SEPTUM

Letters A-E designate flanges

1-14 areas slot with level & transit  
see notes,

BTS

Dec 03/03  
JMc, HI, FG.

SC03SEP1

As-Built

Z

X

Y

,026

-.011

,008

DKS Face

SC03SEPM

Z = 25.506

SR 25.460

+046 -

SC00B8V5

As Built

Z

X

Y

,027

-.010

-.008

SC00Q8F2

As-Built

Z

X

Y

,070

-.014

-.013

SC03IDM

Z

= 48.409

SC03SEPM

Z

= 22.997

+032 -

SR 22.965

22

12/03

BTS

12/03/03

SHORT GUN

READ	17.773
FT	<u>40.750</u>
S/T	58.523
SM04F1	41.987
HI	16.536 ✓

R	17.895
FT	<u>40.750</u>
S/T	58.645
SM03F6	<u>42.111</u>
HI	16.534 ✓

AVG HI = 16.535 ✓

TALL GUN

R	11.764
FT	<u>57.750</u>
S/T	69.514
SM04F1	41.987
HI	27.527 ✓

R	11.879
FT	<u>57.750</u>
S/T	69.629
SM03F6	<u>42.785 111</u>
HI	27.518 ✓

AVG HI = 27.522 ✓

SM04F1

574.72464
<u>575.7911</u>
-1.066 M ✓
-41.987" ✓

SM03F6

574.72147
<u>575.7911</u>
-1.070
-42.111 ✓

28 12/03

BTS

12/3/03

Y) Profile Monitor Pipe

Dia = 1.510 ÷ 2 = .755" Rad.

SC00147M to pt. on pipe  
Z dist = 121.514

pitch = 7.792

$\tan \theta = \frac{y}{x}$



121.514 (tan 7.792) = 18.794 dia

PT.	Z	SLOPE CORR.	y	x	Rad	pitch = $\frac{y}{x}$	x pitch = y
1	-38	+ .581	11.375	1.510	.755		
2	2.5	- .382	13.42	1.085	.543		
3	7.0	- 1.070	17.324	1.085	.543		
4	21.5	- 3.286	15.509	1.000	.5		
5	41	- 6.267	12.527	1.000	.5		
6	44	- 6.725	10.497	1.812	4.060		4.012
7	52.8	- 8.070	11.812	8.12	7.060		
8	57.3	- 8.758	0.000	1.000	.5		

57.5  
check

PREV DIS	PIPE	PIPE	PIPE	PIPE	LR.
1	2	3	4	5	6

16.535	16.535	76.535	27.522	27.522	27.522
- .755	- .543	- .543	.5	.5	4.060
17.290	17.078	17.078	27.022	27.022	23.462
19.375	18.712	17.724	15.509	18.521	12.009
S/R 2.085	S/R 7.334	S/R 0.646	S/R 11.514	S/R 14.495	S/R 11.395
Fwd 2.144	1.173	0.524	11.679	14.530	11.552
2.083	1.360	0.624	11.513	14.500	11.445
2	1.336	0.639		14.495	11.457
27.522					
4.260					
29.462					
10.227					
12.782					
12.782	12.782	17.095	16.986	16.990	

BTS

(Y)

PT	Z	Slope GORR.	d COR FORM
9	66.55	10.172 ✓	8.622 ✓
10	75.05	11.471 ✓	7.323 ✓
11	79.75	12.190 ✓	6.604 ✓
12	86.75	13.260 ✓	5.534 ✓
13	90.75	13.871 ✓	4.923 ✓

SET 12/04/03

CSK <u>7</u>	pipe <u>8</u>	pipe <u>9</u>	gray box <u>10</u>	gray box <u>11</u>
S/R 12.738	S/R 16.986 16.990 16.983 +3	27.522 .5 <u>27.022</u> 8.622 ✓ S/R 18.400 ✓ 18.415 18.403 -3 ✓	27.522 1.763 <u>25.759</u> 7.323 ✓ S/R 18.436 ✓ 18.418 ✓ 18.434 +2	27.522 1.763 <u>25.759</u> 6.604 ✓ S/R 19.155 ✓ 19.192 ✓ 19.144 +1

bpm <u>12</u>	bpm <u>13</u>
27.522 1.543 <u>26.979</u> 5.534 ✓ S/R 21.445 ✓ 21.426 +19 21.447 -2 21.434 21.443 +2 ✓	27.522 1.543 <u>26.979</u> 4.923 ✓ S/R 22.056 ✓ 21.995 22.028 +28 22.026 22.033 +23 ✓

28  
12/03

X) Buck-IN

BTS

12/3/03

SC00Q8F 2 F.V. = -6.373 + -.014 = -6.387 ✓

SC00B8V 5 N.V. = -12.343 + -.010 = -12.353 ✓

1ST F. = 38,000 + 1 = 39,000

1ST N. = 31,523 + 1 = 32,523

2ND F. = 32,000 + 1 = 33,000

2ND N. = 26,959 + 1 = 27,959

S/R F = 36,865 - 1 = 35,865 ✓

S/R N = 30,899 - 1 = 29,899 ✓

LOS = 43.252 ✓ 29.904

check SC035EP1

43.252

36.632

6.868

36.384

1

35.384 ✓

1.260

36.644

.011

S/R 36.633 ✓

FND 36.632 ✓

28

12/03

X) LOS = 43.252

3.550 width  
gray box

DK PR25 1	BPM 2	BPM 3	PIPE 4	PIPE 5	PIPE 5.511 cor. width 6
43.252	43.252	43.252	43.252	43.252	43.252
.755	.543	.543	.5	.5	2.755
42.497	42.709	42.709	42.752	42.752	40.497
40	40	40	40	40	36
2.497 ✓	S/R 2.709 ✓	S/R 2.709 ✓	S/R 2.752 ✓	S/R 2.752 ✓	S/R 4.497 ✓
2.546 <del>479</del>	2.788	2.799	2.805	2.662	4.550
2.550 <del>153</del>	<del>4.079</del>	<del>4.090</del>	<del>4.053</del>	<del>4.090</del>	<del>4.053</del>

cor. 7	" P. 8	" P. 9	G.B. 10	G.B. 11	BPM 12
43.252	43.252	43.252	43.252	43.252	43.252
2.755	.5	.5	1.775	1.775	.543
40.497	42.752	42.752	41.477	41.477	42.709 ✓
36	36	36	36	36	36
4.497	S/R 6.752 ✓	S/R 6.752 ✓	S/R 5.477 ✓	S/R 5.477 ✓	S/R 6.709 ✓
4.536	6.751	6.782	5.539	5.498	6.707 ✓
<del>4.039</del>	<del>4.001</del>	6.770	5.491	<del>4.021</del>	<del>4.003</del>
		<del>4.018</del>	<del>4.14</del> ✓		

