

# STEEL BOILERS

To Hamburg Police Law & Lloyd's requirements for a working pressure of 12.655 atmospheres = 180 lbs per sq. inch.

All plates, rivets, stays & girders of steel.

SCALE - ONE INCH = ONE FOOT

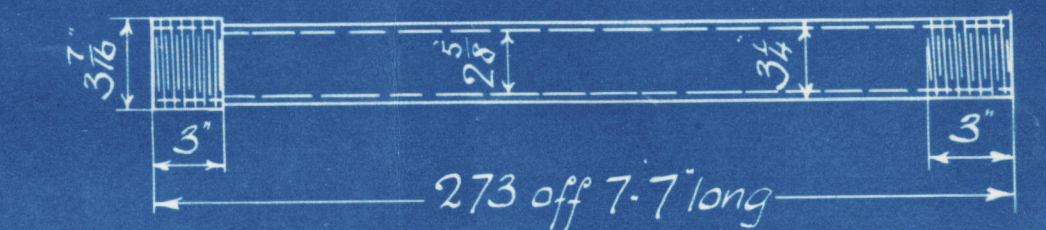
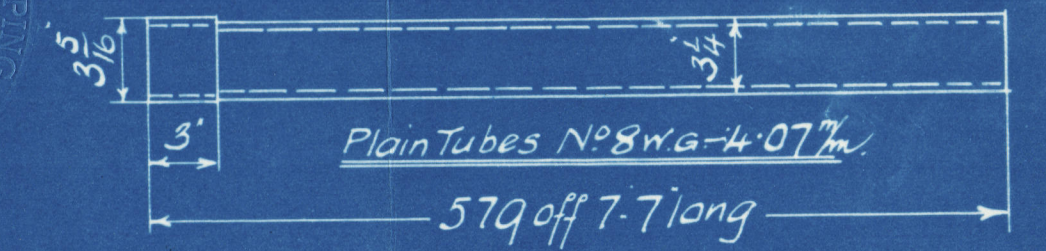
Tubes of Wrought Iron

Riv. P



11/8/13

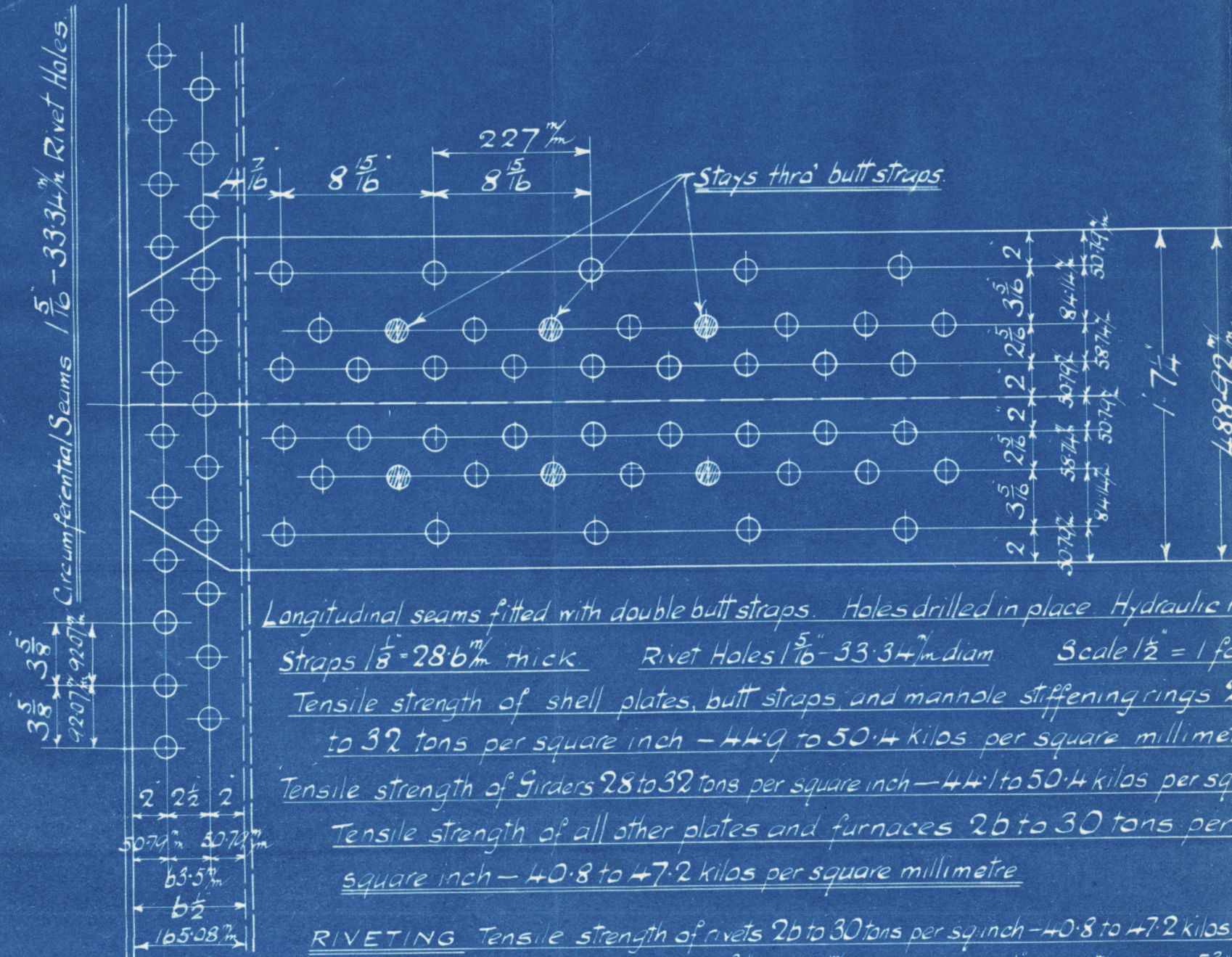
Heating Surface in  
3 Boilers = 6483 sq



