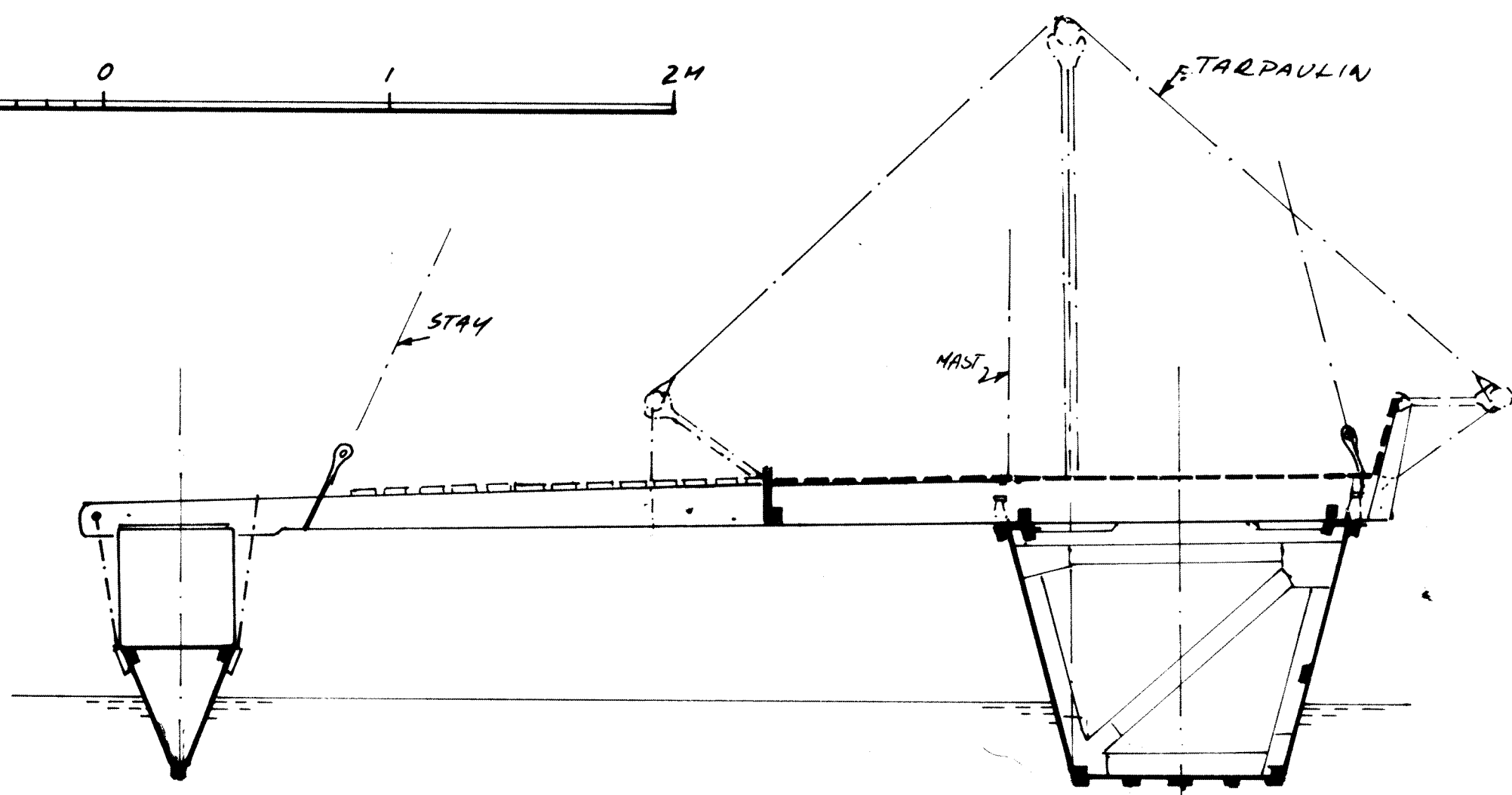
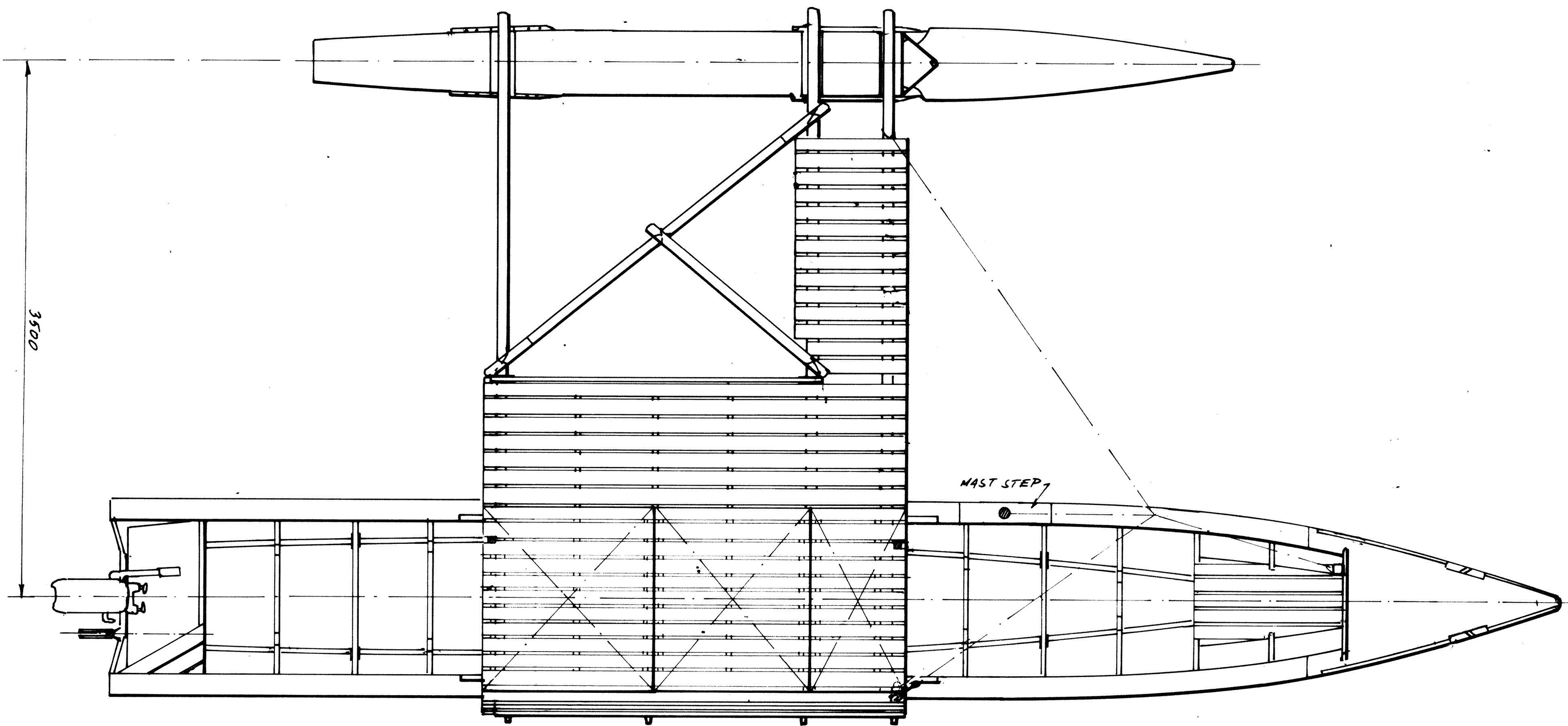
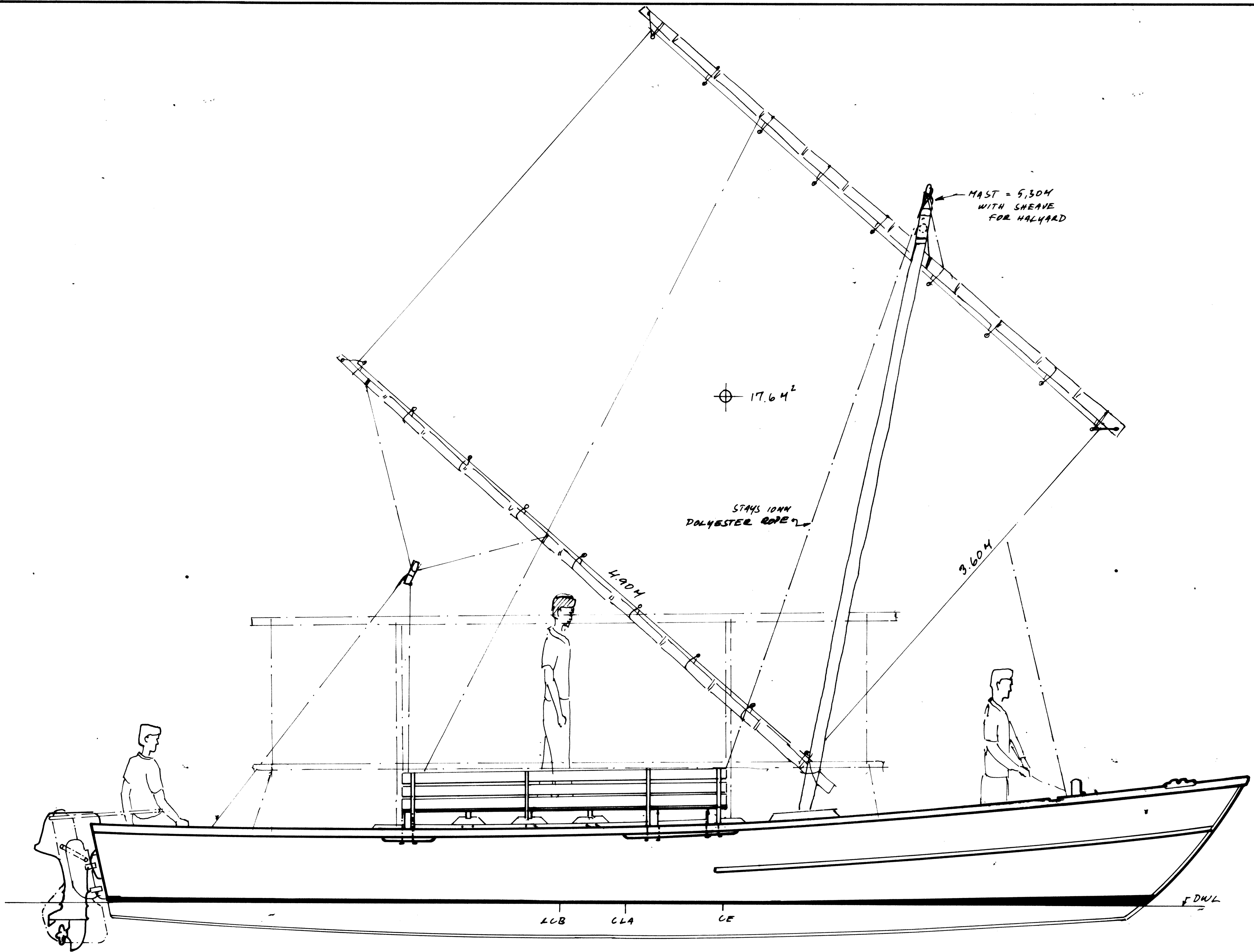


FAO copyright and disclaimer notices

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.

