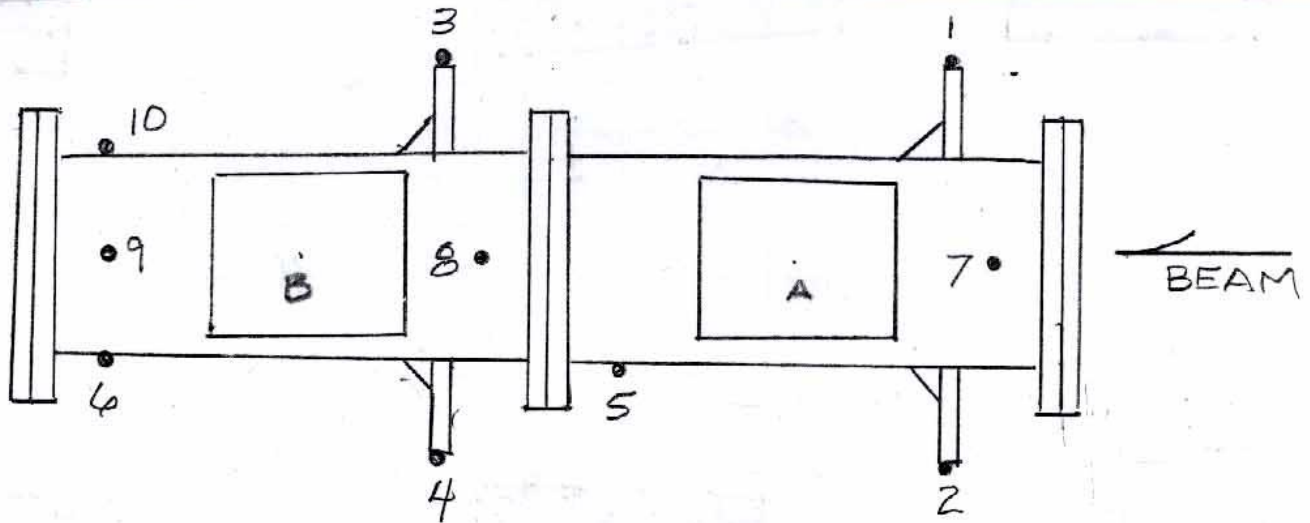


SSRL
BL 4 INJ. STOPPERS

5-3-07



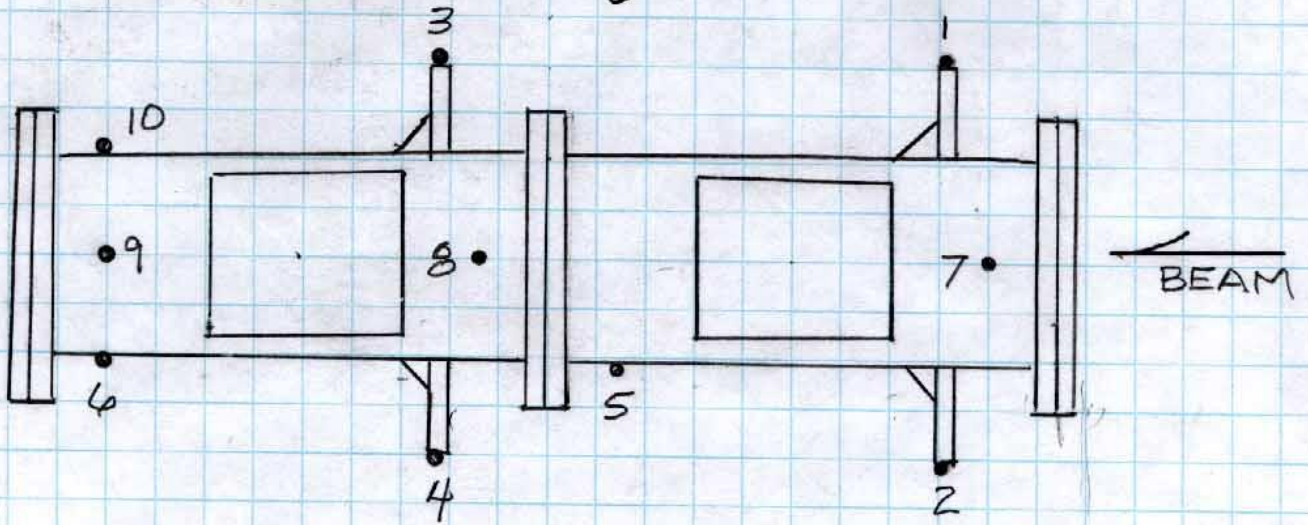
| | X | Y | Z |
|----|---------|---------|---------|
| 1 | -12.586 | -.070 | +5.073 |
| 2 | +12.567 | -.020 | +4.988 |
| 3 | -12.570 | -.074 | +28.093 |
| 4 | +12.566 | +0.080 | +28.038 |
| 5 | +6.858 | +1.070 | +20.009 |
| 6 | +6.851 | +1.062 | +42.988 |
| 7 | -.044 | +7.919 | --- |
| 8 | -.040 | +7.949 | --- |
| 9 | -.208 | +7.914 | --- |
| 10 | -6.892 | +1.239 | --- |
| A | +2.053 | +11.271 | --- |
| B | +2.033 | +11.307 | --- |

