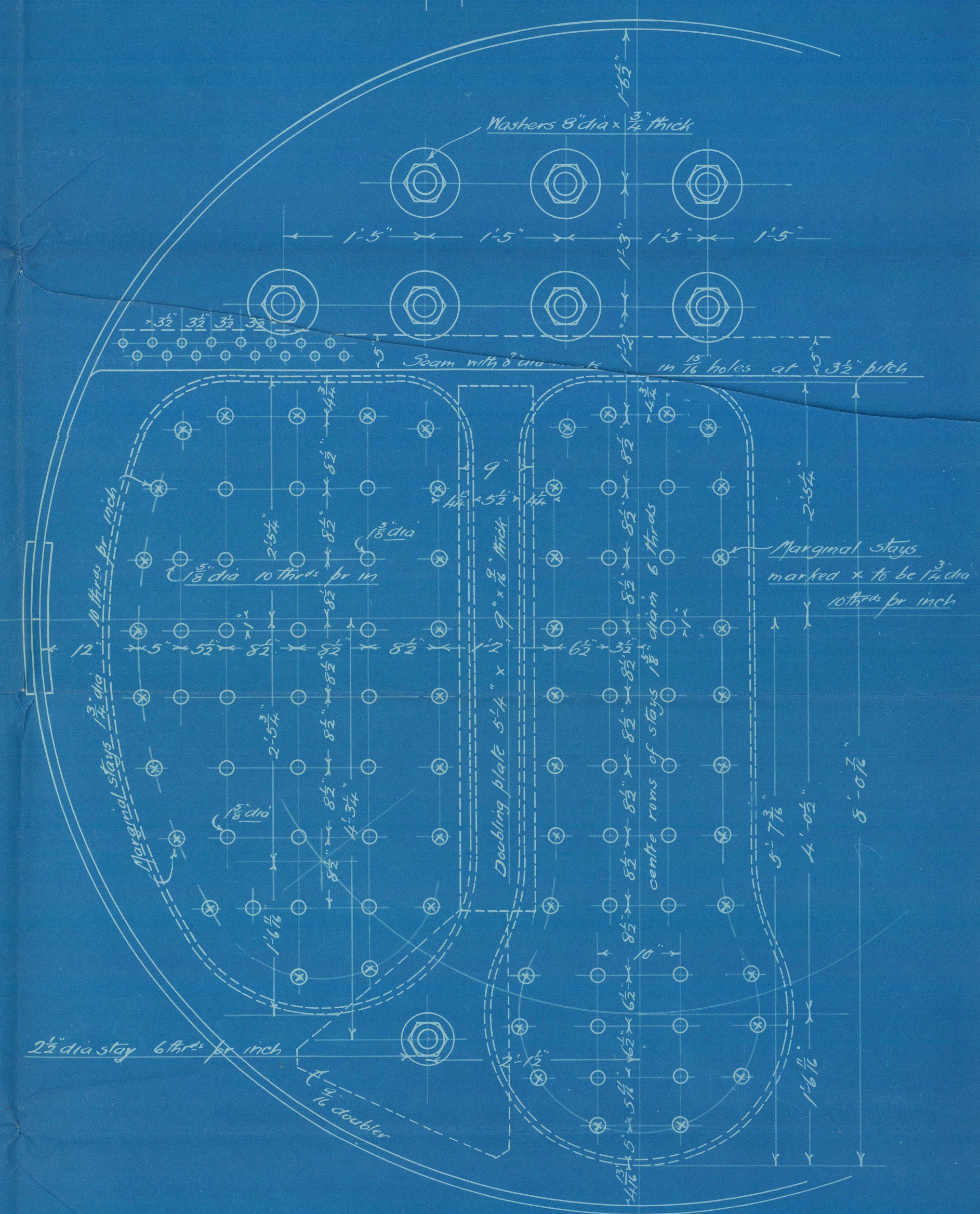
