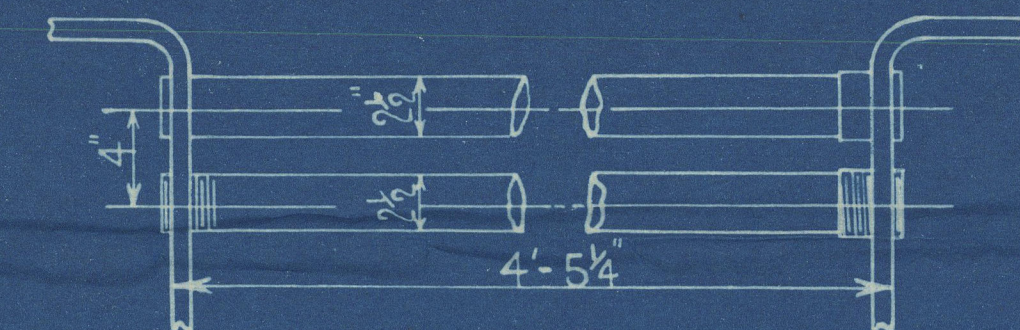


# COCHRAN PATENT VERTICAL MULTITUBULAR BOILER.

## HORIZONTAL FLUE TUBES.

PLAIN TUBE HOLES  $2\frac{1}{2}$ " DIA.  
IN BACK TUBE PLATE.



STAY TUBE HOLES SCREWED  
 $2\frac{1}{2}$ " DIA. 11-THREADS PER INCH.  
IN BACK TUBE PLATE.

STAY TUBE HOLES SCREWED  
 $2\frac{1}{2}$ " DIA. 11-THREADS PER INCH.  
IN FRONT TUBE PLATE.

