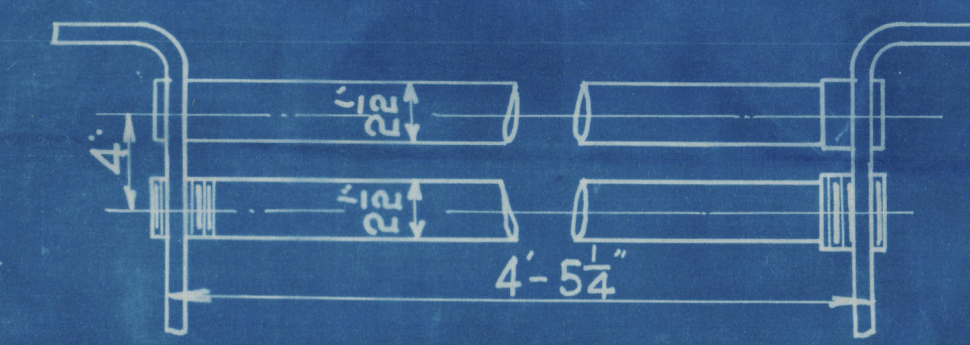


# COCHRAN PATENT VERTICAL MULTITUBULAR BOILER

## HORIZONTAL FLUE TUBES.

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

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