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations (FAO) concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed or recommended by FAO in preference to others of a similar nature that are not mentioned.

All rights reserved. FAO encourages the reproduction and dissemination of material in this information product. Non-commercial uses will be authorized free of charge, upon request. Reproduction for resale or other commercial purposes, including educational purposes, may incur fees. Applications for permission to reproduce or disseminate FAO copyright materials, and all queries concerning rights and licences, should be addressed by e-mail to copyright@fao.org or to the Chief, Publishing Policy and Support Branch, Office of Knowledge Exchange, Research and Extension, FAO, Viale delle Terme di Caracalla, 00153 Rome, Italy.



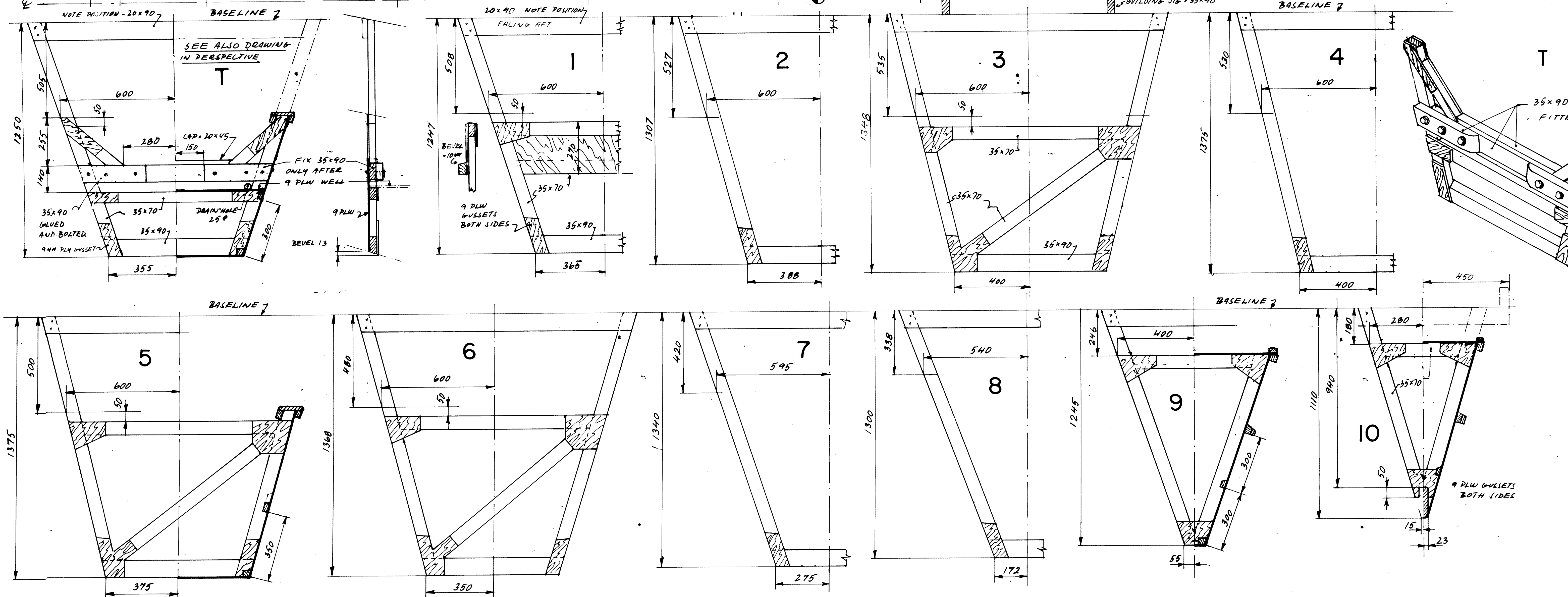
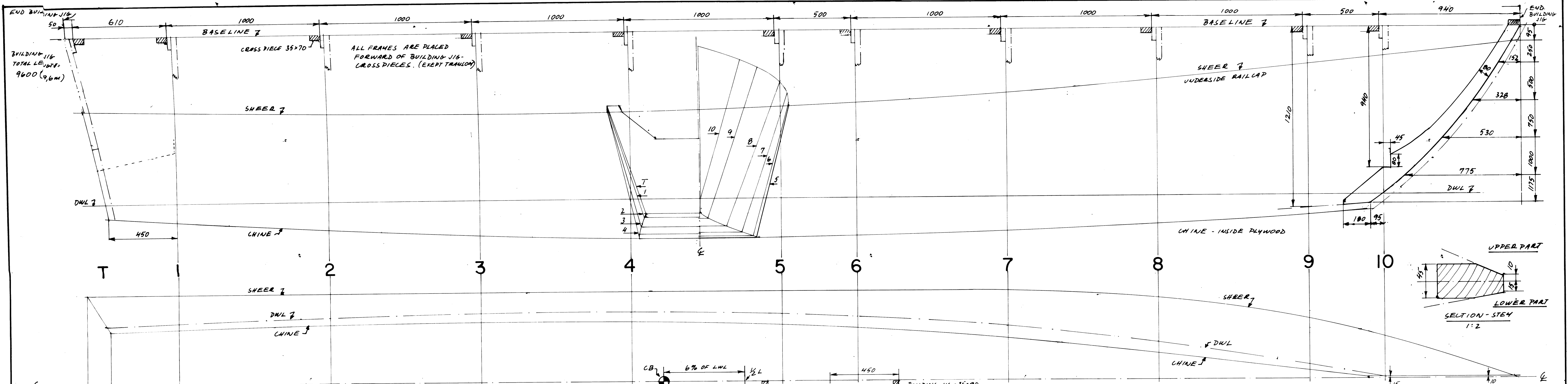
Particulars

		MAIN HULL	OUTRIGGER
LENGTH OVER ALL	LOA =	9,50 M	6,0 M
BEAM MOULDED	BMD =	1,22 M	0,44 M
DEPTH MOULDED, MIDSHIP	DMD =	0,89 M	0,44 M
WBL NUMBER, LOA x BMD x DMD, CM³		10,34³	1,24³
DRAFT MAX DWL	T =	0,30 M	0,28 M
WEIGHT EMPTY		600 Kg	110 Kg
SERVICE LOAD		800 Kg	40 Kg
DISPLACEMENT, DWL	Δ =	1400 Kg	150 Kg
PROPULSION:			
OUTBOARD ENGINE 15-25 HP			
SERVICE SPEED 25 HP = 9 KNOTS			
EMERGENCY SAIL:			
TARPAULIN 17,6 M²			



9.5m Outrigger Canoe GENERAL ARRANGEMENT

SCALE = 1:20	DESIGN NO.	DRWG. NO.
DESIGN: P. Lou/Commandant	PNG-11 A	I
GRANSTAD, APRIL-91		

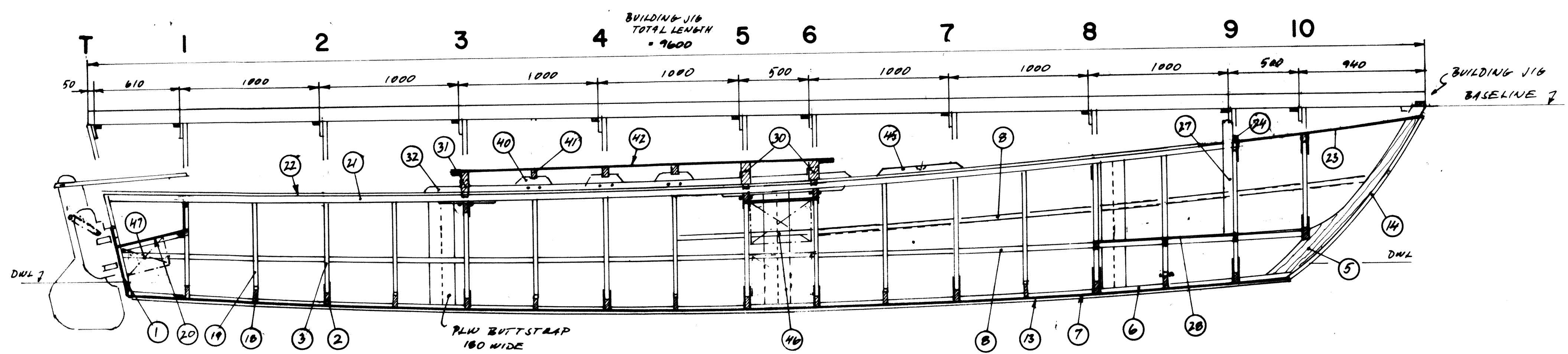


Particulars	
MAIN HULL	
LENGTH OVER ALL	LOA = 9.50 M
BEAM MOULDED	BMD = 1.22 M
DEPTH MOULDED MIDSHIP	DMD = 0.89 M
WBL NUMBER LOA x BMD x DMD	WNO = 10.314
LENGTH DWL	L = 8.50 M
BEAM DWL	B = 0.93 M
DRAFT DWL	T = 0.29 M
FREEBOARD MINIMUM DWL	FMIN = 0.60 M
FREEBOARD BOW	FMAX = 0.90 M
DISPLACEMENT DWL	Δ = 1.35 TONNE
ENGINE POWER : OUTBOARD	15-25 HP
SERVICE SPEED	V = 10 KNOTS
COEFFICIENTS DWL:	
SPEED RATIO	$V/\sqrt{L} = 1.9$
$L/B = 9.1$	$D/0.1L = 2.1$
PRISMATIC	$P = 0.65$
$1/2$ ANGLE OF ENTRANCE	$1/2 K = 8^\circ$