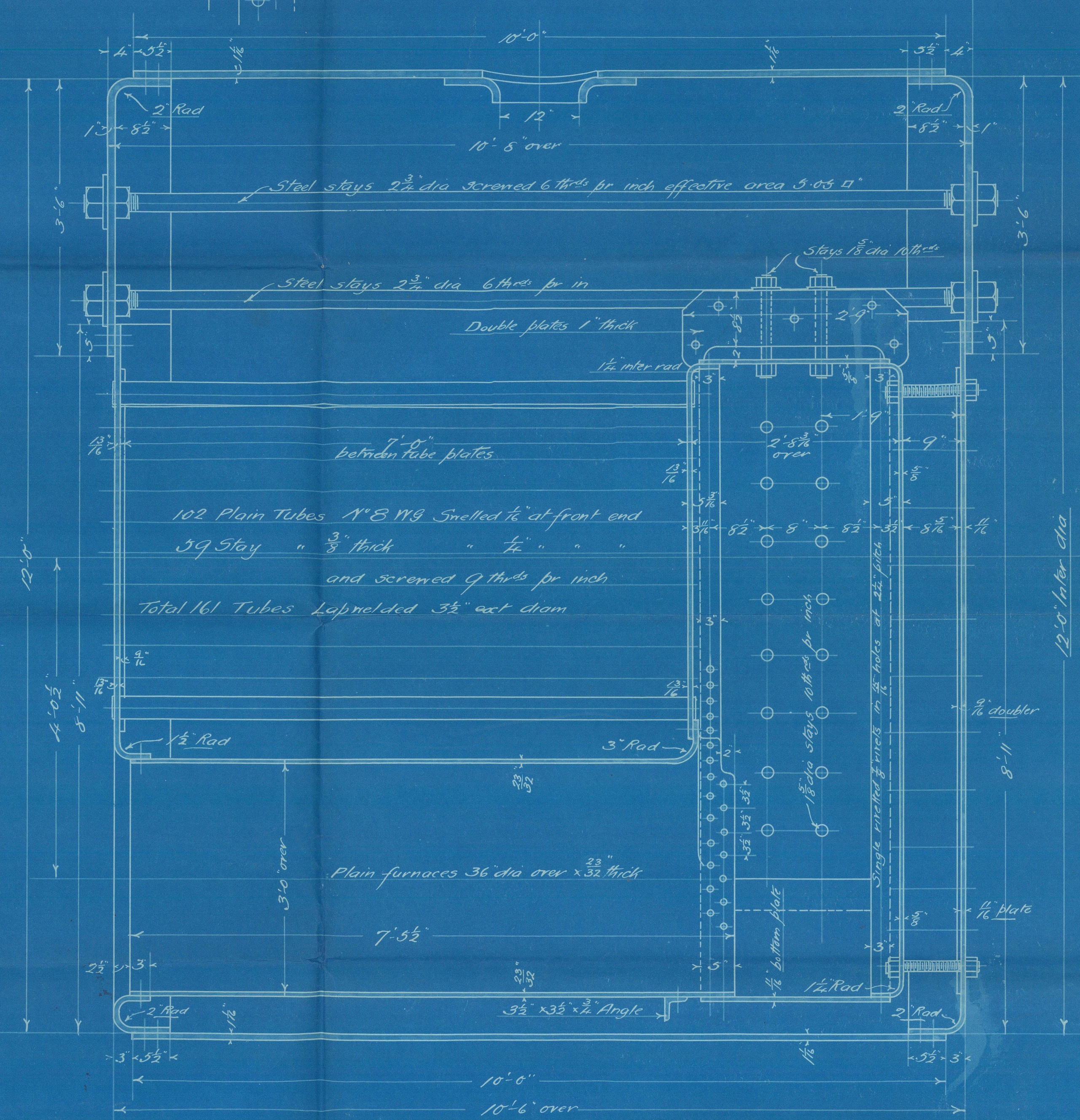
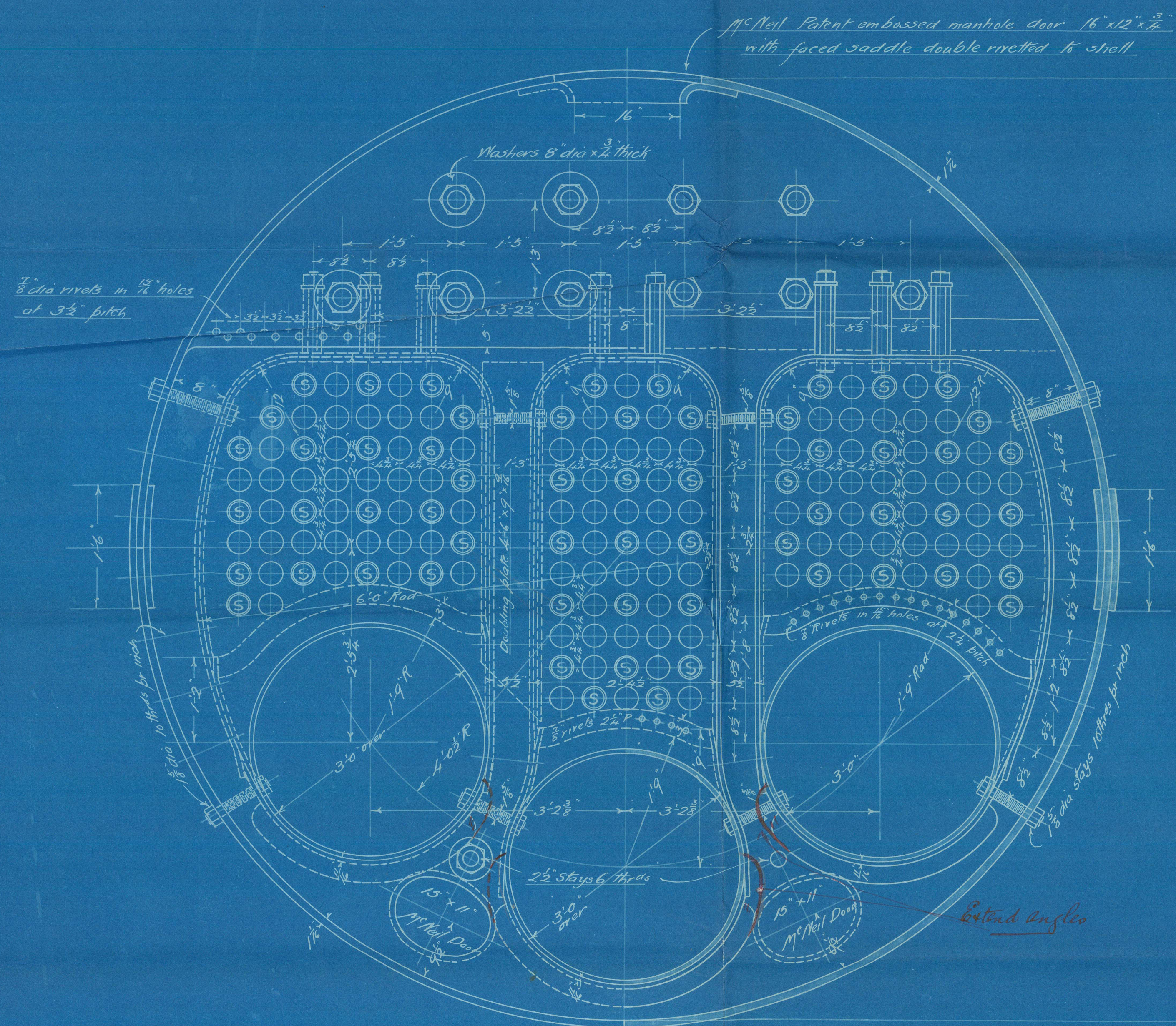