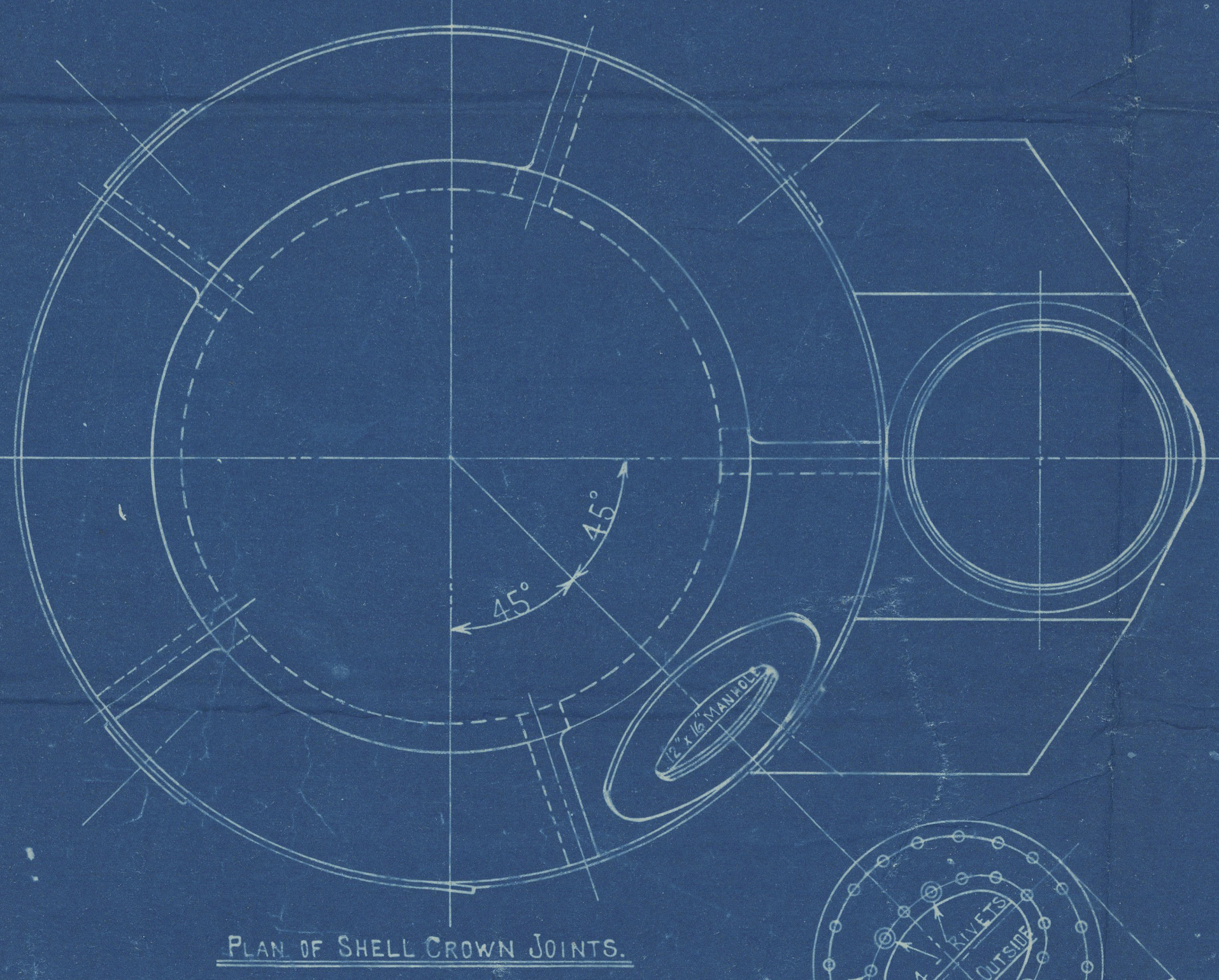
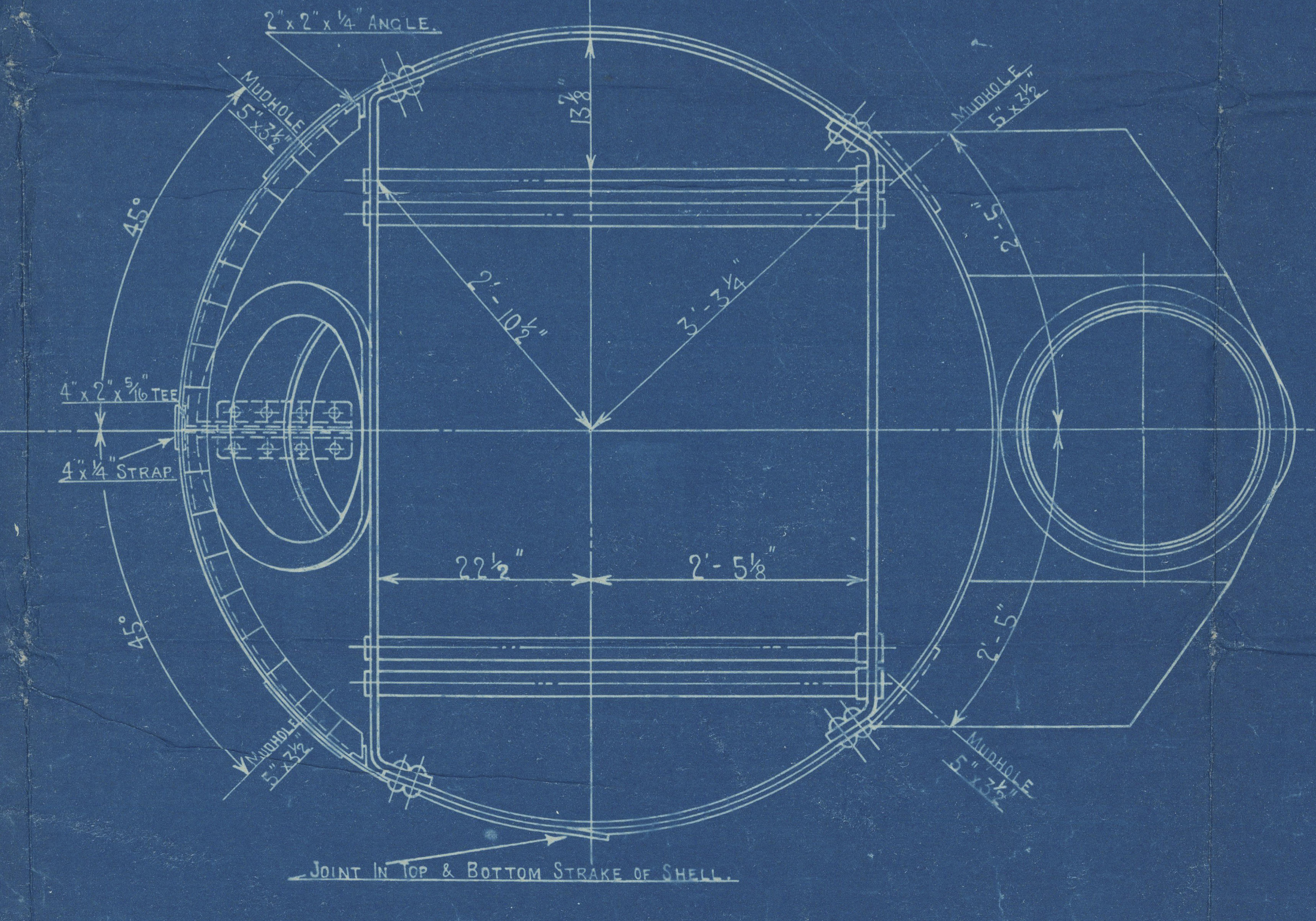
