

HEATING SURFACE.

TUBES 1987.

FURNACES 156.

COMBUSTION CHAMBERS. 238

TUBE PLATES 86

ONE BOILER 2467 229 sq. inches

TOTAL IN THREE BOILERS 7401 687 sq. inches

WORKING PRESSURE 130 LBS PER SQ INCH. 18,655 lbs. per sq. in.

TEST 350 24,311 lbs. per sq. in.

# BOILER. CONTRACT N<sup>o</sup> 653

MESSRS. SIR W. G. ARMSTRONG, WHITWORTH & CO<sup>Y</sup> S.S. N<sup>o</sup> 306

CONSTRUCTED TO PASS LLOYD'S. BOARD OF TRADE & HAMBURG LAW REQUIREMENTS.

3. OFF THIS.

SCALE 1" = ONE FOOT.



MATERIAL MANUFACTURED BY

PLATES STEEL

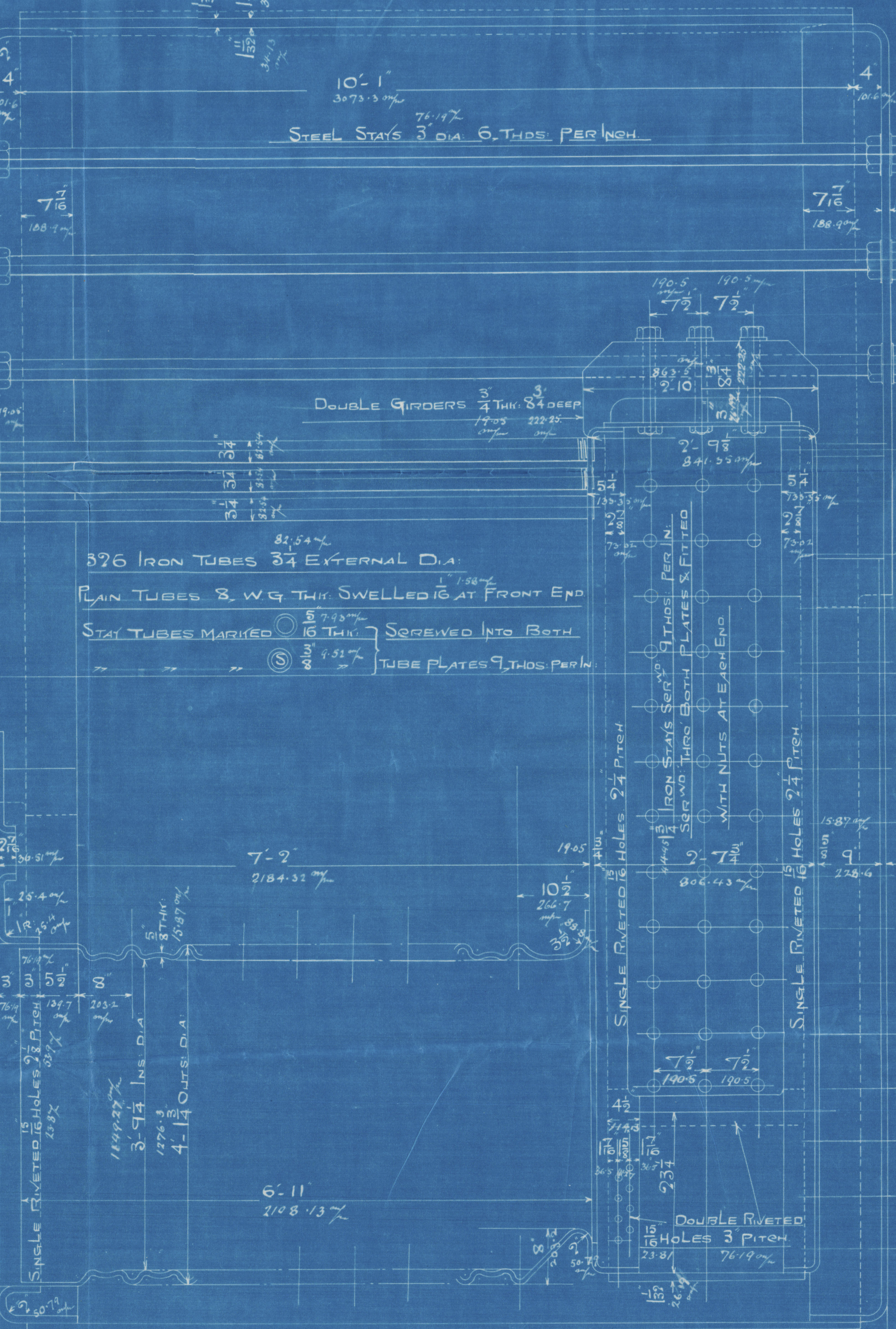
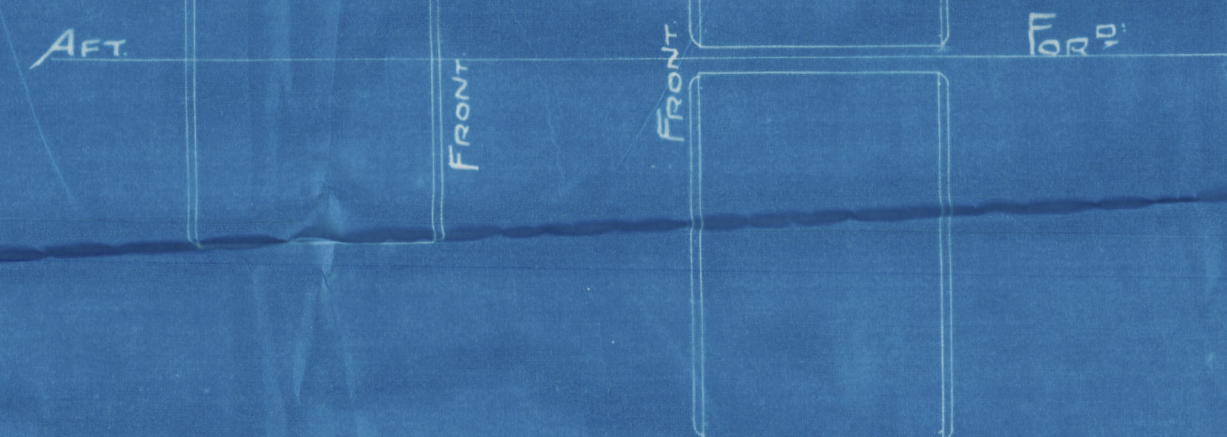
RIVETS --