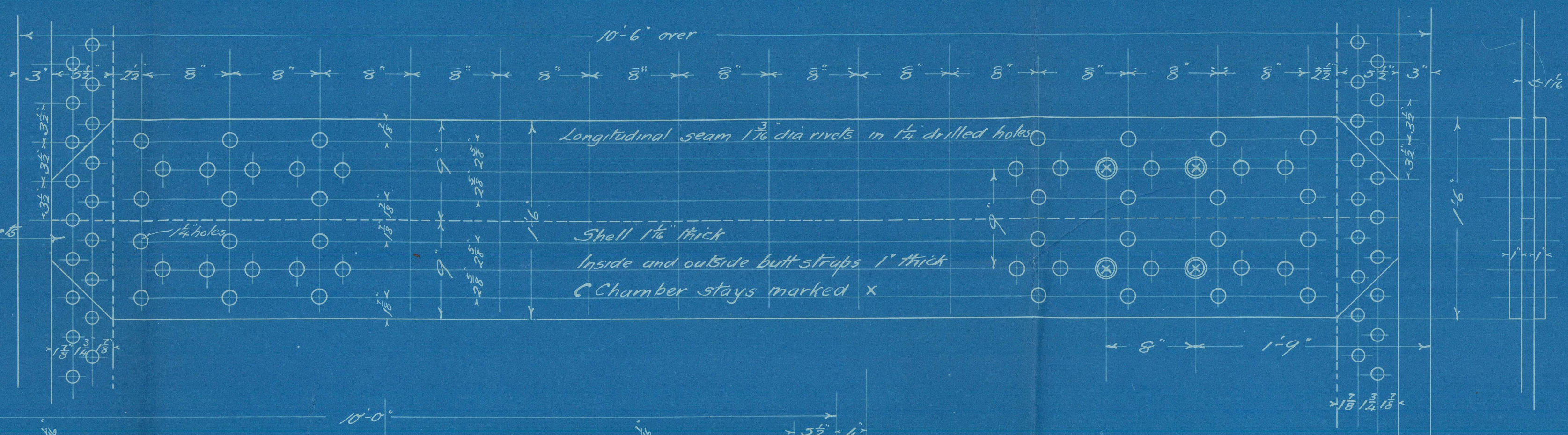


