

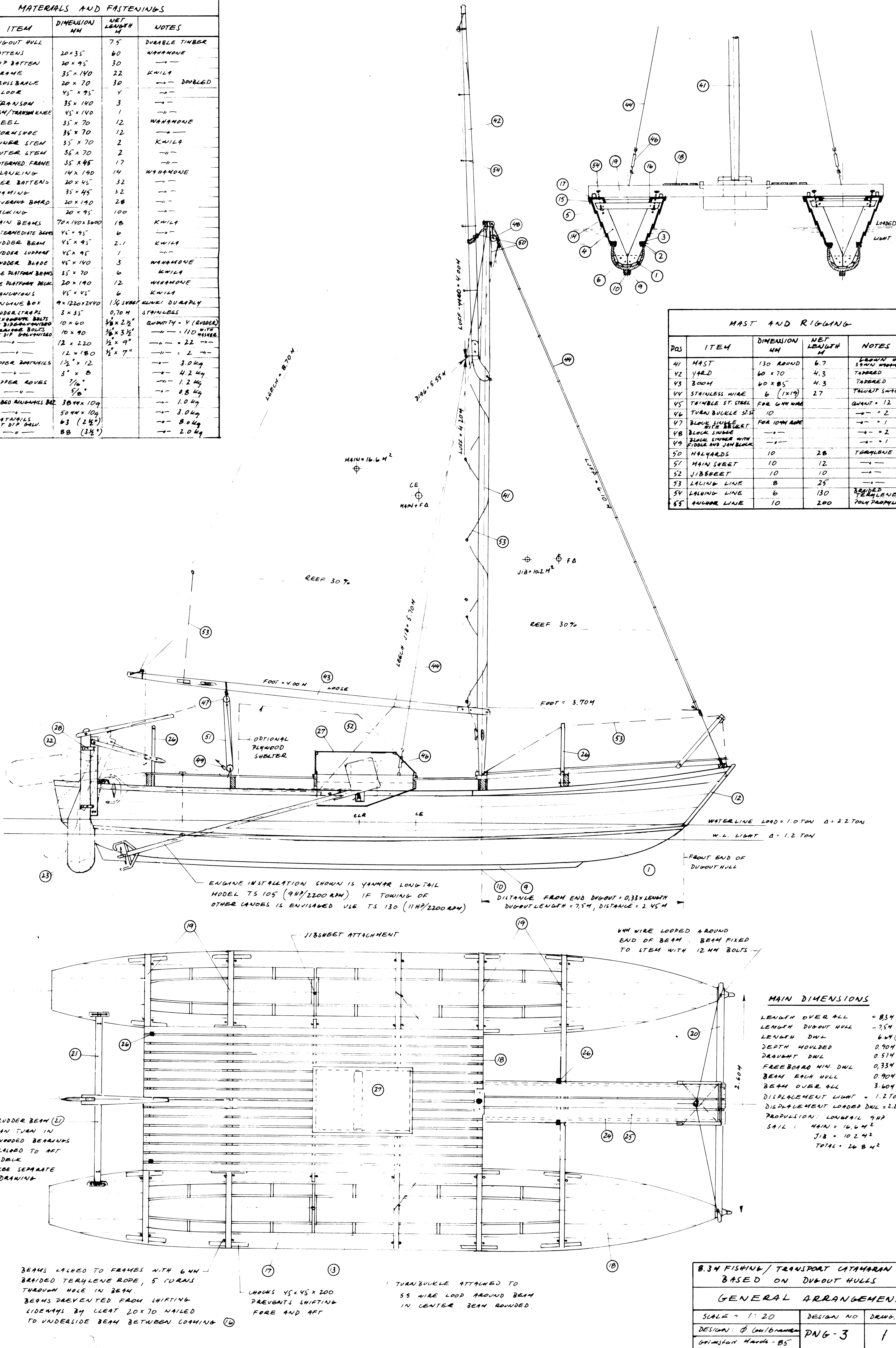
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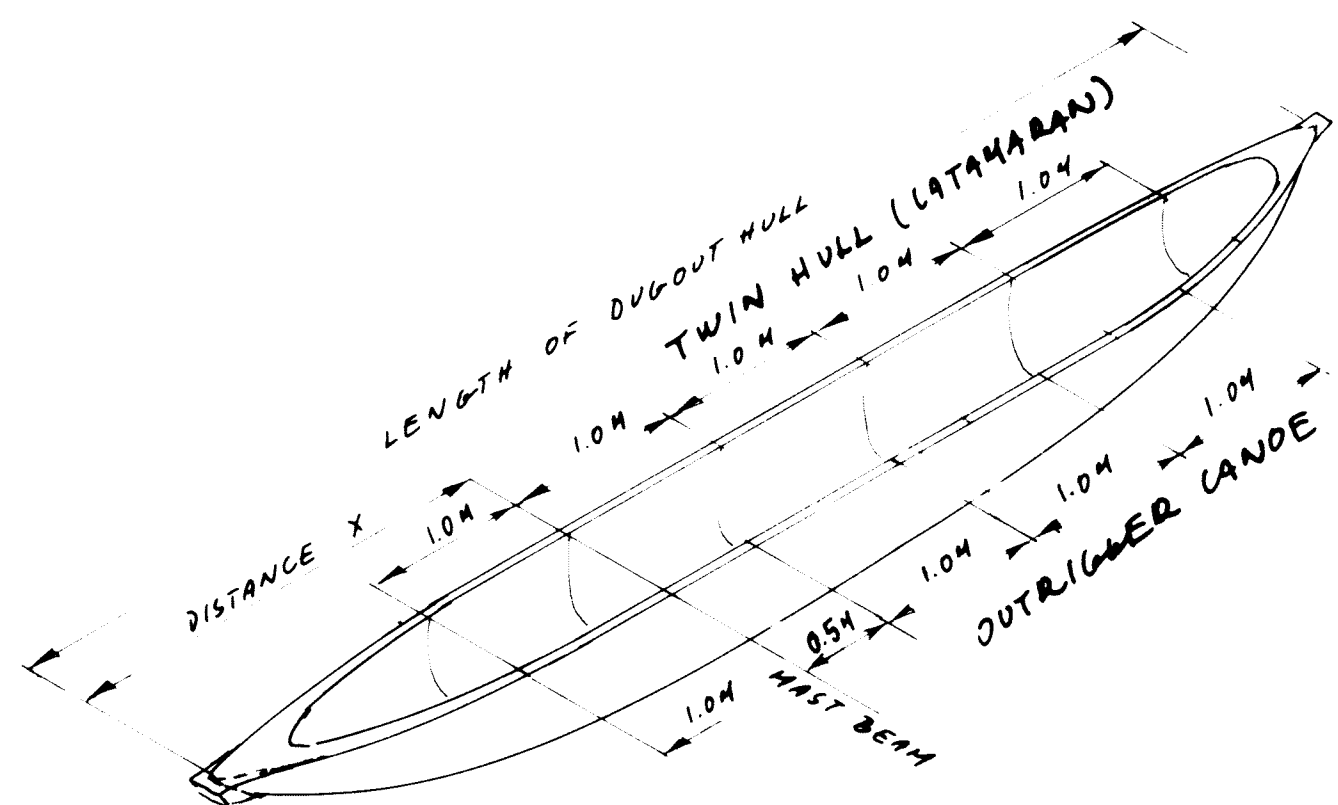
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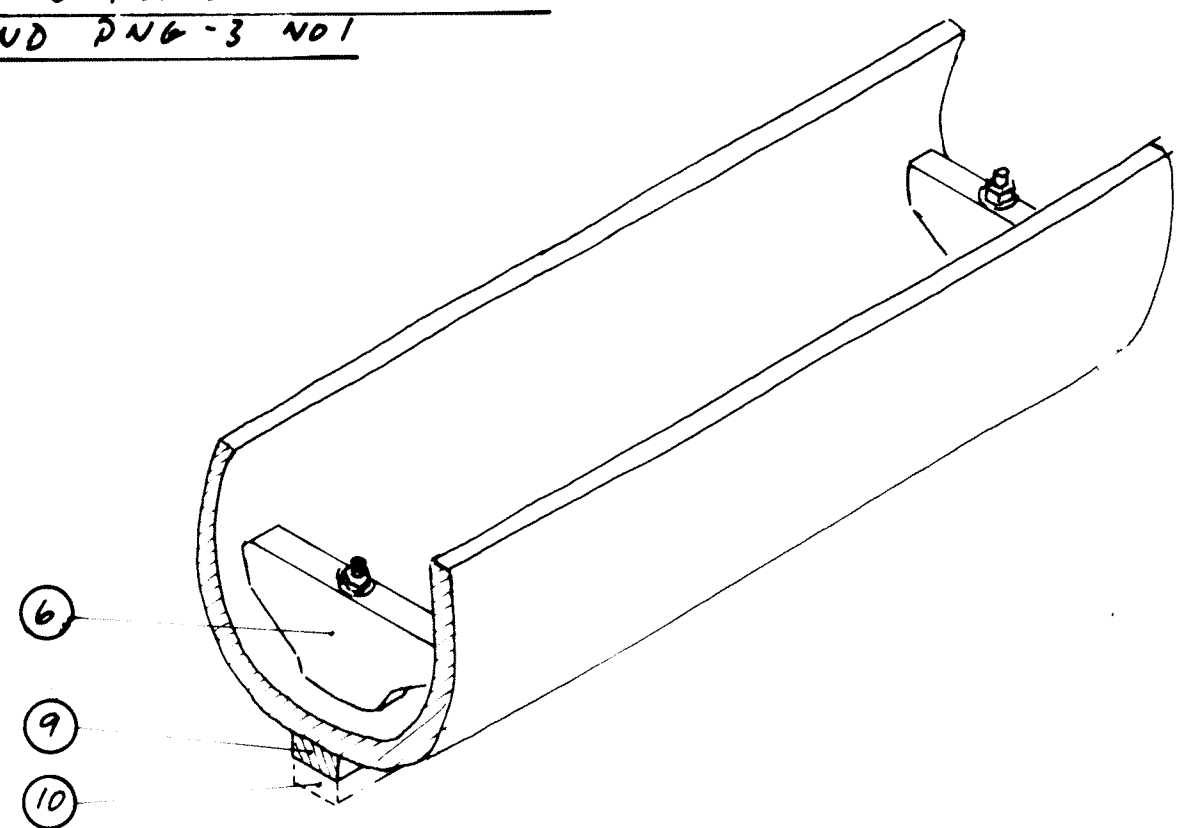
MATERIALS AND FASTENINGS				
POS	ITEM	DIMENSION MM	NET LENGTH M	NOTES
1	DUGOUT HULL		7.5	DURABLE TIMBER
2	BATTENS	20x35	60	WANAHOME
3	TOP BATTEN	20x95	30	—
4	FRAME	35x140	22	KWILA
5	CROSS BATTLE	20x70	30	— DOUBLED
6	FLOOR	45x95	4	—
7	TRANSOM	35x140	3	—
8	STEM/TRANSOM KNEE	45x140	1	—
9	KEEL	35x70	12	WANAHOME
10	WORK SHOE	35x70	12	—
11	INNER STEM	35x70	2	KWILA
12	OUTER STEM	35x70	2	—
13	INTERMED. FRAME	35x45	17	—
14	PLANKING	14x140	14	WANAHOME
15	SWEER BATTENS	20x45	32	—
16	COAMING	35x45	32	—
17	COVERING BOARD	20x140	28	—
18	DECKING	20x95	100	—
