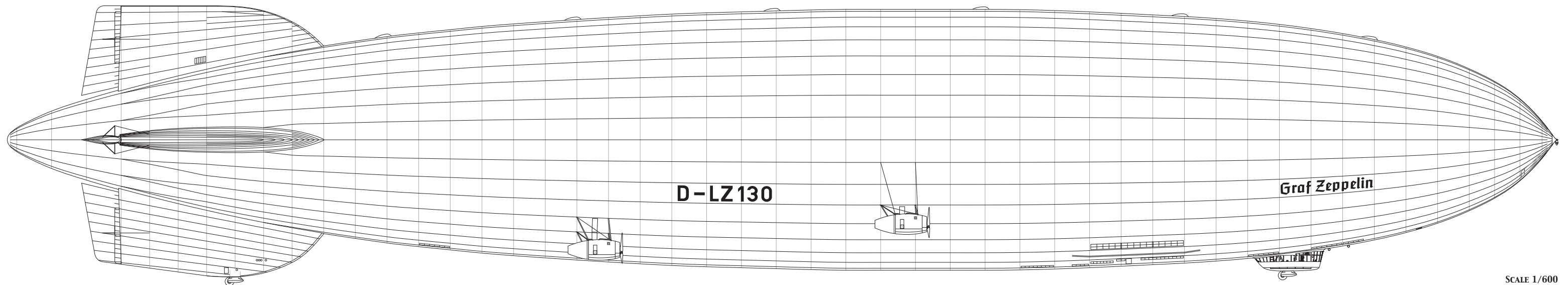


DETAILED TECHNICAL DRAWINGS
OF THE

Graf Zeppelin

D-LZ130



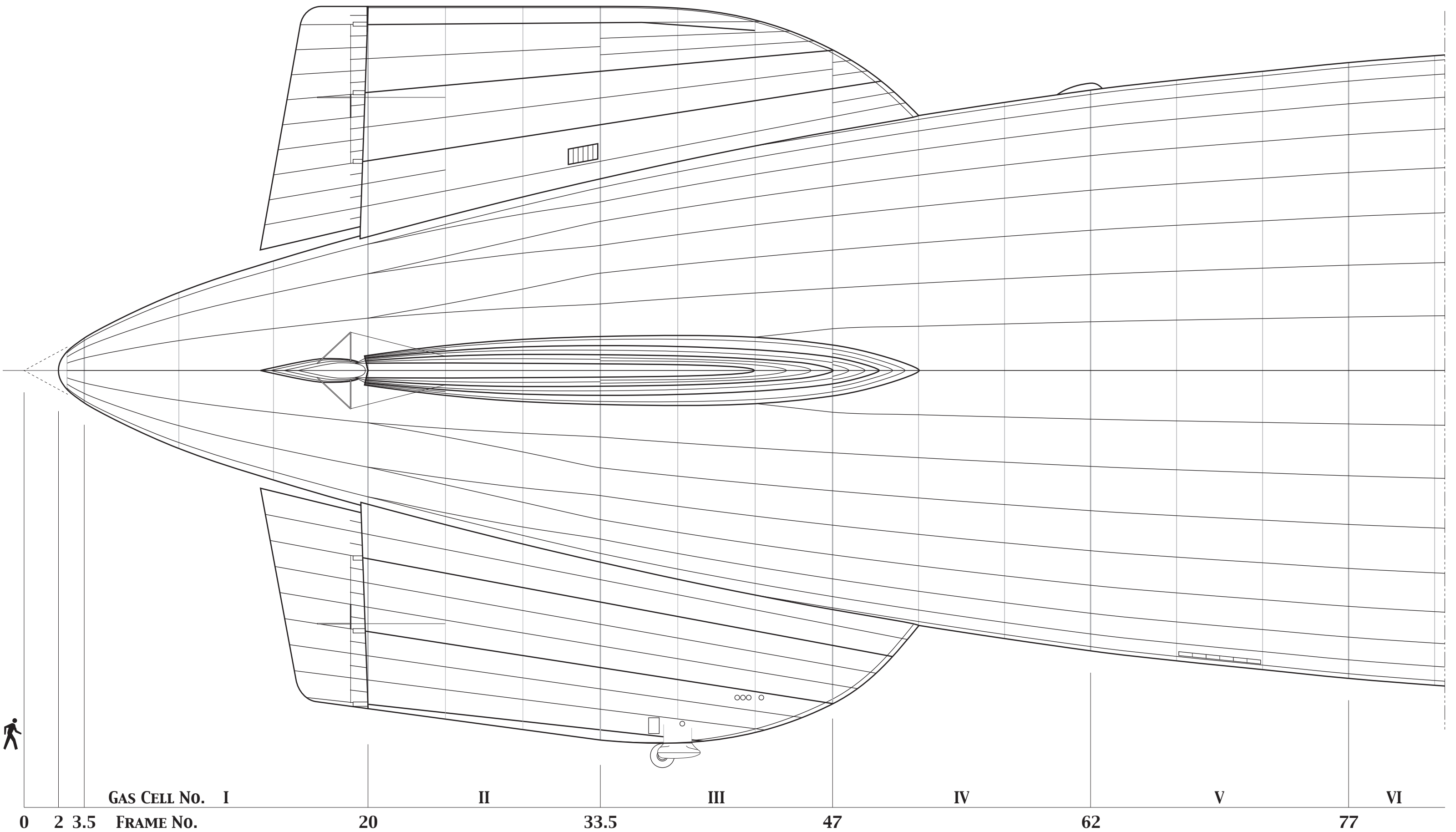
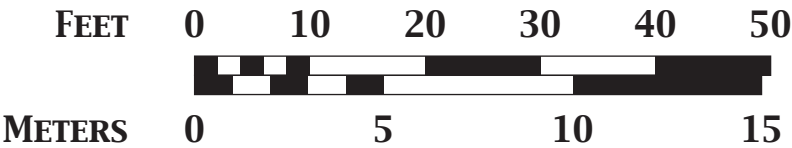
SCALE 1/600

A SET OF TECHNICAL DRAWINGS OF THE PASSENGER AIRSHIP GRAF ZEPPELIN (II)

SCALE IS 1/200 EXCEPT AS OTHERWISE NOTED

DRAWINGS BY DAVID FOWLER

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GAS CELL No. I

II

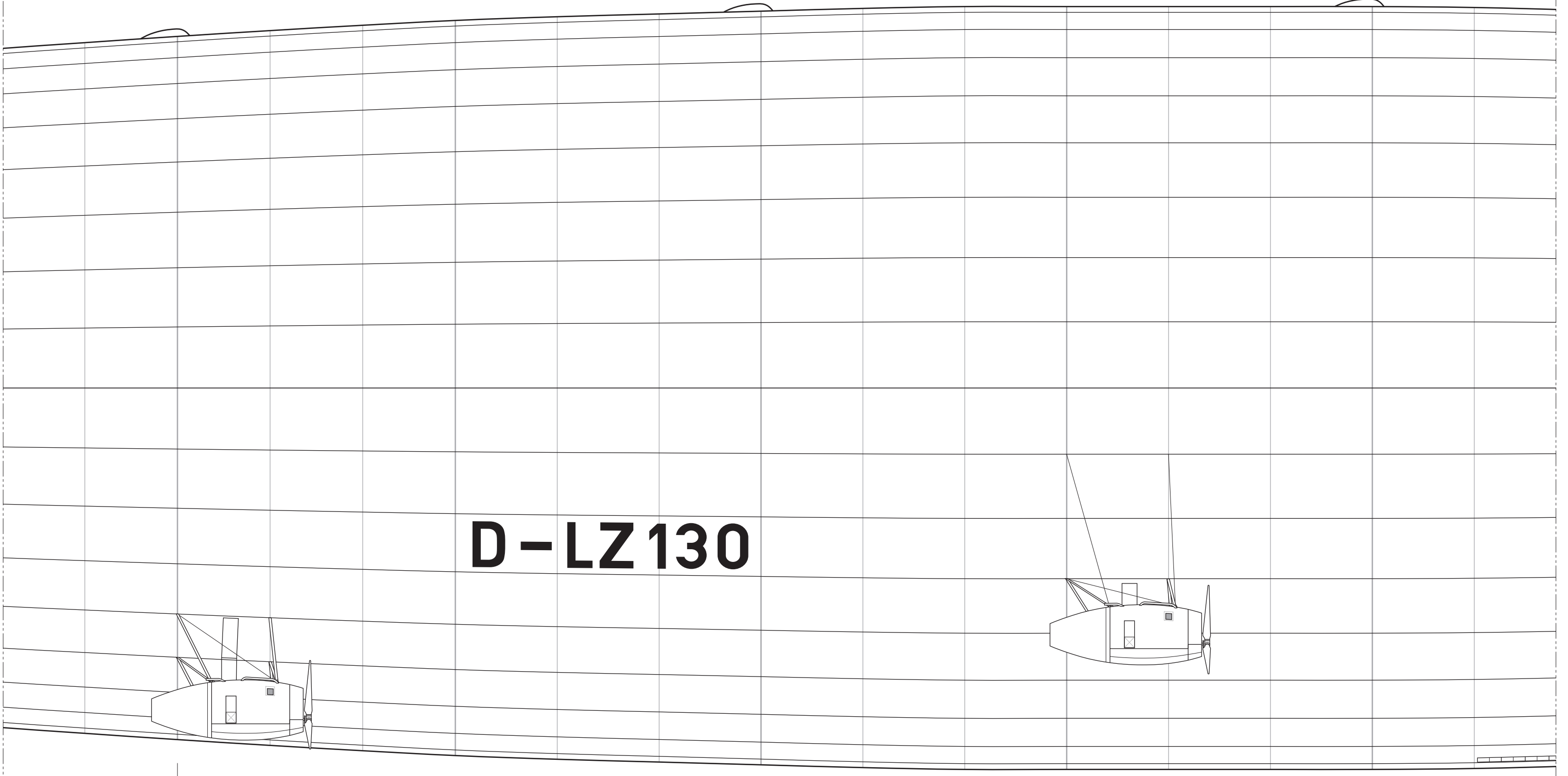
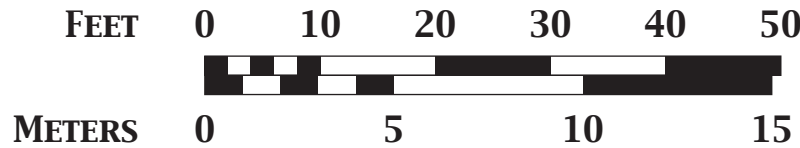
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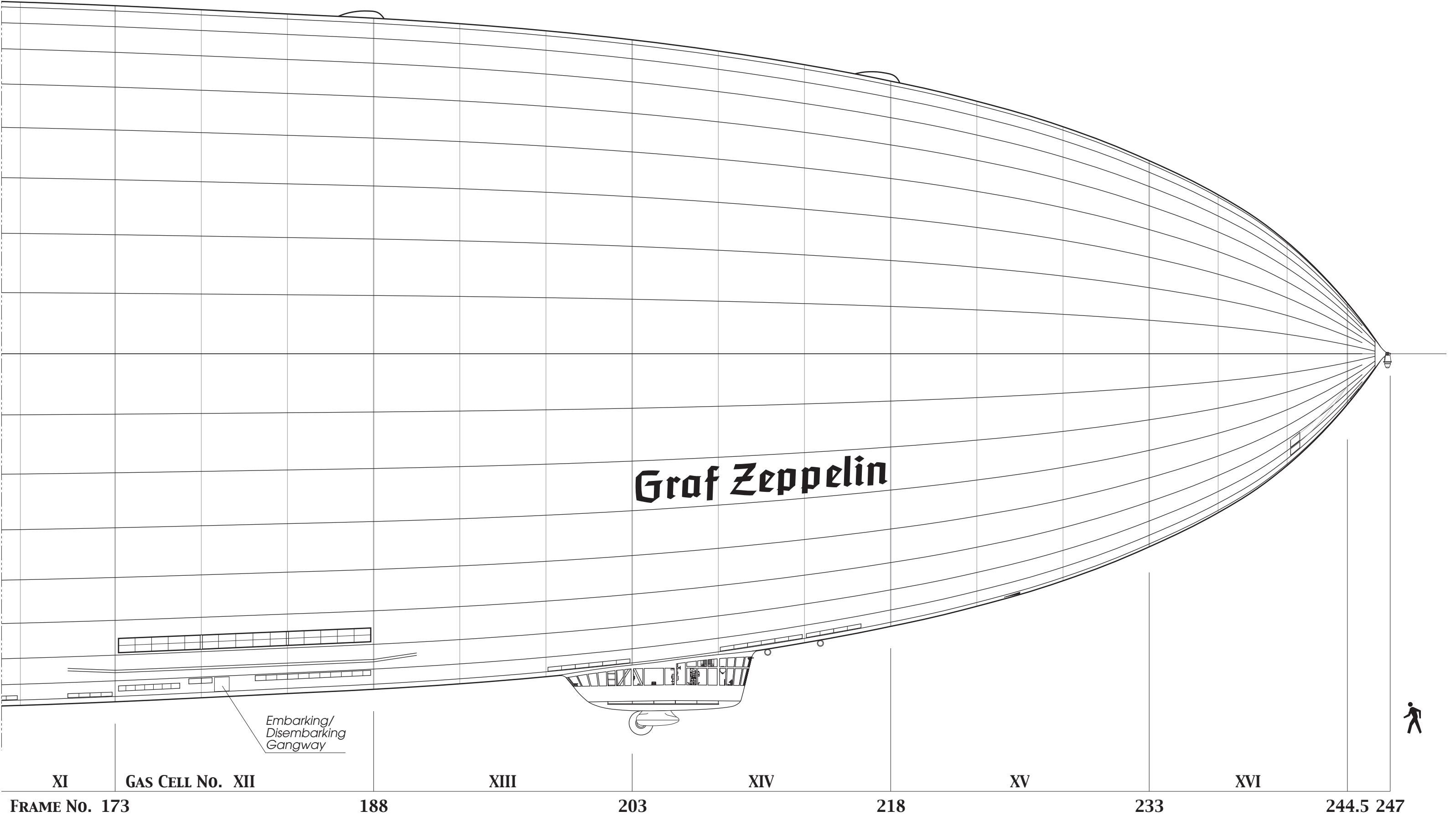
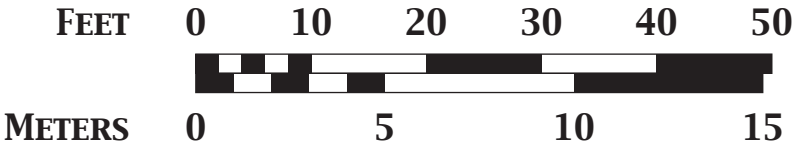
IV

V

VI

0 2 3.5 FRAME No. 20 33.5 47 62 77





Graf Zeppelin

Embarking/
Disembarking
Gangway

XI

GAS CELL NO. XII

XIII

XIV

XV

XVI

FRAME NO. 173

188

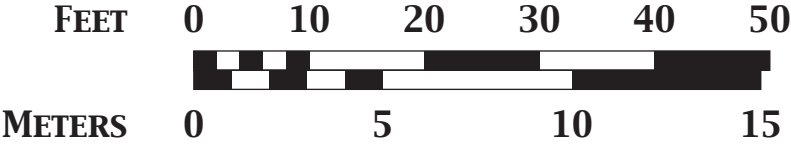
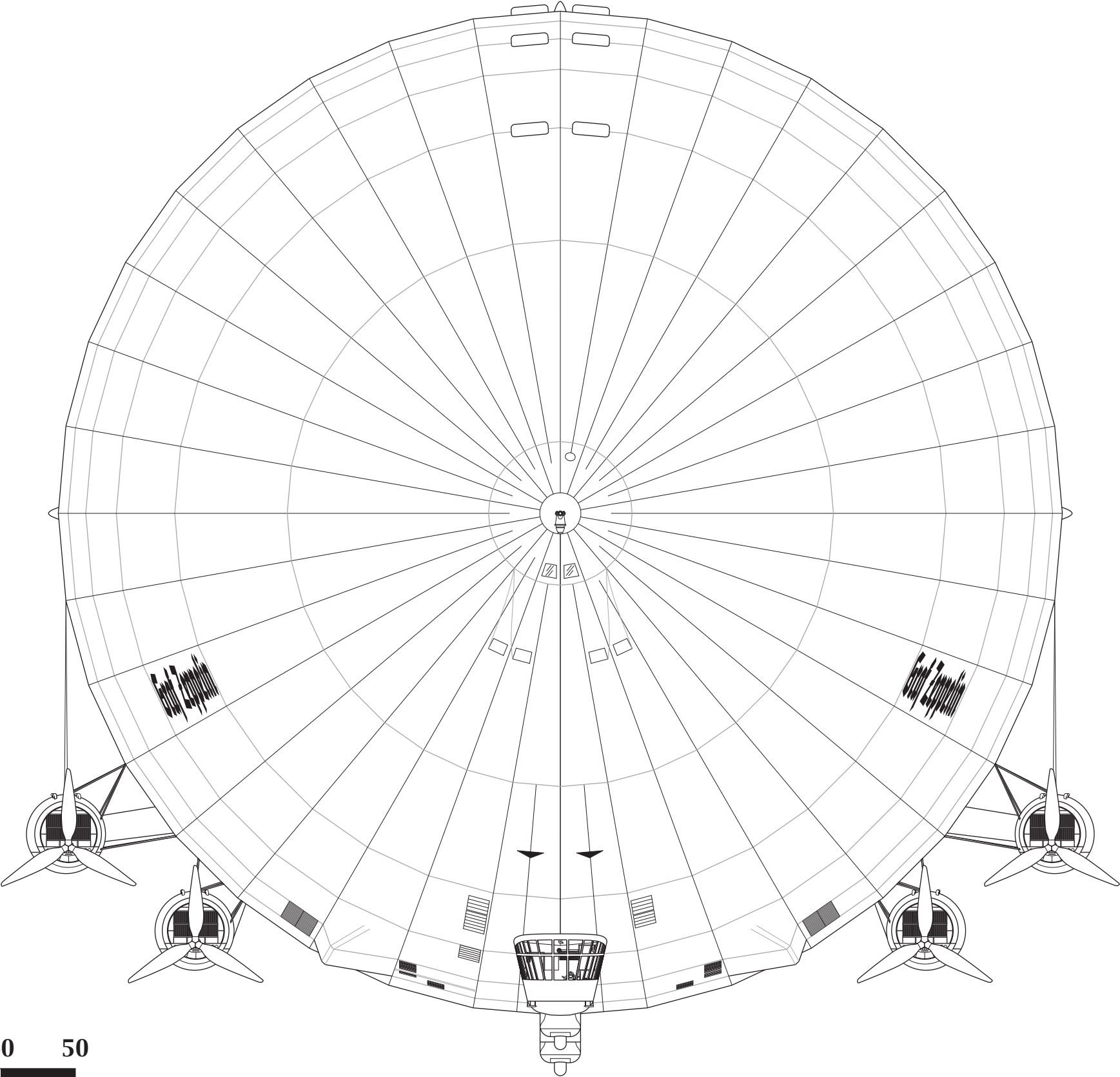
203