4.8.05

Heating Surface in furnaces	= 98.5 Sq ft
" " C. Chambers	= 193.0 " "
" " Tubes	= 1033 " "
Total	= 1315.5 Sq ft
Graze area with 3/8" bars	= 42 Sq ft
Ratio Heating Surface	= 31

Circular seams 1/8" dia rivets in 18" dia drilled holes



Longitudinal Seam (Plate between rivets)	$P = D \times \frac{100}{1} = 5 \times 125 \times \frac{100}{1} = 84.4 \%$
Shell 1/8" thick x 12' 4" mean dia	$C \times T^2 = \frac{15.5 \times 16^2}{17^2 + 15^2} = 184.2 \text{ lbs}$
End plates in steam space plate 1" thick	$C \times T^2 = \frac{15.5 \times 16^2}{17^2 + 15^2} = 184.2 \text{ lbs}$
Maximum pitch of stays 1' 5" x 1' 3"	$C \times T^2 = \frac{15.5 \times 16^2}{17^2 + 15^2} = 184.2 \text{ lbs}$
Stress for sq in on steam space stays	$C \times T^2 = \frac{15.5 \times 16^2}{17^2 + 15^2} = 184.2 \text{ lbs}$
Plate 1' 5" x 1' 3" stays 2 1/2" dia 6" thick	$C \times T^2 = \frac{15.5 \times 16^2}{17^2 + 15^2} = 184.2 \text{ lbs}$
Wide space between tubes in front end	$C \times T^2 = \frac{15.5 \times 16^2}{17^2 + 15^2} = 184.2 \text{ lbs}$
Centres of tubes 15" end plate 1/2" doubler 1/8"	$C \times T^2 = \frac{15.5 \times 16^2}{17^2 + 15^2} = 184.2 \text{ lbs}$
C. Chambers sides 1/8" and ends max pitch	$C \times T^2 = \frac{15.5 \times 16^2}{17^2 + 15^2} = 184.2 \text{ lbs}$
Plate 1/8" x 1/8" plate 1/8" thick	$C \times T^2 = \frac{15.5 \times 16^2}{17^2 + 15^2} = 184.2 \text{ lbs}$
Tube plates 1/8" thick with stay tubes at 1/2" centres	$C \times T^2 = \frac{15.5 \times 16^2}{17^2 + 15^2} = 184.2 \text{ lbs}$
Girder stays on top of C. Chambers	$C \times T^2 = \frac{15.5 \times 16^2}{17^2 + 15^2} = 184.2 \text{ lbs}$
Stress for sq in on top row of C. Chamber stays	$C \times T^2 = \frac{15.5 \times 16^2}{17^2 + 15^2} = 184.2 \text{ lbs}$
