

R77
11.5.98

STEEL BOILER N^o R 77.

WORKING PRESSURE 120 LBS PER SQ INCH TO LLOYDS

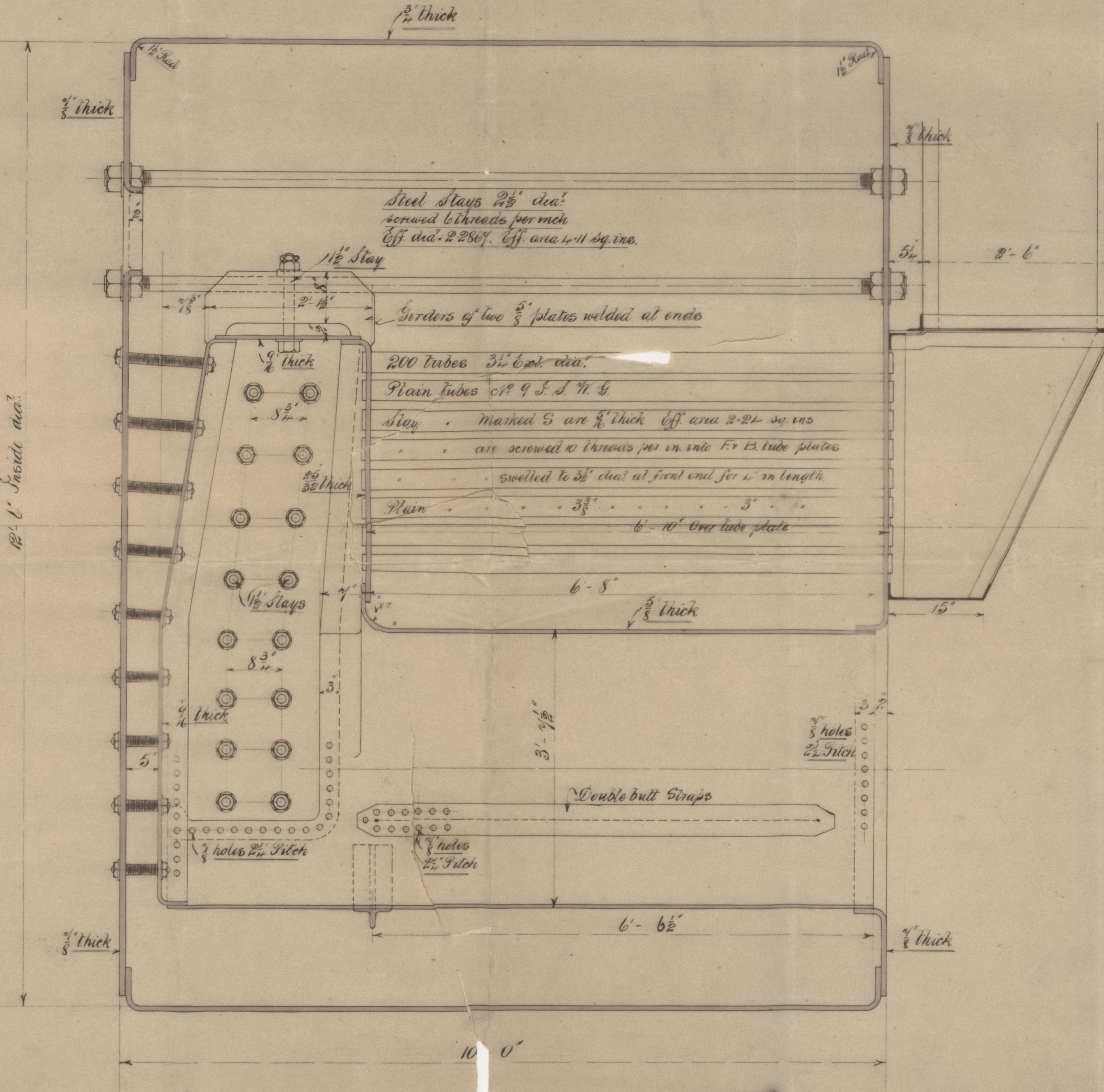
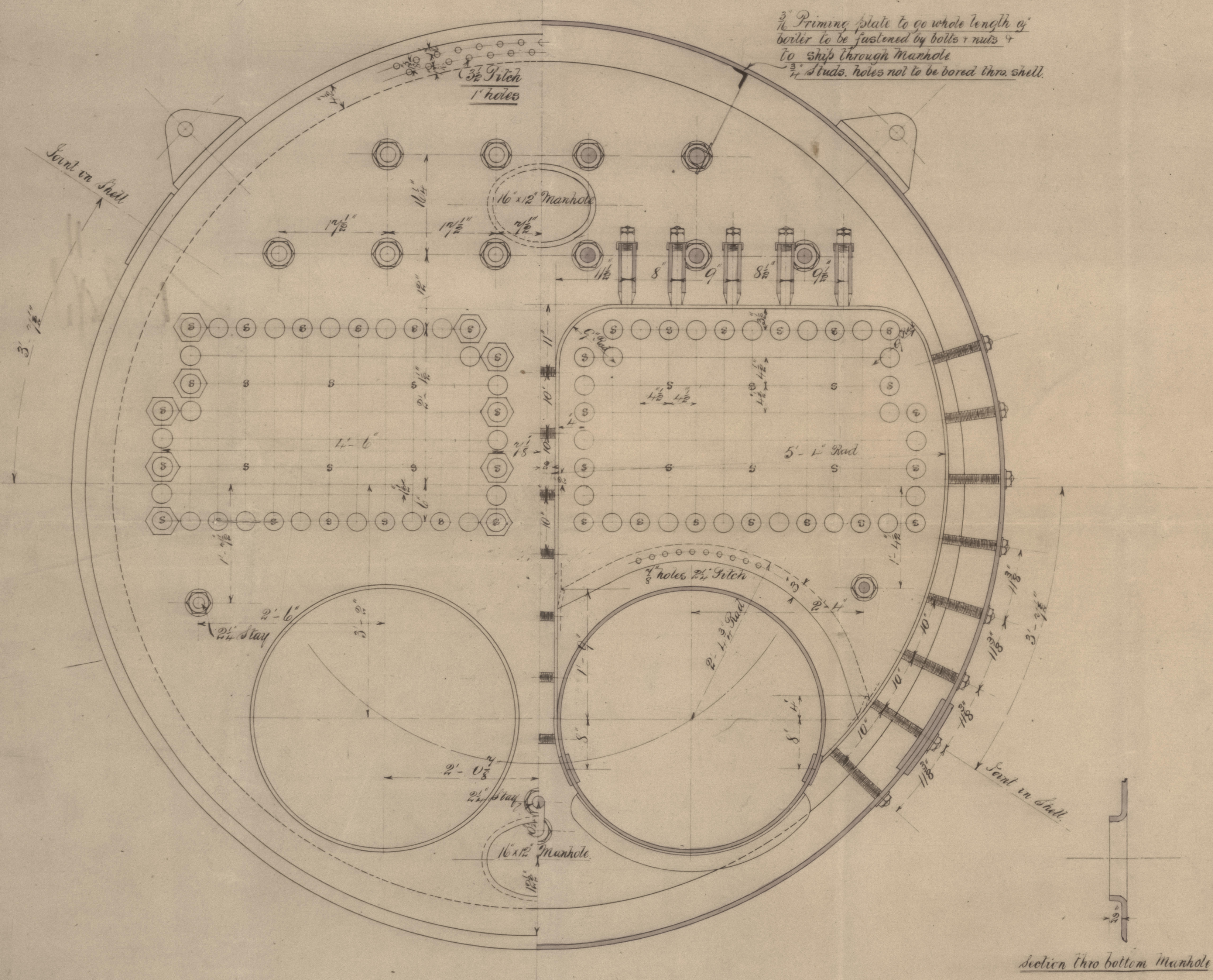
SCALE 1" = 1 FOOT.

