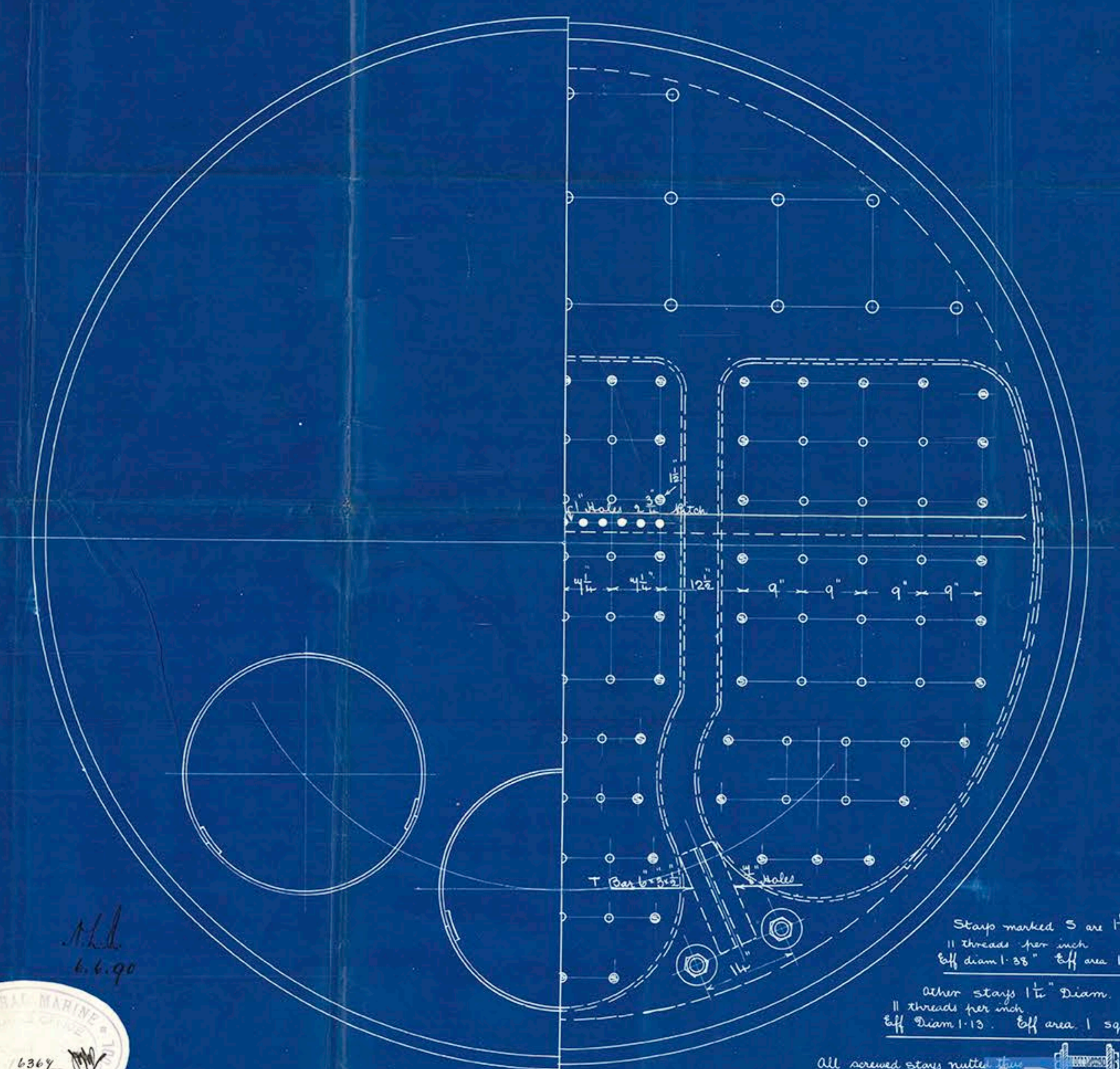
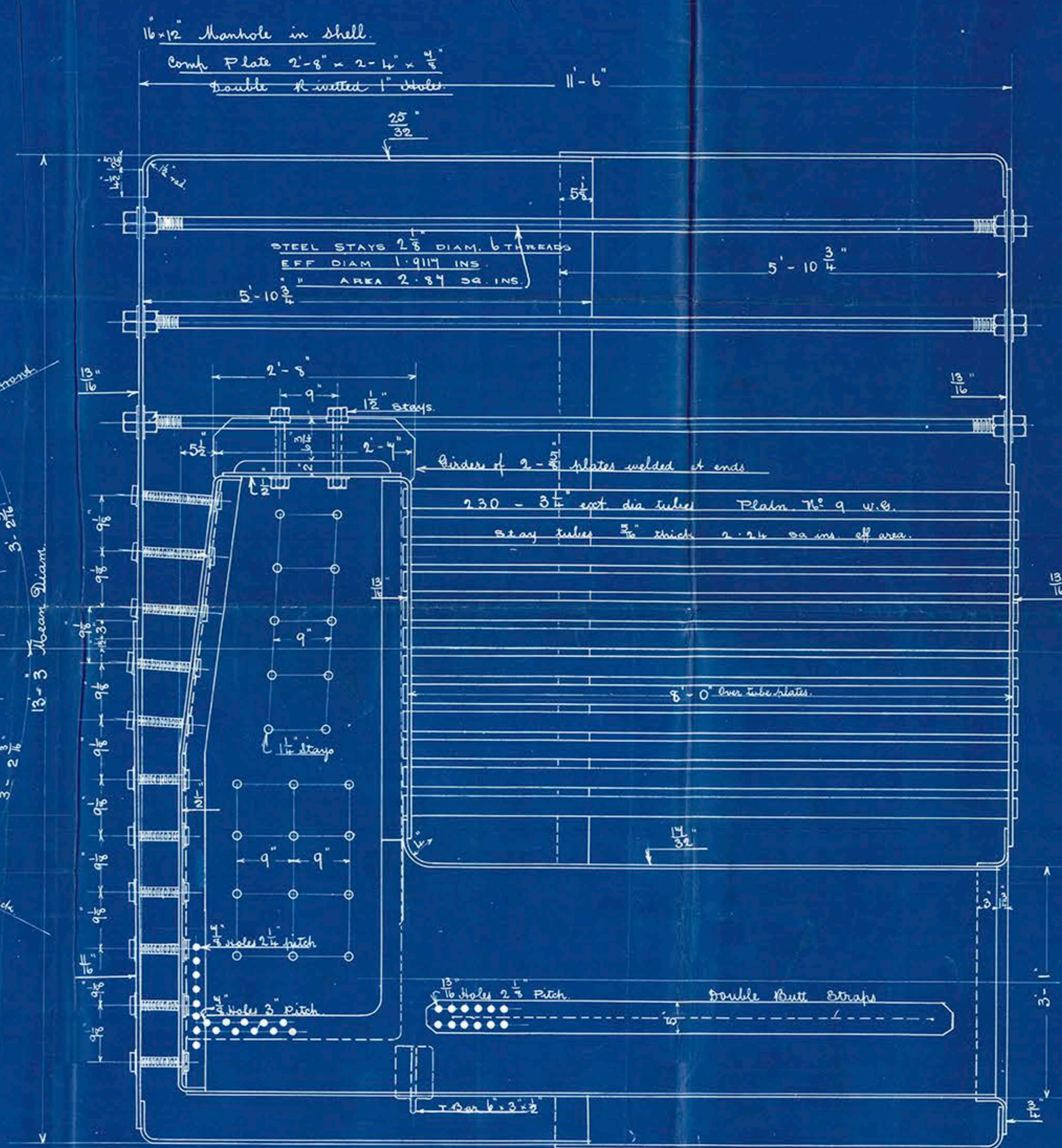