BPM 13	PR2.5 (W/S) 14
43.252	43.252
.543	.755
42.709 ✓	42.497
36	40
6.709 ✓	S/R 2.497 ✓
6.688	2.517
-0.021 ✓	2.520
	<del>4.020</del>
	<del>4.023</del> ✓

2-9 REDONE  
12/04/05

288  
12/03

12/3/03

(y)

PR2.5 w/s  $9.2'' + 3.8 = 12''$

$$\begin{array}{r} \text{Cor.} = 1.834 \\ \underline{18.794} \\ 20.628 \end{array}$$

$$\begin{array}{r} R. \quad 7.134 \\ FT \quad \underline{57.750} \\ S/F \quad 64.884 \\ \text{SM04FL} \quad \underline{41.987} \\ 22.897 \end{array}$$

$$\begin{array}{r} R \\ FT \\ S/F \\ \text{SM03FL} \quad 42.111 \end{array}$$

1.518

$$\begin{array}{r} 22.897 \\ \underline{.755} \\ 22.142 \\ \underline{20.628} \\ S/R \quad 1.514 \\ \underline{1.518} \\ 1.527 -13 \end{array}$$

22  
12/03



(V)

BTS

12/4/03  
JMc, LG, FG

short gun

$$\begin{aligned}
 R &= 3.110 \\
 F &= \frac{57.750}{60.860} \\
 S/T &= 41.987 \\
 SM04F1 &= 18.873 \\
 HI &= 18.873
 \end{aligned}$$

$$\begin{aligned}
 R &= 3.232 \\
 F &= \frac{57.750}{60.982} \\
 S/T &= 42.111 \\
 SM03F6 &= 18.871 \\
 HI &= 18.871
 \end{aligned}$$

$$Avg\ HI = 18.872$$

High Gun

$$\begin{aligned}
 R &= 10.654 \\
 F &= \frac{57.750}{68.404} \\
 S/T &= 41.987 \\
 HI &= 26.417
 \end{aligned}$$

$$\begin{aligned}
 R &= 10.765 \\
 F &= \frac{57.750}{68.515} \\
 S/T &= 42.111 \\
 HI &= 26.404
 \end{aligned}$$

$$Avg\ HI = 26.410$$

New pt @ 40"  
6.114  
18.794  
12.680

BPM 2

$$\begin{aligned}
 &18.872 \\
 &\underline{.543} \\
 &18.329 \\
 \text{Mile up} &18.412 \\
 \text{S/R} &\underline{.083} \\
 &.087 +4 \\
 &+.084 +1
 \end{aligned}$$

BPM 3

$$\begin{aligned}
 &18.872 \\
 &\underline{.543} \\
 &18.329 \\
 &17.724 \\
 \text{S/R} &\underline{.605} \\
 &.599 +9 \\
 &-.587 +18
 \end{aligned}$$

1" PIPE 4

$$\begin{aligned}
 &26.410 \\
 &\underline{.5} \\
 &25.910 \\
 &15.908 \\
 \text{S/R} &\underline{10.402} \\
 &10.372 \\
 &10.387 +15
 \end{aligned}$$

1" PIPE 5

$$\begin{aligned}
 &26.410 \\
 &\underline{.5} \\
 &25.910 \\
 &12.680 \\
 \text{S/R} &\underline{13.230} \\
 &13.278 +2
 \end{aligned}$$

8

$$\begin{aligned}
 &26.410 \\
 &\underline{.5} \\
 &25.910 \\
 &10.036 \\
 \text{S/R} &\underline{15.874} \\
 &15.865 +9
 \end{aligned}$$

9

$$\begin{aligned}
 &26.410 \\
 &\underline{.5} \\
 &25.910 \\
 &9.622 \\
 &17.288 \\
 &17.278 +10
 \end{aligned}$$

28  
12/03

X)

LOS = -43,252 -

12/04/03  
LG, JM, FG

	<u>2</u>		<u>3</u>		<u>4</u>		<u>5</u>		<u>8</u>
	S/R 2.709 ✓		S/R 2.709 ✓		S/R 6.752 ✓		S/R 6.752 ✓		S/R 6.752 ✓
	2.805		2.807		6.857		6.678		6.778
MAX'D	2.767 +58 ✓		2.727 +18 ✓		6.740		6.707 -45 ✓		6.757 ✓
					6.741 -11 ✓				+5

	<u>9</u>		<u>6</u>		<u>7</u>
	S/R 6.752 ✓		S/R 4.497 ✓		S/R 4.497 ✓
	6.792		4.562 +5		4.534 +37
	6.758 +6 ✓		4.560 +63 ✓		4.532 +35 ✓

28  
12/03

Flanges

1-3 HI High Gun

W/S cor. (1) (D)

(2) (C)

(3) (B)

(4)

Reads 12.208

9.406

7.503

COULDN'T SHOOT (A)

