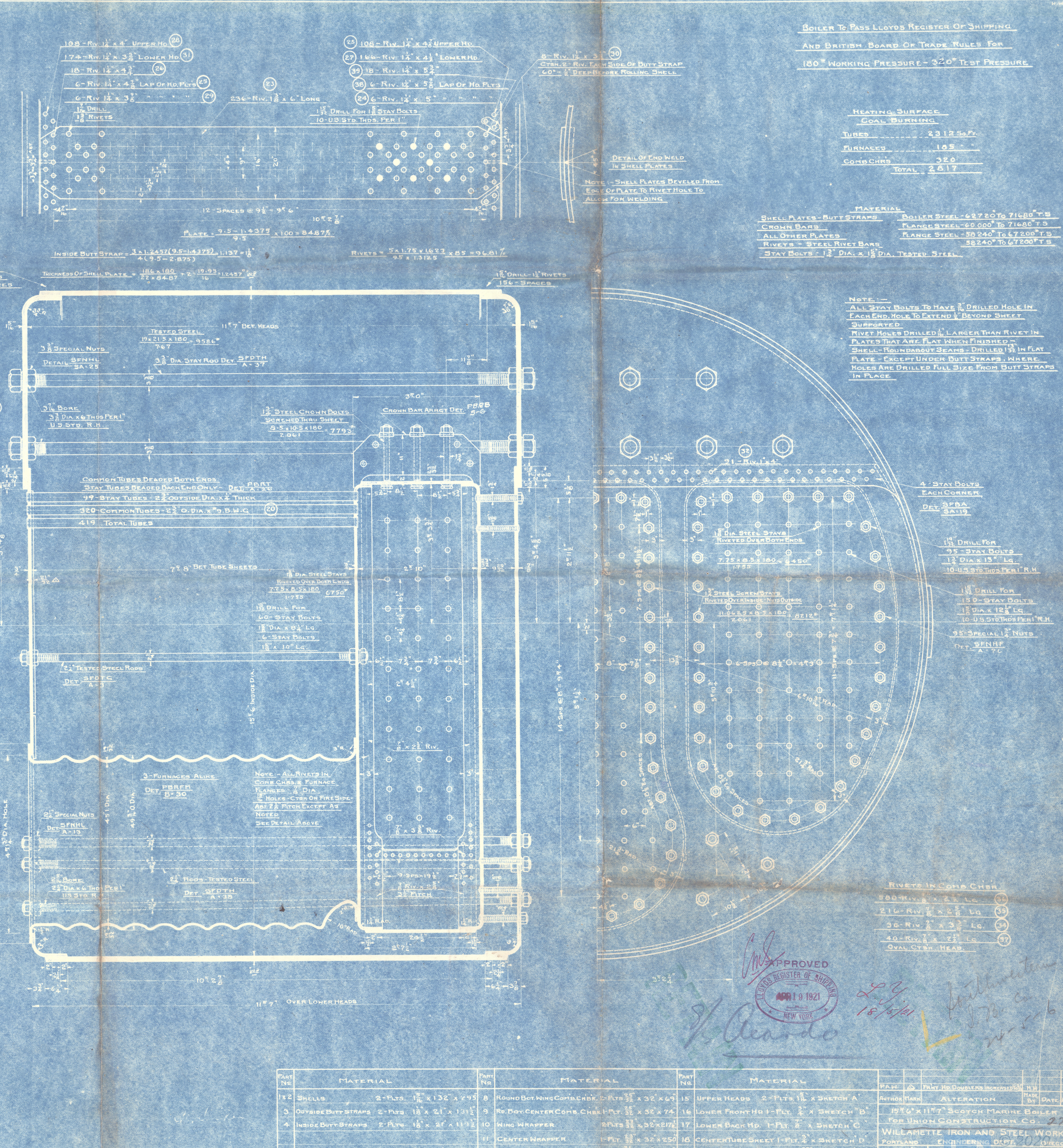
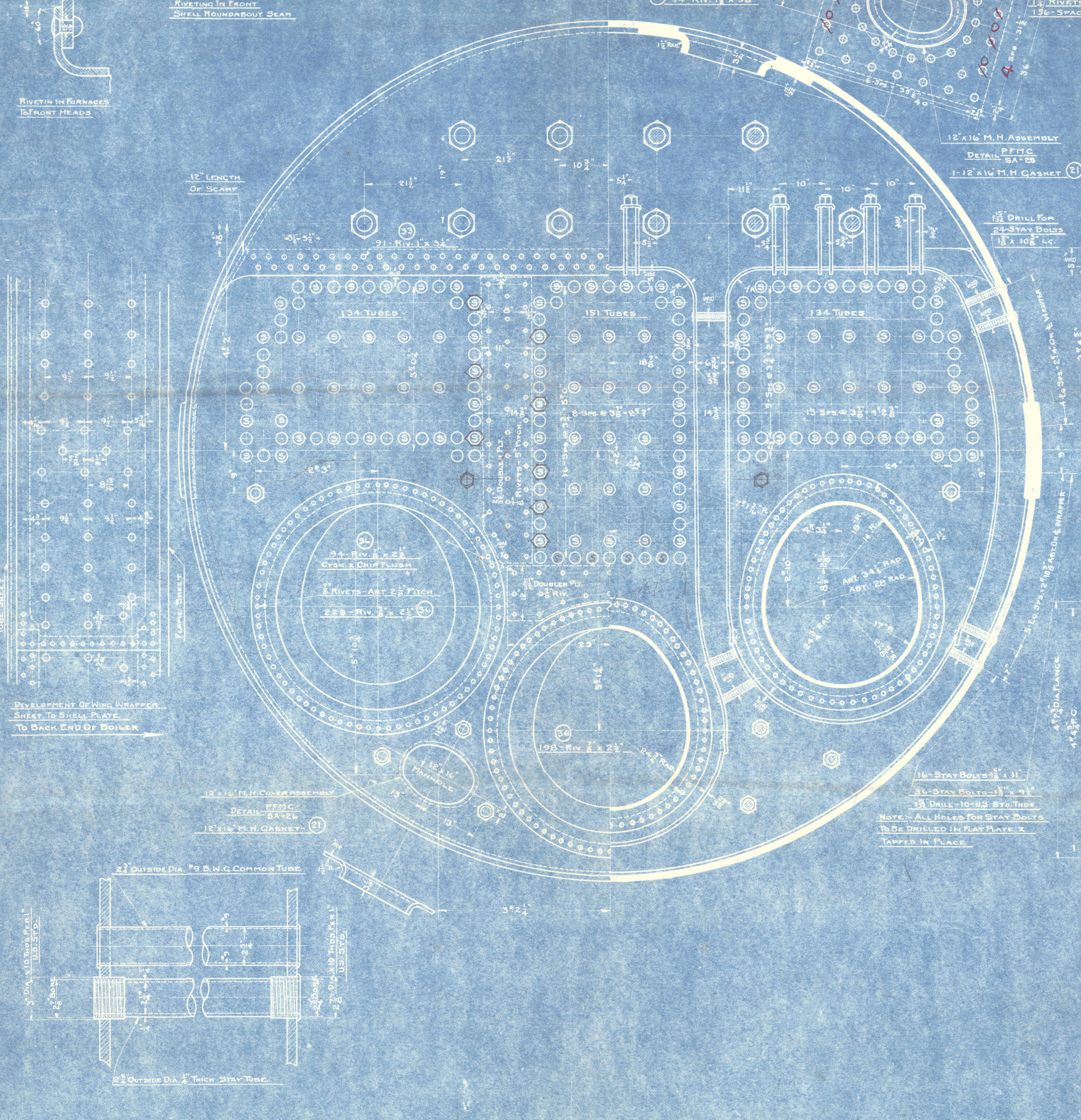
