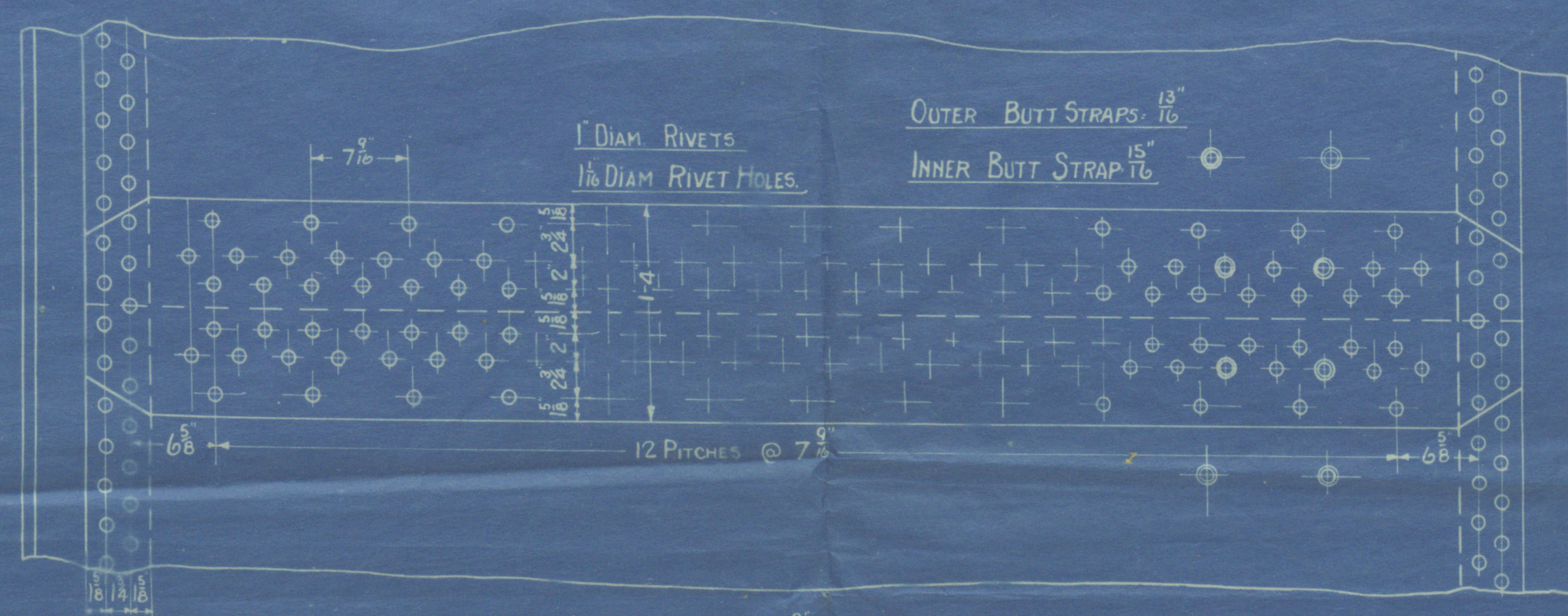


TUBE PLATE STAY: 2" DIAM. SOLID STEEL STAY. SCREW'D 6 THDS/INCH. FITTED WITH NUTS 2" DEEP OUTSIDE & 1 1/2" DIAM. INSIDE.

BACK PLATE STAY: 2 1/2" DIAM. SOLID STEEL STAY. SCREW'D 6 THDS/INCH. FITTED WITH 2 1/2" NUTS OUTSIDE & 1 1/2" NUTS INSIDE WITH BEVELLED WASHERS.



HEATING SURFACES	
TUBES	948
FURNACES	75.6
WRAPPER PLATES	80.5
COMBUSTION CHAMBER BACK	48.8
INNER TUBE PLATE	27.1
TOTAL HEATING SURFACE	1180.0
GRATE AREA (5-3 BARS IN 2 LENGTHS)	34.4
RATIO OF HEATING SURFACE TO GRATE AREA	34.2:1

TENSILE STRENGTH OF SHELL PLATES GIRDERS & BUTT STRAPS	
ALL OTHER PLATES	26 TO 30
SOLID STEEL STAYS	28 TO 32
SCREW'D	26 TO 30
STEEL RIVETS	26 TO 30

