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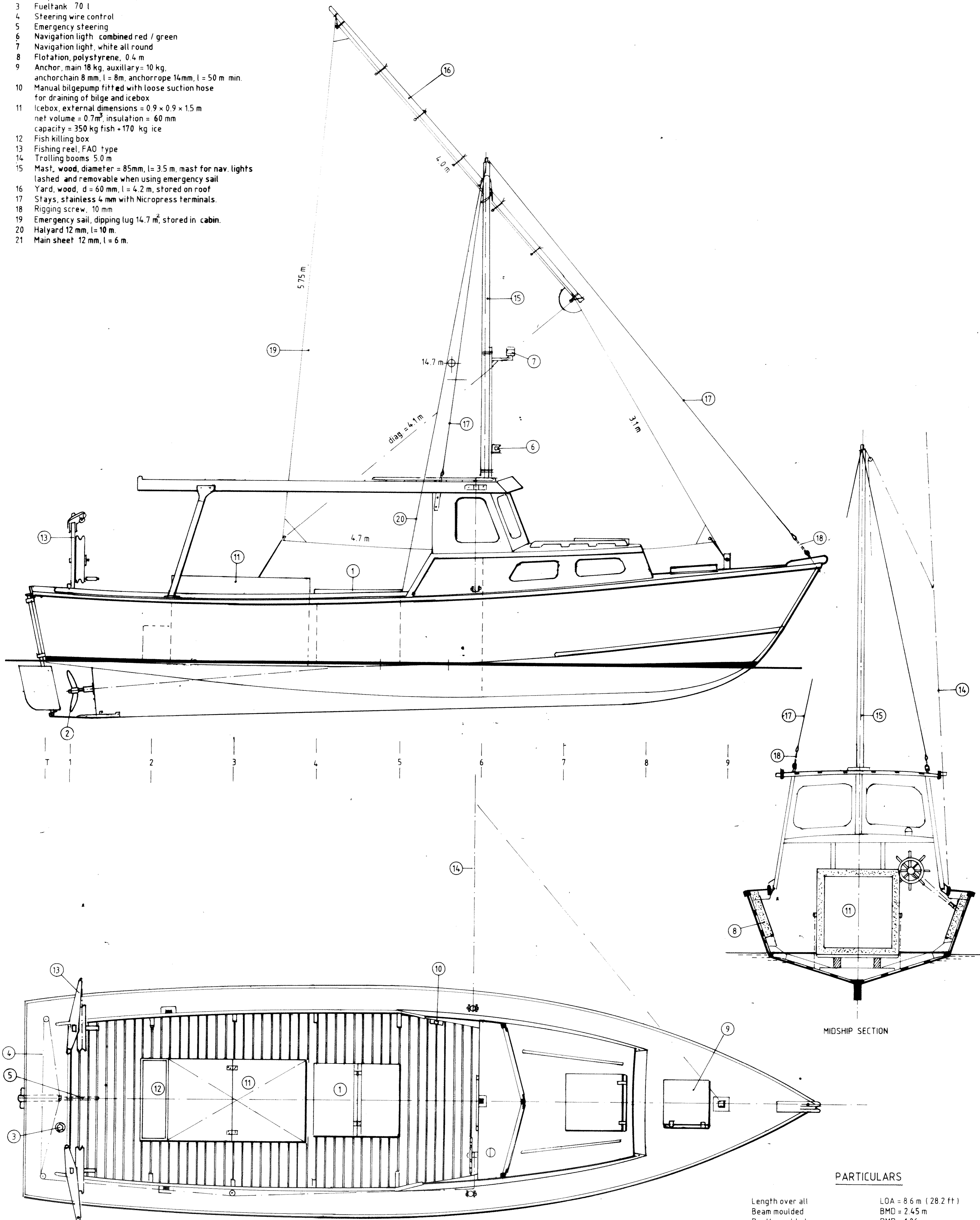
This information product is intended to be used by anyone who wants to build a boat to a particular and suitable FAO design, it being understood that it is the responsibility of the intended user regarding the selection of a vessel design on the basis of its suitability for the intended fishery, sea state and weather and the availability of suitable construction material and building capability. Furthermore, it is the responsibility of the intended user to comply with national legislation for authorization to construct a fishing vessel and obtain approval of technical specifications. It being noted that the application to build a vessel must be accompanied by the specifications of mandatory safety equipment and outfit. In the case there is no national legislation in place for the design, construction and equipment of vessels FAO recommends that the intended user applies appropriate international standards, such as the FAO/ILO/IMO Safety recommendations for decked fishing vessels of less than 12 metres in length and undecked fishing vessels.

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EQUIPMENT

- 1 Engine, continuous rated 23 hp / 2600 rpm, reduction = 2.45
- 2 Propeller, diameter = 480mm, pitch = 340mm
Propeller shaft l = 2800mm, sterntube = 1600mm
- 3 Fuel tank 70 l
- 4 Steering wire control
- 5 Emergency steering
- 6 Navigation light, combined red / green
- 7 Navigation light, white all round
- 8 Flotation, polystyrene, 0.4 m
- 9 Anchor, main 18 kg, auxiliary = 10 kg,
anchor chain 8 mm, l = 8m, anchor rope 14mm, l = 50 m min.
- 10 Manual bilge pump fitted with loose suction hose
for draining of bilge and icebox
- 11 Icebox, external dimensions = 0.9 x 0.9 x 1.5 m
net volume = 0.7m³, insulation = 60 mm
capacity = 350 kg fish + 170 kg ice
- 12 Fish killing box
- 13 Fishing reel, FAO type
- 14 Trolling booms 5.0 m
- 15 Mast, wood, diameter = 85mm, l = 3.5 m, mast for nav. lights
lashed and removable when using emergency sail
- 16 Yard, wood, d = 60 mm, l = 4.2 m, stored on roof
- 17 Stays, stainless 4 mm with Micropress terminals.
- 18 Rigging screw, 10 mm
- 19 Emergency sail, dipping lug 14.7 m², stored in cabin.
- 20 Halyard 12 mm, l = 10 m.
- 21 Main sheet 12 mm, l = 6 m.



PARTICULARS

Length over all	LOA = 8.6 m (28.2 ft)
Beam moulded	BMD = 2.45 m
Depth moulded	DMD = 1.06 m
Cubic number = LOA x BMD x DMD	= 22 m ³
Length water line	LWL = 7.7 m (25.3 ft)
Displacement light	= 1300 kg
Service load	= 500 kg
Displacement service	= 1800 kg
Service speed = 8.0 knots with service power = 15 hp.	