218

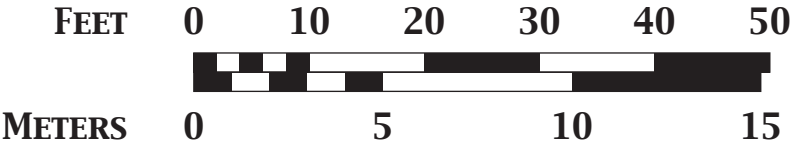
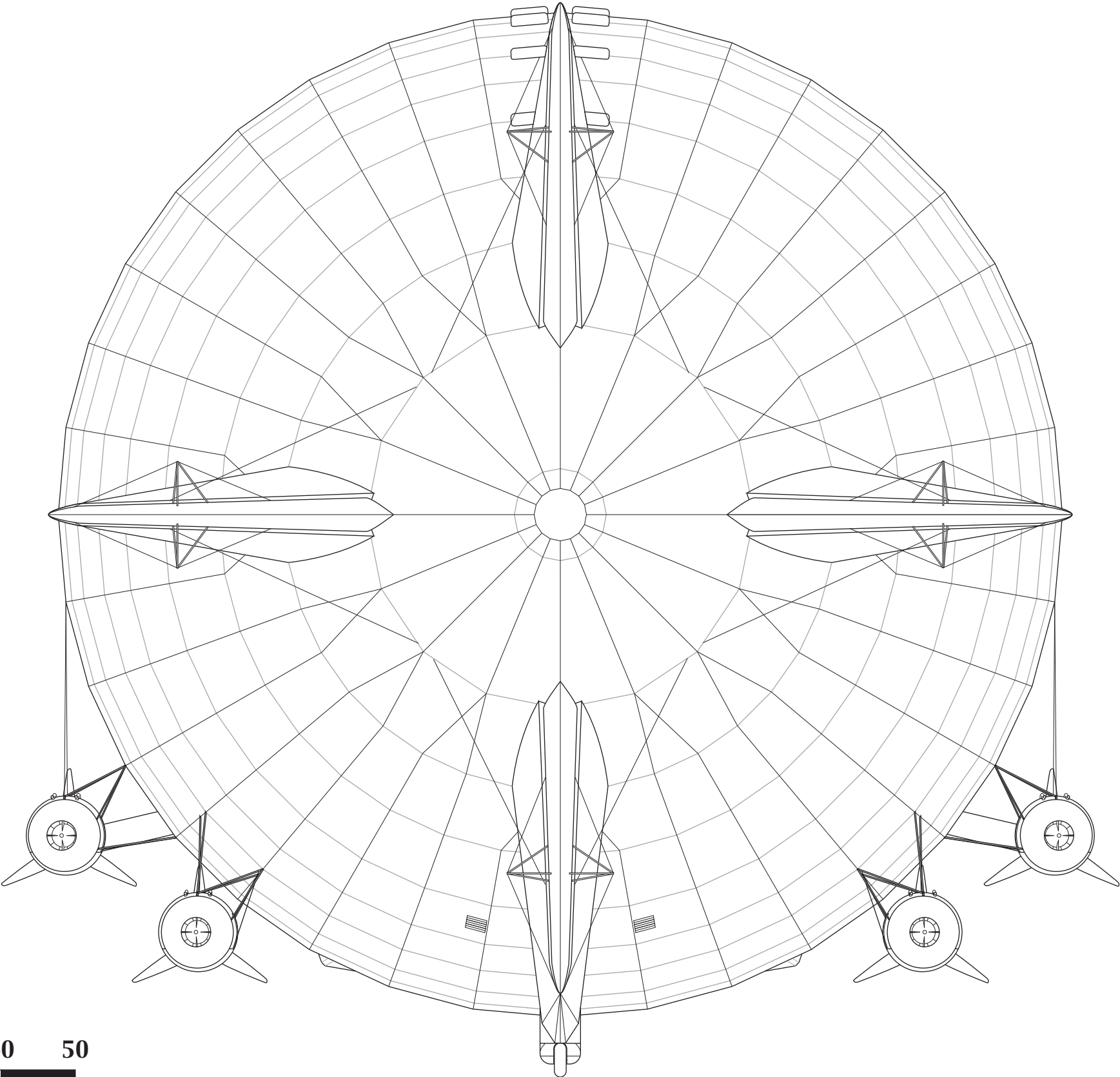
233

244.5 247

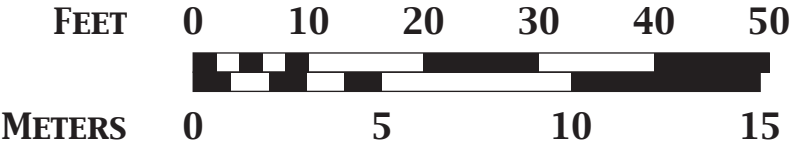
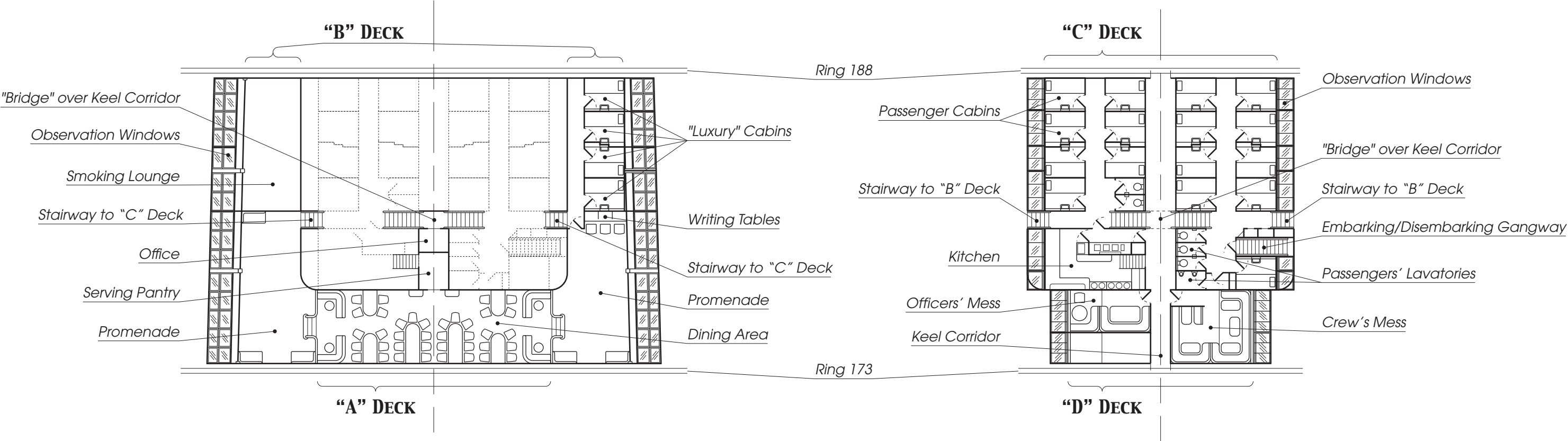
FRONT ELEVATION



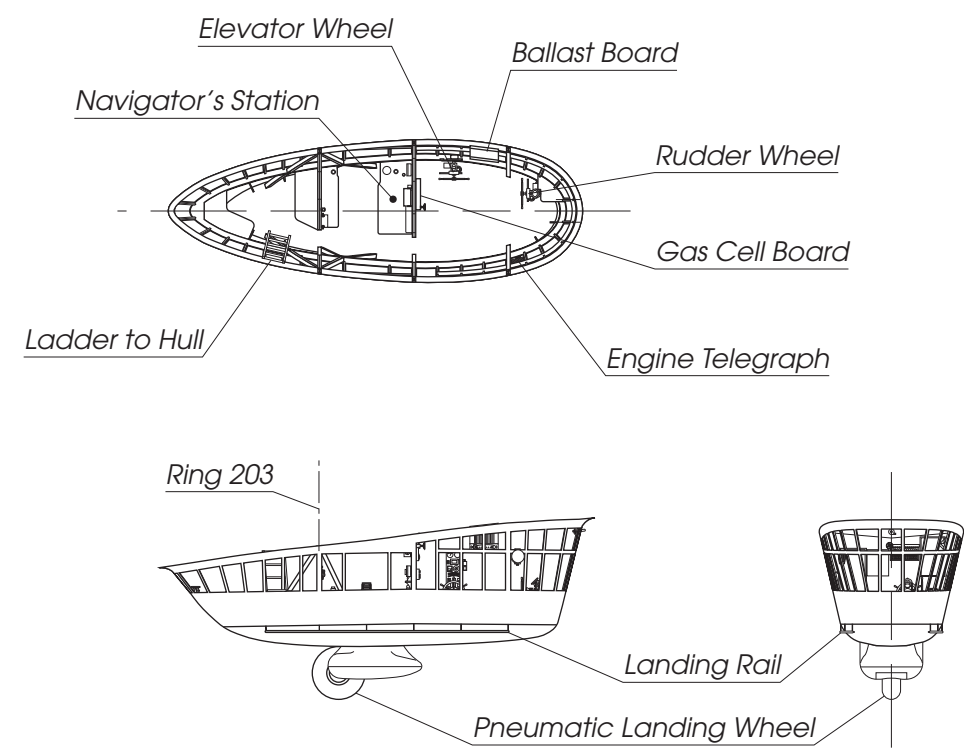
REAR ELEVATION



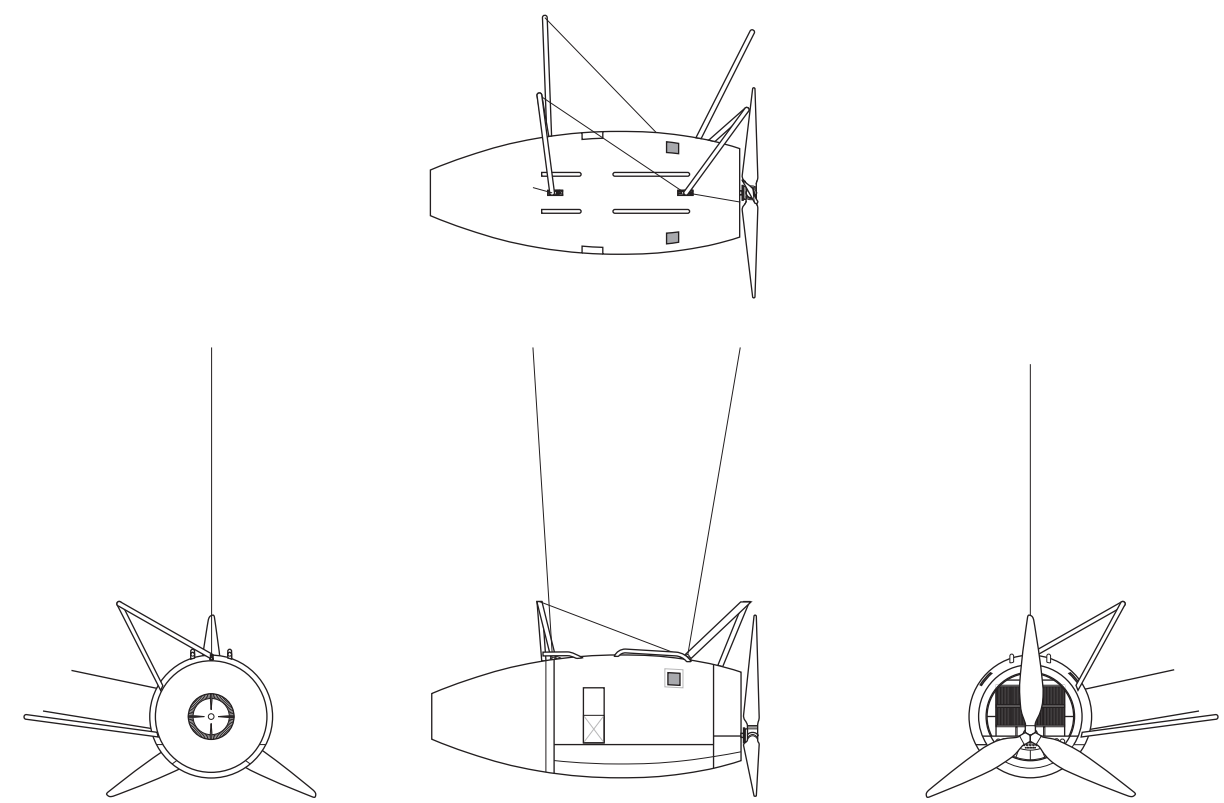
PASSENGER AREA



CONTROL GONDOLA

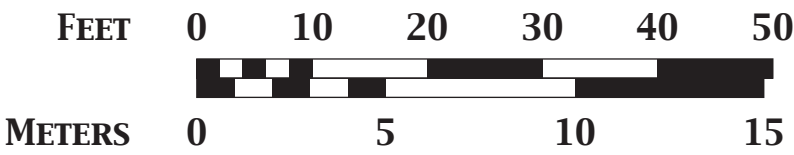


ENGINE CAR (FORWARD)

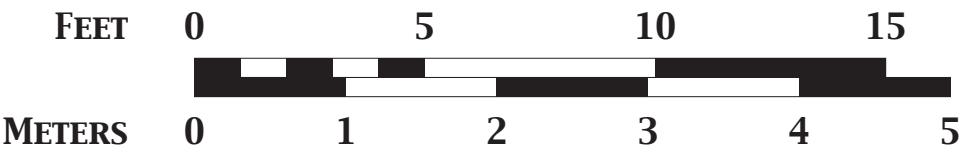
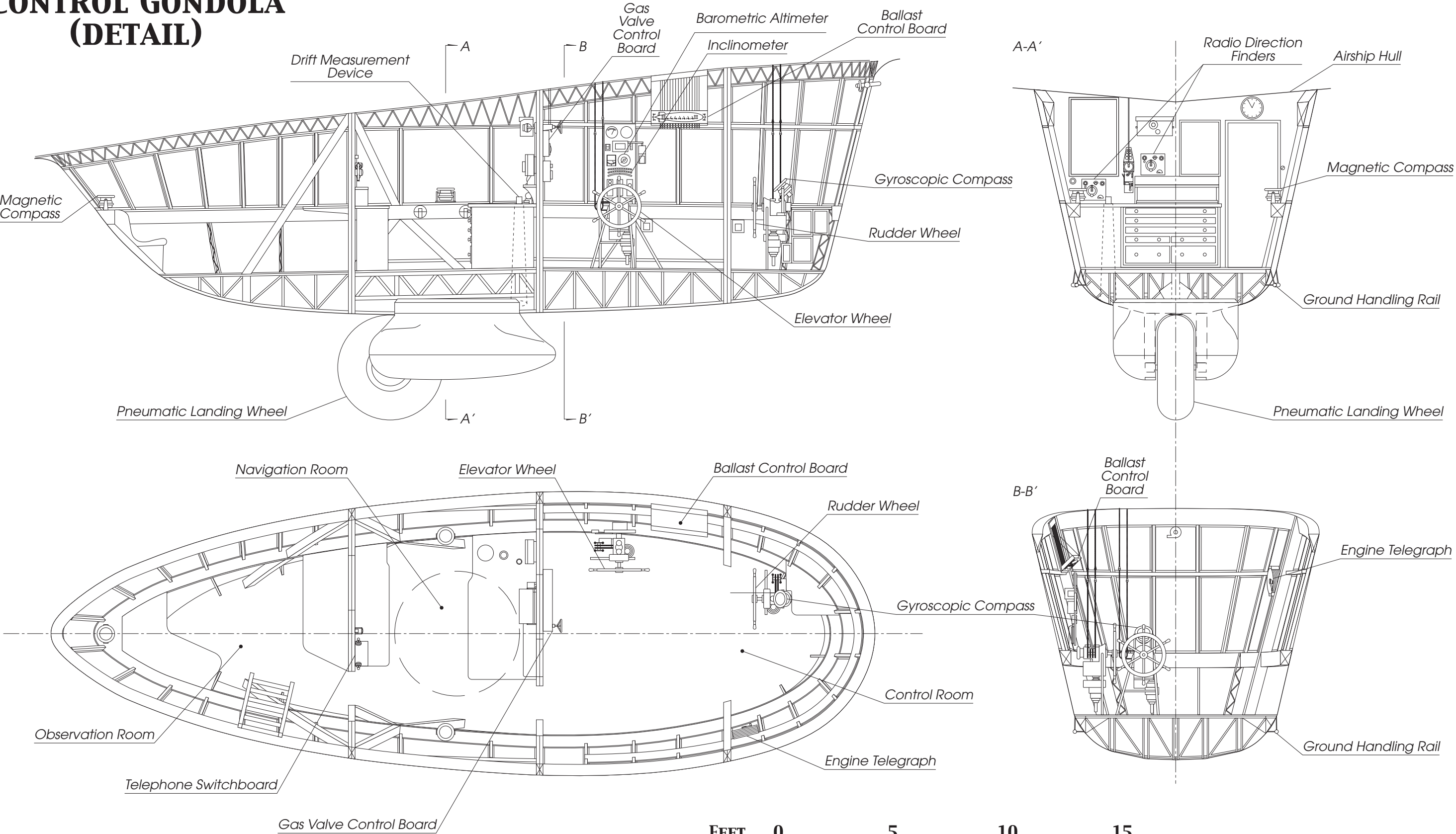


4 Engine Cars
Forward Engine Cars mounted 4° outward from ship's axis
Aft Engine Cars mounted at 3° outward from ship's axis

Engine specifications:
Daimler Benz LOF 6 diesel
V16, 4 valve per cylinder
770 kW (1050 hp) maximum at 1500 rpm
690 kW (940 hp) cruising at 1350 rpm
225 g/kWh (0.37 lbs./hp/h) fuel consumption (cruising)

