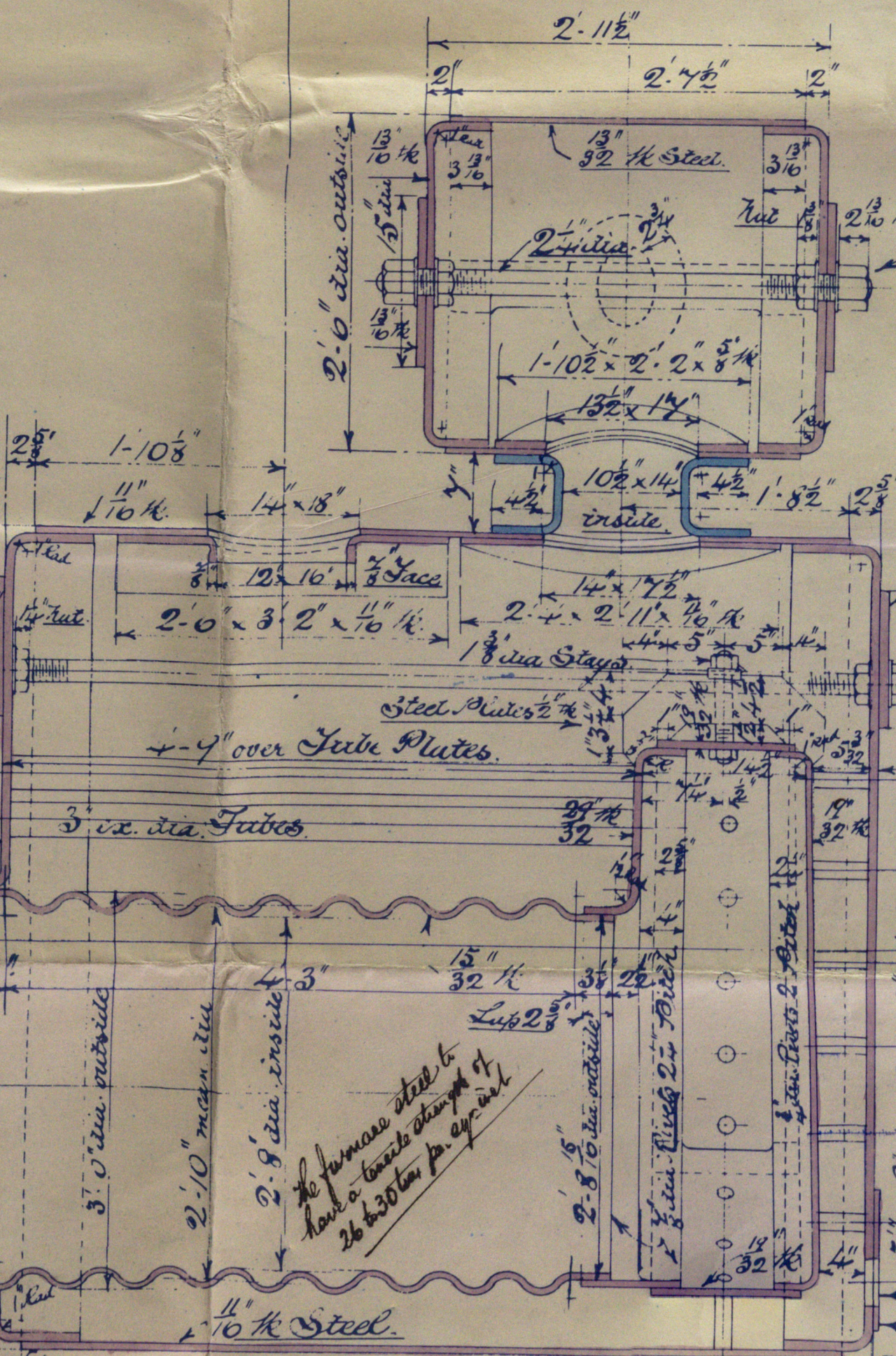