19	MAIN BEAMS	70x140x3000	18	KWILA
20	INTERMEDIATE BEAMS	45x95	6	—
21	BUDDER BEAM	45x95	2.1	KWILA
22	BUDDER SUPPORT	45x95	1	—
23	BUDDER BLADE	45x140	3	WANAHOME
24	FORE PLATFORM BEAMS	35x70	6	KWILA
25	FORE PLATFORM DECK	20x140	12	WANAHOME
26	STANCHIONS	45x45	6	KWILA
27	ENGINE BOX	9x120x240	1.4	SHEET KUNMI DURABLE
28	BUDDER STRAPS	3x35	0.70 M	STAINLESS
29	GENUINE BELTS	10x60	3/8 x 2 1/2"	QUANTITY = 4 (BUDDER)
30	GENUINE BELTS	10x90	3/8 x 3 1/2"	— = 110 WITH
31	—	12x220	3/8 x 9"	— = 22 —
32	—	12x180	3/8 x 7"	— = 2 —
33	COPPER ZAPPHALS	1 1/2" x 12	—	3.0 kg
34	—	3" x 8	—	4.2 kg
35	COPPER ROVES	3/16"	—	1.2 kg
36	—	3/8"	—	8.8 kg
37	BRIDGED ANCHORS BEL	38x44x109	—	1.0 kg
38	—	50x44x109	—	3.0 kg
39	ZAPPHALS	63 (2 1/2")	—	8.0 kg
40	—	88 (3 1/2")	—	2.0 kg





