

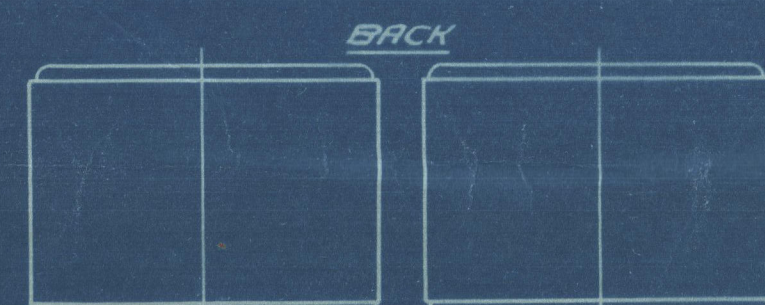
SURFACES ETC.	ONE BOILER	2 BOILERS
TUBES	1520	3040
FIREBOX TOP & SIDES	132	264
" BACK	73	146
" TUBE PLATE	44	88
FURNACES	131	262
TOTAL HEATING SURFACE	1900	3800
CRATE AREA (BARS)	5.63	11.26
TUBE AREA	11.22	22.44
WATER "	136	272
STEAM SPACE	404	808
CRATE AREA HEATING SURFACE		
" " TUBE		
" " AREA		
" " WATER		
" " STEAM SPACE		
% BOILER ABOVE FIRE BOX	32.2	
WEIGHT OF WATER	21 TONS	42 TONS

- RIVETING -			
	LONG. &	BACK END CIRC.	FRONT END CIRC.
RIVET HOLE DIA	1 1/8"	1 1/8"	1 1/8"
PITCH	8" 56.25	3" 31"	3" 2"
% PLATE	85.4	64.2	62.8
% RIVET	91.8	49.2	50.8

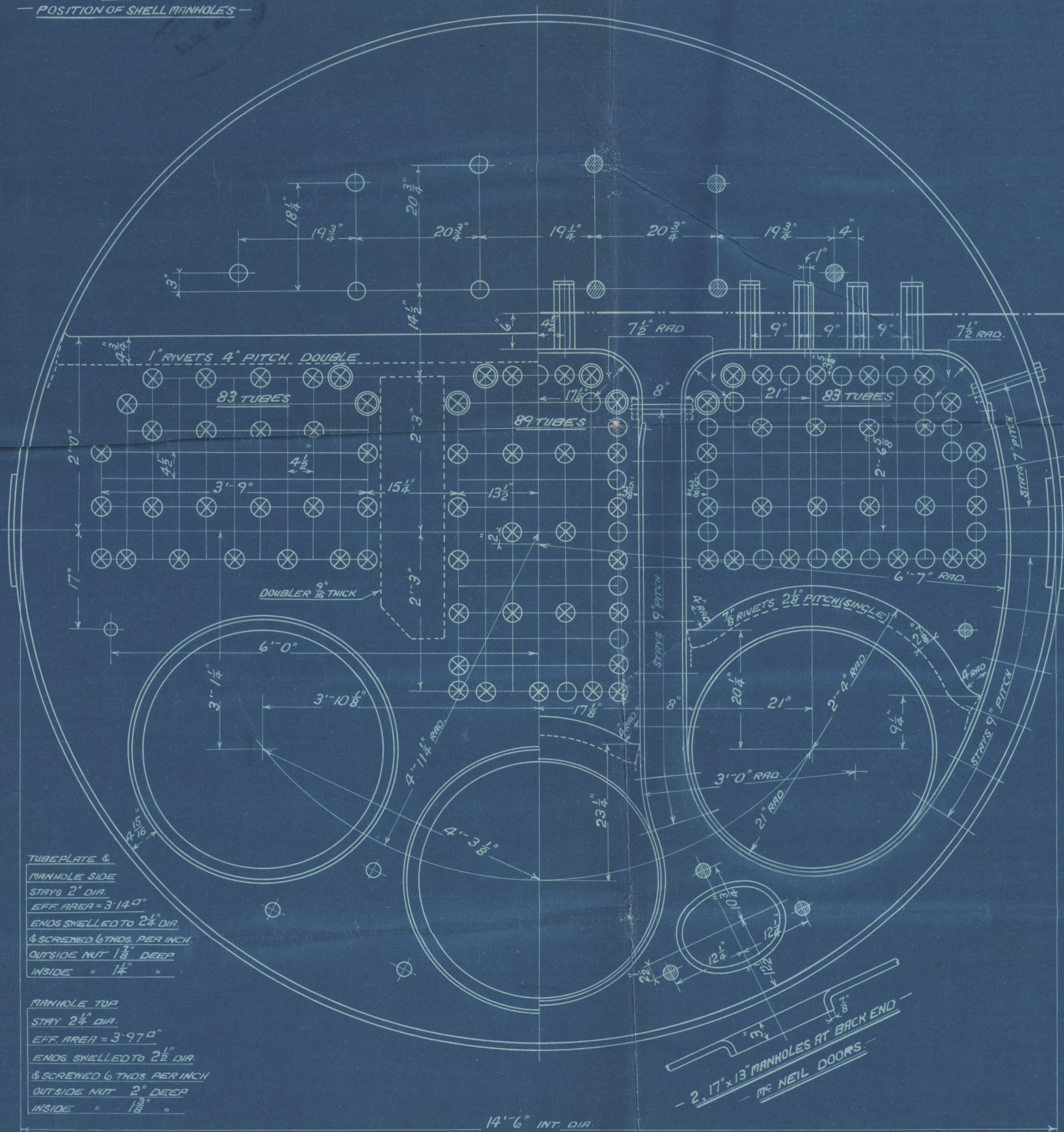
# - LIMITS OF TENSILE STRENGTH & MATERIAL -

