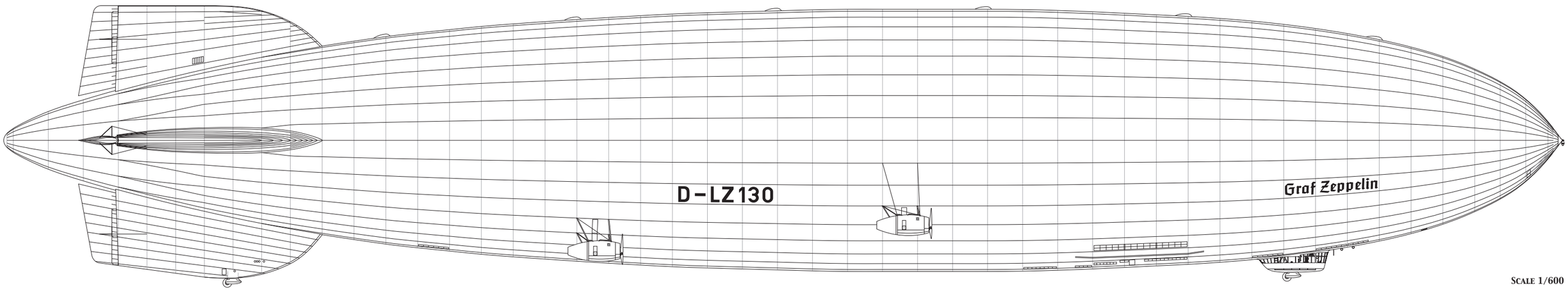
DETAILED TECHNICAL DRAWINGS
OF THE

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

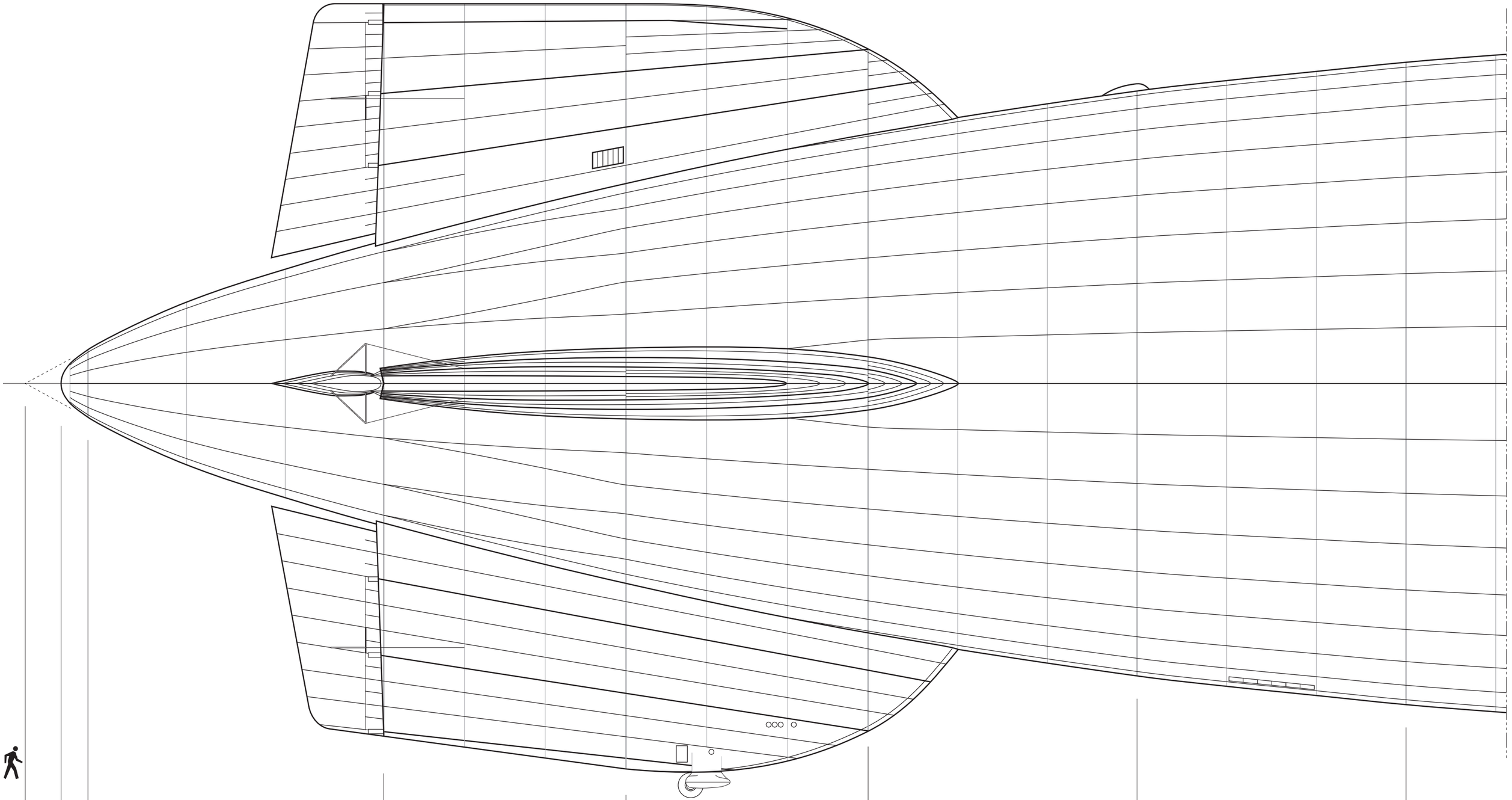
DRAWINGS BY DAVID FOWLER

20161101

THE Graf Zeppelin (II)

