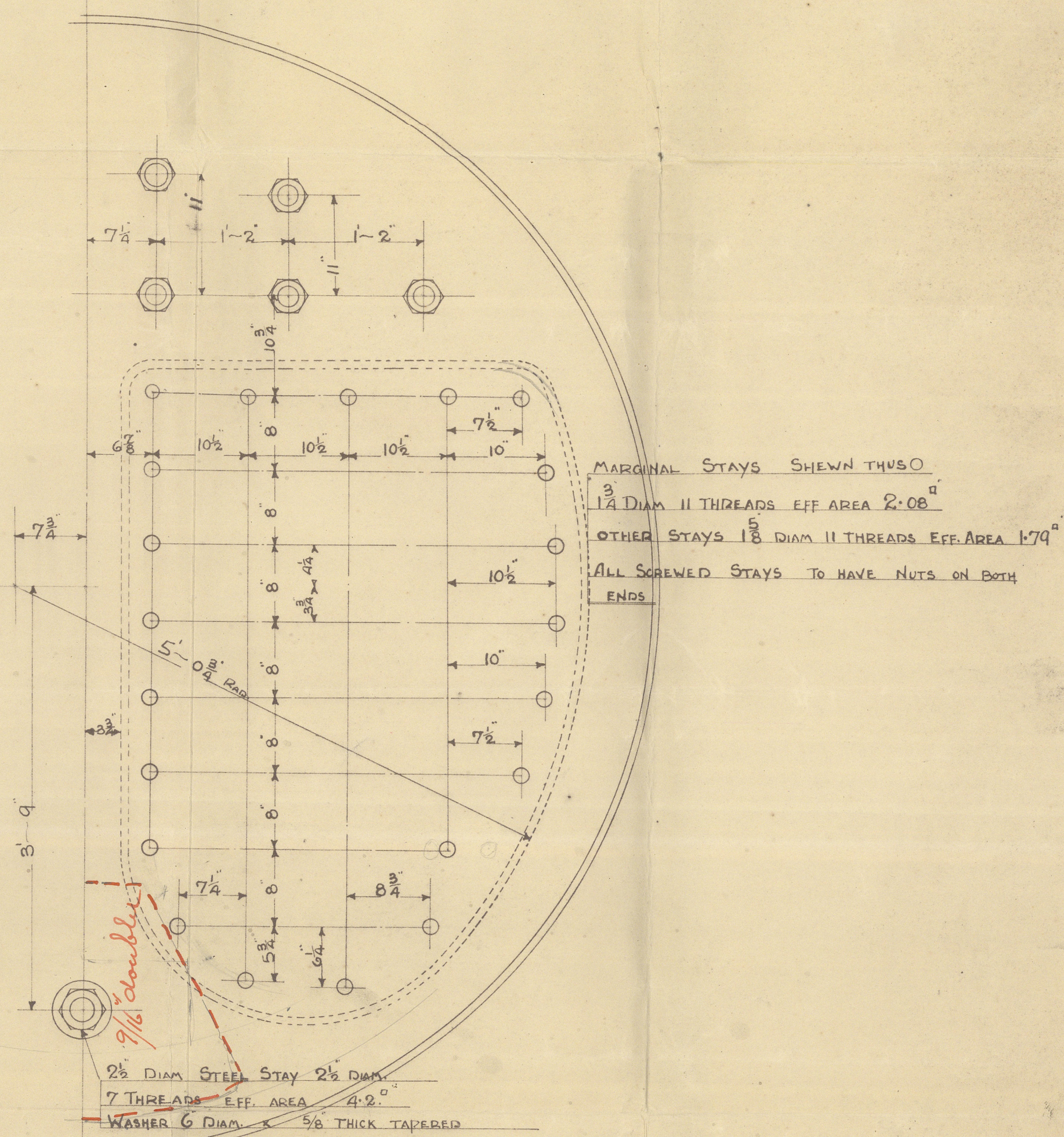