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

STAY TUBE HOLES SCREWED.  
 $2\frac{3}{8}$ " DIA. 11-THREADS PER INCH  
IN FRONT TUBE PLATE

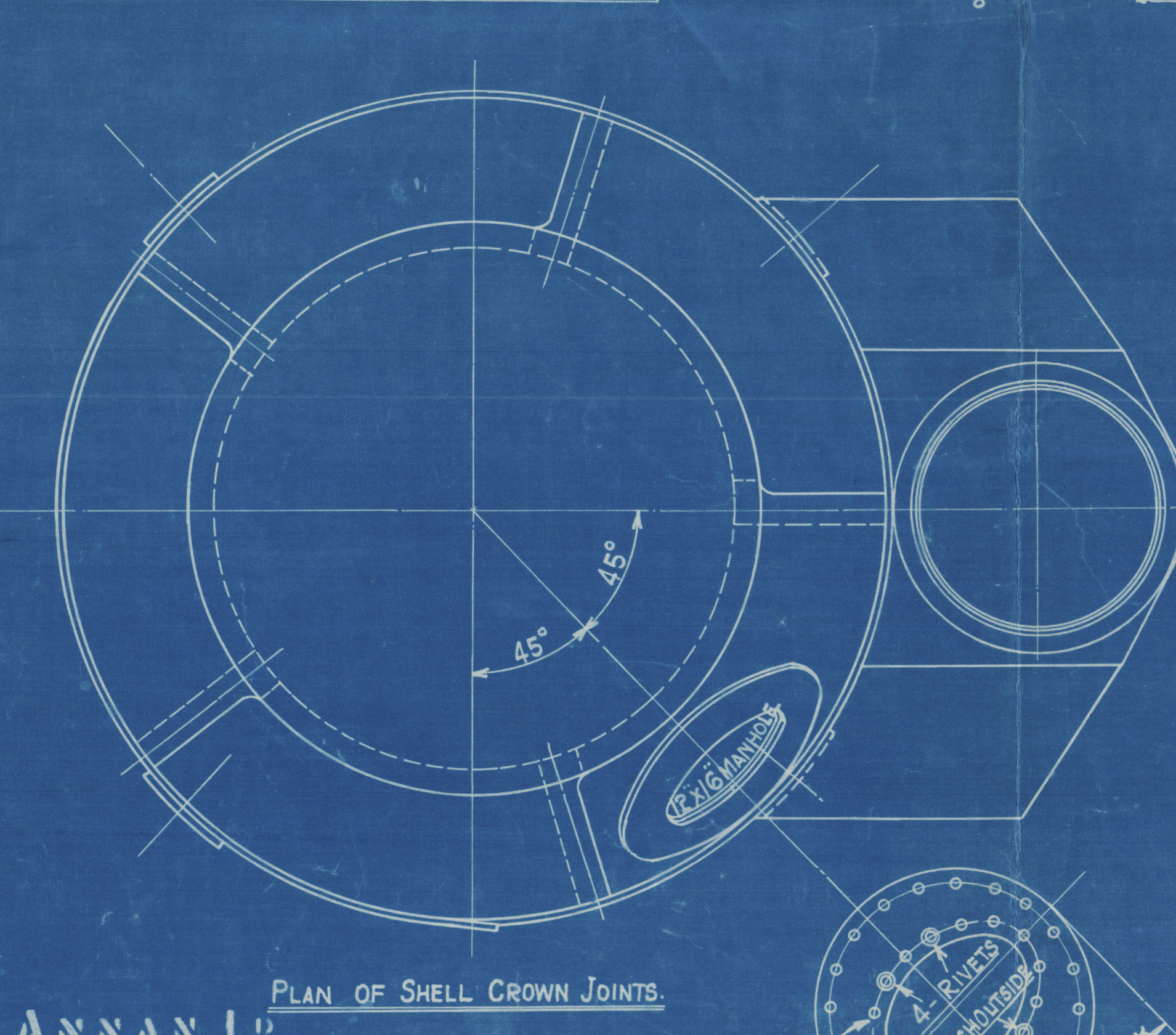
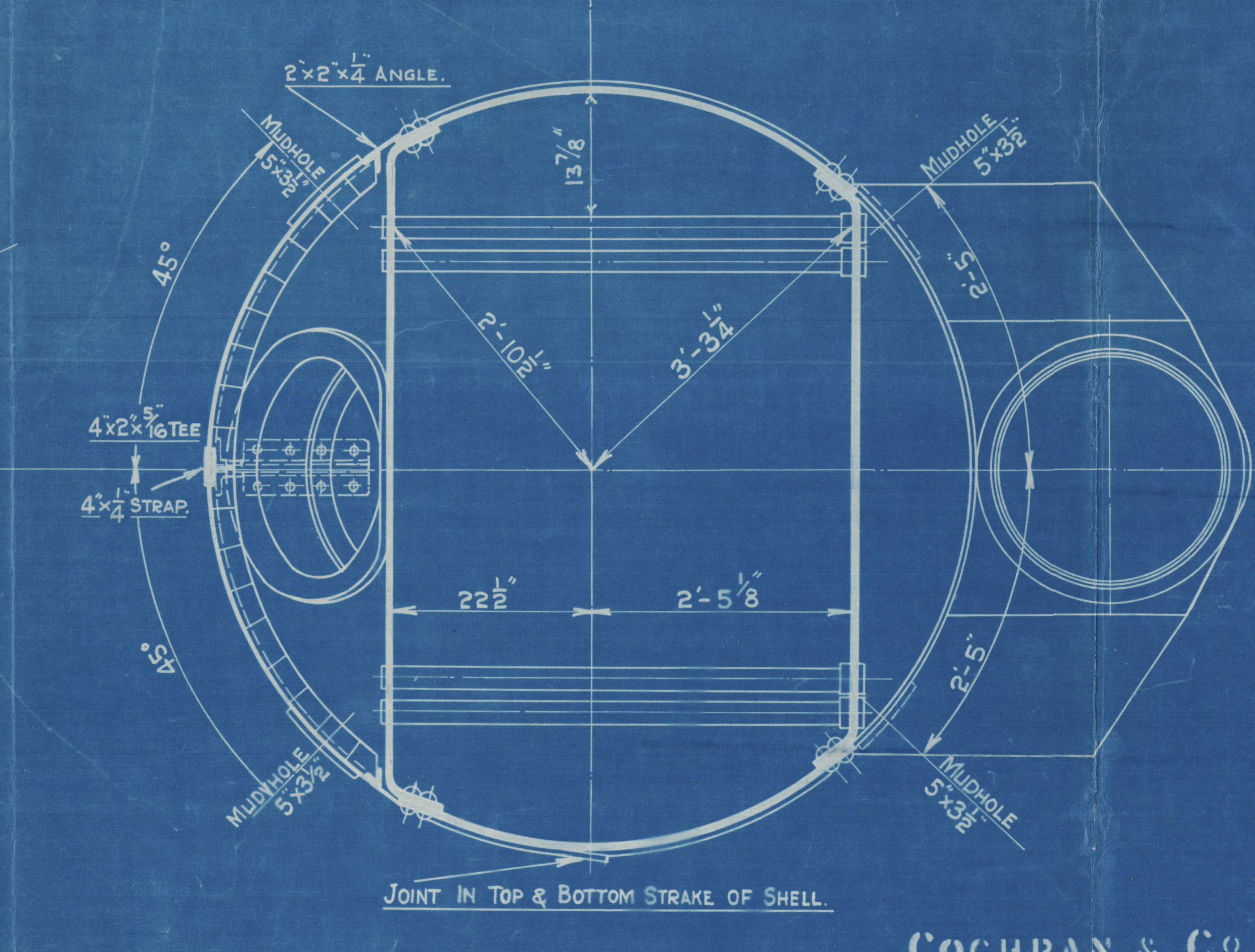
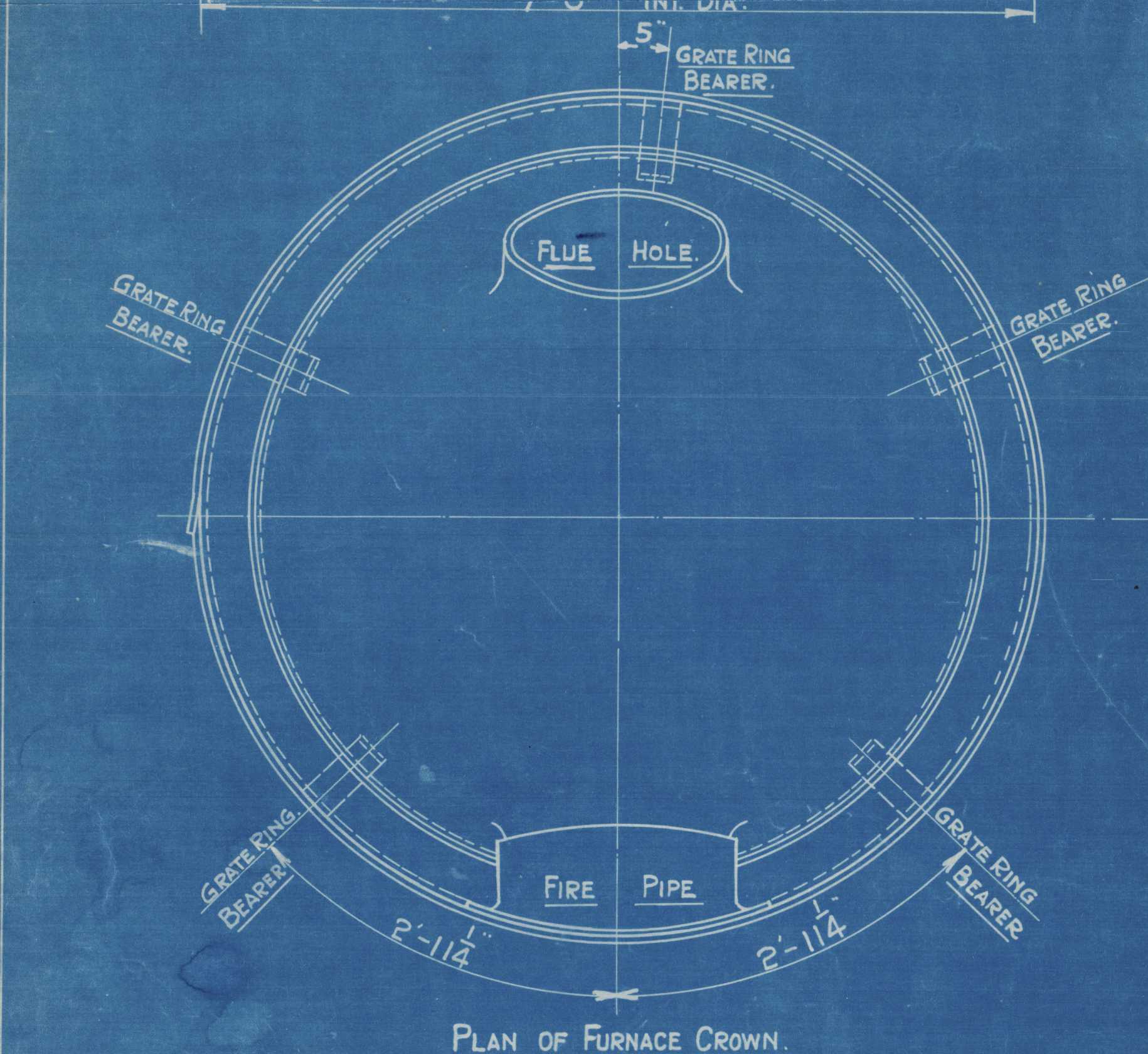