Plate 1/8" x 1/8" screened 1/8" dia 10" thick	$C \times T^2 = \frac{15.5 \times 16^2}{17^2 + 15^2} = 184.2 \text{ lbs}$
Stress for sq in on marginal C. Chamber stays	$C \times T^2 = \frac{15.5 \times 16^2}{17^2 + 15^2} = 184.2 \text{ lbs}$
Plate 1/8" x 1/8" screened 1/8" dia 10" thick	$C \times T^2 = \frac{15.5 \times 16^2}{17^2 + 15^2} = 184.2 \text{ lbs}$
Plain furnaces 3' 0" ext dia 3/8" thick	$C \times T^2 = \frac{15.5 \times 16^2}{17^2 + 15^2} = 184.2 \text{ lbs}$
Wide space between C. Chamber stays in back end	$C \times T^2 = \frac{15.5 \times 16^2}{17^2 + 15^2} = 184.2 \text{ lbs}$
Plate 1/8" doubler 1/8" pitch of stays 1/8" x 1/8"	$C \times T^2 = \frac{15.5 \times 16^2}{17^2 + 15^2} = 184.2 \text{ lbs}$
Stress on centre C. Chamber stays pitch 8 1/2" x 5 1/2"	$C \times T^2 = \frac{15.5 \times 16^2}{17^2 + 15^2} = 184.2 \text{ lbs}$
Screened 1/8" dia 10" thick for in eff area 17 1/2" 1/2"	$C \times T^2 = \frac{15.5 \times 16^2}{17^2 + 15^2} = 184.2 \text{ lbs}$

MARINE BOILER 12'-0" DIA x 10'-6" LONG

WORKING PRESSURE 180 LBS PER SQ IN

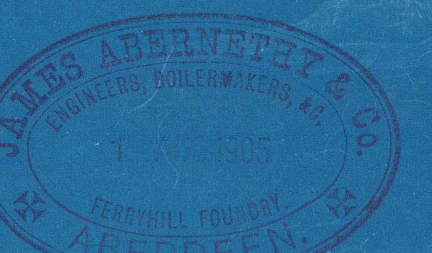
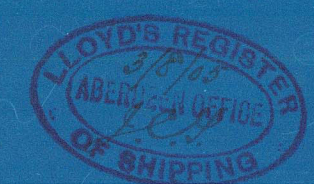
TESTED TO LLOYD'S REQUIREMENTS

Scale 1 inch to a foot

JULY 1905

1 OFF JULY 1905 JOB N° 712

Thickness of Plating	1/8" thick
Shell Plates	1" thick
Upper End Plates	1" "
Front Lower Plate	1/2" "
Back " "	1/2" "
Inner Tube Plate	1/2" "
C. Chamber Back Plates	1/2" "
" " Sides and Top covers	1/2" "
" " Bottom Covers	1/2" "
Plain Furnaces	3/8" "
Girder Stays	1" "
Boiler all steel except the Tubes which are iron	



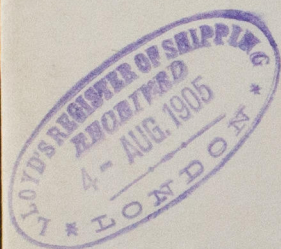
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Jas. Abernethy & Co.

Eng. No. 412

Main Boiler S.S. "Victor"

Abn. Rept. 8631.



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