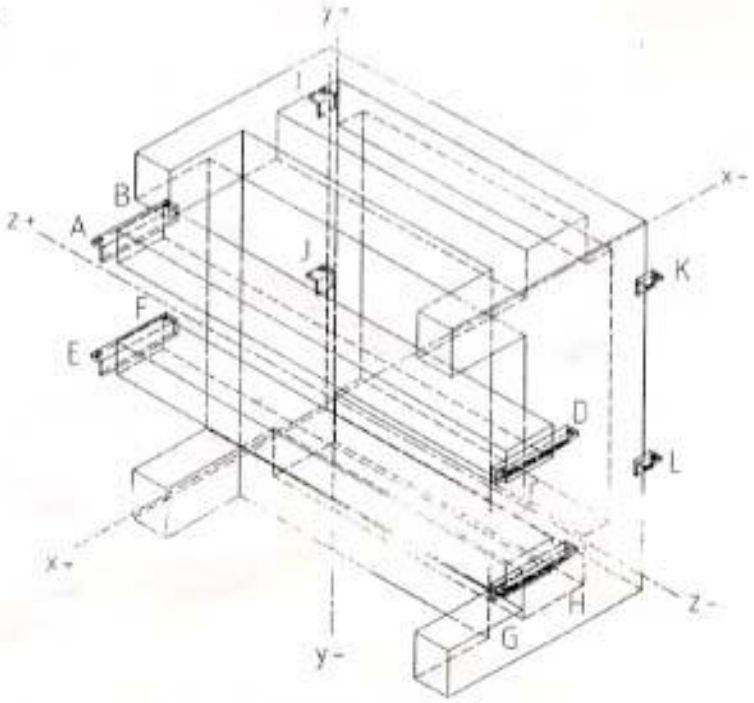
7.2. TABLES AND GRAPHS FOR BL4 WIGGLER.

7.2.1. SURVEY SOCKET COORDINATES AT 16 MM GAP.

Survey socket designation	Coordinates [mm] (±0.05 mm) *(±0.2 mm)*					
	X		Y		Z	
	Theoretical	Measured	Theoretical	Measured	Theoretical	Measured
A	200	200.33	335	335.35	1205	*1205.0*
B	-200	-199.75	335	335.48	1205	*1206.0*
C	200	200.25	335	335.25	-1205	*-1205.0*
D	-200	-199.85	335	335.32	-1205	*-1203.8*
E	200	200.58	-265	-265.64	1205	*1205.0*
F	-200	-199.47	-265	-265.63	1205	*1206.4*
G	200	200.33	-265	-265.66	-1205	*-1205.0*
H	-200	-199.75	-265	265.74	-1205	*-1203.5*
I	-960	-960.46	680	683.68	990	[illegible]
J	-960	-959.47	-380.3	-376.40	990	[illegible]
K	-960	-958.86	680	683.79	-990	[illegible]
L	-960	-959.42	-380.3	-377.56	-990	[illegible]

All measures to center of socket hole.