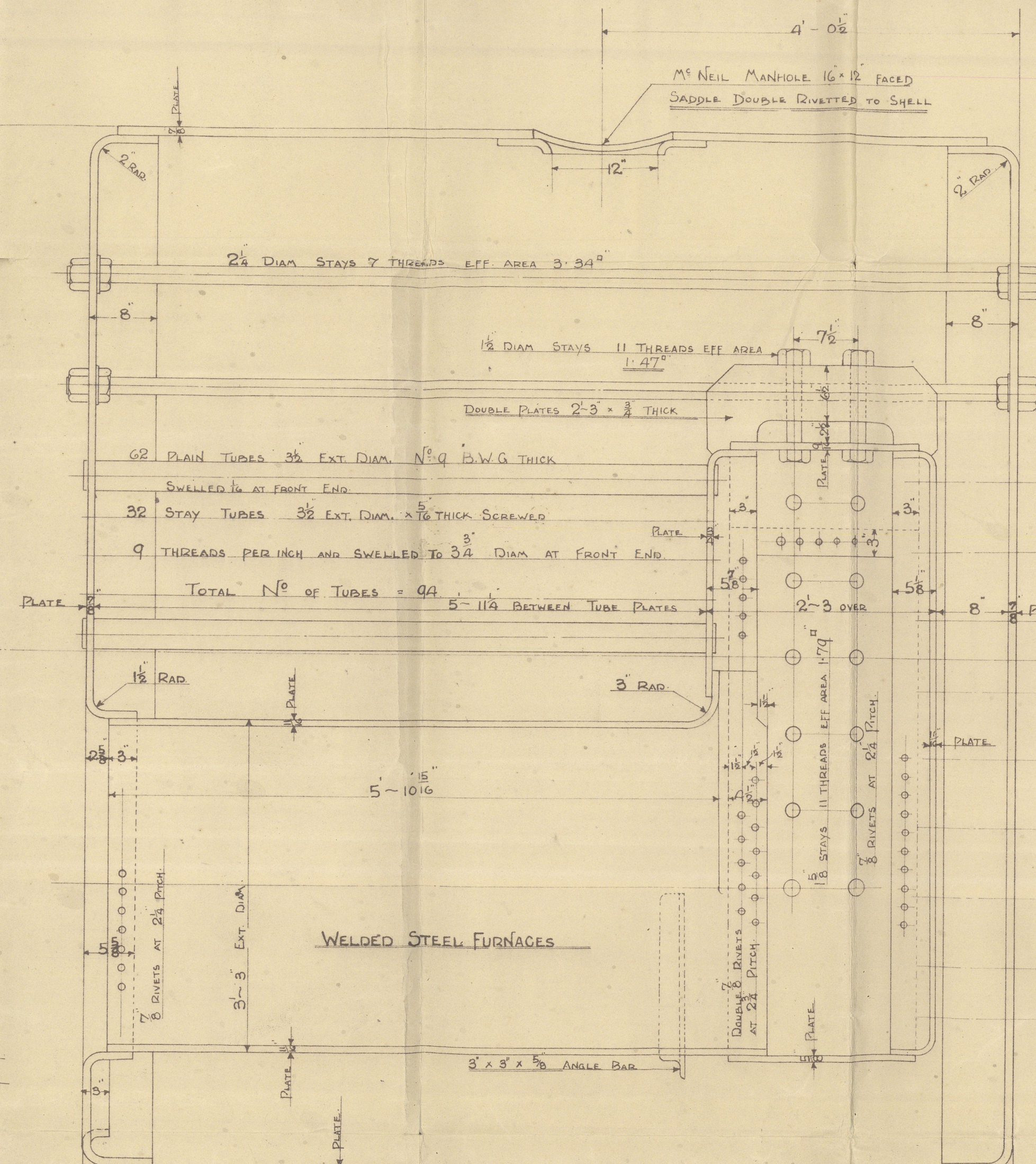