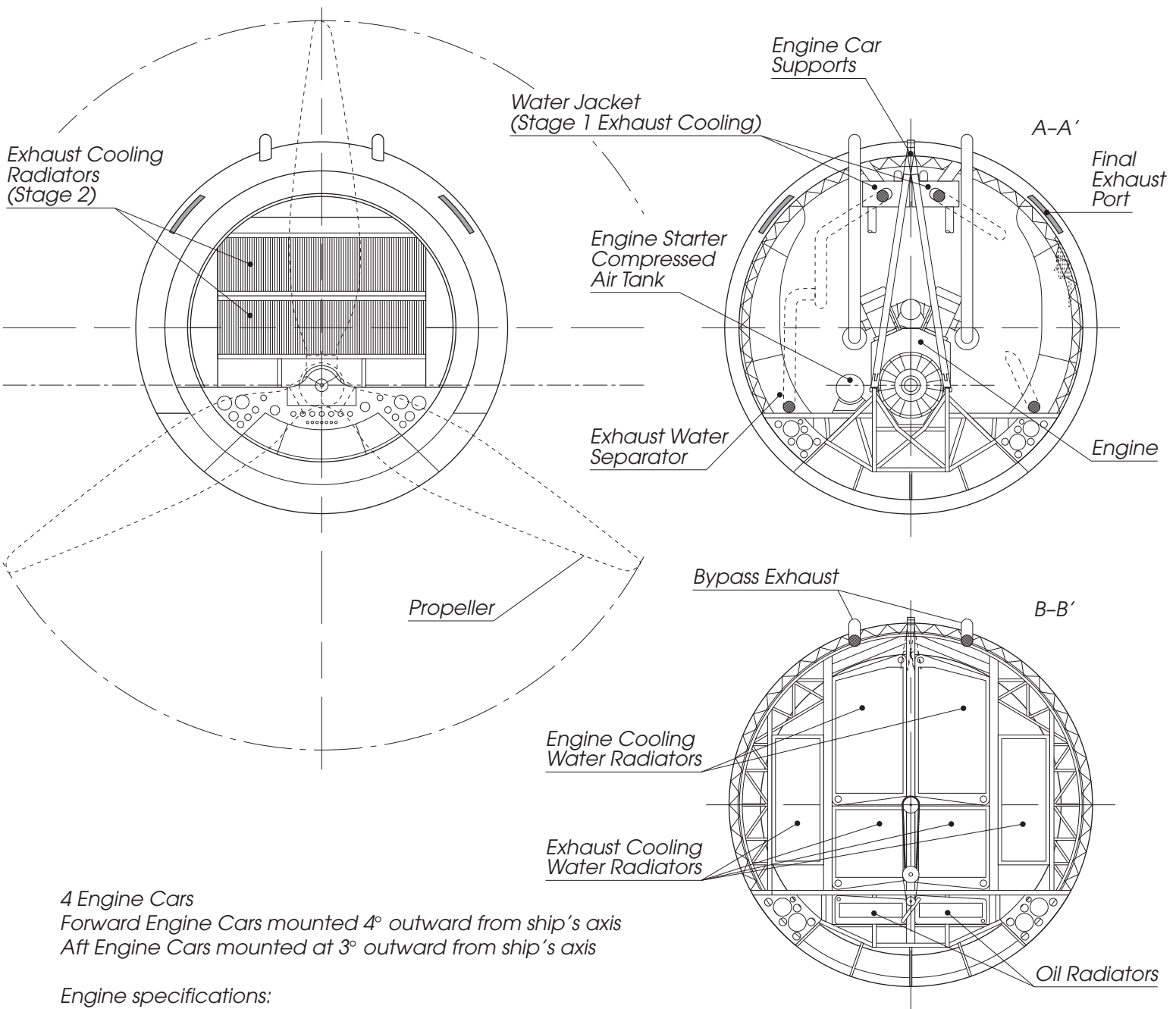
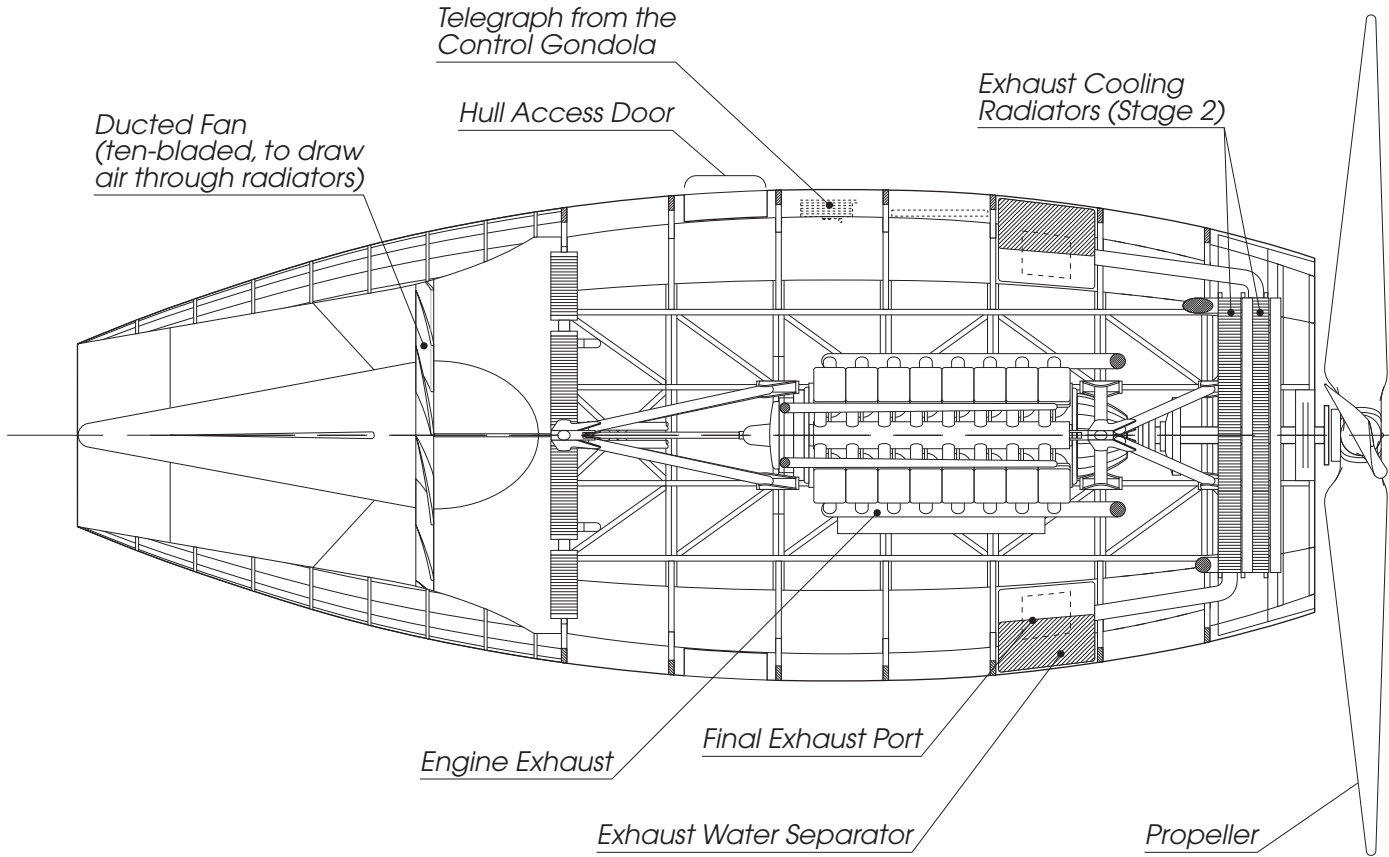
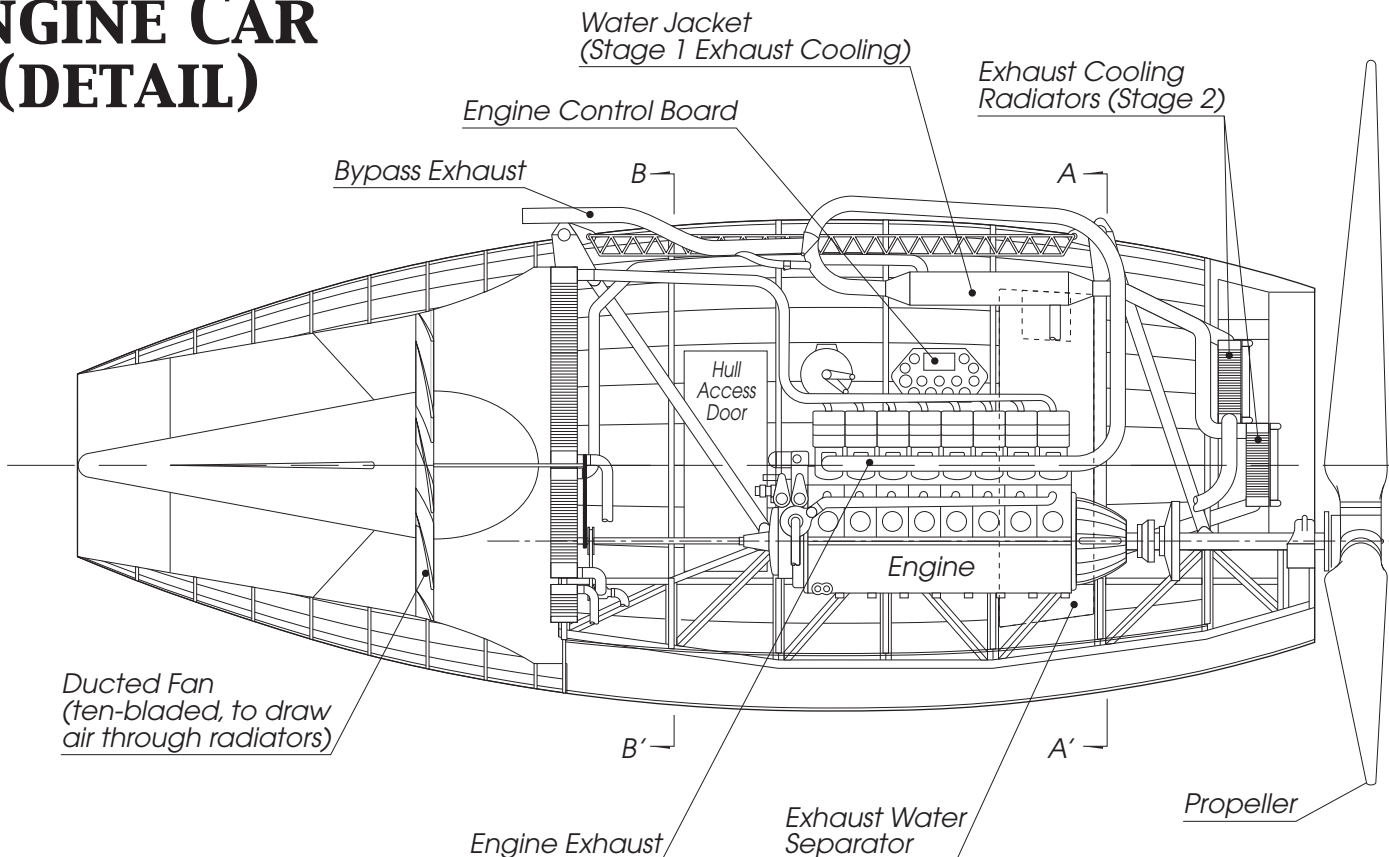


CONTROL GONDOLA (DETAIL)



SCALE 1/50

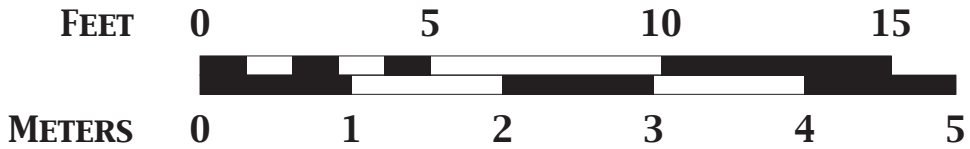
ENGINE CAR
(DETAIL)



4 Engine Cars
Forward Engine Cars mounted 4° outward from ship's axis
Aft Engine Cars mounted at 3° outward from ship's axis

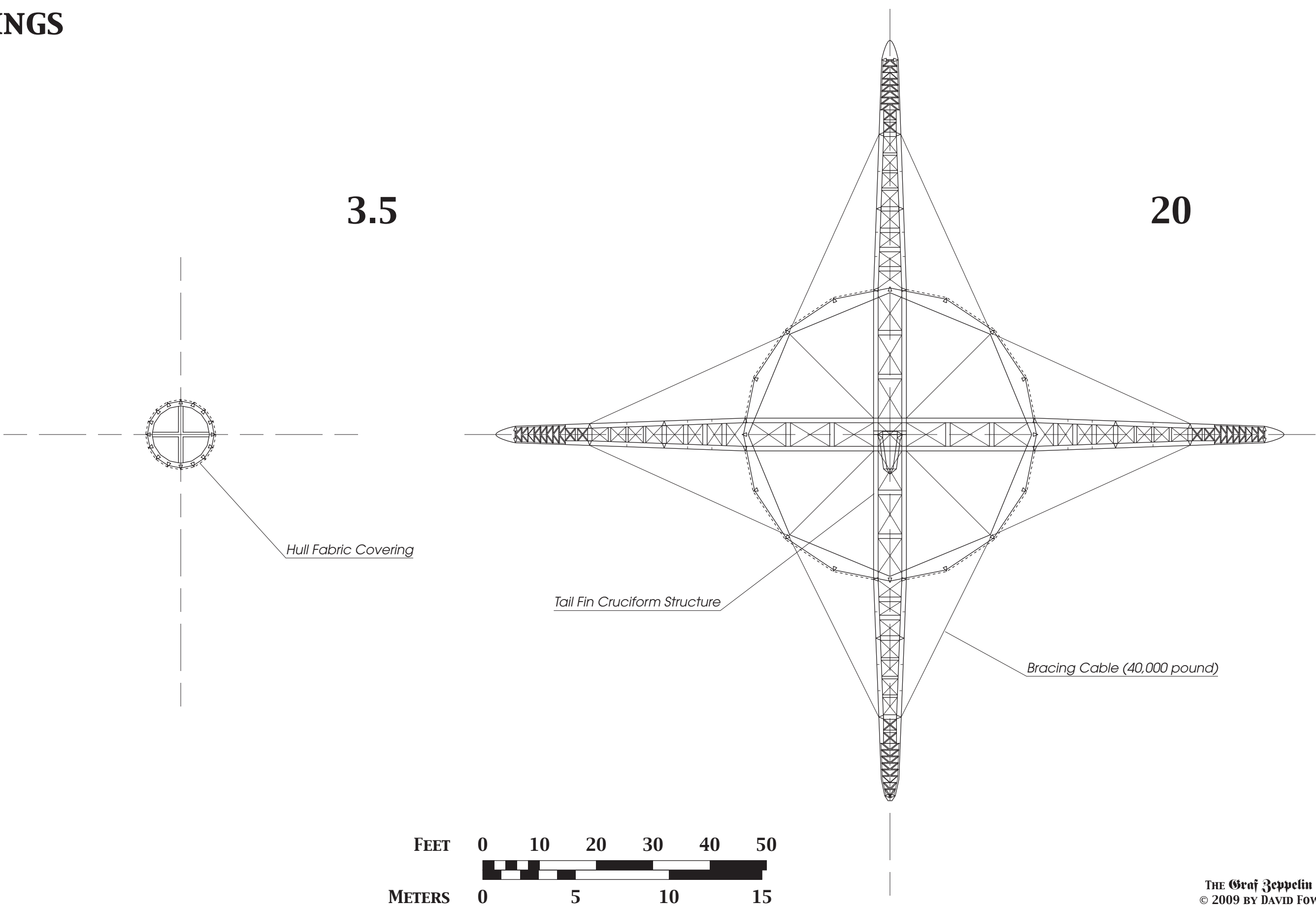
Engine specifications:
Daimler Benz LOF 6 diesel
V16, 4 valve per cylinder

Exhaust cooling system to reclaim water for ballast.
Stage 1: Cool Water Jacket (temperature in = 400°C, temperature out = 50°C)
Stage 2: Cooling Radiator (temperature in = 50°C, temperature out = 20°C)
Final: Water is condensed and separated from the exhaust in collector (baffles) and transferred to ballast water tanks and bladders within the airship.



SCALE 1/50

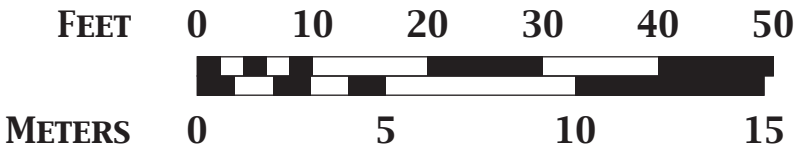
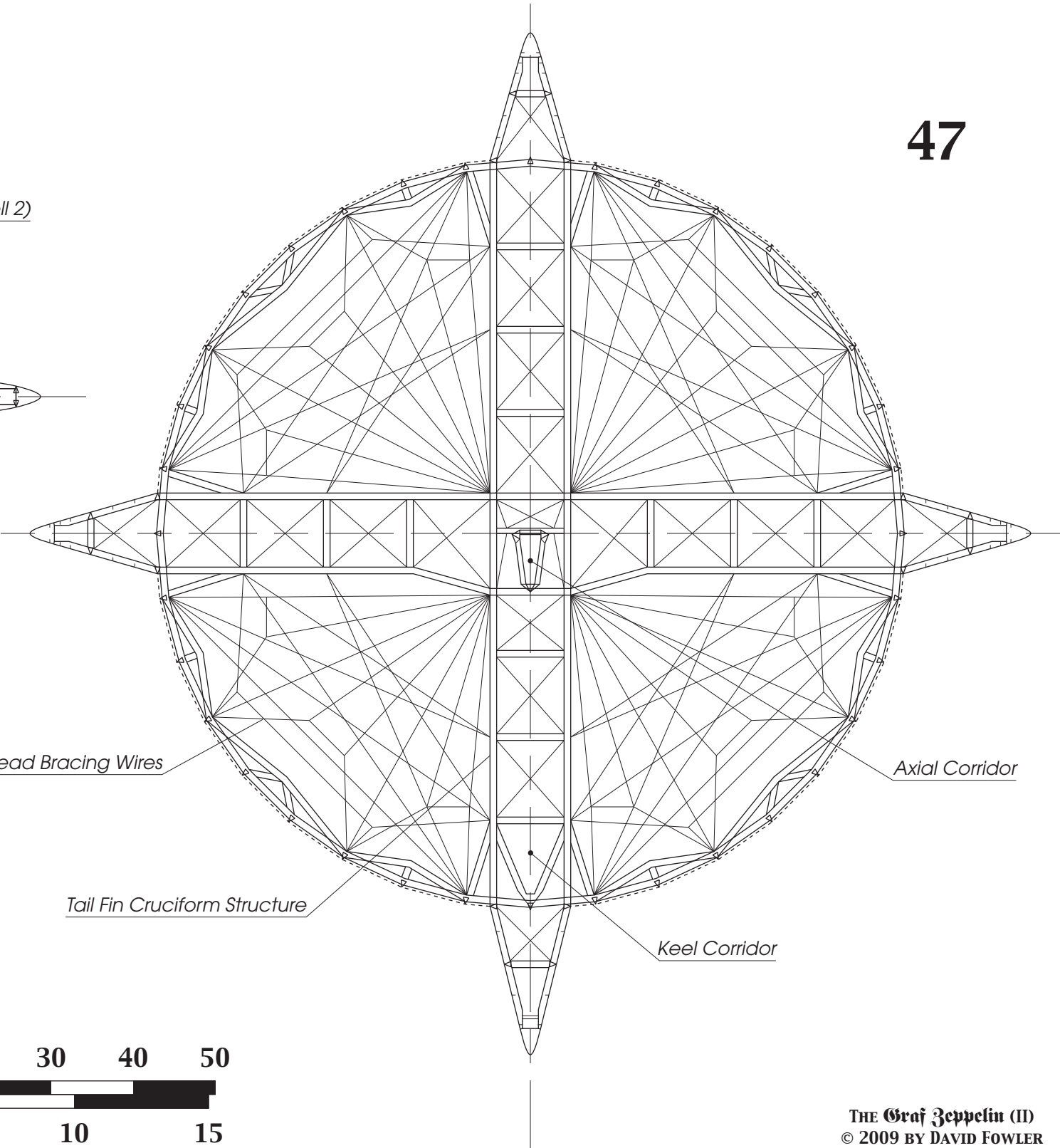
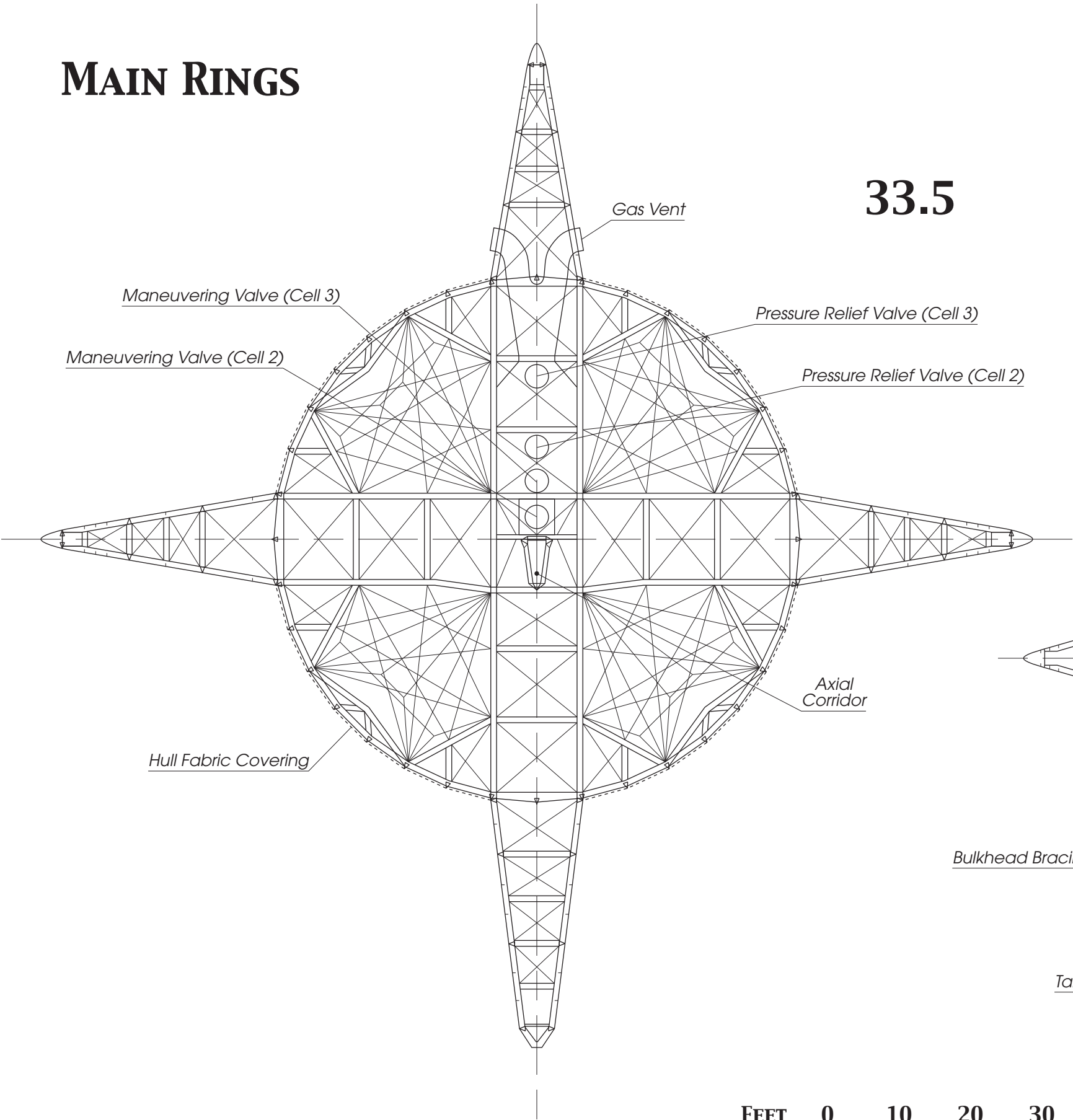
MAIN RINGS