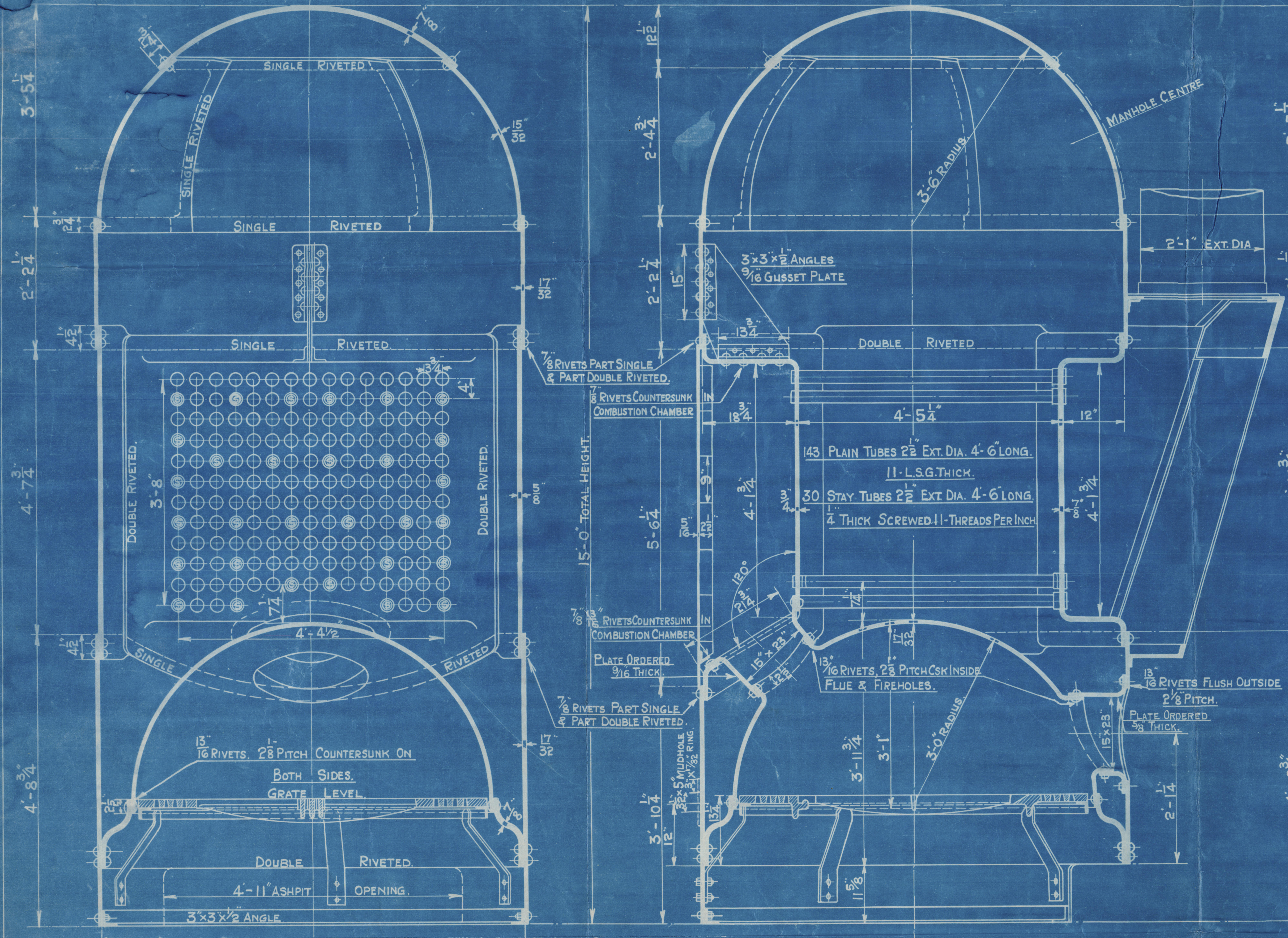
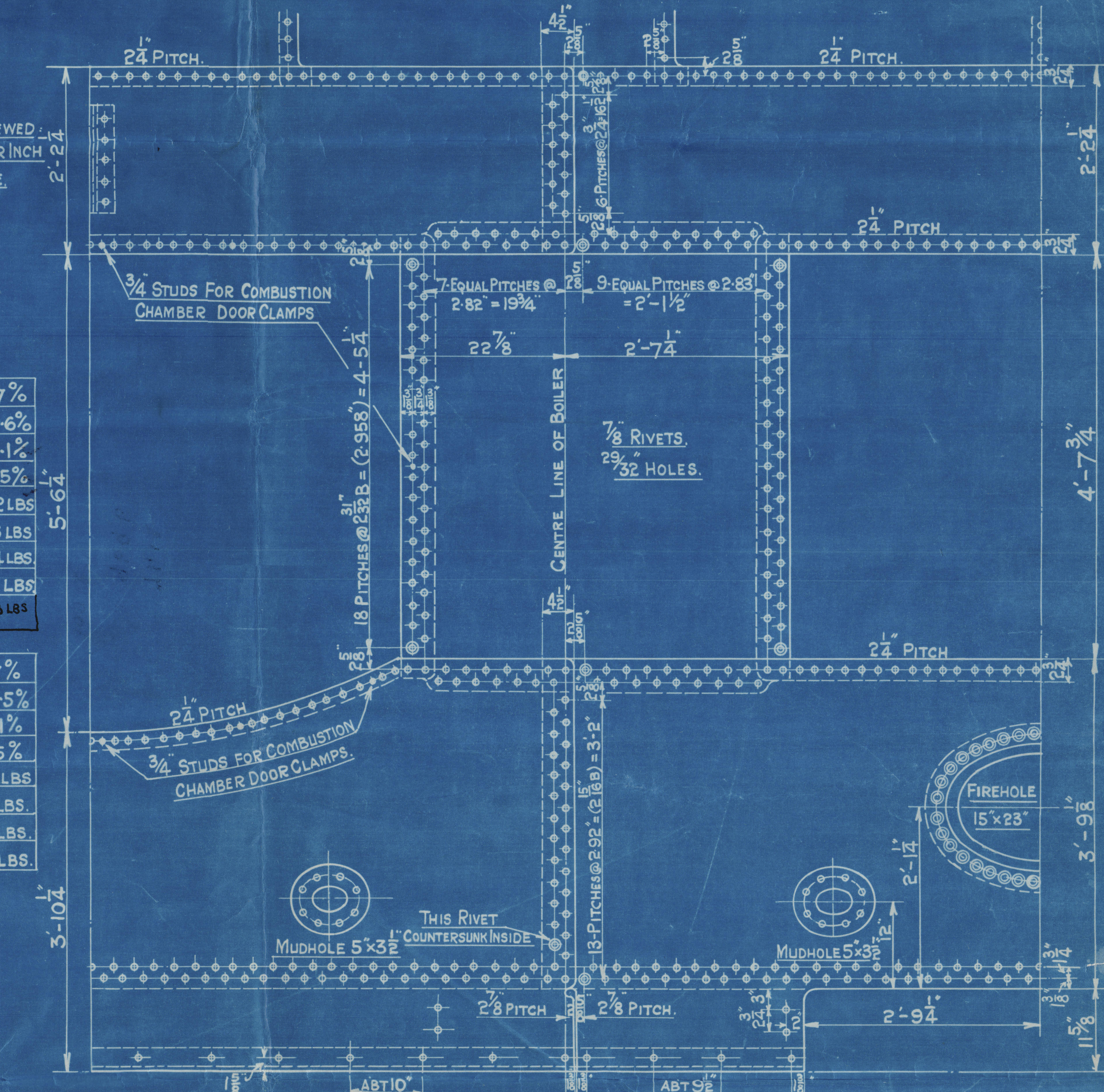
SCALE  $\frac{1}{2}$ " = 1 FOOT.