WAS BL 7 REWORKED
"Y" BEAM 1 in. BELOW ϕ OF TANK

SSRL
 B/L 7 STOPPERS
 NOW B/L 4 !

8/13/03

F.G., M.R., L.G



✓ 8/14/03
 MR

| | X | Y | Z |
|----|-----------|----------|-----------|
| 1 | -12.586 ✓ | -1.070 ✓ | +5.073 ✓ |
| 2 | +12.567 ✓ | -1.020 ✓ | +4.988 ✓ |
| 3 | -12.570 ✓ | -1.074 ✓ | +28.093 ✓ |
| 4 | +12.566 ✓ | -.920 ✓ | +28.038 ✓ |
| 5 | +6.858 ✓ | +.070 ✓ | +20.009 ✓ |
| 6 | +6.851 ✓ | +.062 ✓ | +42.988 ✓ |
| 7 | -.044 ✓ | +6.919 ✓ | — |
| 8 | -.040 ✓ | +6.949 ✓ | — |
| 9 | -.208 ✓ | +6.914 ✓ | — |
| 10 | -6.892 ✓ | +.239 ✓ | — |

SSRL
BL 4 INJ. STOPPERS

4-30-07
J.M., L.G.

(X)

6) +6.851
2) +12.567
5.000 +1
1.642 +1
11.000 +1
5.433 +1
12.739 -1
7.023 -1
+ 19.590 LOS

19.590 LOS
43.000 REF.

62.590 = Φ
3.880 1/2 BRICK

66.470 5/2
1.000

66.570 5/2

u/s
18.469 BLOCK
15.370 PLATE

D/S
18.545
15.440
15.345

A) 16.537
- 1.000

17.537
19.590

+2.053

B) 16.557
1.000

17.557
19.590

+2.033

YAW PITCH

(Z)

1) 5.073
2) 4.988
16.000 +1
15.624
13.000
13.931
14.942 +1
15.027 +1

u/s BRICK

(+) M (-) T
13.188 13.188
13.188 B

SSRL
 # 7 STOPPERS

8-12-03
 FG, LG, MR

X)

COLLIMATOR WIDTH = $6.250 \div 2 = 3.125$

F.V. = -12.569 TB 3
 N.V. = -12.590 TB 1.

1ST F = $3 + 1 = 4$
 1ST N = $3.574 + 1 = 4.574$

2ND F = $10 + 1 = 11$
 2ND N = $9.721 + 1 = 10.721$

S/R F = $8.883 - 1 = 7.883$
 S/R N = $8.862 - 1 = 7.862$

LOS = -21.452

| <u>7</u> | <u>8</u> | <u>9</u> | <u>10</u> |
|---------------|---------------|---------------|---------------|
| 20.408 | 20.400 | 20.237 | 13.541 |
| <u>1</u> | <u>1</u> | <u>1</u> | <u>1</u> |
| 21.408 | 21.400 | 21.237 | 14.541 |
| 21.452 | 21.452 | 21.452 | 21.452 |
| <u>-0.044</u> | <u>-0.052</u> | <u>-0.215</u> | <u>-6.911</u> |

COLLIMATOR
 W/S (-) D/S (-)
7 8



21.452
 $\underline{3.125}$
 SK 18.327 ✓
 18.353
 18.331

28
 8/03

SSRL B/L 7 STOPPER
NEW X's

8/13/03
M.R., L.G., F.G.