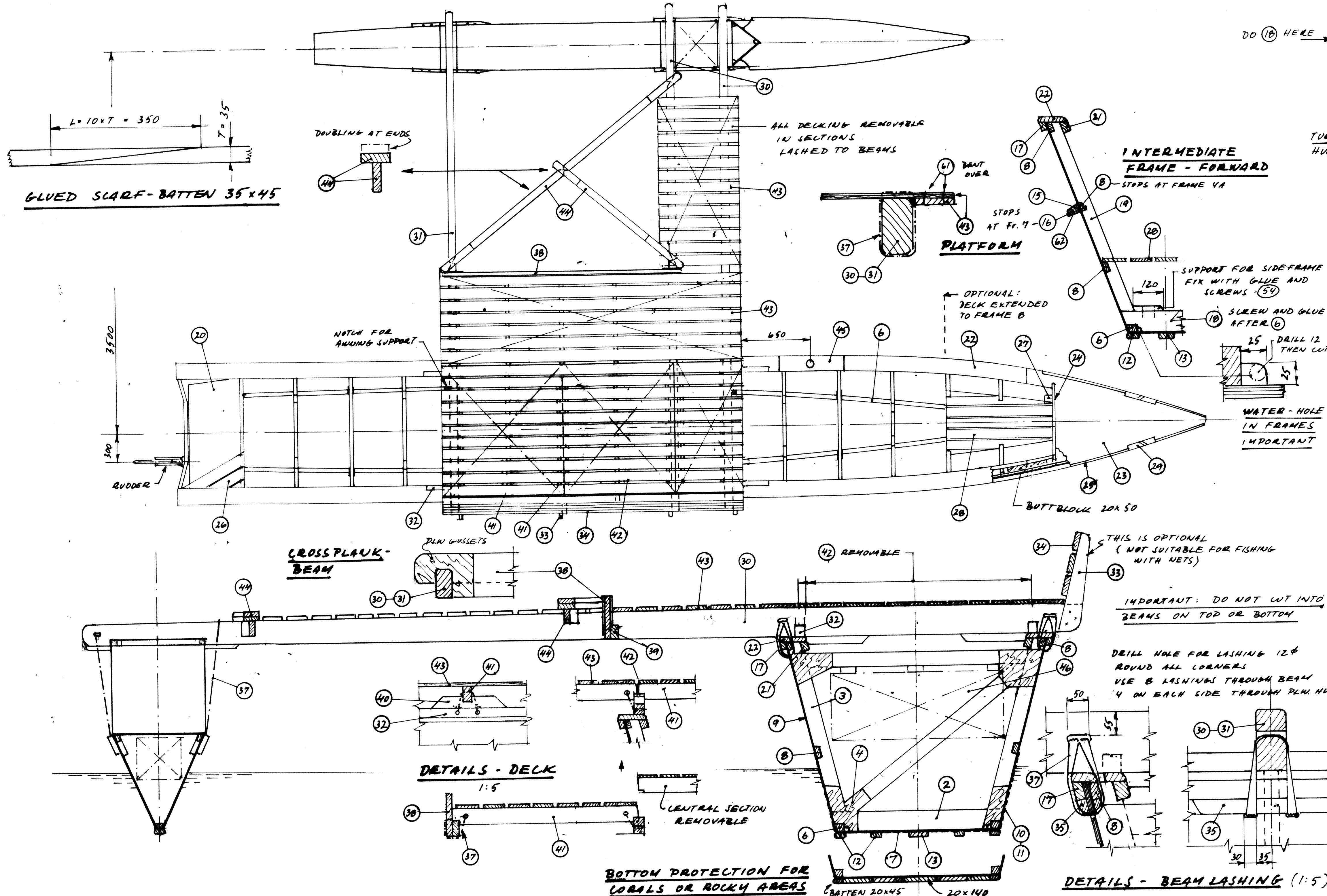
**9.5m Outrigger Canoe
LINES - FRAMES**

SCALE = 1:10	DESIGN NO	DRAWG. NO
DESIGN: J. Gual/Granados	PNG-11A	2
GUAYMAS, APRIL-91		



LIST OF MATERIALS DO NOT INCLUDE OUTRIGGER (DRAWG NO 4) OR BUILDING JIG.

POS	ITEM	DIMENSION MM	LENGTH M	NOTES
1	TRANSOM PLANKING PLW	9		
2	BOTTOM FRAME	35 x 90	7	
3	SIDE FRAME, MAIN	35 x 70	26	
4	GUSSETS PLW BOTH SIDES	9		OFF CUTS
5	STEM	45 x 200	1,7	SAWN TO SHAPE
6	CHINE	35 x 45	17	
7	BOTTOM PLANKING PLW	12		
8	SIDE BATTEN	20 x 45	46	
9	SIDE PLANKING PLW	9		
10	FELP MAT	450 g/m ²	12,4 ²	ALTERNATIV
11	POLYESTER RESIN	20 LITRE		DHUEL + FIBRE GLAS
12	CORNER PROTECTION	20 x 45	34	
13	BOTTOM PROTECTION, CENTRE	20 x 70	8,5	
14	STEM CAPPING	20 x 45	1,7	
15	SPRAY RAIL INNER	35 x 45	8	USE HYDROSEAL NOT GLUE
16	SPRAY RAIL OUTER	20 x 35	8	
17	SHEER BATTEN	20 x 45	20	
18	INTERMEDIATE FLOOR	35 x 90	5	
19	INTERMEDIATE SIDE FRAMES	35 x 55	14	ALTERNATIV: 1 OF 35 x 55 + 1 OF 100 x 55
20	OUTBOARD WELL PLW	9		
21	CLAMING	35 x 45	17	
22	RAIL CAP	20 x 140	17	FORWARD FROM BOARD
23	DECK FORWARD PLW	9		
24	DECK BATTEN	20 x 45		
25	DECK PROTECTION	20 x 45		
26	SEAT AFT	20 x 90	1,1	
27	MOORING BITT	70 x 70	0,8	
28	FLOOR FORWARD	12 x 90	5	
29	FAIRLEADS	45 x 45	0,5	
30	BEAMS FORWARD	70 x 140	9,2	TWO OF 4,64
31	BEAM AFT	70 x 140	4,6	
32	BEAM SUPPORT	45 x 45	6	STOPS AT BEAMS
33	STANCHIONS	35 x 90	2	OPTIONAL
34	STANCHION PLANKS	20 x 90	8,4	OPTIONAL
35	FILLER BLOCK	20 x 35	2,2	GLUE IN PLACE
36	PLYWOOD DOUBLING	9		GLUE IN PLACE
37	LASHING ROPE	5 φ	70	BRAIDED NYLON
38	LOADS PLANK	20 x 200	2,3	
39	CROSS BATTEN	35 x 35	1,9	
40	BEAM BLOCKS	45 x 45	2,1	
41	DECK BEAMS	35 x 70	6,6	
42	DECK - REMOVABLE	15 x 90	3,1	ALT.: 20 x 90
43	WOODEN DECK	15 x 90	3,5	"
44	DIAGONAL BRACE	35 x 70	11	
45	MAST STEP	45 x 140	0,6	
46	BUOYANCY BLOCK MAIN	300 x 400 x 200		POLYURETHANE OR POLYURETHAN
47	BUOYANCY BLOCK AFT	200 x 300 x 200		
FASTENINGS				
50	GLUE, EPOXY OR RESORCINOL			
51	NIPDUSUMUS SILKON BRONZE	25 x 8,9		PLW 9 - BATTEN 20
52	LOUVERSUNK HEAD	32 x 8,9		PLW 9 - BATTEN 35
53	"	38 x 8,9		PLW 12
54	"	45 x 10,9		PLW 20
55	"	75 x 12,9		BATTENS 35
56	BARBED RIVNAILS	25 x 12,9		PLW 9 - BATTEN 20
57	SILKON BRONZE, FLAT HEAD	32 x 12,9		PLW 9 - BATTEN 35
58	"	38 x 10,9		PLW 12
59	"	50 x 10,9		PLW 20
60	LOPPER BOOTNAILS	25 x 12,9		PLW 9 - BUTTS
61	"	32 x 12,9		PLW 12 - BUTTS
62	"	100 x 10,9		PLW 20 - BUTTS