For Mess^{rs} Hedley & Boyd's Eng N^o 82.

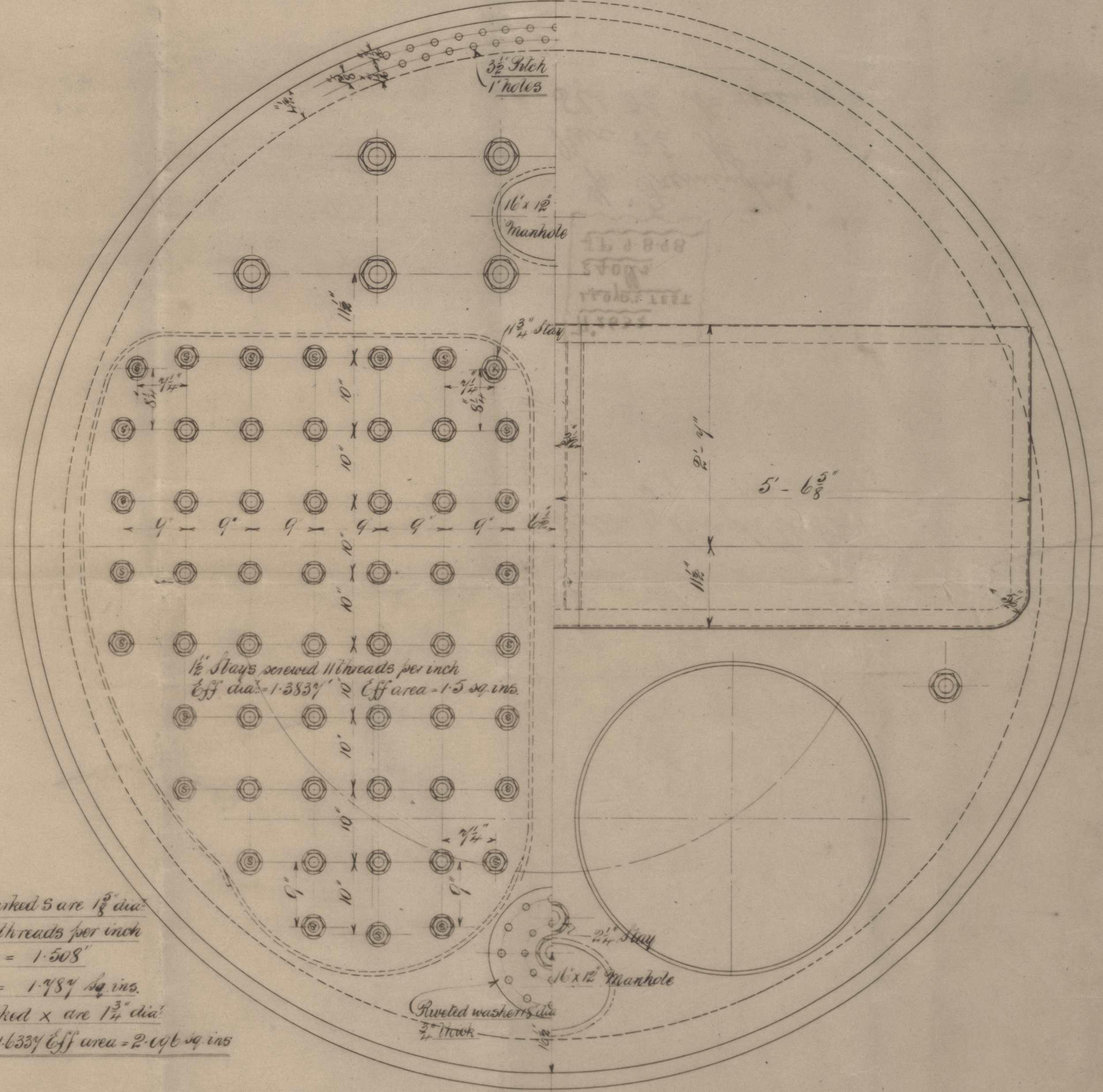
Shell plates to have a tensile strength of 27 to 30 tons.
Other plates & stay bars 26 to 30 tons.