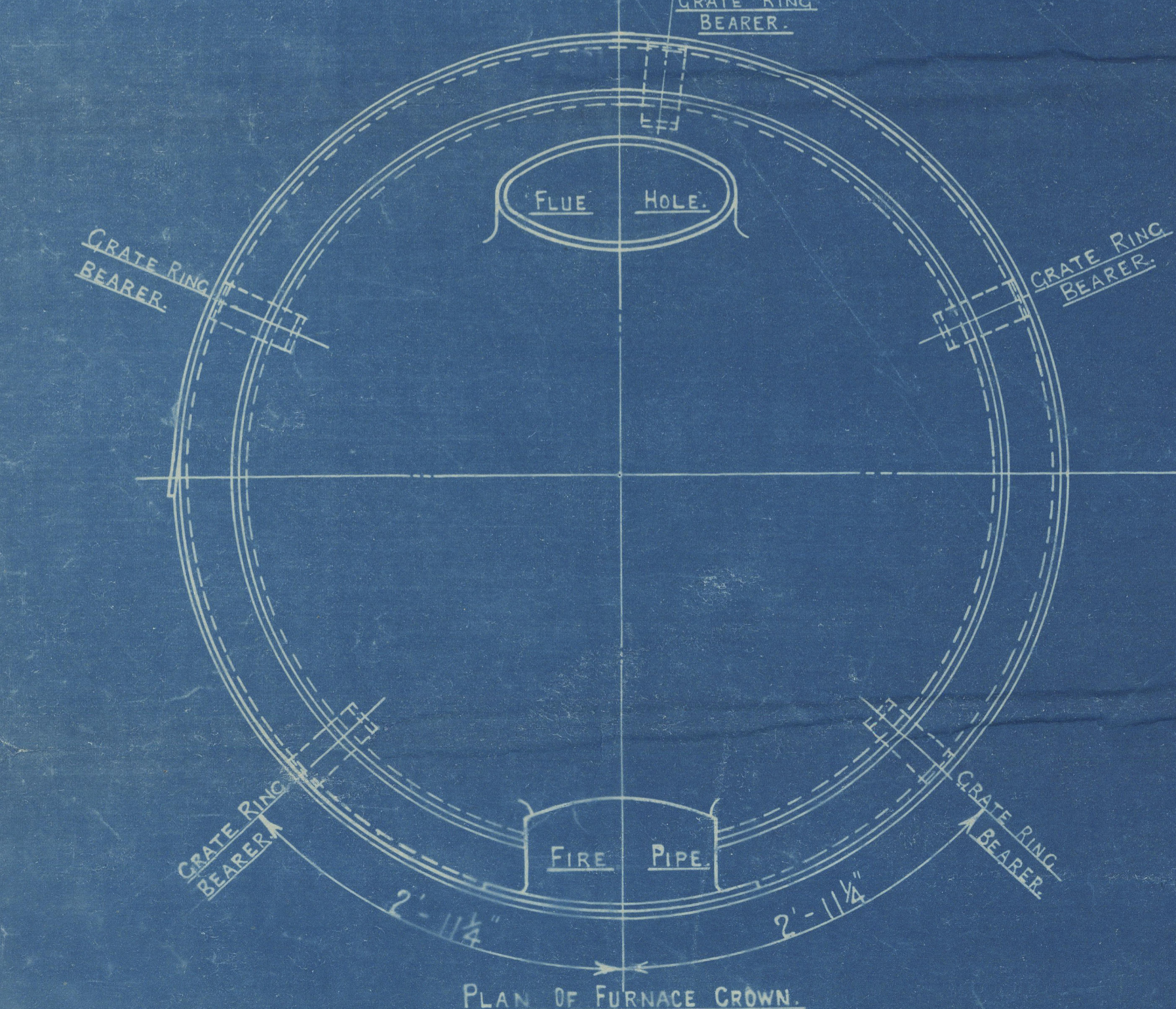
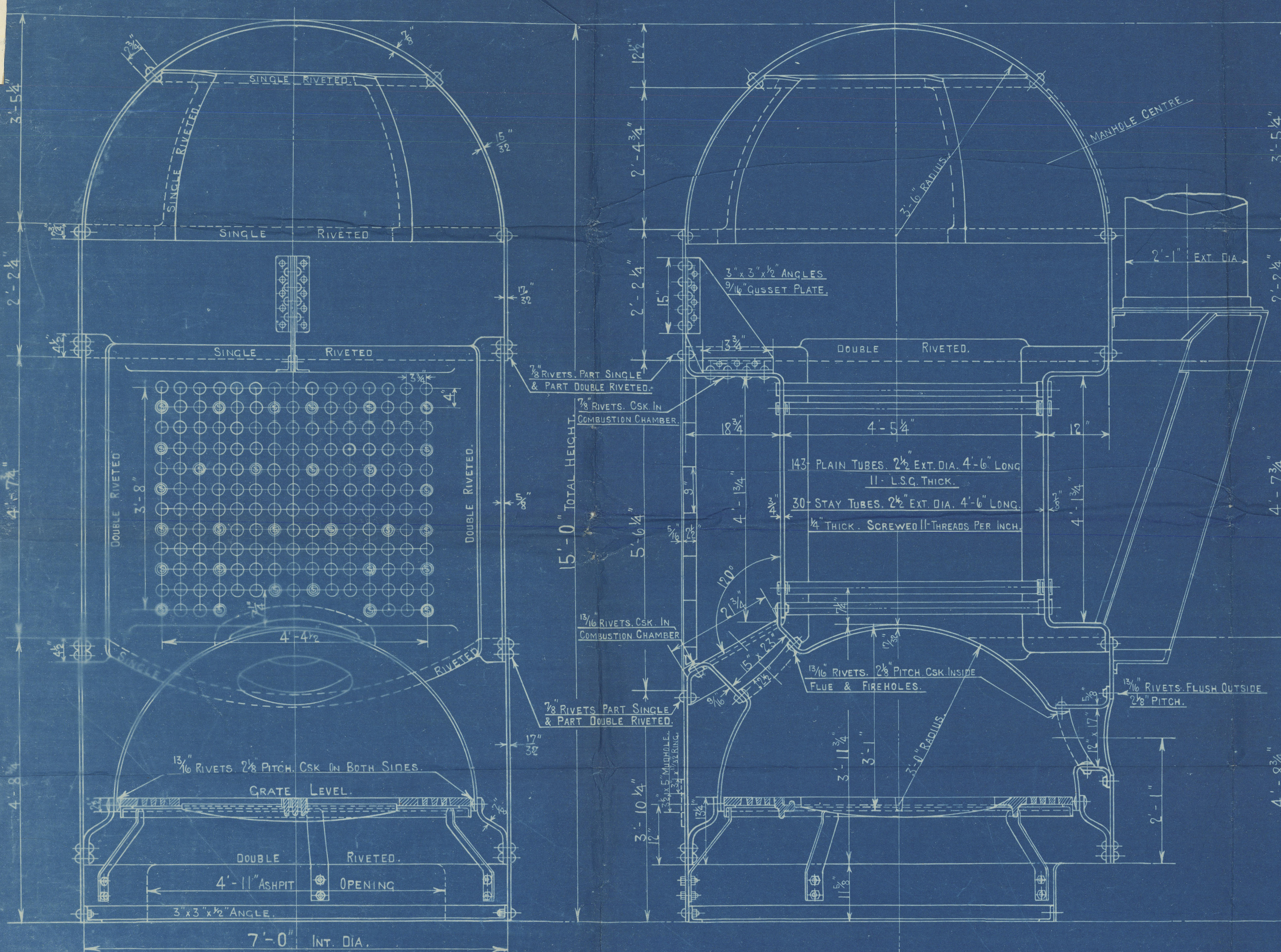