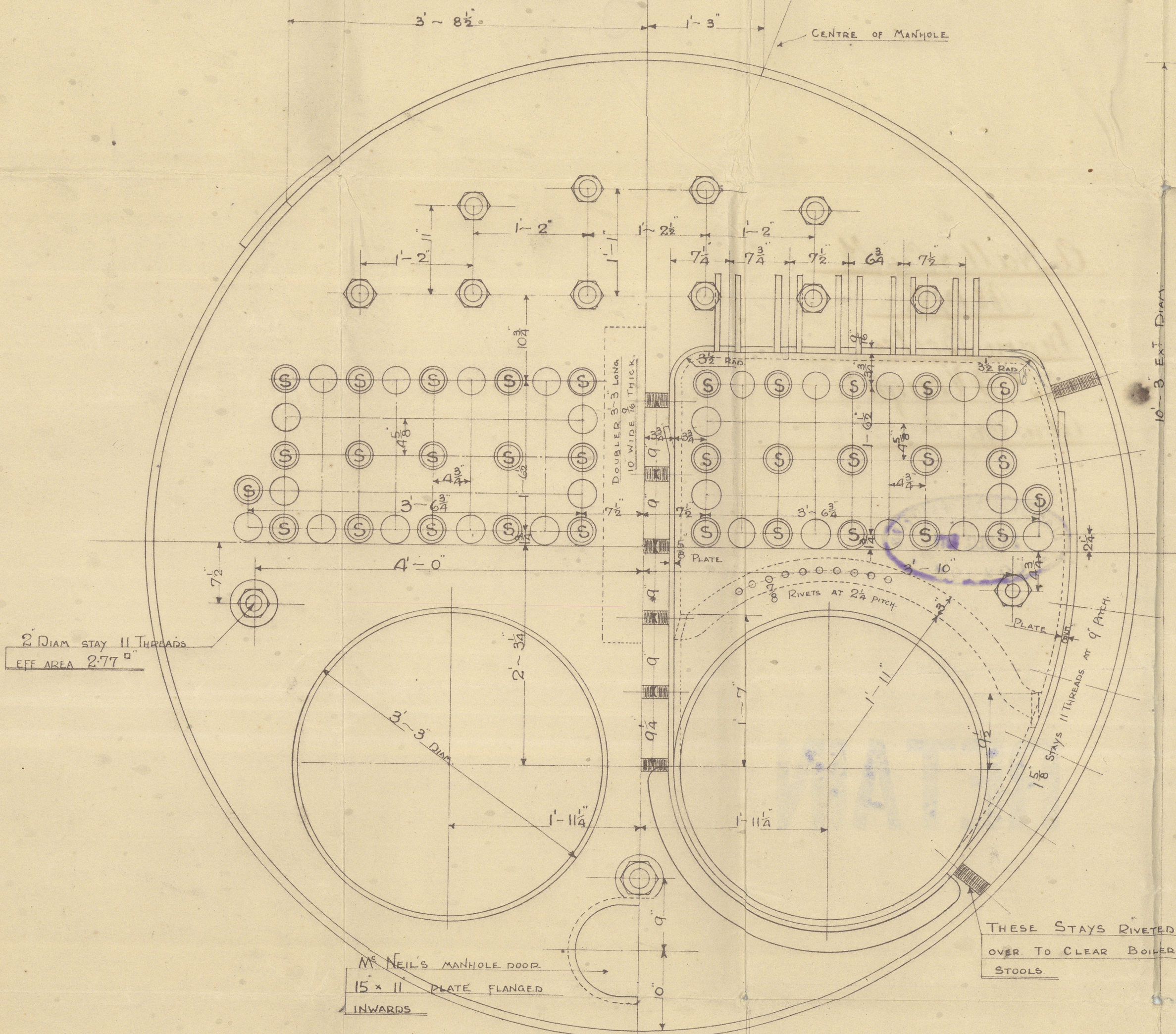