FEET 0 10 20 30 40 50

METERS 0 5 10 15

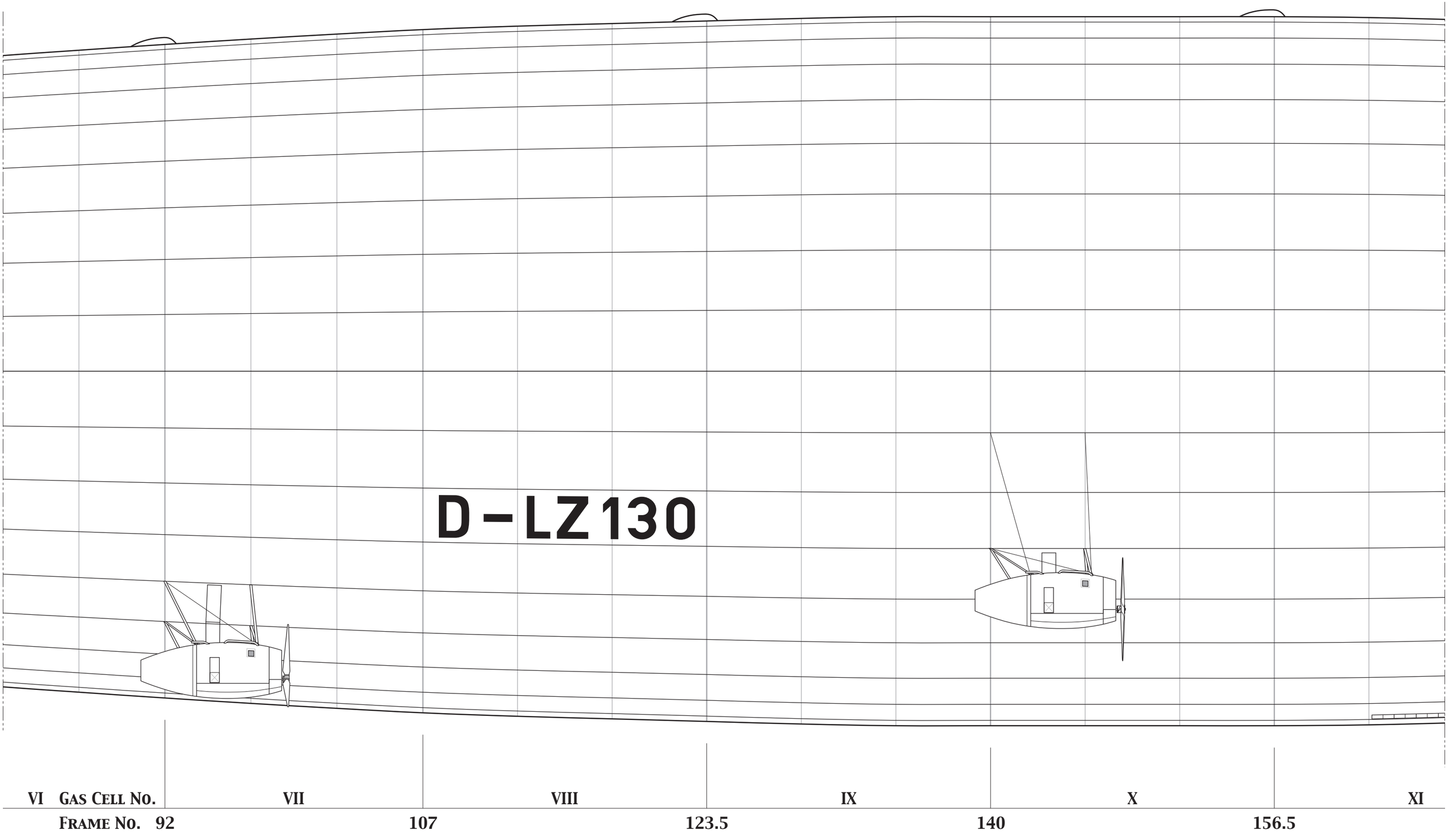


GAS CELL NO. I II III IV V VI

0 2 3.5 FRAME NO. 20 33.5 47 62 77

FEET 0 10 20 30 40 50

METERS 0 5 10 15

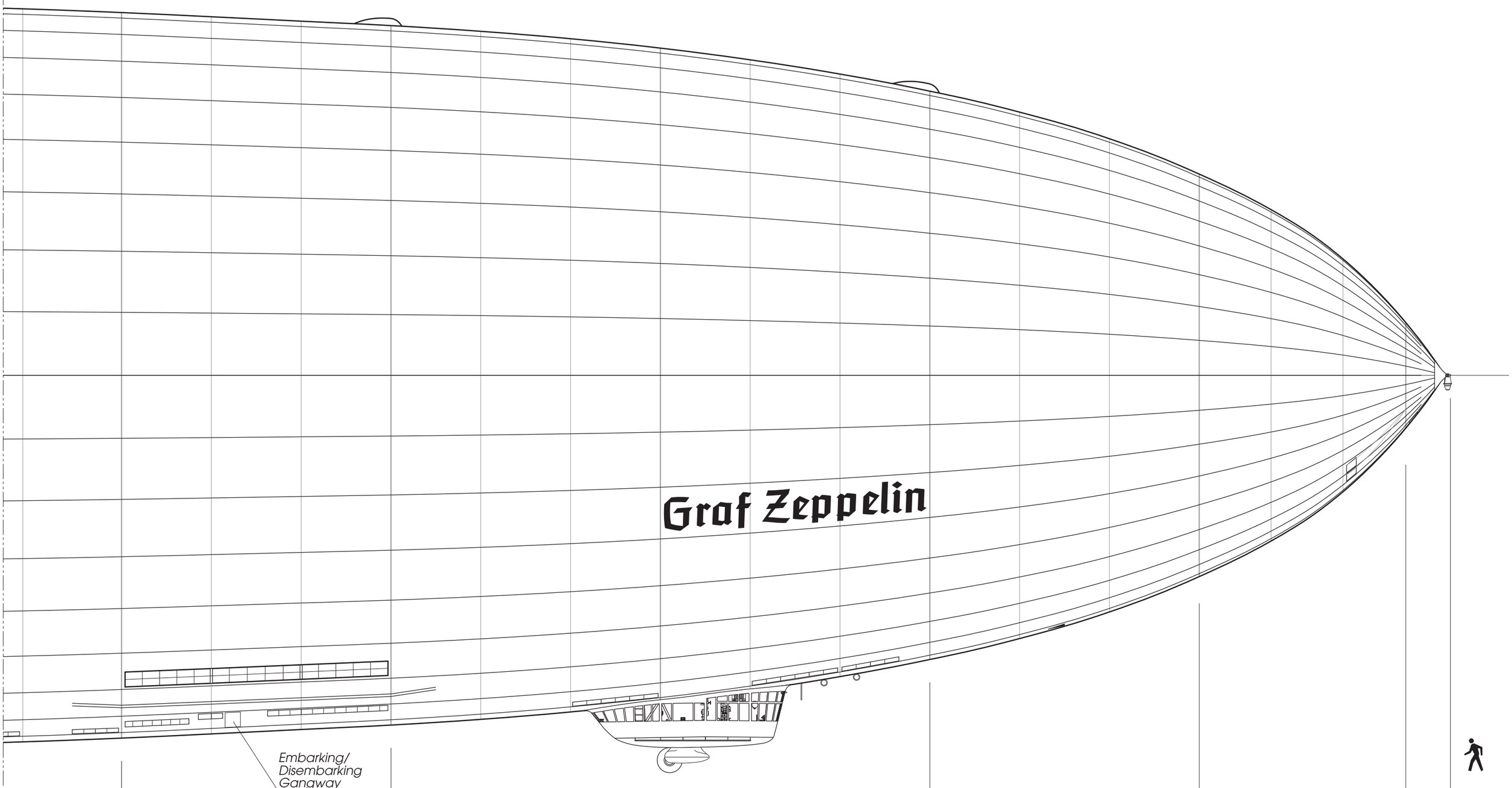


VI GAS CELL NO. VII VIII IX X XI

FRAME NO. 92 107 123.5 140 156.5

FEET 0 10 20 30 40 50

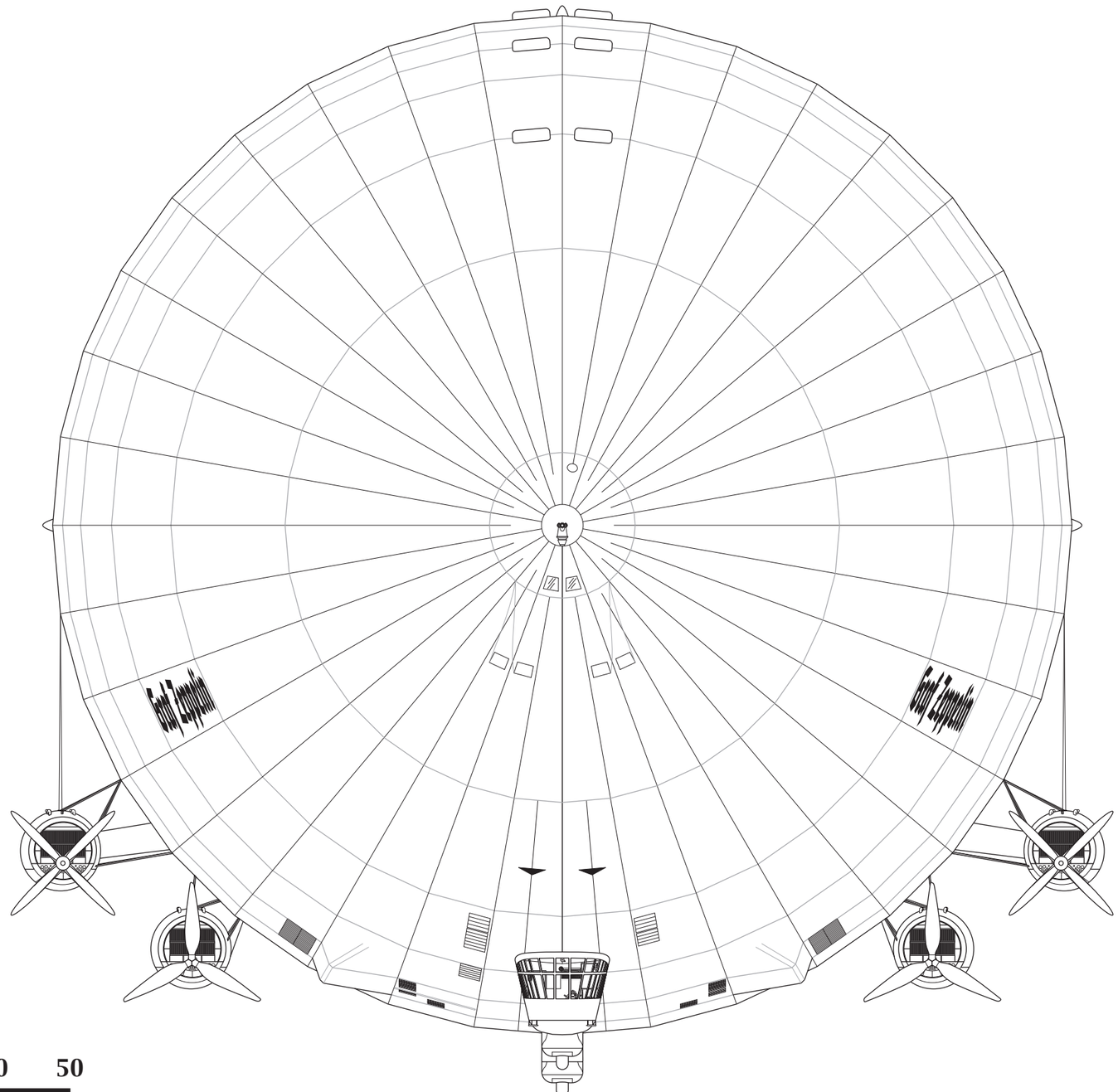
METERS 0 5 10 15



XI GAS CELL NO. XII XIII XIV XV XVI

FRAME NO. 173 188 203 218 233 244.5 247

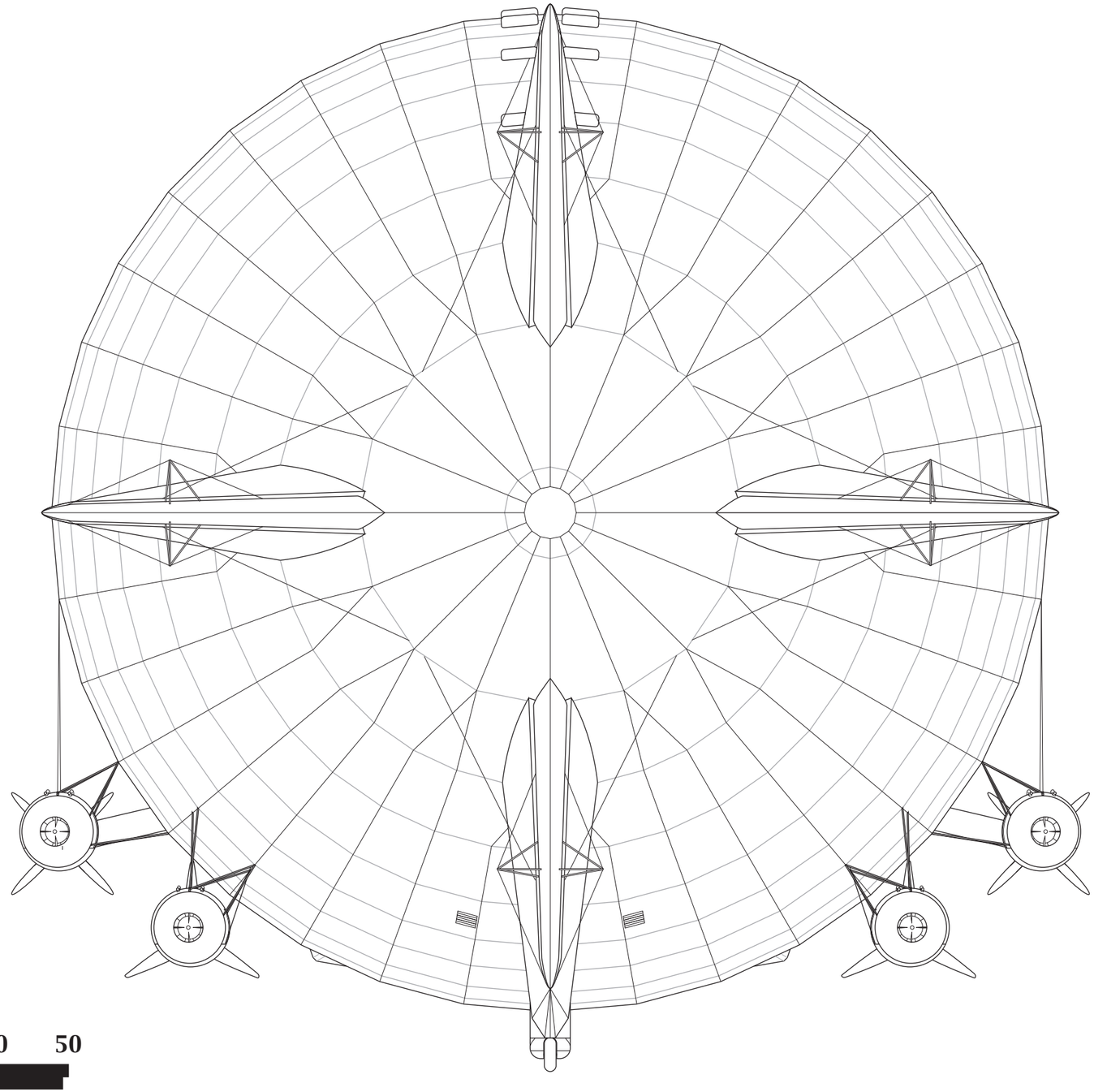
Front Elevation

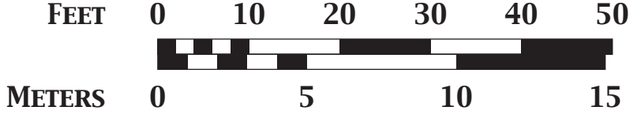


Feet 0 10 20 30 40 50

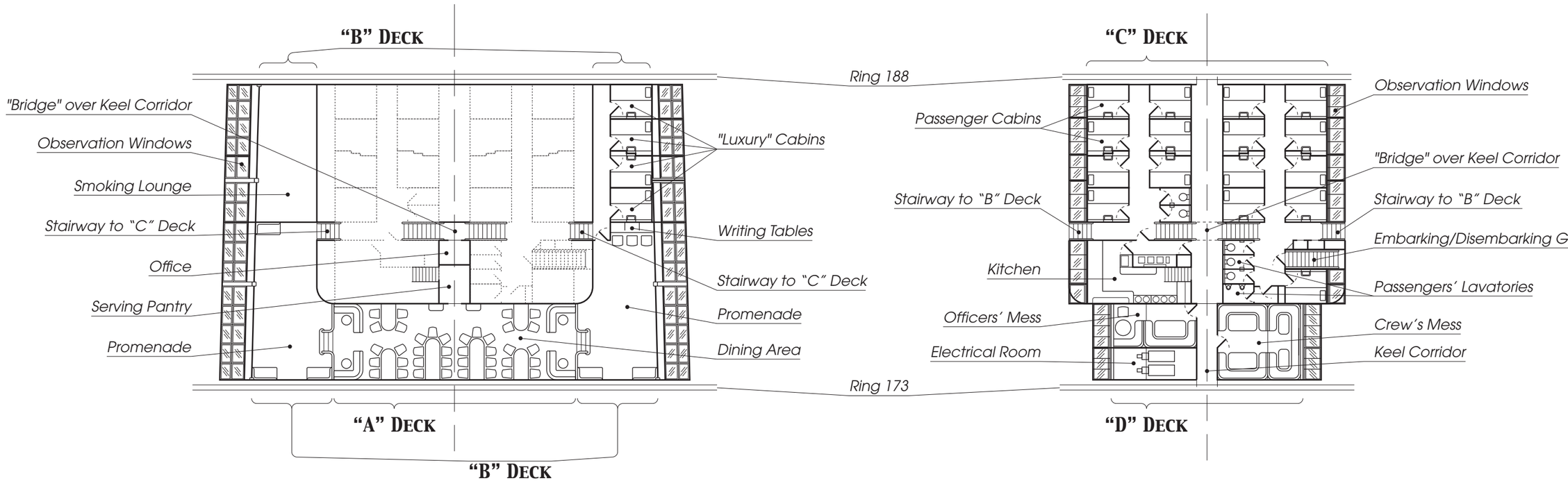
Meters 0 5 10 15

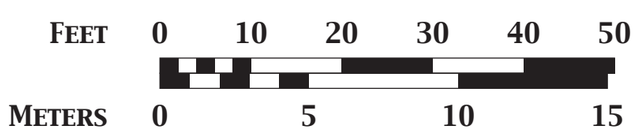
Rear Elevation



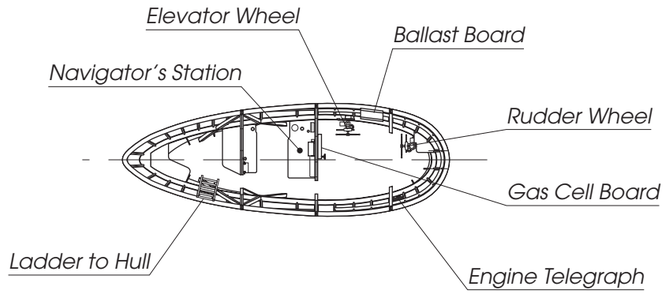


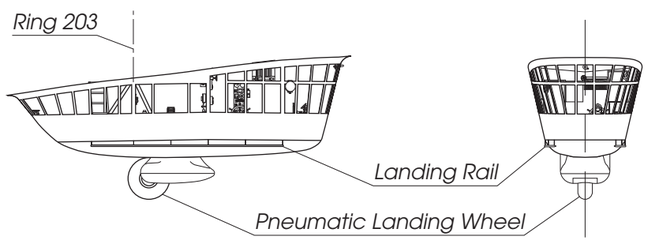
Passenger Area

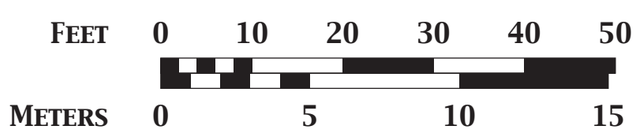




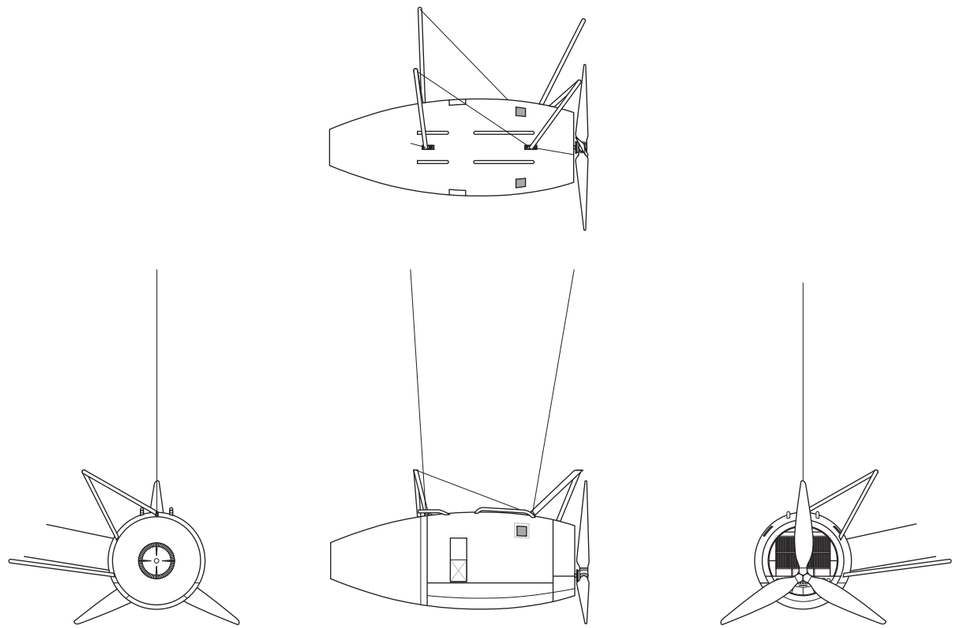
Control Gondola







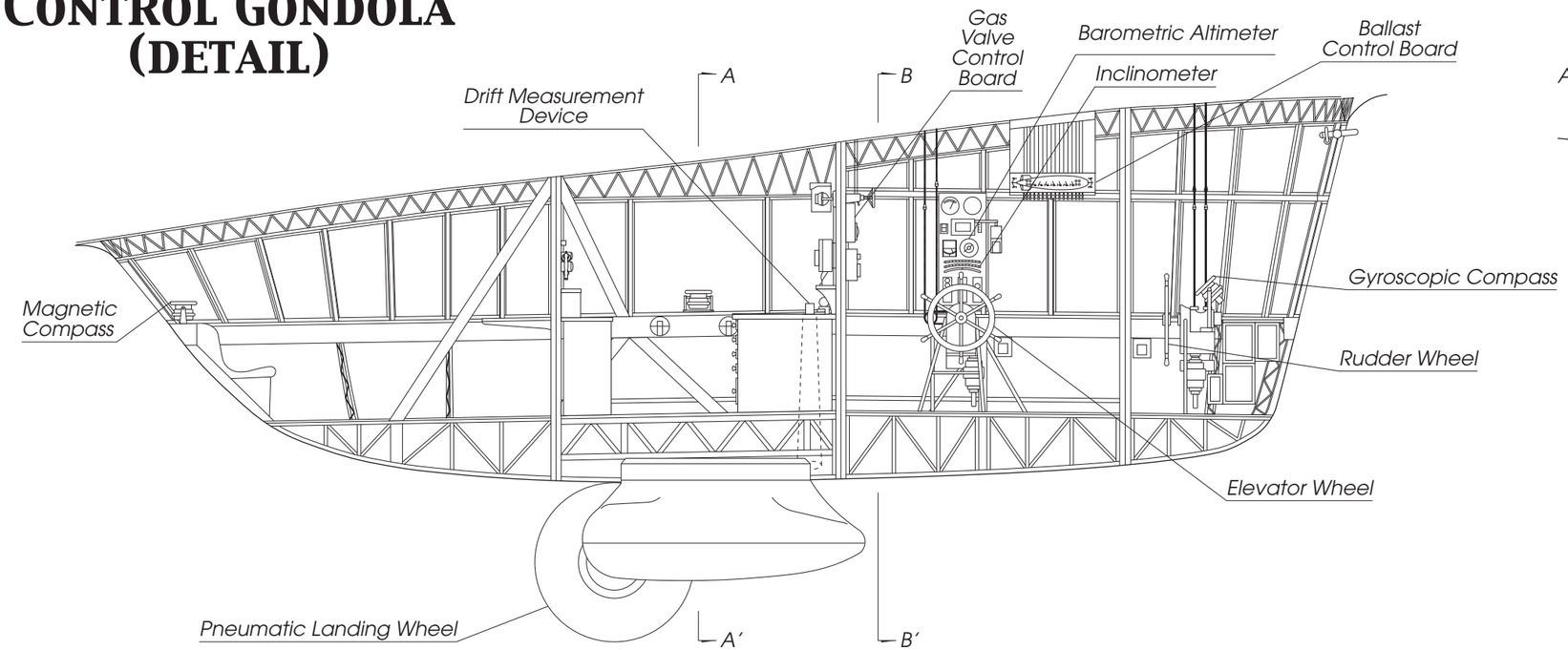
Engine Car (forward)

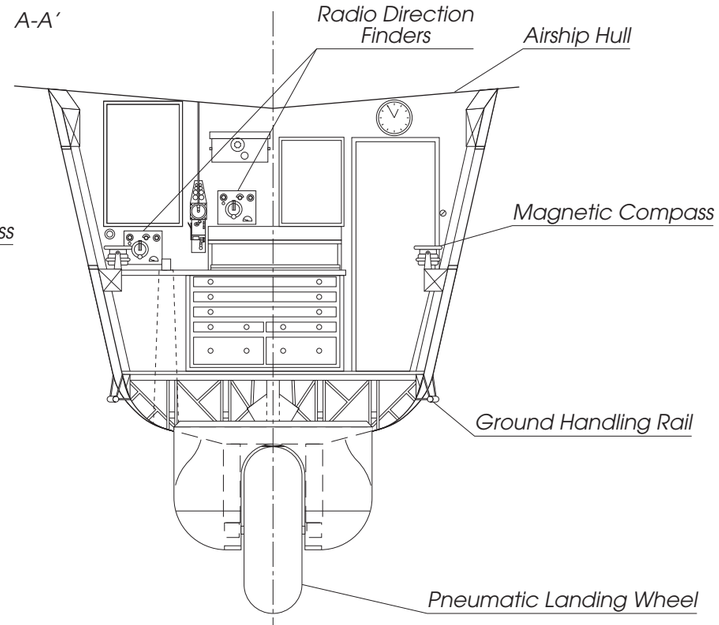


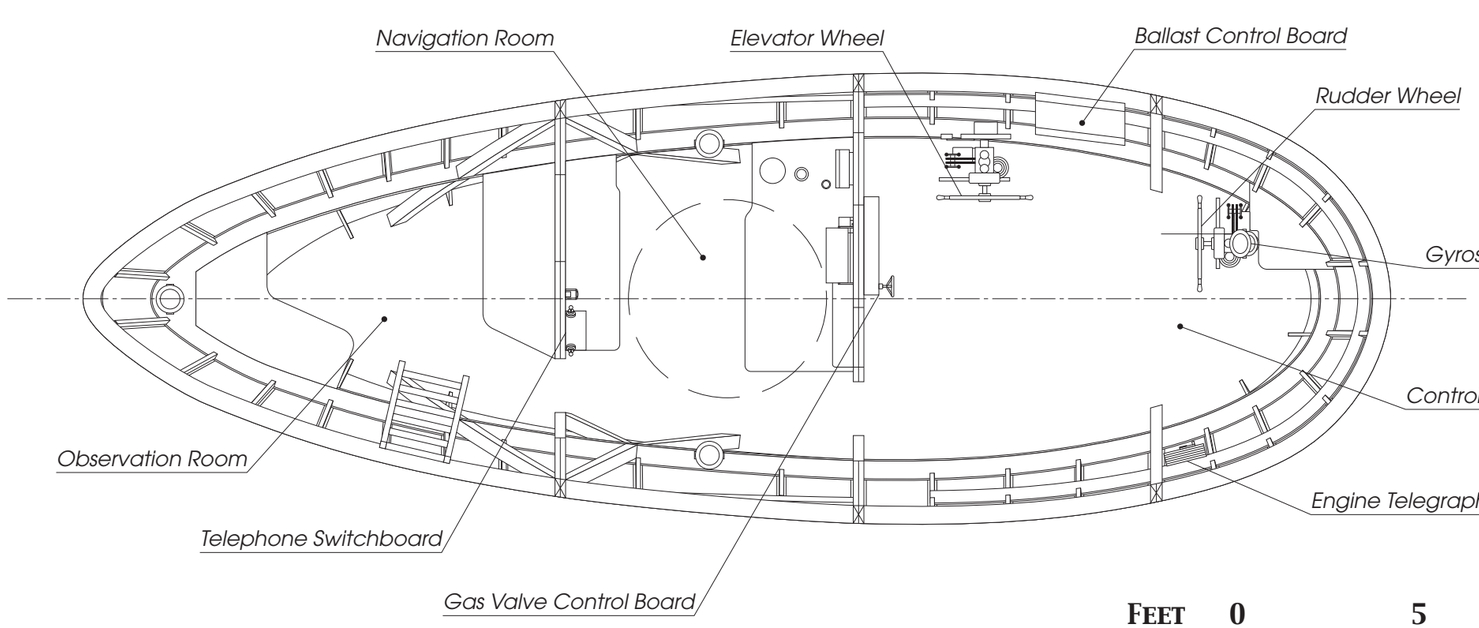
4 Engine Cars
Forward Engine Cars mounted 4° outward from ship's axis
Aft Engine Cars mounted at 3° outward from ship's axis

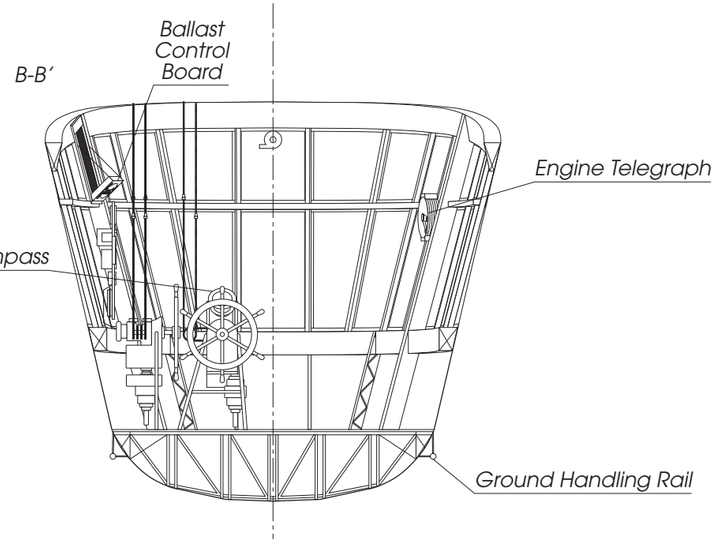
Engine specifications:
Daimler Benz LOF 6 diesel
V16, 4 valve per cylinder
770 kW (1050 hp) maximum at 1500 rpm
690 kW (940 hp) cruising at 1350 rpm
225 g/kWh (0.37 lbs./hp/h) fuel consumption (cruising)

Control Gondola (detail)