(X)

- 9) -.208 ✓
7) -.044 ✓

$$\begin{array}{r} 18.000 \text{ F} \\ 18.531 \text{ +} \\ \hline 20.000 \text{ +} \\ 20.144 \text{ +} \end{array}$$

$$\begin{array}{r} 1) 7.485 \\ 1.000 \\ \hline 8.485 \\ 21.071 \end{array}$$

$$\begin{array}{r} 3) 7.501 \\ 1.000 \\ \hline 8.501 \\ 21.071 \end{array}$$

$$\boxed{-12.586} \quad \boxed{-12.570}$$

$$\begin{array}{r} 20,897-1 \\ 21.061-1 \quad 20.056 \end{array}$$

$$\begin{array}{r} -21.105605 \\ 20.864-1 \\ 21.027-1 \\ -21.071 \text{ LOS} \end{array}$$

$$\begin{array}{r} 8) 20.035 \\ 1.000 \\ \hline 21.035 \\ 21.071 \end{array}$$

$$\begin{array}{r} 10) 13.179 \\ 1.000 \\ \hline 14.179 \\ 21.071 \end{array}$$

$$\boxed{-0.36} \quad \boxed{-6.892}$$

-0.43 front side

$$\bar{M} = -.040$$

FLANGES

$$14.445$$

$$\begin{array}{r} 4/s) 21.071 \\ 6.625 \\ \hline 14.446 \text{ S/R} \\ 14.445 \\ \hline \boxed{-0.001} \end{array}$$

$$14.445$$

$$\begin{array}{r} d/s) 14.446 \text{ S/R} \\ 14.445 \\ \hline \boxed{-0.001} \end{array}$$

COLLIMATOR

$$17.946$$

$$17.938$$

$$\begin{array}{r} 7) 21.071 \\ 3.125 \\ \hline 17.946 \text{ S/R} \end{array}$$

$$\begin{array}{r} 8) 17.946 \text{ S/R} \\ 17.938 \\ \hline \end{array}$$

$$\boxed{0} \quad \boxed{-0.008}$$

SSRL B/L 7 STOPPER
NEW X's

8/13/03

M.R., F.G., L.G.

(X)

6) +6.851 ✓
7) - .044 ✓

9.507+1
16.410+1
11.000+1
17.573+1

2) 3.827
1.000
4.827
17.394

4) 3.828
1.000
4.828
17.394

5) 9.536
1.000
10.536
17.394

+12.567 ✓

+12.566 ✓

+6.858 ✓

10.543-1
17.438-1
17.394 LOS

8) 16.437
1.000
17.437
17.394

9) 16.602
1.000
17.602
17.394

-.043 ✓

-.208 ✓

-.036 from (-) SIDE

M = -.040

FLANGES

COLLIMATOR

w/s) 17.394
6.625
10.7695/2 ✓
10.772

d/s) 10.7695/2
10.757

+0.012 ✓

5) 17.394
3.125
14.2695/2
14.268

6) 14.269
14.272

-.003 ✓

-.003 ✓

+0.001 ✓

FG

8-13-03

SSRL
BL 4 INJ. STOPPERS

5-3-07
J.M., L.G.

OLD VALUES TO ϕ OF TANK
NEW VALUES TO BL 1" BELOW ϕ OF TANK

(Y)

$$\begin{array}{r} \text{OLD 1) } -1.070 \\ \Delta \quad \underline{+1.000} \\ \text{NEW } -0.070 \end{array}$$

$$\begin{array}{r} \text{2) } -1.020 \\ \quad \underline{+1.000} \\ \quad -0.020 \end{array}$$

$$\begin{array}{r} \text{3) } -1.074 \\ \quad \underline{+1.000} \\ \quad -0.074 \end{array}$$

$$\begin{array}{r} \text{4) } -0.920 \\ \quad \underline{+1.000} \\ \quad +0.080 \end{array}$$

$$\begin{array}{r} \text{5) } +0.070 \\ \quad \underline{+1.000} \\ \text{NEW } +1.070 \end{array}$$

$$\begin{array}{r} \text{6) } +1.062 \\ \quad \underline{+1.000} \\ \quad +1.062 \end{array}$$

$$\begin{array}{r} \text{7) } +6.919 \\ \quad \underline{+1.000} \\ \quad +7.919 \end{array}$$

$$\begin{array}{r} \text{8) } +6.949 \\ \quad \underline{+1.000} \\ \quad +7.949 \end{array}$$

$$\begin{array}{r} \text{9) } +6.914 \\ \quad \underline{+1.000} \\ \text{NEW } +7.914 \end{array}$$

$$\begin{array}{r} \text{10) } +0.239 \\ \quad \underline{+1.000} \\ \quad +1.239 \end{array}$$