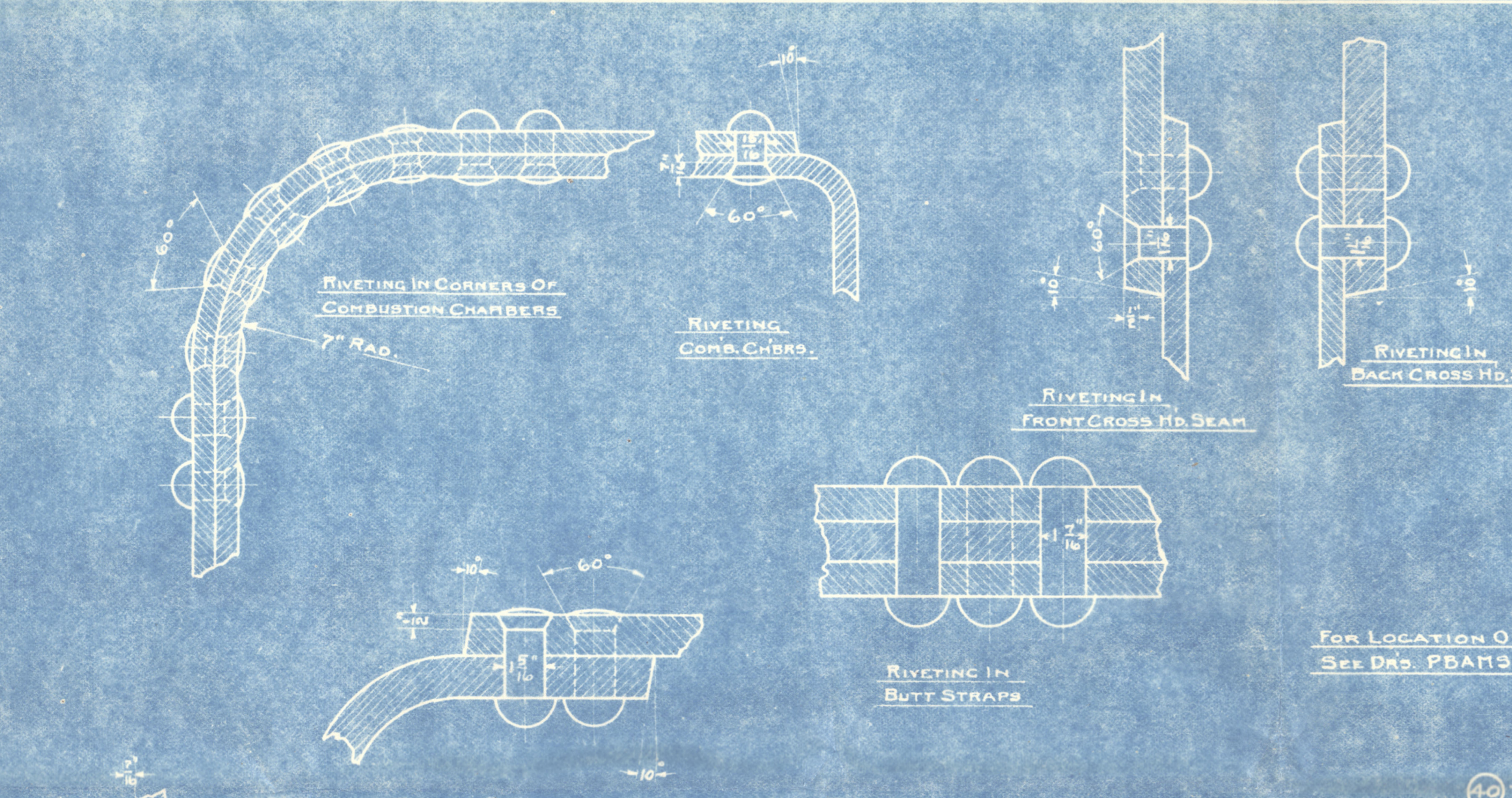