Z dist from 2φ ~~38.75"~~  
38.75" ✓

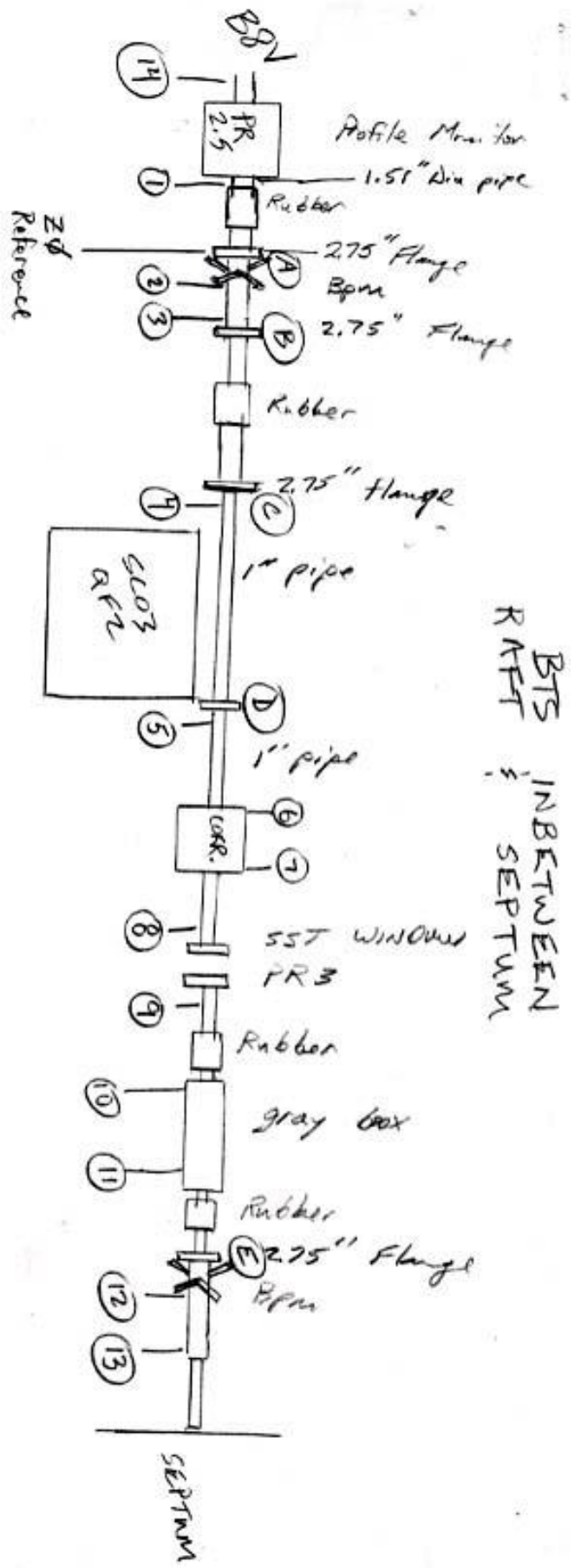
= .700

~~8.1"~~

~~21.5~~  
~~20.8"~~ 20.8 ✓

8.1 ✓

~~14.5~~  
~~1.7~~  
~~13.8~~



Letters A-E designate flanges

1-14 areas slot with level & transit  
See notes,

BTS SECTION BETWEEN BTS RAFT AND SEPTUM.  
 DEC. 4, 2003

SHOT A HORIZONTAL Z DISTANCE TO A FLANGE FOR Z = 0 REFERENCE.  
 Z DISTANCE = 121.514' FROM INJECTION VERTEX OF SEPTUM.

PITCH = 0.153449 RADIANS  
 DH = 18.794 FROM SC001V1TM AS Y = 0 REFERENCE.

Y-ELEVATIONS ALL UNITS IN INCHES AND RADIANS.

PT	DESCRIP- TION	SLOPE DIST.		DH AT Z0	SLOPE CORR.	HI	DIA.	RADIUS & COS. CORR.		S/R	FND	DIFF.
		FROM Z0 (INCHES)	PITCH					RADIUS & COS. CORR.	S/R			
1	D/S PR2.5	-3.8	0.153449348	18.794	19.375	16.535	1.510	0.746	2.094	2.083	-0.011	
2	BPM	2.5	0.153449348	18.794	18.412	18.872	1.085	0.536	0.076	0.084	0.008	
3	BPM	7	0.153449348	18.794	17.724	18.872	1.085	0.536	0.612	0.587	0.025	
4	1" PIPE	21.5	0.153449348	18.794	15.508	26.410	1.000	0.494	10.408	10.387	0.021	
5	1" PIPE	40	0.153449348	18.794	12.680	26.410	1.000	0.494	13.236	13.228	0.008	
6	CORR.	44	0.153449348	18.794	12.069	27.522	8.12	4.012	11.441	11.407	0.034	
7	CORR.	52.8	0.153449348	18.794	10.724	27.522	8.12	4.012	12.786	12.713	0.073	
8	1" PIPE	57.3	0.153449348	18.794	10.036	26.410	1.000	0.494	15.880	15.865	0.015	
9	1" PIPE	66.55	0.153449348	18.794	8.622	26.410	1.000	0.494	17.294	17.278	0.016	
10	GRAY BOX	75.05	0.153449348	18.794	7.323	27.522	3.55	1.754	18.445	18.434	0.011	
11	GRAY BOX	79.75	0.153449348	18.794	6.604	27.522	3.55	1.754	19.163	19.144	0.019	
12	BPM	86.75	0.153449348	18.794	5.534	27.522	1.085	0.536	21.451	21.443	0.008	
13	BPM	90.75	0.153449348	18.794	4.923	27.522	1.085	0.536	22.063	22.033	0.030	
14	U/S PR2.5	-12	0.153449348	18.794	20.628	22.897	1.510	0.746	1.523	1.527	-0.004	

NOTE: MICD UP ON 1 & 2.  
 1 & 14 ARE THE PIPE ON PR 2.5.

Flanges	SLOPE DIST.		DH AT Z0	SLOPE CORR.	HI	DIA.	RADIUS & COS. CORR.		S/R	FND	DIFF.
	FROM Z0	PITCH					RADIUS & COS. CORR.	S/R			
D	38.75	0.153449	18.794	5.923	26.410	2.750	1.359	12.180	12.208	-0.028	
C	20.8	0.153449	18.794	3.179	26.410	2.750	1.359	9.436	9.406	0.030	
B	8.1	0.153449	18.794	1.238	26.410	2.750	1.359	7.495	7.503	-0.008	

**X-HORIZONTAL**

BUCKED IN  
 FAR 08F TB 2  
 NEAR 88V TB 5

PT	DESCRIP- TION	LOS	DIA.	RAD.	FT.	S/R	FND.	DIFF.
1	D/S PR2.5	-43.252	1.510	0.755	40	2.497	2.550	0.053
2	BPM	-43.252	1.085	0.543	40	2.710	2.767	0.057
3	BPM	-43.252	1.085	0.543	40	2.710	2.727	0.017
4	1" PIPE	-43.252	1.000	0.5	36	6.752	6.741	-0.011
5	1" PIPE	-43.252	1.000	0.5	36	6.752	6.707	-0.045
6	CORR.	-43.252	5.511	2.756	36	4.497	4.560	0.063
7	CORR.	-43.252	5.511	2.756	36	4.497	4.532	0.035
8	1" PIPE	-43.252	1.000	0.5	36	6.752	6.757	0.005
9	1" PIPE	-43.252	1.000	0.5	36	6.752	6.758	0.006
10	GRAY BOX	-43.252	3.55	1.775	36	5.477	5.491	0.014
11	GRAY BOX	-43.252	3.55	1.775	36	5.477	5.498	0.021
12	BPM	-43.252	1.085	0.543	36	6.710	6.707	-0.003
13	BPM	-43.252	1.085	0.543	36	6.710	6.688	-0.022
14	U/S PR2.5	-43.252	1.510	0.755	40	2.497	2.520	0.023

SEE BELOW  
 SEE BELOW  
 SEE BELOW

Dec. 5, 2003  
 Found math error in notes, went back and shot the PR2.5 and the D/S BPM with the TC2002 FILE:TPBTS.PM.FNL.  
 Have new values for PR2.5 and the BPM in X. Elevation didn't change.