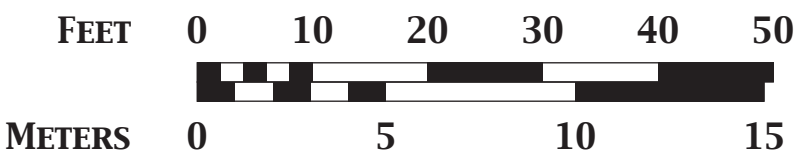
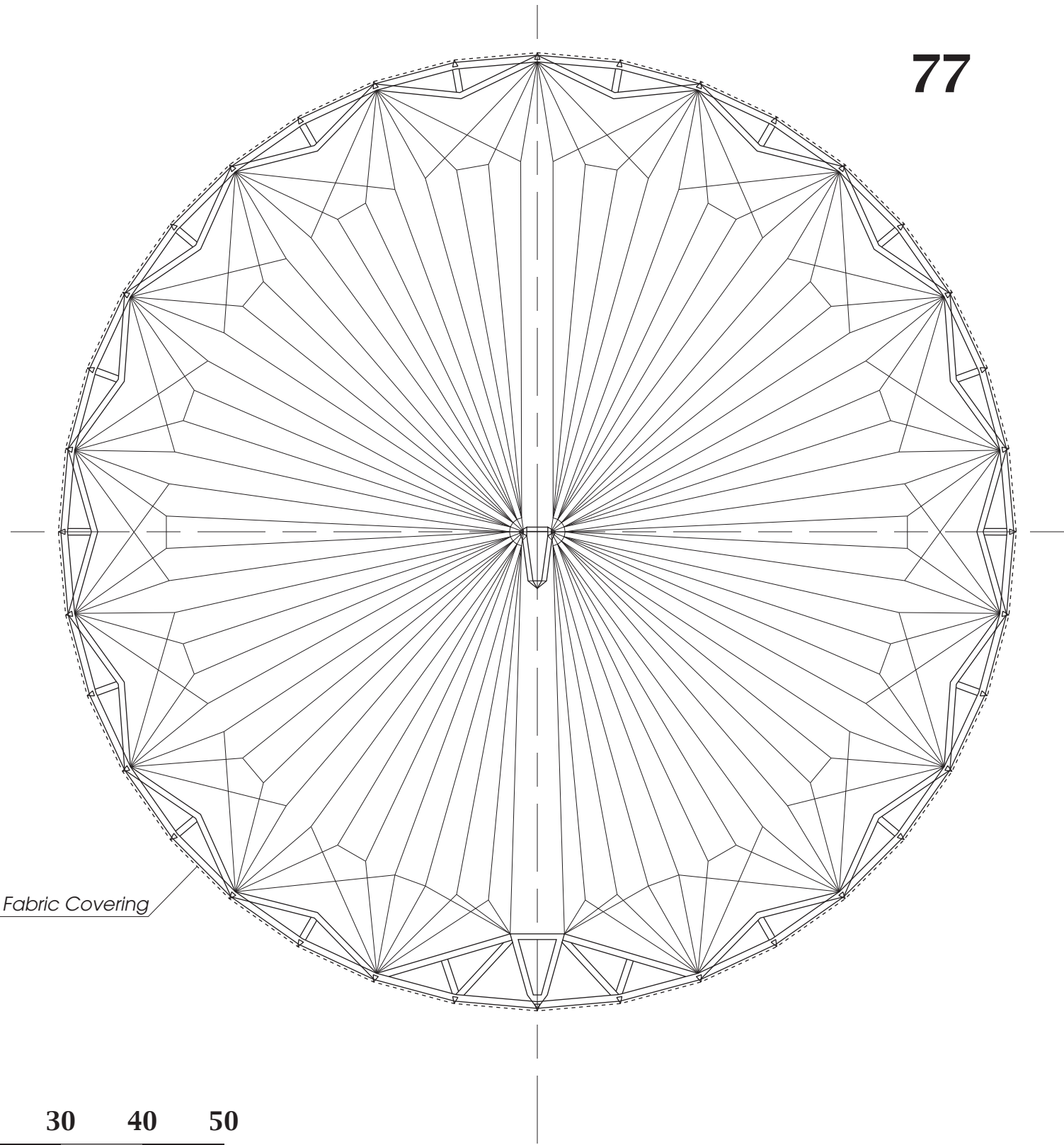
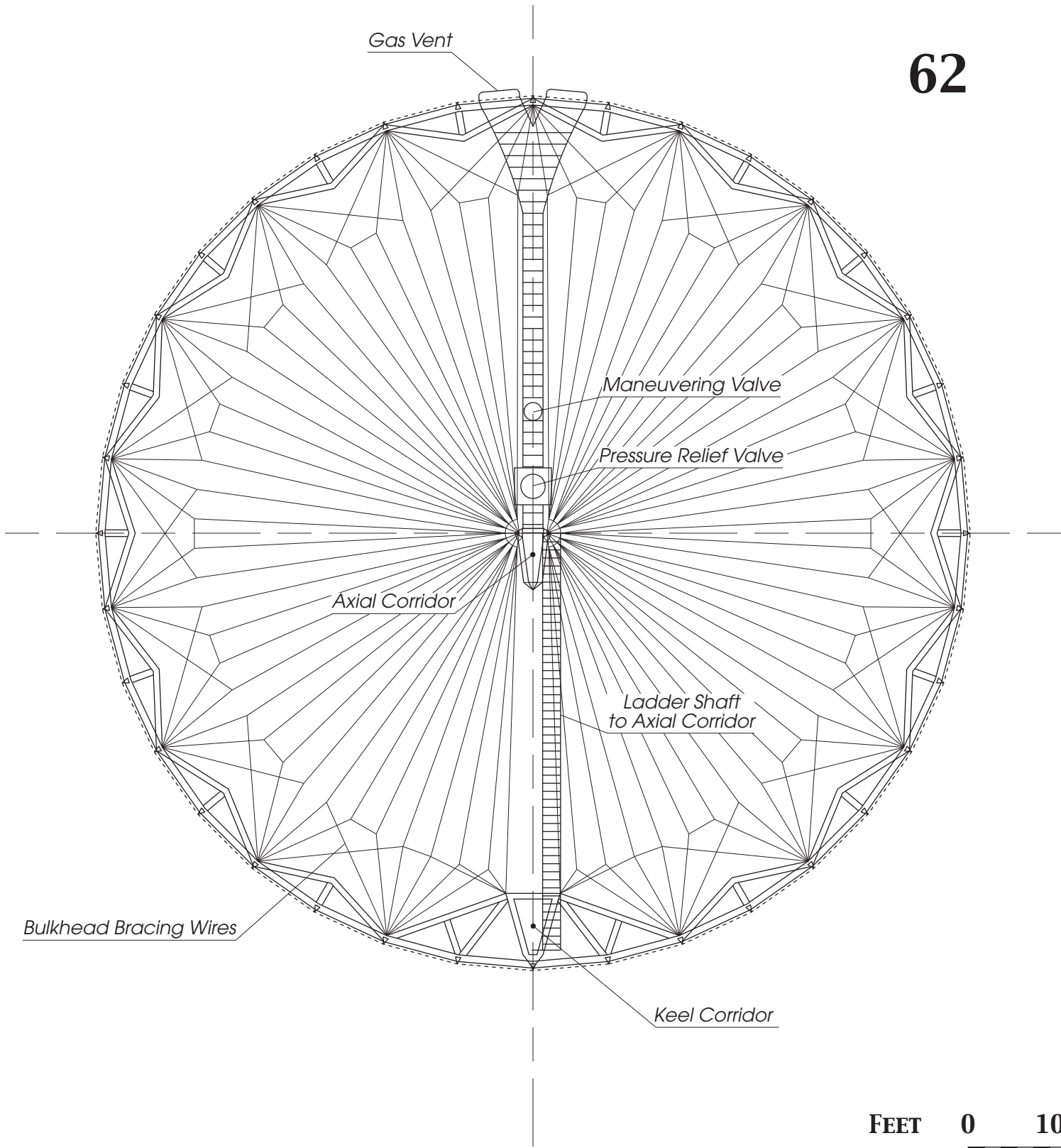
MAIN RINGS

33.5

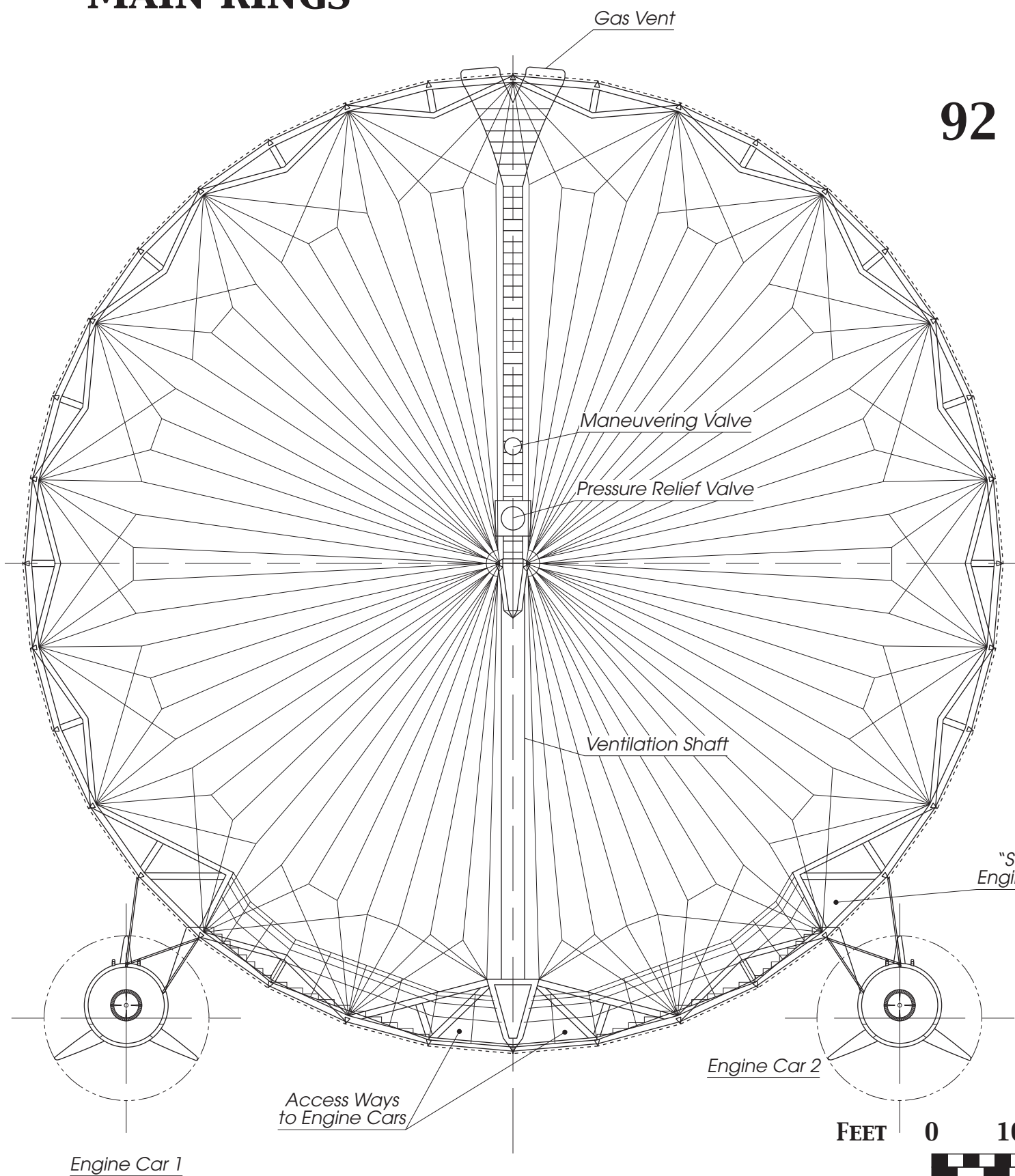
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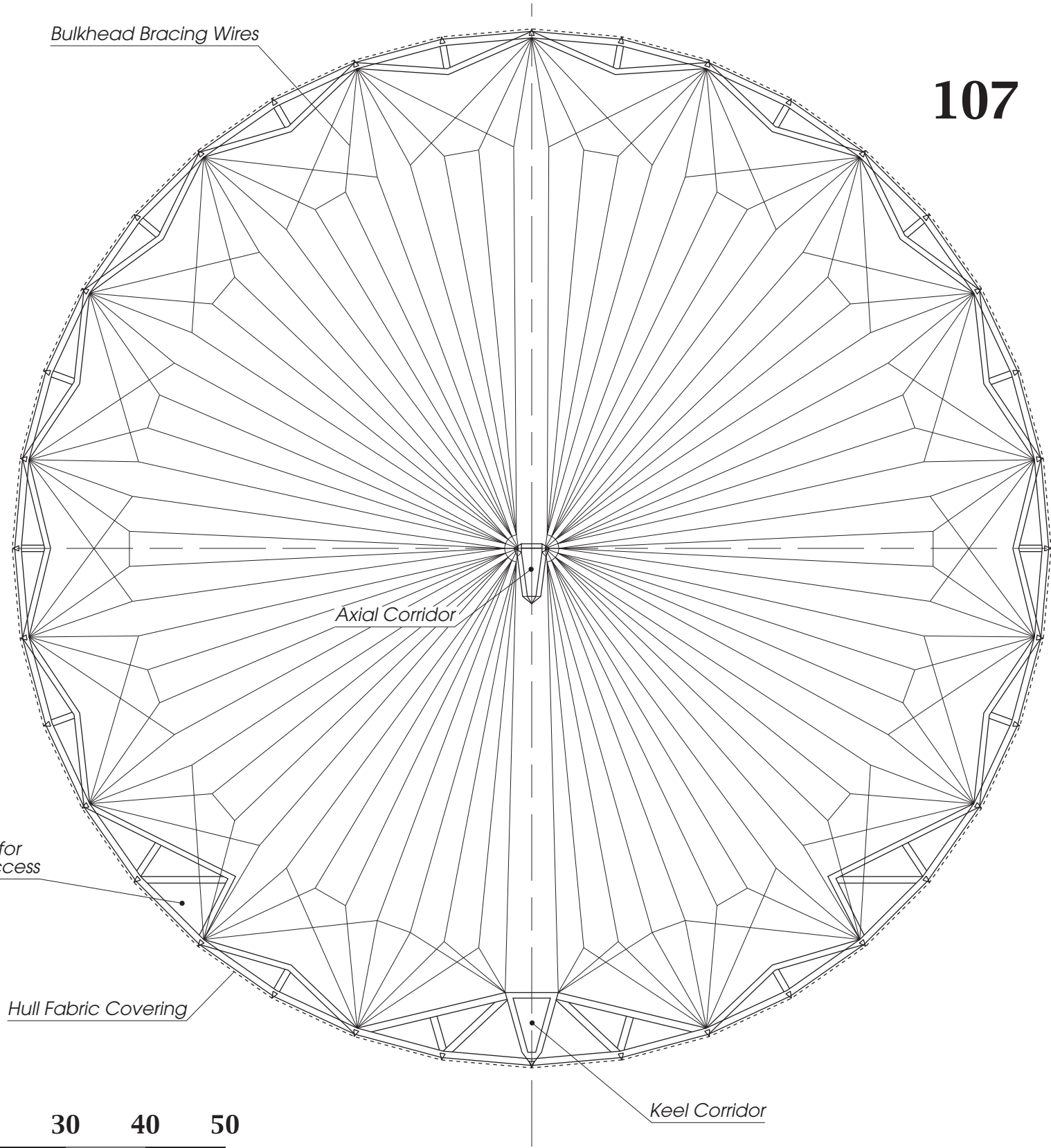
MAIN RINGS