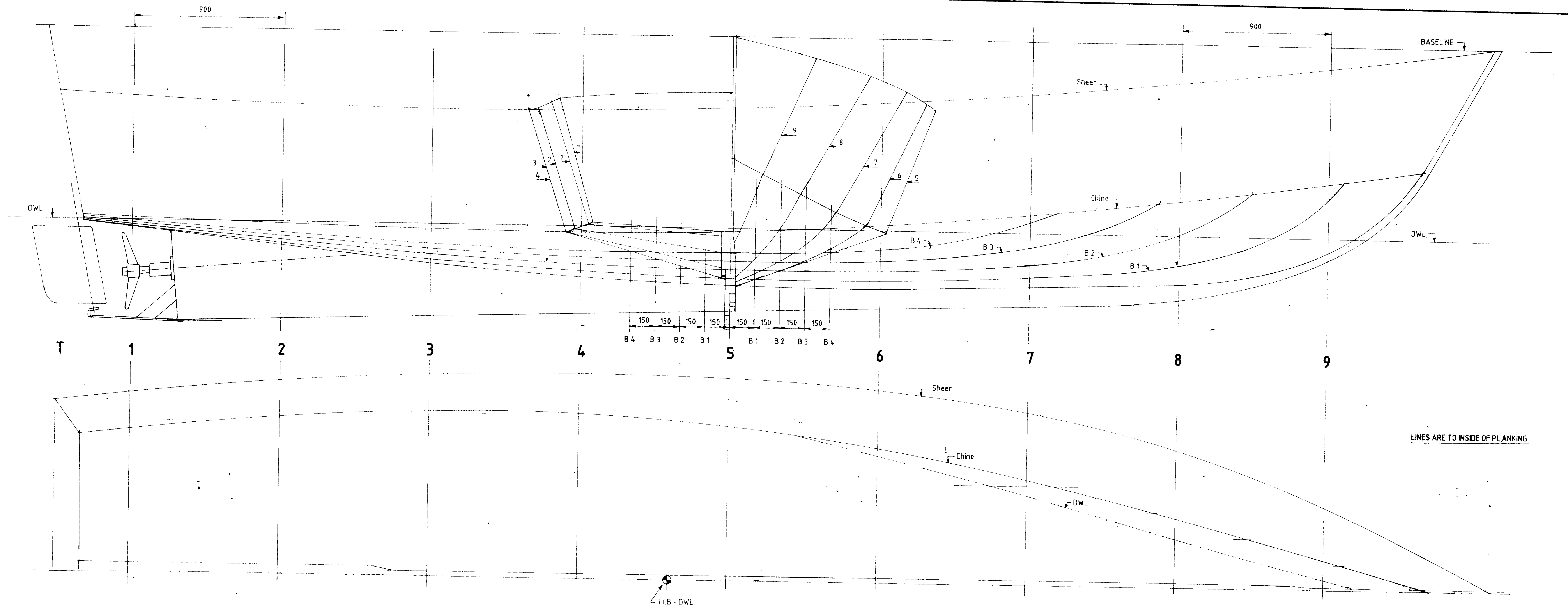
8.6 m Fishing boat

GENERAL ARRANGEMENT