LONGITUDINAL STAYS --

SCREW -- IRON

TUBES --

SPARE GEAR  
20 BOILER TUBES



## PLAN OF SHELL RIVETING.

STRENGTH OF JOINT

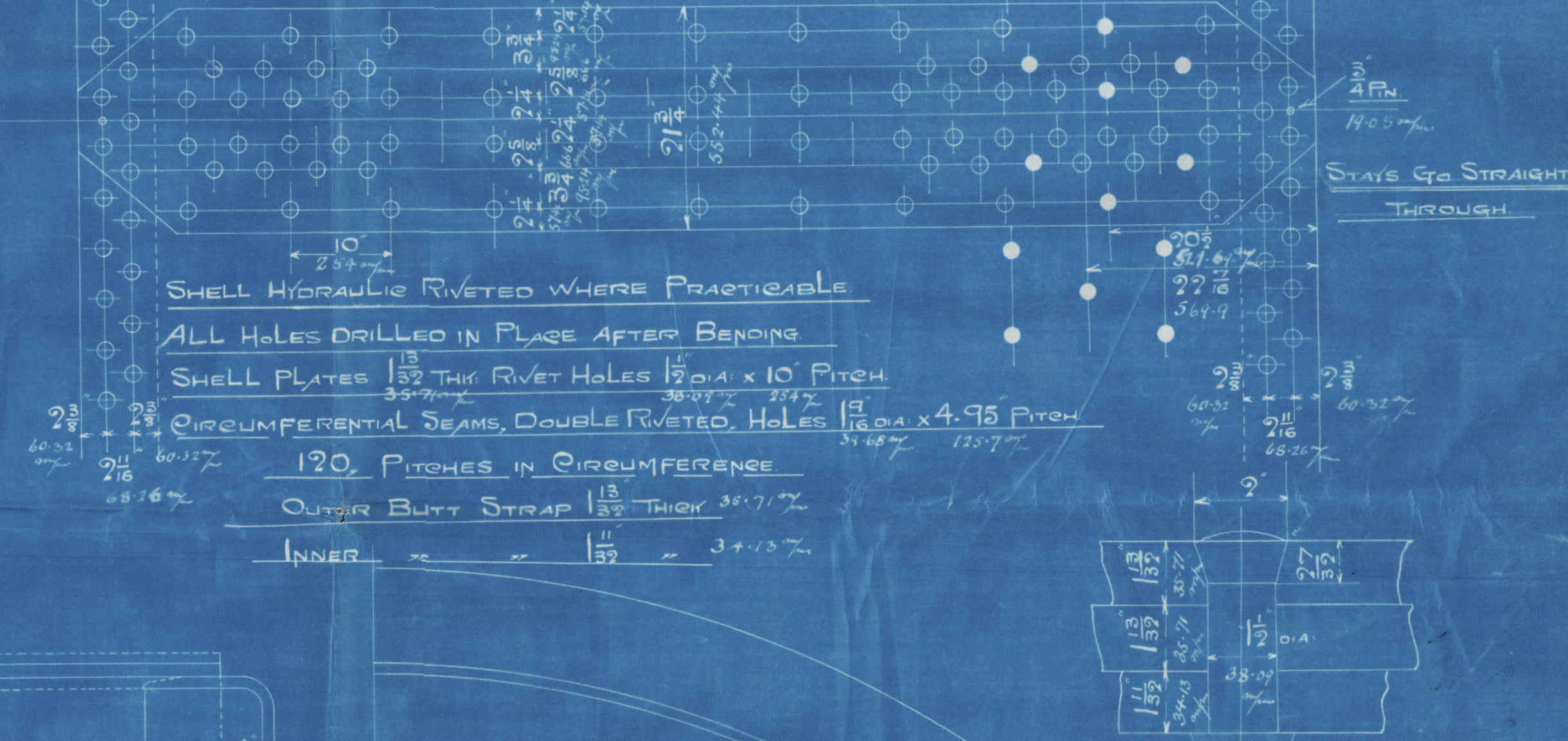
PLATE = 85%

RIVET =

= 87.2 B OF TRADE (4.5 FACTOR)

STRESS IN -- = 6.78 KILS. PER SQ CM. HAMB. LAW

TENSILE STRENGTH OF SHELL & BUTT STRAPS 22 TO 25 TONS PER SQ IN.



SHELL HYDRAULIC RIVETED WHERE PRACTICABLE

ALL HOLES DRILLED IN PLACE AFTER BENDING

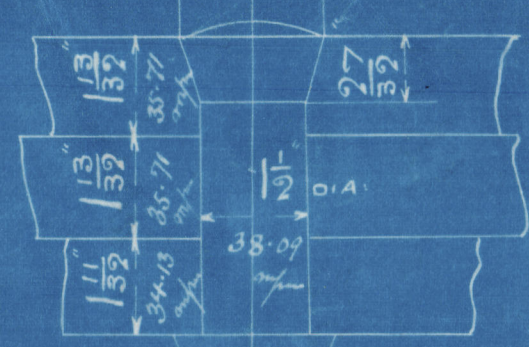
SHELL PLATES 1 1/2 THICK RIVET HOLES 1 1/2 DIA. x 10' PITCH