SHELL BUTTSTRAPS	28-495 TO 32 TONS	SIEMENS-MARTIN STEEL
GIRDERS	26 " 30 "	
OTHER PLATES	26 " 30 "	
FURNACES	26 " 30 "	
MAIN STAYS	28 " 32 "	
SCREWED STAYS	26 " 30 "	
RIVET BARS	26 " 30 "	

ALL RIVET HOLES DRILLED IN PLACE.  
MAIN STAYS SWELLED AT ENDS BY HYDRAULIC PRESSURE & ANNEALED.



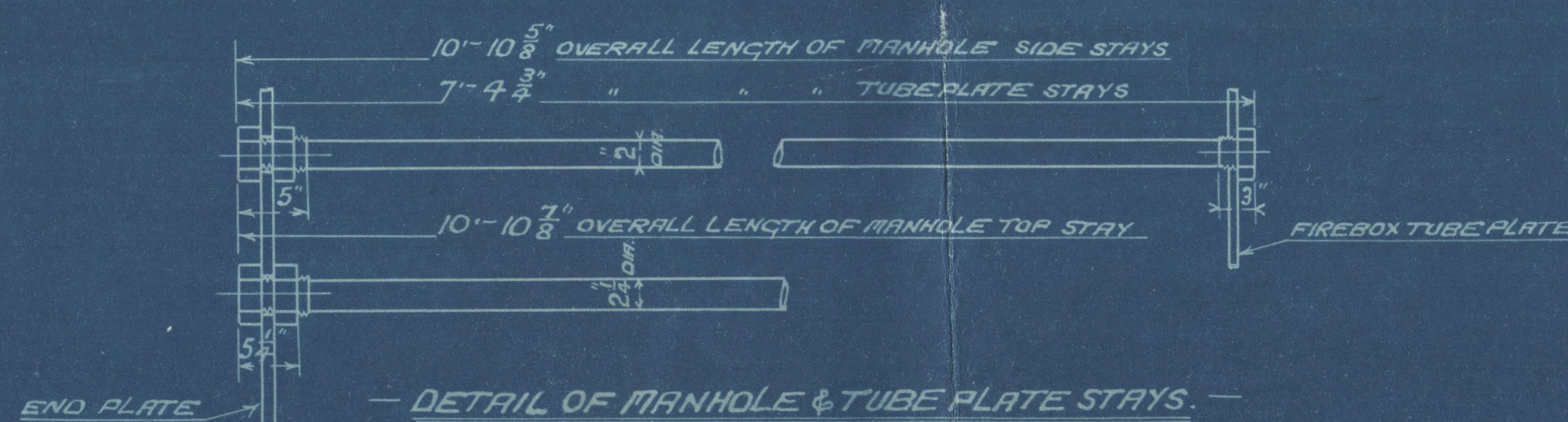
FRONT  
- POSITION OF SHELL MANHOLES -



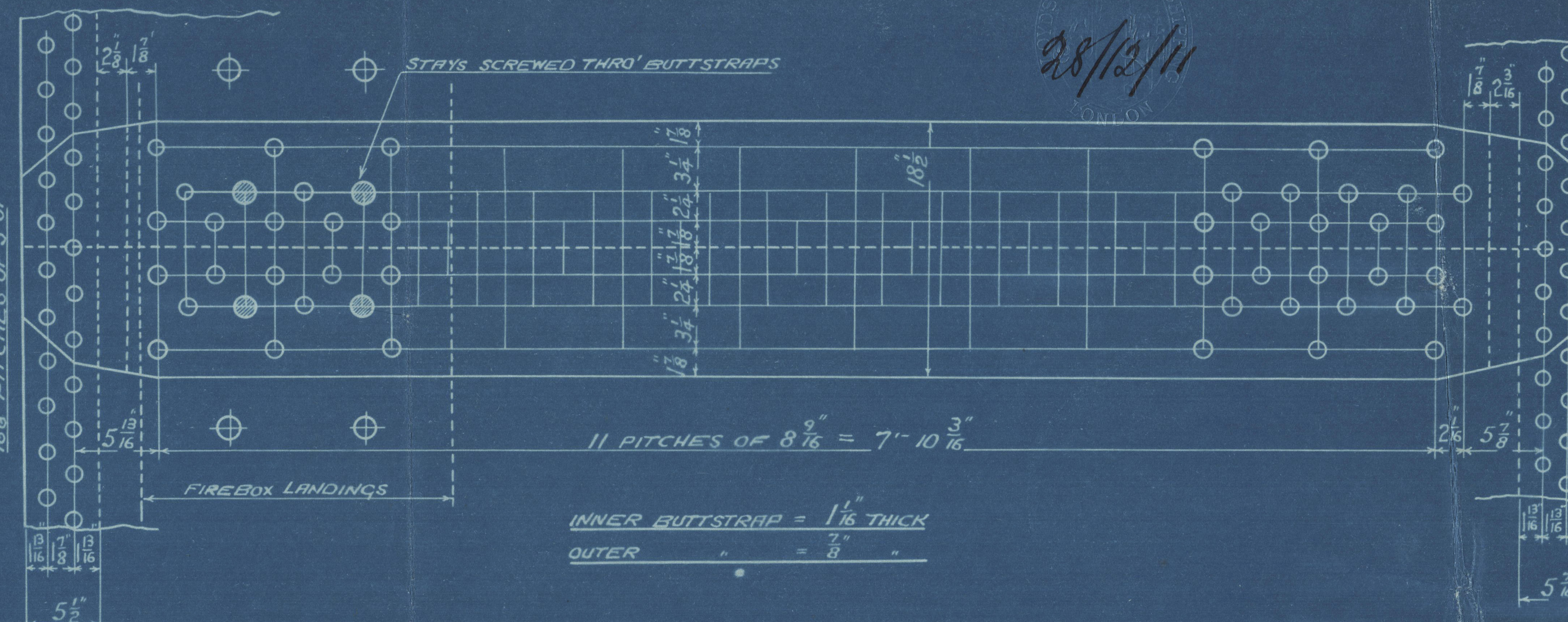
TUBEPLATE & MANHOLE SIDE STAYS 2" DIA. EFF. AREA = 3.14"² ENDS SWELLED TO 2 1/2" DIA. & SCREWED 6 THDS. PER INCH OUTSIDE NUT 1 1/2" DEEP INSIDE " 1 1/2" "