PT	DESCRIP- TION	DIA.	PRISM RAD.	FT.	S/R	BEFORE MOVE	AFTER MOVE	DIFF.
1	D/S PR2.5	1.510	0.750	5.888	7.393	7.343	7.407	-0.014
2	BPM	2.75	0.750	0	2.125	2.075	2.127	-0.002
3	BPM	2.75	0.750	0	2.125	2.128	2.134	-0.009

Dec. 04, 2003 As-Built Postions Units = Inches.  
 Shot with TC2002 File: PR2FIDS.FNL

PR2.5	Z	X	Y
SC00PRR21	-0.059	-0.001	-0.042
SC00PRR22	-0.071	0.023	-0.064
SC00PRR23	-0.036	0.008	-0.038
SC00PRR24	-0.062	0.031	-0.055

Dec. 05, 2003 As-Built Postions Units = Inches.  
 Shot with TC2002 File: TPBTSPM.FNL

PR2.5	Z	X	Y
SC00PRR21	0.000	0.000	0.000
SC00PRR22	-0.071	-0.021	-0.065
SC00PRR23	-0.029	-0.034	-0.036
SC00PRR24	-0.059	-0.013	-0.062

PR2.5 moved avg. .043 in X

PR2.5	Z	X	Y
SC00PRR22	0.000	0.044	0.002
SC00PRR23	-0.007	0.042	-0.002
SC00PRR24	-0.003	0.044	0.007
Avg.Move	-0.003	0.043	0.002

Flanges shot with TC2002 File:PR2FIDS.FNL  
 Injection Vertex used as Reference.  
 Z Distances are U/S of IVTM.

	Z	X	Y	DESCRIP.	PITCH	DIA.	PRISM RAD.	RADIUS & COS. CORR.	SLOPE CORR.	S/R	DIFF.
A	-122.259	-0.024	16.690	bot flange	0.153449	2.750	0.750	2.100	18.909	16.809	0.120
B	-113.843	0.093	19.688	top flange	0.153449	2.750	0.750	2.100	17.608	19.708	0.019
C	-101.218	0.054	17.768	top flange	0.153449	2.750	0.750	2.100	15.655	17.755	-0.013
D	-83.389	0.123	14.933	top flange	0.153449	2.750	0.750	2.100	12.897	14.997	0.064
NEAR 87	-65.298	0.009	11.307	1" pipe	0.153449	1.000	0.750	1.235	10.099	11.335	0.027
NEAR 4	-100.015	-0.128	16.700	1" pipe	0.153449	1.000	0.750	1.235	15.469	16.704	0.004
E	-37.937	0.073	7.889	top flange	0.153449	2.750	0.750	2.100	5.868	7.968	0.079

RUN DATE 12/03/03 RUN TIME 05:44  
 ELEMENT NAME SC001VT  
 ORIENTATION ANGLES IN DEGREES  
 YAW -58.235294  
 AZIMUTH 148.235294  
 PITCH -8.792000  
 ROLL 0.000000

VERSION 3.1  
 OTHER NAME

IVT ON GIRDER BTS R

MONUMENT OFFSET FROM LOCAL BEAM LIT

ALL DATA IN RIGHT HANDED SYSTEM  
 LAB DATA IN BEAM FOLLOWING SYSTEM  
 ALL UNITS EQUAL INCHES EXCEPT OTHERWISE NOTED  
 ORIGIN OF GIRDER SYSTEM IS T/B M  
 GIRDER T/B LINE IS M  
 MONUMENT LINE IS -

ORIGIN AT SPEAR RING CENTER  
 X = 3000 [METERS]  
 Y = 500 [METERS]  
 Z = 6000 [METERS]  
 ROLL = YAW = 0  
 PITCH = 0.000000

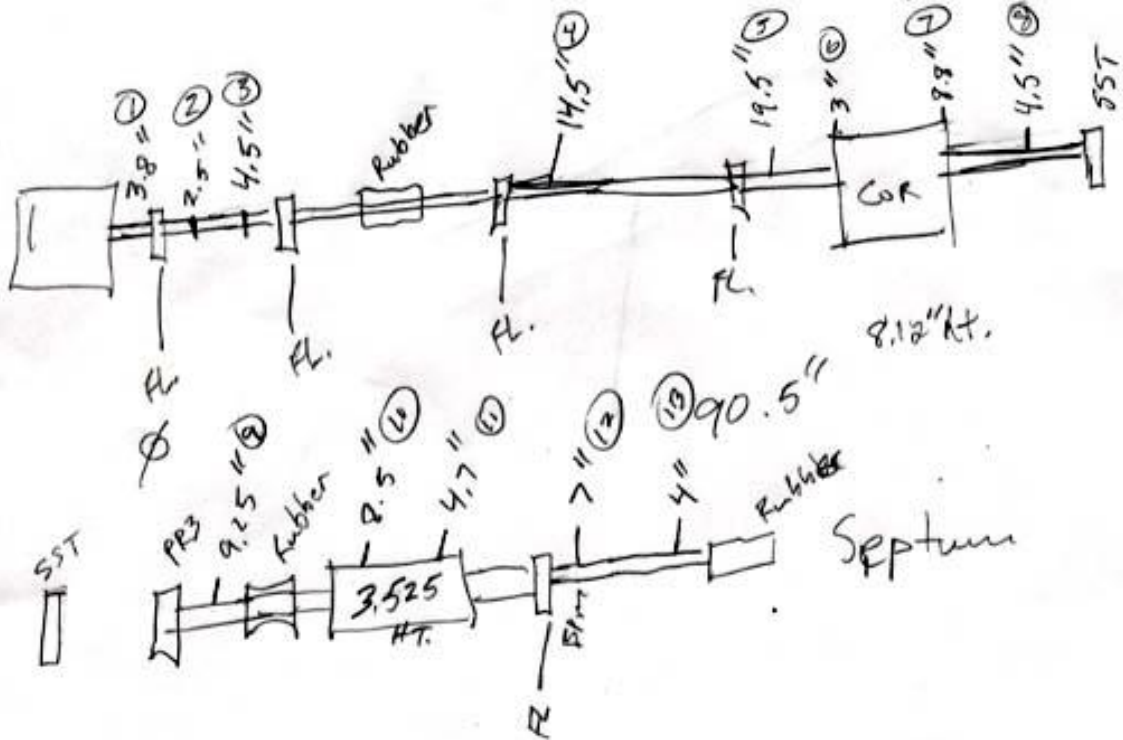
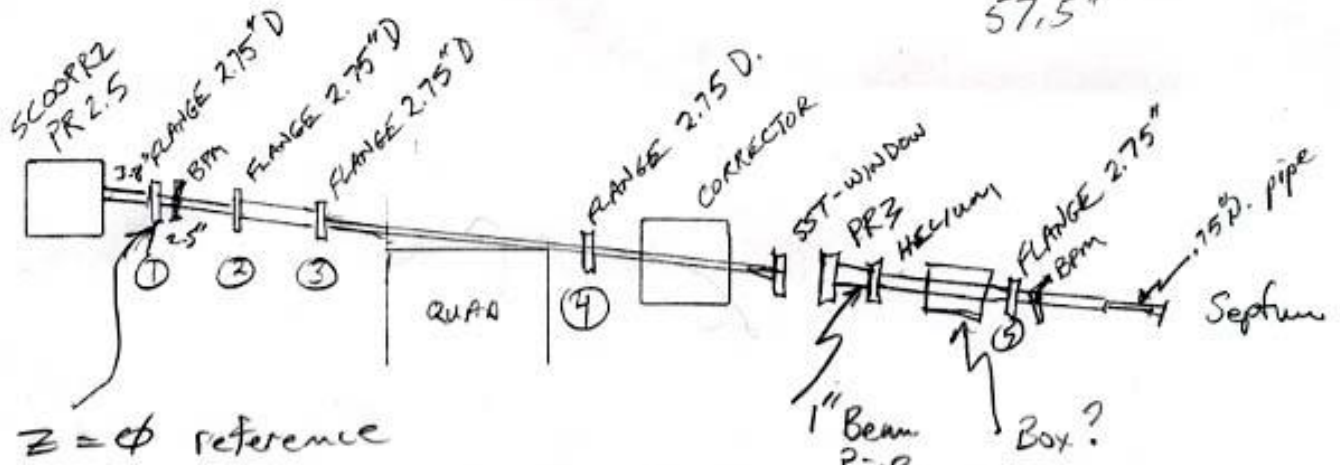
X  
 \*\*\*\*\*  
 Z  
 \*\*\*\*\*