CIRCUMFERENTIAL SEAMS, DOUBLE RIVETED. HOLES 1 1/2 DIA. x 4.95 PITCH

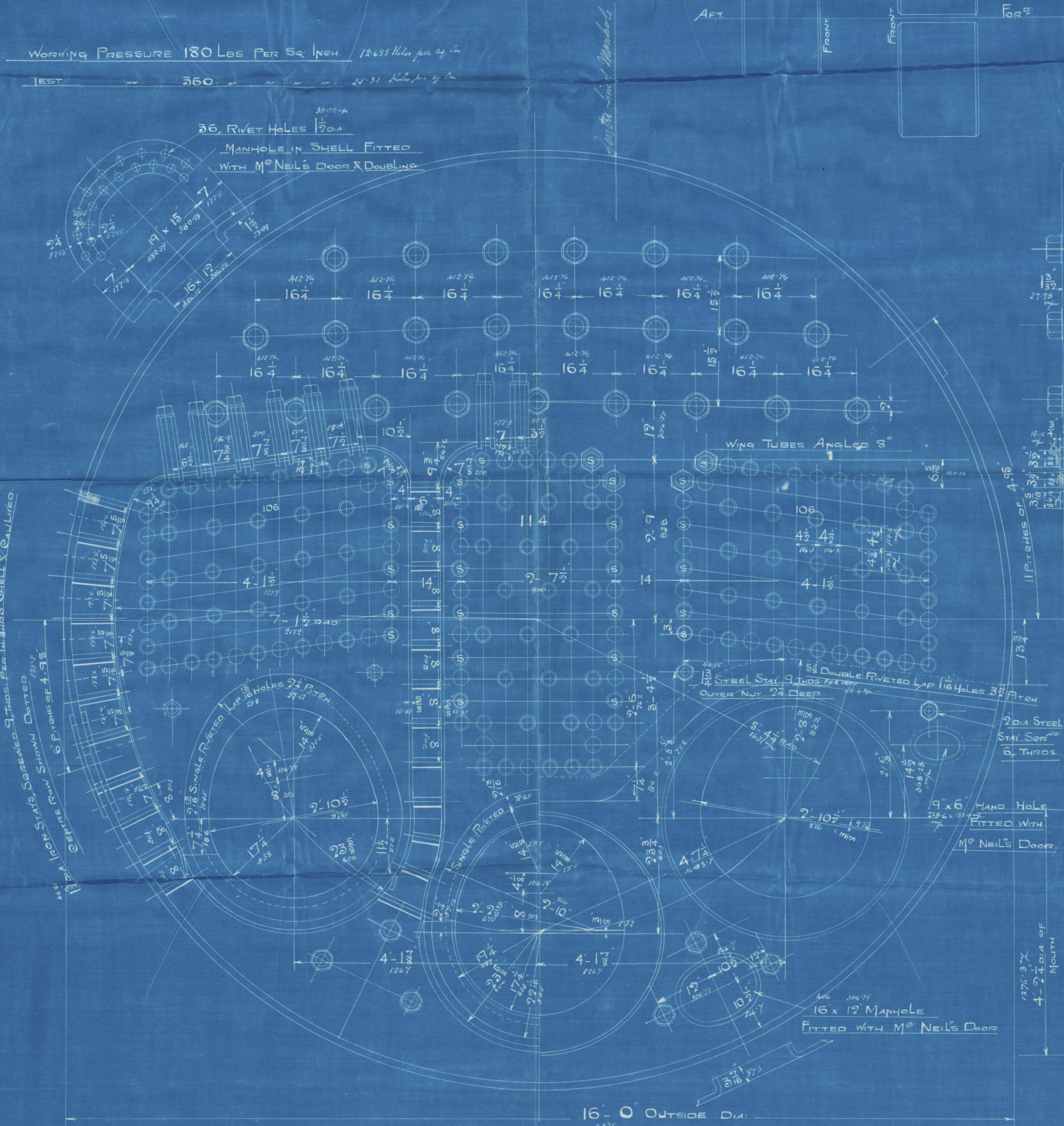
120 PITCHES IN CIRCUMFERENCE

OUTER BUTT STRAP 1 1/2 THICK 35.7 PITCH

INNER 1 1/2 34.1 PITCH



BUTT STRAP RIVETS THUS



100% IRON STAYS, SCREWED 9 THOS. PER INCH. SHELL & CULINDO  
CENTRAL ROW SHOWN DOTTED  
6 PITCHES 4.95

16'-0" OUTSIDE DIA.

10'-9" MEAN LENGTH  
3276.5"

44.45%  
1 1/2 DIA. IRON STAYS SCREWED 9 THOS. PER INCH MARKED  
SEREWED THRO' BOTH  
PLATES & FITTED WITH NUTS  
EACH END



Armstrong Whist<sup>12</sup>

45 N° 806

Wallsend Slip 6°

653

180

Joya Marie  
Newcastle-on-Tyne

P 55484

N° 7661
360 lbs
YY 17/1/08



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Lloyd's Register  
Foundation

W553-0202