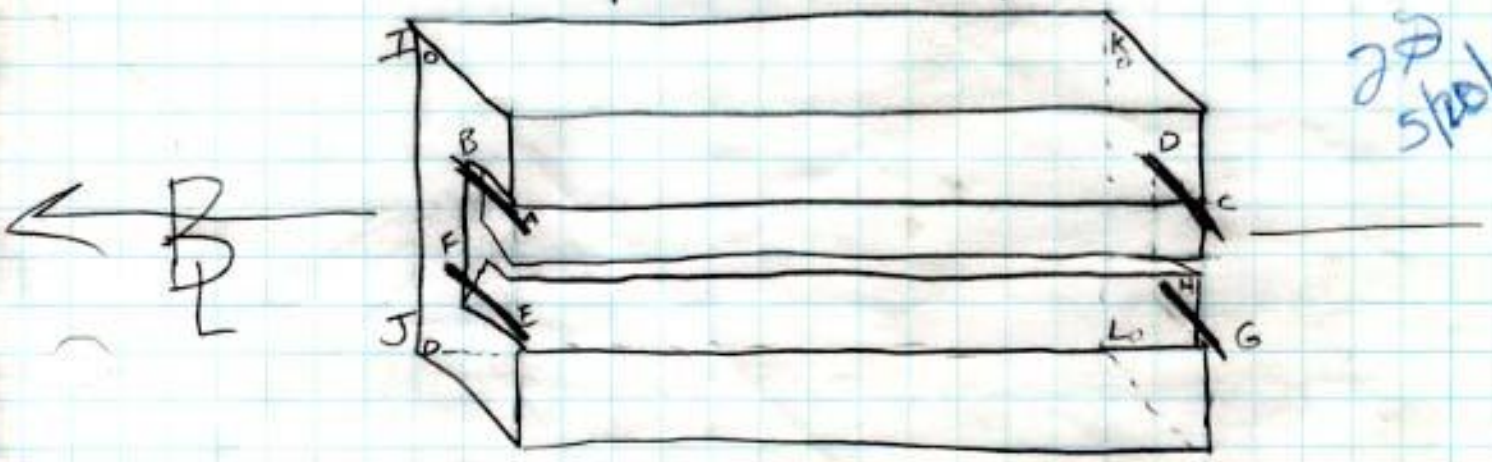


93-0902-1

@ slot face.
Add 1.000" to all values for TB's

BL 4 Wiggler

	X mm	X in	Y mm	Y in	Z mm	Z in
A	200.33	7.887	335.35	13.203 14.703	1205.0	47.441
B	-199.75	-7.864	335.48	13.208 14.208	1206.0	47.480
C	200.25	7.884	335.25	13.199 14.199	-1205.0	-47.441
D	-199.85	-7.868	335.32	13.702 14.202	-1203.8	-47.394
E	200.58	7.897	-265.64	-10.458 -9.458	1205.0	47.441
F	-199.47	-7.853	-265.63	-10.458 -9.458	1206.4	47.496
G	200.33	7.887	-265.66	-10.459 -9.459	-1205.0	-47.441
H	-199.75	-7.864	-265.74	-10.462 -9.462	-1203.5	-47.382
I	-960.46	-37.813	683.68	26.917 27.917	973.2	38.315
J	-959.17	-37.774	-376.40	-14.819 -13.819	973.2	38.315
K	-958.86	-37.750	683.74	26.921 27.921	-973.5	-38.327
L	-959.12	-37.772	-377.56	-14.865 -13.865	-973.5	-38.327



JD 5/20/02

(4)

	G	F	J
VAL	-9.459	-9.458	-13.819
READ	8.452	8.453	12.813
SIT	-1.007	-1.005	-1.006
FT	1	1	1
HI	-0.007 [-001]	-0.005 [+001]	-0.006

HI = -0.006

	F	H
HI	-0.006	-0.006
VAL	-9.458	-9.462
SIT	9.452	9.456
FT	1	1
S/R	8.452	8.456
FND	8.451 [+001]	8.452 [+0.004]

HI	-0.006
BLade	25.713
℄@ blade	25.719

2 D
5/20/02

HE = 0.000

~ Pole tips +/- 8mm = +/- 0.315"

	19	15	10	5	1
Top	.330	.314	.315	309	.324
Bottom	-.318	-.304	-.300	-.313	-.329
Gap	.648	.618	.615	.622	.653

Reference Blade
Gun 2 @ 44.354
25.719 ℄
HI = 18.635

J	
READ	31.462
VAL	-13.819
S/T	17.643
FT	1
HI	18.643

A	B	J	L
18.643	18.643	18.635	18.643
14.203	14.208	-13.819	-13.865
4.440	4.435	32.454	32.508
1	1	1	1
S/R 3.440	S/R 3.435	S/R 31.454	S/R 31.508
		31462	
FND 3.451 [-011]	3.452 [-017]		31.512 [-004]