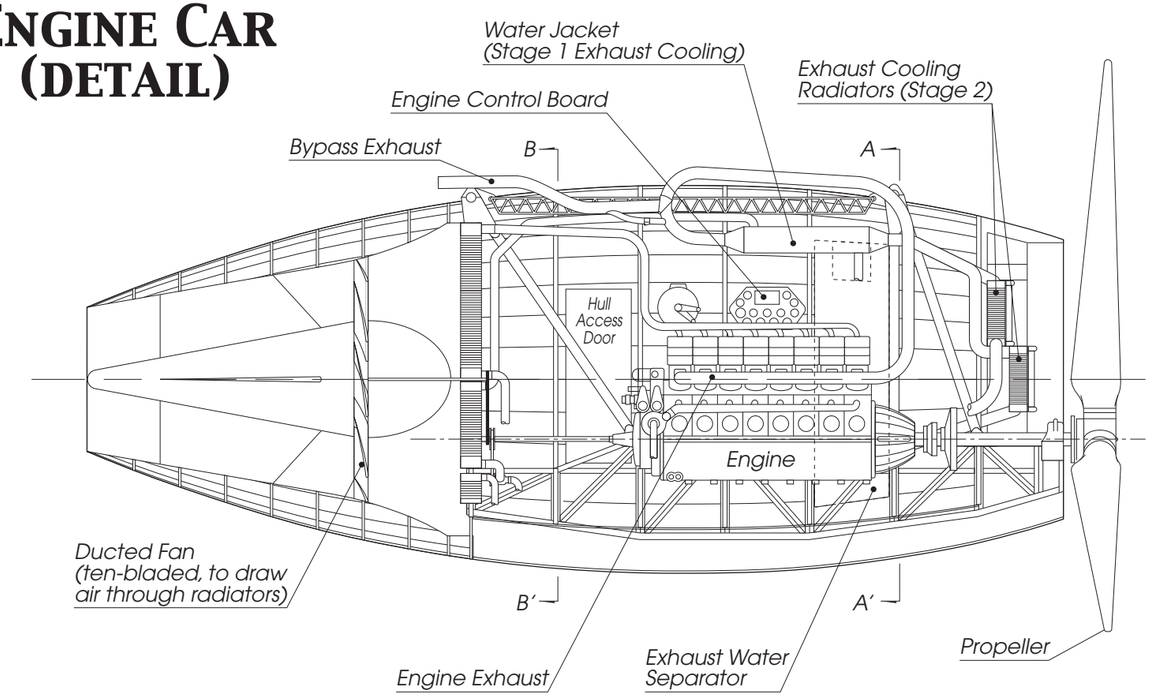


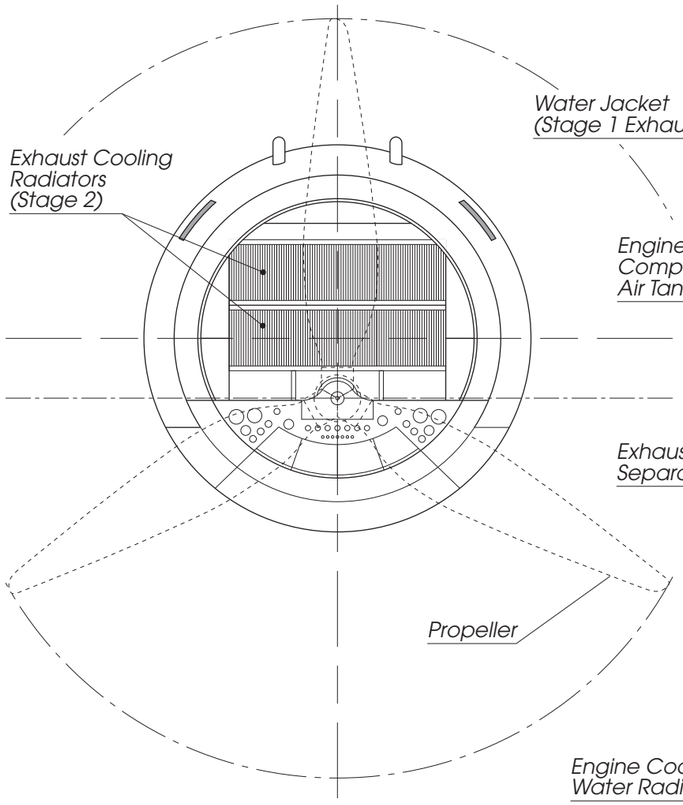
Feet 0 5 10 15

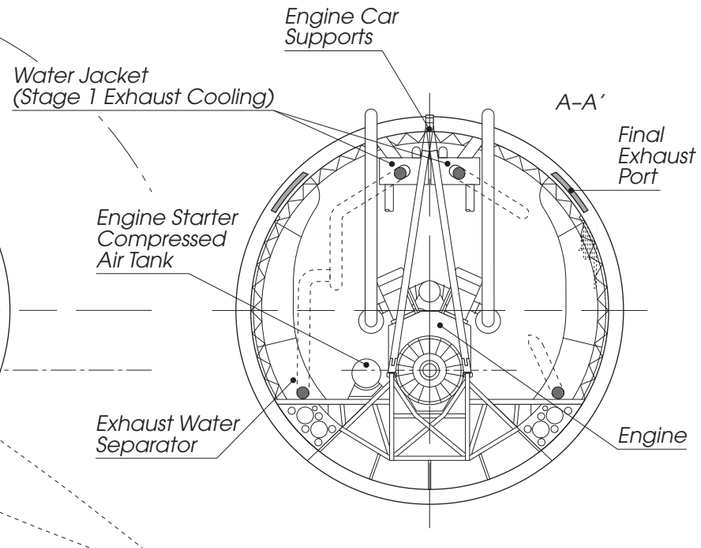
Meters 0 1 2 3 4 5

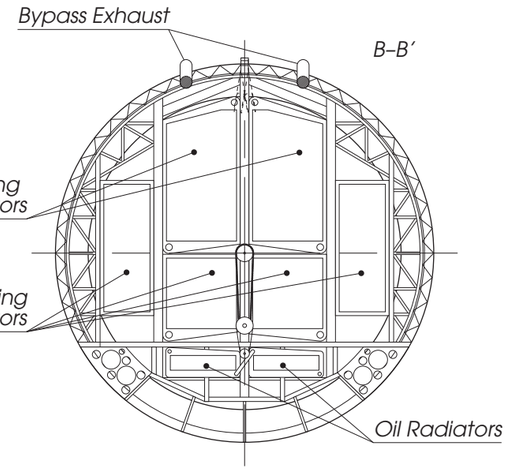
Scale 1/50

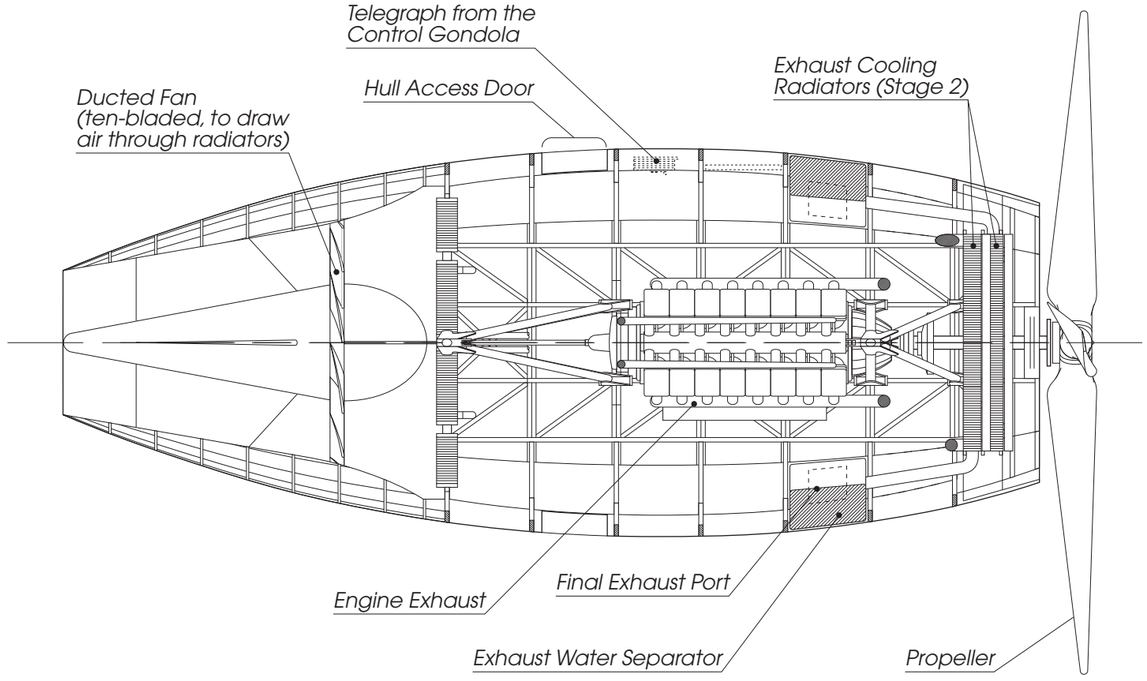
Engine Car (detail)







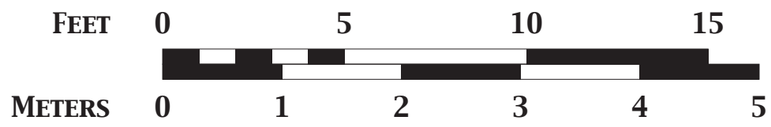




4 Engine Cars
Forward Engine Cars mounted 2° outward from ship's axis
Aft Engine Cars mounted at 1° outward from ship's axis

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

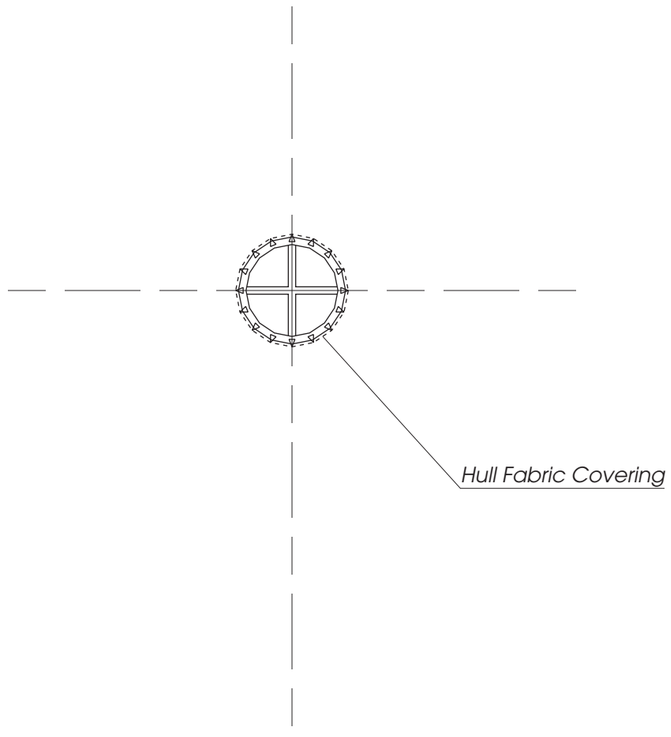
Exhaust cooling system to reclaim water for ballast.
Stage 1: Cool Water Jacket (temperature in = 400°C, temperature out = 50°C)
Stage 2: Cooling Radiator (temperature in = 50°C, temperature out = 20°C)
Final: Water is condensed and separated from the exhaust in collector (baffles) and transferred to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



SCALE 1/50

Main Rings

3.5



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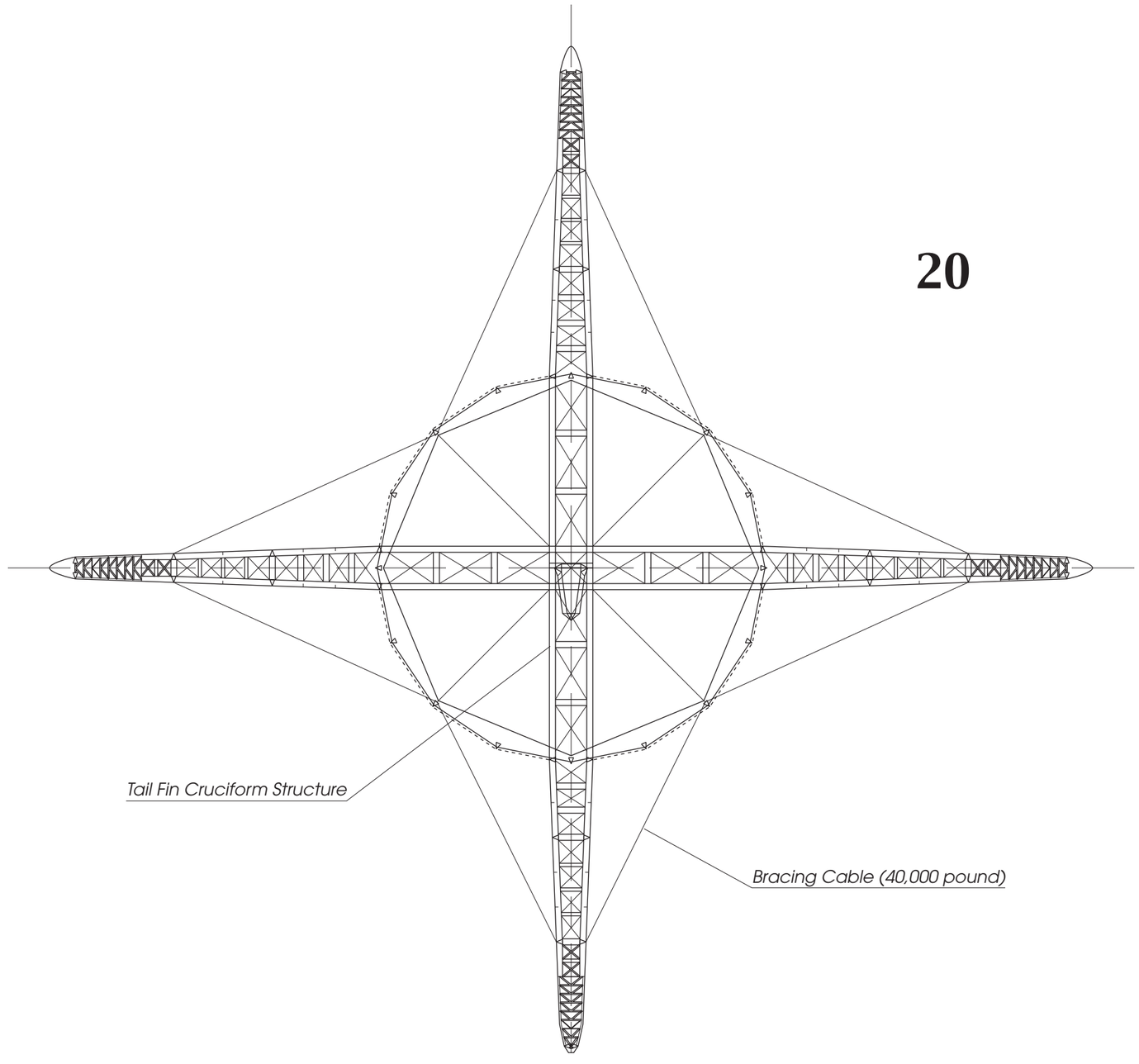
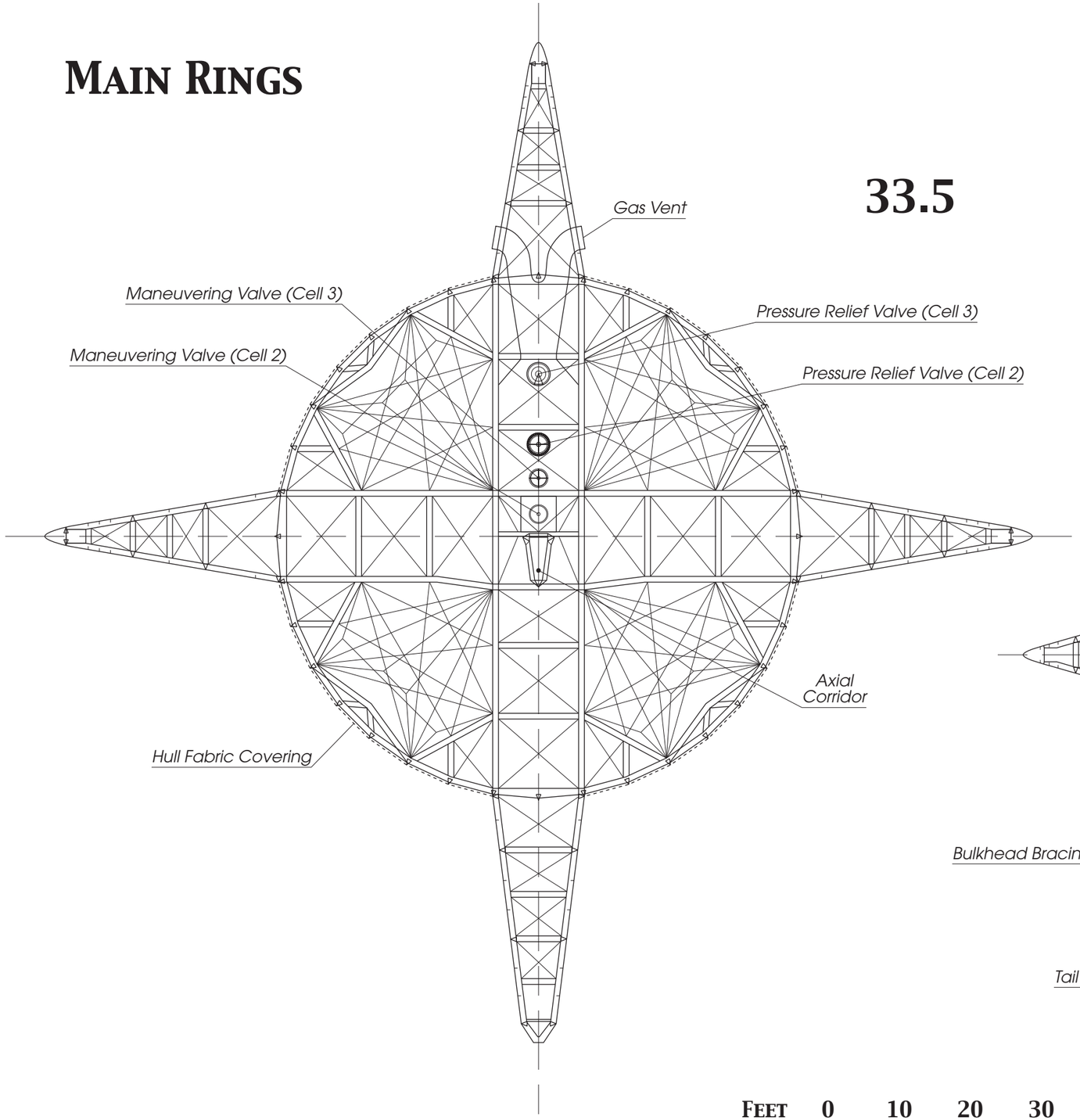