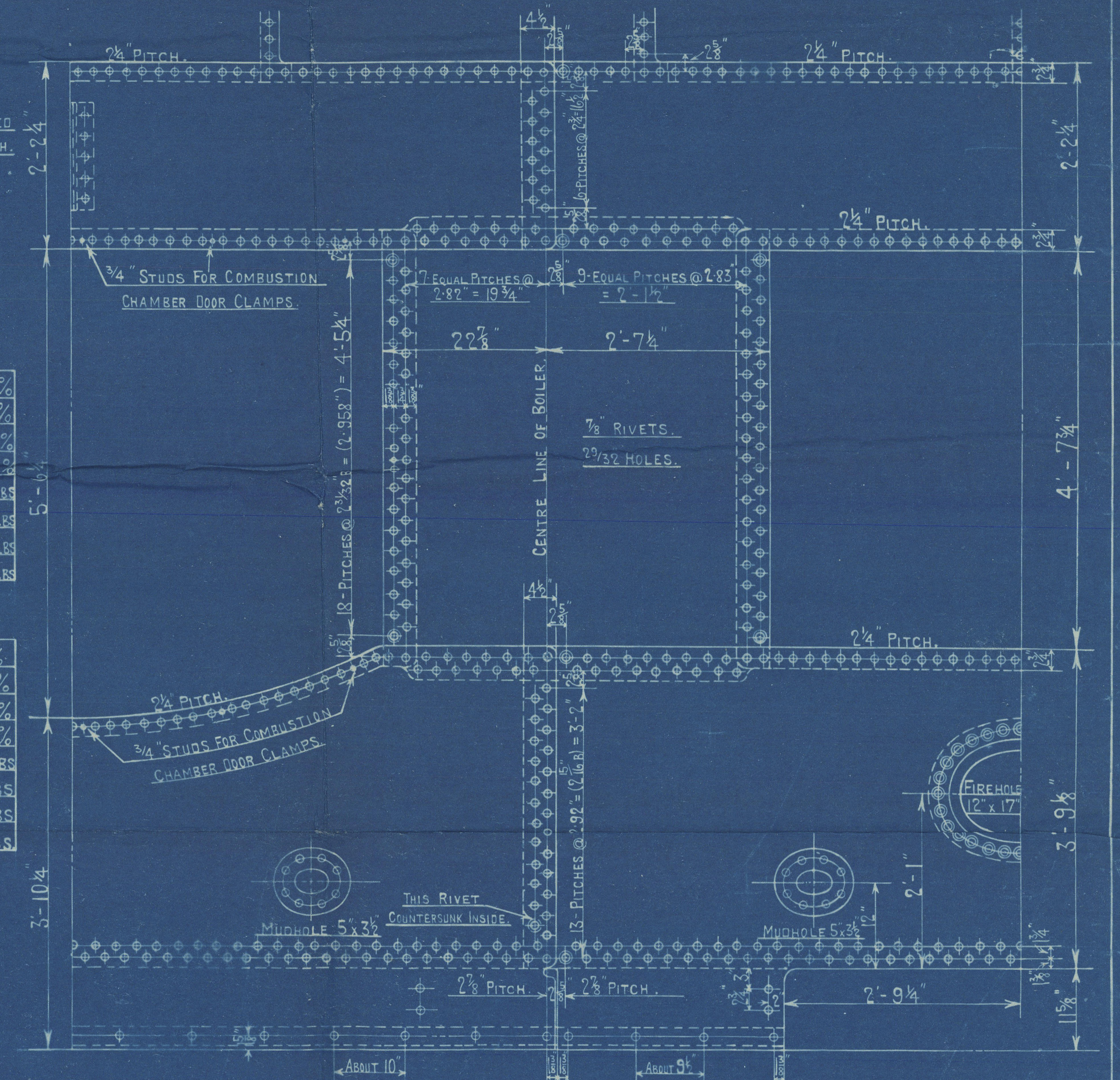
SCALE  $1\frac{1}{2}$ " = 1 FOOT.