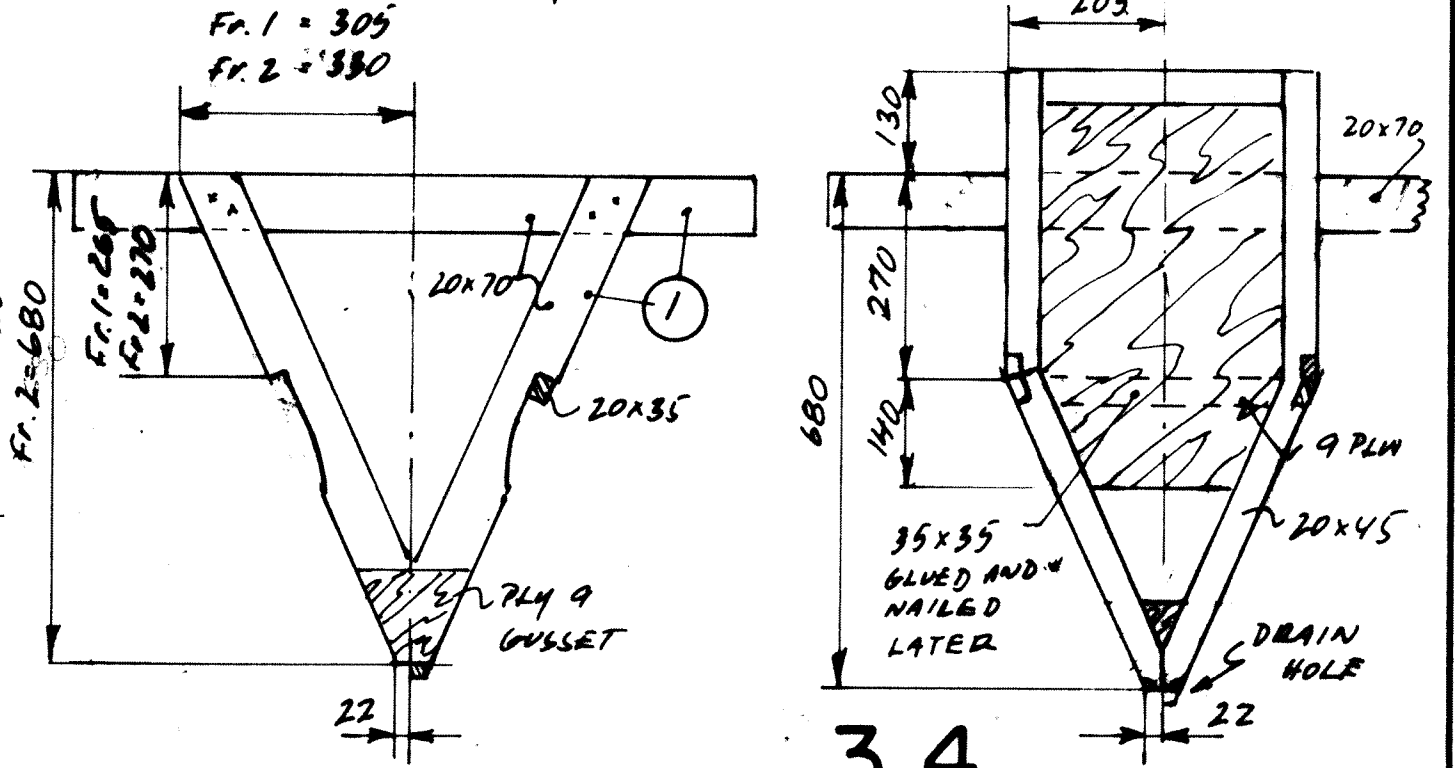
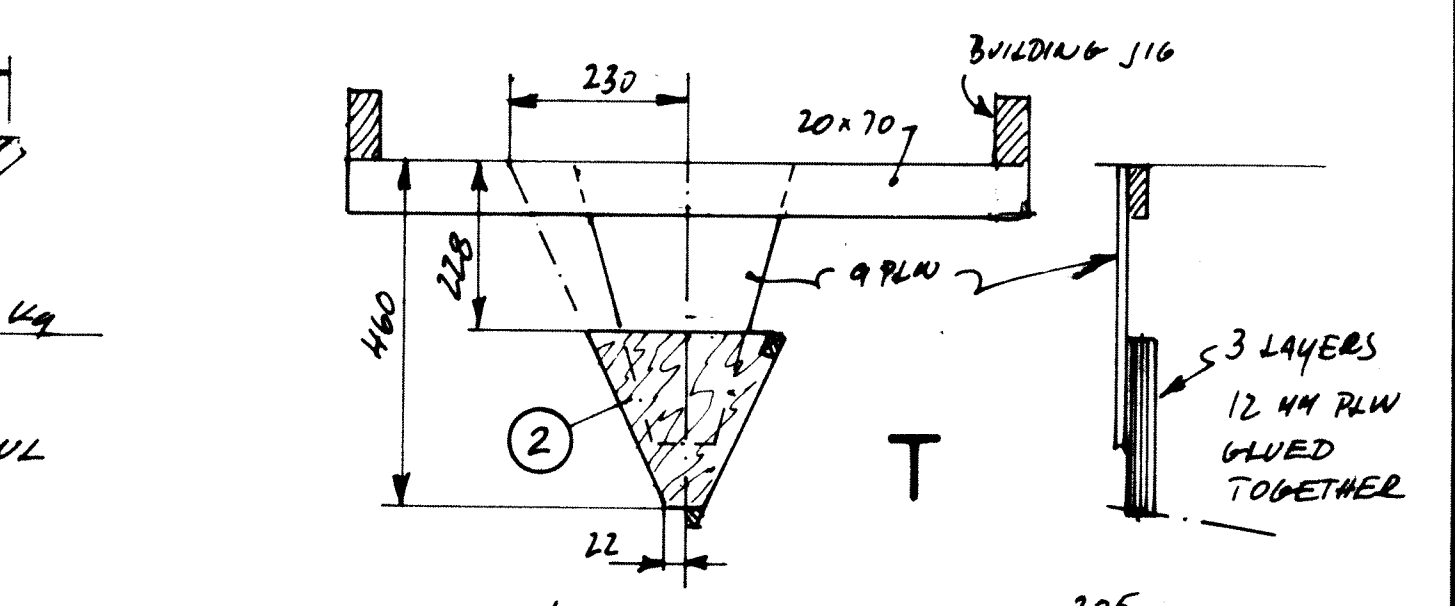
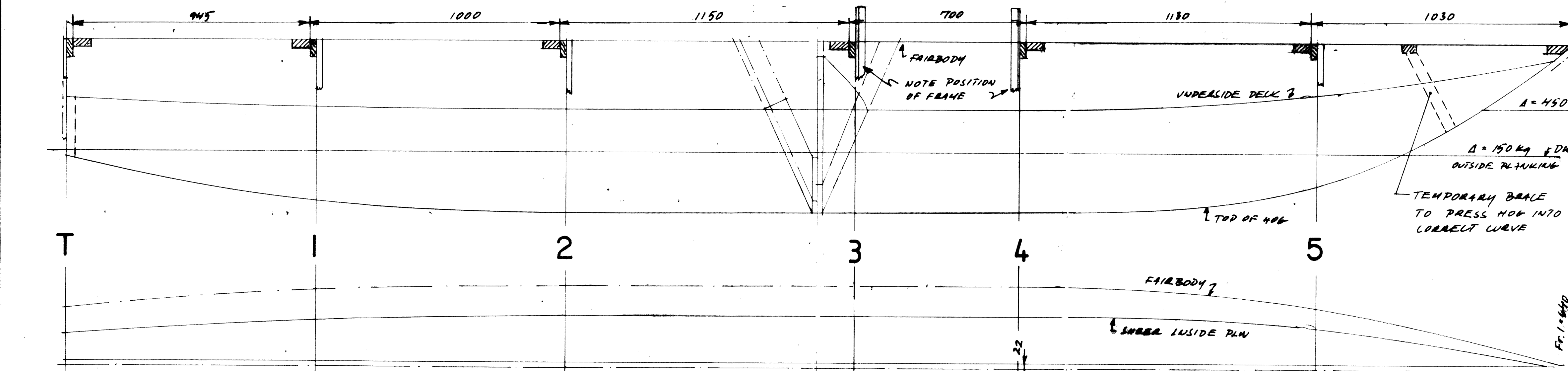


9.5m Outrigger Canoe CONSTRUCTION

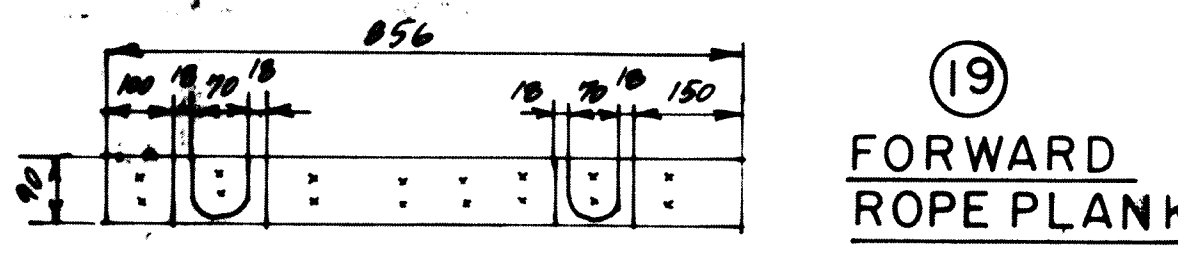
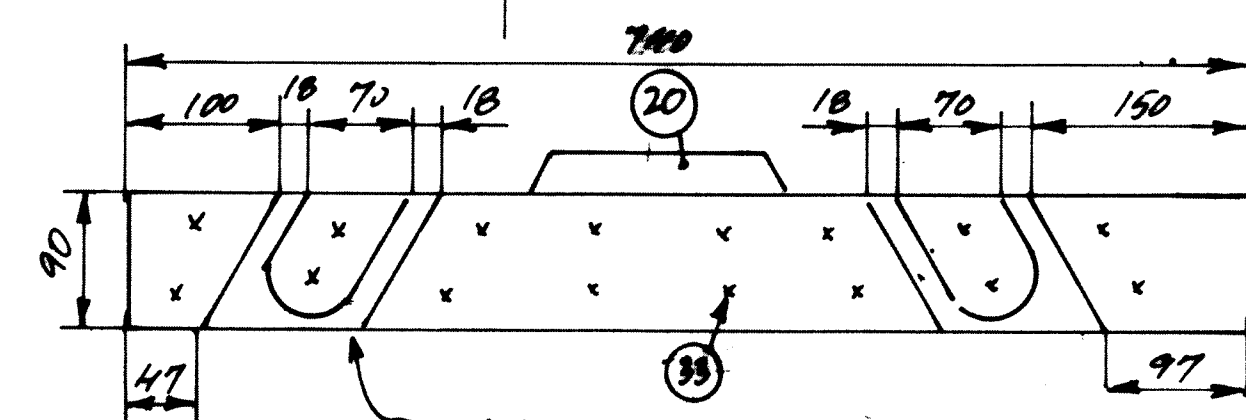
SCALE = 1:10, 1:20 DESIGN NO. DRAWG. NO.