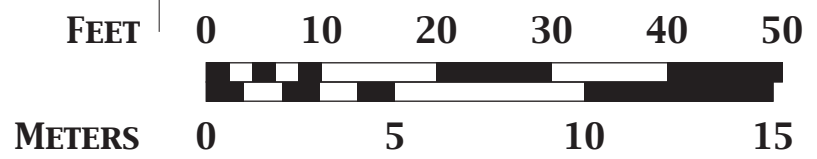
MAIN RINGS



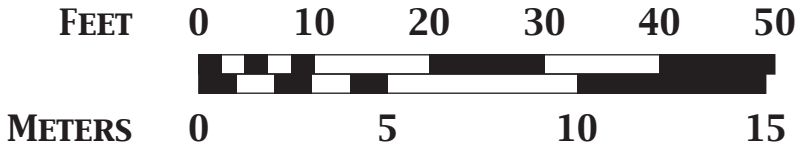
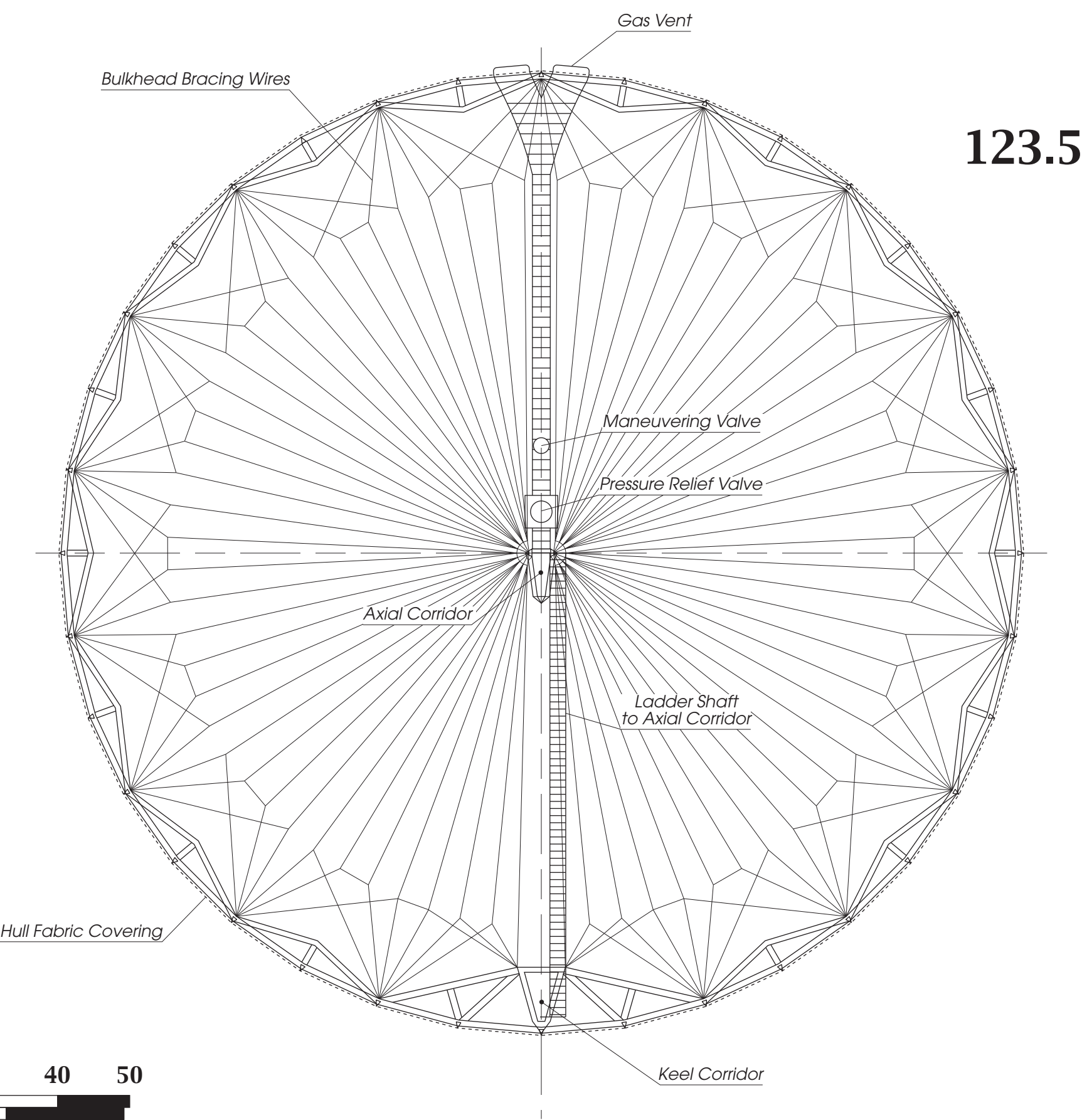
92