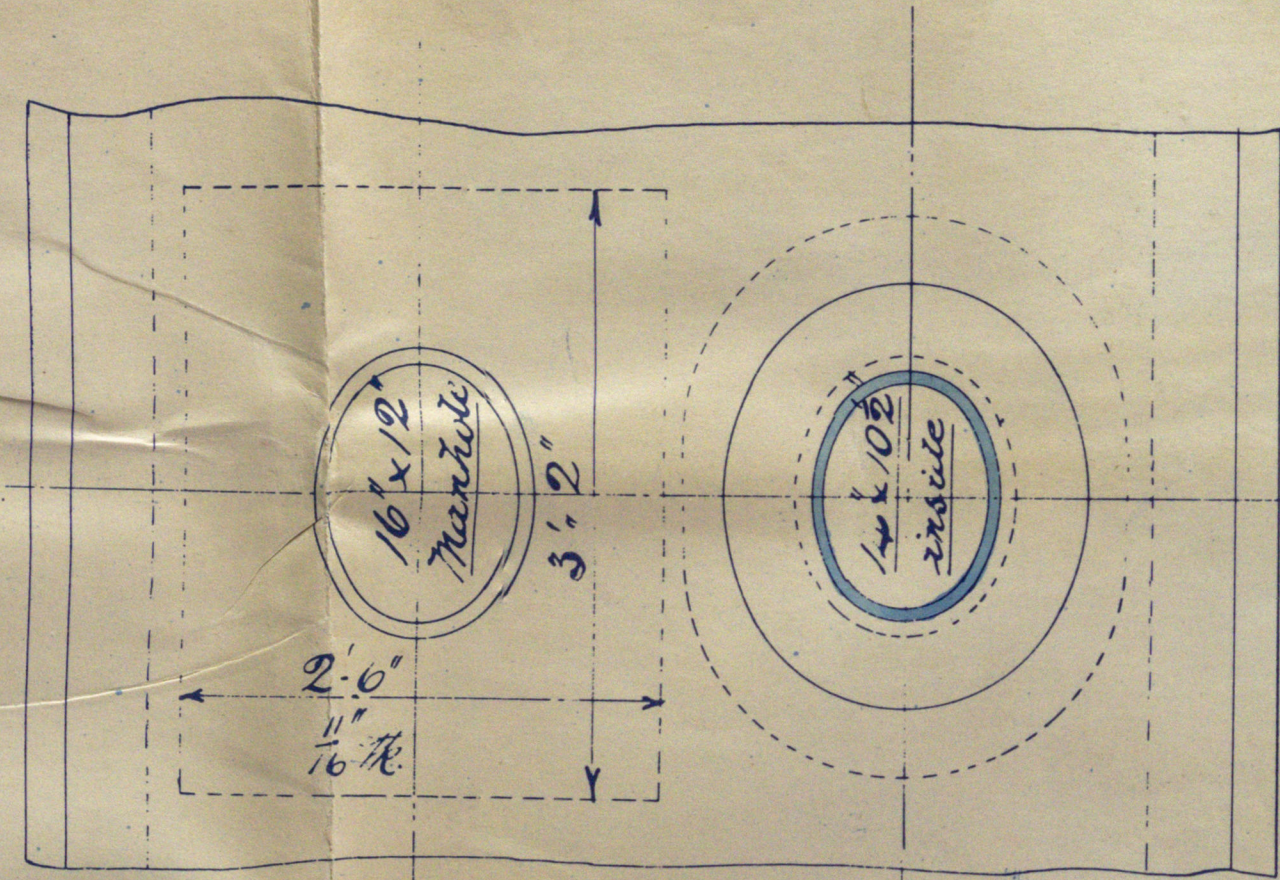