Plate	$\frac{P \cdot d}{P}$	$\frac{6.25 \cdot 875}{6.25}$	86%
Rivets	$\frac{a \cdot P^2 \cdot 175 \cdot 85}{P \cdot L}$	$\frac{601 \cdot 6 \cdot 175 \cdot 85}{6.25 \cdot 75}$	95.3%
Shell	$\frac{C \cdot (E - 2) \cdot P}{D}$	$\frac{21 \cdot (12 - 2) \cdot 86}{150}$	120.4 lbs
F & B. Laps	$\frac{C \cdot P^2}{\frac{1}{2} \cdot (P^2 + P^2)}$	$\frac{175 \cdot 14^2}{\frac{1}{2} \cdot (17.5^2 + 16.25^2)}$	120.2 lbs
F. tube plate	$\frac{C \cdot P^2}{P^2}$	$\frac{150 \cdot 14^2}{14.25^2}$	144 lbs
B. tube plate	"	$\frac{140 \cdot 12.5^2}{13.5^2}$	120 lbs
d. to compress	$\frac{C \cdot (D - d) \cdot P}{W \cdot D}$	$\frac{400 \cdot (4.5 \cdot 29.75) \cdot 85}{32.875 \cdot 4.5}$	207 lbs
Chamber back	$\frac{C \cdot P^2}{\frac{1}{2} \cdot (P^2 + P^2)}$	$\frac{135 \cdot 9^2}{\frac{1}{2} \cdot (10^2 + 9^2)}$	120.8 lbs
Back bottom	"	$\frac{135 \cdot 14^2}{\frac{1}{2} \cdot (13^2 + 10^2)}$	196 lbs
Refractors	$\frac{C \cdot d^2 \cdot P}{(L - P) \cdot L \cdot dist \ apart}$	$\frac{4600 \cdot 4^2 \cdot 125}{(25.5 - 9.75) \cdot 25.5 \cdot 9.8}$	138 lbs
Plain furnace	$\frac{50 \cdot (300 T - L)}{D}$	$\frac{50 \cdot (300 \cdot 425 - 743)}{43.5}$	129.8 lbs
Main stays	$\frac{C \cdot P \cdot a}{surf \ supply}$	$\frac{9000 \cdot 14 \cdot 11}{17.5 \cdot 16.25}$	130 lbs
1/8" screw stays	"	$\frac{8000 \cdot 1.787}{11 \cdot 10}$	129.9 lbs
1/2" " "	"	$\frac{8000 \cdot 1.5}{10 \cdot 9}$	133.3 lbs
Stay tubes	"	$\frac{7500 \cdot 2.24}{13.5^2 \cdot 6 \cdot 7 \cdot 10}$	156 lbs

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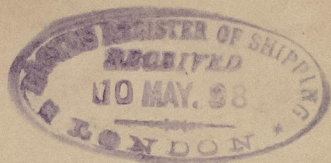


Stays marked S are 1 1/2" dia
screwed 11 threads per inch
Eff dia = 1.508
Eff area = 1.787 sq ins.
Stays marked X are 1 1/2" dia
Eff dia = 1.533 Eff area = 2.046 sq ins



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Medley & Boyd 4/28/82
R 77. Dr. 120.15



N^o 2632
LLOYD'S TEST.
240 lbs.
J.P. 9-8-98

Yp "Fremington"
Awe F.E. N^o 37912
Sld F.E. N^o ~~19544~~ (A)
19571.

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Foundation