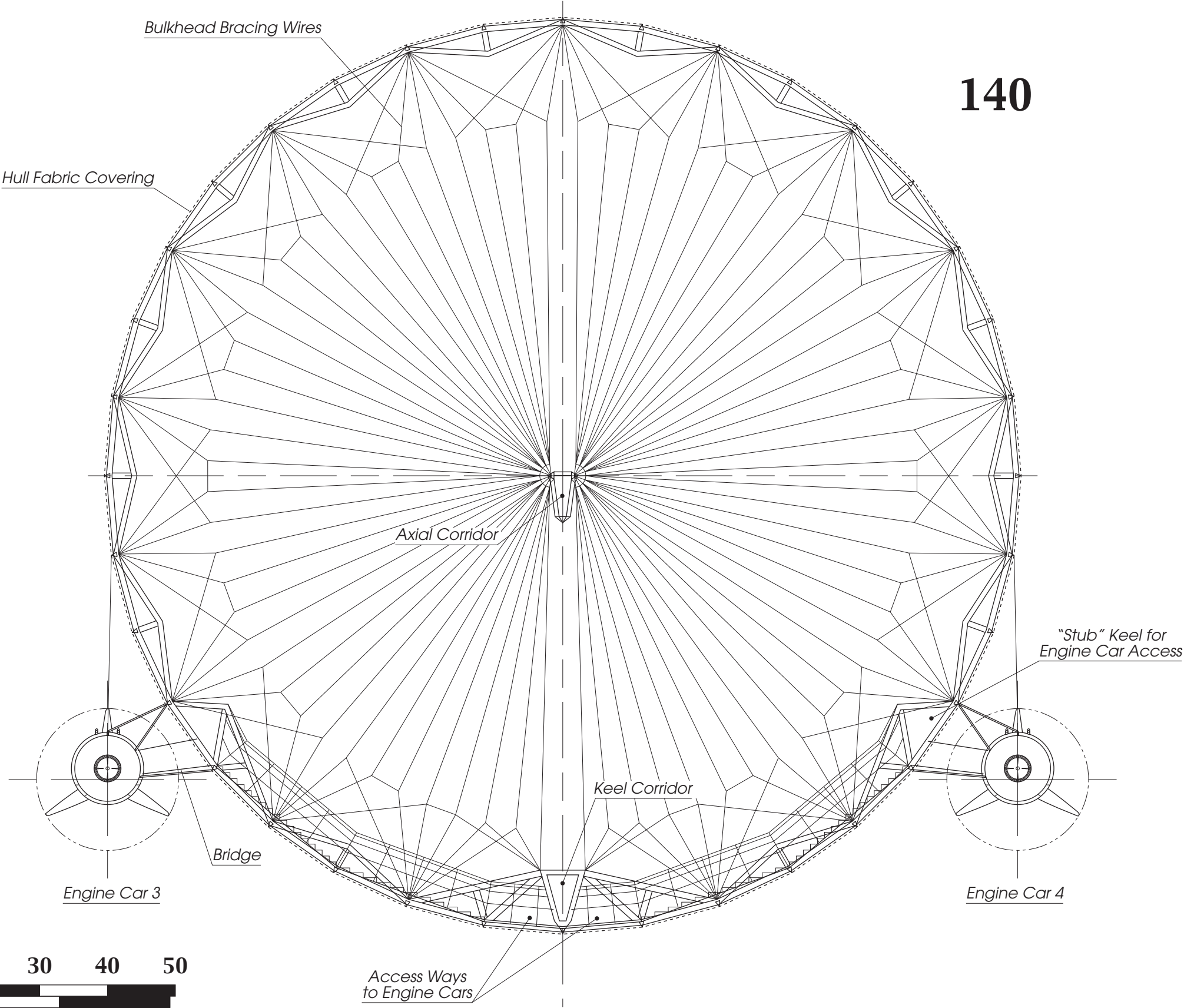
107



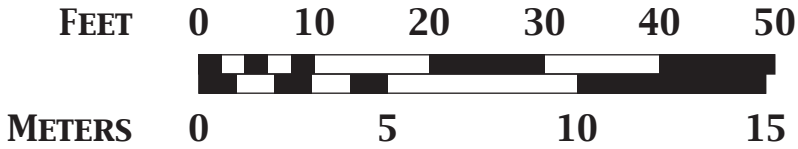
MAIN RINGS



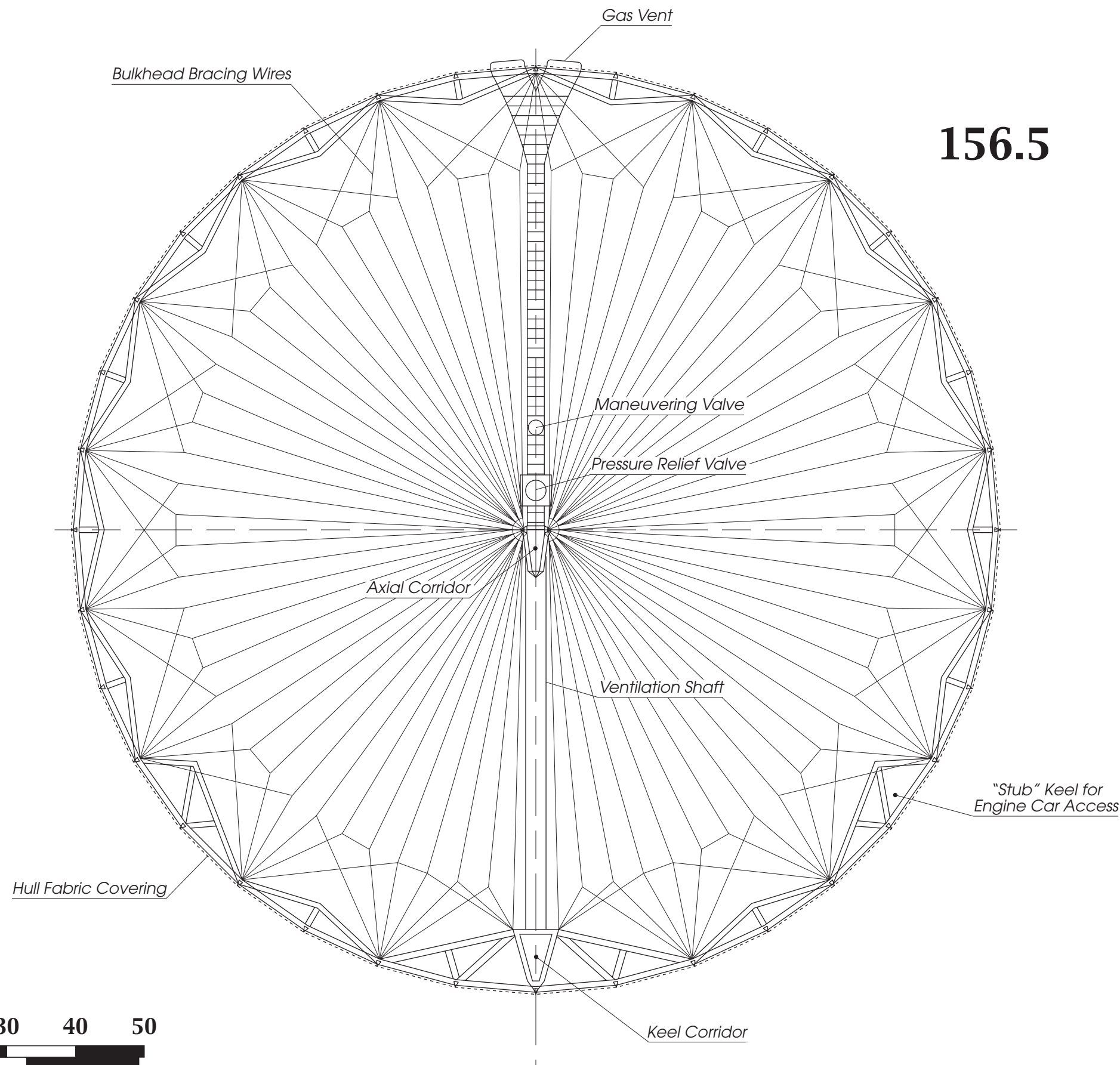
MAIN RINGS



140



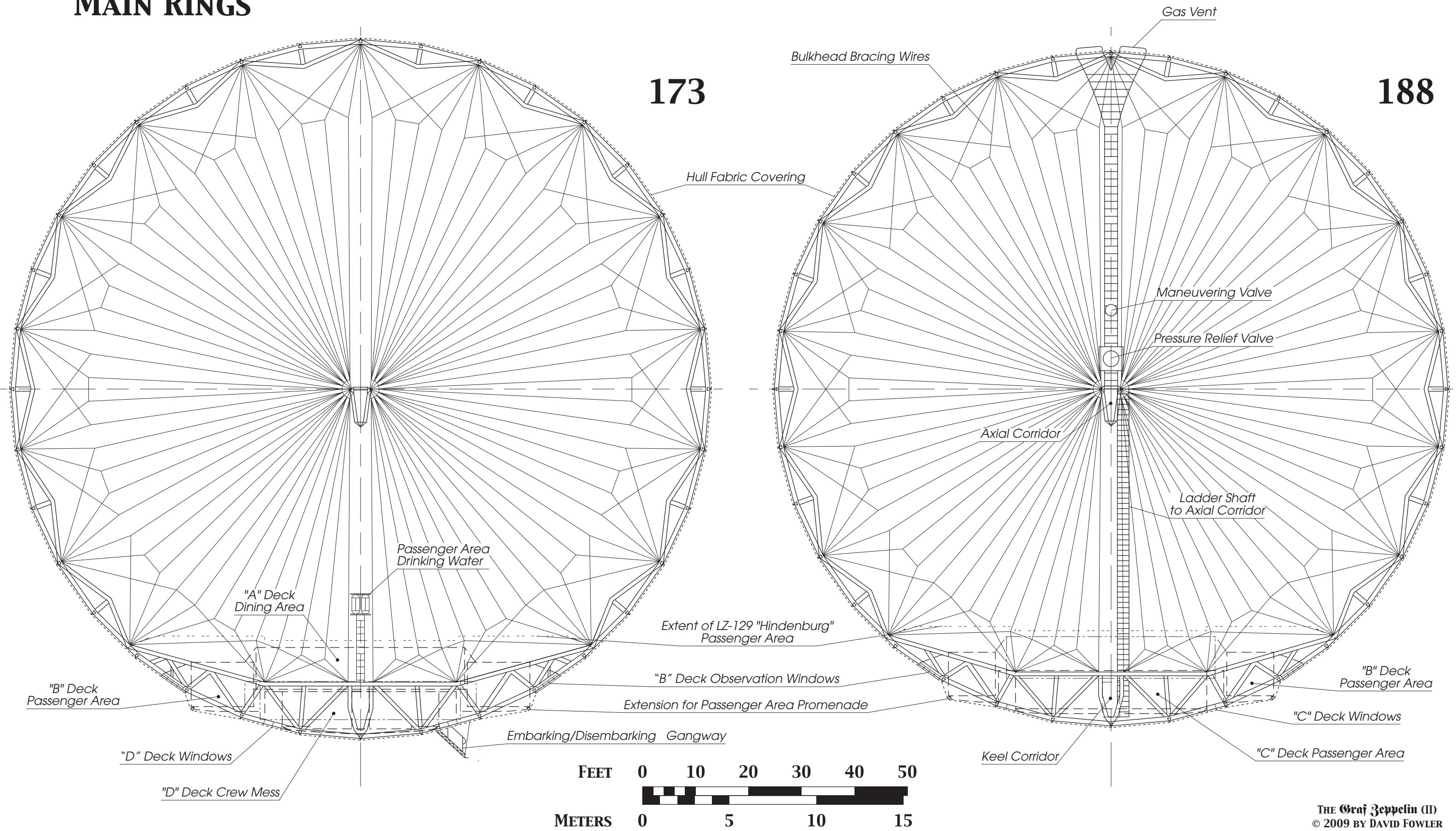
MAIN RINGS



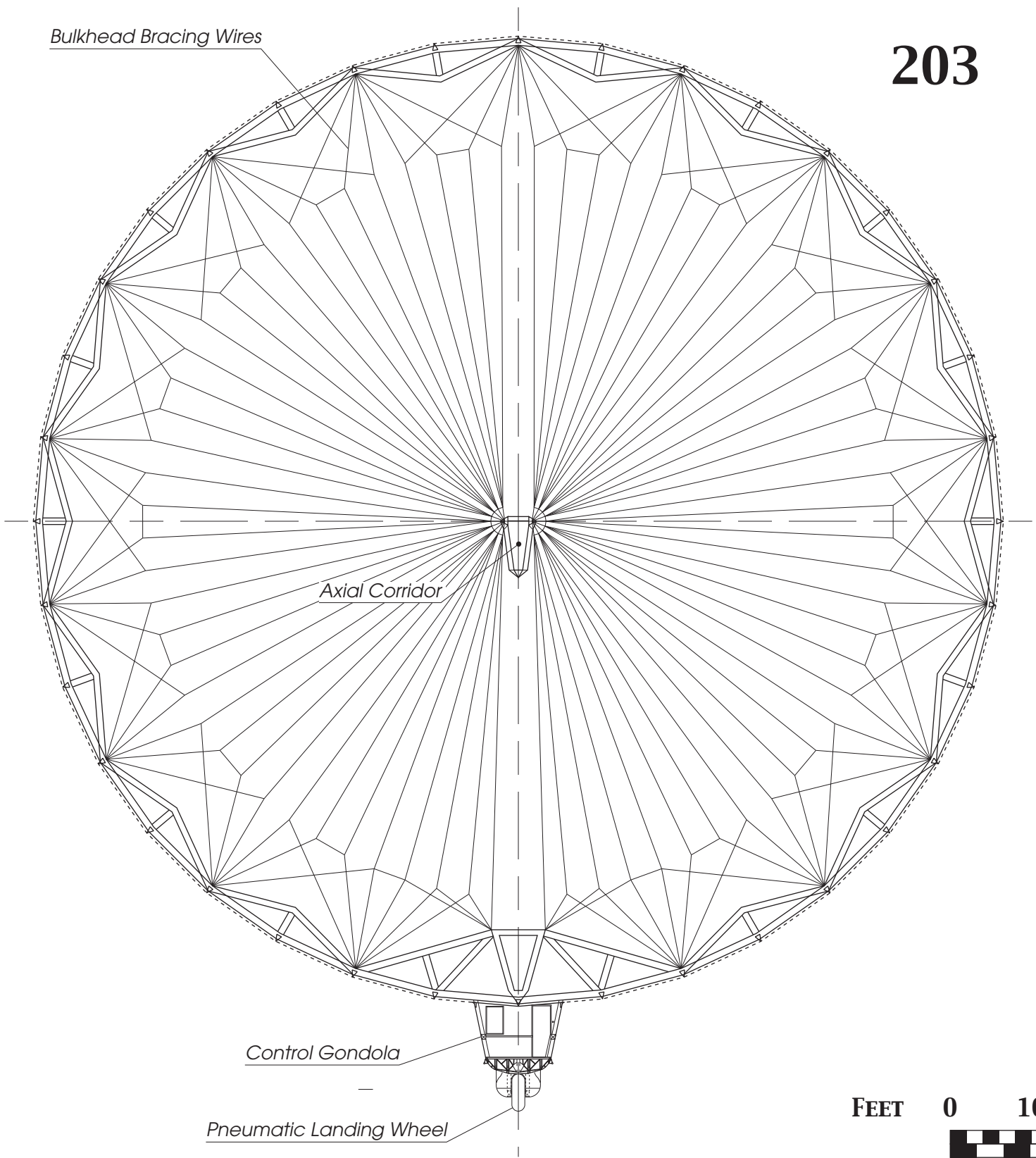
FEET 0 10 20 30 40 50

METERS 0 5 10 15

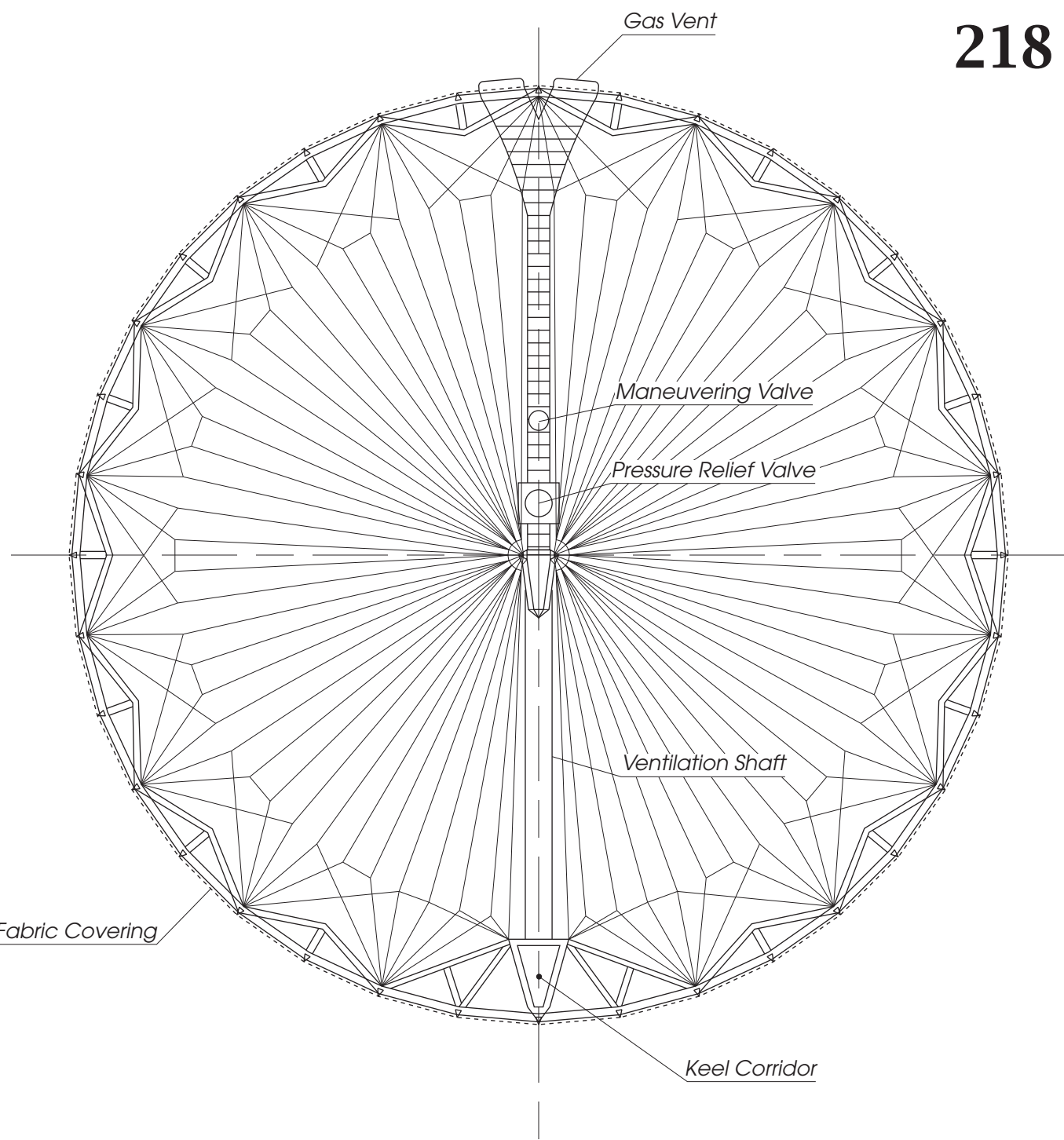
MAIN RINGS



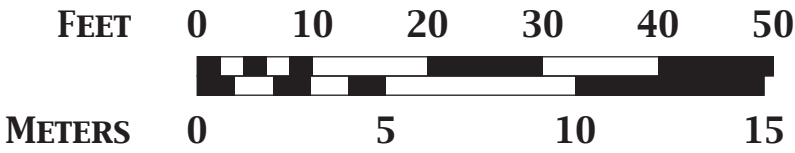
MAIN RINGS



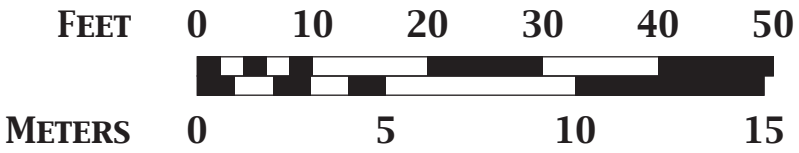
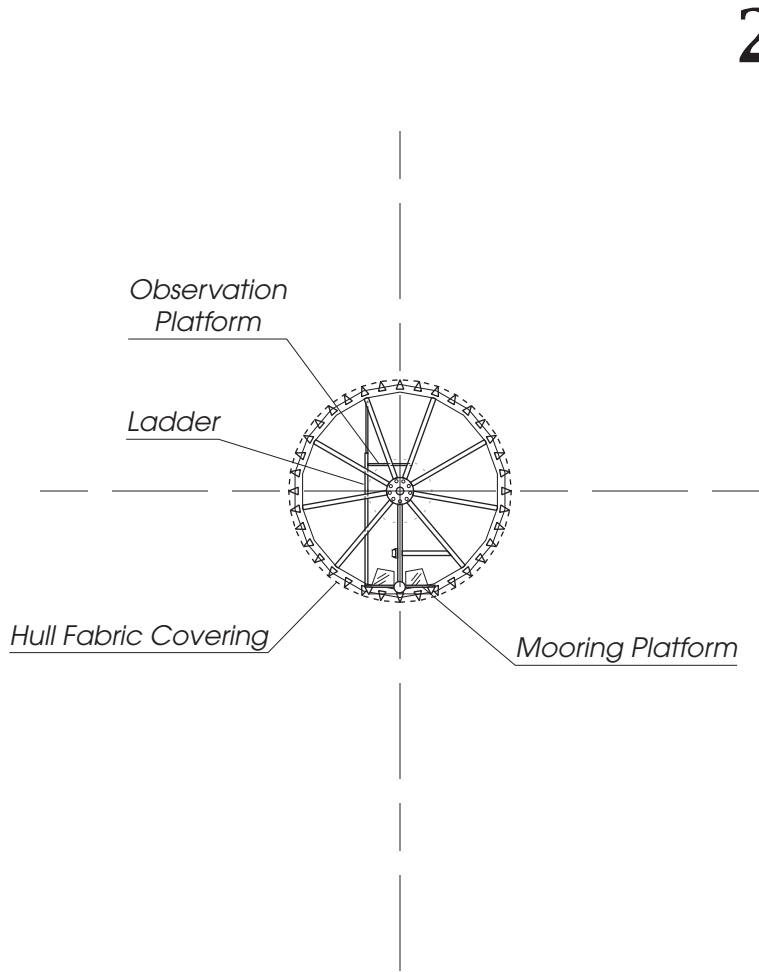
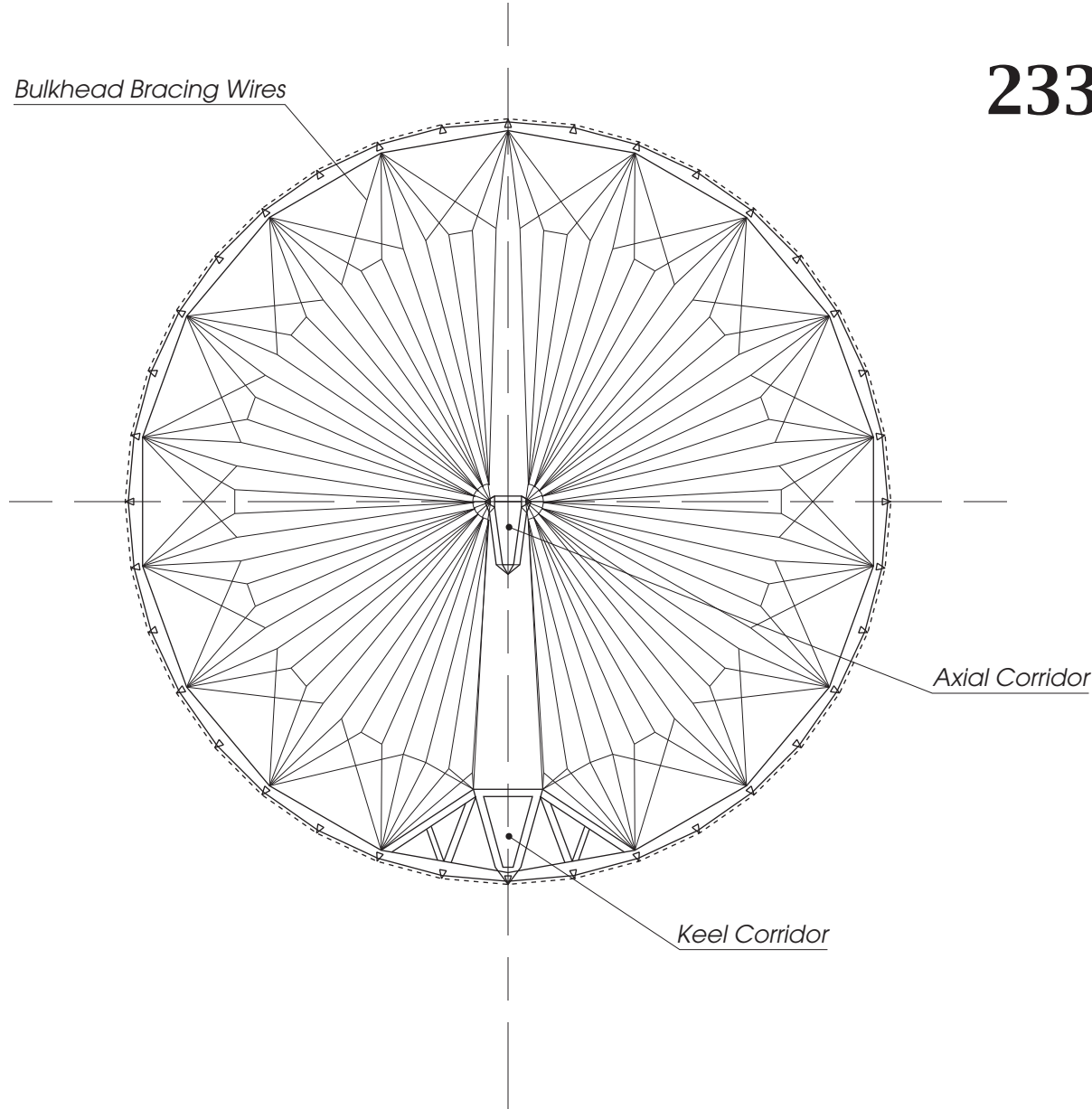
203



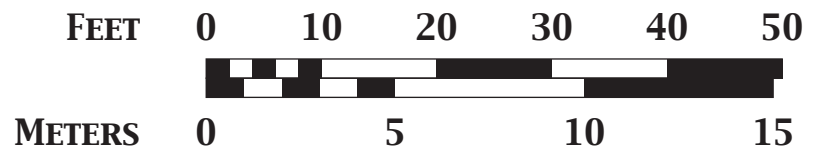
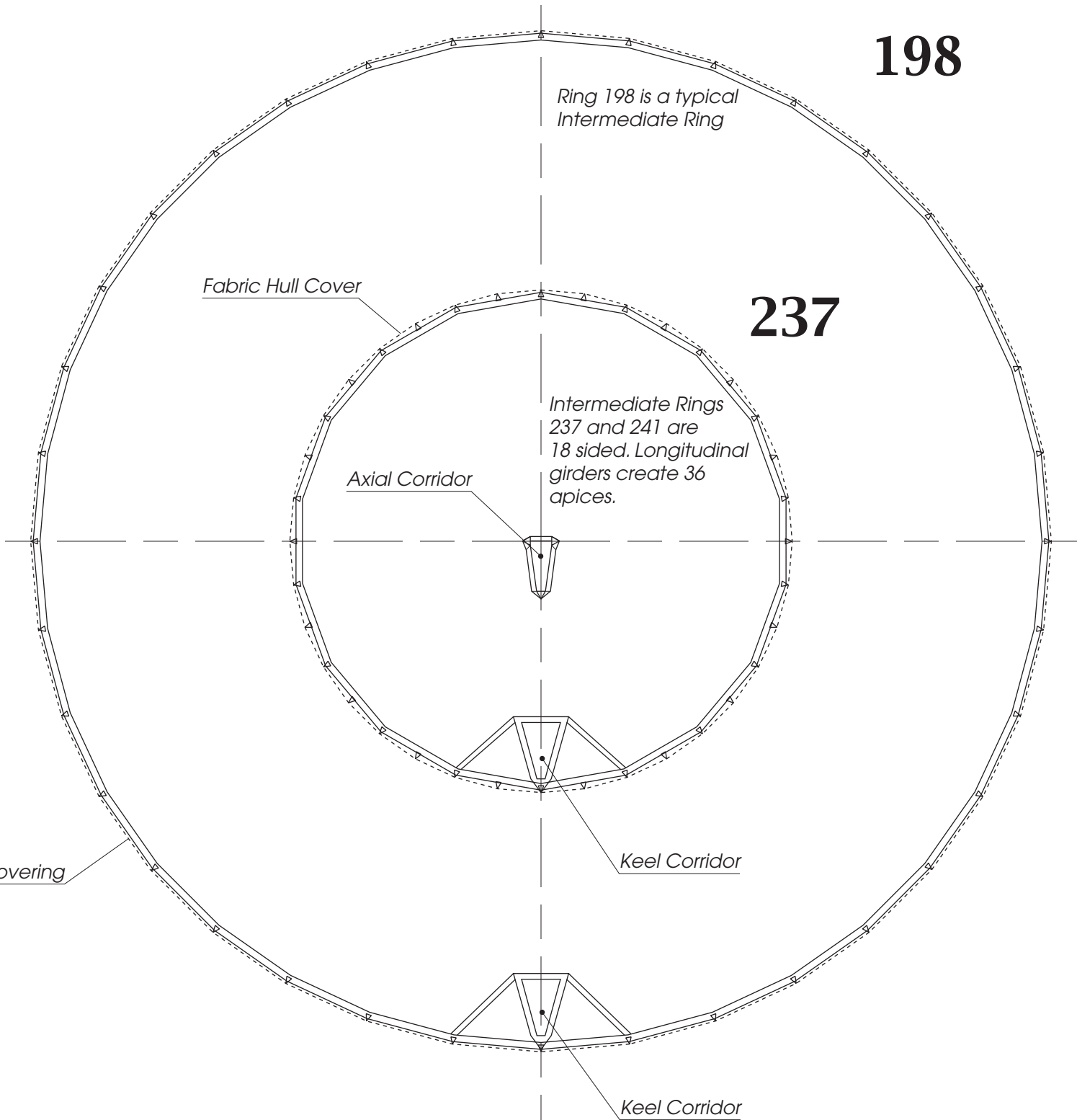
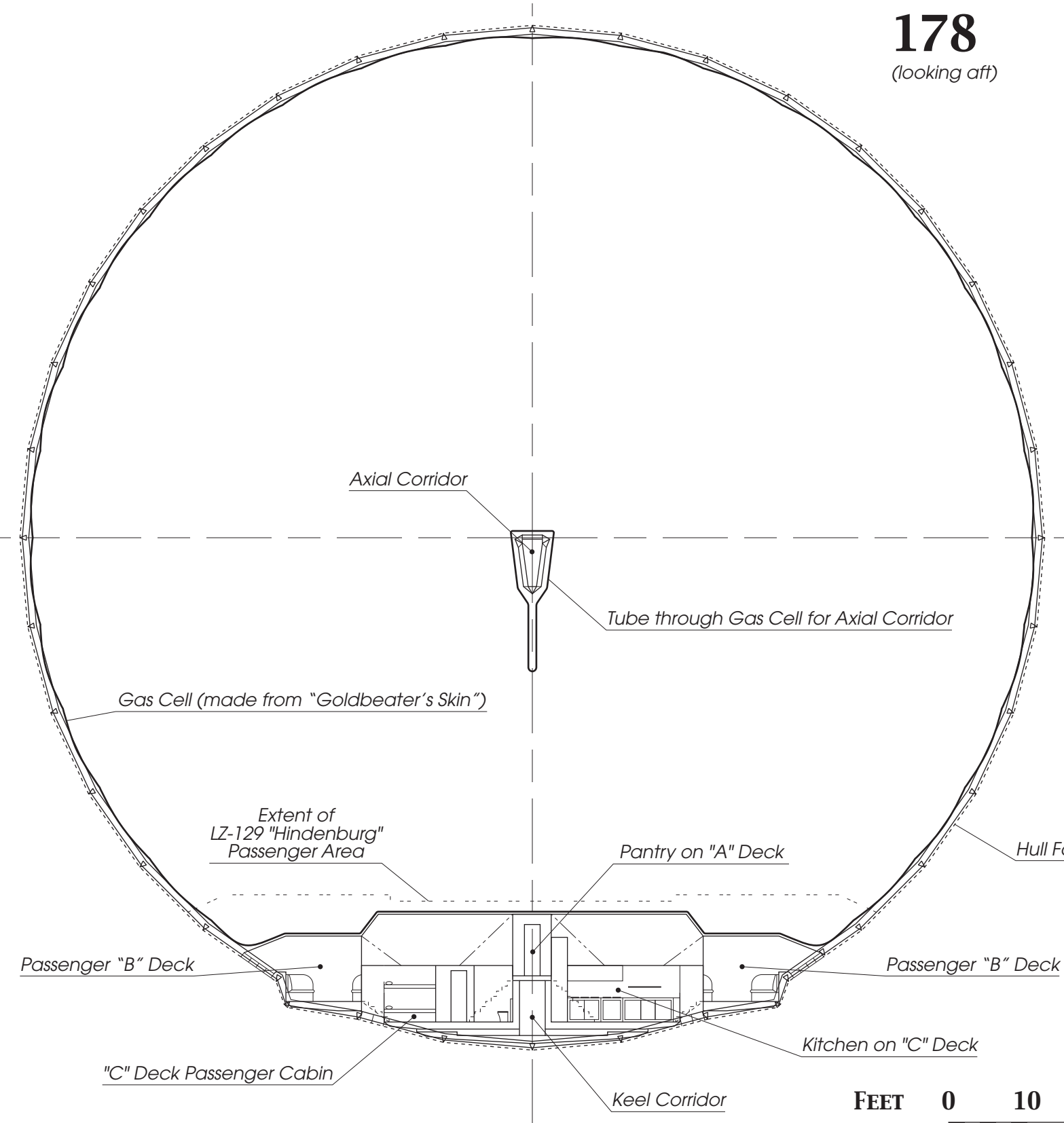
218