DESIGN: P. Gulliksson **PNG-11A** **3**

GAMSTAD, APRIL-91



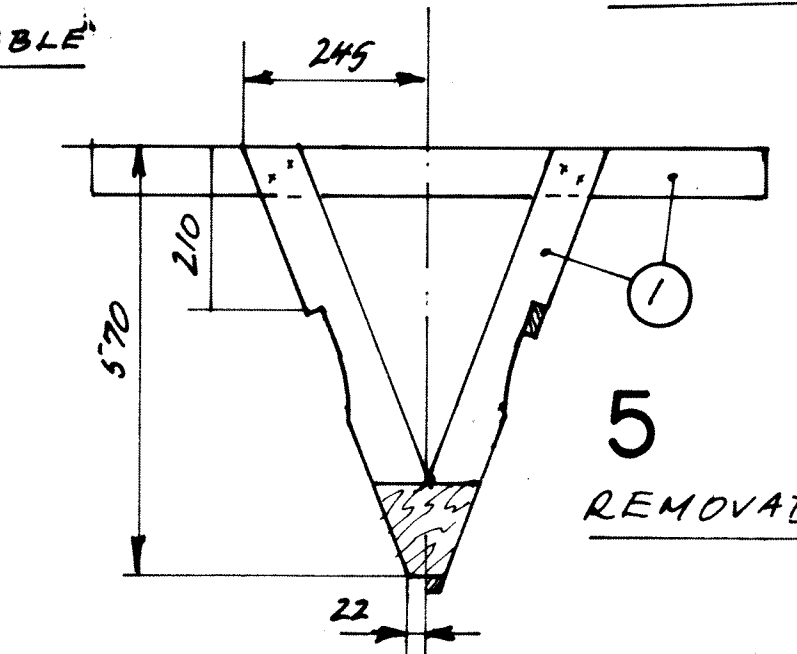
19 AFT ROPE PLANK
1:5



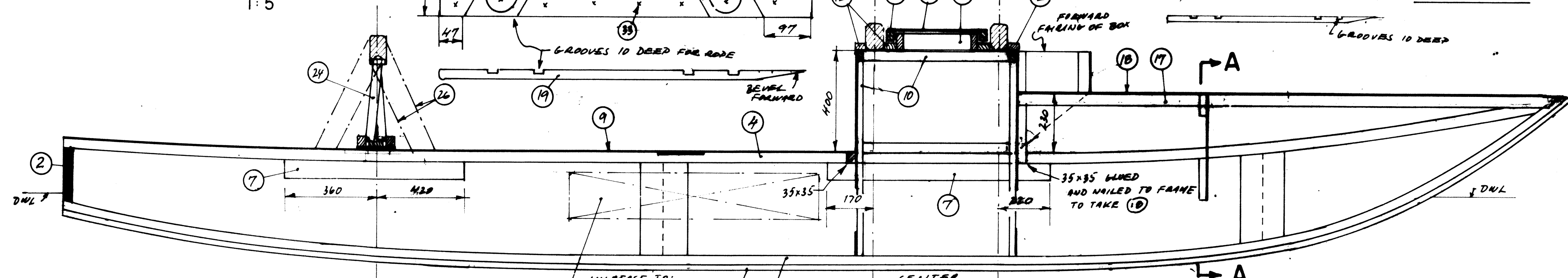
19 FORWARD ROPE PLANK

1,2 REMOVABLE

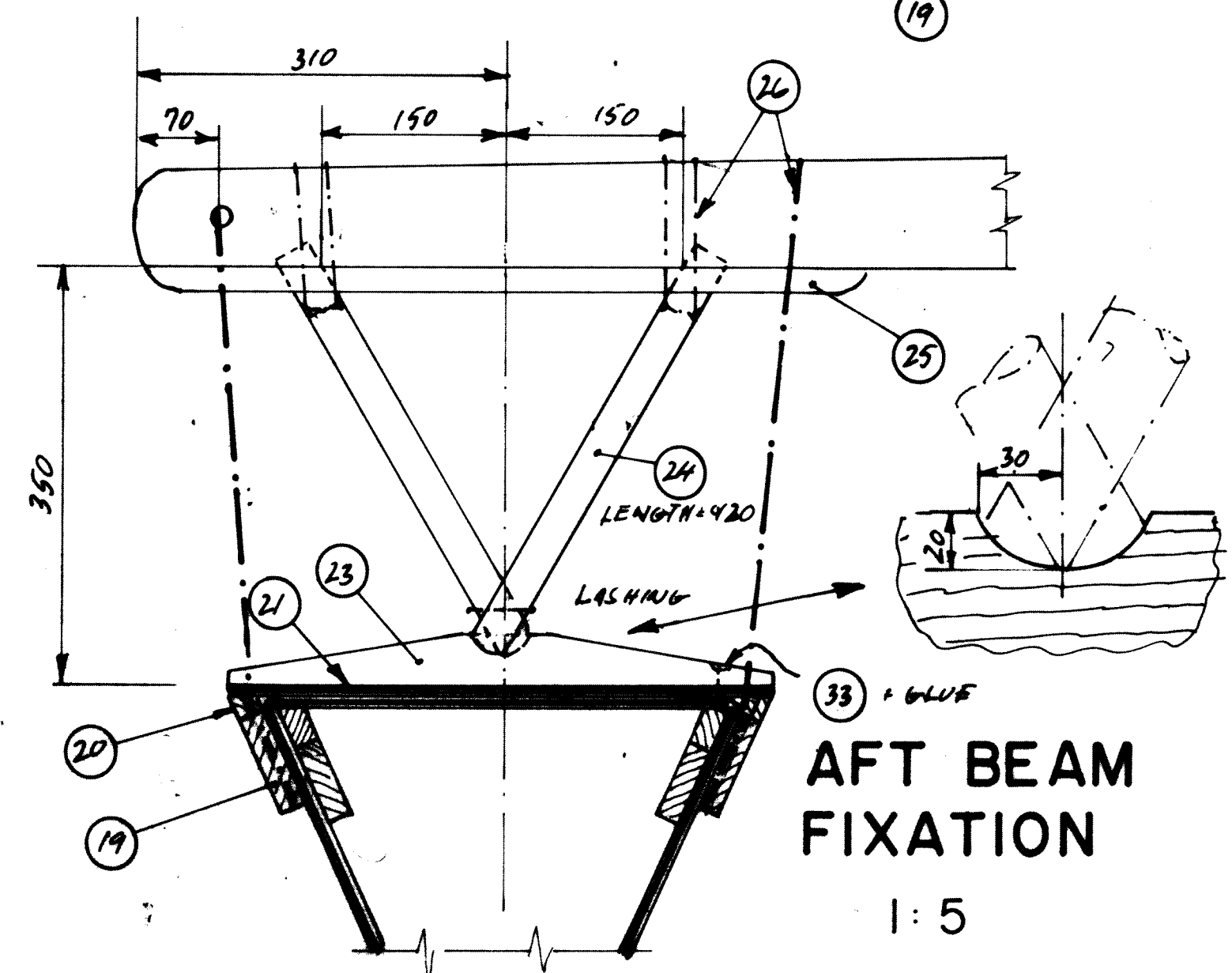
3,4 PERMANENT



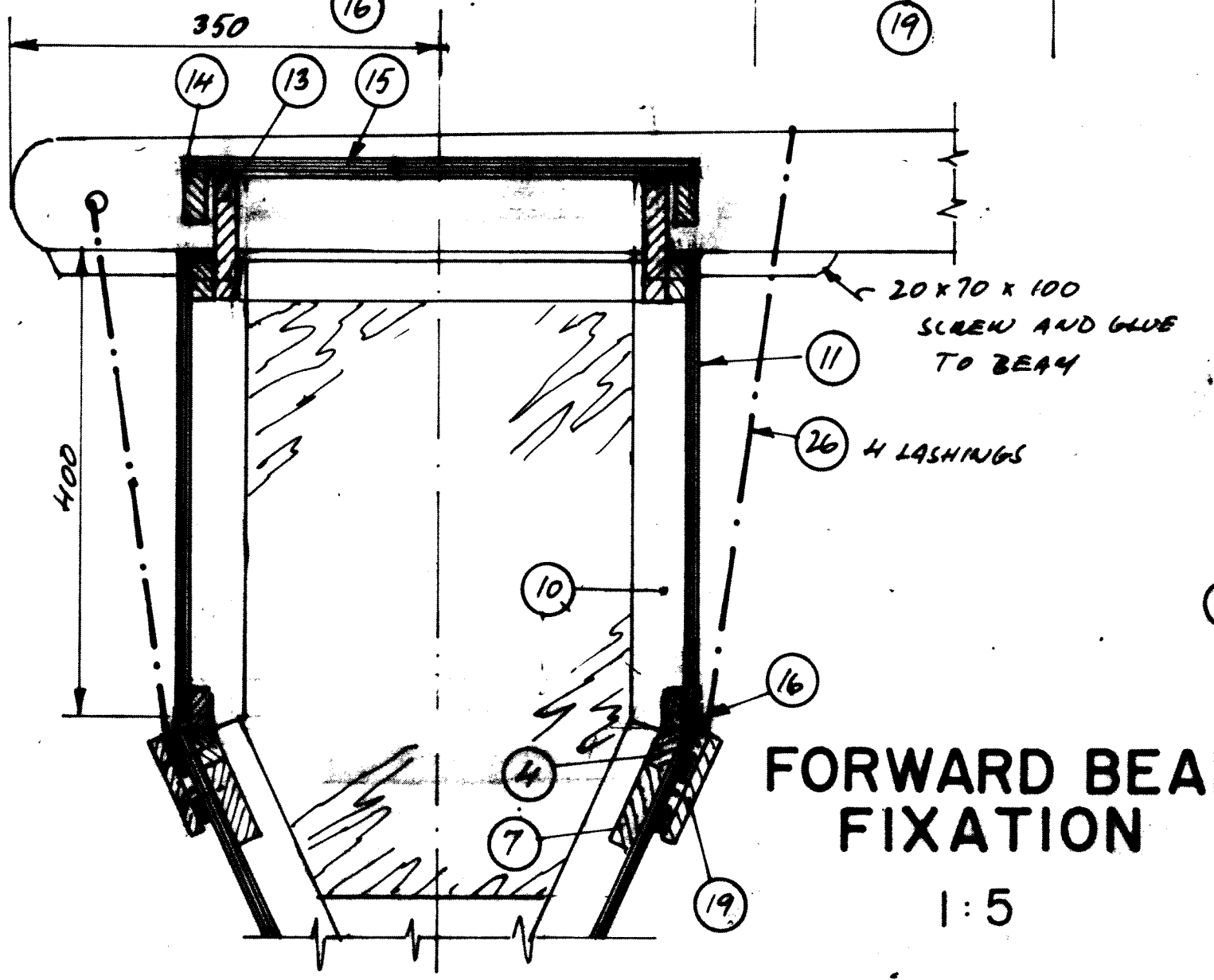
5 REMOVABLE



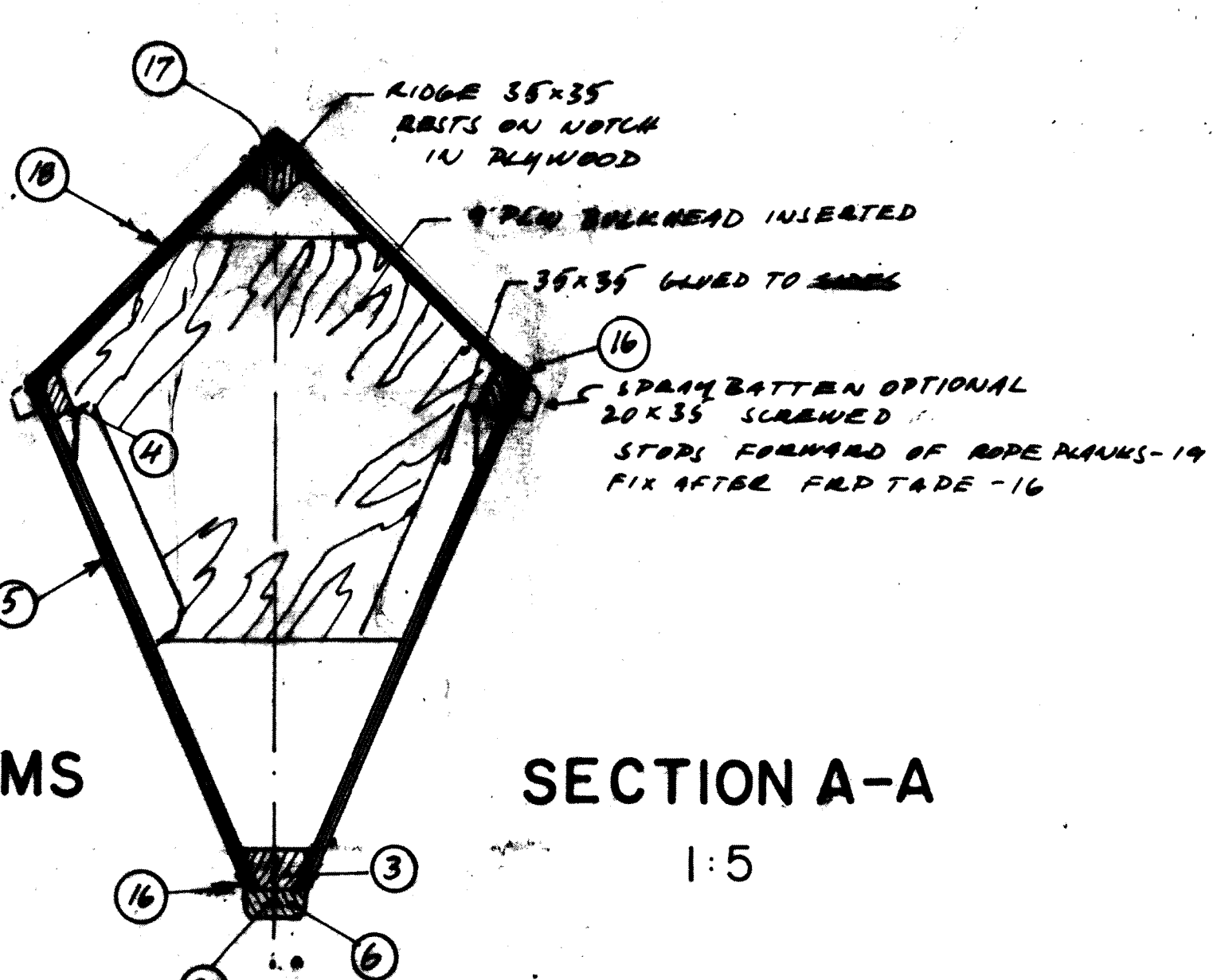
POS	ITEM	DIMENSION MM	LENGTH M	NOTES
1	BUILDING JIG FRAMES	20x70	7	REMOVABLE
2	TRANSOM, PLW	6x36		3 LAYERS 12 PLW
3	HOG	35x45	4,2	FORWARDED LAM. 2x17
4	SHEER BATTEN (2)	20x35	12	
5	SIDE PLANKING	9 PLW		
6	KEEL	20x45	4,2	TURN HULL AFTER FIX.
7	BULKING BLOCKS (4)	20x70	3,3	
8	BUOYANCY BLOCK, POLYETHYLENE	200x200x1500		
9	DECK	9 PLW		
10	BOX FRAMING	20x45	5,5	
11	BOX PLANKING	9 PLW		
12	BEAM BATTENS	20x45	2,0	
13	LOADING	20x100	1,5	
14	HATCH FRAME	20x35	1,6	
15	HATCH PLANKING	9 PLW		