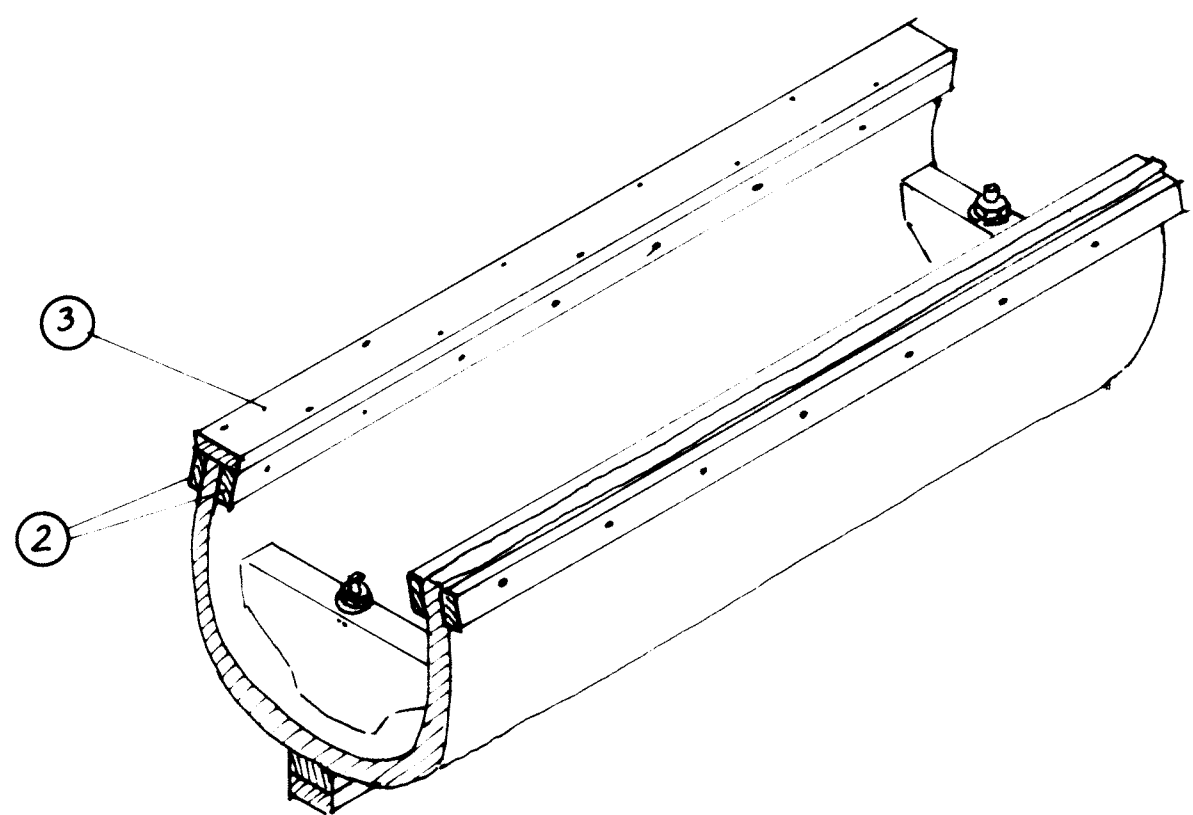
1. SHAPE ENDS OF THE CANOE TO MAKE SHARP BOW AND STERN
2. MEASURE LENGTH OF CANOE
3. FIND DISTANCE FROM BOW TO MAST BEAM DISTANCE X
SINGLE OUTRIGGER CANOE: $X = 0.36 \times \text{LENGTH OF DUGOUT}$
DOUBLE CANOE (LATAMARA): $X = 0.38 \times \text{LENGTH OF DUGOUT}$
4. MARK POSITION OF MAST BEAM FRAME AND OTHER FRAMES
SPACED AS SHOWN.

