

PLAIN TUBE HOLES  $2\frac{3}{8}"$  DIA.  
IN BACK TUBE PLATE

PLAIN TUBE HOLES  $2\frac{3}{8}"$  DIA.  
IN FRONT TUBE PLATE

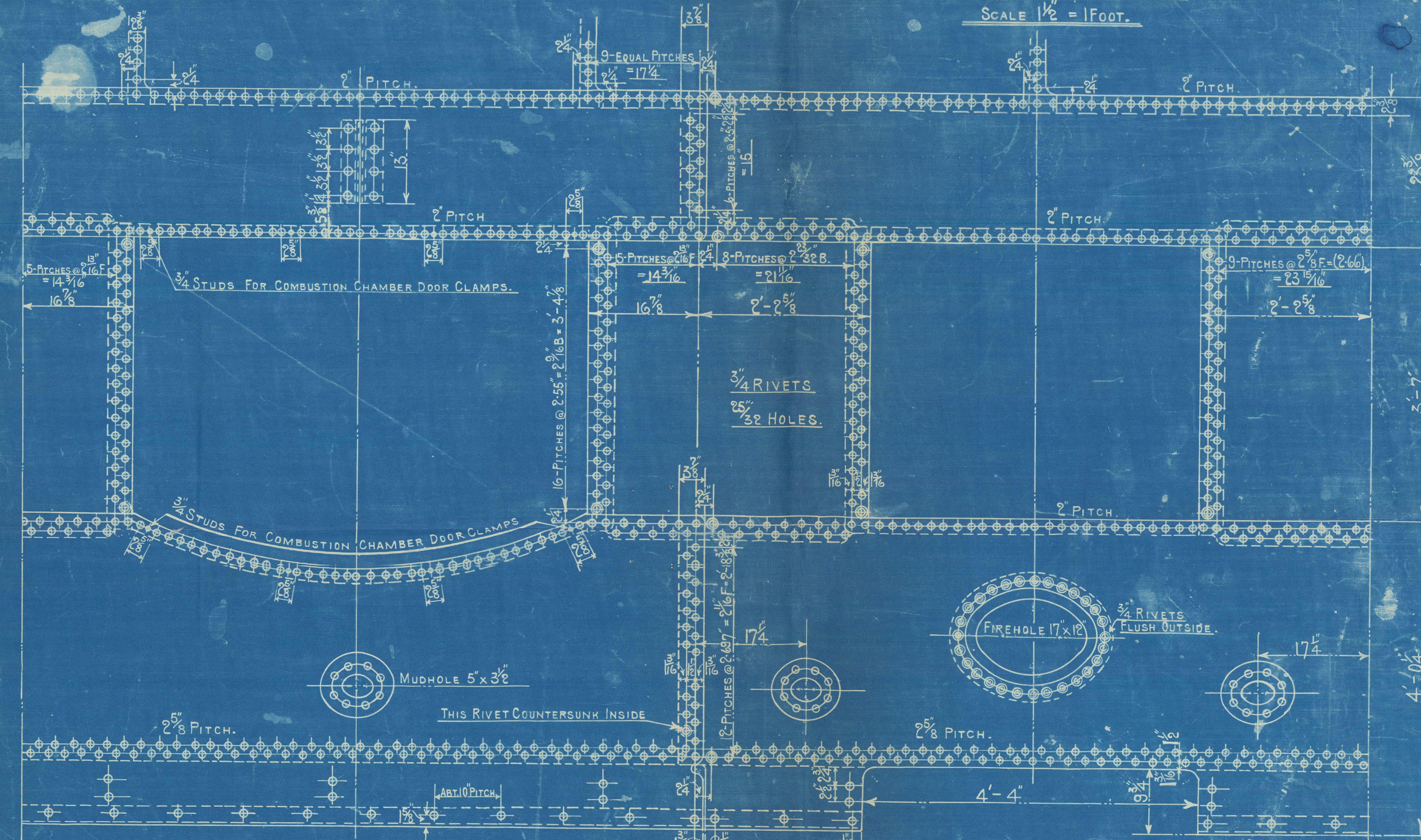
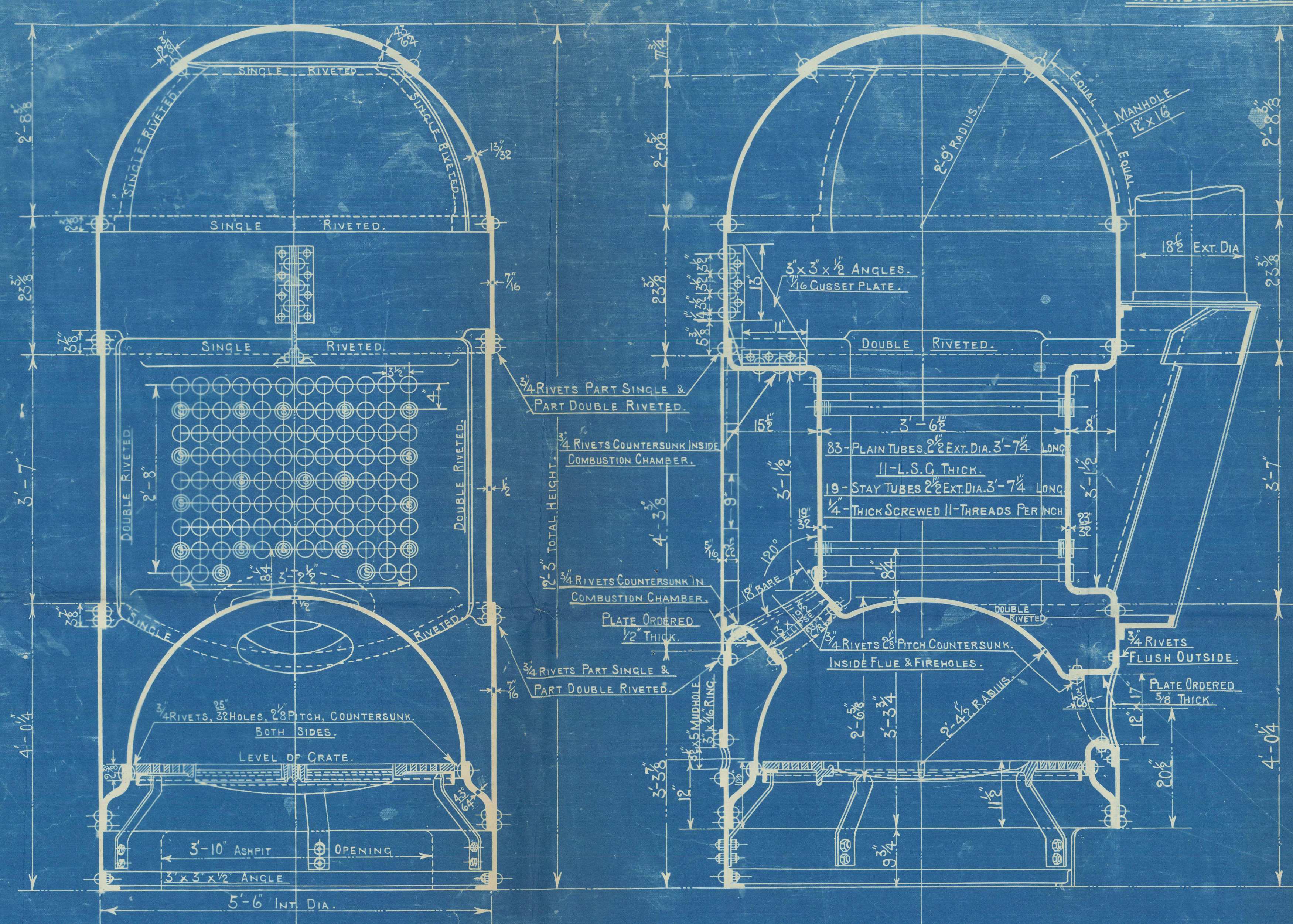
3" 6"

STAY TUBE HOLES SCREWED  
 $2\frac{3}{8}"$  DIA. IN BACK TUBE PLATE

STAY TUBE HOLES SCREWED  
 $2\frac{3}{8}"$  DIA. IN FRONT TUBE PLATE

SCREWED  
THREADS PER INCH.