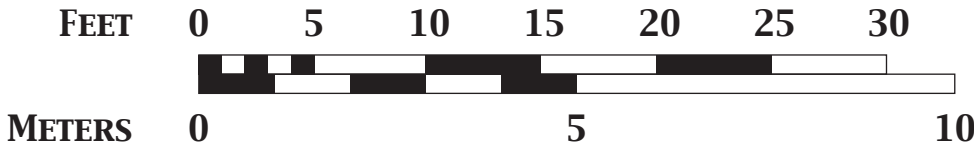
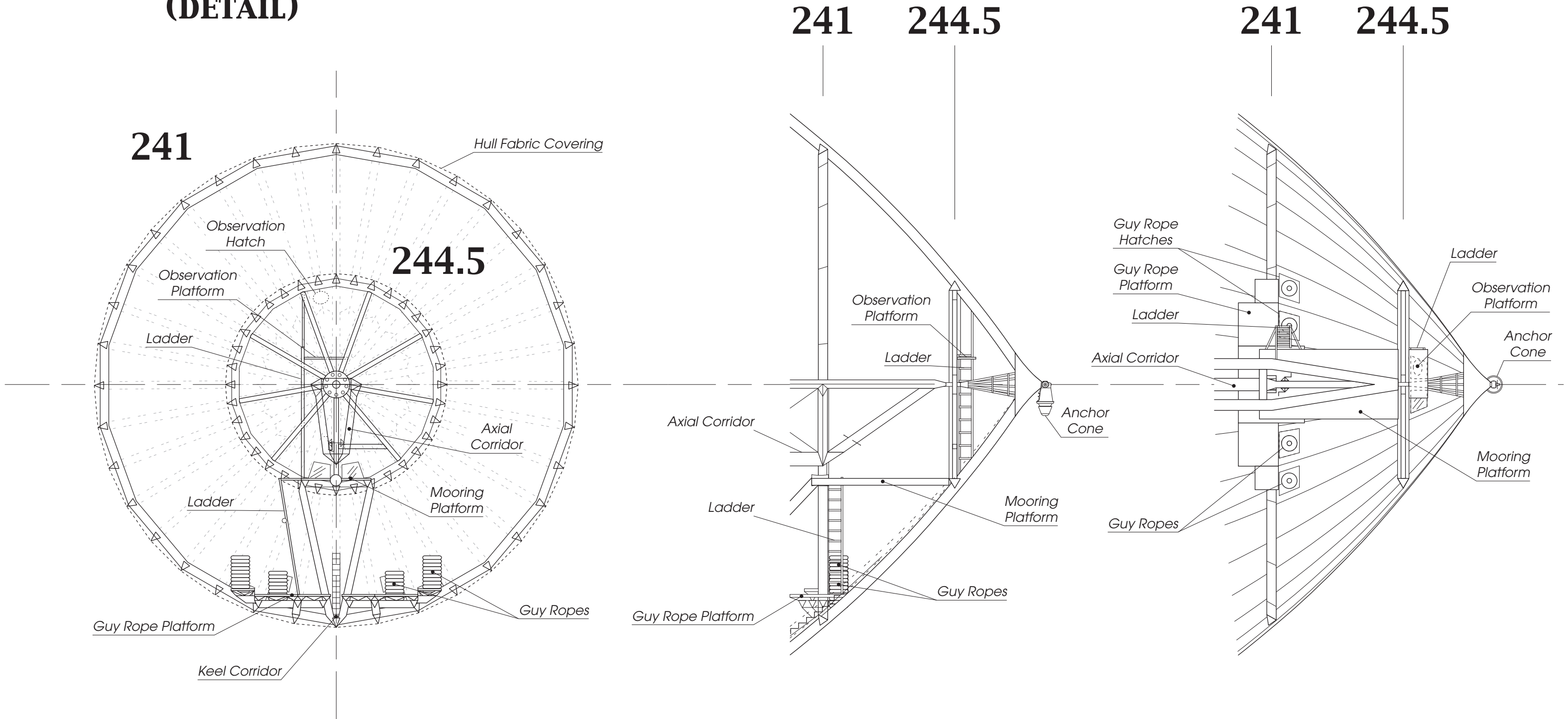
MAIN RINGS



INTERMEDIATE RINGS

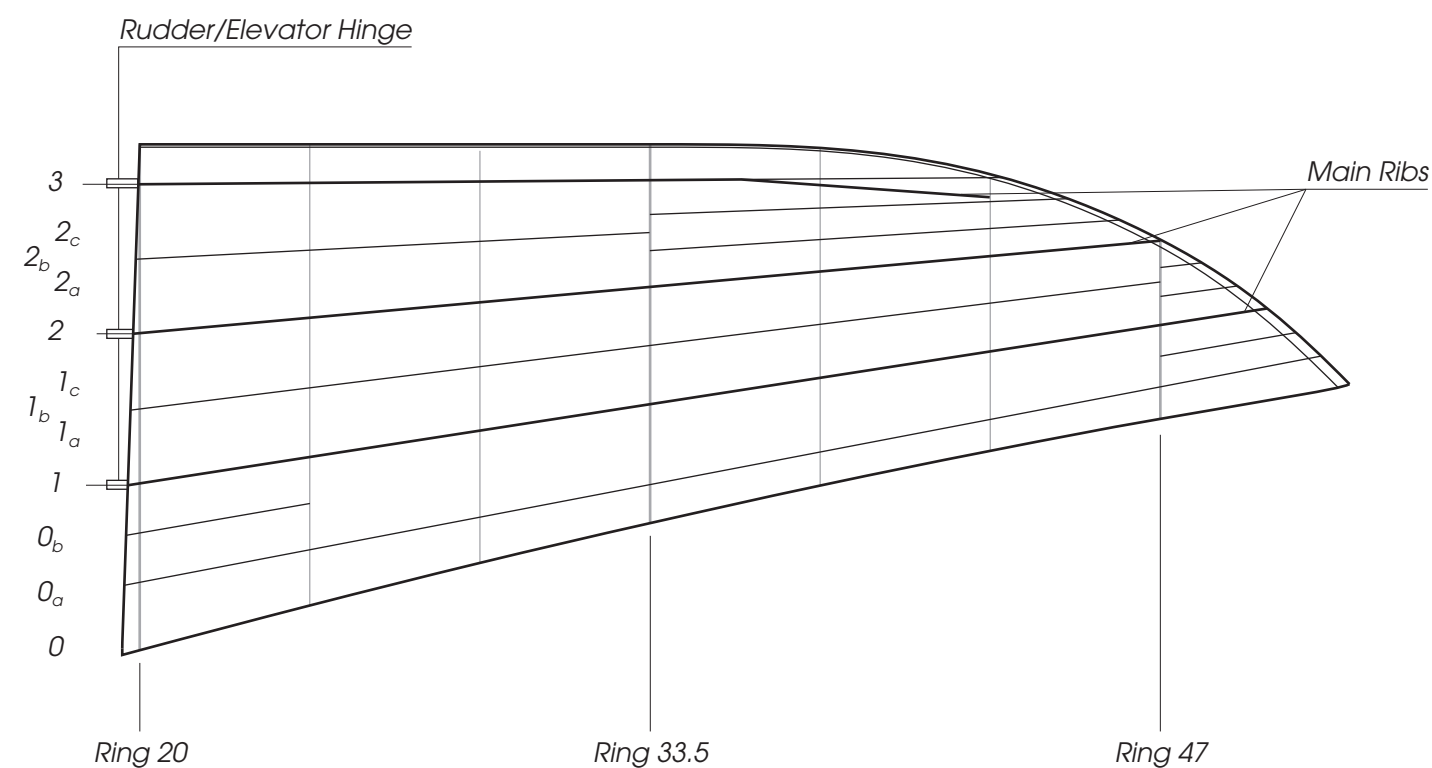


BOW MOORING AREA (DETAIL)



SCALE 1/100

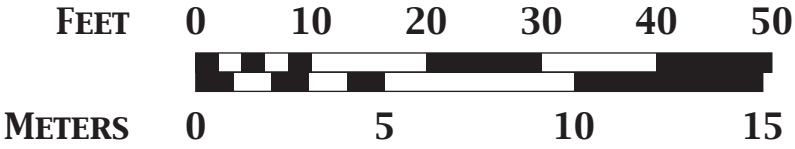
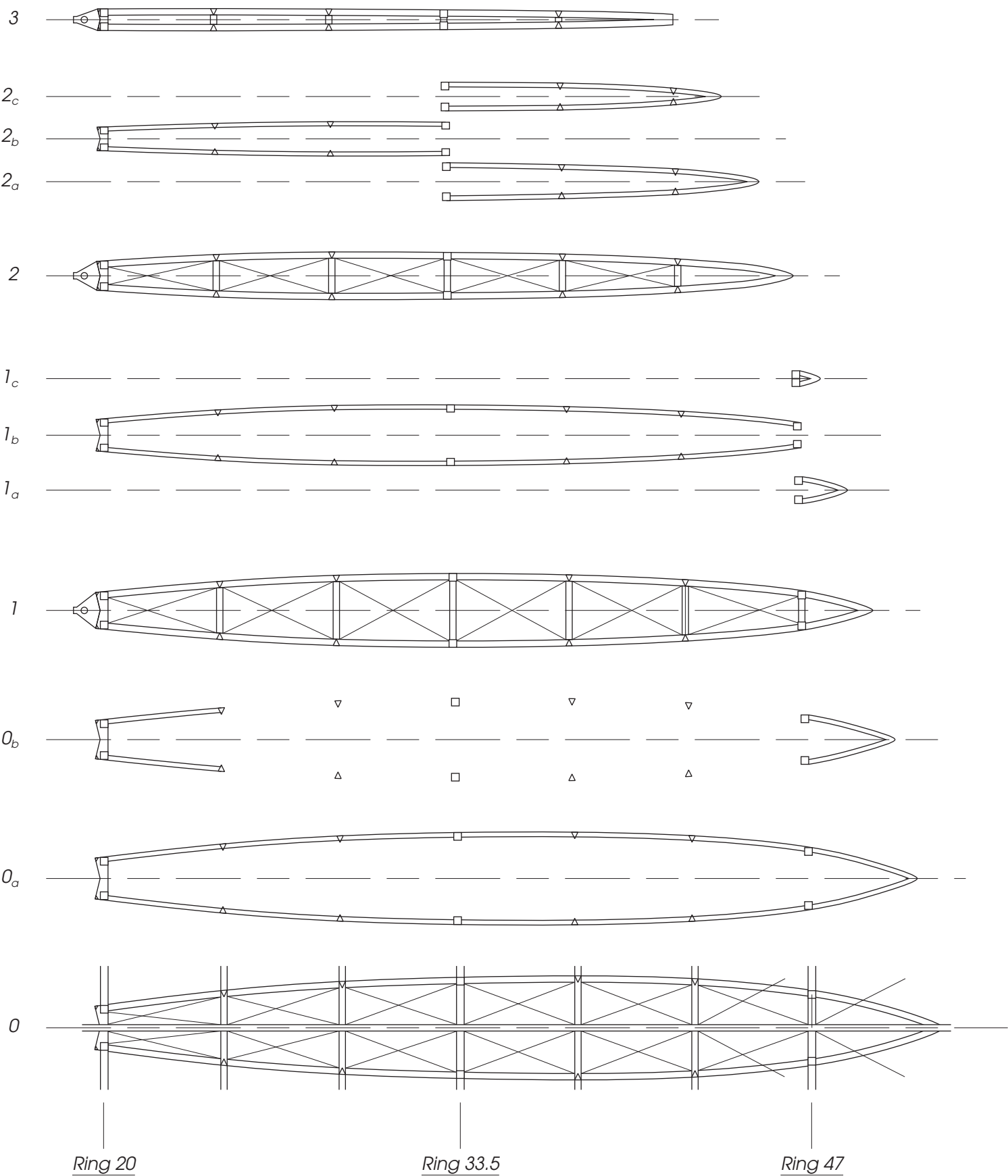
TAIL STRUCTURE

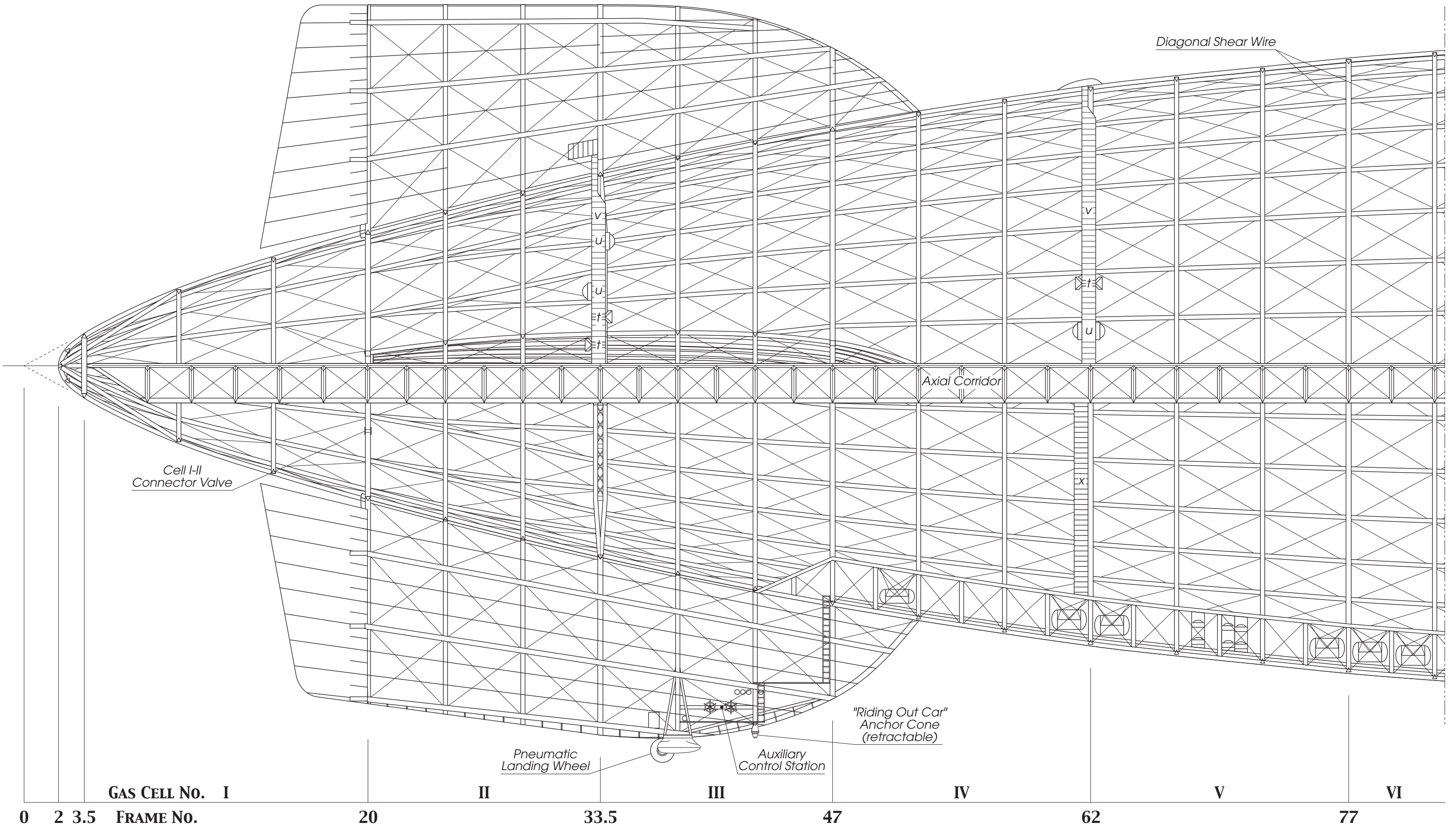
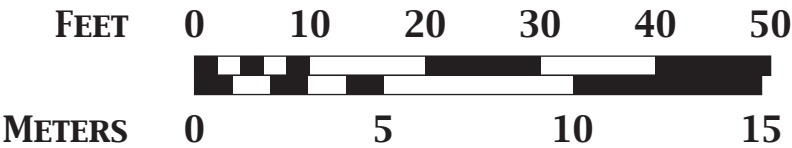


Main Ring construction of the Tail Fins is braced through the hull to the opposing Fin by the Tail Fin Cruciform Structure

Main Ribs constructed using triangular girders;
Intermediate ribs constructed using flat girders

Tests showed that most of the stress was on the leading edge of the fin, so the intermediate ribs were reduced in number from the center to the trailing edge to save weight.





FEET 0 10 20 30 40 50

THE Graf Zeppelin (II)
© 2009 BY DAVID FOWLER

METERS 0 5 10 15

Intermediate Ring

Gas Vent

Main Ring

Gas Cell Cord Netting*

Circumferential Wires*

Gas Cell Wire Netting*

Diagonal Shear Wires

Longitudinal Wires*

* wiring and netting extend throughout airship frame, but are omitted in other cells for clarity

Axial Corridor

"Stub" Keel for Engine Car Access

"Stub" Keel for Engine Car Access

VI GAS CELL No.