16	GLASS CLOTH 330 g/m ²	50 WIDE	2,0	ALL JOINTS
17	FORWARD DECK FRAMING	35x35	3,5	
18	FORWARD DECK	9 PLW		
19	ROPE PLANKS	20x90	3,2	
20	BLANK ROPE PLANK	20	0,15	FIT FLUSH DECK
21	STRAUT PLANK BOTTOM	9 PLW		
22	STRAUT PLANK STIFFENER	35x45	0,90	ON HIGH
23	"	45x55	0,45	ON FLAT
24	STRAUT (L)	35 ROUNDED	0,70	
25	STRAUT RETAINER	20x70	0,60	FIX UNDER BEAM
26	ROPE POLYAMIDE (NYLON)	6 Ø	15	
FASTENINGS				
30	EPoxy OR RESORCINOL GLUE			ALL JOINTS
31	WOODSCREW SILICON BRUSHES (FOR BULKING HEAD)	25x86		9 PLW
32	"	32x86		9 PLW + KEEL (6)
33	"	45x106		ROPE PLANKS - 19
34	BARRIED NAILS/SCREWS BRONZE FLAT HEAD	25x126		9 PLW
35	"	32x126		9 PLW
36	LOPPER BOATNAILS	25x126		PLW, BUTT BLOCK



AFT BEAM FIXATION
1:5



FORWARD BEAMS FIXATION
1:5



SECTION A-A
1:5

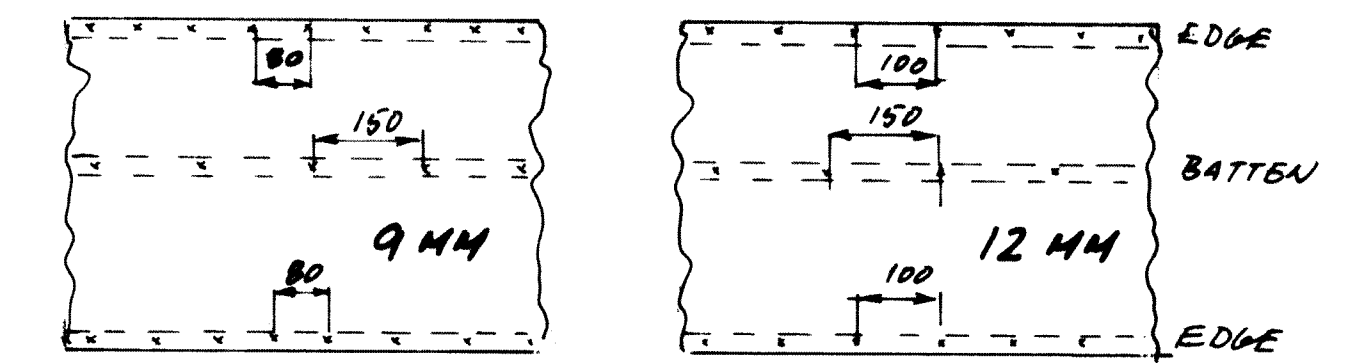
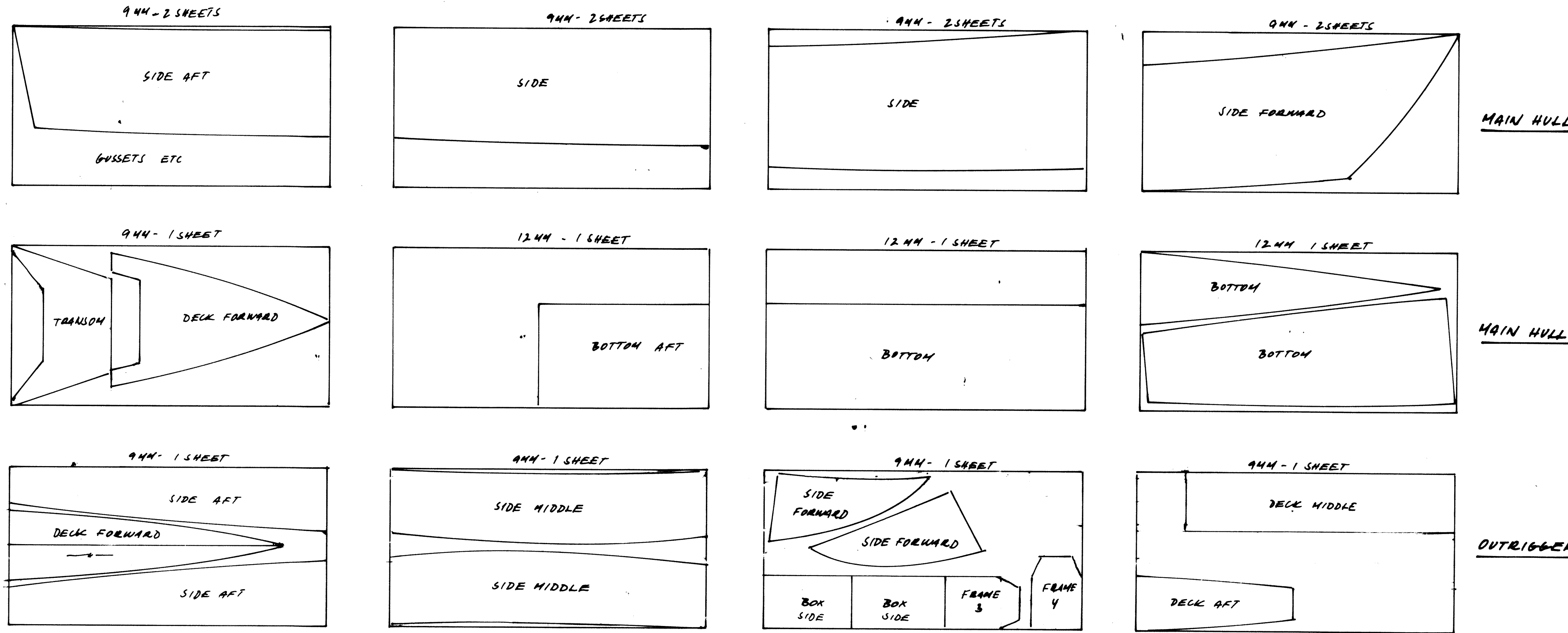