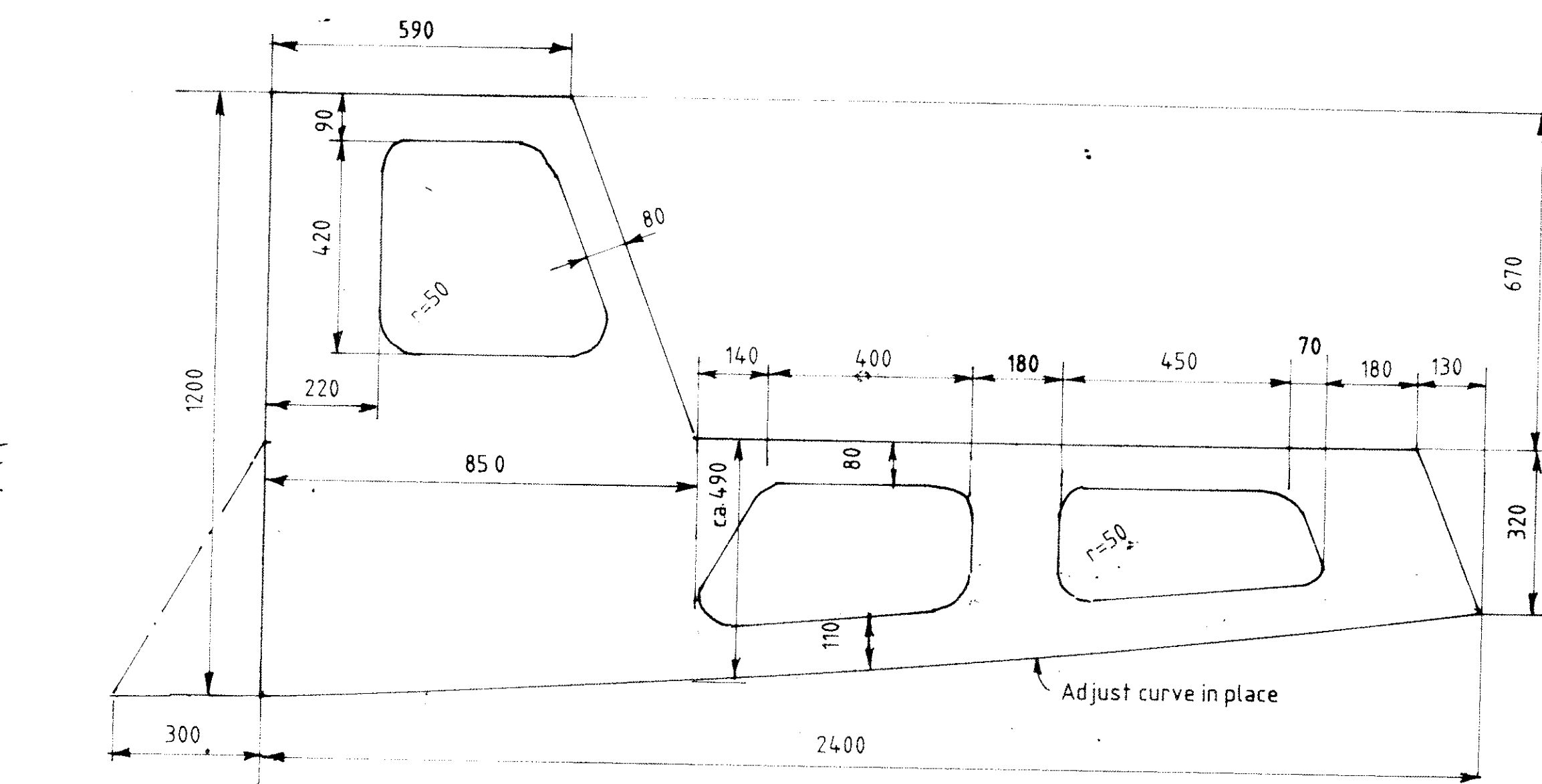
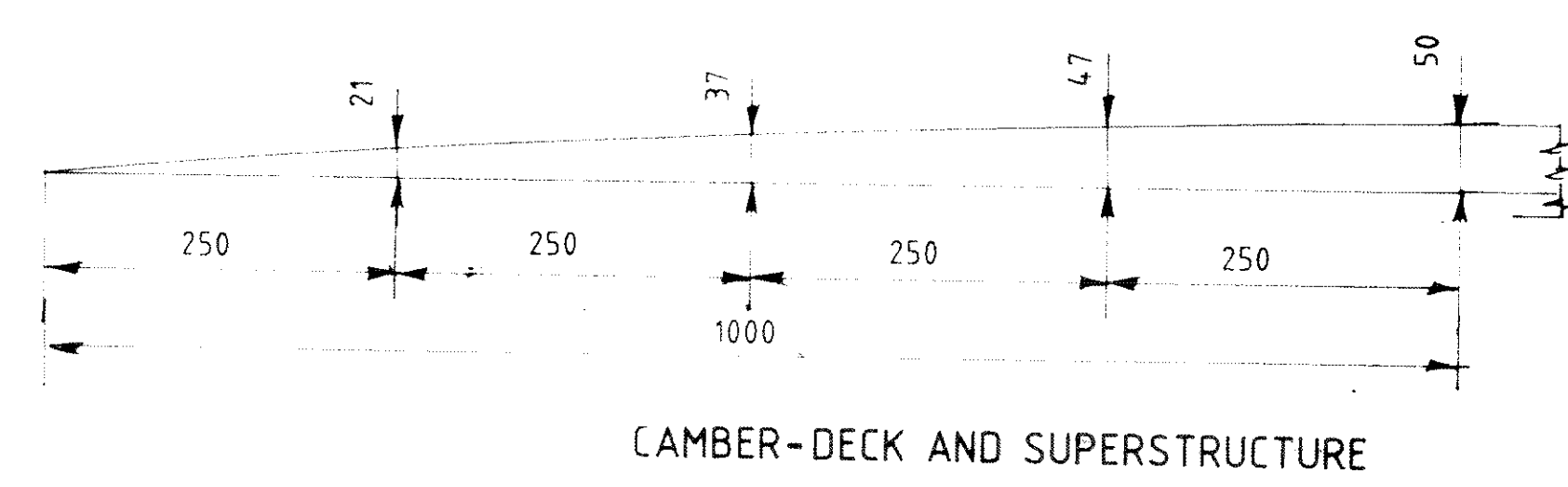
SCALE = 1:20 DESIGN NO. DRAWING NO.