STEEL BOILER N^o R.20.

— 90 LBS TO LLOYDS —

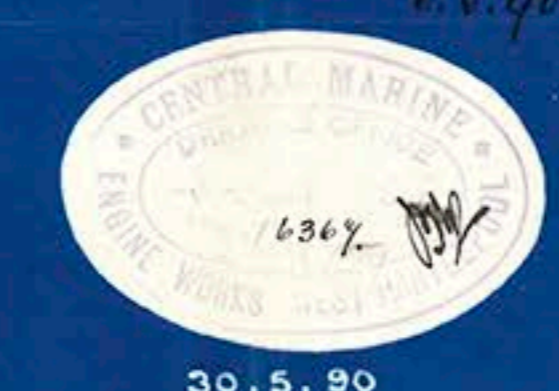
SCALE 1 IN. = 1 FT.



13-5th class 11'-6" long, 90 lbs working pressure per sq. in. shell 3/8" thick 3/4" holes 3 1/2" pitch To Lloyd's Requirements

Place	Calculation	Result	Notes
Shell	$\frac{\text{Area} \times \text{No.} \times \text{Pitch} \times \text{Holes}}{\text{Pitch} \times \text{Holes}} = \frac{6013 \times 2 \times 1 \frac{1}{2} \times 85}{3 \times 125 \times .78125}$	92.24 lbs	✓
Head	$\frac{\text{Const} \times \text{thick} \times \text{dia}}{\text{dia}} = \frac{260 \times 25 \times 72}{32 \times 169}$	91.98 lbs	✓
Shell & Back top	$\frac{\text{Const} \times \text{thick} \times \text{pitch}}{\text{pitch}^2} = \frac{140 \times 13}{16^2}$	92.42 lbs	✓
Front tube plate	$\frac{100 \times 13^2}{13 \times 5^2}$	92.6 lbs	✓
Back tube plate	$\frac{100 \times 13^2}{13 \times 5^2}$	92.6 lbs	✓
Comb. diam.	$\frac{120 \times 5^2}{4 \times 120^2}$	92.23 lbs	✓
Back Bottom	$\frac{120 \times 11^2}{12 \times 5^2}$	92.93 lbs	✓
Stays	$\frac{\text{Const} \times (\text{thick} \times \text{diam})}{\text{length} \times \text{diam.}} = \frac{89600 \times .25 \times 22}{7.25 \times 37}$	94.25 lbs	✓
Stays	$\frac{\text{Eff. area} \times \text{const}}{\text{area subjected}} = \frac{2.24 \times 4600}{13 \times 5^2}$	92.18 lbs	✓
Stays	$\frac{2.37 \times 4000}{16 \times 16}$	100.82 lbs	✓
Stays	$\frac{1 \times 8000}{9^2}$	98.46 lbs	✓
Stays	$\frac{1.5 \times 8000}{12 \times 5^2 \times 9}$	106.6 lbs	✓

TOTAL HEATING SURFACE IN BOILER 1900 sq. ft.



Stays marked S are 1 1/2" diam.
11 threads per inch
Eff diam 1.38" Eff area 1.8 Sq. ins.

Other stays 1 1/2" diam.
11 threads per inch
Eff diam 1.15" Eff area 1.59 sq. in.

All screwed stays nutted thru

Lloyd's Register Foundation

One Auxiliary Bail.

90 Lrs. W. Pies

†

~~Transf. to Jany & Co Ltd~~

~~at 302 Kent~~

Contd. in Enq. Wks

Nº R 20

Wm M

8-6-90

†

Transferred to
Messrs Roberts 248 Fins

Wm M

Nº 2126

Engas Sat

180 Lrs

10-7-90 H.M.R.

Pekeha

Mdb. 153