J	C	D	L
READ 31.548	HI 18.779	18.779	18.779
VAL -13.819	VAL 14.199	14.202	-13.865
S/T 17.779	S/T 4.580	4.577	32.644
FT 1	FT 1	1	1
HI 18.779	S/R 3.580	3.577	31.644
	FND 3.585 [-005]	3.586 [-009]	31.648 [-004]

2B
5/20/02

	C	K	I
READ	14.499	HI 29.693	29.693
VAL	14.199	VAL 27.921	27.917
S/T	28.698	S/T 1.772	1.796
FT	1	FT 1	1
S/T	29.698	S/R .772	.776
FND	(-0.005)	FND 778	.791
HI	29.693	-006	-015

Relative to J being Ø

28
5/20/[illegible]

(X)

FAR	L	-37.772
NEAR	J	-37.774
1st	F	4.000 +1
1st	N	7.152 +1
2nd	F	16.000 +1
2nd	N	14.159 +1
SIR	F	12.580 -1
SIR	N	12.578 -1
LOS		50.352

270
2.760 .92

11.580	11.587	11.571		11.597 +1
11.582	11.592	~~11.569~~ 11.578		11.595 +1
			- 50.369 LOS	

	K	I	A	B	C
LOS	50.369	50.369	50.369	50.369	50.369
VAL	-37.750	-37.813	7.887	-7.864	7.884
SIT	12.619	12.556	58.256	42.505	58.253
FT	1	1	40.250	40.250	40.250
SIR	11.619	11.556	18.006	2.255	18.003
FND	11.626	11.586	17.974	2.222	17.993
	+.007	+.030	-.032	-033	-010

	D	E	F	G	H
	50.369	50.369	50.369	50.369	50.369
	-7.868	7.897	-7.853	7.887	-7.864
	42.501	58.266	42.516	58.256	42.505
	40.250	40.250	40.250	40.250	40.250
	2.251	18.016	2.266	18.006	2.255
	2.242	17.986	2.232	18.000	2.254
	-.009	-030	-034	-006	-001

C) 7.884
A) 7.887
8.000+1
5.000+1
1.200+1
1.586+1
2.981-1
2.978-1
10.865

UPPER BLUE MAG. SUPPORT

u/s) 10.865 LOS o/s) 4.550 S/R

5.315	4.537
5.550	+013
1. —	
4.550 S/R	
4.540	
+010	

2B S/B 0~

SIDE OF MAG.

IBOT	9.077 +01
TOP	9.077 -00
IBOT	9.107 -01
ITOP	9.089 +00

10.865
1.772 1/2 MAG
9.093 S/R

LOWER

4.521 +029

4.514 +.036

(4) Probe

HI = -0.006

-0.050"

SSRL

Wiggler # 4 Checked: 8-1-03 JM

7/29/03
JMc, FG

Wiggler

Y)

	J	L
Values	-13.819	-13.869
	18.865	18.907

.008 mils pitch

-13.865
.004
-13.869

3.473

X) (J) Far V. = -37.774
(L) Near V. = -37.772

1st F. = 1 + 1 = 2.000
1st N = 2.437+1 = 3.437

2 Nd F. = 3 + 1 = 4.000
2nd N. = 3.264 + 1 = 4.264

S/R F = 4.447 - 1 = 3.447
S/R N = 4.449 - 1 = 3.449

Los = 42.221

K

37.750
.007
37.743 cor. val

42.221
37.743
4.478
1
S/R 3.478
3.473

checked 8-1-03 JM

SSRL Wiggler | B 4 Chamber | 7/29/03 JMc, FG

Y)

Wiggler TBL

19.149
1
20.149
13.869
HI = 6.280

Chamber

8

6.280
2.967
3.313
1.25
S/R 2.063
2.291
2.318
2.066 -3
4
6.280
2.985
3.295
1.25
S/R 2.045

7

6.280
1.072
5.208
1.250
S/R 3.958
3.861
3.960
3.970 -12
3.958 Ø

Wiggler TBJ

20.627
1
21.627
13.819
HI = 7.808

Chamber

3

7.908
1.086
6.722
1.250
S/R 5.472
5.353
5.476
5.455
5.465 +7
5.419 +3

4

7.808
2.995
4.823
1.250
S/R 3.573
3.569 +4
3.573 Ø
3.575 -2

8

7.808
2.967
4.841
1.25
S/R 3.591

SSRL

Wiggler Chamber #4

7/29/03

Checked 8-1-03 JM

X)