FEET 0 10 20 30 40 50

METERS 0 5 10 15

Main Rings

33.5



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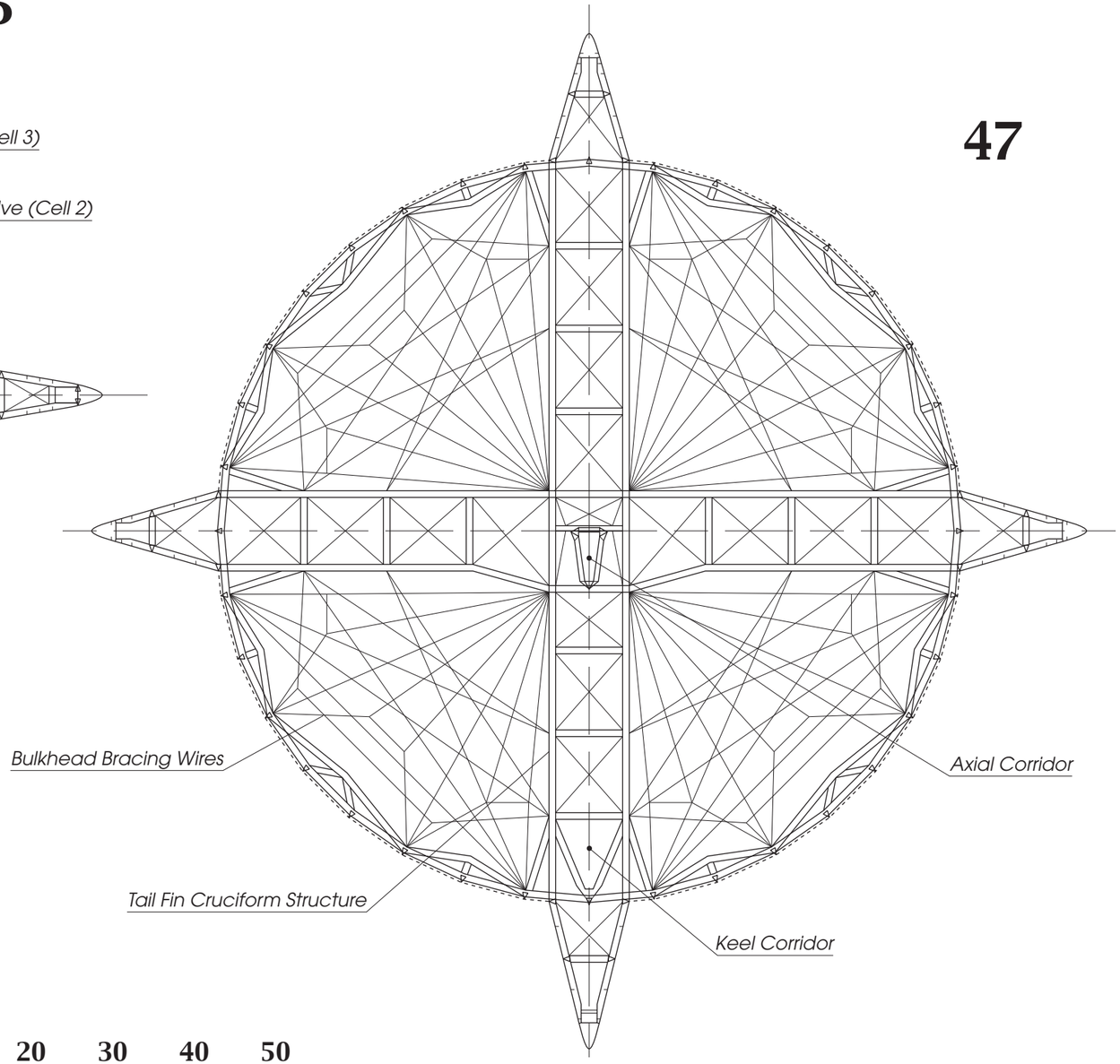
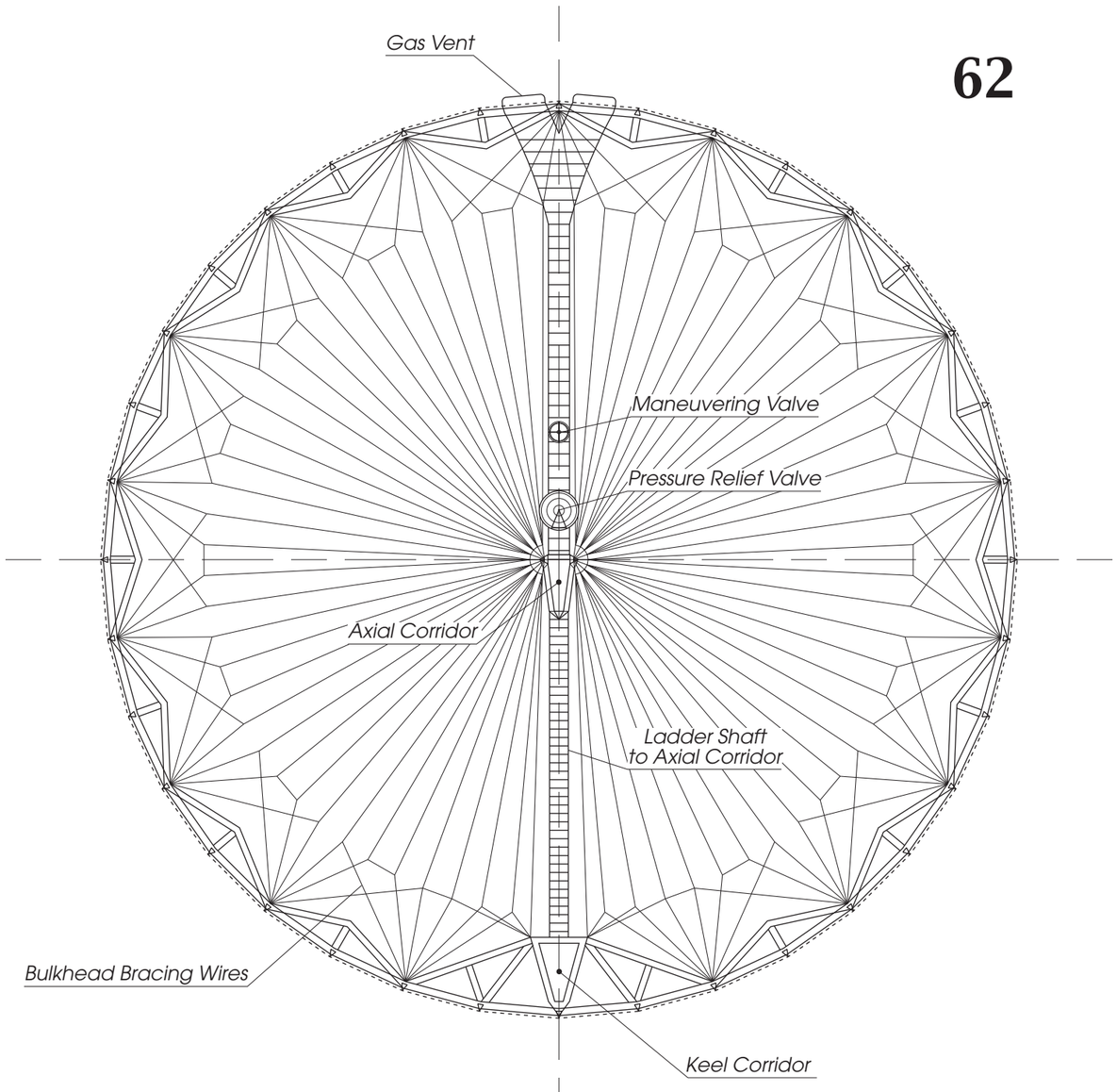
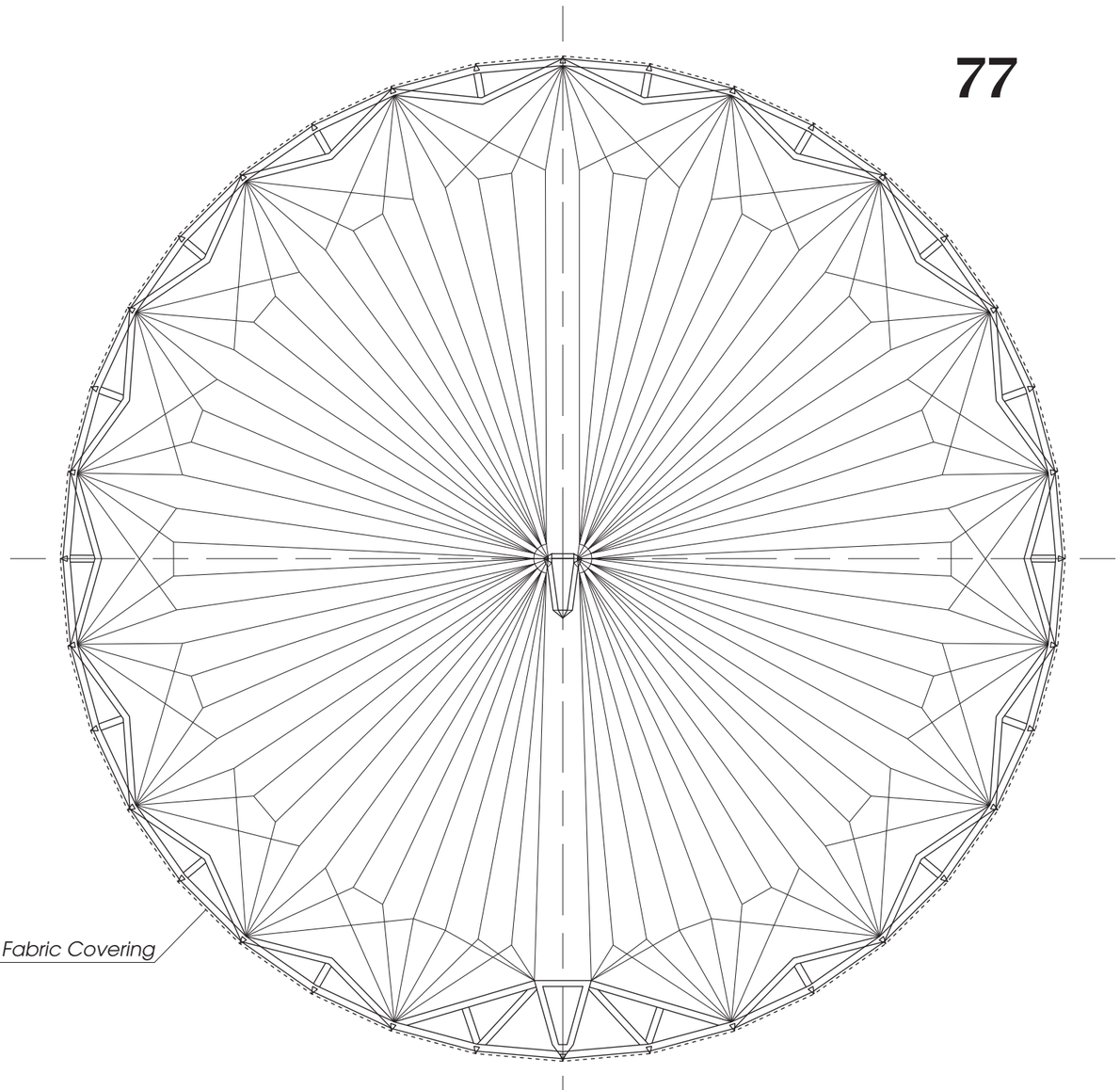
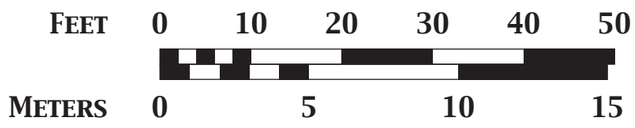