MANHOLE TOP STAY 2 1/2" DIA. EFF. AREA = 3.97"² ENDS SWELLED TO 2 1/2" DIA. & SCREWED 6 THDS. PER INCH OUTSIDE NUT 2" DEEP INSIDE " 1 1/2" "

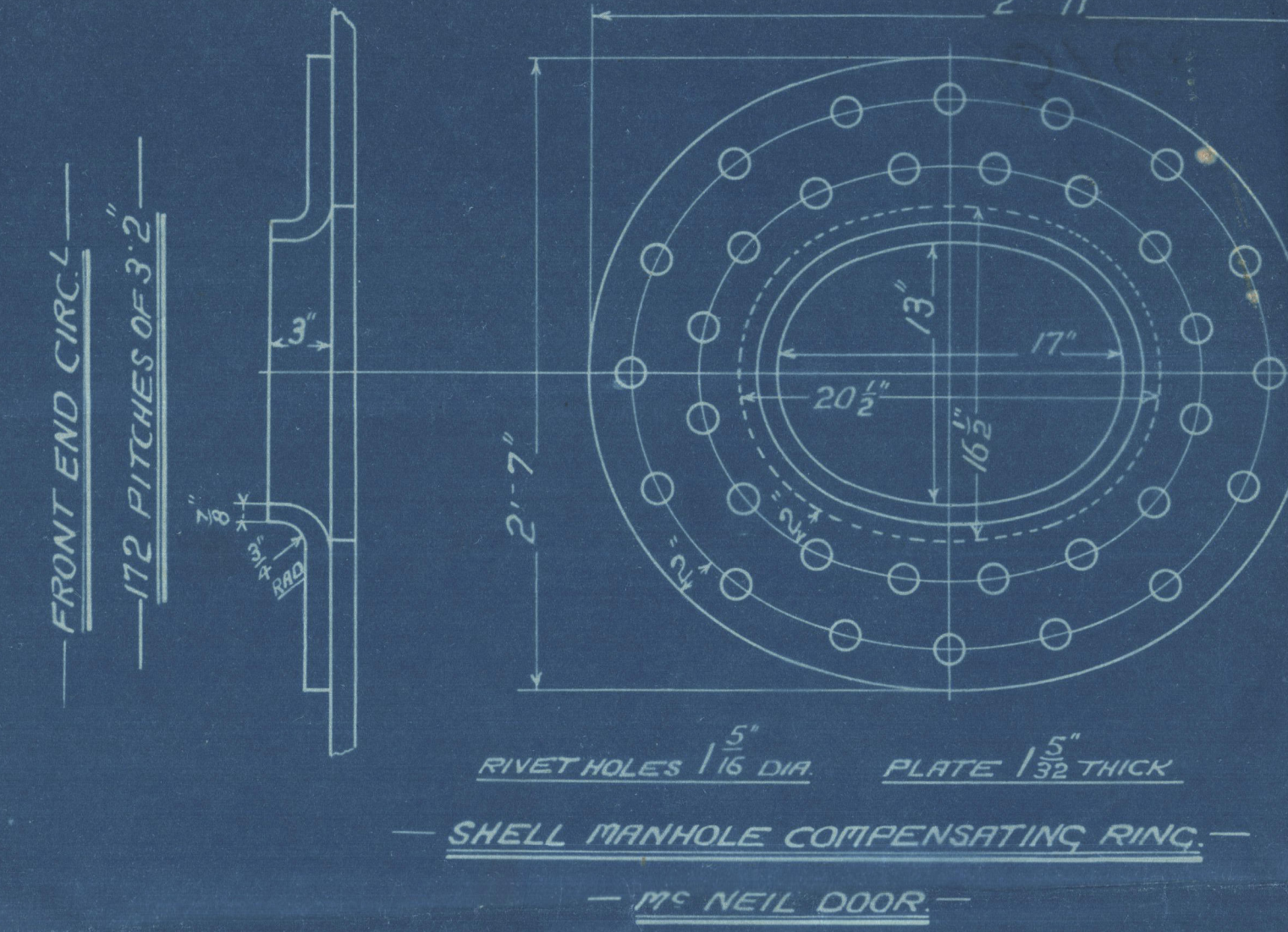
2.17" x 13" MANHOLES AT BACK END - MC NEIL DOORS