VII

VIII

IX

X

XI

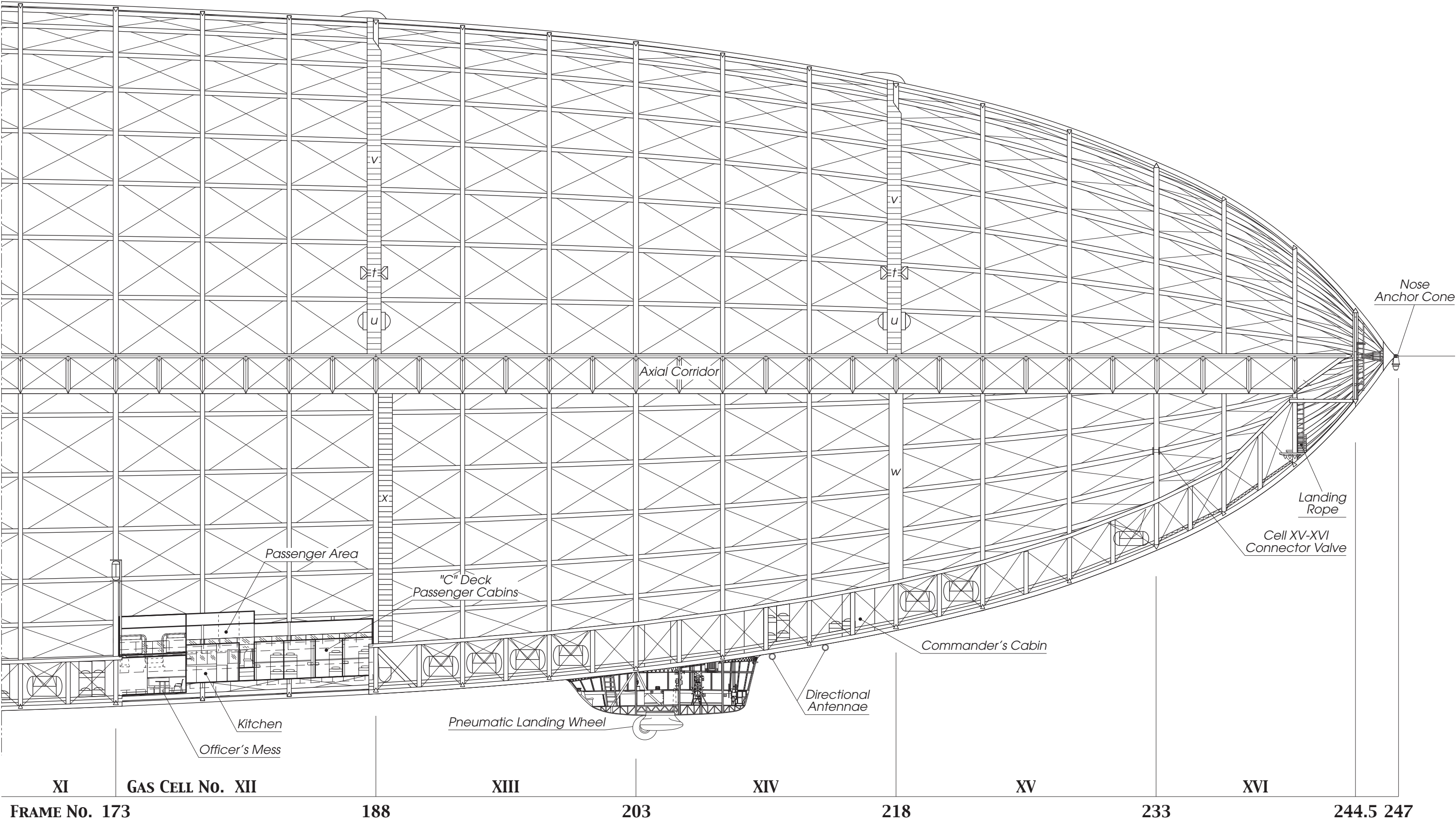
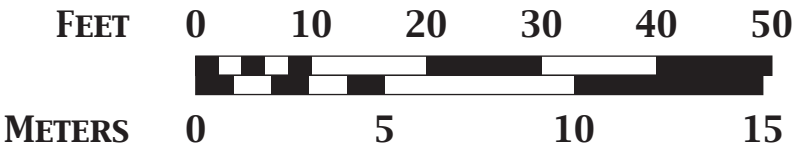
FRAME No. 92

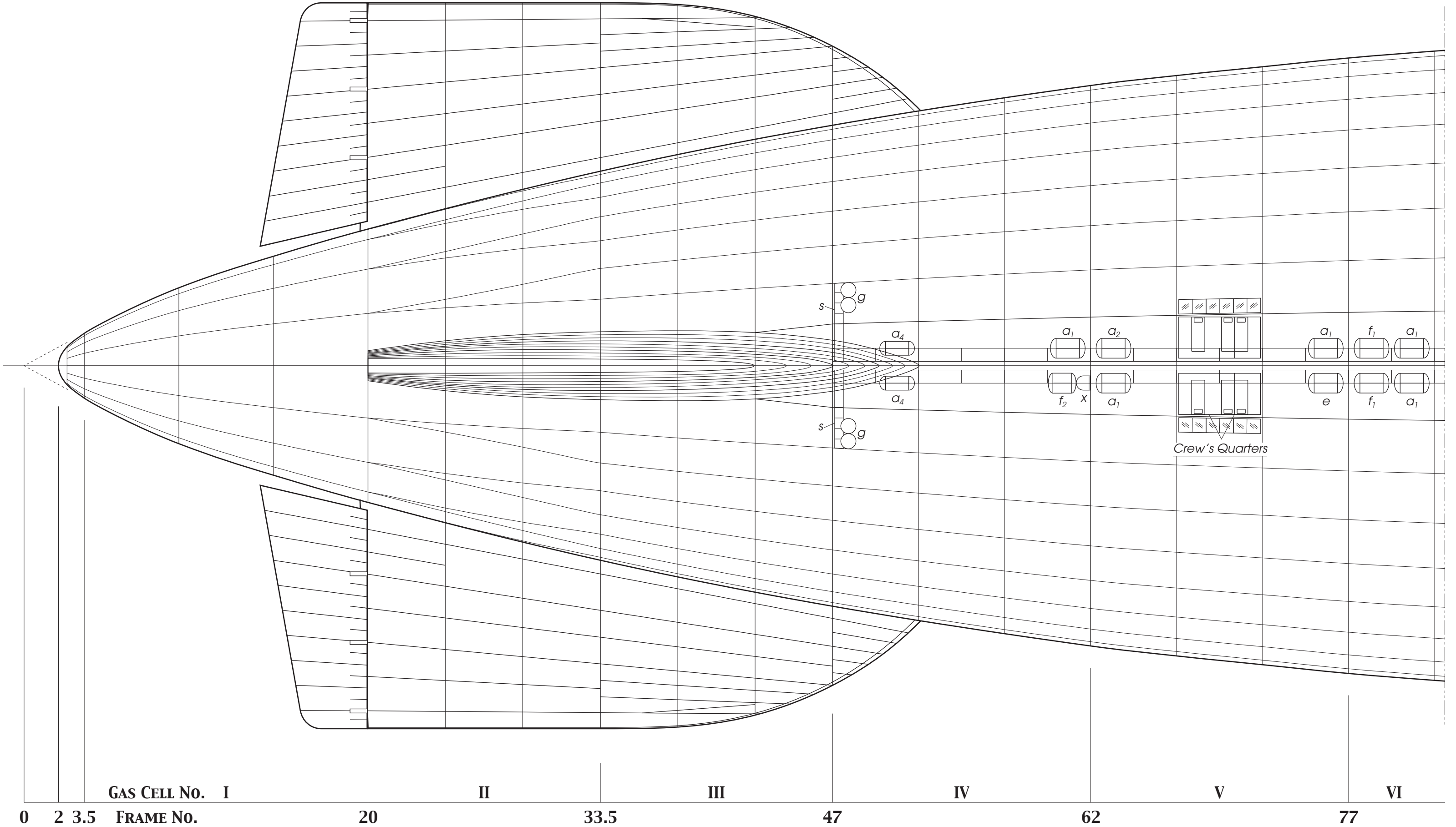
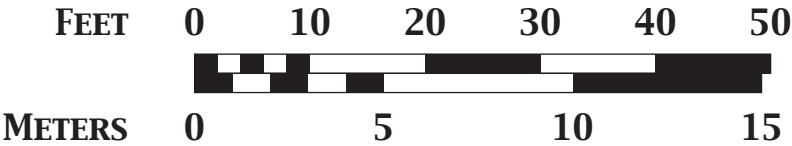
107

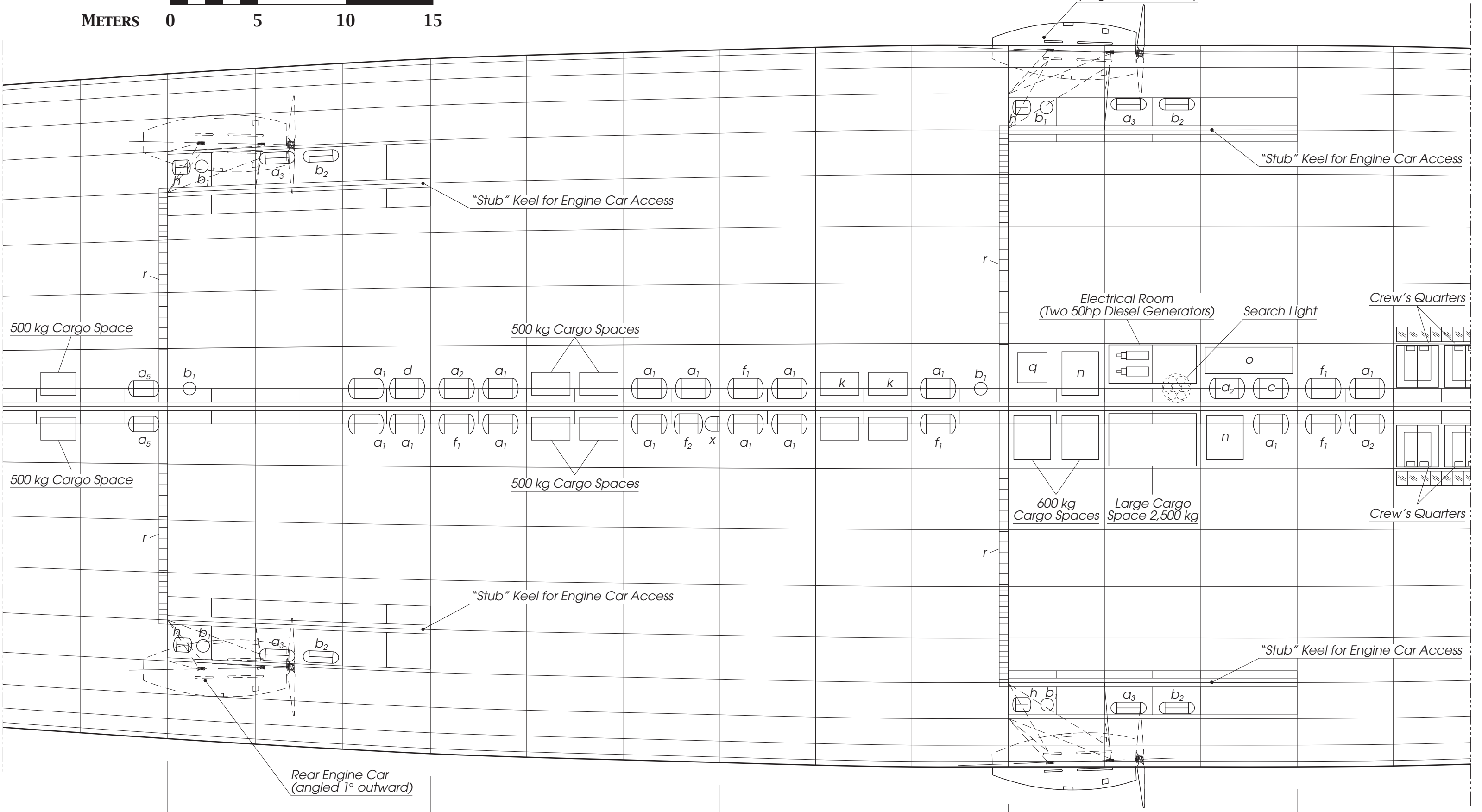
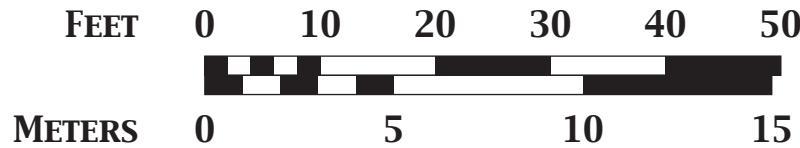
123.5

140

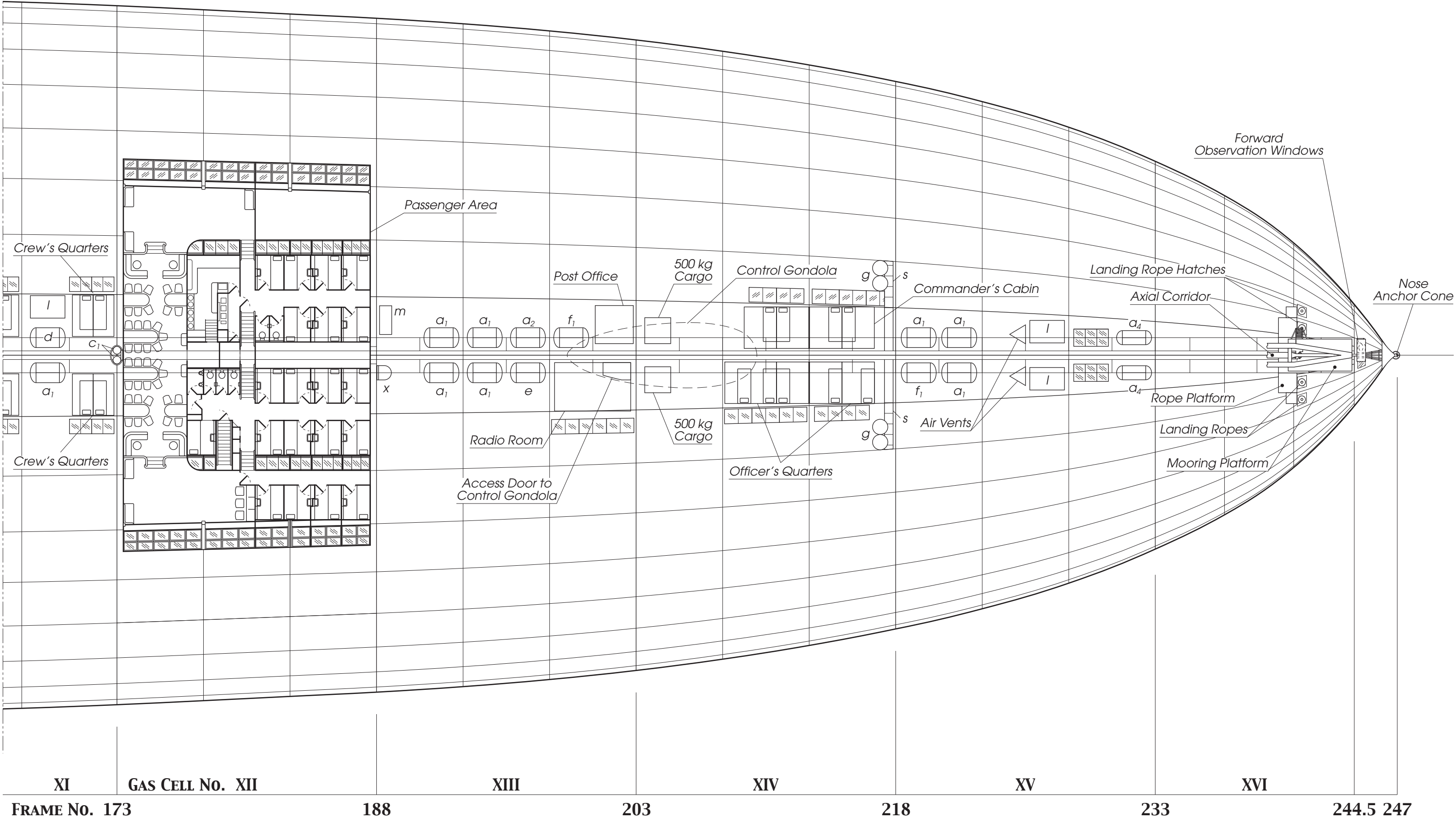
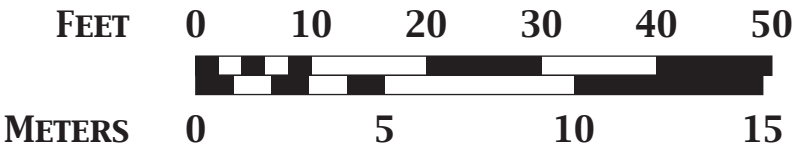
156.5







VI	GAS CELL No.	VII	VIII	IX	X	XI
FRAME No.	92	107	123.5	140	156.5	



Explanation of Letters on Longitudinal
Cross Section and Plan Views

a ₁	Fuel Oil Barrels (2,500 liters) (28)
a ₂	Fuel Oil Valve Barrels (2,500 Liters) (4)
a ₃	Fuel Oil Operation Barrels (800 liters) (4)
a ₄	Fuel Oil Barrels (1,250 liters) (4)
a ₅	Fuel Oil Barrels (850 liters) (2)
b ₁	Lubrication Oil Barrels (500 liters) (6)
b ₂	Lubrication Oil Barrels (380 liters) (4)
c	Drinking Water Barrel (2,500 liters)
c ₁	Passenger Drinking Water Barrels (200 Liters) (2) (elevated to maintain faucet pressure)
d	Fresh Water Barrels (2,500 liters) (2)
e	Waste Water Barrels (2,500 liters) (2)
f ₁	Barrels for Recovered Ballast Water (2,500 liters) (9)
f ₂	Barrels for Recovered Ballast Water (2,000 liters) (2)
g	Double Ballast Bags (500 liters) (4)
h	Cooling Water Barrels (400 liters) (4)
i	Baggage Room (500 kg) (2)
k	Spare Parts Storage Room (500 kg) (2)
l	Food/Storage Room (500 kg)
m	Food/Storage Room (250 kg)
n	Engineer's Room
o	Exhaust
p	Washroom and Toilet
q	Workshop
r	Access Way to Engine Cars (4)
s	Access Ways to Ballast Bags (4)
t	Maneuvering Valve (14)
u	Pressure Relief Valve (14)
v	Gas Shaft (7)
w	Ventilation Shaft (3)
x	Ladder Shafts (3)
y	Anchor Cones (2)

Ring No. (meters)	Diameter (meters)	Diameter (feet)
2	0	0
2.5	2.2	7.06
3.5	3.8	12.38
9	9.1	29.75
14.5	12.7	41.78
20	15.9	52.17
24.5	18.3	59.92
29	20.5	67.31
33.5	22.6	74.24
38	24.6	80.61
42.5	26.3	86.43
47	28.0	91.78
52	29.6	97.25
57	31.2	102.25
62	32.6	106.96
67	33.8	110.76
72	34.8	114.12
77	35.8	117.45
82	36.6	120.08
87	37.3	122.38
92	38.0	124.60
97	38.6	126.64
102	39.2	128.53
107	39.7	130.25
112.5	40.1	131.56
118	40.4	132.55
123.5	40.7	133.53
129	41.0	134.51
134.5	41.2	135.17
140	41.2	135.17
145.5	41.2	135.17
151	41.2	135.17
156.5	41.2	135.17
162	41.1	134.84
167.5	40.8	133.91
173	40.4	132.55
178	39.9	131.02
183	39.4	129.40
188	38.9	127.78
193	38.3	125.69
198	37.5	122.99
203	36.4	119.56
208	35.1	115.28
213	33.5	110.07
218	31.6	103.67
223	29.3	96.13
228	26.4	86.61
233	22.4	73.49
237	18.5	60.70
241	13.0	42.65
244.5	5.9	19.63
246.5	0.8	2.60
247	0	0