DESIGN: *P. Gulbrandsen* **FIJ-5 A** **1**

Grimstad, April 1991



LINES ARE TO INSIDE OF PLANKING



(4) CABINSIDES Cut from one sheet of 12 mm plywood

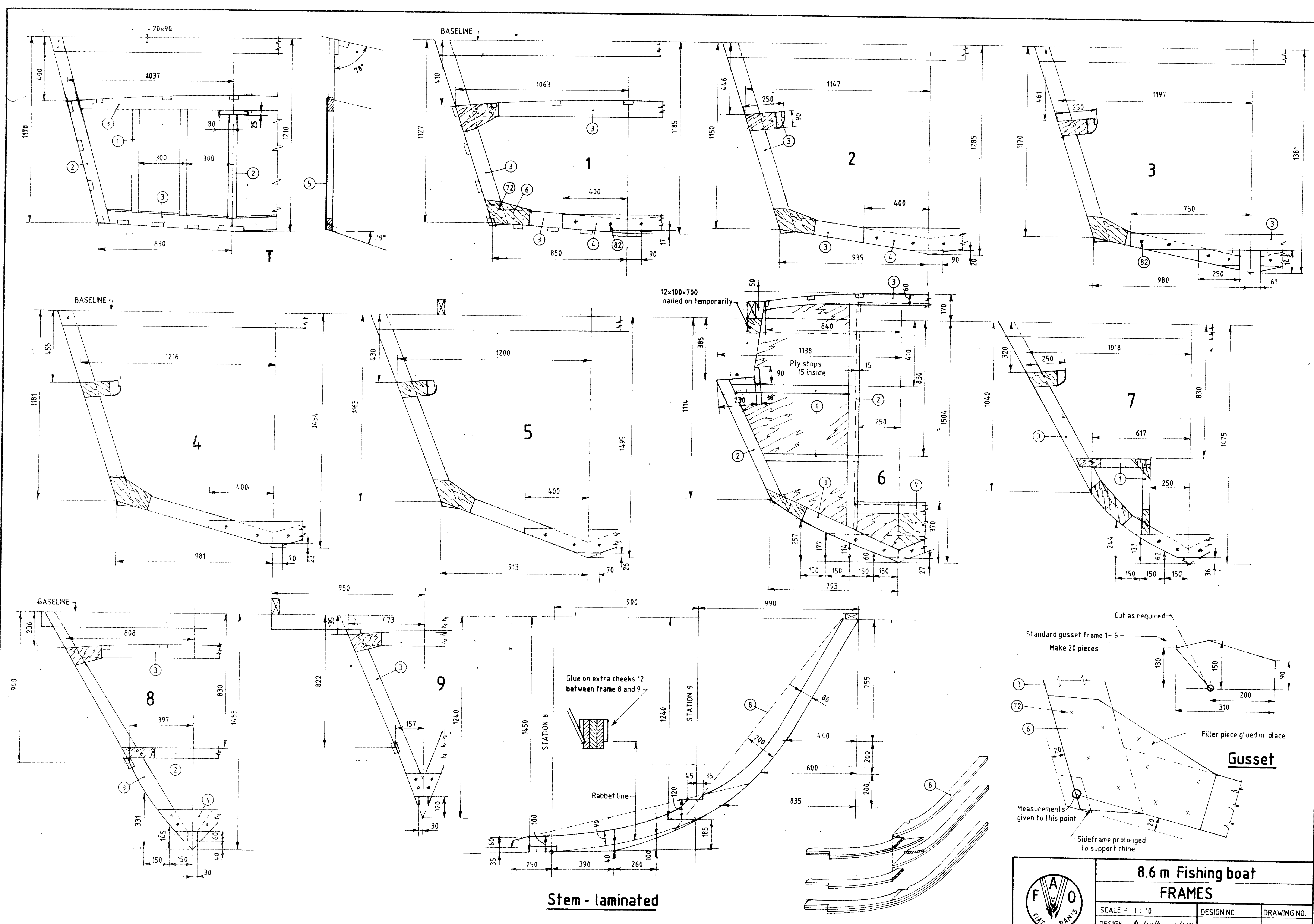
PARTICULARS

Length over all	LOA = 8.6 m
Beam moulded	BMD = 2.45 m
Depth moulded	DMD = 1.06 m
Cubic number	LOA x BMD x DMD
Length waterline DWL	L = 7.7 m
Beam DWL	B = 2.04 m
Draft DWL	T = 0.61 m
Freeboard minimum	F = 0.70 m
Weights:	
Displacement, no load	= 1300 kg
Service load, 3 men + 250 kg	= 500 kg
Displacement service	= 1800 kg
Installed engine power	= 20-30 hp
Service speed = 8.0 knots at service power = 15 hp	
COEFFICIENTS DWE:	
L/B = 3.8 ; $\nabla / (0.1L) = 3.9$; $\phi = 0.61$; $\nabla / L = 1.6$; $\delta = 15^\circ$	



**8.6 m Fishing boat
LINES**

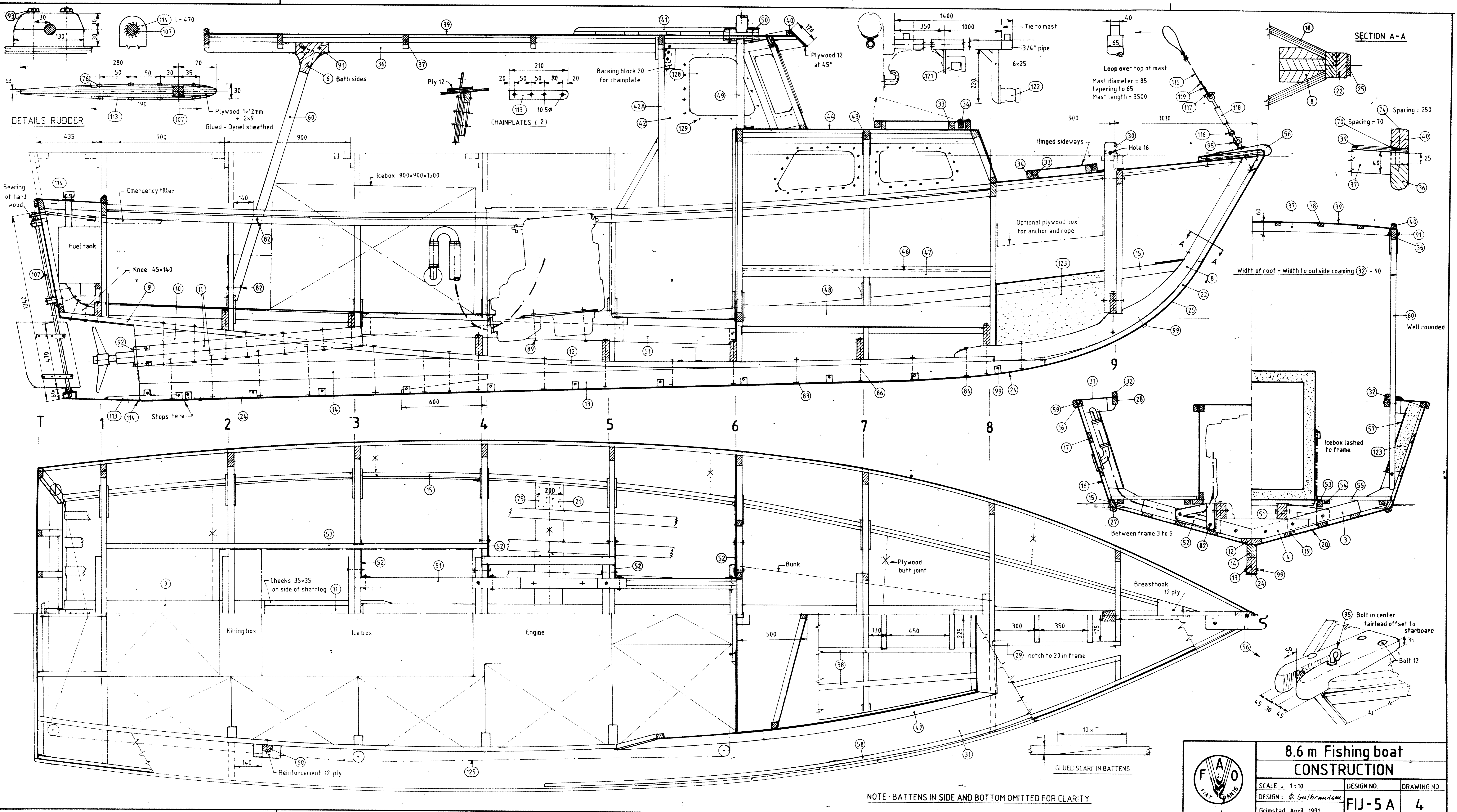
SCALE = 1 : 10	DESIGN NO.	DRAWING NO.
DESIGN : Ø. Grimstad	FIJ - 5 A	2
Grimstad, April, 1991		