Feet	0	10	20	30	40	50
Meters	0	5	10	15		

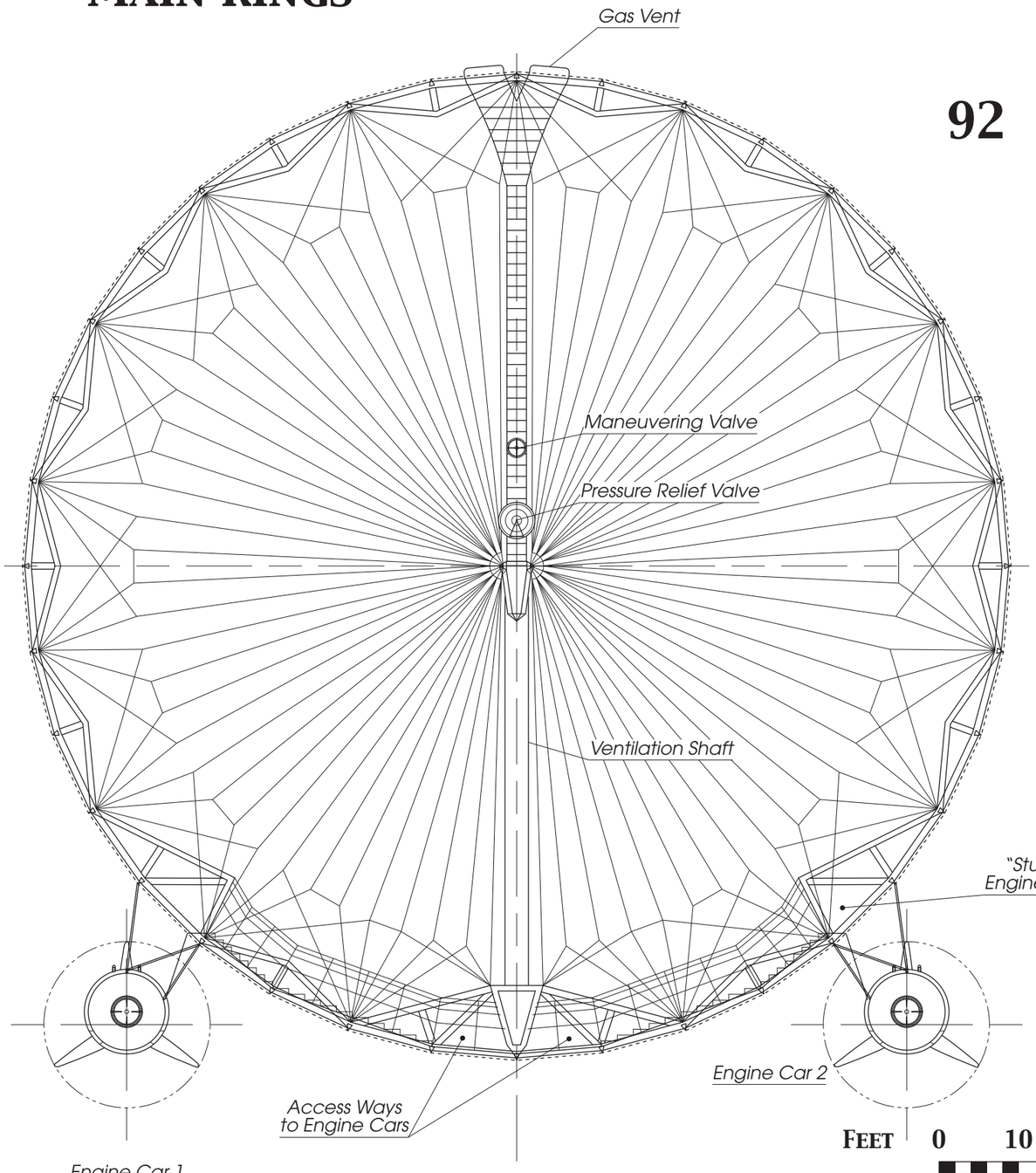
Main Rings

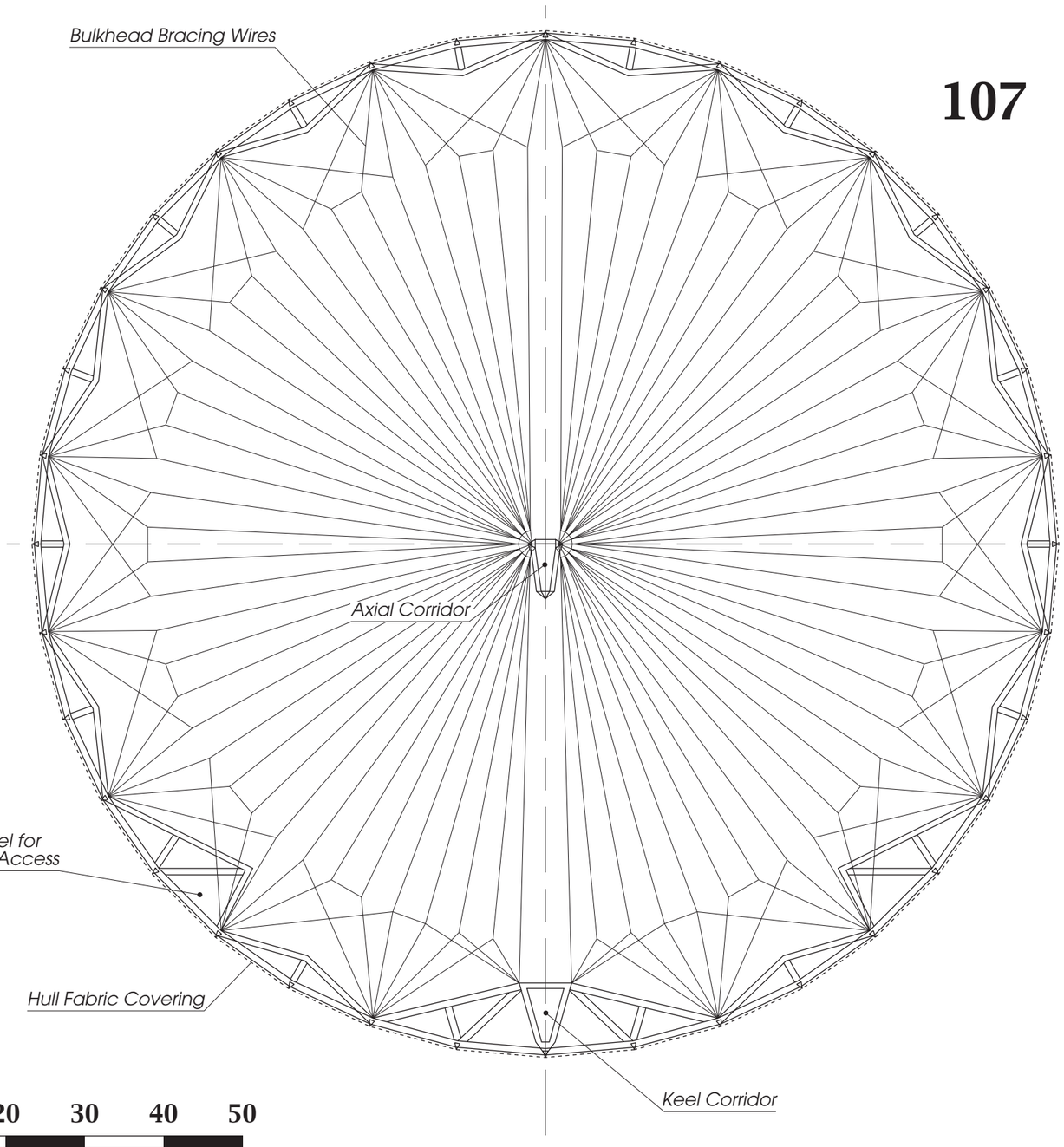






Main Rings

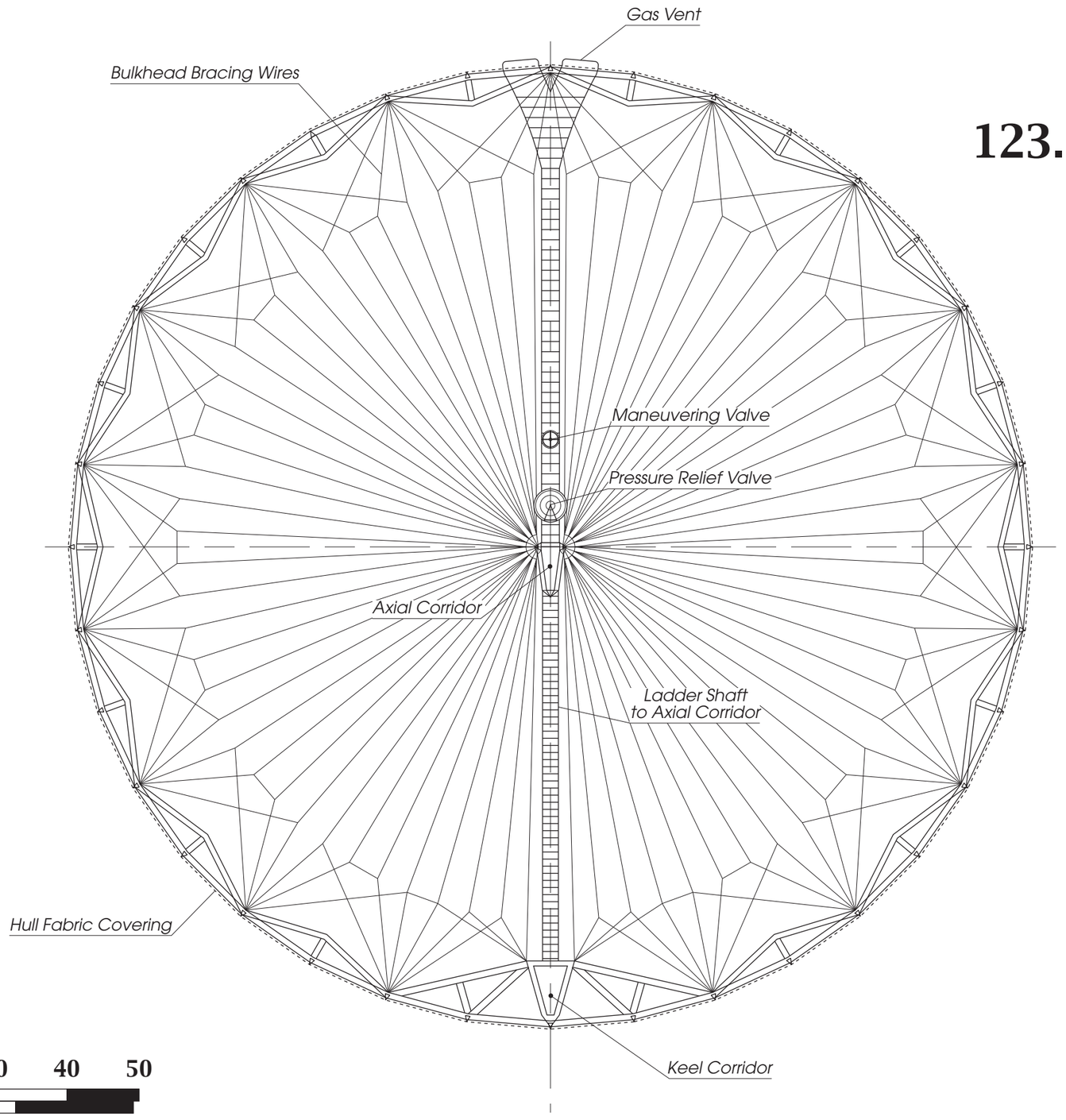




FEET 0 10 20 30 40 50

METERS 0 5 10 15

Main Rings

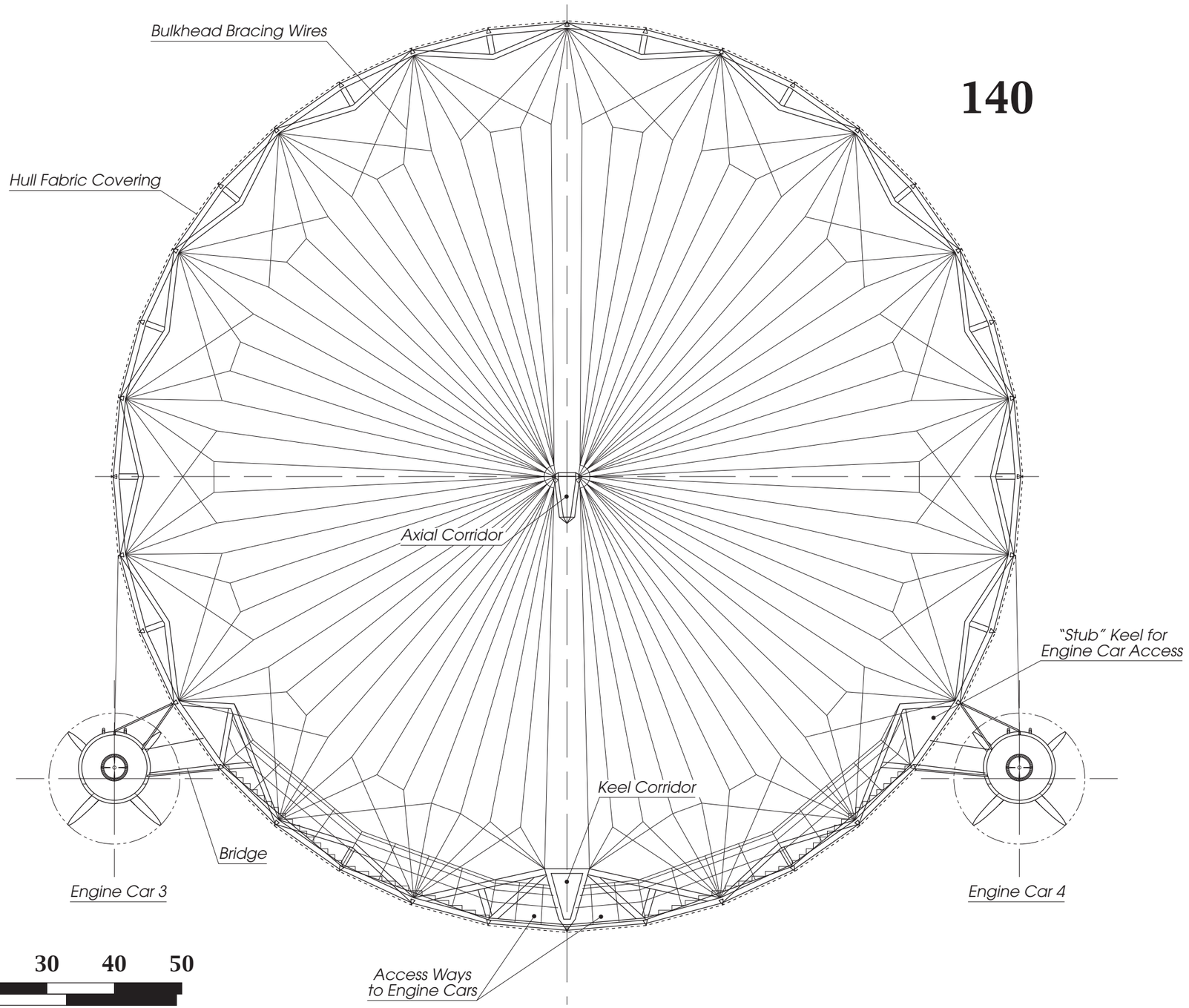


123.5

FEET 0 10 20 30 40 50

METERS 0 5 10 15

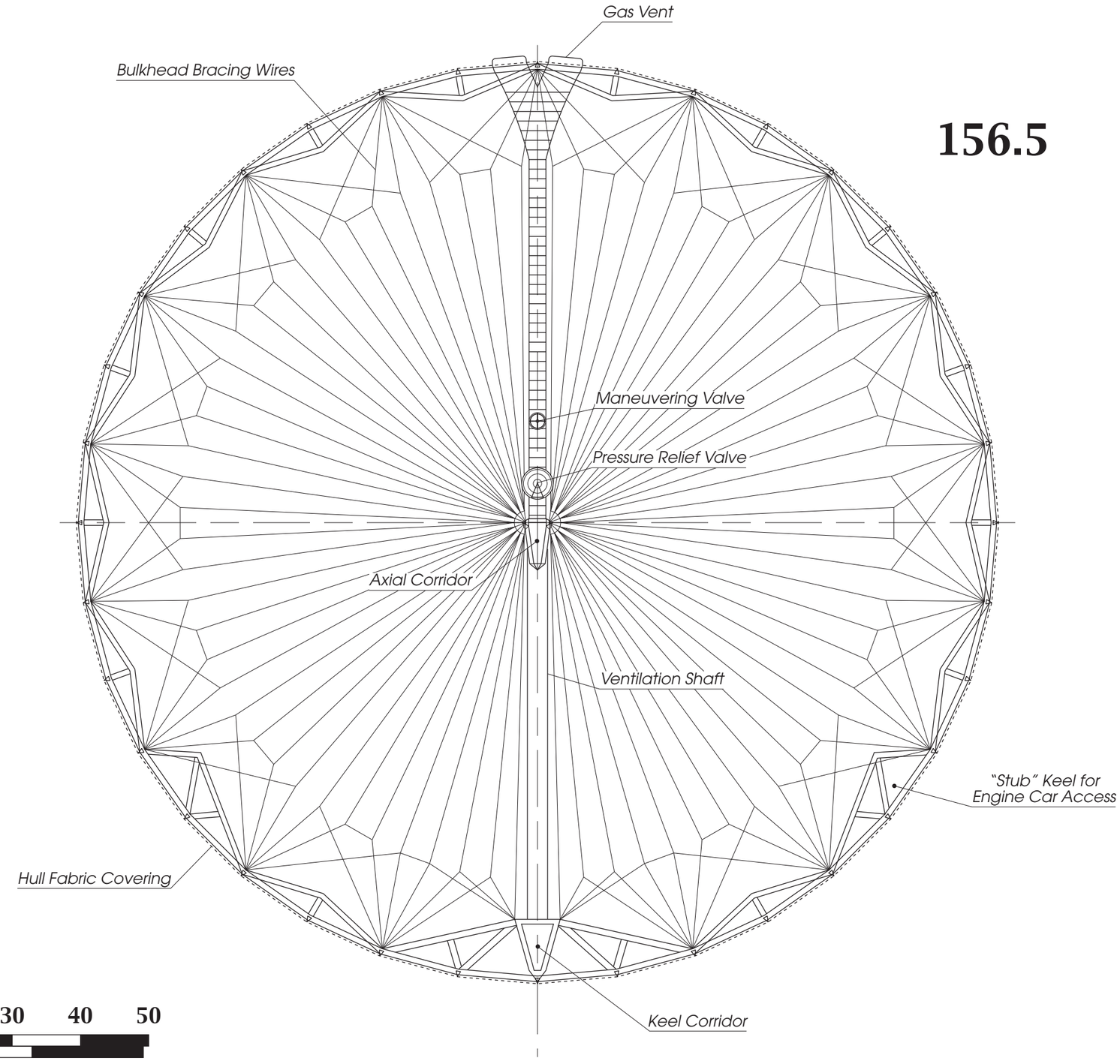
Main Rings



FEET 0 10 20 30 40 50

METERS 0 5 10 15

Main Rings

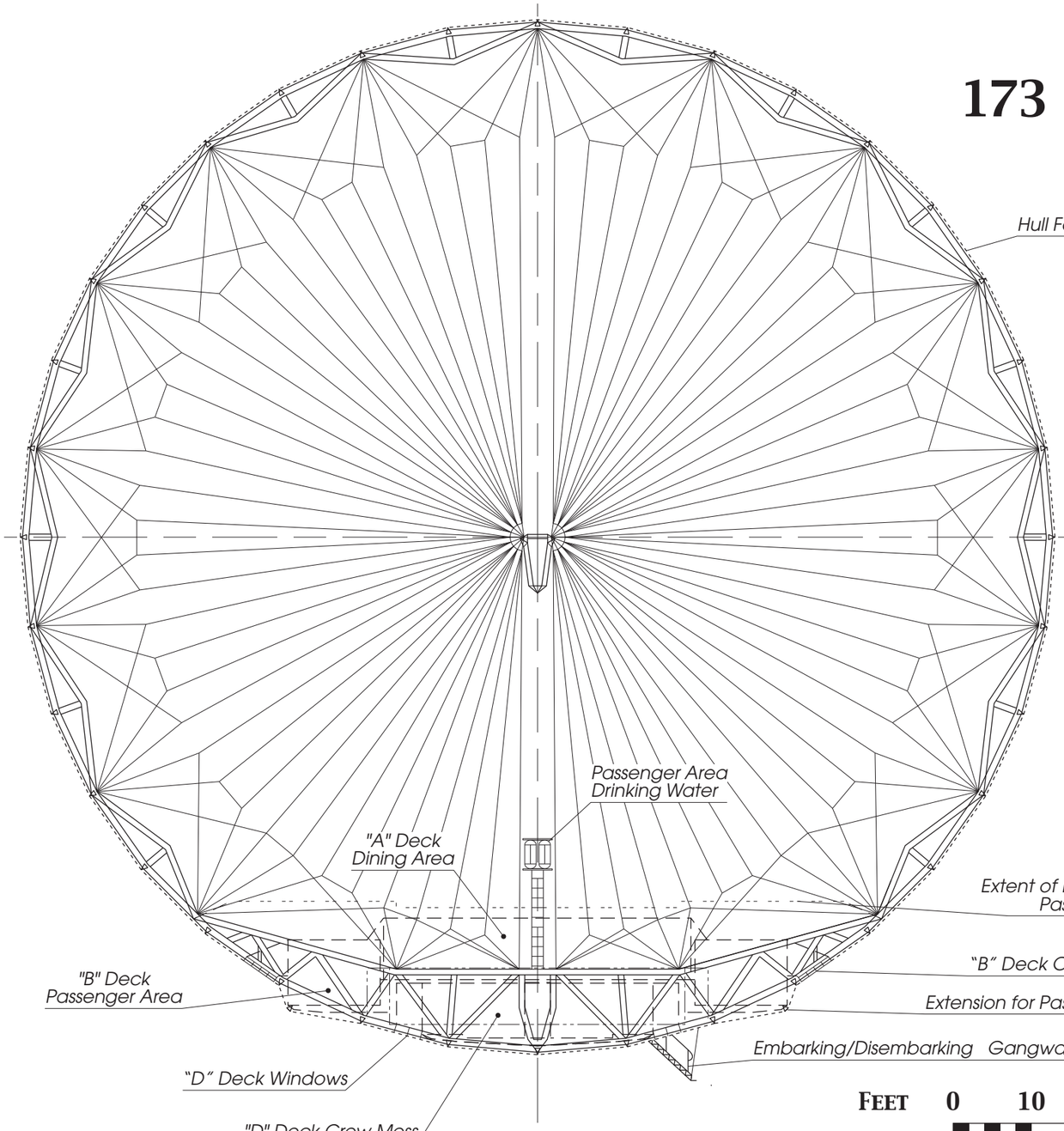


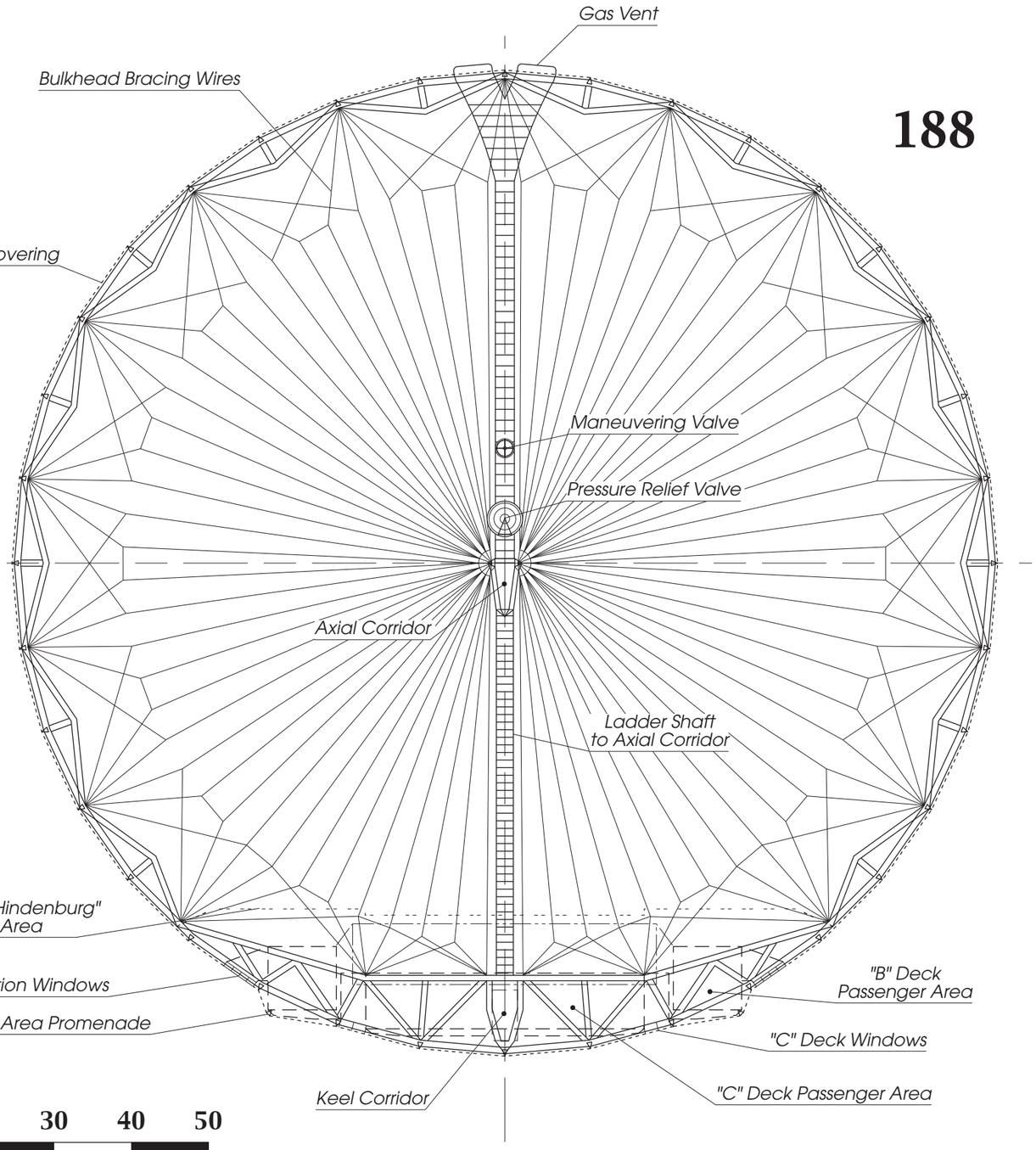
156.5