MC	LAB DATA			GEODETTIC COORDS W/O OFFSET			GIRDER COORDS		LOCAL BEAM LINE	
	X	Y	Z	X	Y	Z	X	Z	X	Z
MC	0.0000	0.0000	0.0000	631.143	2983.906	1411.143	0.000	255.896	0.000	0.000
				GEODETTIC COORDS (METERS)			GIRDER T/B LINE		MONUMENT LINE	
MC				3016.03103	575.79122	6035.84303	*****	*****	*****	*****



SM02F5	111503	6022.23882	3027.21624	574.72346	170.1	0.00012	0.00005	.00006
SM03F6	111503	6031.04789	3020.35286	574.72147	177.9	0.00010	0.00004	.00006
SM04F1	111503	6034.36934	3015.60950	574.72464	182.6	0.00009	0.00004	.00007

575.7911 M.



- 9 - 1"
- 10 - 3.525" HT
- 11 - 3.525 HT
- 12 - 1.085"
- 13 - 1.085"

Final As Built PostionsDate: 12-03-2083

T.

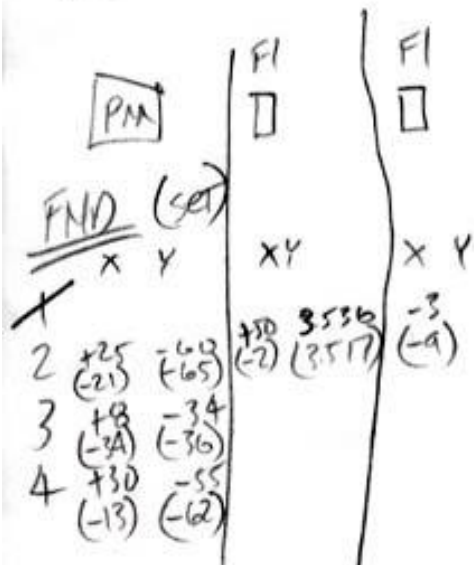
Station:	BTSFNL			Difference units =	Inches
Operator:	fg	Gopher #1:	hi	Gopher #2:	jm
SC03SEP1	0.02608	-0.01139	0.00810	-	checked buck-in
SC03SEPM	25.50567	0.97220	13.65090	-	shot D/s side septum at plate.
SC03SEPM	0.00000	0.00000	0.00000	-	
SC0088V5	0.02719	-0.01000	-0.00776	DR	pts used for buck-in.
SC0008F2	0.06994	-0.01354	-0.01334	-	pts
SC03ID1M	0.00000	0.00000	0.00000	-	
SC03ID1M	48.40870	-7.32351	9.24581	}	shot D/s side of septum before plate
SC03SEPM	22.99718	-7.32019	9.24549	}	
SC00IVTM	121.51384	-2.03549	18.64996	-	Z φ Reference

Final As Built PostionsDate: 12-04-2083

Station:	PR2FIDS	Difference units =		Inches
Operator:	FG	Gopher #1:	LG	Gopher #2:
SC00PR21	-0.05869	-0.00050	-0.04202	
SC00PR22	-0.07098	0.02337	-0.06376	
SC00PR23	-0.03592	0.00814	-0.03810	
SC00PR24	-0.06227	0.03096	-0.05547	
7 SC00IVTM	-122.25890	-0.02418	16.68965	Flange A bottom
2 SC00IVTM	-113.84297	0.09337	19.68827	FL.B
3 SC00IVTM	-101.21816	0.05359	17.76762	FL.C
4 SC00IVTM	-83.38873	0.12347	14.93330	FL.D
5 SC00IVTM	-65.29774	0.00938	11.30749	-1" pipe
6 SC00IVTM	-100.01524	-0.12770	16.70000	-1" pipe
7 SC00IVTM	-37.93743	0.07270	7.88883	FL.E
SC00IVTM	0.00000	0.00000	0.00000	

1-4 2.75" Flange

5-6 1" pipe



5.888  
 .750  
 -----  
 6.638  
 .755  
 -----  
 7.393

12/05/03  
 FG, HI, MR

1.375  
 2 / 2.75  $\phi$

1.375  
 .750  
 -----  
 2.125

@ D/s PM pipe w/ o/s 7.393  
 X +50  
 (-14)

Final As Built PostionsDate: 12-05-2083

Station:	TPBTSPM	Difference units =		Inches
Operator:	HI	Gopher #1:	FG Gopher #2:	MR
SC00PR21	0.00000	0.00000	0.00000	
SC00PR22	-0.07137	-0.02052	-0.06549	
SC00PR23	-0.02936	-0.03404	-0.03603	
SC00PR24	-0.05902	-0.01319	-0.06232	
SC00PR2M	8.99576	-2.12696	-1.68365	
SC00PR2M	8.32952	-0.03377	-3.51716	
SC00PR2M	16.47923	-2.13442	-2.73419	
SC00PR2M	0.00000	0.00000	0.00000	
SC00PR2M	4.97053	-7.40742	-0.97853	