Stem - laminated

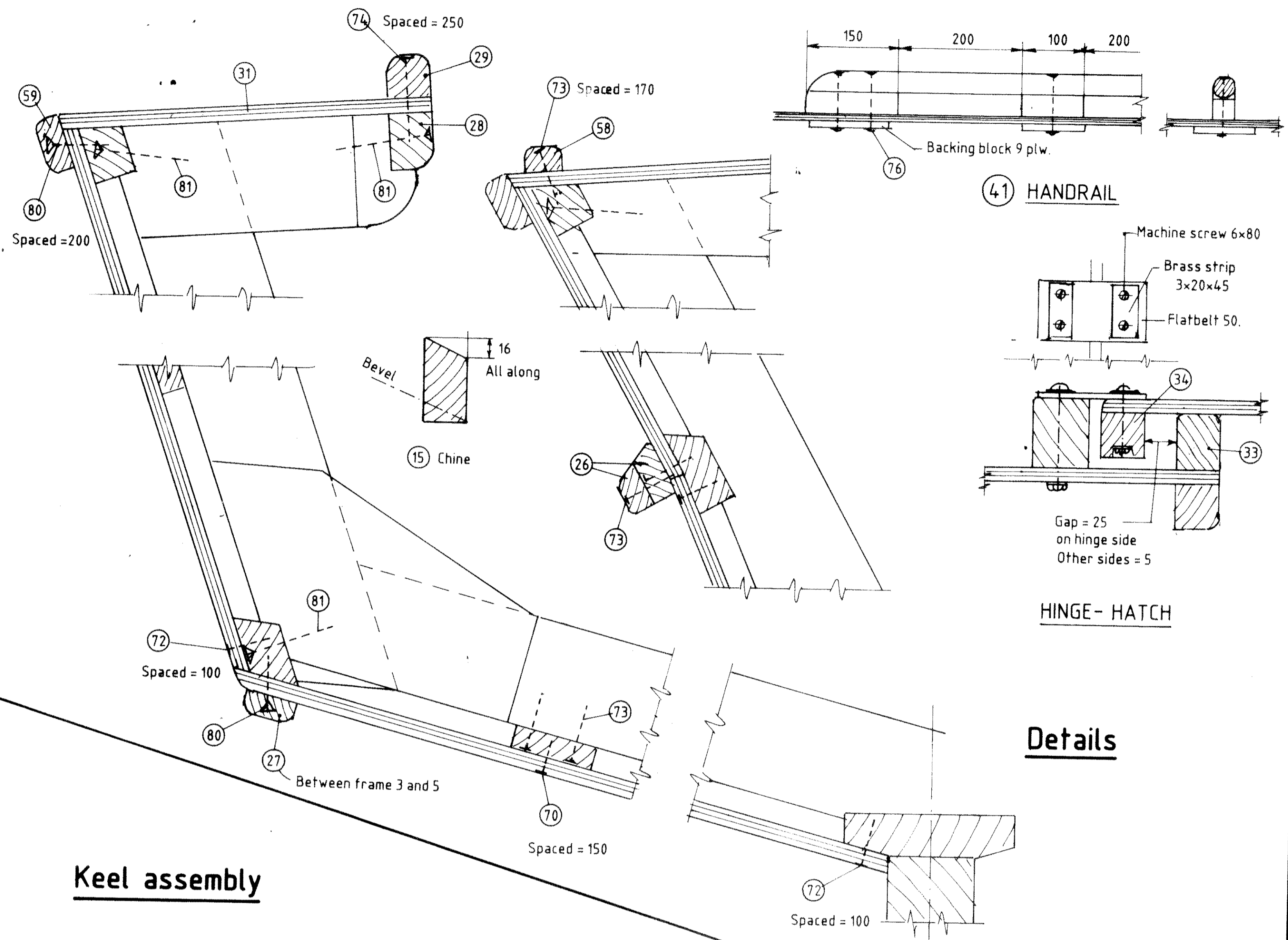
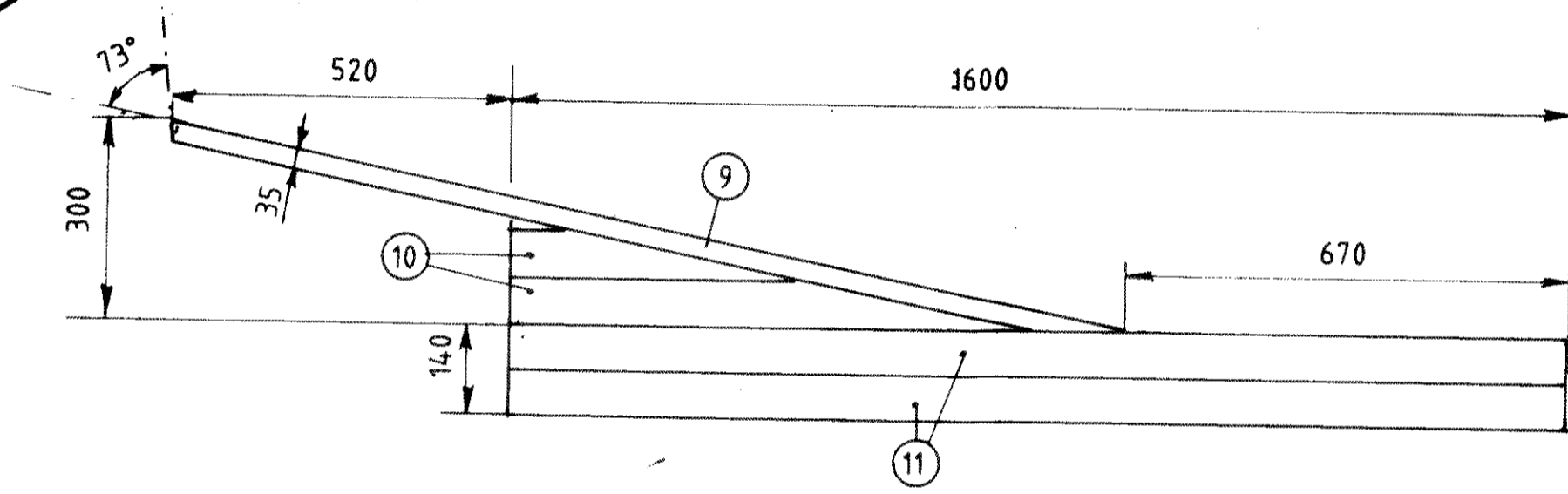
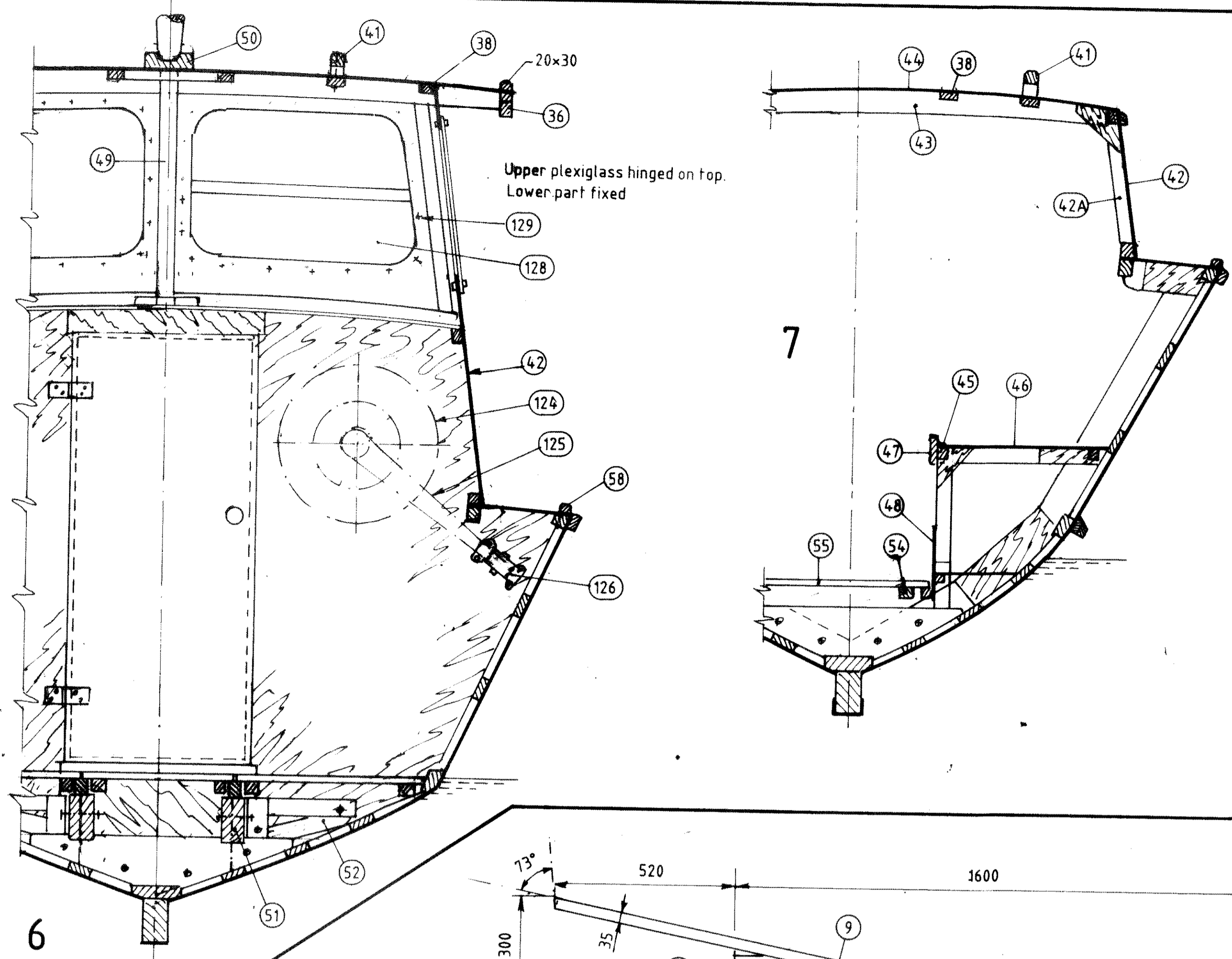
	8.6 m Fishing boat		
	FRAMES		
	SCALE = 1 : 10	DESIGN NO.	DRAWING NO.
	DESIGN : <i>Ø. Gulbrandsen</i>	FIJ-5 A	3