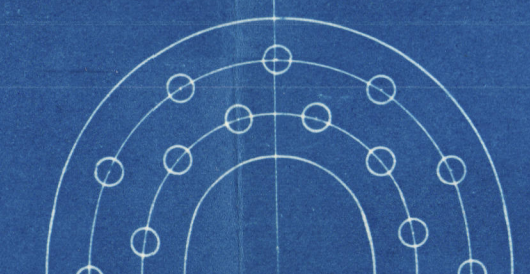
Stay Tubes 5/16 - 7/8 inch thick Scaled 10 threads per inch. Eff. area 2.2433 sq

STAYS					
Diam	Length	End Dia	End Area	Tensile Strength	Weight
1 1/2	9	1.357	1.45	26	40.8
1 1/2	9	1.6078	2.031	TO	79
2	9	1.8577	2.69	30	47.2
2 1/2	6	2.036	3.25	27	42.5
3 1/2	6	3.1616	7.85	30	47.2

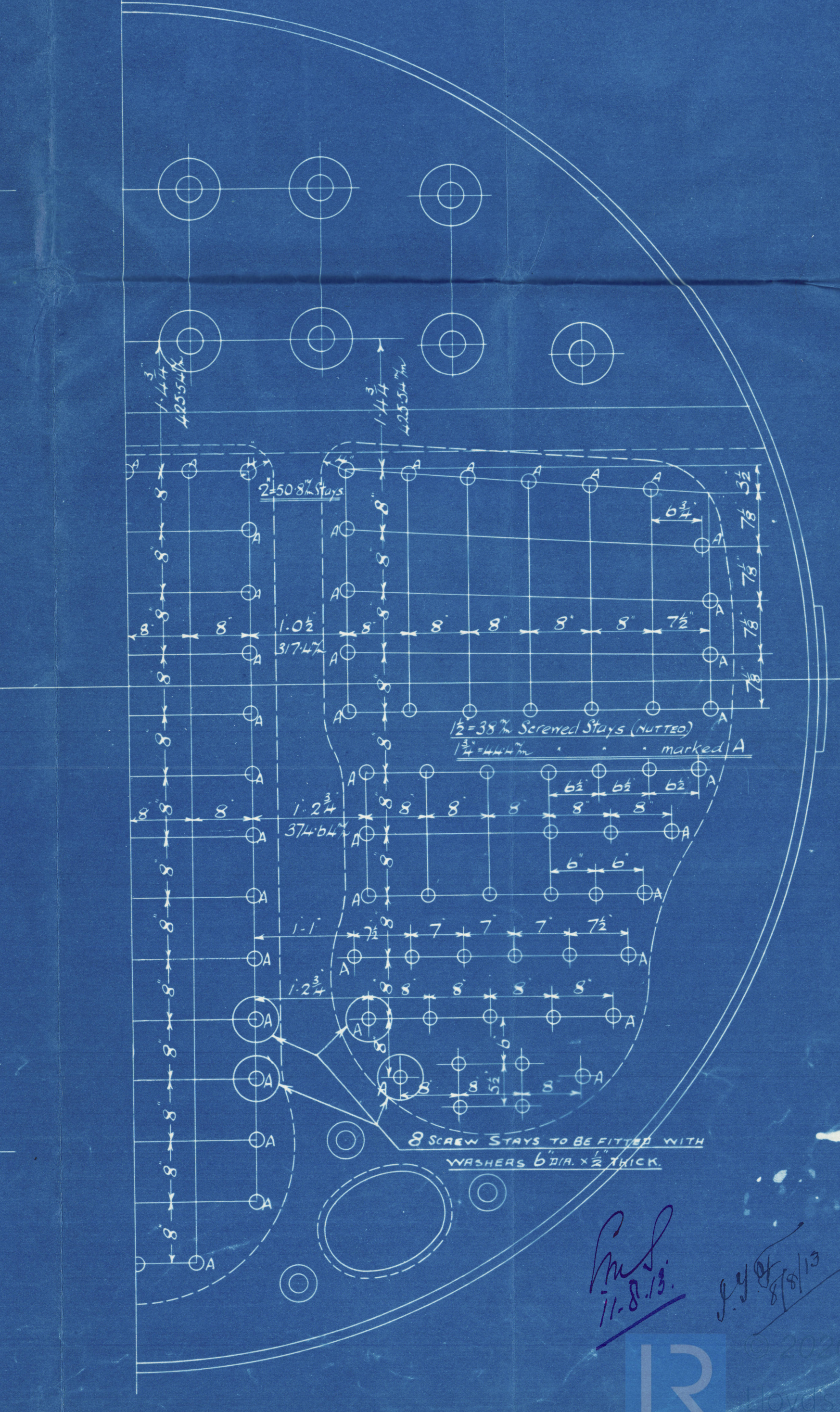
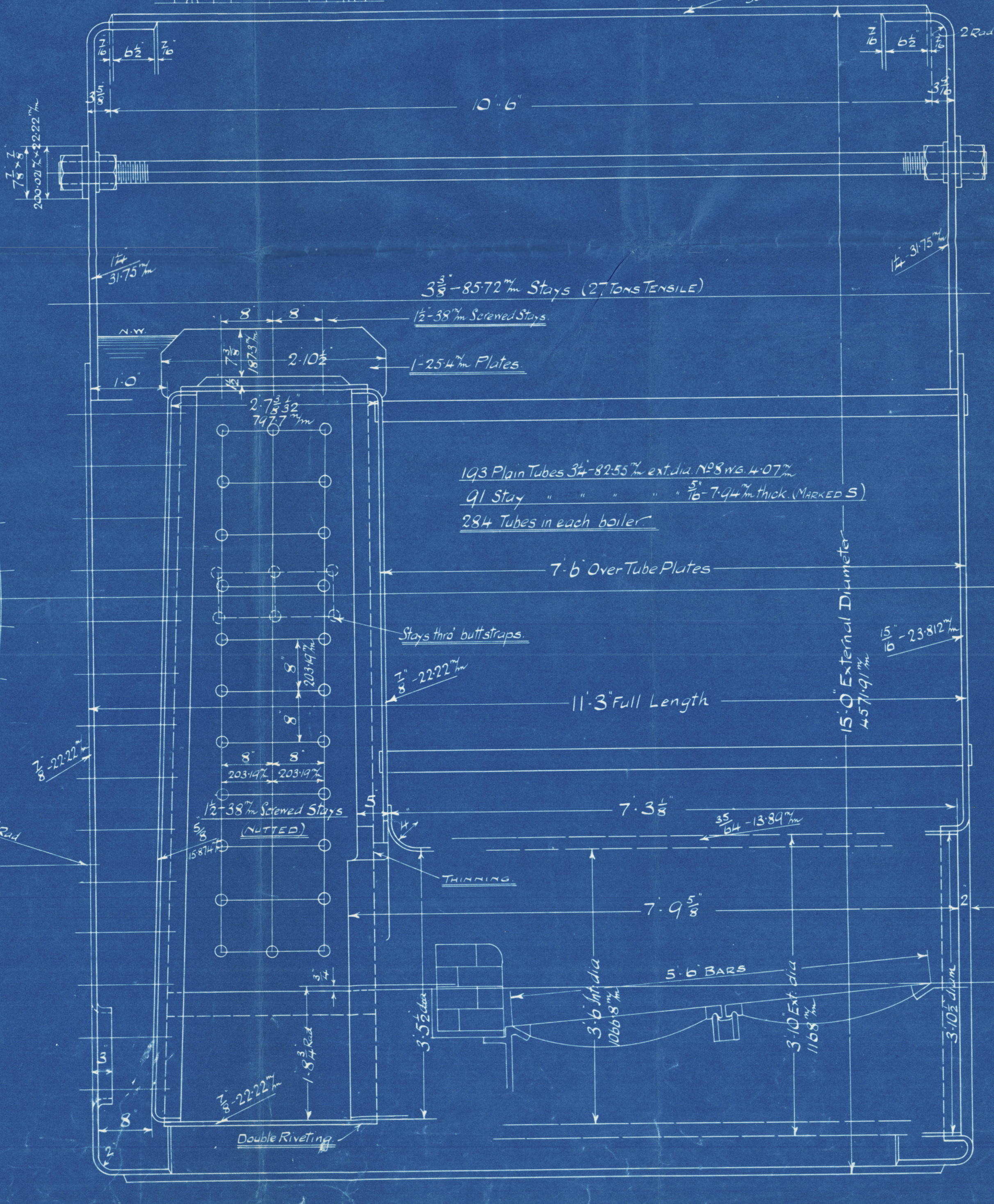
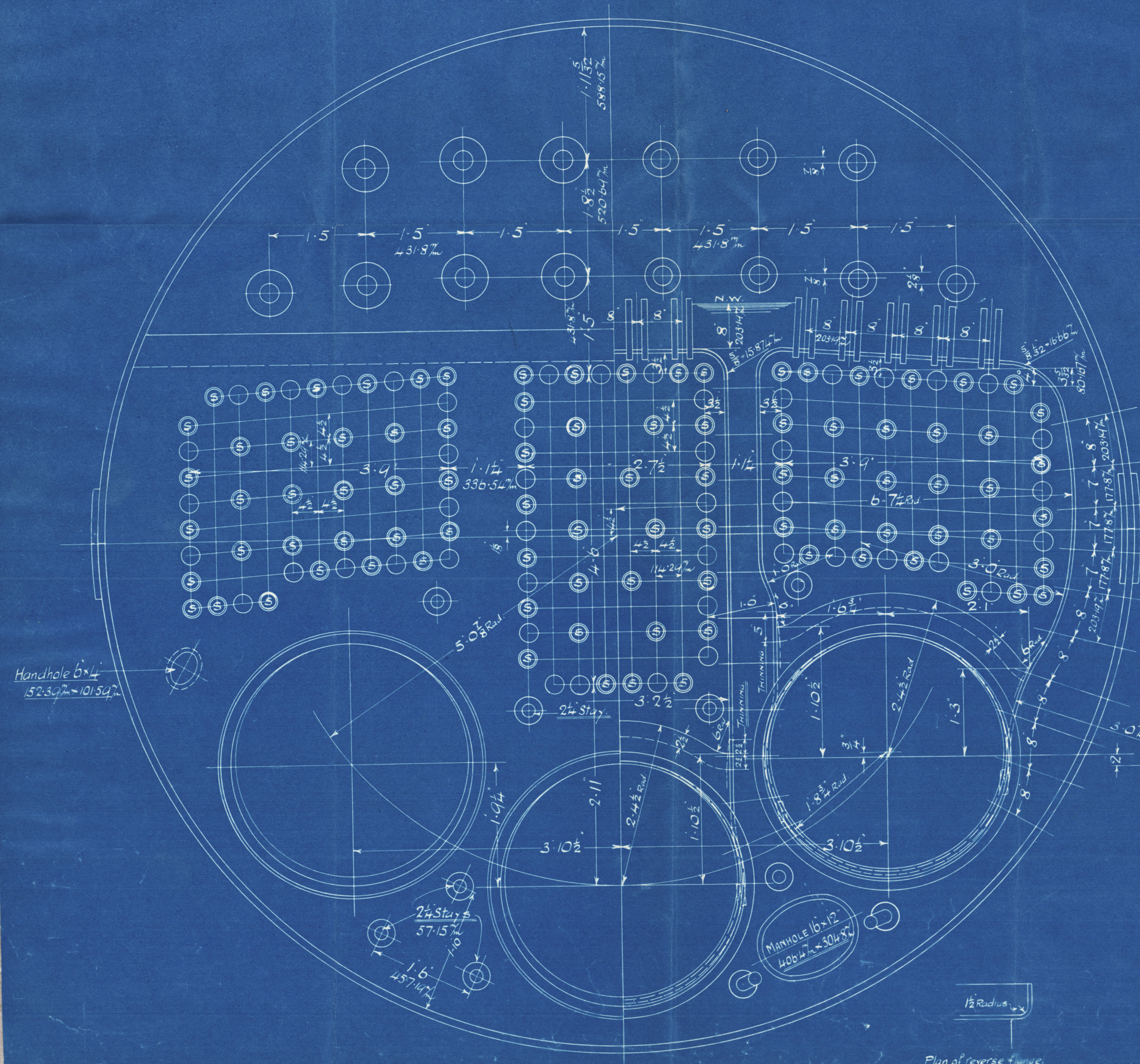
ENG	DATE	FURNACES
705 3 OFF	Intended for Messrs Bartram & Sons Ltd %s 228	January 3.13 Marison's Section
706 3 OFF	Intended for Messrs Bartram & Sons Ltd %s 229	January 14.13 Marison's Section
708 3 OFF	Intended for Messrs Bartram & Sons Ltd %s 230	January 14.13 Marison's Section
776 3 OFF	Intended for Messrs Bartram & Sons Ltd %s 231	July 15.13 Marison's Section
777 3 OFF	Intended for Messrs Bartram & Sons Ltd %s 232	July 15.13 Marison's Section