SSRL

8-12-03
LG, FG, MR

B7 STOPPERS
BEFORE WELDING

Y)

1

$$\begin{array}{r} 14.924 \\ - 1.059 \\ \hline 13.865 \\ + 1 \\ \hline 14.924 \\ \hline 14.983 \end{array}$$

S/R 14.983 ✓

2

$$\begin{array}{r} 14.924 \\ - 1.005 \\ \hline 13.919 \\ + 1 \\ \hline 14.929 \\ \hline 14.929 \end{array}$$

S/R 14.929 ✓

6 * GOOD

$$\begin{array}{r} 13.862 \\ + 1 \\ \hline 14.862 \\ + 0.062 * \\ \hline 14.924 = HI \end{array}$$

New TB'S

7 * GOOD

$$\begin{array}{r} 7.005 \\ + 1 \\ \hline 8.005 \\ + 6.919 \\ \hline 14.924 \end{array}$$

8

$$\begin{array}{r} 6.974 \\ + 1 \\ \hline 7.974 \\ + 6.950 \\ \hline 14.924 \end{array}$$

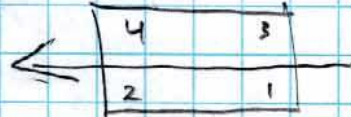
9

$$\begin{array}{r} 7.012 \\ + 1 \\ \hline 8.012 \\ + 6.912 \\ \hline 14.924 \end{array}$$

10 * GOOD

$$\begin{array}{r} 13.685 \\ + 1 \\ \hline 14.685 \\ + 0.239 \\ \hline 14.924 \end{array}$$

COLLIMATOR



3

$$\begin{array}{r} 14.924 \\ + 1.070 \\ \hline 15.994 \\ + 1 \\ \hline 16.994 \\ \hline 14.999 \end{array}$$

S/R 14.999 ✓

U/S (+) 1

$$\begin{array}{r} 14.924 \\ + 0.826 \\ \hline 15.750 \\ + 1 \\ \hline 16.750 \\ \hline 14.098 \end{array}$$

TANX S/R O/S 14.098 ✓

D/S (+) 2

$$\begin{array}{r} 14.098 \\ + 1.898 \\ \hline 15.996 \\ + 1 \\ \hline 16.996 \\ \hline 15.098 \end{array}$$

S/R 15.098 ✓

U/S (-) 3

$$\begin{array}{r} 14.098 \\ + 1.898 \\ \hline 15.996 \\ + 1 \\ \hline 16.996 \\ \hline 15.098 \end{array}$$

S/R 15.098 ✓

D/S (-) 4

$$\begin{array}{r} 14.098 \\ + 1.898 \\ \hline 15.996 \\ + 1 \\ \hline 16.996 \\ \hline 15.098 \end{array}$$

S/R 15.098 ✓

COLLIMATOR

$$HT = 1.652 \div 2 = .826$$

292
8/10/03

(Y)

14.915 HI

$$\begin{array}{r}
 1) \ 14.985 \\
 \underline{1.000} \\
 15.985 \\
 14.915
 \end{array}$$

$$\begin{array}{r}
 2) \ 14.935 \\
 \underline{1.000} \\
 15.935 \\
 14.915
 \end{array}$$

$$\begin{array}{r}
 3) \ 14.989 \\
 \underline{1.000} \\
 15.989 \\
 14.915
 \end{array}$$

$$\begin{array}{r}
 4) \ 14.835 \\
 \underline{1.000} \\
 15.835 \\
 14.915
 \end{array}$$

$$\boxed{-1.070} \checkmark$$

$$\boxed{-1.020} \checkmark$$

$$\boxed{-1.074} \checkmark$$

$$\boxed{-0.920} \checkmark$$

$$\begin{array}{r}
 5) \ 13.845 \\
 \underline{1.000} \\
 14.845 \\
 14.915
 \end{array}$$