Grimstad, April 1991



NOTE : BATTENS IN SIDE AND BOTTOM OMITTED FOR CLARITY

	8.6 m Fishing boat CONSTRUCTION	
	SCALE = 1:10	DESIGN NO.
	DESIGN : Ø. G. Braudson Grimstad April 1991	FIJ-5 A
		DRAWING NO. 4



Keel assembly

- 1 Make plywood pattern of 9, 10, 11, according to measures shown in drawing to the left. Cut parts.
- 2 Hollow out 11 for sterntube as shown below
- 3 Assemble parts and clamp to frames on building jig.
- 4 Drill holes for bolts, clear of hollowed out shaft tube.
- 5 Clamp 12 and 13 to frames. Check distance = 240 at end.
- 6 Make plywood pattern of 14 (shaded portion). Saw parts and clamp together with 12 and with lower part of shaftlog 11. Drill holes for bolts in center of 11. (on ground). Bolt together.
- 7 Place the bolted assembly back on to the frames. Place bolts in predrilled holes through upper and lower shaftlog 11.

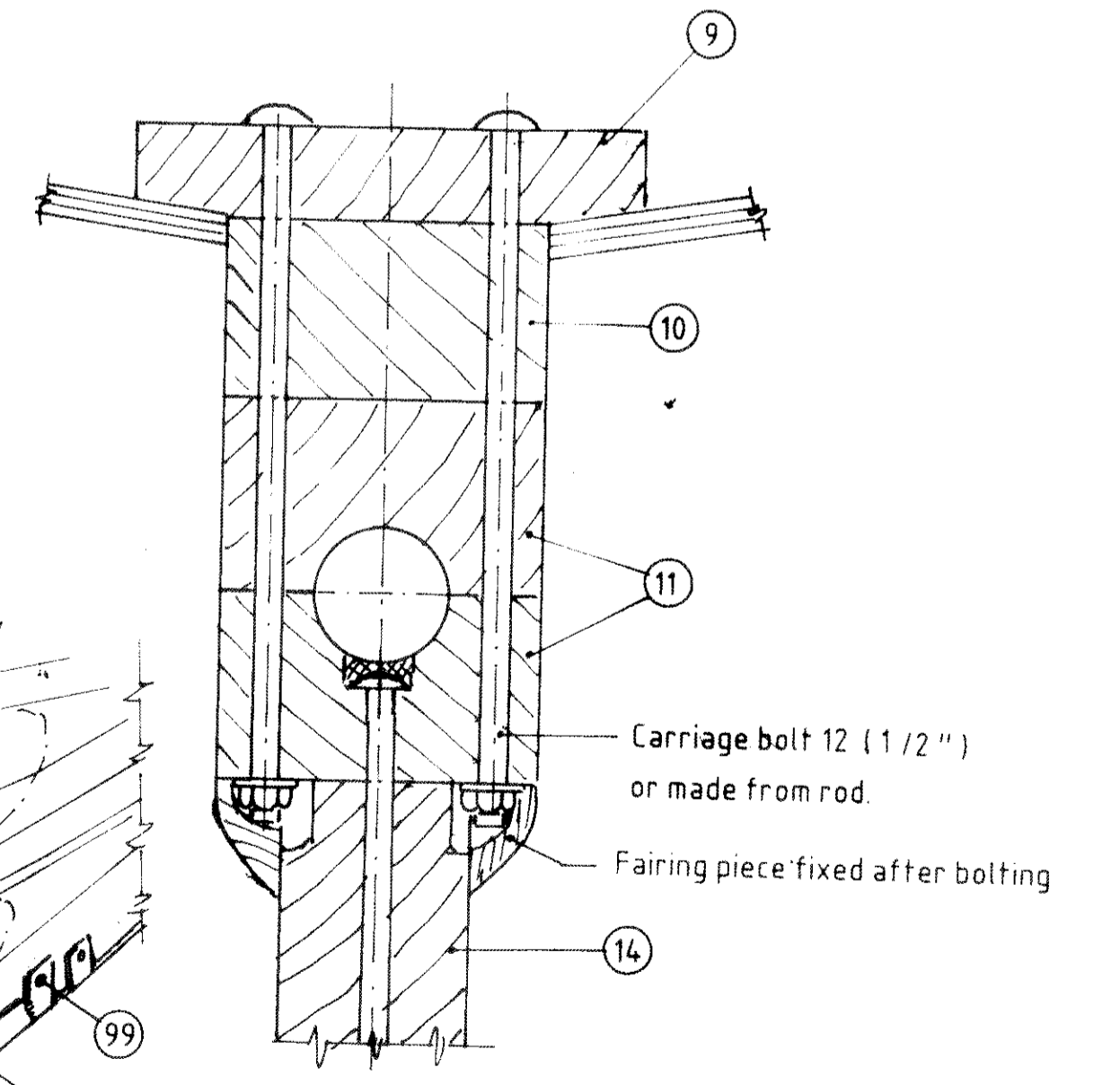
NOTE: ALL FRAMES ARE PLACED FORWARD OF CROSSPIECES

35x90 level with top of building jig

Sterntube length = 1600 between flanges

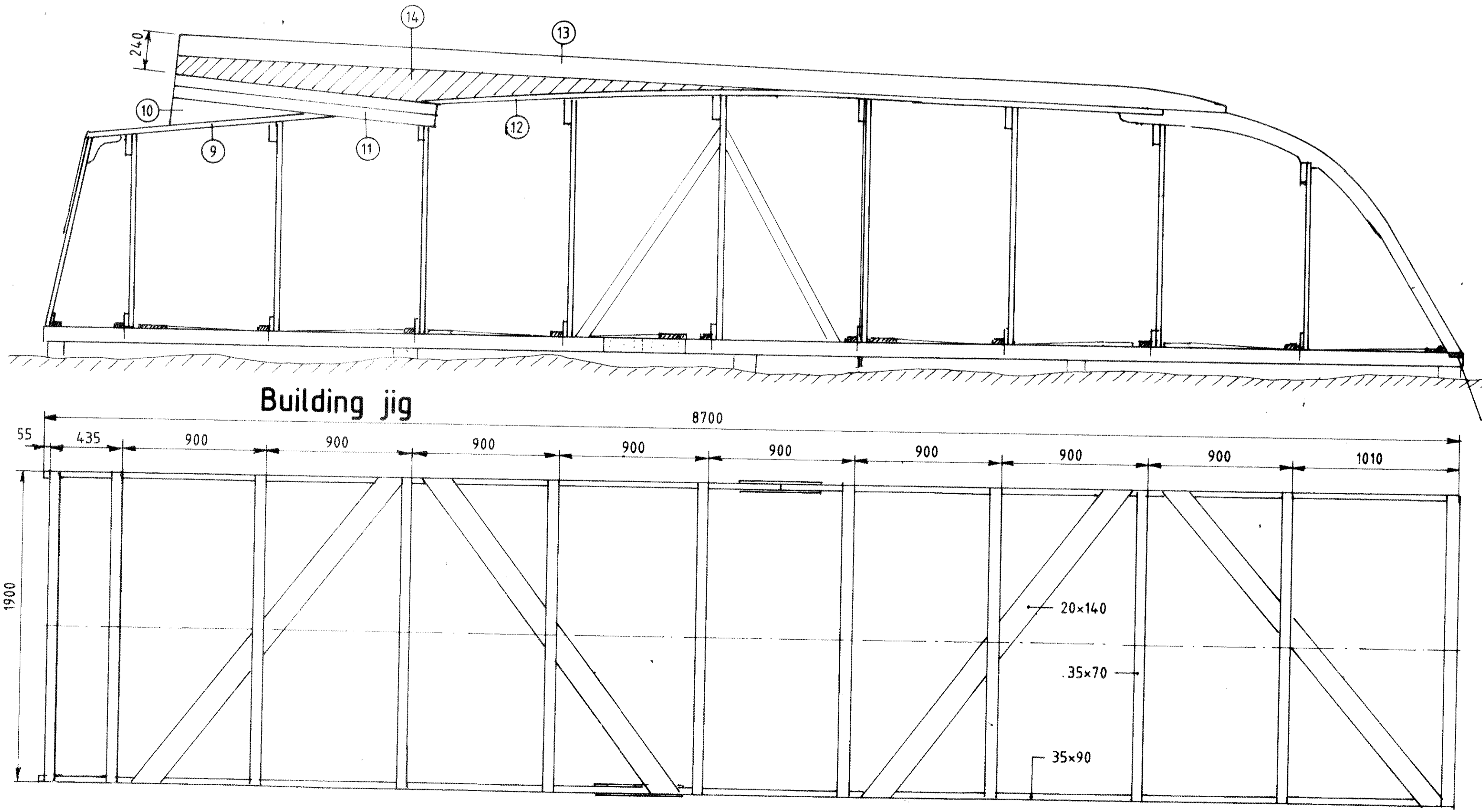
Pocket for fixing sternbearing with bolts

IMPORTANT Fairing of keel



**8.6 m Fishing boat
DETAILS**

SCALE: 1:2.5, 1:10, 1:20	DESIGN NO.	DRAWING NO.
DESIGN: Ø. Bulbrandau	FIJ-5 A	5
Grimstad, April 1991		