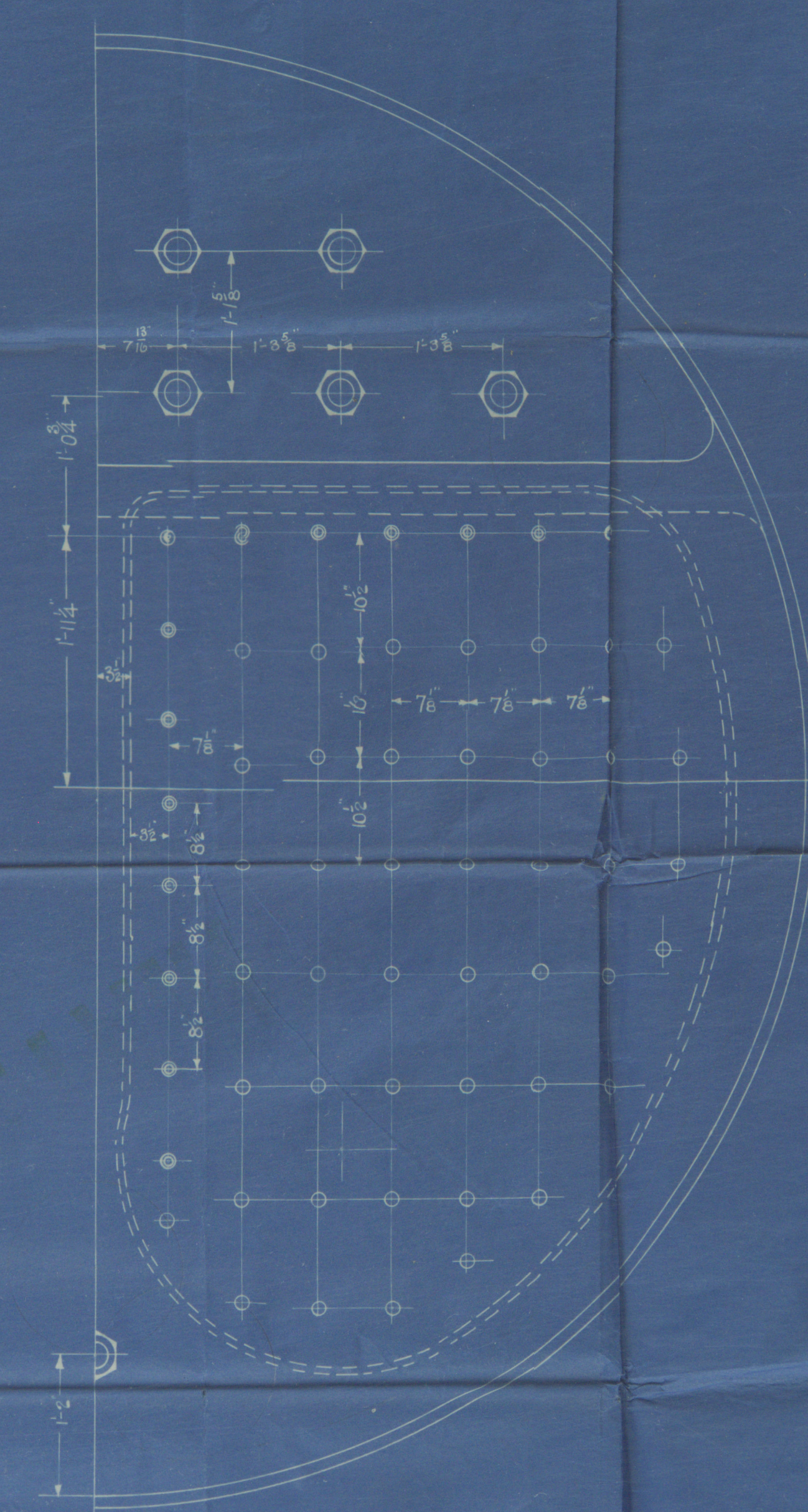
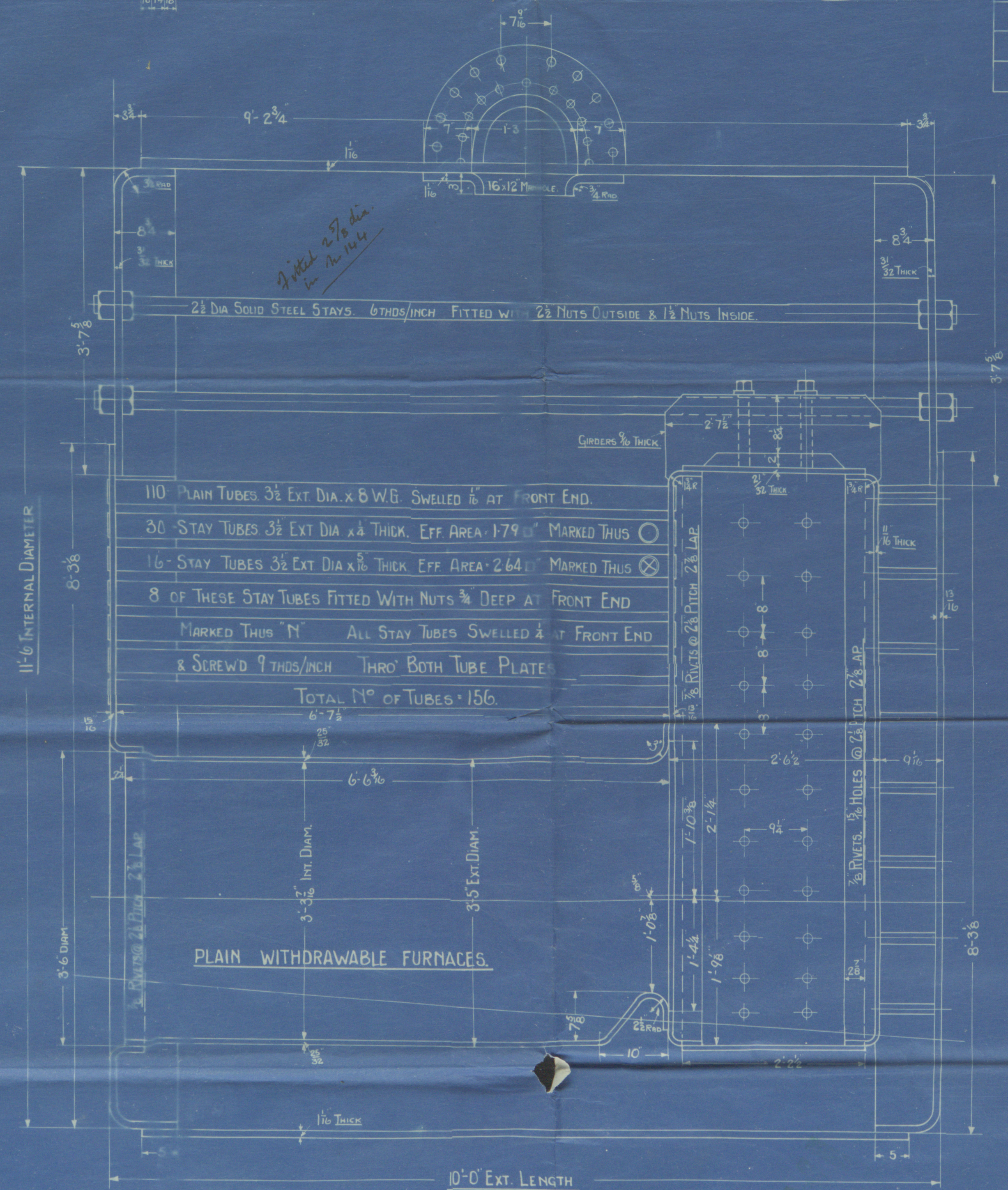