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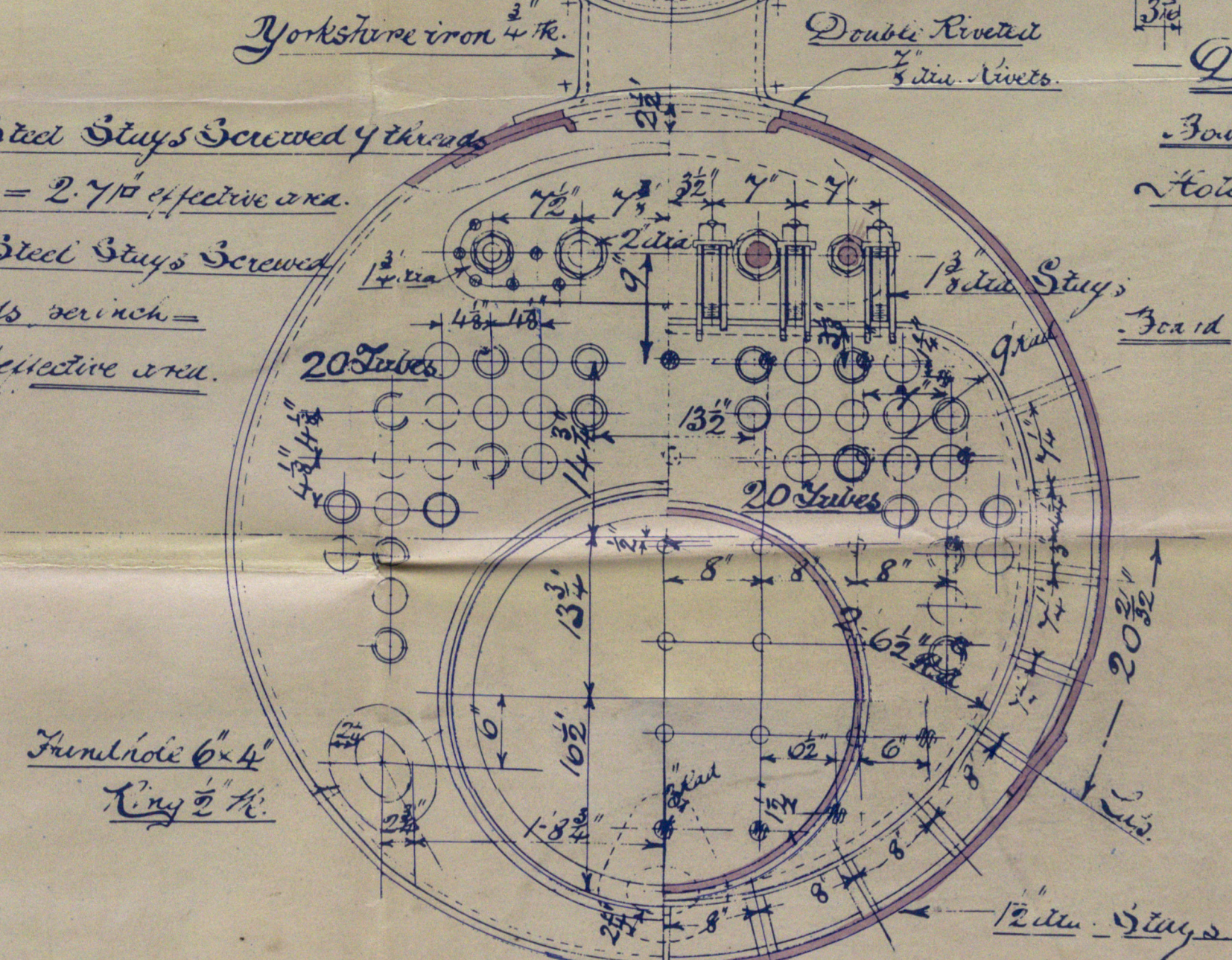
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**Tubes**  
22 Common Tubes 3' 6" dia. x 4' 9" long x 3/4" wall  
Swelled to 3' 6" dia. at one end 2 1/2" from  
18 Stay Tubes 3' 6" dia. x 4' 10 1/2" long x 3/4" wall  
one end Swelled 3' 6" dia. (in 1' 10" of 2' 6" dia. section)  
and Screwed 3' 6" dia. (in 1' 10" of 2' 6" dia. section)  
inch on one Continuous line. Swelled at 1' 10"  
and fitted with a nut 3/4" in outside of 3' 6"  
Effective area = 2.434 sq. ft.