RUN DATE 12/03/03 RUN TIME 05:44  
 ELEMENT NAME SC00B8V  
 ORIENTATION ANGLES IN DEGREES  
 YAW -58.235294  
 AZIMUTH 148.235294  
 PITCH -4.396000  
 ROLL 0.000000

VERSION 3.1  
 OTHER NAME

B8V ON GIRDER BTS R

MONUMENT OFFSET FROM LOCAL BEAM LI

ALL DATA IN RIGHT HANDED SYSTEM  
 LAB DATA IN BEAM FOLLOWING SYSTEM  
 ALL UNITS EQUAL INCHES EXCEPT OTHERWISE NOTED  
 ORIGIN OF GIRDER SYSTEM IS T/B M M  
 GIRDER T/B LINE IS M M  
 MONUMENT LINE IS M M

ORIGIN AT SPEAR RING CENTER  
 X = 3000 [METERS]  
 Y = 500 [METERS]  
 Z = 6000 [METERS]  
 ROLL = YAW = 0  
 PITCH = 0.00000

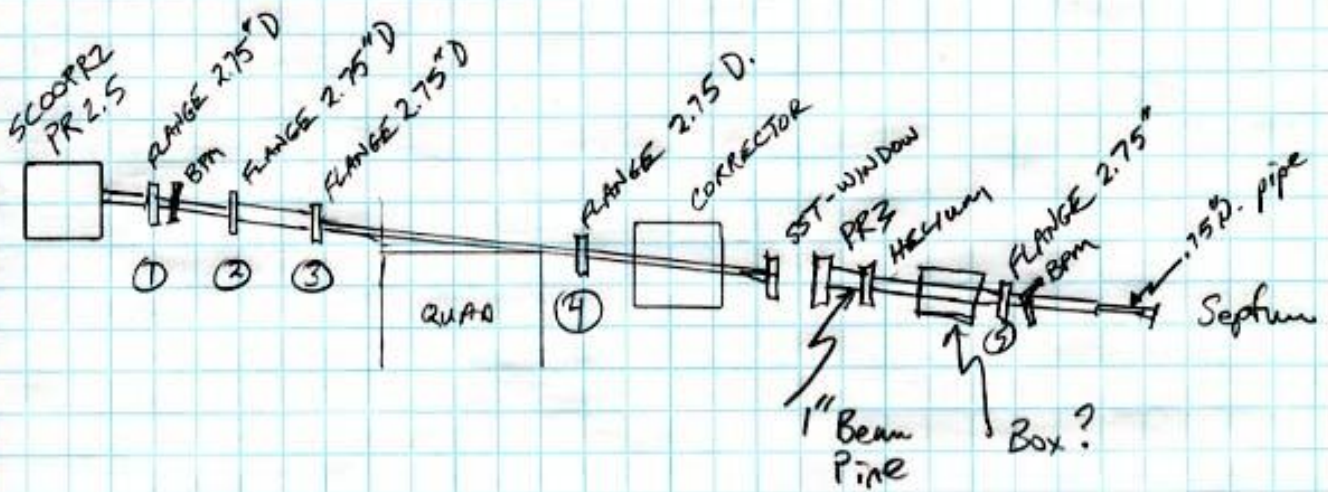
X  
 Z  
 \*\*\*\*\*  
 \*\*\*\*\*  
 \*\*\*\*\*  
 \*\*\*\*\*  
 \*\*\*\*\*  
 \*\*\*\*\*  
 \*\*\*\*\*  
 \*\*\*\*\*  
 \*\*\*\*\*

MC	LAB DATA			GEODETIC COORDS W/O OFFSET			GIRDER COORDS			LOCAL BEAM LINE		
	X	Y	Z	X	Y	Z	X	Z	X	Z		
1	0.0000	0.0000	0.0000	769.512	3007.970	1325.468	0.000	93.150	0.000	0.000		
2	-10.2590	14.5880	-19.9230	780.050	3024.043	1306.877	-10.259	74.404	-10.259	-18.746		
3	10.2100	14.5890	-19.8510	790.765	3024.038	1324.318	10.210	74.475	10.210	-18.674		
4	-10.0580	14.5880	19.4890	746.746	3021.022	1327.735	-10.058	113.700	-10.058	20.550		
5	10.1060	14.5880	19.4670	757.379	3021.024	1344.867	10.106	113.678	10.106	20.528		
6	-12.3430	-5.0200	-19.8930	780.205	3004.490	1304.330	-12.343	72.931	-12.343	-20.219		
7	-12.3430	-4.9700	19.9630	746.416	3001.485	1325.252	-12.343	112.673	-12.343	19.523		
8	-10.2180	-7.1190	-19.9260	781.489	3002.400	1306.034	-10.218	72.737	-10.218	-20.413		
	10.0910	-7.1170	-19.6900	791.980	3002.384	1323.425	10.091	72.972	10.091	-20.178		

GEODETIC COORDS (METERS)			GIRDER T/B LINE			MONUMENT LINE		
MC	X	Y	Z	X	Z	X	Z	
1	3019.54562	576.40245	6033.66689	*****	*****	*****	*****	
2	3019.81327	576.81068	6033.19468	*****	*****	*****	*****	
3	3020.08542	576.81057	6033.63768	*****	*****	*****	*****	
4	3018.96734	576.73395	6033.72446	*****	*****	*****	*****	
5	3019.23744	576.73400	6034.15962	*****	*****	*****	*****	
6	3019.81722	576.31405	6033.12998	*****	*****	*****	*****	
7	3018.95896	576.23772	6033.66139	*****	*****	*****	*****	
8	3019.84982	576.26095	6033.17328	*****	*****	*****	*****	
	3020.11629	576.26055	6033.61501	*****	*****	*****	*****	





Date: 11-01-2003

Time: 12:19

Difference units = Inches

As-Builts

O/S In X from BTS line to Spear Beam Line = - 1.26".

PR 2.5	Z	X	Y
SC00PR22	0.341	-1.245	0.004
SC00PR23	0.370	-1.253	0.017
SC00PR24	0.347	-1.236	0.014

Date: 11-22-2003

Time: 10:41

Difference units = Inches

As-Builts

O/S In X from BTS line to Spear Beam Line = - 1.26".