LLOYD'S REGISTER OF SHIPPING RULES			BRITISH BOARD OF TRADE RULES		
ITEM	FORMULA	N.B.	ITEM	FORMULA	N.B.
SHELL	$22 \times (21 \times 2) \times 64 \times 87$		SHELL	$22 \times (21 \times 2) \times 64 \times 87$	182.8
UPPER HEAD	$175 \times 21 \times 2$		UPPER HEAD	$175 \times 21 \times 2$	191.3
WIDE WATER	$140 \times 18 \times 12 \times 3$		WIDE WATER	$140 \times 18 \times 12 \times 3$	182.5
WIDE WATER	$14 \times 3 \times 7 \times 3$		WIDE WATER	$14 \times 3 \times 7 \times 3$	182.5
WIDE WATER	$105 \times 14 \times 2$		WIDE WATER	$105 \times 14 \times 2$	208
WIDE WATER	$25 \times 13 \times 2 \times 2$		WIDE WATER	$25 \times 13 \times 2 \times 2$	208
WIDE WATER	$100 \times 11 \times 2 \times 2$		WIDE WATER	$100 \times 11 \times 2 \times 2$	208
CROWN SHEET	$125 \times 11 \times 2$		CROWN SHEET	$125 \times 11 \times 2$	187.8
CROWN SHEET	$100 \times 9 \times 2$		CROWN SHEET	$100 \times 9 \times 2$	187.8
FLANGE SHEET	$100 \times 11 \times 2$		FLANGE SHEET	$100 \times 11 \times 2$	187.8
FLANGE SHEET	$75 \times 8 \times 2$		FLANGE SHEET	$75 \times 8 \times 2$	223.7
GIRDERS	$10 \times 12 \times 10 \times 15$		GIRDERS	$10 \times 12 \times 10 \times 15$	223.7
GIRDERS	$10 \times 12 \times 10 \times 15$		GIRDERS	$10 \times 12 \times 10 \times 15$	223.7
TUBE SHEET	$1750 \times (1075 \times 2 \times 450) \times 15$		TUBE SHEET	$1750 \times (1075 \times 2 \times 450) \times 15$	22.7
CONCHES	$50 \times (100 \times 70 \times 25 \times 31.2)$		CONCHES	$50 \times (100 \times 70 \times 25 \times 31.2)$	189.5
CONCHES	$125 \times (10 \times 25 \times 2)$		CONCHES	$125 \times (10 \times 25 \times 2)$	189.5
FURNACES	$4.9 \times 10 \times 75$		FURNACES	$4.9 \times 10 \times 75$	189.5