HEATING SURFACE		
TUBES	4879 Sq Ft	
PLATE	113.5 Sq Ft	
TOTAL	6009 Sq Ft	
GRATE AREA	2675 Sq Ft	

LLOYDS.		
PLATE	$2\frac{1}{2}$ " x 24" x 100' = 67%	
RIVETS	$2\frac{1}{2}$ " x 24" x 100' = 70.6%	
FRONT TUBE PLATE	$4\frac{1}{2}$ " x 100' = 35.1%	
BACK TUBE PLATE	$4\frac{1}{2}$ " x 100' = 37.5%	
SHELL	$20\frac{1}{2}$ " (14-2) x 35'1" x 26' = 1062 LBS	
FRONT TUBE PLATE	$7\frac{1}{2}$ " x 100' = 102.6 LBS	
BACK TUBE PLATE	$20\frac{1}{2}$ " (12-2) x 37\frac{1}{2}" x 26' = 103.4 LBS	
FURNACE	$1250\frac{1}{2}$ " (8-5-2) = 112.8 LBS	
OGEE RING	$516\frac{1}{2}$ " x 14-2" = 100.3 LBS	

BOARD OF TRADE		
PLATE	$2\frac{1}{2}$ " x 24" x 100' = 67%	
RIVETS	$2\frac{1}{2}$ " x 24" x 100' = 74.5%	
FRONT TUBE PLATE	$4\frac{1}{2}$ " x 100' = 35.1%	
BACK TUBE PLATE	$4\frac{1}{2}$ " x 100' = 37.5%	
SHELL	$28\frac{1}{2}$ " x 240" x 67' x 26' = 1081 LBS	
FRONT TUBE PLATE	$29\frac{1}{2}$ " x 4.5' x 100' = 136 LBS	
BACK TUBE PLATE	$26\frac{1}{2}$ " x 240" x 37.5' x 75' = 161 LBS	
FURNACE	$14000\frac{1}{2}$ " x 17' = 108 LBS	

BUREAU VERITAS		
PLATE	$67\frac{1}{2}$ " x 28" x 2240' (53125-04) = 122.8 LBS	
RIVETS	$2(2\frac{1}{2} \times 645) \times 24 \times 2240 = 1132 LBS$	
FRONT TUBE PLATE	$10400\frac{1}{2}$ x 875' (4-2-5937) = 123.9 LBS	
BACK TUBE PLATE	$10400\frac{1}{2}$ x 75' (4-2-5) = 113.3 LBS	
FURNACE	$600\frac{1}{2}$ x 17' = 108 LBS	



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

Approved. 19-4-13. *W. H. Robinson*  
**PATENT BOILER N° 7412**  
**7'-0" x 15'-0" x 600# 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 FURNACE CROWN. 26 TO 30 TONS.  
FURNACE CROWN 26 TO 29 TONS.

DRAWING N° 9696.

W701-0223

STANDARD  
SURVEY-LLOYDS



COCHRAN & CO., ANNAN, LD.

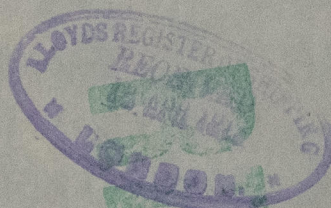
Boiler No. 7412

Drawing No. 9696.

100 lb.

GLASGOW REPORT No. 36826

"Hopelynd."



W702 - 0223



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Foundation