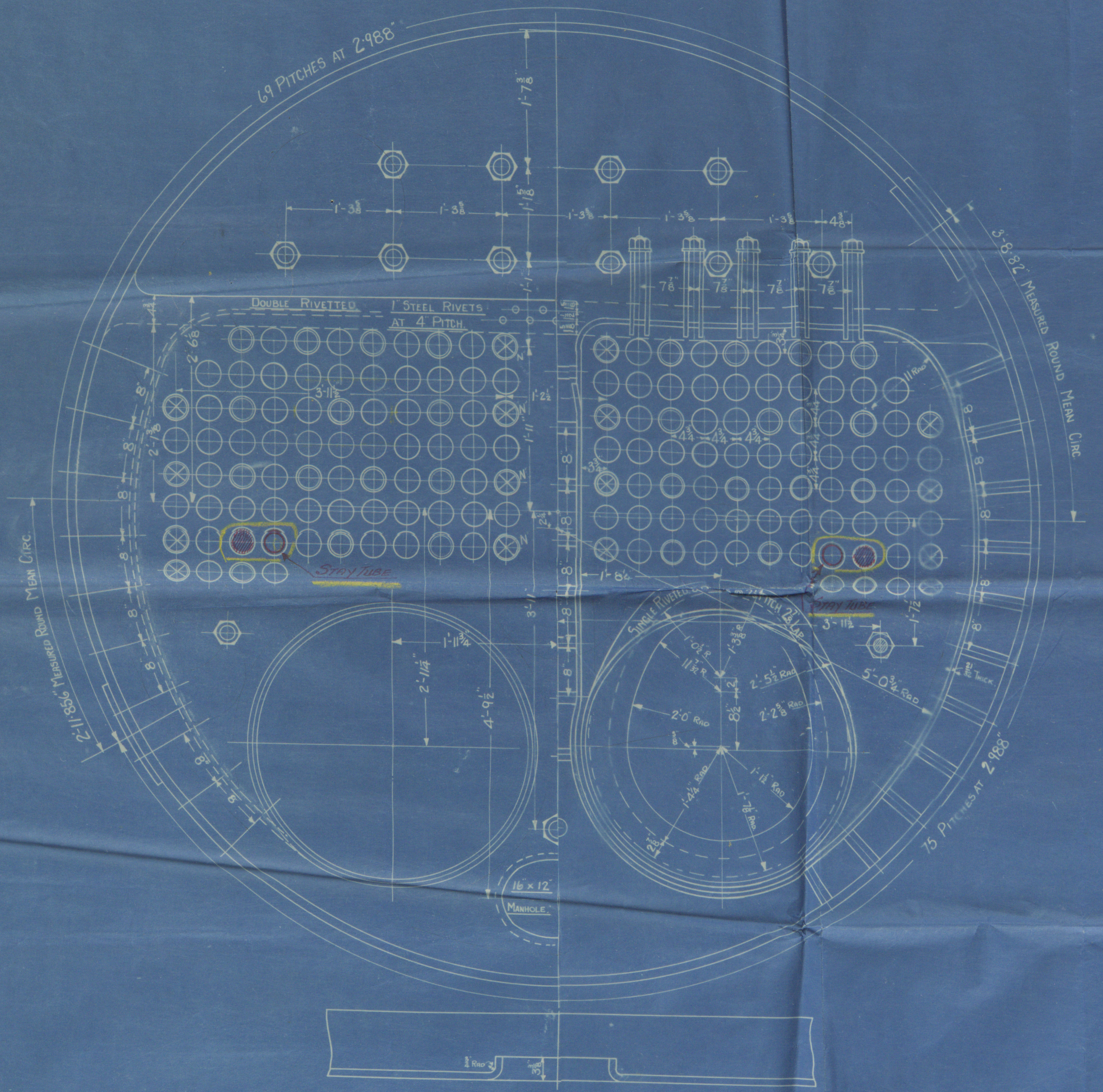