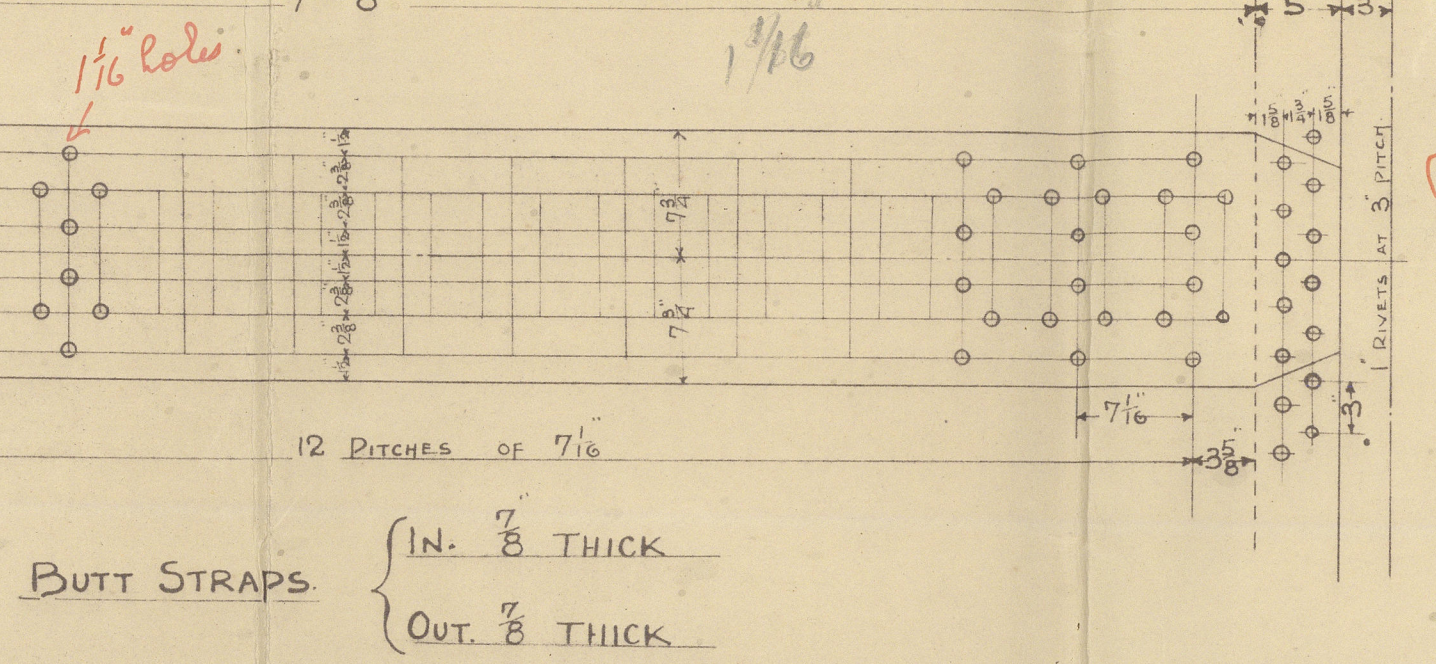
MARINE BOILER 10'-3" DIAM 9'-0" LONG. WORKING PRESS. 180 LBS PER SQ. INCH. TO LLOYDS REQUIREMENTS. SCALE 1 INCH TO A FOOT.