HEATING SURFACE	
TUBES	487 Sq. Ft.
PLATE	113 Sq. Ft.
TOTAL	600 Sq. Ft.
GRATE AREA	26.75 Sq. Ft.

LLOYDS.	
PLATE	$\frac{0.75}{2.75} \times 100 = 6.7\%$
RIVETS	$\frac{2.5 \times 64.5 \times 9.5}{8.5 \times 2.5 \times 1.5} = 70.6\%$
FRONT TUBE PLATE	$\frac{4 \times 2.5}{4} \times 100 = 35.1\%$
BACK TUBE PLATE	$\frac{4 \times 2.5}{4} \times 100 = 37.5\%$
SHELL	$\frac{20.5 \times 14.2 \times 37.5}{20.5 \times 12.2 \times 37.5} = 102.2\%$
FRONT TUBE PLATE	$\frac{20.5 \times 12.2 \times 37.5}{20.5 \times 14.2 \times 37.5} = 103.4\%$
BACK TUBE PLATE	$\frac{20.5 \times 14.2 \times 37.5}{20.5 \times 12.2 \times 37.5} = 102.2\%$
FURNACE	$\frac{12.50 \times 8.5 \times 21}{72} = 112.8\%$

BUREAU VERITAS.	
PLATE	$\frac{0.75}{2.75} \times 100 = 6.7\%$
RIVETS	$\frac{2.5 \times 64.5 \times 9.5}{8.5 \times 2.5 \times 1.5} = 74.5\%$
FRONT TUBE PLATE	$\frac{4 \times 2.5}{4} \times 100 = 35.1\%$
BACK TUBE PLATE	$\frac{4 \times 2.5}{4} \times 100 = 37.5\%$
SHELL	$\frac{28 \times 22.0 \times 67 \times 2 \times 53.125}{26 \times 22.0 \times 67 \times 2 \times 87.5} = 108.1\%$
FRONT TUBE PLATE	$\frac{28 \times 22.0 \times 67 \times 2 \times 53.125}{26 \times 22.0 \times 67 \times 2 \times 87.5} = 136\%$
BACK TUBE PLATE	$\frac{28 \times 22.0 \times 67 \times 2 \times 53.125}{26 \times 22.0 \times 67 \times 2 \times 87.5} = 101\%$
FURNACE	$\frac{14000 \times 17}{72 \times 32} = 103\%$