PLATE SECTION	$\frac{100(7.5625 - 1.0625)}{7.5625}$	85.9%	1" RIVETS
RIVET SECTION	$\frac{100(23 \times 884 \times 5 \times 1.875)}{28 \times 7.5625 \times 1.0625}$	84.9%	1 1/2" HOLES 7 1/2" PITCH
COMBINED PLATE & RIVET SECTION	$\frac{100(7.5625 - 2 \times 1.0625)}{7.5625} + \frac{100(23 \times 884 \times 5 \times 1.875)}{28 \times 7.5625 \times 1.0625}$	88.7%	
SHELL	$\frac{(34 - 2) \times 28 \times 24.9}{275 \times 138}$	200.5 lbs	1 1/2" THICK
MAX. PITCH OF RIVETS	$\frac{(6 \times 1.0625) \times 1.56}{8}$	8"	8" PITCH
BUTT STRAPS	$\frac{5 \times (7.5625 - 1.0625)}{8 \times (7.5625 - 2.125)} \times 10625$.795	1 1/2" OUTER 1 1/2" INNER
FURNACES	$\frac{1450(25-1)^2}{(73.75 \times 24) \times 41}$ OR $\frac{30(10.25-1)^2}{41}$	208.5 lbs	25 3/32" THICK
UPPER END PLATES	$\frac{96(31-1)^2}{15.625 \times 13.625}$	200.5 lbs	31 3/32" THICK
UPPER END PLATE STAYS	$\frac{(25 - 34)^2 \times 9500}{15625 \times 13.625}$	208 lbs	2 1/2" DIA
FRONT TUBE PLATE	$\frac{72(30-1)^2}{165^2 \times 9.5}$ OR $\frac{52(30-1)^2}{11^2 \times 9.5}$	201 lbs 207.5 lbs	15 1/16" THICK
C.C. STAYS BACK ORDINARY	$\frac{(1425 - 267)^2 \times 8250}{10.5 \times 7.125}$	203 lbs	1 1/8" STAYS
C.C. STAY BACK MARGINAL	$\frac{(175 - 267)^2 \times 8250}{10.5625 \times 8.5}$	202 lbs	1 1/8" STAYS
BACK C.C. PLATE	$\frac{(22-1)^2 \times 75}{10.5^2 \times 7.125}$	203 lbs	1 1/16" THICK
BACK PLATE	$\frac{(26-1)^2 \times 86}{14^2 \times 8.5}$	200 lbs	13 1/16" THICK
C.C. TOP	$\frac{(21-1)^2 \times 75}{9.25^2 \times 7.875}$	203.5 lbs	31 3/32" THICK
C.C. SIDES	$\frac{(21-1)^2 \times 75}{9.25^2 \times 8}$	200.5 lbs	21 3/32" THICK
C.C. STAYS TOP	$\frac{(1425 - 267)^2 \times 8250}{9.25 \times 7.875}$	209 lbs	1 1/8" STAYS
C.C. GIRDERS	$\frac{75 \times 495 \times 8.25^2 \times 36}{24 \times 9 \times 10.5 \times 7.675 \times 24}$	204.9 lbs	20 1/2" DIA X 1 1/8"
BACK PLATE AT BOTTOM	$\frac{97.33 \times (26-1)^2}{17^2}$	210 lbs	13 1/16" THICK
BACK STAY	$\frac{(2625 - 34) \times 9500}{\text{AREA } 17 \times 226.98}$	213 lbs	2 1/8" DIA
STAY TUBES ORDINARY	$\frac{179 \times 7500}{11.875 \times 9.5 \times (5 \times 9.62)}$	207.5 lbs	3 1/2" DIA X 1 1/8" THICK
STAY TUBES MARGINAL	$\frac{2.36 \times 7500}{12.495 \times (3 \times 9.62)}$	207.7 lbs	3 1/2" DIA X 1 1/8" THICK
STAY TUBES WING	$\frac{2.36 \times 7500}{10.25 \times 9.5 \times (3 \times 9.62)}$	258	3 1/2" DIA X 1 1/8" THICK
INNER TUBE PLATE	$\frac{38(26-1)^2}{10.687^2}$	208.7 lbw	13 1/16" THICK
BACK C.C. PLATE AT BREAST STAY	$\frac{(26-1)^2 \times 77.33}{12.675^2}$	292 lbw	13 1/16" THICK
BREAST STAY	$\frac{(2 - 34)^2 \times 9500}{\text{AREA } 12 1/2 \times 130.14}$	201 lbw	2" DIA