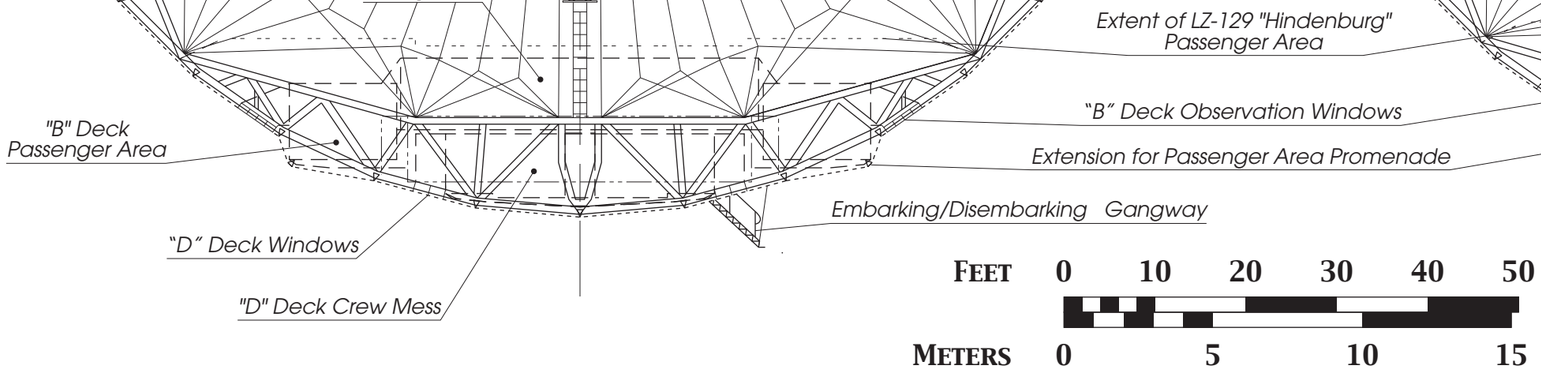
FEET 0 10 20 30 40 50

METERS 0 5 10 15

Main Rings

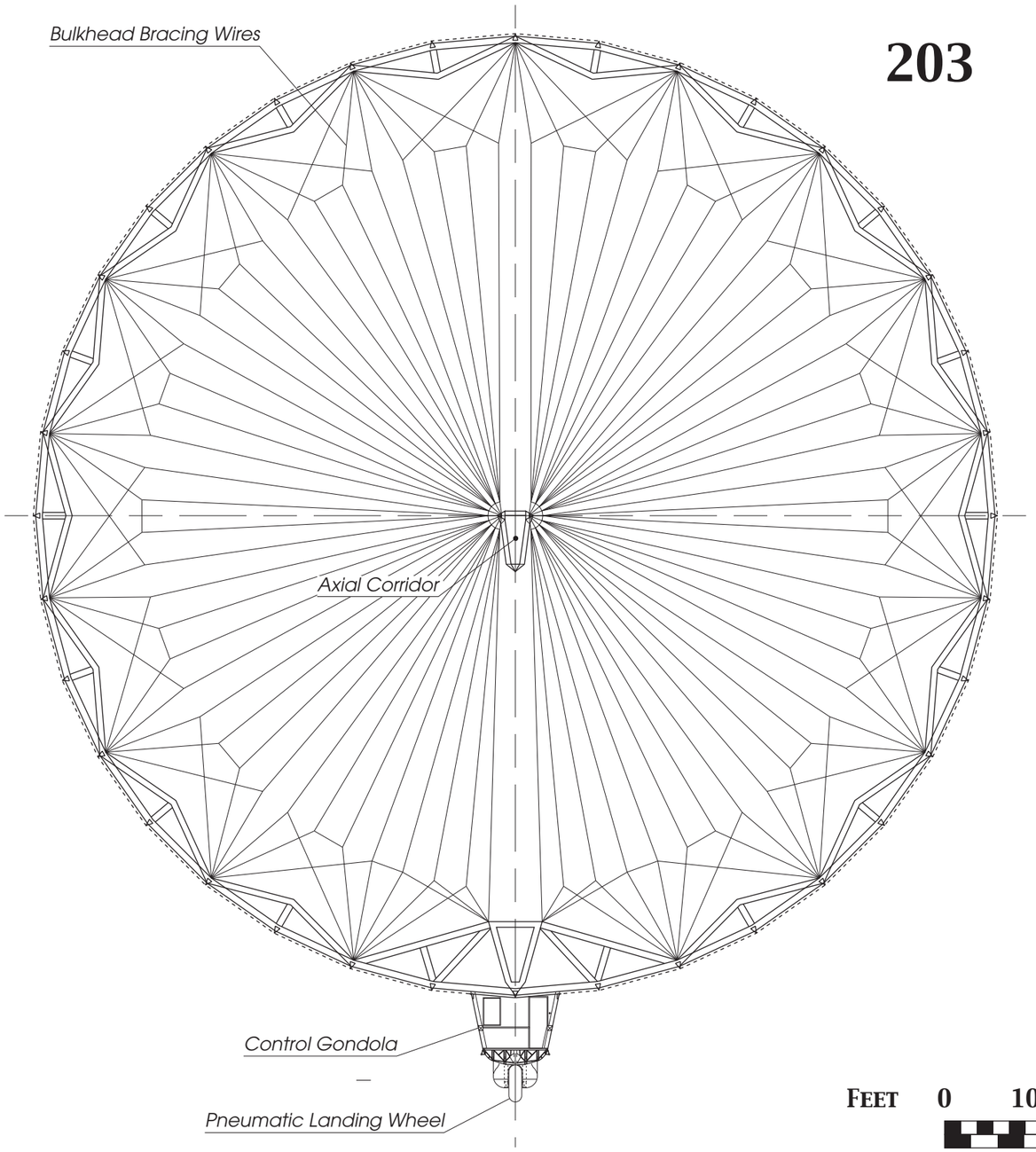


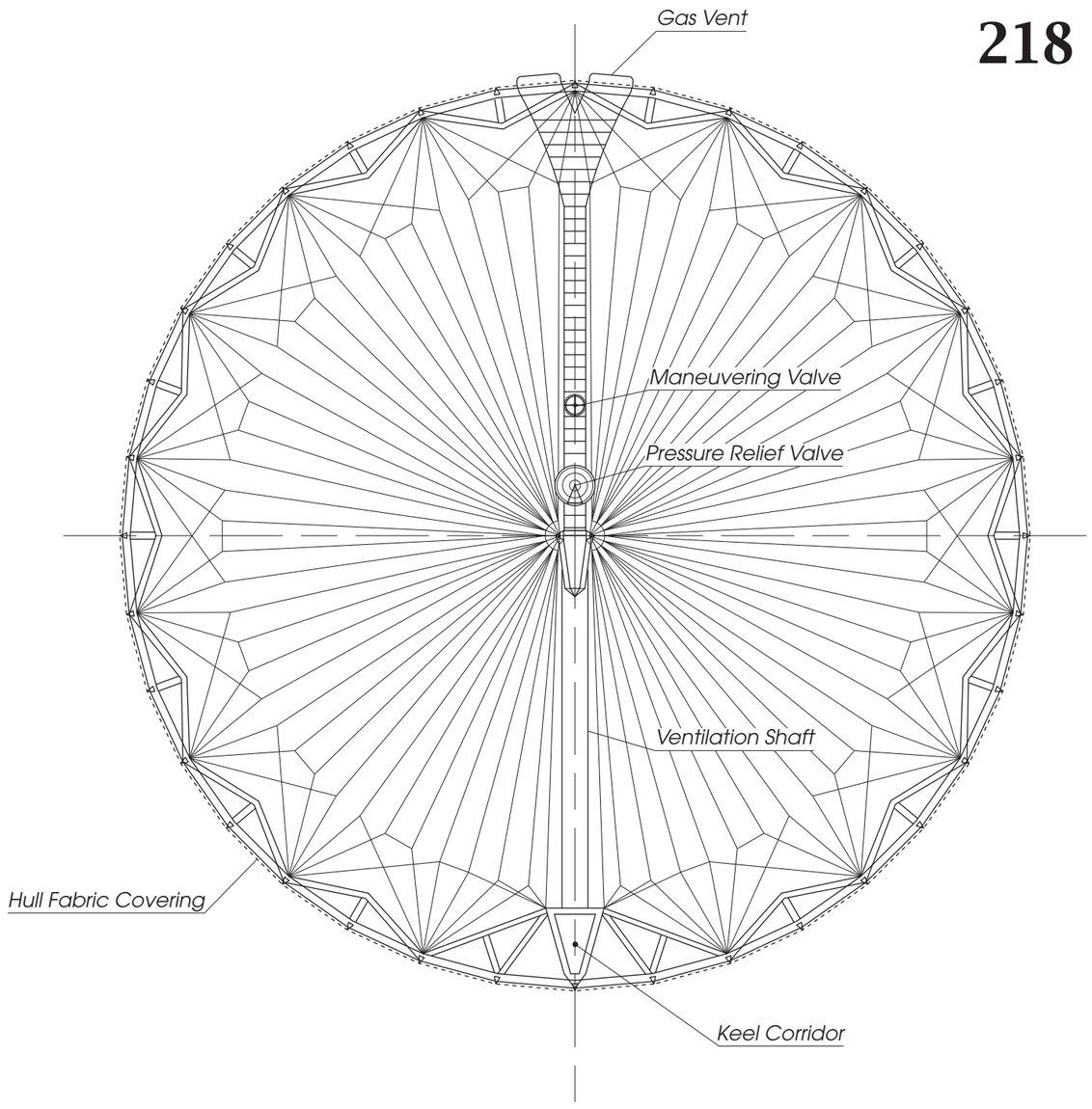


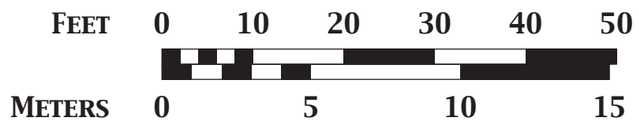


The Graf Zeppelin (II)

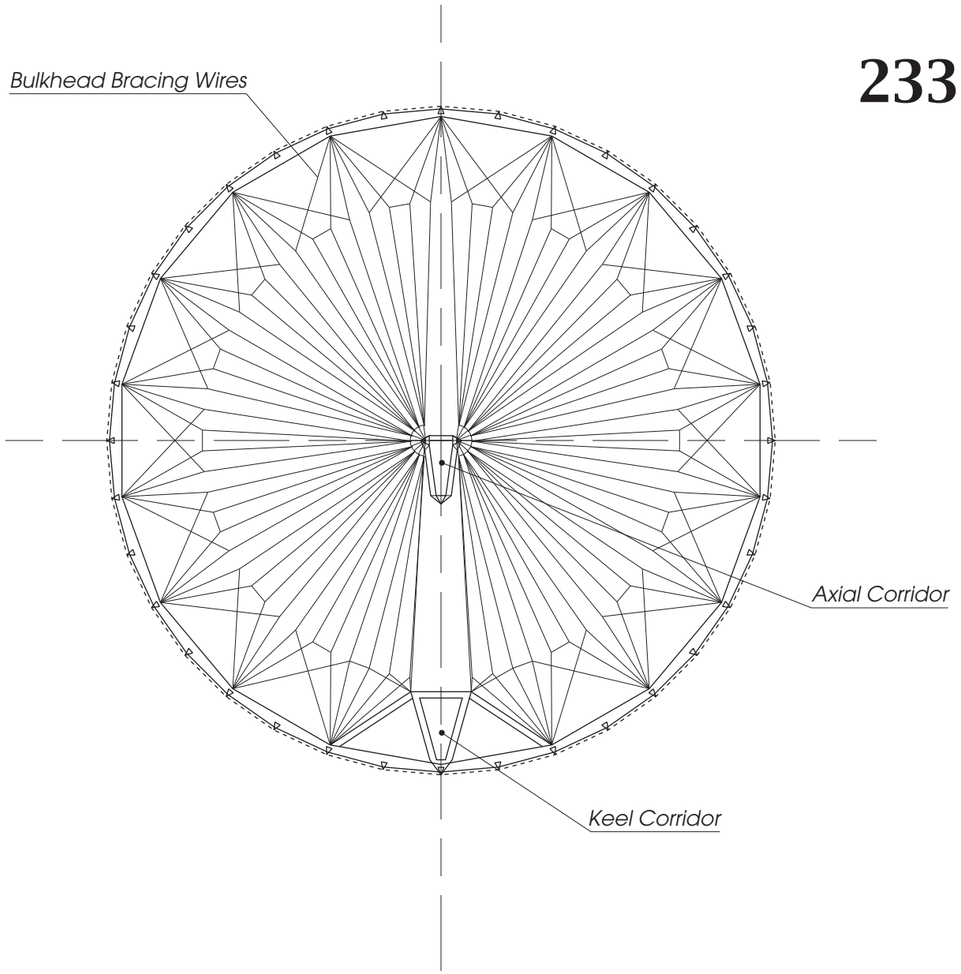
Main Rings





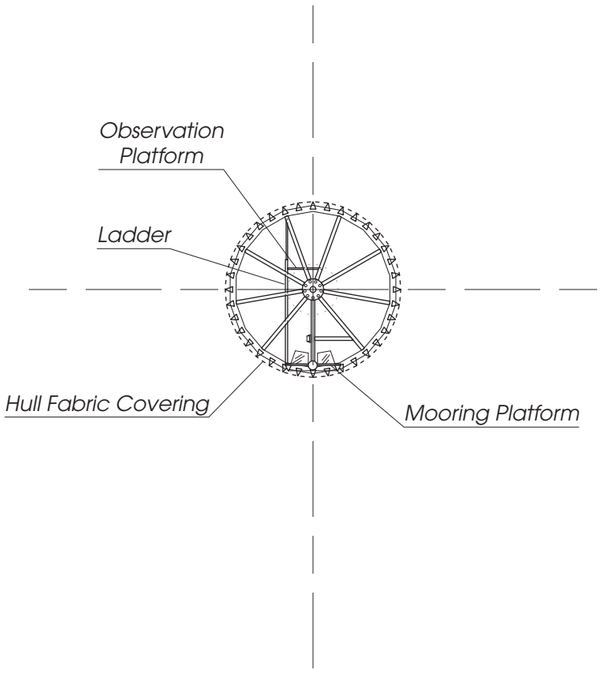


Main Rings



233

244.5

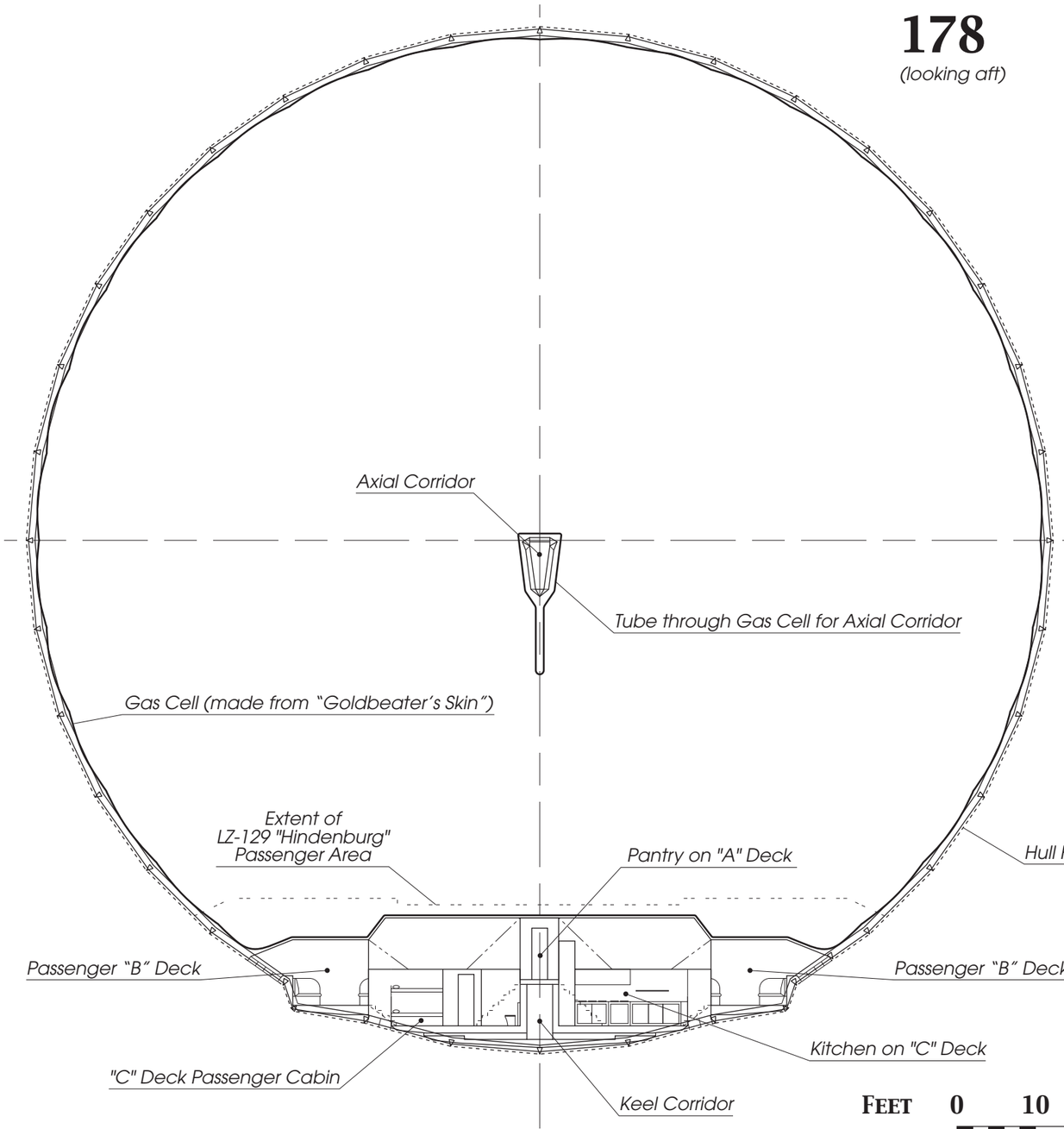


Feet	**0**	**10**	**20**	**30**	**40**	**50**
Meters	**0**	**5**	**10**	**15**		

Intermediate Rings

178

(looking aft)