NOTE: ALL POSITION NUMBERS
REFER TO MATERIAL LIST
IN DRAWINGS PNG-2 NO1
AND PNG-3 NO1



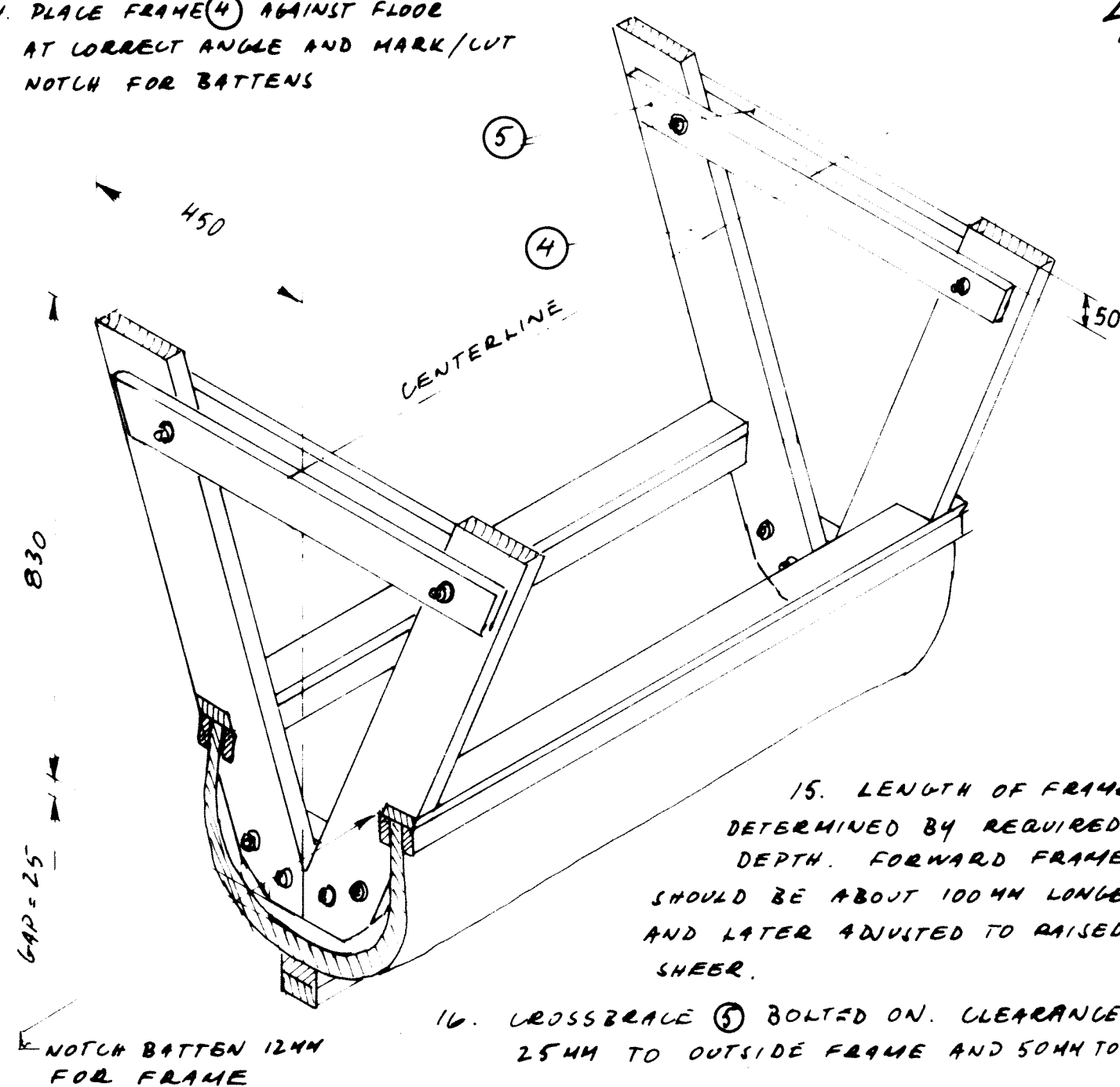
5. SHAPE FLOOR (6) TO FIT INSIDE CANOE. MAKE CUTOUT FOR BILGE WATER (SEE DETAIL)
6. DRILL FOR KEEL BOLT 12x230 OR 10x230
7. MARK POSITION OF BOLT THROUGH KEEL (9) AND DRILL. COUNTERSINK BOLT HEAD IN KEEL
8. APPLY MASTIC AND BOLT TOGETHER
9. FIX WORM SHOE (10) WITH COPPER STAPLES TO KEEL (SEE DETAIL)