- DETAIL OF MANHOLE & TUBE PLATE STAYS -



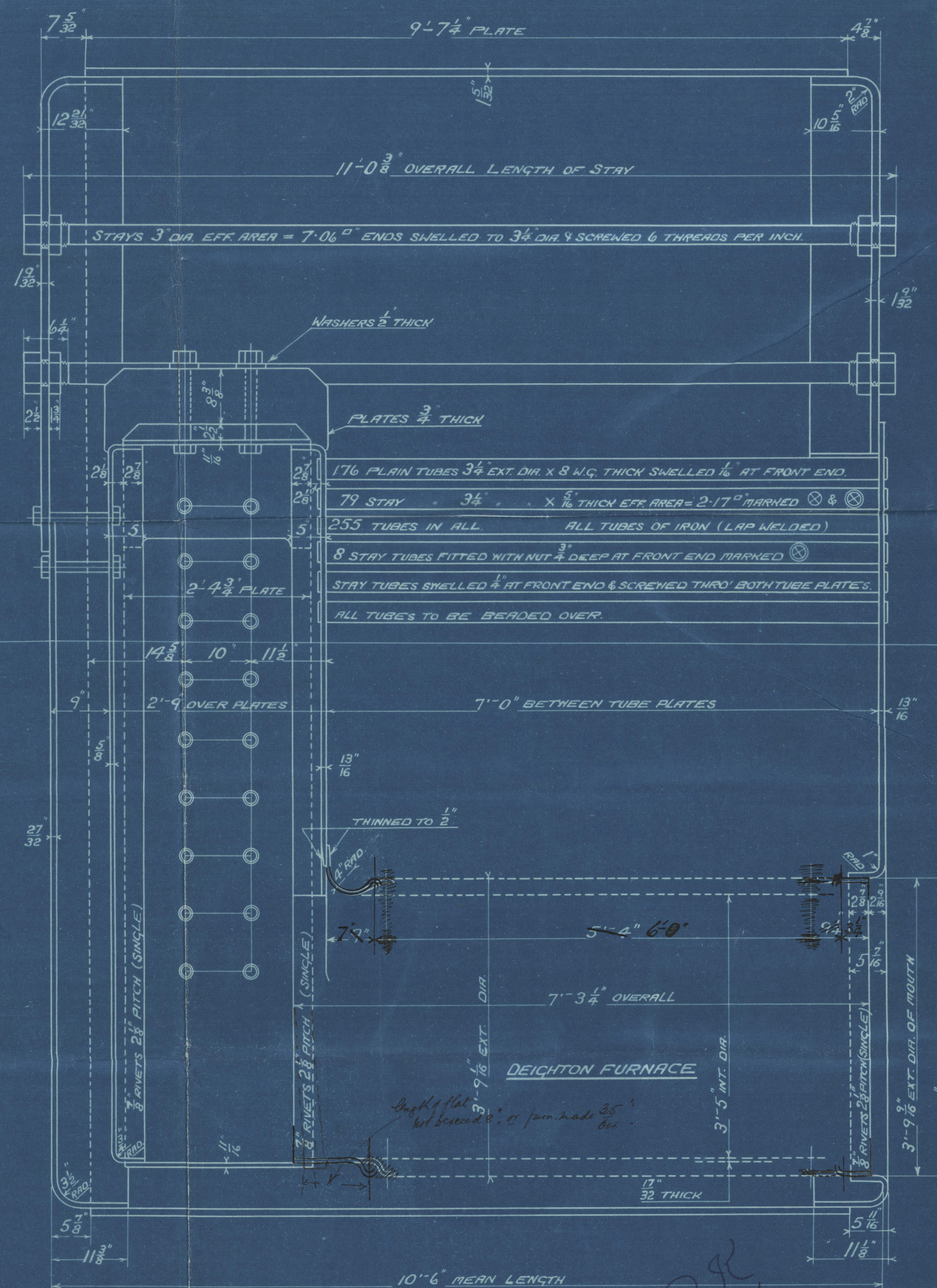
INNER BUTTSTRAP = 1 1/4" THICK  
OUTER " = 1/2" "