BUREAU VERITAS.	
PLATE	$\frac{0.75}{2.75} \times 100 = 122.8\%$
RIVETS	$\frac{2(2 \times 64.5) \times 24 \times 22.40}{8.4 \times 2.5 \times 2 \times 5} = 113.2\%$
FRONT TUBE PLATE	$\frac{10400 \times 75 \times (4 \times 2.5937)}{25.8125 \times 4} = 123.9\%$
BACK TUBE PLATE	$\frac{10400 \times 75 \times (4 \times 2.5)}{25.8125 \times 4} = 113.3\%$
FURNACE	$\frac{800 \times (8.5 \times 2)}{56} = 108\%$



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

approved 10/11/13  
PATENT BOILER N<sup>o</sup> 6110  
7'-0" x 15'-0" x 600 x 100 LBS.

SCALE 1 INCH TO 1 FOOT

SIEMENS MARTIN MILD STEEL PLATE

TENSILE TESTS:

PLATES NOT EXPOSED TO FLAME OR FLANGED 28 to 32 TONS.  
PLATES EXPOSED TO FLAME OR FLANGED EXCEPT FURNACE CROWN 26 to 30 TONS.  
FURNACE CROWN 25 to 29 TONS.

DRAWING N<sup>o</sup> 3195

STANDARD.  
SURVEY - LLOYDS.

COCHRAN & CO., ANNAN, LD.

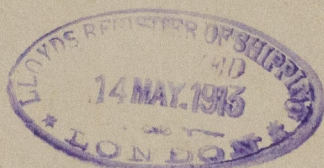
Boiler No. 6119

Drawing No. 9195

Mess S P Austin & Son S/S 268.

S/S "MOTO"

GLASGOW REPORT No. 32676



Sld 25759.



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COCHRAN & Co., ANNAN, Ltd.

Enclosure.

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