6.0m Outrigger CONSTRUCTION		
SCALE = 1:10	DESIGN NO	DRWING NO
DESIGN: P. GARDSTAD	KIR-5A	5
GARDSTAD, APRIL 91	PNG-11A	4

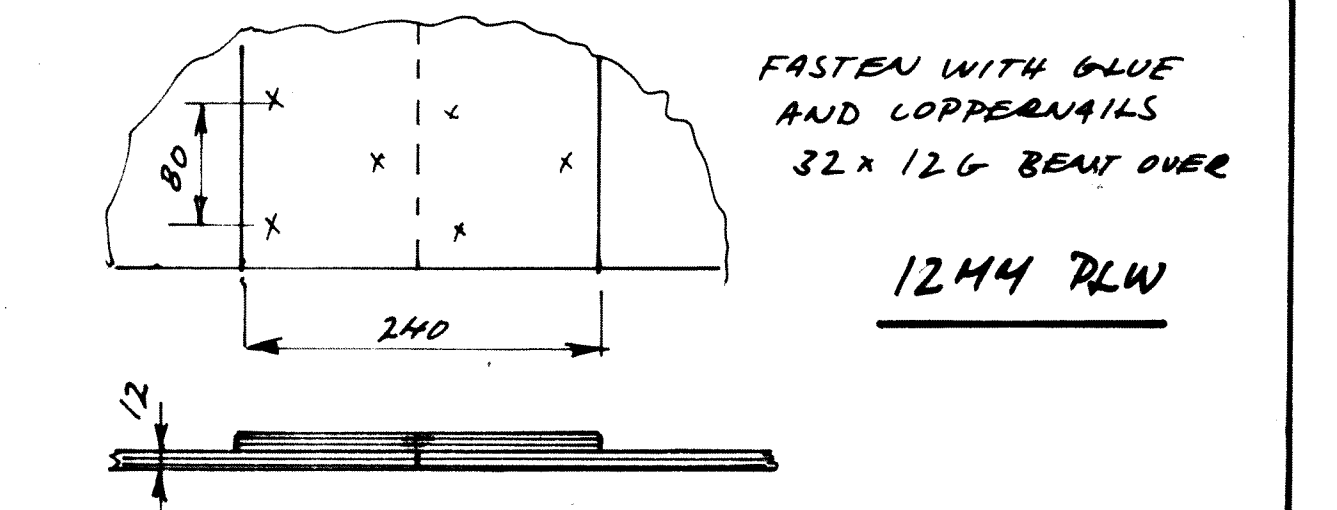
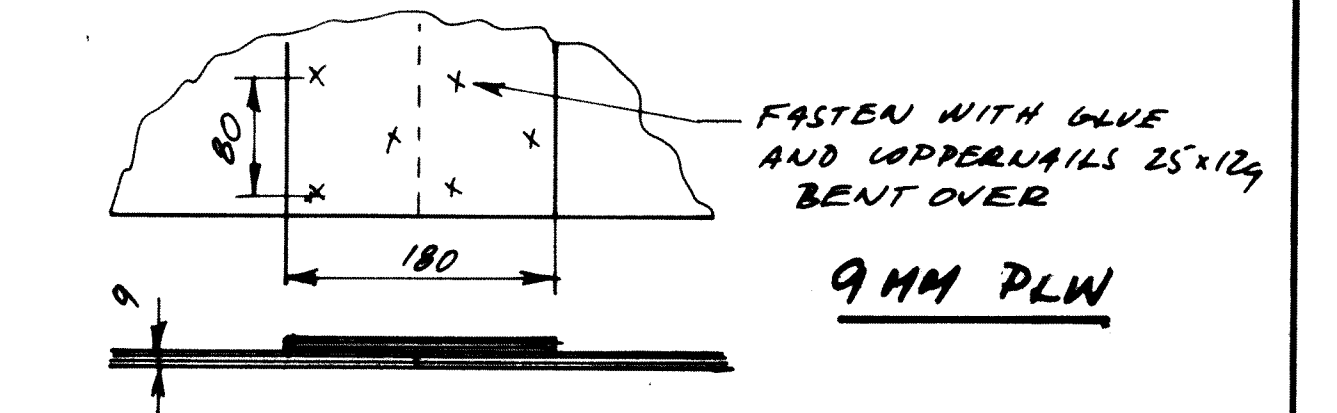
PLYWOOD UTILIZATION

TOTAL PLYWOOD SHEETS (1.2 x 2.44)