WORKING PRESSURE = 200 LBS/SQ. IN.

TEST PRESSURE = 350 LBS/SQ. IN.

TO PASS LLOYDS SURVEY.

— BOILER NO 143 + 144 —

— MARINE BOILER 11-6" INT. DIA. X 10'-0" EXT. LENGTH. —

— SCALE 1" = ONE FOOT. —

ORDINARY COMBUSTION CHAMBER STAYS, 1 1/2" DIA SCREW'D 9 THDS/INCH & FITTED WITH NUTS 3" THICK.

MARGINAL C.C. STAYS, 1 1/2" DIA. SCREW'D 9 THDS/INCH. MARKED THUS ⊙ & FITTED WITH NUTS 3" THICK.

STAYS THRO' C.C. GIRDERS 1 1/2" THICK, SCREW'D 9 THDS/INCH & FITTED WITH NUTS 1 1/2" DEEP ON TOP & 3" ON BOTTOM.



J. Lewis & Son, Ltd.

Print N° 13

S. E. Boiler 8 N° 143 & 144

W. 200 lbs/qr

Ships N° 96 & 7

Engines N° 180 & 181

One boiler for each vessel

"Fermanagh"

"Enniskillen"

RETAIN

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WS24-0285

App^d 27.1.26

27/1/26



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