PR 2.5	Z	X	Y
SC00PR22	0.433	-1.258	-0.012
SC00PR23	0.451	-1.248	-0.037
SC00PR24	0.438	-1.237	0.002

Date: 11-22-2003

Time: 10:41

Difference units = Inches

As-Builts

	Z	X	Y	
SC00IVTM	0.000	0.000	0.000	Reference Point
Flange1Y	-121.514		-0.004	
Flange1X	-121.880	0.063		
Flange2Y	-113.535		0.017	
Flange2X	-114.447	0.086		
Flange3Y	-101.677		0.034	
Flange3X	-101.859	0.062		

Date: 10-31-2003

As-Built

	X	Y	
SC00IVTM	0.000	0.000	Reference Point
Flange4Y		-0.045	
Flange4X	-0.110		

Corrector

NA

NA

As-Built

	X	Y
SST Window		
Shot Beam pipe		0.025

As-Built	-0.024		
PR3	X	Y	
Shot 1" Beam Pipe		0.011	
	-0.004		

Date: 11-22-2003                      Time: 10:41  
 Difference units = Inches

As-Builts  
 Box D/S of  
 PR3

	Z	X	Y	
SC00IVTM	0.000	0.000	0.000	Reference Point
1X		-0.009		
2X		0.006		
3Y			-0.001	
4Y			0.010	
5Y			0.018	
Flange5Y			0.002	
Flange5X		-0.019		
.75" Beam Pipe			-0.010	
		-0.012		

Faraday Cup and Profile Monitor.  
 Final As Built Postions Date: 09-17-2083  
 Difference units = Inches

Shot 3" Beam pipe to set X & Y positions referencing mid. Pt. of Faraday Cup.

	Z	X	Y
SC00FDCM	11.524		0.006
SC00FDCM	-8.024		-0.044
SC00FDCM	11.014	-0.00462	
SC00FDCM	-32.545	0.003	
SC00FDCM	-7.591	-0.05845	

B7 BEND	Z	X	Y
SC00B7H2	0.006	0.009	0.000
SC00B7H4	0.008	0.004	0.004
SC00B7H5	0.003	0.005	0.001
SC00B7H6	0.006	0.007	0.006

Q8F QUAD	Z	X	Y
SC00Q8D1	0.064	-0.017	0.008
SC00Q8D2	0.071	0.008	0.004
SC00Q8D5	0.062	-0.010	0.002

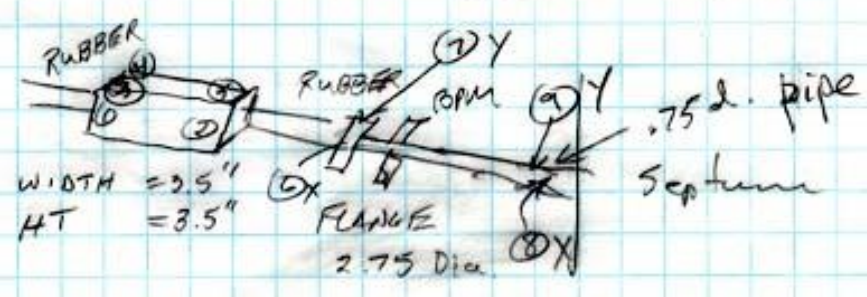
Q9D QUAD	Z	X	Y
SC00Q9F1	-0.0548	0.019	-0.011
SC00Q9F2	-0.0519	0.004	-0.011
SC00Q9F5	-0.0458	0.017	0.011

B8V BEND	Z	X	Y
SC00B8V6	0.011	0.010	0.004
SC00B8V7	0.000	0.001	0.011
SC00B8V8	0.001	0.009	0.007

SEPTUM	Z	X	Y
SC03SEP1	0.011	-0.001	0.014
SC03SEP2	0.016	-0.003	0.005
SC03SEP3	0.019	-0.003	0.005
SC03SEP4	0.015	0.004	0.013
SC03SEP5	0.010	-0.004	0.008

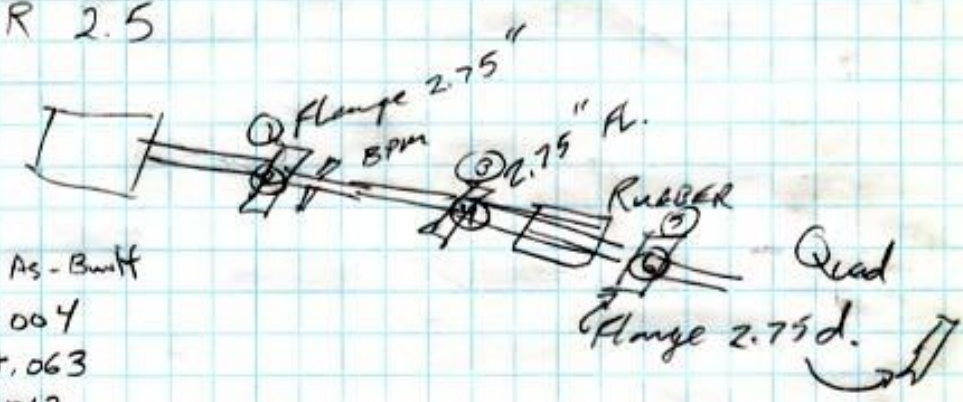
11/22/03  
MR, FG, LJ

SCOOUT M O/S -2.6" = X

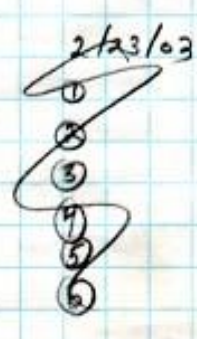


- |    |                            |                    |
|----|----------------------------|--------------------|
|    | X o/s                      | Y o/s              |
| 1. | .75 + 1.75 + 1.26 = 3.760  |                    |
| 2. | 3.760                      |                    |
| 3. |                            | .75 + 1.75 = 2.50" |
| 4. |                            | 2.50               |
| 5. |                            | 2.50               |
| 6. | 1.26 + 1.375 + .75 = 3.385 |                    |
| 7. |                            | 2.125              |
| 8. | 1.26 + 1.375 + .75 = 2.385 |                    |
| 9. |                            | 1.125              |

PR 2.5



- As-Built
- 1 Fy = -.004
  - 2 Fy = +.063
  - 3 Fy = -.012
  - 4 Fy = +.086
  - 5 Fy = +.034
  - 6 Fy = +.062