Longitudinal seams fitted with double butt straps. Holes drilled in place. Hydraulic riveted. Straps 1/8 - 286 inch thick. Rivet Holes 1/8 - 33.3 inch diam. Scale 1/2 = 1 foot. Tensile strength of shell plates, butt straps, and manhole stiffening rings 285 to 32 tons per square inch - 44.4 to 50.4 kilos per square millimetre. Tensile strength of girders 28 to 32 tons per square inch - 44.4 to 50.4 kilos per square millimetre. Tensile strength of all other plates and furnaces 26 to 30 tons per square inch - 40.8 to 47.2 kilos per square millimetre. RIVETING Tensile strength of rivets 26 to 30 tons per square inch - 40.8 to 47.2 kilos per square millimetre. Front & back seams double riveted 1 3/8 - 30.16 inch rivet holes. 3 1/2 - 88.4 inch pitch. 5 1/2 - 136.5 inch lap. 3rd Cham. off longitudinal seams double riveted 1 1/2 - 38.1 inch rivet holes. 2 1/2 - 63.5 inch pitch. 4 - 101.6 inch lap. 3rd Cham. off furnace seams single riveted 1 1/2 - 38.1 inch rivet holes. 2 1/2 - 63.5 inch pitch. 2 1/2 - 63.5 inch lap.



MANHOLE 16 x 12 - 406 x 304 mm. Stiffening Ring 8 1/2 - 116.32 - 213 mm x 30.48 mm. Rivet Holes 1/8 - 33.3 mm.



11-8-13. 11/8/13



Register of Engineers



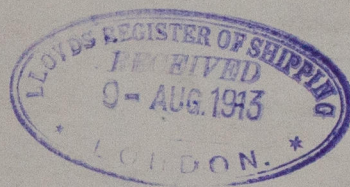
SUNDERLAND.

J. Dickinson & Sons, Ltd.

Main Boilers N<sup>o</sup> 444  
(3 off)

for  
Bartram & Sons Ltd

S.S. N<sup>o</sup> 232.

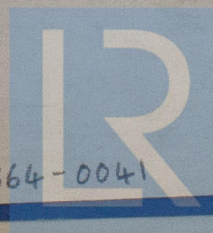


s.s. "Havrovia"

Sld Rpt no. 26083

RETAIN

W864-0041



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Lloyd's Register  
Foundation