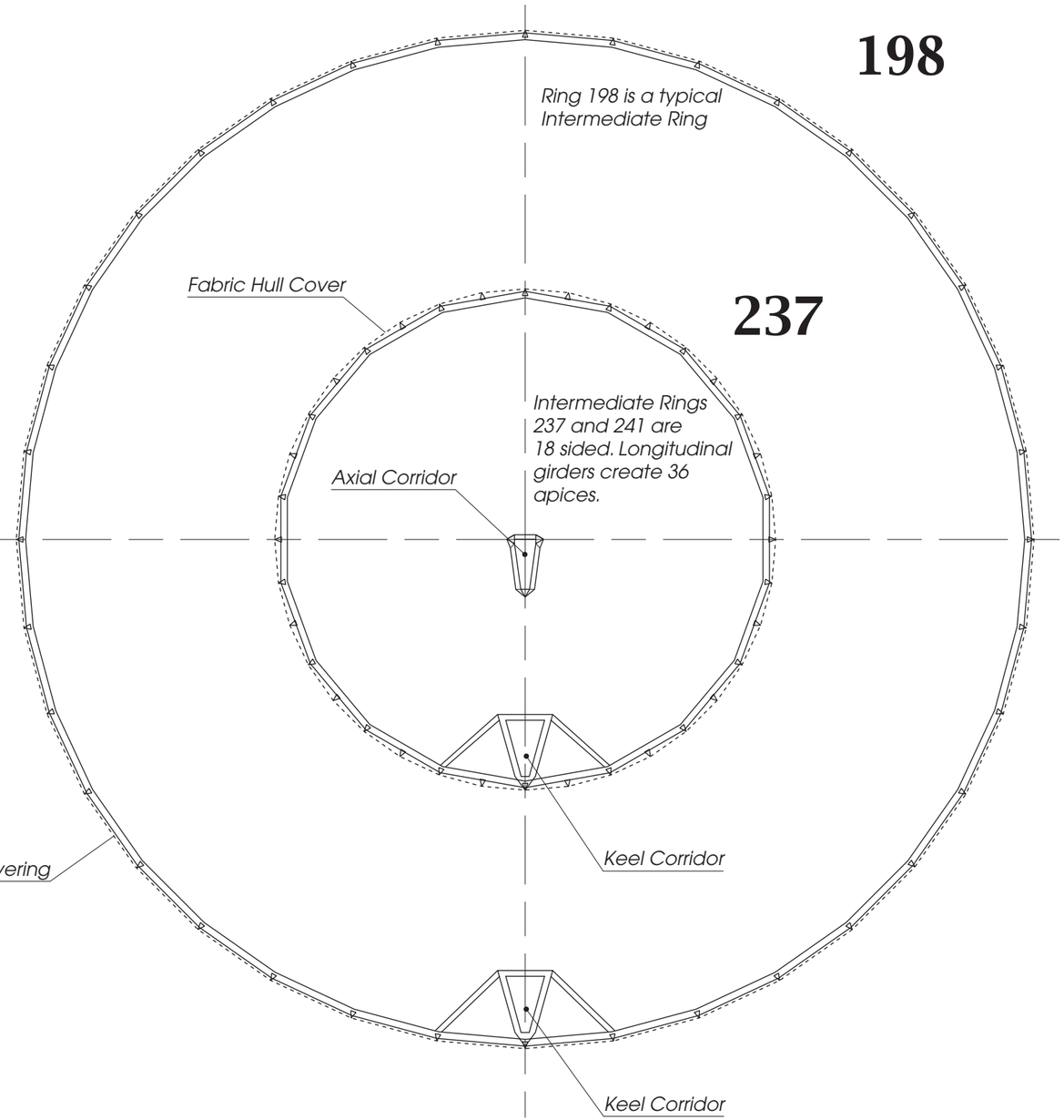


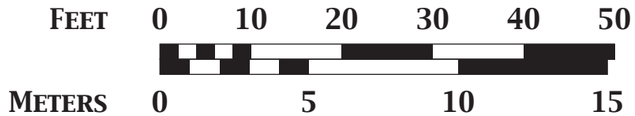
198

Ring 198 is a typical Intermediate Ring

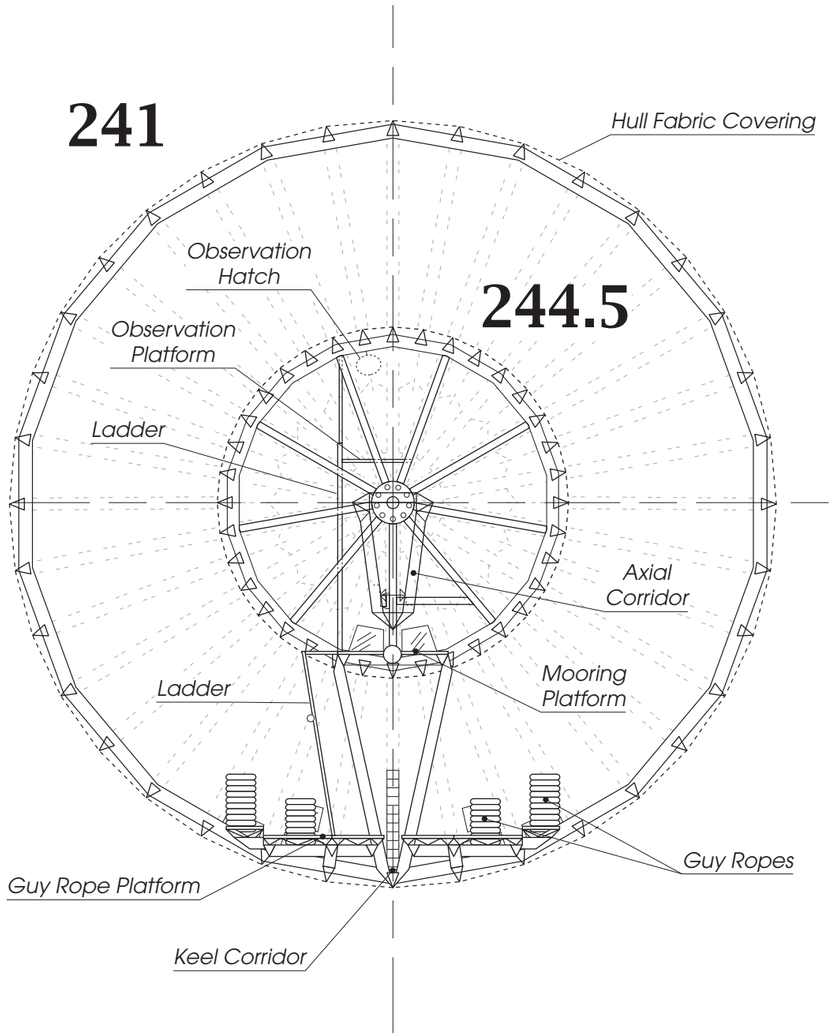
237

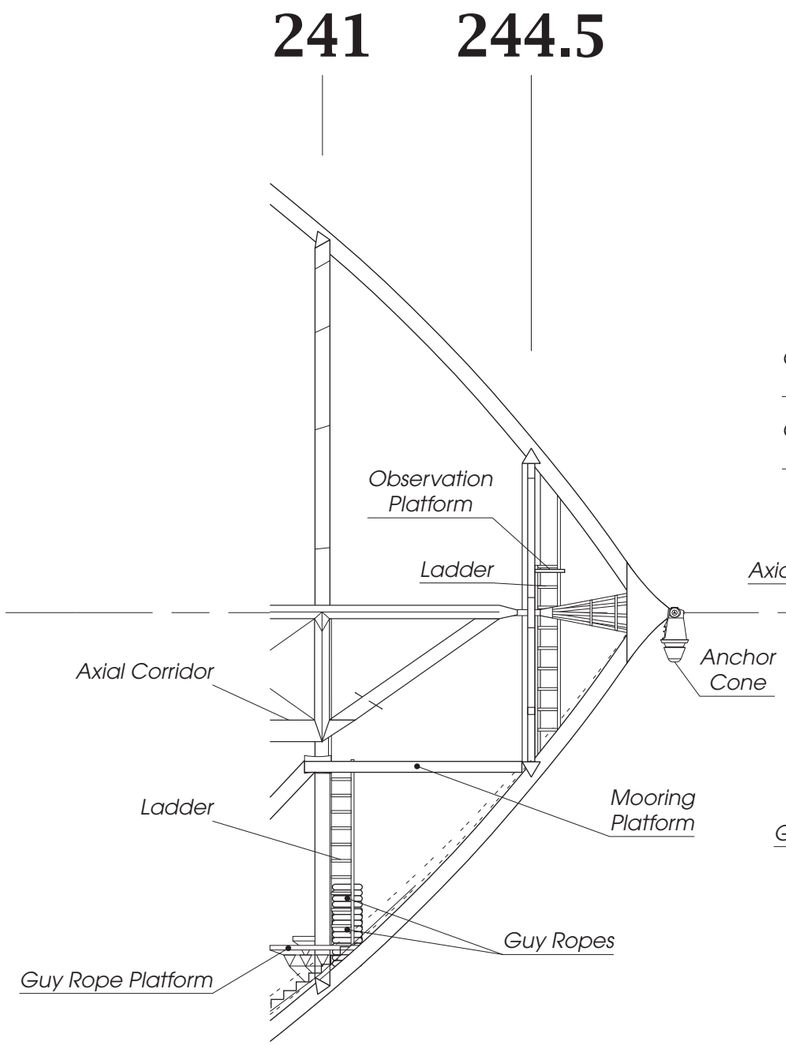
Intermediate Rings 237 and 241 are 18 sided. Longitudinal girders create 36 apices.

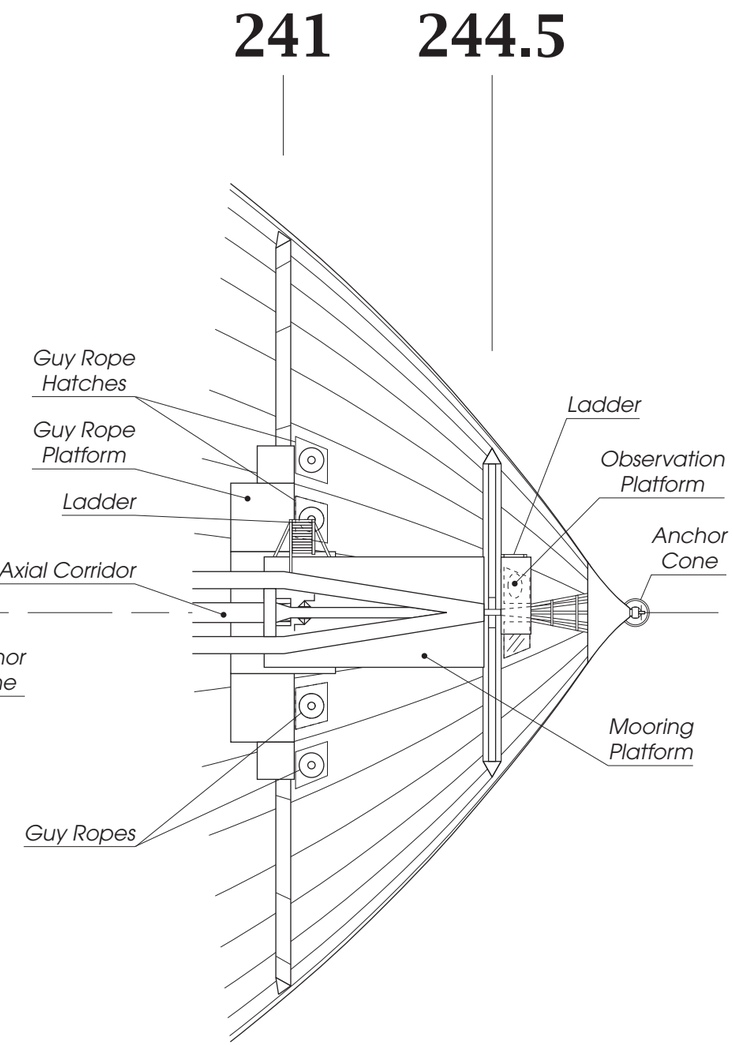




Bow Mooring Area (detail)





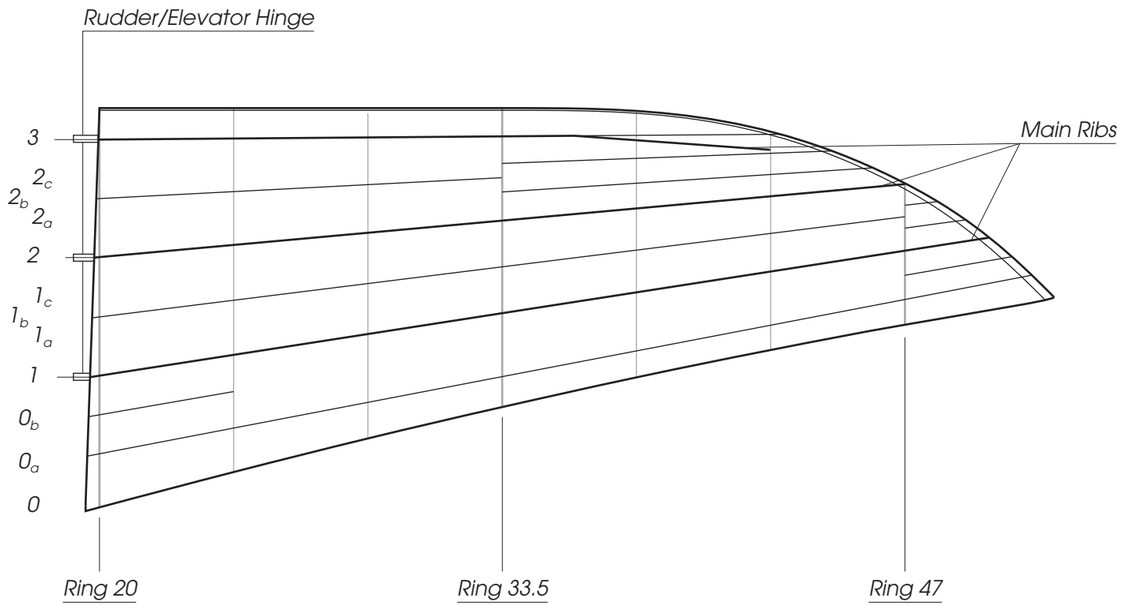


FEET 0 5 10 15 20 25 30

METERS 0 5 10

SCALE 1/100

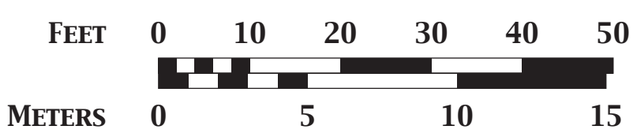
Tail Structure

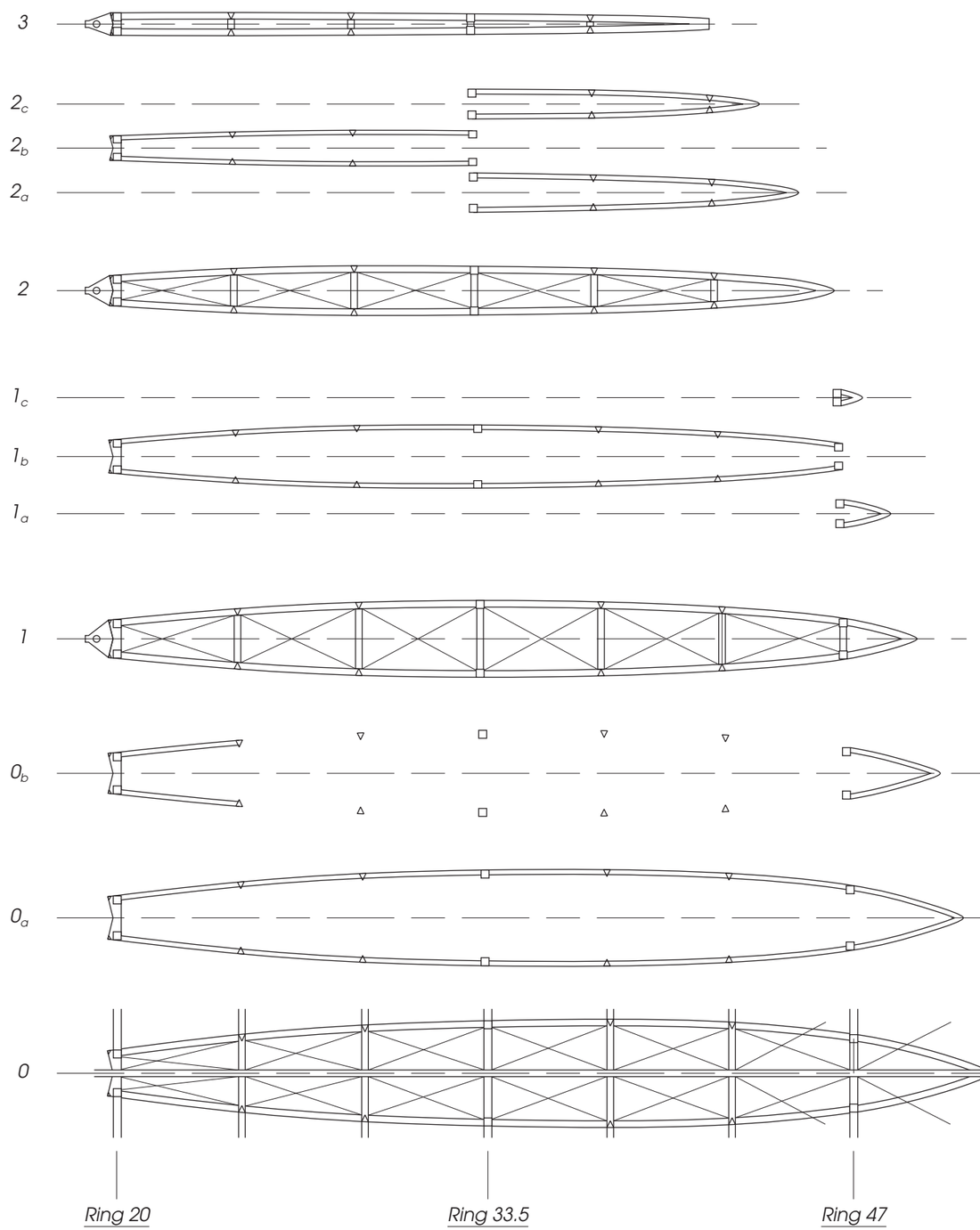


Main Ring construction of the Tail Fins is braced through the hull to the opposing Fin by the Tail Fin Cruciform Structure

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

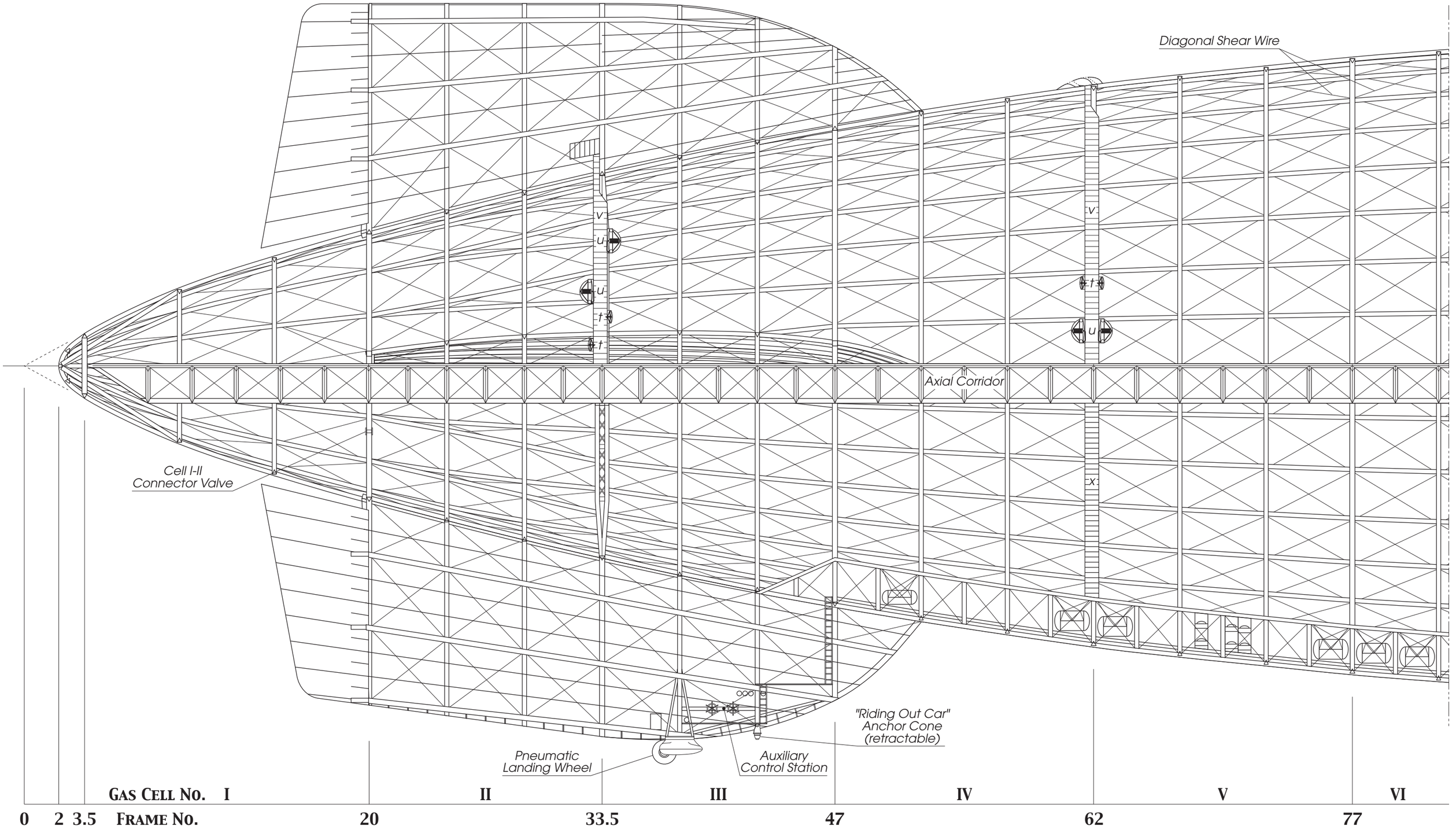
Tests showed that most of the stress was on the leading edge of the fin, so the intermediate ribs were reduced in number from the center to the trailing edge to save weight.