22/12/11

ALL RIVETS PLATES & STAYS OF STEEL
TUBES OF IRON TENSILE STRENGTH OF
SHELL PLATES & BUTT STRAPS 28 TO 32 TONS
- PER SQ. INCH -



LONGITUDINAL	PLATE BETWEEN RIVETS	$P.D. \times 100 = 7.0625 - 1.06 \times 100 = 84.9\%$
SEAM	RIVETS	$P = 7.0625$
	$N.A. \times 85 \times 7$	$4 \times 886 \times 85 \times 7 = 85.3\%$
	$7 \times T \times 4$	$7 \times 0.625 \times 875 \times 4$
SHELL 121.25 DIAM	$C \times (14-2) \times 84.9$	$22 \times 12 \times 84.9 = 184 \text{ LBS.}$
	121.25	121.25
END PLATES IN STEAM SPACE	$\frac{C \times T^2}{P^2 + P^2} = \frac{175 \times 146}{210.25 + 169} = 175 \times 146 = 181 \text{ LBS.}$	
STAYS 1'-2 1/2" x 1'-1"	$\frac{C \times T^2}{P^2 + P^2} = \frac{175 \times 146}{210.25 + 169} = 175 \times 146 = 189.6$	
MAIN STAYS 2 1/2" DIAM 7 THREADS EFF. AREA 3.34	$\frac{10400 \times 3.34}{14.5 \times 13} = 184 \text{ LBS.}$	
WIDE SPACE BETWEEN NESTS OF TUBES	$\frac{140 \times 18 1/2}{15} = 213 \text{ LBS.}$	
WIDE SPACE BETWEEN C.C. BACKS	$\frac{135 \times 196}{(13.75 \times 8^2) - 2} = 208 \text{ LBS.}$	
C.C. BACKS. PLATE 1 1/2" THICK STAYS 10 1/2" x 8	$\frac{135 \times 121}{(10.5 \times 8^2) - 2} = 188 \text{ LBS.}$	
C.C. SIDES. PLATE 5/8" THICK STAYS 9" x 7 1/2"	$\frac{135 \times 100}{(9^2 + 7.5^2) - 2} = 197 \text{ LBS.}$	
C.C. TOPS. PLATE 9/16" THICK STAYS 7 3/4" x 7 1/2"	$\frac{135 \times 81}{(7.75^2 + 7.5^2) - 2} = 188 \text{ LBS.}$	
FURNACES 1 1/2" THICK	$\frac{50(300 \times .69 - 65)}{39} = \frac{50 \times 142}{39} = 182 \text{ LBS.}$	
GIRDERS 6 1/2" DEEP 2 1/2" PLATES STAYS 7 3/4" x 7 1/2"	$\frac{10660 \times 42.25 \times 1.5}{(25.5 - 7.5) \times 7.75 \times 25.5} = 189 \text{ LBS.}$	
C.C. SIDE STAYS 1 1/2" DIAM 11 THREADS EFF. AREA 1.79	$\frac{9000 \times 1.79}{9 \times 7.5} = 238 \text{ LBS.}$	
C.C. TOP STAYS 1 1/2" DIAM 11 THREADS EFF. AREA 1.79	$\frac{8000 \times 1.79}{7.75 \times 7.5} = 210 \text{ LBS.}$	
C.C. BACK STAYS 1 1/2" DIAM 11 THREADS EFF. AREA 1.79	$\frac{9000 \times 1.79}{10.5 \times 8} = 200 \text{ LBS.}$	
C.C. BACK MARGINAL STAYS 11 THREADS EFF. AREA 2.08	$\frac{13.75 \times 10.5}{2} \times 8 = \frac{4000 \times 2.08}{12.72 \times 8} = 187 \text{ LBS.}$	



JOB NO.
178.

HEATING SURFACE IN FURNACES	65 f
" " " C. CHAMBERS	115 f
" " " TUBES	511 f
TOTAL HEATING SURFACE	691 f
GRATE SURFACE 4'-0" BARS	25 f
RATIO OF GRATE TO HEATING SURFACE	= 1:27.



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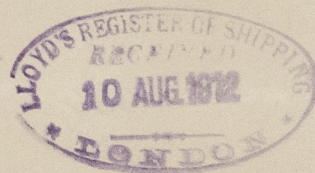
A Hall & Co. L^d

N^o 1248.

Main Boiler.

S.S. "Plough"

Abn rept. N^o 10857.



RETAIN



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Lloyd's Register
Foundation

W1557-0009