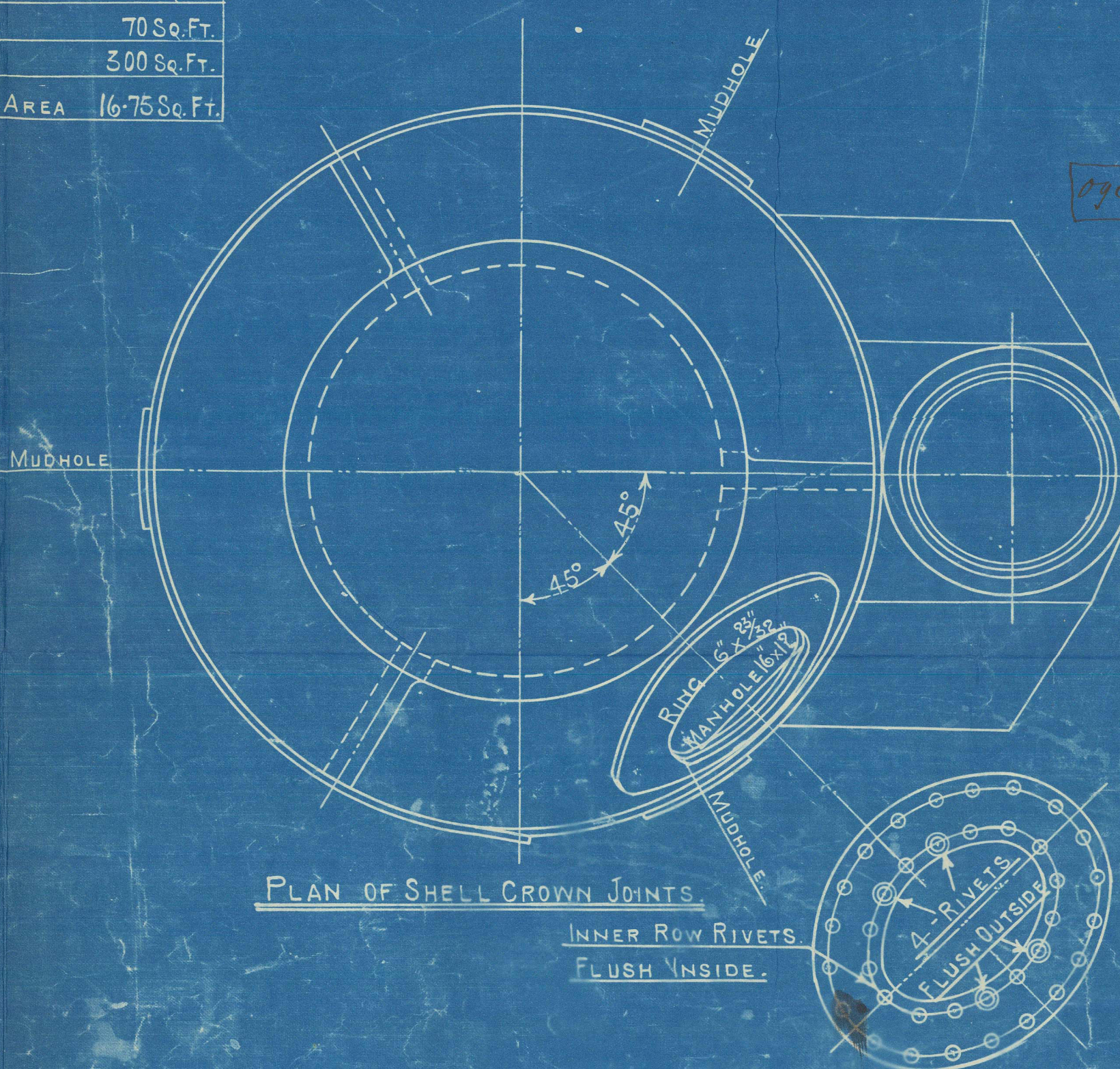