3	7
42.221	42.221
6.481	6.494
35.740	35.727
1	1
S/R 34.740	S/R 34.727
34.734 −6	34.728 +1

Z)

Wiggler F

25.988
1
26.988
47.441
74.429

47.441

Chamber 4

74.458
45.475
28.983
1
S/R 27.983
27.988 +5

F

25.991
1
26.991
47.496
74.487

LOS = +74.4458

Final Position of Wiggler Chamber

8-1-03
JMc, FG.
Checked.
8-1-03 JM

X)

LOS = 42.221

2	3	6	7
42.221	S/R 34.740	42.221	S/R 34.727
6.477	FND. 34.733	6.489	FND. 34.726
35.744	-7	35.732	-1
1		1	
S/R 34.744		S/R 34.732	
FND 34.737		FND. 34.730	
-7		-2	

Y)

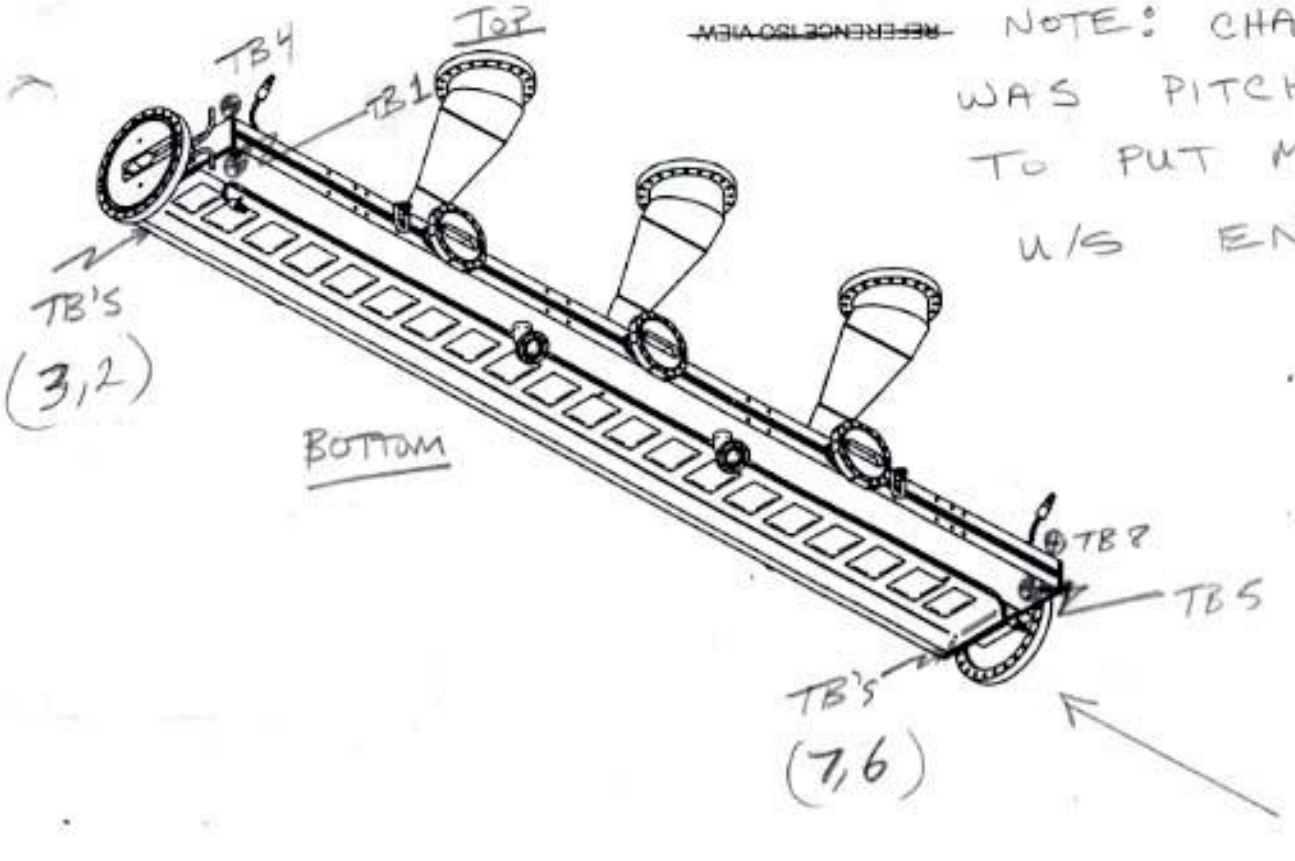
L	7	8	4
17.151	S/R 3.960	S/R 2.065	S/R 2.047
1	FND 3.950	FND 2.061	FND. 2.054
20.151	+10	+4	+7
13.869			
HI = 6.282			