10. CLAMP BATTENS (2) SLIGHTLY BELOW EDGE OF DUGOUT
DRILL AND RIVET (3" NO B, RIVES 5/8") SPACING = 150MM
11. PLANE OFF DUGOUT FLUSH WITH TOP OF BATTENS



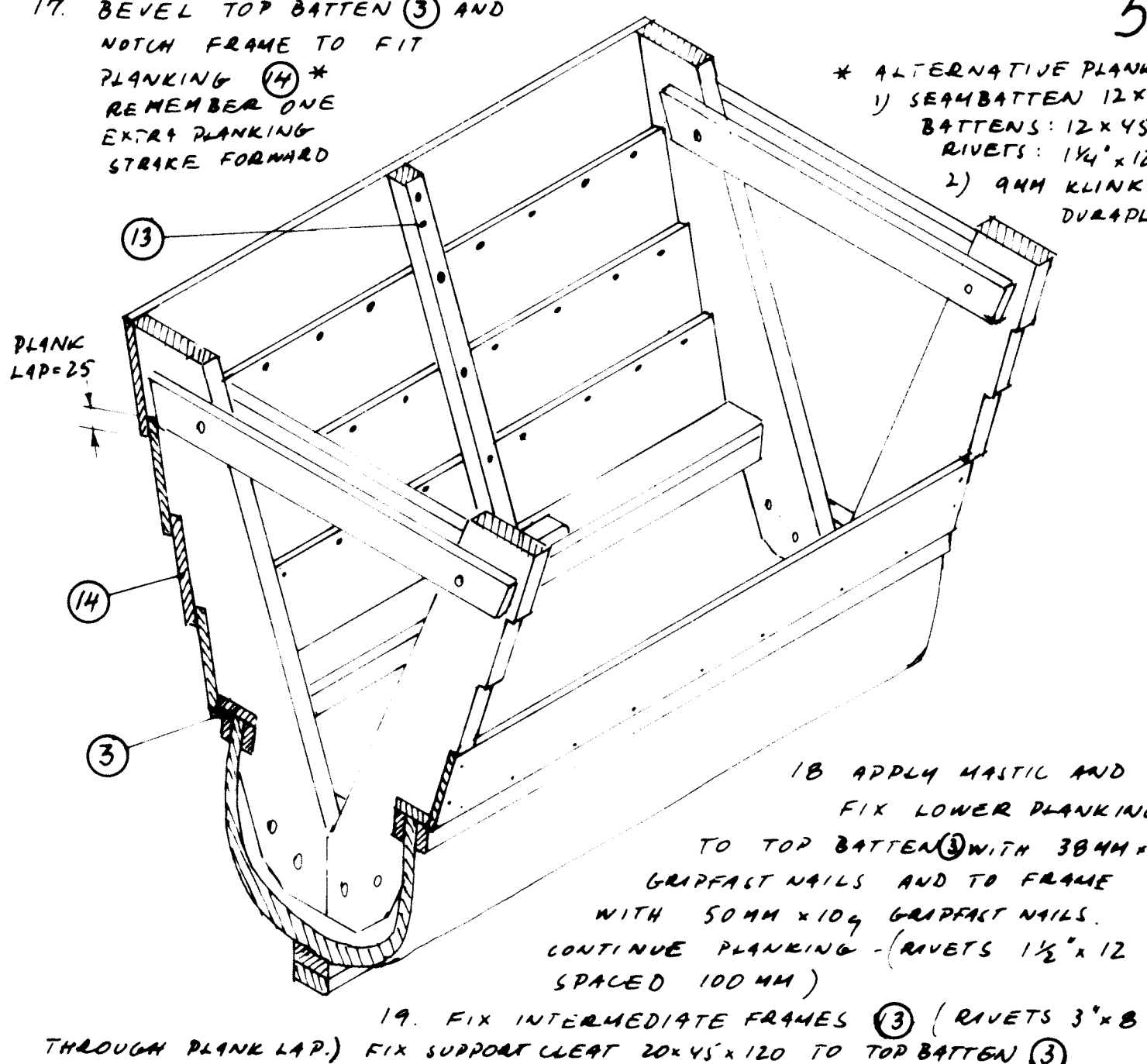
12. PLANE OFF APPROXIMATE BEVEL ON TOP BATTEN (3) FOR PLANKING
13. APPLY MASTIC AND STRIP OF MOSQUITO SCREEN AND NAIL TOP BATTEN TO BATTENS (2) WITH BRONZE BARBED NAILS (50MM x 10g, SPACING = 150MM)

14. PLACE FRAME (4) AGAINST FLOOR AT CORRECT ANGLE AND MARK/CUT NOTCH FOR BATTENS



15. LENGTH OF FRAME DETERMINED BY REQUIRED DEPTH. FORWARD FRAME SHOULD BE ABOUT 100MM LONGER AND LATER ADJUSTED TO RAISED SHEER.
16. CROSS BEAM (5) BOLTED ON. CLEARANCE = 25MM TO OUTSIDE FRAME AND 50MM TO TOP.