RIVET HOLES 1 1/8" DIA. PLATE 1 1/2" THICK

SHELL MANHOLE COMPENSATING RING

- MC NEIL DOOR -



WASHERS 1/2" THICK

PLATES 3/4" THICK

176 PLAIN TUBES 3 1/2" EXT. DIA. x 8 W.G. THICK SWELLED 1/8" AT FRONT END.  
79 STAY " 3 1/2" " x 5/16" THICK EFF. AREA = 2.17"² MARKED ⊗ & ⊙  
255 TUBES IN ALL ALL TUBES OF IRON (LAP WELDED)  
8 STAY TUBES FITTED WITH NUT 1/2" DEEP AT FRONT END MARKED ⊗  
STAY TUBES SWELLED 1/4" AT FRONT END & SCREWED THRU BOTH TUBE PLATES.  
ALL TUBES TO BE BEADED OVER.

THINNED TO 1/2"

2" RADIUS

2" RADIUS

2" RADIUS

2" RADIUS

2" RADIUS

2" RADIUS

2" RADIUS

2" RADIUS

2" RADIUS

2" RADIUS

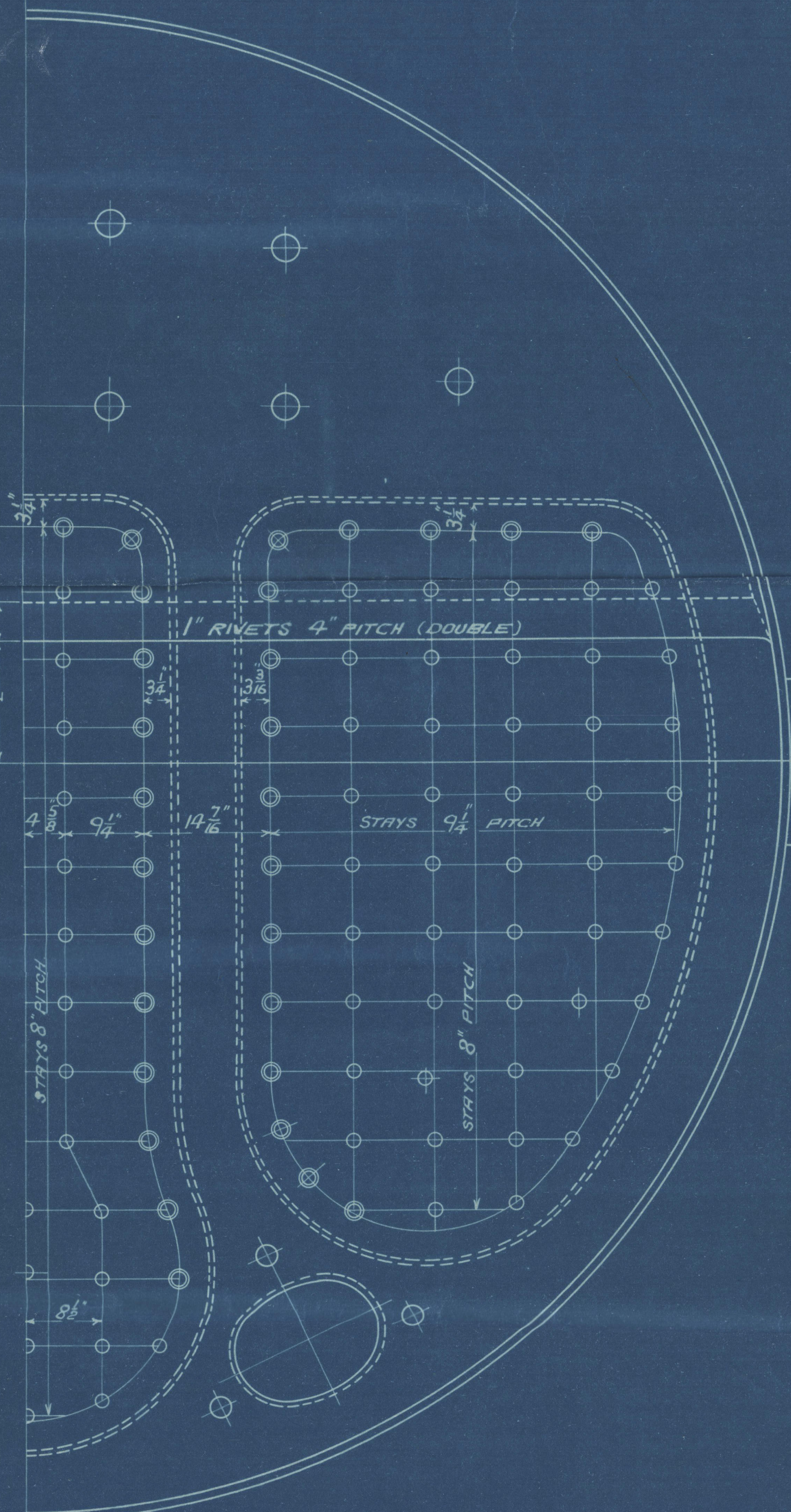
## MAIN BOILER

2 OFF  
B. 179