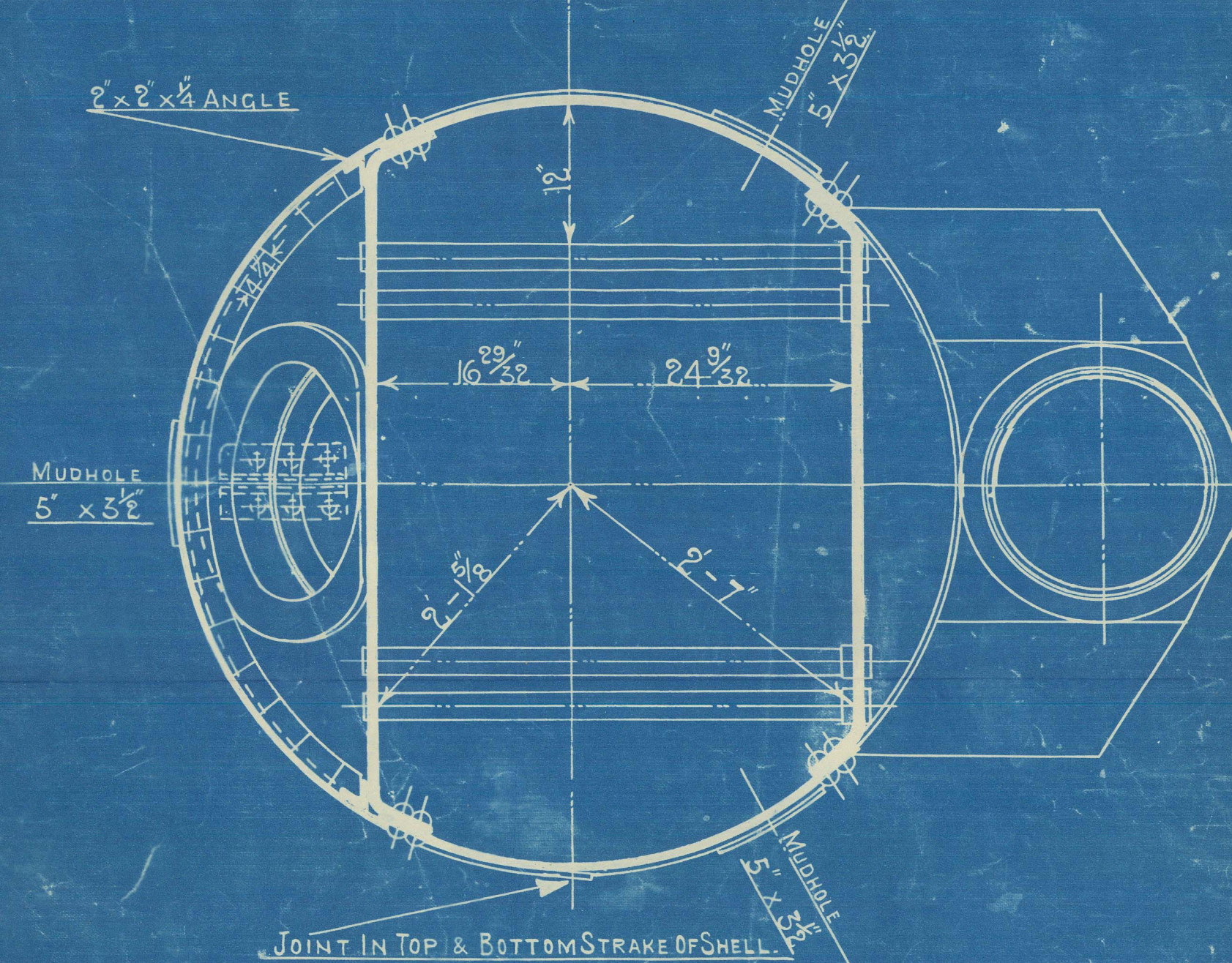
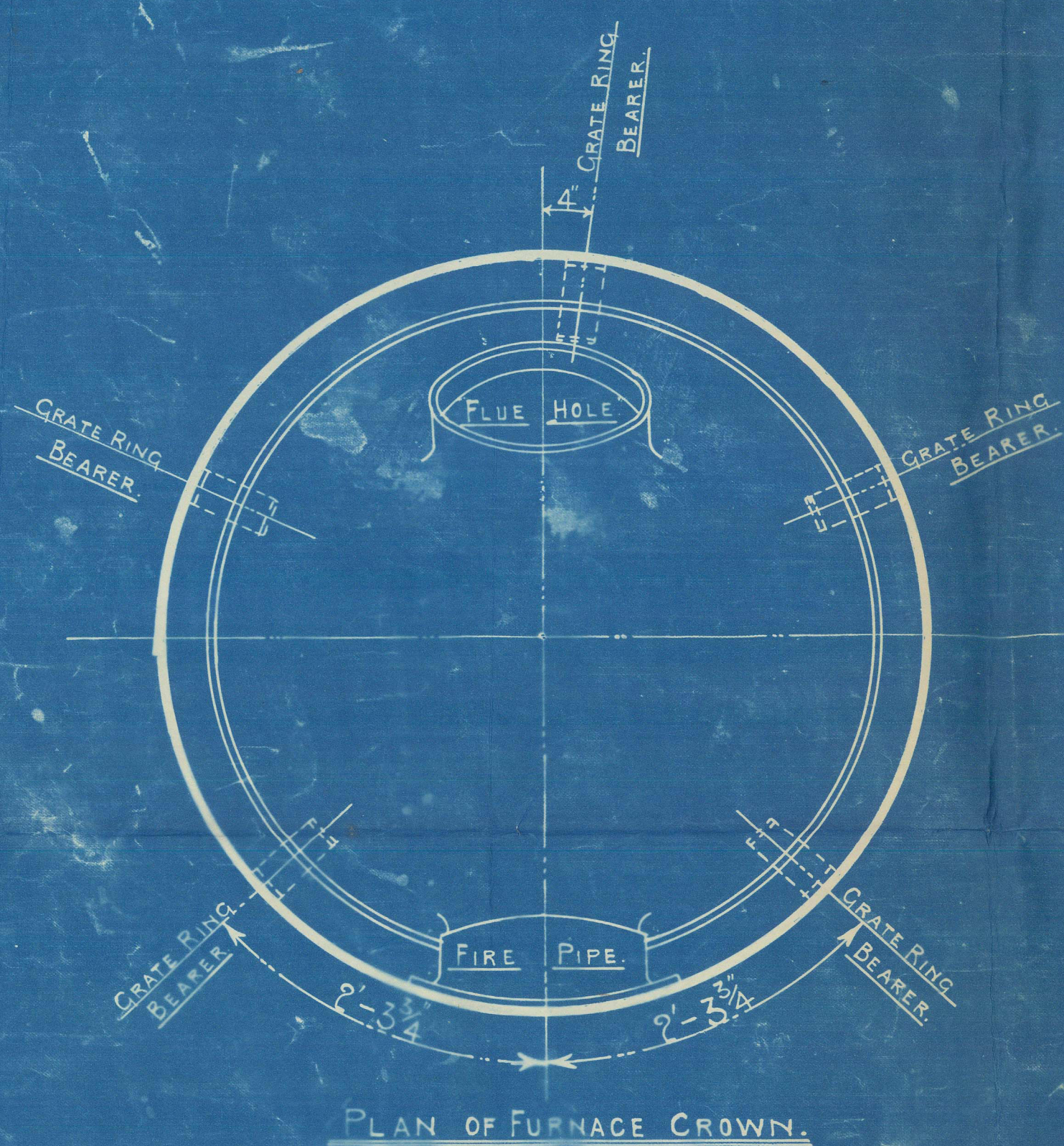
SCALE  $1\frac{1}{2}" = 1\text{ FOOT.}$