2' 6" dia. Steel Stay, Screwed 9/16" nuts  
per inch = 3.45 effective area

2' 6" dia. Steel Stays Screwed 9/16" nuts  
per inch = 2.70 effective area  
1' 10" dia. Steel Stays Screwed  
9/16" nuts per inch =  
2.130 effective area



**Dome Shell Riveting**

Board of Trade Factor 5.3 Shell Plate 3/8" thick  
Holes in Shell 3/8" dia. Bore 3/4" dia. Nut 3/4"  
one plate in Circumference  
Board Trade Plate = 7.07 sq. ft.  
Rivets = 7.27 sq. ft.  
Lloyds Plate = 7.16 sq. ft.  
Rivets = 7.27 sq. ft.

List of Plates				
Mark	to	Length	Breadth	Purpose
off				
A	1	19' 10"	6' 1 1/2"	Shell
B	1	3' 4"	2' 8"	Manhole in Shell
C	1	2' 11 1/2"	2' 4 1/2"	Shell Key for Dome
D	1	4' 3" diam.		Front End
E	2	3' 2 1/2"	1' 0 1/2"	Drumming Plates Ends
F	1	5' 9 3/4"	4' 11"	Back Tube Plate
G	1	5' 8"	4' 8"	C.C. Back
H	1	11' 1"	1' 1 1/2"	C.C. Sides & Top
I	1	5' 0"	1' 1 1/2"	C.C. Bottom
K	6	3' 1"	5 1/2"	C.C. Brackets
L	1	3' 1 1/2"	2' 7 3/4"	Dome Shell
M	2	3' 3 1/2" diam.		" Ends
N	2	1' 3 1/4" diam.		" Washers
O	1	2' 2 1/4"	1' 10 1/2"	" Neck Ring
Yorkshire Iron	P	1	4' 3"	Dome Tuck

**List of Stay Bars**  
1 Bar 3' 5" long x 2 1/2" diam.  
2 Bars 4' 2" long x 2" diam.  
2 Bars 4' 1/2" long x 1 1/2" diam.  
24 Feet of Bar 1 1/2" diam.  
45 Feet of Bar 1 1/8" diam.  
8 Feet of Bar 1 1/4" diam.

**one set off - Plates and Bars**  
Plates and Stay Bars of Siemens Mild Steel  
to be tested in the presence of the satisfaction of  
the Board of Trade and Lloyds Surveyors.

**To Board of Trade and Lloyds Requirements**

**Heating Surface etc.**  
40 Tubes 3' 6" dia. x 4' 9" long = 14.922 sq. ft.  
1 Construction Chamber = 39.75  
1 Furnace = 31.71  
Total Heating Surface = 226.68 sq. ft.  
Bar Surface 2' 10" x 4' 0" Bars = 11.33  
Area through Tubes = 1.35 sq. ft.  
Furnace Area (18' dia) = 1.77 sq. ft.  
Ratio of Bar Surface to Heating Surface 1/4  
" Tube Area to Bar Surface 1/3

**Materials of Material**  
Plates made by W. Beardmore & Co. Glasgow  
Stay Bars do do do do  
Tubes made by A.J. Stewart & Co. Glasgow  
Rivets " " W. Beardmore & Co. Glasgow

**Method of Construction**  
All holes drilled in place.  
Longitudinal Seams Lap joint Double Riveted.  
Circumferential Seams Lap joint Double Riveted.  
Board of Trade Working Factor 5.2

**Boiler Constructed for 180 lbs press. per sq. in.**  
**To be tested to 360 lbs press. per sq. in.**  
**Actual Working Pressure 160 lbs per sq. in.**