WORKING PRESSURE 180 LBS. PER SQ. INCH

TO PASS LLOYD'S SURVEY

SCALES 1/8" 1 1/2" = ONE FOOT.



- FIREBOX STAYS - STEEL

POSITION	MARK	DIA.	EFF. AREA
BACK	○	1 1/8"	1.76"²
TOP, SIDES & BACK OUTER ROWS	⊙	1 1/8"	2.07"²

ALL STAYS SCREWED THRU BOTH PLATES AND NUT FITTED AT EACH END.  
ALL 1 1/8" x 1 1/8" NUTS 1" DEEP EXCEPT ON GIRDER TOPS  
WHERE THE OUTSIDE NUTS ARE 1 1/2" DEEP

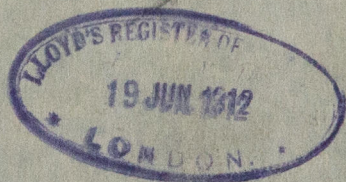
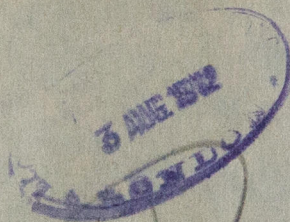
15/66C  
5020  
TRAILED 21st DEC. 1911





D Houston & Co  
Boiler 179-

GLASGOW REPORT No. 31579.



$\frac{5}{8}$  "Fregath"  
Greenock Report No 16301

Now named **REHREA**



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Lloyd's Register  
Foundation