Date: 11-22-2003

Time: 10:41

Station: TPBTS

Difference units =

Inches

SC00IVTM	<del>31.00528</del>	<del>1.32806</del>	<del>5.03979</del>	
1X	43.08291	0.00889	-0.42021	
2X	48.43819	-0.00567	-0.33829	
2-5y	48.38293	-0.18351	0.00116	
4Y	48.68330	2.67460	-0.00966	
5Y	42.75505	1.63588	-0.01778	
6X	38.20936	-0.06298	0.33456	
7Y	37.80137	1.06589	0.04672	
8X	0.00000	0.00000	0.00000	
SC00IVTM	0.00000	0.00000	0.00000	
6X	38.09784	0.01915	-0.25090	
7Y	37.86625	1.28982	-0.00234	
8X	31.14452	0.01217	-0.24010	
9Y	31.02428	1.25744	0.01045	
SC00IVTM	0.00000	0.00000	0.00000	
F1Y	121.51443	1.54574	0.00425	
2FX	121.87960	-0.06316	0.01165	
3FY	113.53450	1.36715	-0.01677	
4FX	114.44668	-0.08616	0.09818	
5FY	101.67686	1.27183	-0.03417	
6FX	101.85895	-0.06200	-0.25117	
SC00PR21	0.00000	0.00000	0.00000	
SC00PR22	-0.43301	1.25756	0.01234	
SC00PR23	-0.45089	1.24811	0.03699	
SC00PR24	-0.43817	1.23661	-0.00161	
SC03CM25	<del>38.07341</del>	<del>26.49288</del>	<del>-0.08234</del>	
SC03CM29	0.00230	-0.00369	-0.02037	
SC03CM20	-0.10074	0.02049	-10.00408	
SC03CM29	0.00000	0.00000	0.00000	
SC05QD11	0.00000	0.00000	0.00000	
SC05QD11	0.00000	0.00000	0.00000	
SC00Q6FM	-468.14137	-0.91557	4.88598	DR
SC00Q6FM	0.00000	0.00000	0.00000	
SC00Q6FM	0.00000	0.00000	0.00000	
SC00Q6FM	0.00000	0.00000	0.00000	
SC00Q7DM	-304.37403	-0.91896	4.88469	DR
SC00Q7DM	0.00000	0.00000	0.00000	
SC00Q7DM	0.00000	0.00000	0.00000	
SC00Q7DM	0.00000	0.00000	0.00000	

# SC001VTM

**Gaydosh, Michael**

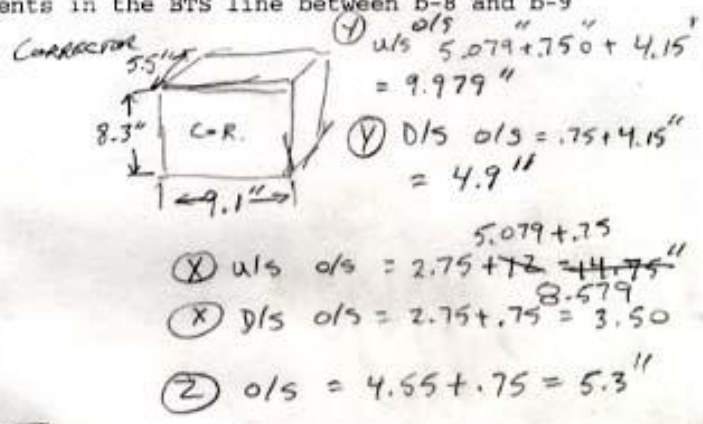
**From:** Trautwein, Thomasina Ann  
**Sent:** Tuesday, October 28, 2003 11:50 AM  
**To:** Safranek, James  
**Cc:** Dell'Orco, Domenico; Gaydosh, Michael; LeCoq, Catherine M.  
**Subject:** BTS alignment data

COP. 1.252 BOT  
 ROLL 1.225 TOP

James the following are the values for the c-8h magnet and PR-3. The values shown for pr-3 will be the typical values used for all components in the BTS line between b-8 and b-9 unless there is an objection

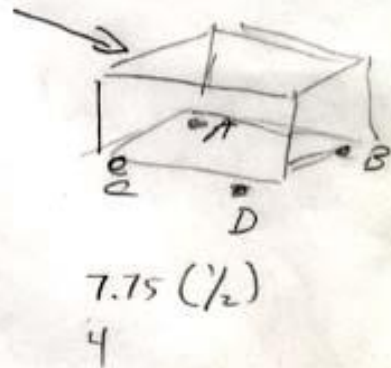
TOL	C-8H	PR-3	WINDOW SPOOL
Y	+/- .04	+/- .02	+/- .02
X	+/- .04	+/- .02	+/- .02
Z	+/- .5	+/- .5	+/- .5
PITCH	+/- .04	+/- .02	+/- .02
ROLL	+/- .04	+/- .02	+/- .02
YAW	+/- .04	+/- .02	+/- .02

Ann



PR 2.5 D/S VERTICAL BEND

	X	Y	Z
A	+ 1.014 <sup>?</sup>	- 3.300	- 2.355
B	+ 1.025	- 3.338	4.125
C	- 2.534	- 3.299	- 2.362
D	- 2.579	- 3.316	4.266

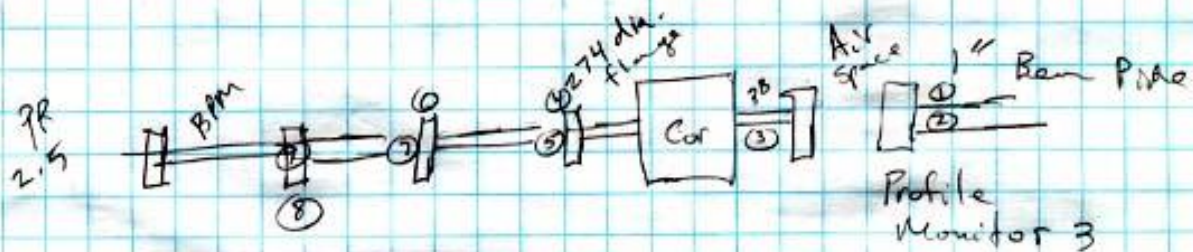


Z dist 0.167" from  $\phi$  PR 2.5 To Next D/S

Flange, u/s of BPM

1.26" o/s from Spear to Injection Line

S/R FOR Z ON D/S COR 68.75" FWD 68.927"



1" Beam Pipe  $.5 + .750 = S/R \quad 1.250$   
 2.74 flange  $1.37 + .750 = S/R \quad 2.120$

Moves		0/5	1.26
Y) 4)		+0.045	
X) 5)		<del>+0.110</del>	1.370
Y) 6)		-0.023	
X) 7)		<del>+0.297</del>	1.210
Y) 8)		-0.011	
X) 9)		1.184	

PR3		
Y	①	-0.011
	②	1.264
X	③A	-0.025
	③	1.284

SST WINDOW