$$\begin{array}{r}
 8) \ 6.966 \\
 \underline{1.000} \\
 7.966 \\
 14.915
 \end{array}$$

$$\begin{array}{r}
 9) \ 7.001 \\
 \underline{1.000} \\
 8.001 \\
 14.915
 \end{array}$$

$$\boxed{+0.070} \checkmark$$

$$\boxed{+6.949} \checkmark$$

$$\boxed{+6.914} \checkmark$$

COLLIMATOR

$$\begin{array}{r}
 1) \ 14.915 \\
 \quad 1.826 \ 1/2 \text{ coll.} \\
 \underline{14.089} \\
 \quad 1.000 \text{ offset} \\
 15.089 \ 5/8 \checkmark \\
 15.082
 \end{array}$$

$$\begin{array}{r}
 2) \ 15.089 \ 5/8 \\
 \quad 15.082 \\
 \boxed{+0.007} \checkmark
 \end{array}$$

$$\begin{array}{r}
 3) \ 15.089 \ 5/8 \\
 \quad 15.091 \\
 \boxed{-0.002} \checkmark
 \end{array}$$

$$\begin{array}{r}
 4) \ 15.089 \\
 \quad 15.091 \\
 \boxed{-0.002} \checkmark
 \end{array}$$

$$\boxed{+0.007} \checkmark$$

FG
8-13-03

SSRL B/L 7
 REEVALUATE T/B 1,2,4
 AFTER WELDING ON BRACKETS

8/12/03
 MR LGFG

6) +0.062

$$\begin{array}{r} 13.852 \\ \underline{1.} \\ 14.852 \\ \underline{0.62} \checkmark \\ 14.914 \text{ H.I.} \checkmark \\ 13.854 -002 \\ 13.851 +001 \end{array}$$

7) +6.919

$$\begin{array}{r} 14.914 \\ \underline{6.919} \checkmark \\ 7.995 \\ \underline{1.} \\ 6.995 \checkmark \text{ SR} \\ 7.016 -021 \\ 6.994 +001 \end{array}$$

10) +0.239

$$\begin{array}{r} 14.914 \\ \underline{0.239} \checkmark \\ 14.675 \\ \underline{1.} \\ 13.675 \checkmark \text{ SR} \\ 13.680 -005 \\ 13.675 \cancel{\phi} \\ 76 \end{array}$$

14.915 H.I.

~~1) $\begin{array}{r} 14.981 \\ \underline{1.} \\ 15.981 \\ 14.915 \\ \hline -1.066 \end{array} \checkmark$~~

~~2) $\begin{array}{r} 14.935 \\ \underline{1.} \\ 15.935 \\ 14.915 \\ \hline -1.020 \end{array} \checkmark$~~

~~3) $\begin{array}{r} 14.986 \\ \underline{1.} \\ 15.986 \\ 14.915 \\ \hline -1.071 \end{array} \checkmark$~~

~~4) $\begin{array}{r} 14.835 \\ \underline{1.} \\ 15.835 \\ 14.915 \\ \hline -0.920 \end{array} \checkmark$~~

14.915

TANK O/S

COLLIMATOR

~~$\begin{array}{r} .826 \\ 14.089 \\ \underline{1.} \\ 15.089 \end{array}$~~

~~1) $\begin{array}{r} 15.082 \\ 15.089 \\ \hline +007 \end{array} \checkmark$~~

~~2) $\begin{array}{r} 15.083 \\ 15.089 \\ \hline +006 \end{array} \checkmark$~~

~~4) $\begin{array}{r} 15.089 \\ 15.089 \\ \hline \phi \end{array} \checkmark$~~

~~2) $\begin{array}{r} 15.091 \\ 15.089 \\ \hline -002 \end{array} \checkmark$~~

FG 8-13-03

BL 7 stopper

8-9-03
Perry Carrillo

Flange 13.250 R = 6.625

$$\begin{array}{r} \text{u/s} \\ 5.957 \end{array} \quad \begin{array}{r} \text{d/s} \\ 5.960 \\ \hline 5.957 \end{array} \quad \begin{array}{r} \text{SO} \\ 5.957 \\ \hline 6.625 \\ \hline 12.582 \end{array} \quad \text{F1}$$

| | | | | | |
|----------|----------|----------|----------|----------|----------|
| <u>1</u> | <u>2</u> | <u>3</u> | <u>4</u> | <u>5</u> | <u>6</u> |
| 12.582 | 12.582 | 12.582 | 12.582 | 12.582 | 12.582 |
| 12.641 | 12.587 | 12.652 | 12.491 | 11.515 | 11.520 |
| <u>1</u> | <u>1</u> | <u>1</u> | <u>1</u> | <u>1</u> | <u>1</u> |
| -1.059 ✓ | -1.005 ✓ | -1.070 ✓ | -1.909 ✓ | +1.067 ✓ | +1.062 ✓ |