2.985
.007
2.992

4	3	Wiggler J
2.070	6.312	6.312
1.250	1.086	13.819
3.720	5.226	20.131
2.992	1.250	1
HI = 6.312	S/R 3.976	S/R 19.131
	FND. 3.968	FND 19.131 ∅
	+8	

SCI3ED2

B4 CHAMBER



~~REFERENCE TSO VIEW~~

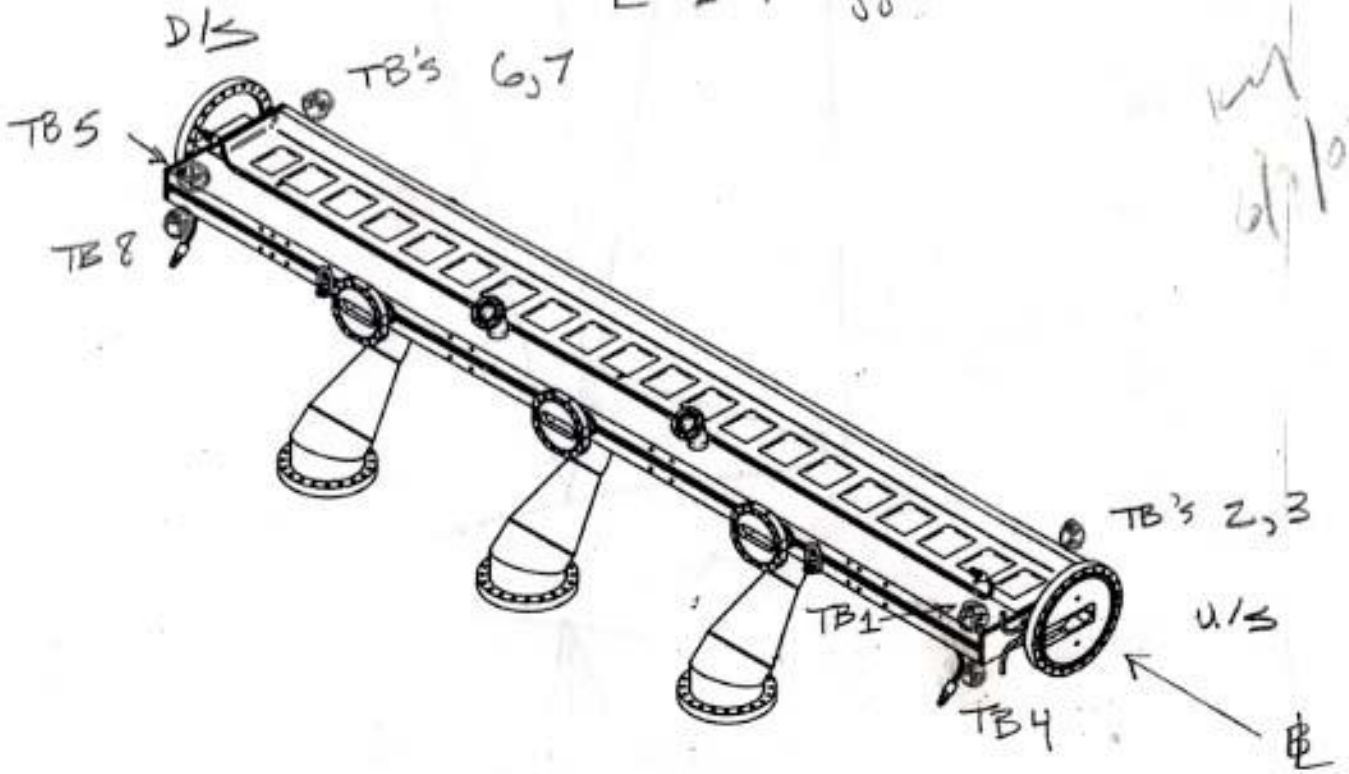
NOTE: CHAMBER WAS PITCHED 180° TO PUT MASK ON U/S END.