**DRAWING NO 3458**

**DONKEY BOILER**

**FOR**

**NO 218 - 1 OFF**

**SCALE 1" = 1 FOOT**

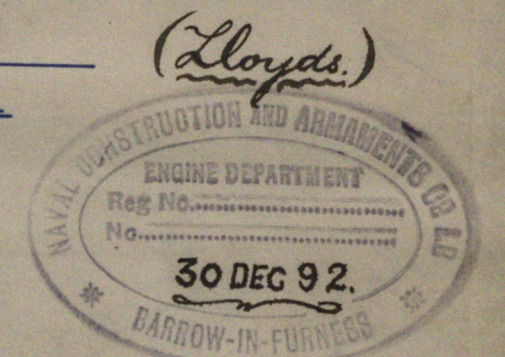
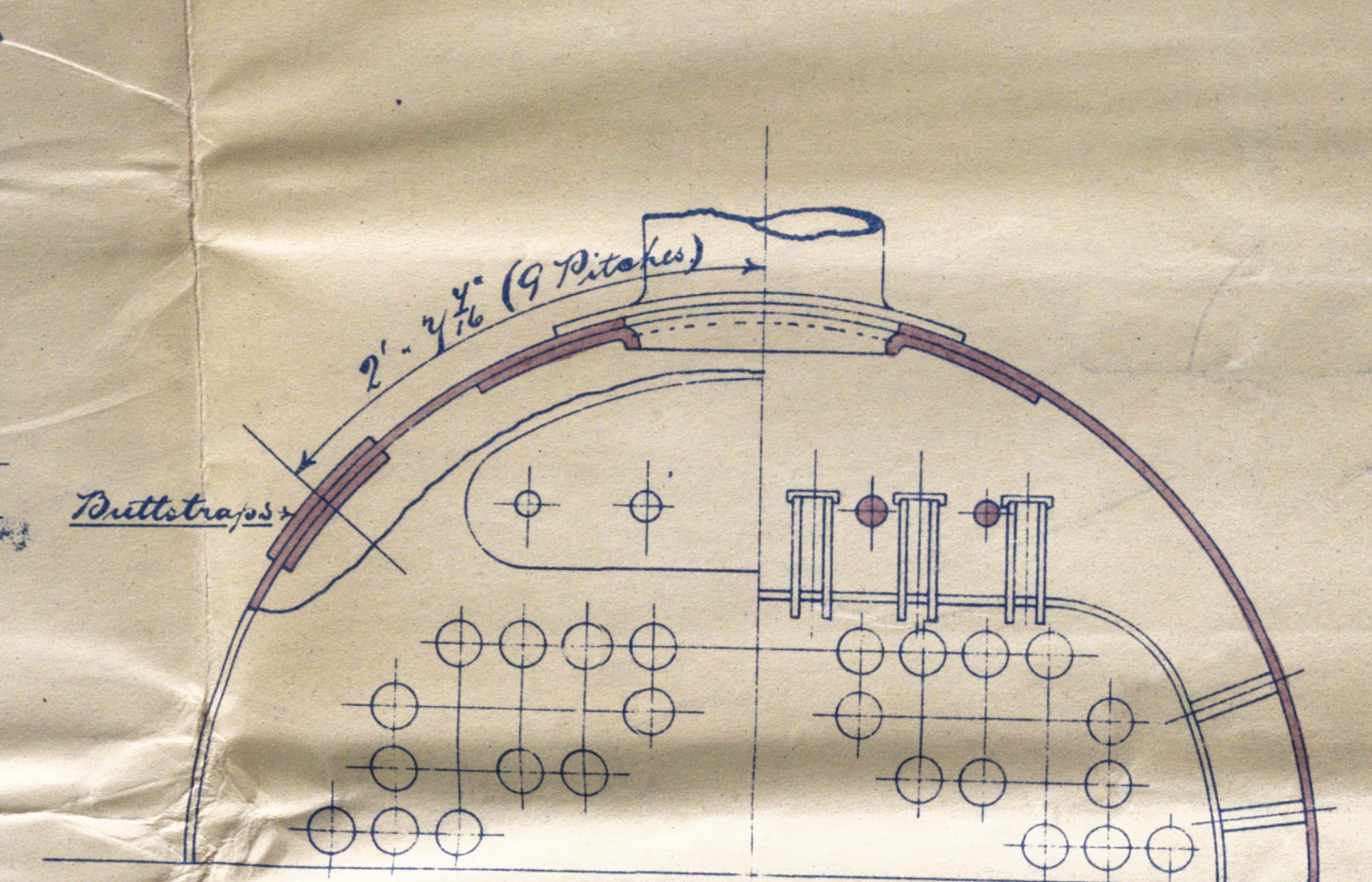


Fig Sheet, to be attached to  
Drawing No 3458.



One plate in Circumference			
Board of Trade	Lloyds		
Longitudinal Seams	Plate = 82.43%	82.43%	
	Rivets = 86.46%	83.47%	
Circumferential Seams	Plate = 74.17%	74.17%	
	Rivets = 49.44%	50.55%	
Board of Trade Working Factor = 5.1			



**Alteration to Shell of Donkey Boiler**  
for No 218.  
Scale, 1" = 1' 0"





BRW42-0104

R & A Co

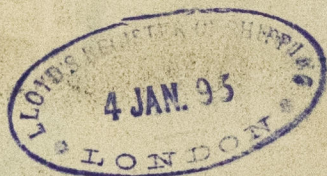
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Donkey Boiler

Brw

Rpt No 529

Dredger "Branker"



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Lloyd's Register  
Foundation