BOILER TO PASS LLOYD'S REGISTER OF SHIPPING	
AND BRITISH BOARD OF TRADE RULES FOR	
180" WORKING PRESSURE - 320" TEST PRESSURE	
HEATING SURFACE	2312.50 SQ. FT.
TUBES	2312.50 SQ. FT.
FURNACES	105.0
CONCHES	320
TOTAL	2617

MATERIAL	
SHELL PLATES - BUTT STRAPS	BOILER STEEL - 60,000 TO 71,600 T.S.
CROWN SHEET	PLATE STEEL - 60,000 TO 71,600 T.S.
ALL OTHER PLATES	PLATE STEEL - 50,000 TO 67,200 T.S.
RIVETS - STEEL RIVET BARS	58,240 TO 67,200 T.S.
STAY BOLTS - 1/2" DIA. X 1/2" DIA. TESTED STEEL	

NOTE: - ALL STAY BOLTS TO HAVE 1/2" DRILLED HOLE IN EACH END, HOLE TO EXTEND 1/2" BEYOND SHEET SUBMITTED. RIVET HOLES DRILLED 1/8" LARGER THAN RIVET IN PLATES THAT ARE FLAT WHEN FINISHED. SHELL - ROUNDABOUT SEAMS - DRILLED 1/8" IN FLAT PLATE - EXCEPT UNDER BUTT STRAPS, WHERE HOLES ARE DRILLED FULL SIZE FROM BUTT STRAPS IN PLACE.

4" STAY BOLTS EACH CORNER DET. SP. 19

1/2" DRILL FOR 1/2" STAY BOLTS 1/2" DIA. X 1/2" LG. 10-1/2" STAY BOLTS PER R.H.

1/2" DRILL FOR 1/2" STAY BOLTS 1/2" DIA. X 1/2" LG. 10-1/2" STAY BOLTS PER R.H.

35" SPECIAL 1/2" NUTS DET. SP. 19

1/2" DRILL FOR 1/2" STAY BOLTS 1/2" DIA. X 1/2" LG. 10-1/2" STAY BOLTS PER R.H.

35" SPECIAL 1/2" NUTS DET. SP. 19

1/2" DRILL FOR 1/2" STAY BOLTS 1/2" DIA. X 1/2" LG. 10-1/2" STAY BOLTS PER R.H.

35" SPECIAL 1/2" NUTS DET. SP. 19

1/2" DRILL FOR 1/2" STAY BOLTS 1/2" DIA. X 1/2" LG. 10-1/2" STAY BOLTS PER R.H.

35" SPECIAL 1/2" NUTS DET. SP. 19

1/2" DRILL FOR 1/2" STAY BOLTS 1/2" DIA. X 1/2" LG. 10-1/2" STAY BOLTS PER R.H.

35" SPECIAL 1/2" NUTS DET. SP. 19

PART NO.	MATERIAL	PART NO.	MATERIAL	PART NO.	MATERIAL
12	SHELLS	2-PLTS. 1/2" X 132" X 29"	8	ROUND BOT. WING CONCHES	2-PLTS. 1/2" X 32" X 74"
3	OUTSIDE BUTT STRAPS	2-PLTS. 1/2" X 21" X 131"	9	RO. BOT. CENTER CONCHES	1-PLT. 1/2" X 32" X 74"
4	INSIDE BUTT STRAPS	2-PLTS. 1/2" X 21" X 131"	10	WING WRAPPER	2-PLTS. 1/2" X 32" X 74"
6	WING TUBE SHEET	2-PLTS. 1/2" X 69" X 109"	11	CENTER WRAPPER	1-PLT. 1/2" X 32" X 74"
7	WING FLAME SHEET	2-PLTS. 1/2" X 69" X 109"	13	FRONT HD DOUBLER	1-PLT. 1/2" X 11" X 156"
			14	FRONT HD DOUBLER	1-PLT. 1/2" X 11" X 156"
			15	UPPER HEADS	2-PLTS. 1/2" X 32" X 74"
			16	LOWER FRONT HD	1-PLT. 1/2" X 32" X 74"
			17	LOWER BACK HD	1-PLT. 1/2" X 32" X 74"
			18	CROWN SHEET	1-PLT. 1/2" X 32" X 74"
			19	CROWN TUBE SHEET	1-PLT. 1/2" X 32" X 74"
			20	BACK HD CONCHES	1-PLT. 1/2" X 32" X 74"
			21	MANHOLE REINFLT.	1-PLT. 1/2" X 32" X 74"

APPROVED
LLOYD'S REGISTER OF SHIPPING
NEW YORK

2/3
18/5/11
W. S. 5-6

WILLAMETTE IRON AND STEEL WORKS
PORTLAND, OREGON
ENGINEERING DEPT. 20
W. S. 5-6