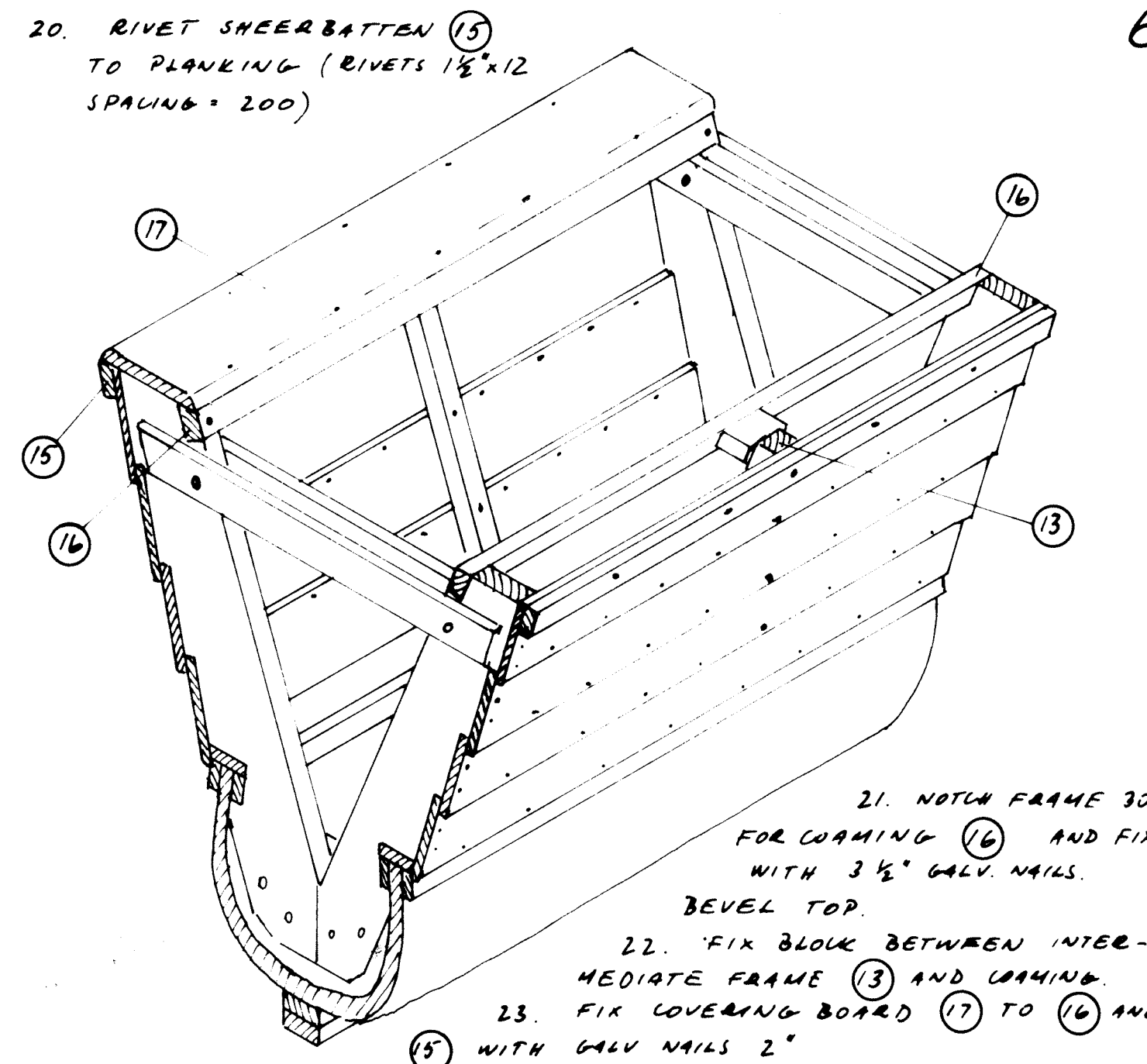
17. BEVEL TOP BATTEN (3) AND NOTCH FRAME TO FIT PLANKING (16) * REMEMBER ONE EXTRA PLANKING STRAKE FORWARD