MATERIALS EXCLUDING BUILDING JIG LISTED IN ORDER OF ASSEMBLY (NOT INCLUDING ICE BOX)

		TIMBER											FASTENINGS																
		PLANED DIMENSIONS						LENGTH IN METER					BARBED RINGNAILS SILICON BRONZE				COPPER NAIL		WOODSCREW SILICON BRONZE			CARRIAGE BOLT WITH NUT HOT DIP GALVANIZED				ROD GALV.	LAG SCREW		
		20x45	20x70	20x90	20x200	35x35	35x45	35x70	35x90	35x140	35x190	45x140	70x120	25x12g	32x12g	38x10g	50x10g	75x8g	32x12g	100x10g	38x8g	45x10g	75x12g	12x90	12x150	12x200	12x300	12φ	10x50
1	Frame 35x45					7																							
2	Frame 35x70						7																						
3	Frame 35x90							46																					
4	Floor 45x140									5																			
5	Transom planking 12 plw																												
6	Bushets 12 plw														60														
7	Bulkhead 12 plw														500														
8	Stem 20x200														150														
9	Horn timber 35x190																												
10	Deadwood aft 70x120																												
11	Shafflog 70x120																												
12	Hog 35x140																												
13	Keel 70x120																												
14	Deadwood 70x120																												
15	Chine 35x70																												
16	Sheerbatten 35x45																												
17	Sidebattens 20x70																												
18	Side planking 12 plw																												
19	Bottom battens 20x70																												
20	Bottom planking 12 plw																												
21	Buttstraps 12 plw																												
22	Outer stem 20x45																												
23	Dynel sheathing																												
24	Keel band, steel 6x80																												
25	Stemband, steel 6x40																												
26	Spray strip 20x45 doubled																												
27	Rubbing strip 20x45																												
28	TURN OVER																												
29	Batten 35x45																												
30	Batten 35x35																												
31	Mooring bitt 70x90																												
32	Deck planking 12 plw																												
33	Coaming 35x35																												
34	Hatch coaming 35x45																												
35	Hatch frame 35x35																												
36	Hatch top 12 plw																												
37	Top side batten 35x70 (1)																												
38	Top frame 35x90																												
39	Top battens 20x45																												
40	Top planking 6 plw																												
41	Top batten 35x35																												
42	Handgrip 35x35																												
43	Cabin sides 12 plw																												
44	Cabin framing 35x45																												
45	Cabin roof beam 35x90																												
46	Cabin roof 9 plw																												
47	Cabin bunk frame 35x35																												
48	Bunk bottom 9 plw																												
49	Bunk front 20x70																												
50	Storage front 9 plw																												
51	Mast strut 45x45																												
52	Mast step 45x140																												
53	Engine bed 70x120																												
54	Engine brackets, steel																												
55	Floor framing 35x45																												
56	Floor framing 35x35																												
57	Floorboards 20x90																												
58	Bow fairlead 70x120																												
59	Floatation cover 6 plw																												
60	Yac rail 20x30																												
61	Fender 20x45																												
62	Stanchions 45x70																												
63	NET LENGTH in meter	60	90	71	10	56	83	32	60	4.6	1.5	7.2	22.1	1182	70	1975	880	90	500	66	235	212	88	73	10	6	9	3.2	36
64	GROSS LENGTH INCL. 25 % WASTE	86	113	94	13	74	110	42	80	6	2	9	29	770	610	290	240	100	490	100	pc/kg								
65	CUT FROM SAWN DIMENSION mm	25x150	25x150	25x150	25x220	40x200	40x200	40x200	40x200	40x200	40x200	40x200	40x200	50x150	75x130	1.5 kg	0.1 kg	6.8 kg	3.7	0.9 kg	1.0 kg	0.7 kg							

ORDER LIST

TIMBER (INCLUDING 25 % WASTE)						
WEIGHT	SAWN DIMENSION	PLANED DIM.	TOTAL LENGTH		CUBIC	
			m	ft.	m ³	ft. ³
Airdry 15 % MC	mm inch					
500-650 kg/m	25x150 1"x6"	20x140	150	490	0.56	20
	100x100 4"x4"	85x85	3.8	13	0.04	1.3
	25x220 1"x9"	20x200	13	43	0.07	2.5
650-750 kg/m	40x200 1 1/2"x8"	35x190	102	335	0.82	28.5
	50x150 2"x6"	45x140	9	30	0.07	2.4
	75x130 3"x5"	70x120	29	95	0.28	10.0
			Total		1.84	64.7

MARINE PLYWOOD

6x1200x2400 - 6 sheets
 9x1200x2400 - 2 sheets
 12x1200x2400 - 18 sheets

GENERAL

POS	DESCRIPTION	QTY.	UNIT PRICE	COST	NOTES
70	Barbed ringnails, bronze 25x12g	1.7 kg			
71	" " 32x12g	0.2 kg			
72	" " 38x10 g	7.5 kg			
73	" " 50x10g	4.2 kg			
74	" " 75x8g	0.6 kg			
75	Copper nail 32x12g	1.0 kg			
76	" " 100x10g	0.5 kg			
77	Copper roves 7/16"	0.5 kg			
78	" " 1/2"	0.1 kg			
79	Woodscrew, bronze 38x8g	260 pc			
80	" " 45x10 g	230			
81	" " 75x12g	100 pc			
82	Carriage bolt, hot dip galv. 12x90	80 pc			Alternative use
83	with nut " " 12x150	12 pc			copperbolts with brass
84	" " 12x200	7 pc			nuts and washers
85	" " 12x300	10 pc			
86	Rod, hot dip galv. 12φ	3.5 m			
87	Washer, strong, hot dip galv. 12φ	140			
88	" " 14 φ	4 pc			
89	Hex bolt, hot dip galv. 14x250	4 pc			
90	Hex bolt, stainless 10x50	6 pc			
91	with nut " " 10x60	8 pc			
92	" " 10x100	2 pc			
93	" " 10x120	4 pc			
94	Washer stainless 10φ	26			
95	Rod stainless 10 φ	0.3 m			
96	Nut stainless 10	1 pc			
97	Nut, hot dip galv. 12	20 pc			
98	Nut, hot dip galv. 14	4			
99	Lagscrew, hot dip galv. 10x50	40			
100	Epoxy glue with hardener	13 kg			
101	Epoxy resin for sheathing w. hard.	24 l			