HEATING SURFACE.	
TUBES	230 Sq. Ft.
PLATE	70 Sq. Ft.
TOTAL	300 Sq. Ft.
GRATE AREA	16.75 Sq. Ft.

	Lloyds.	
PLATE	$\frac{2-5}{2} = 7.8125 \times 100$	= 68.7%
RIVETS	$\frac{2 \times 4.732 \times 86}{2.69 \times 4.375}$	= 69%
FRONT TUBE PLATE	$\frac{4 \times 2.533}{2} \times 100$	= 35.1%
BACK TUBE PLATE	$\frac{4 \times 0.5}{2} \times 100$	= 37.5%
SHELL	$\frac{20.5 (7.2 - 6.8) \times 26}{2}$	= 106 LBS.
FRONT TUBE PLATE	$\frac{20.5 (5.2 - 4.732) \times 86}{2}$	= 102.4 LBS.
BACK TUBE PLATE	$\frac{20.5 (5.2 - 4.732) \times 86}{2}$	= 104.4 LBS.
FURNACE CROWN	$\frac{15.5 (8 - 7.8125) \times 28}{2}$	= 131.5 LBS.

BUREAU VERITAS		
SHELL	$.68 \times 314.00 \text{ (4375 -.04)}$	
	66	= 128.5 LBS
RIVETS	$2 \times 2 \times .4793 \times 84 \times 2240$	
	$66 \times 2 \times .69 \times 5$	= 116 LBS
	104.000 x 718.75 (4-2.533)	
FRONT TUBE PLATE	$2 \times .593 \times 4$	= 127.6 LBS
	104.000 x 593 (4-2.5)	
BACK TUBE PLATE	$2 \times .593 \times 4$	= 112 LBS
	600 (8-2)	
FURNACE	28.5	= 196 LBS



BOARD OF TRADE		
PLATE	$\frac{25}{8} - 78125$	$\times 100 = 68.7\%$
RIVETS	$\frac{25}{8} \times \frac{25}{8} \times \frac{479}{4} \times \frac{4}{9}$	
	$\frac{25}{8} \times \frac{25}{8} \times \frac{479}{4} \times \frac{4}{9} \times 100 = 73\%$	
FRONT TUBE PLATE	$\frac{4}{2} - 593$	$\times 100 = 35.1\%$
BACK TUBE PLATE	$\frac{4}{2} - 595$	$\times 100 = 37.5\%$
SHELL	$\frac{67242.6 \times 7}{8} \times \frac{2}{8} \times 4375$	
	$\frac{67242.6 \times 100}{8}$	$= 116 \text{ LBS.}$
FRONT TUBE PLATE	$\frac{58424}{4} \times 35.1 - 71875$	
	$\frac{24}{4} - 281 \times \frac{4}{4} \times 100 = 134 \text{ LBS}$	
BACK TUBE PLATE	$\frac{58424}{4} \times 37.5 - 53575$	
	$\frac{24}{4} - 281 \times \frac{4}{4} \times 100 = 170 \text{ LBS}$	
FURNACE CROWN	$\frac{14000}{2} \times 5$	$= 120 \text{ LBS}$

**PATENT BOILER N° 8693**  
5'-6" x 12'-3" x 300  $\frac{c}{i}$  x 100 LBS

SCALE 1 INCH TO 1 FOOT.

SIEMENS MARTIN MILD STEEL PLATES.  
TENSILE TESTS.

PLATES NOT EXPOSED TO FLAME OR FLANGED	28 TO 32 TONS
PLATES EXPOSED TO FLAME OR FLANGED EXCEPT FUR CROWN	26 TO 30 TONS
FURNACE CROWN	26 TO 28 TONS

DRAWING N° 8921.

STANDARD  
SURVEY—LLOYDS

**COCHRAN & CO. ANNAN LTD.**  
**ENGINEERS & BOILERMAKERS**  
**ANNAN, SCOTLAND**



Lloyd's Register Foundation



COCHRAN & CO., ANNAN, LD.

Boiler No. 8693

Drawing No. 8921

100 lbs per sq inch.

Rank in boiler.

No 15706  
Clydes 2at.  
200 lbs  
4 P. 100 lbs  
P.M.C.G. 18/21

GLASGOW REPORT No.  
40891

S.S. "Bairnside"

Ubn. & C. Rept. No. 12809.

RETAIN



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Foundation

W337-0080



WDZ

No. 2 G 2. 2-20.

COCHRAN & CO., ANNAN, Ltd.

Enclosure

FOR

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