CORRECTED VALUES

TB	Z	X	Y
1	+ 45.485	+7.631	-2.970
2	+ 45.475	-6.477	-1.041
3	+ 45.450	-6.481	+1.086
4	+ 45.475	+7.620	+2.985
5	- 45.465	+7.613	-2.983
6	- 45.485	-6.489	-1.048
7	- 45.485	-6.494	+1.072
8	- 45.465	+7.621	+2.967

	Z	X	Y
1	-45.485	7.631	2.970
2	-45.475	-6.477	1.041
3	-45.450	-6.481	-1.096
4	-45.475	7.620	-2.985
5	45.465	7.613	2.983
6	45.485	-6.489	1.048
7	45.485	-6.494	-1.072
8	45.465	7.621	-2.967

4 Wiggler Chamber



25 JUN 2003

B4 Chamber

PF-444-350-10A

K. Surbaugh
H. Imfeld

(4)

Remove Roll from internal chamber.

Set Pitch from U/S & D/S Flanges

	U/S FL Φ=9.974	D/S FL Φ=8.772
READ	4.054	4.666
VAL	4.987	4.366
HI	9.041	9.032

HI = 9.036

	1	2	3	5	6	7
HI	9.036	9.036	9.036	9.036	9.036	9.036
READ	5.0666	6.995	9.122	5.053	6.988	9.108
S/T	3.970	2.041	- .086	3.983	2.048	- .072
FT	1	1	1	1	1	1
VAL	2.970	1.041	~~.014~~ -1.086	2.983	1.048	~~.028~~ -1.072

Mid TB → TB 5 → 8 → (6.450 - .500) = 5.950 - 2.983 = 2.967

1 → 4 → (6.455 - .500) = 5.955 - 2.970 = 2.985

5.950
2.983
-2.967

Top Spot face 1 → upstream

	READ	VAL
1)	8.735	.301
2)	8.731	.305
3)	8.725	.311
4)	8.722	.314
5)	8.716	.320
6)	8.711	.325
7)	8.711	.325
8)	8.704	.332
9)	8.704	.332
10)	8.701	.335
11)	8.699	.337
12)	8.699	.337
13)	8.699	.337
14)	8.702	.334
15)	8.702	.334
16)	8.702	.334
17)	8.702	.334
18)	8.702	.334
19)	8.709	.327
20)	8.712	.324

KM 6/26/03

(V)

BOTTOM SPOT FACE (NEW GUN)

OLD GUN → 28.075
NEW GUN = 16.685
− 11.390
OLD HI + 9.036
NEW HI = -2.354

1)	2)	3)	4)
-2.354	-2.354	-2.354	-2.354
-2.045	-2.043	-2.044	-2.045
-.309	-.311	-.310	-.309