- * ALTERNATIVE PLANKING:
1) SEAM BATTEN 12x140
BATTENS: 12x45
RIVETS: 1 1/4" x 12
2) 9MM KLINKI DURABLE

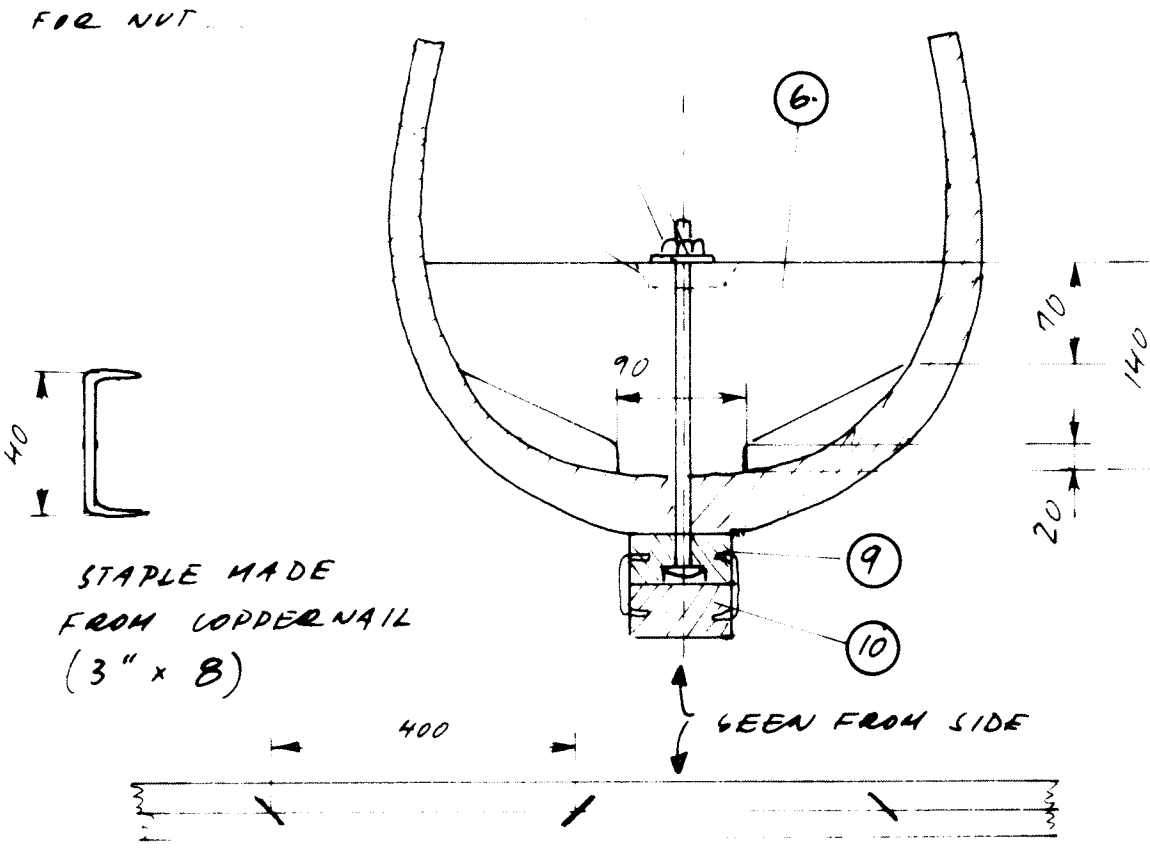
18. APPLY MASTIC AND FIX LOWER PLANKING TO TOP BATTEN (3) WITH 38MM x 10g GRIPFAST NAILS AND TO FRAME WITH 50MM x 10g GRIPFAST NAILS. CONTINUE PLANKING - RIVETS 1 1/2" x 12 SPACED 100MM
19. FIX INTERMEDIATE FRAMES (3) (RIVETS 3" x 8 THROUGH PLANK LAP) FIX SUPPORT CLEAT 20x45 x 120 TO TOP BATTEN (3)