* GOOD

| | | | | | | |
|----------|----------|----------|-----------|----------|-----------|----------|
| <u>X</u> | <u>+</u> | <u>-</u> | <u>2</u> | <u>4</u> | <u>5</u> | <u>6</u> |
| FV | 6.625 | 6.625 | 19.608 | 19.608 | 19.608 | 19.608 |
| NV | 6.625 | 6.625 | 6.023 | 6.039 | 11.744 | 11.757 |
| IF | 14.000 | 11.000 | <u>1</u> | <u>1</u> | <u>1</u> | <u>1</u> |
| IN | 13.512 | 12.622 | 12.585 ✓ | 12.569 ✓ | 6.864 ✓ | 6.851 ✓ |
| ZF | 11.000 | 14.000 | | | | |
| ZN | 11.952 | 14.043 | | | | |
| S/R | 12.983 | 14.082 | | | | |
| LOS | 19.608 | 20.707 | | | | |
| | | | <u>1</u> | | <u>3</u> | |
| | | | 20.707 | | 20.707 | |
| | | | 7.117 | | 7.138 | |
| | | | <u>1</u> | | <u>1</u> | |
| | | | -12.590 ✓ | | -12.569 ✓ | |

28
8/03

SSRL
BL 4 STOPPERS

4-30-0
J.M., L.G.

(Y)

53.371 to TOP OF FOOT
.500 to BOTTOM

53.871
41,000 ϕ OF TANK
12.871 HI to ϕ TANK

19.110 REF

12.871 HI
6.239 = ϕ OF TANK
(-) 1.000 to BL
5.239 = BL
5.239 = BL
19.110
13.871 HI
to BL

TANK

1) 12.871
- 1.070
13.941
1.000
12.941 $\frac{3}{4}$
12.939
+002

2) 12.871
- 1.020
13.891
1.000
12.891 $\frac{3}{4}$
12.893
-002

6) 12.871
- 4.062
12.809
12.528
.281 $\frac{3}{4}$
.281
0

10) 12.871 HI
(+) .239 VALUE
12.632
1.000
11.632 $\frac{3}{4}$
11.630
+002

STOPPERS

5.239 BL ON REF.
- 1.315 $\frac{1}{2}$ BRICK
3.924 $\frac{3}{4}$ ON REF

(+) u/s (-)

(+) d/s (-)

u/s
T/B A
1.600
1.000
2.600
13.871 HI
+11.271

0.348
1.250
.598
2.600
2.002 = Δ

d/s
T/B B
1.564
1.000
2.564
13.871
+11.307

0.310
.250
.560
2.564
2.004 = Δ

BL7 Stopper

8-9-03
Perry, Carrillo



| | 1 | 2 | 3 | 4 | 5 | 6 |
|---------------|--------------|--------------|---------------|---------------|---------------|---------------|
| | 5.955 | 5.870 | 28.975 | 28.920 | 20.891 | 43.870 |
| - | 1.132 | 1.132 | 1.132 | 1.132 | 1.132 | 1.132 |
| + | .250 | .250 | .250 | .250 | .250 | .250 |
| Result | 5.073 | 4.988 | 28.093 | 28.038 | 20.009 | 42.988 |

Flanges Both 2.265
1.132

28
8/03

SSRL
BL4 INJ. STOPPERS

5-2-07
J.M., L.G.

BRICKS

(X)

u/s

u/s) - .003

d/s) + .002

d/s

u/s) - .006

d/s) + .007

(Y)

u/s

u/s

Roll

d/s

u/s

d/s

u/s

d/s

(+) ~~0~~ (-) ~~0~~

(+) +000 (-) +002

Protect

u/s

d/s

u/s) .200
d/s) .241

u/s) .190
d/s) .245

.007 RAO

.003 RAO