FEET 0 10 20 30 40 50

METERS 0 5 10 15

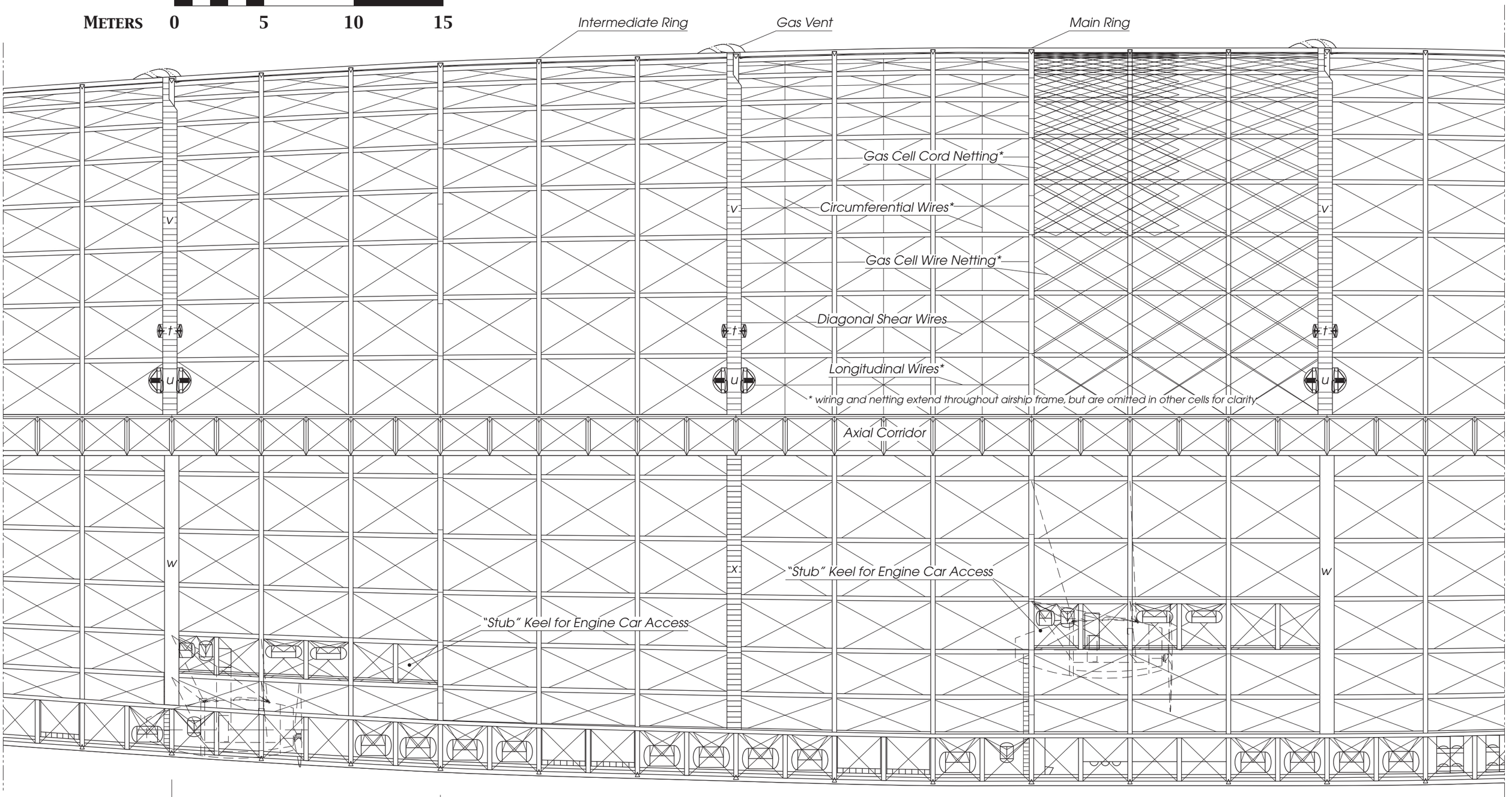


GAS CELL NO. I II III IV V VI

0 2 3.5 FRAME NO. 20 33.5 47 62 77

FEET 0 10 20 30 40 50

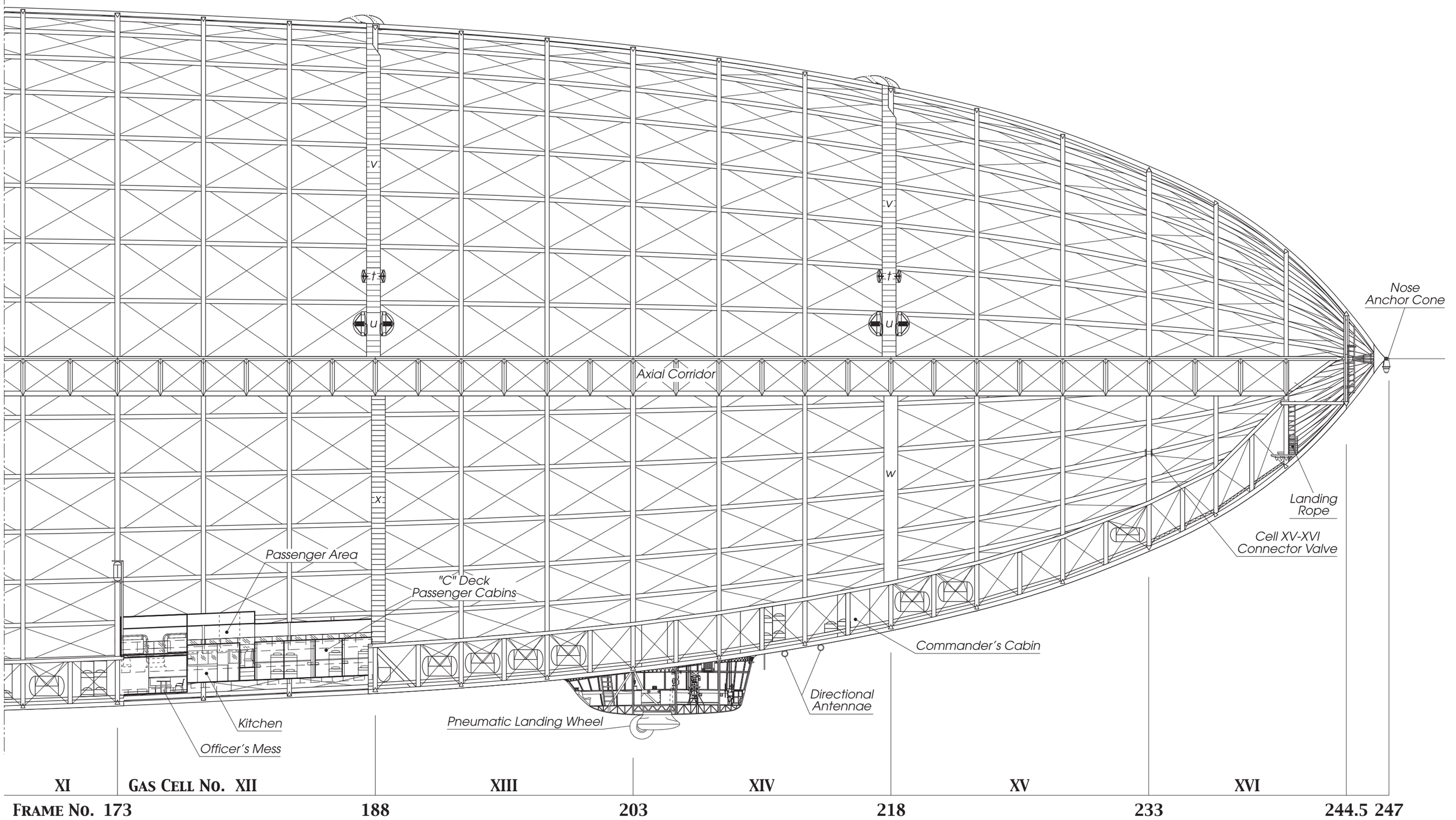
METERS 0 5 10 15



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

FEET 0 10 20 30 40 50

METERS 0 5 10 15

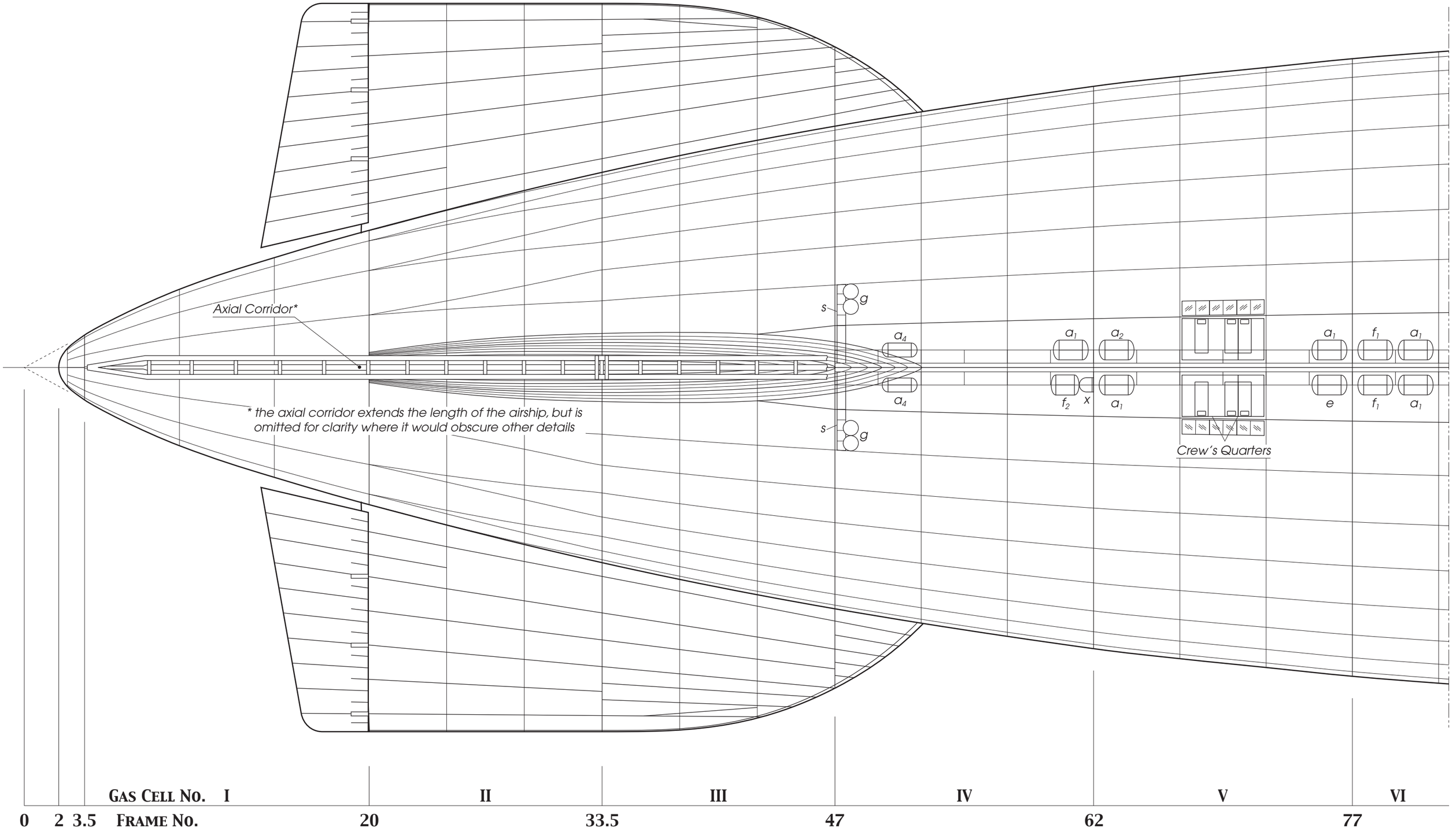


XI GAS CELL NO. XII XIII XIV XV XVI

FRAME NO. 173 188 203 218 233 244.5 247

FEET 0 10 20 30 40 50

METERS 0 5 10 15

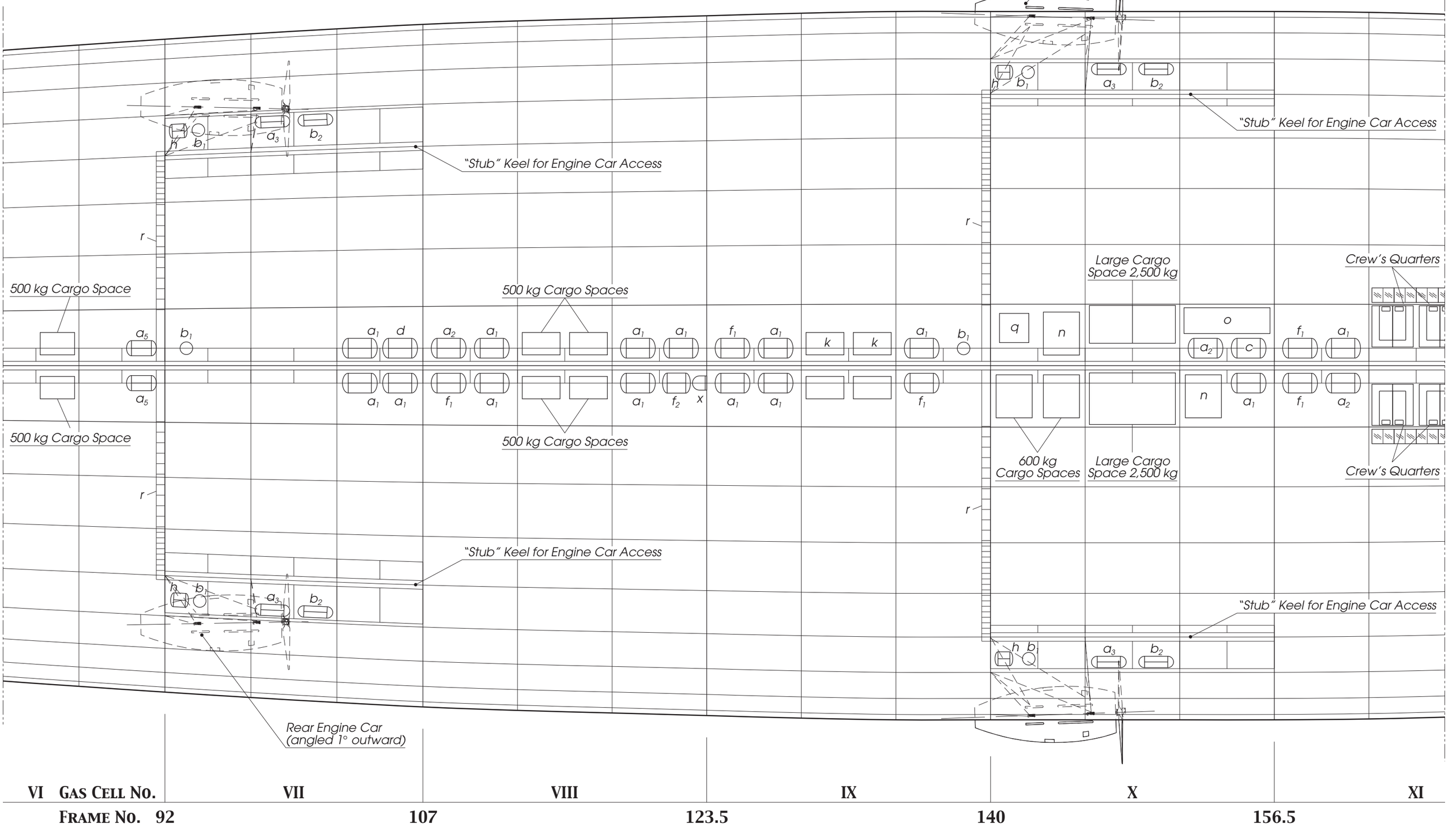


GAS CELL NO. I II III IV V VI

0 2 3.5 FRAME NO. 20 33.5 47 62 77

FEET 0 10 20 30 40 50

METERS 0 5 10 15

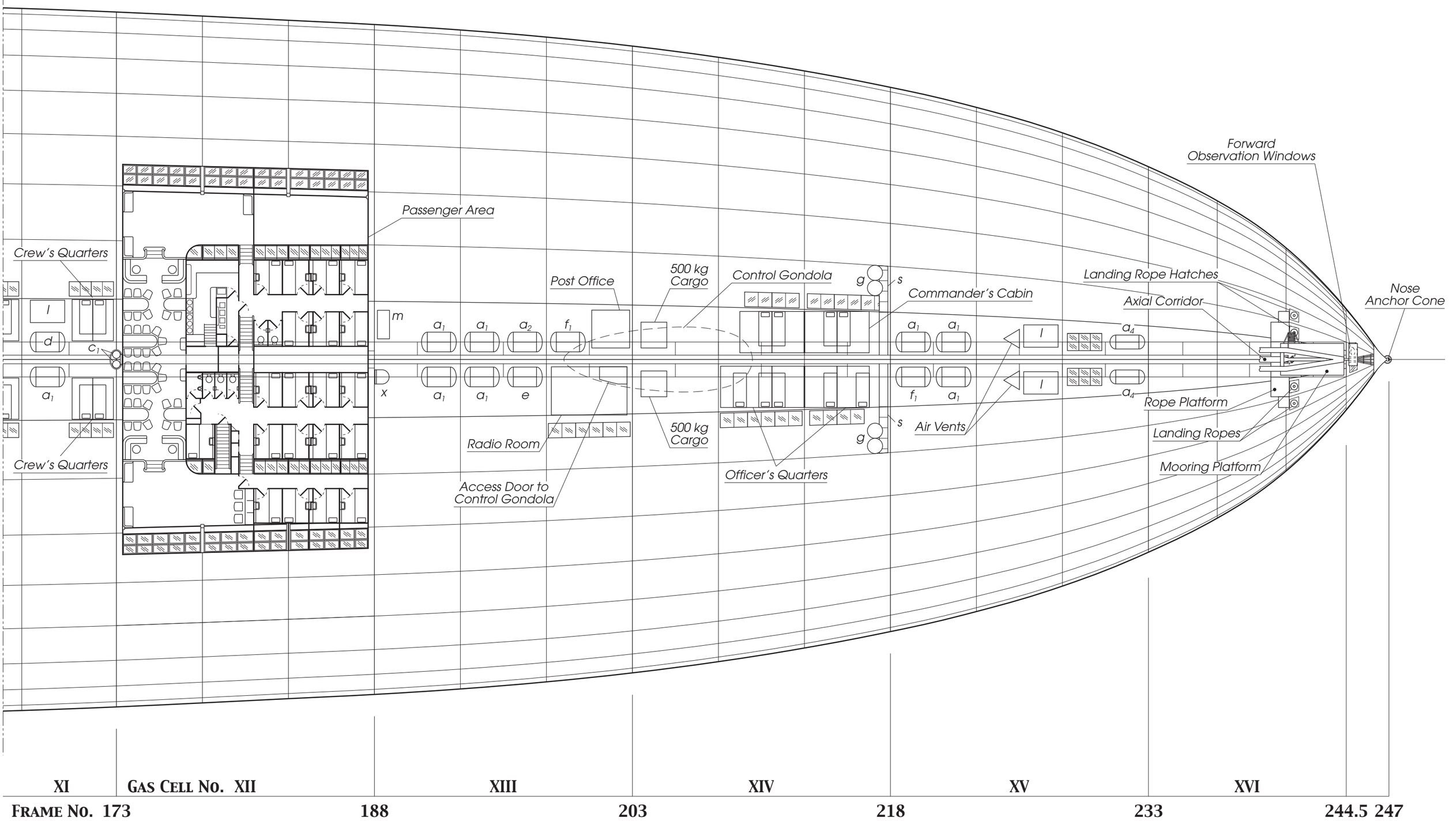


VI GAS CELL NO. VII VIII IX X XI

FRAME NO. 92 107 123.5 140 156.5

FEET 0 10 20 30 40 50

METERS 0 5 10 15



XI | GAS CELL NO. XII | XIII | XIV | XV | XVI

FRAME NO. 173 188 203 218 233 244.5 247

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.	*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*