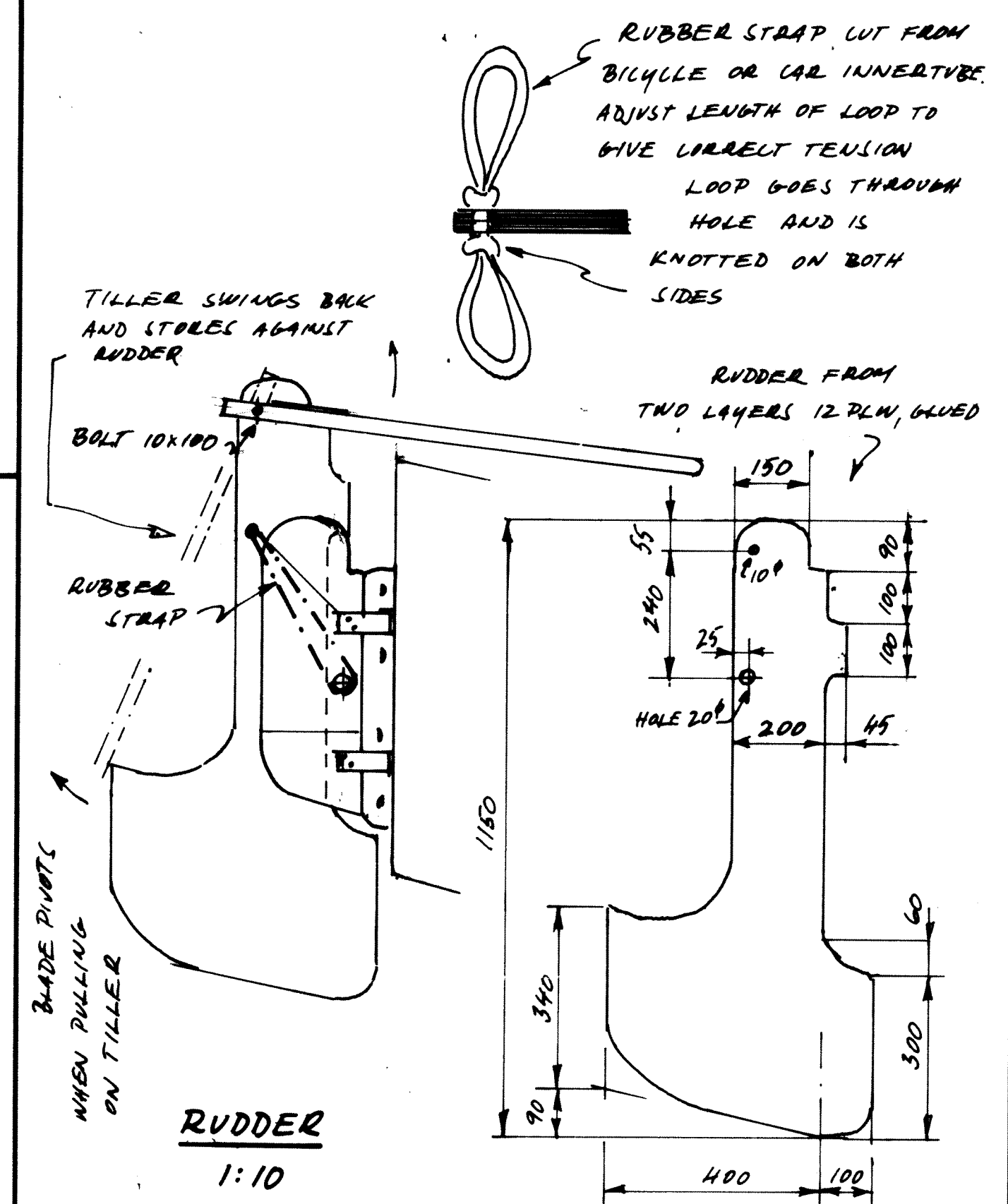
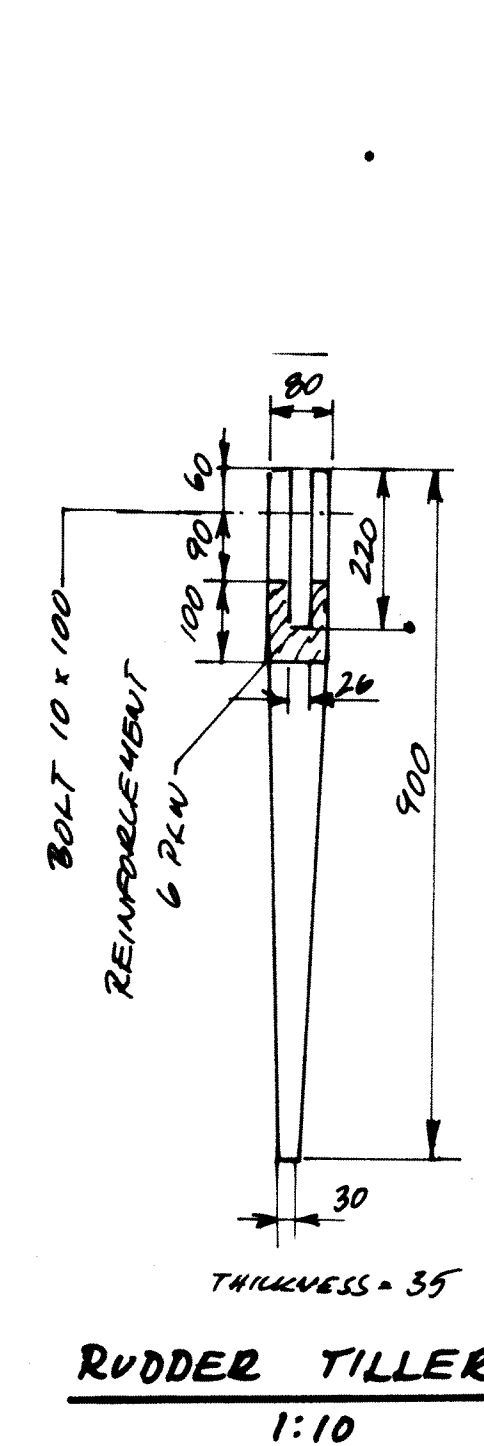
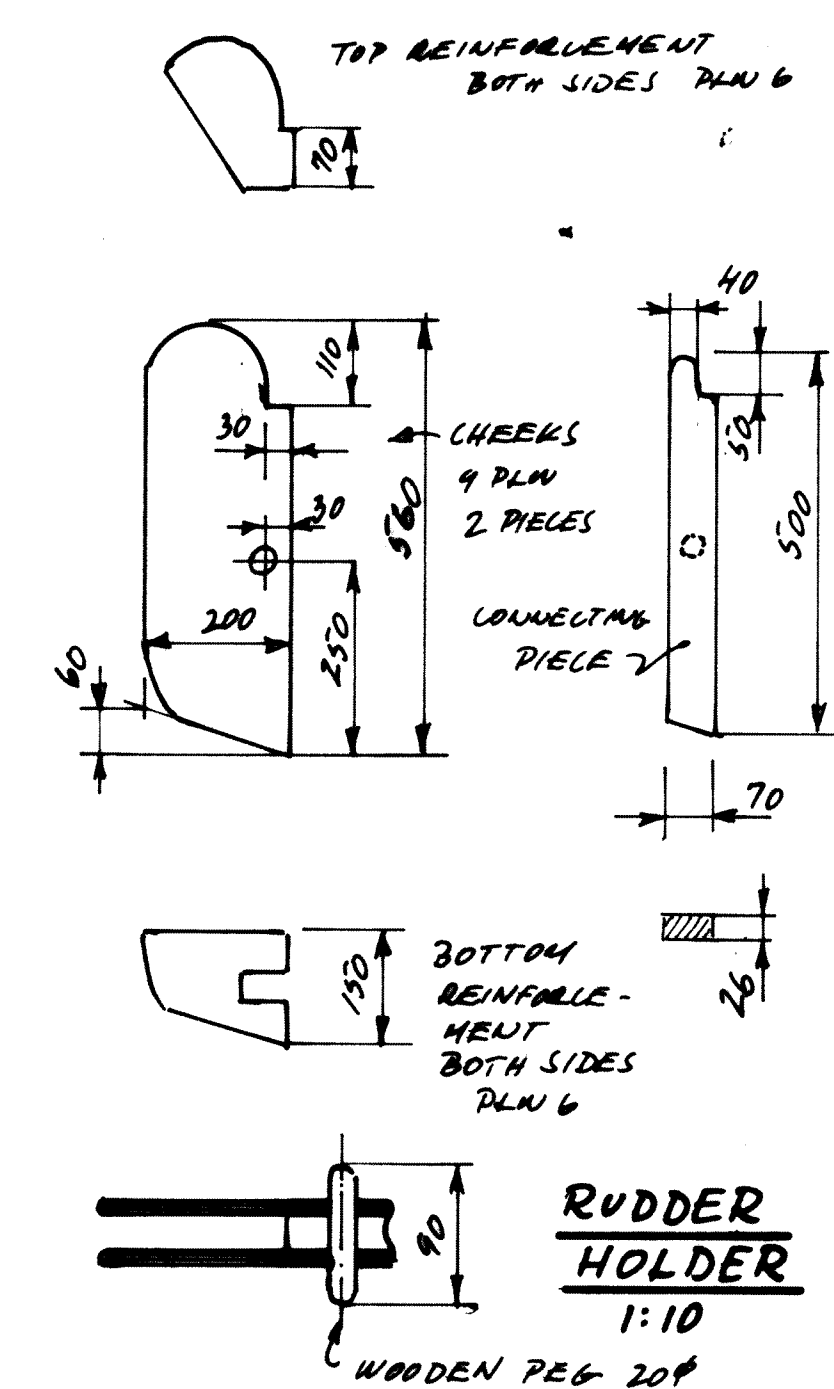
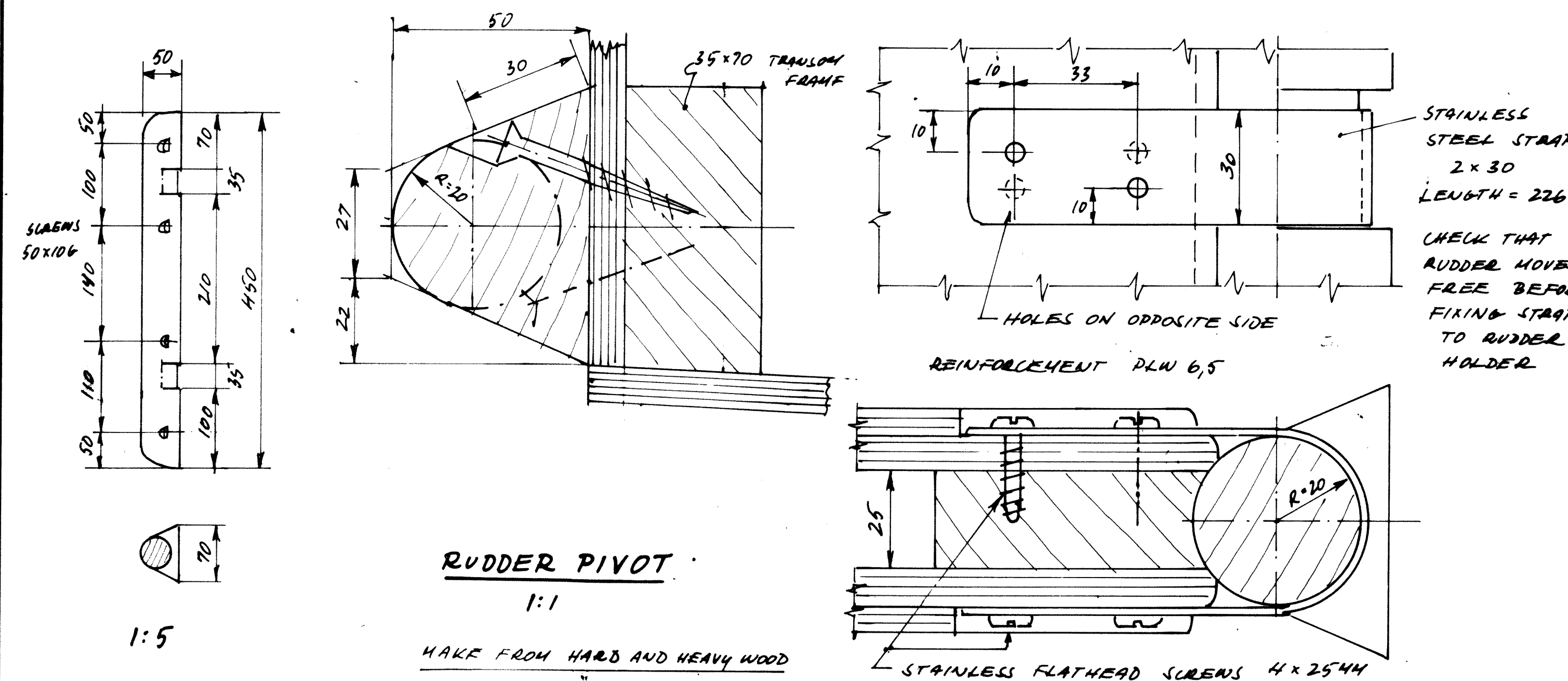
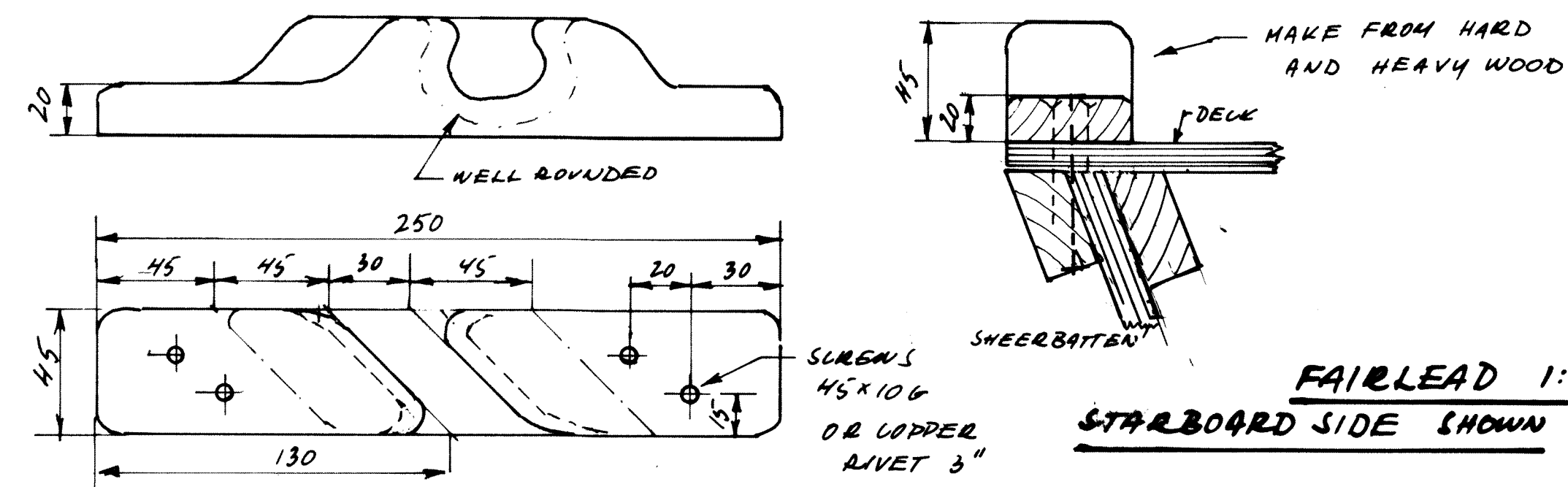
MAIN HULL: 9MM - 9 SHEETS
 12MM - 3 SHEETS
 OUTRIGGER: 9MM - 4 SHEETS



SPACING OF GLUEFAST NAILS



PLYWOOD JOINTS



9.5 m Outrigger Canoe DETAILS		
SCALE: AS SHOWN	DESIGN NO.	DRWG. NO.
DESIGN: G. GUNBRANDSEN	PNG-11A	5
GUMSTAD, APRIL-91		