5)	6)	7)	8)	9)	10)
-2.354	-2.354	-2.354	-2.354	-2.354	-2.356
-2.045	-2.048	-2.048	-2.048	-2.048	-2.047
-.309	-.306	-.306	-.306	-.306	-.309

11)	12)	13)	14)	15)	16)
-2.354	-2.354	-2.354	-2.354	-2.354	-2.354
-2.055	-2.055	-2.052	-2.054	-2.054	-2.054
-.299	-.299	-.302	-.300	-.300	-.300

17)	18)	19)	20)
-2.354	-2.354	-2.354	-2.354
-2.055	-2.054	-2.056	-2.056
-.299	-.300	-.298	-.298

OLD HI — Top + Bottom Pins of U/S + D/S Flanges

	U/S T	U/S B	D/S T	D/S B
HI	9.036	9.036	9.036	9.036
READ	6.526	11.086	6.489	11.056
S/T	2.510	-2.050	2.547	-2.020
ET	.250	.250	.250	.250
VAL	2.260	-2.300	2.297	-2.270

(X)

FAR	4.987	U/S Flange	FAR	-4.987	
NEAR	4.366	D/S Flange	NEAR	-4.366	
1ST F	15.000		1ST F	-3.000	
1ST N	12.093		1ST N	-3.949	
2ND F	6.000		2ND F	-4.000	
2ND N	10.818		2ND N	-4.386	
S/R F	10.264		S/R F	-3.578	
S/R N	10.885 → 10.880		S/R N	-4.199	
#1 LOS	15.251		#2 LOS	-8.565	

6/20/03

#1	1	4	5	8
LOS	15.251	15.251	15.251	15.251
READ	6.620	6.631	6.638	6.630
S/T	8.631	8.620	8.613	8.621
FT	1.000	1.000	1.000	1.000
VAL	7.631	7.620	7.613	7.621

LOS = 8.565 = 2.000 on scale

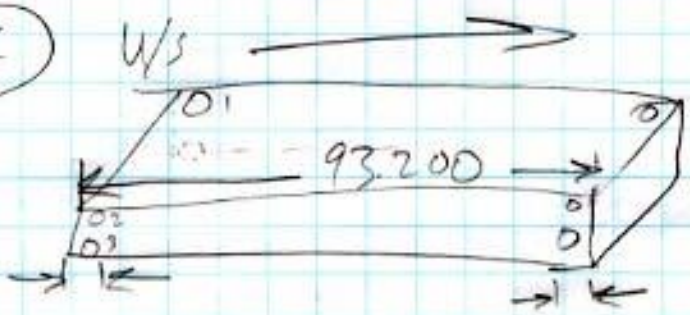
∴ move gun to 10.565

#1	U/S T	U/S B	D/S T	D/S B
L	15.251	15.251	15.251	15.251
READ	14.986	14.986	14.986	14.987
S/T	.265	.265	.265	.264
FT	.250	.250	.250	.250
VAL	.015	.015	.015	.014

#2	2	3	6	7
LOS	-8.565	-8.565	-8.565	-8.565
READ	-1.088	-1.084	-1.076	-1.071
S/T	-7.477	-7.481	-7.489	-7.494
FT	1	1	1	1
VAL	-6.477	-6.481	-6.489	-6.494

MASK U/S MASK M10 MASK D/S

(2)



$$2\overline{)93.2} \quad 46.6$$

6/26/03

1) 1.490 − .375
2) 1.500 − .375
3) 1.525 − .375
4) 1.500 − .375
5) 1.510 − .375
6) 1.490 − .375
7) 1.490 − .375
8) 1.510 − .375

1	2	3	4	5	6
-46.600	-46.600	-46.600	-46.600	46.600	46.600
1.490	1.500	1.525	1.500	-1.510	-1.490
-45.110	-45.100	-45.075	-45.100	45.090	45.110
-.375	-.375	-.375	-.375	.375	.375
45.485	-45.475	-45.450	-45.475	45.465	45.485

7	8
46.600	46.600
-1.490	-1.510
45.110	45.090
.375	.375
45.485	45.465