20. RIVET SHEER BATTEN (15) TO PLANKING (RIVETS 1 1/2" x 12 SPACING = 200)

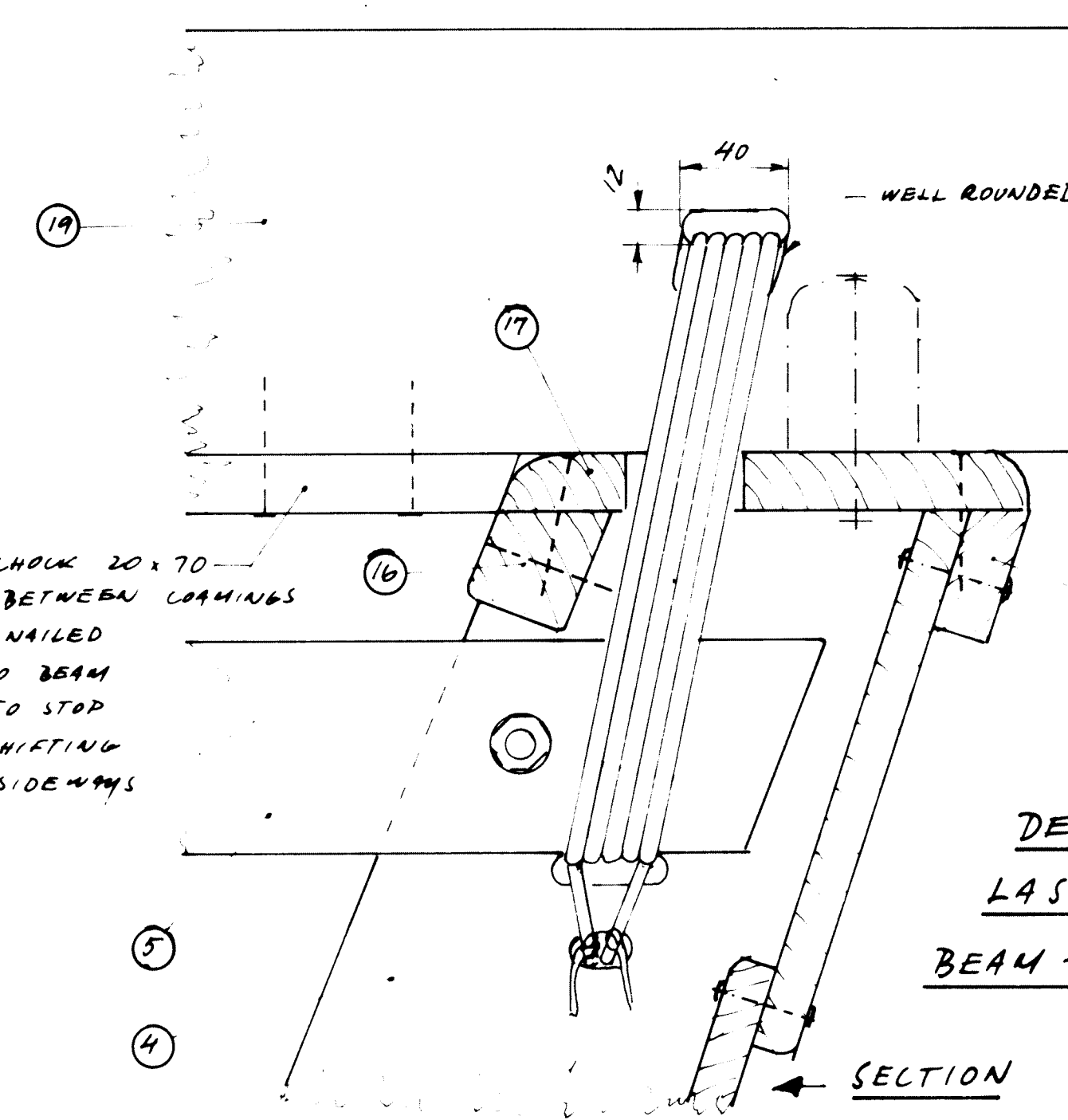


21. NOTCH FRAME 30MM FOR LAMING (16) AND FIX WITH 3 1/2" GALV. NAILS. BEVEL TOP.
22. FIX BLOCK BETWEEN INTERMEDIATE FRAME (3) AND LAMING.
23. FIX COVERING BOARD (17) TO (16) AND (15) WITH GALV NAILS 2"

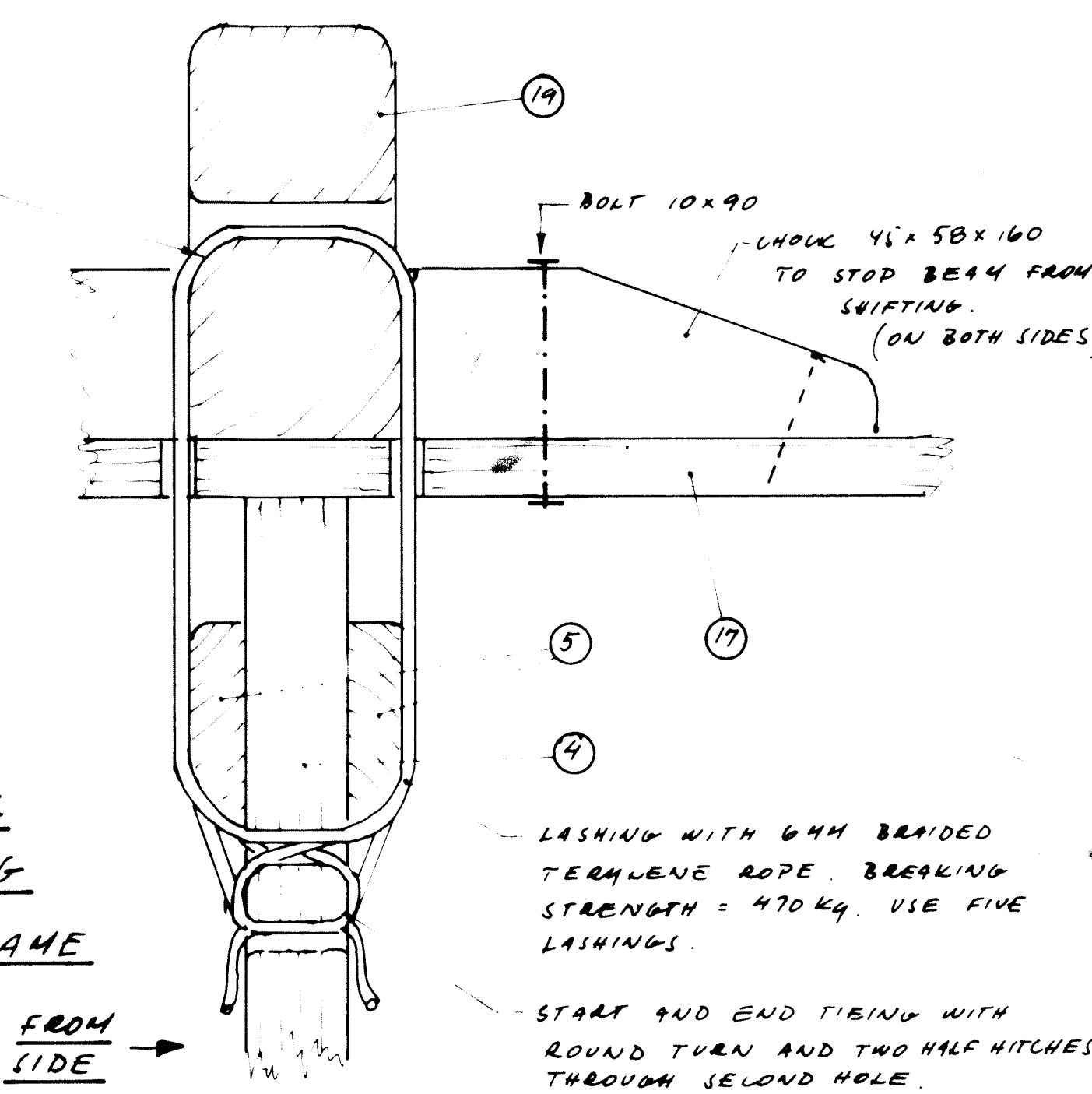
- IF ONLY SHORTER BOLTS = 200MM (8") AVAILABLE, RECESS FOR NUT
- LAMINATE BOLT NOT DIP GALVANIZED 12x230 (1/2" x 9"). FOR SMALLER CRAFT USE 10MM (3/8") HEAVY WASHER



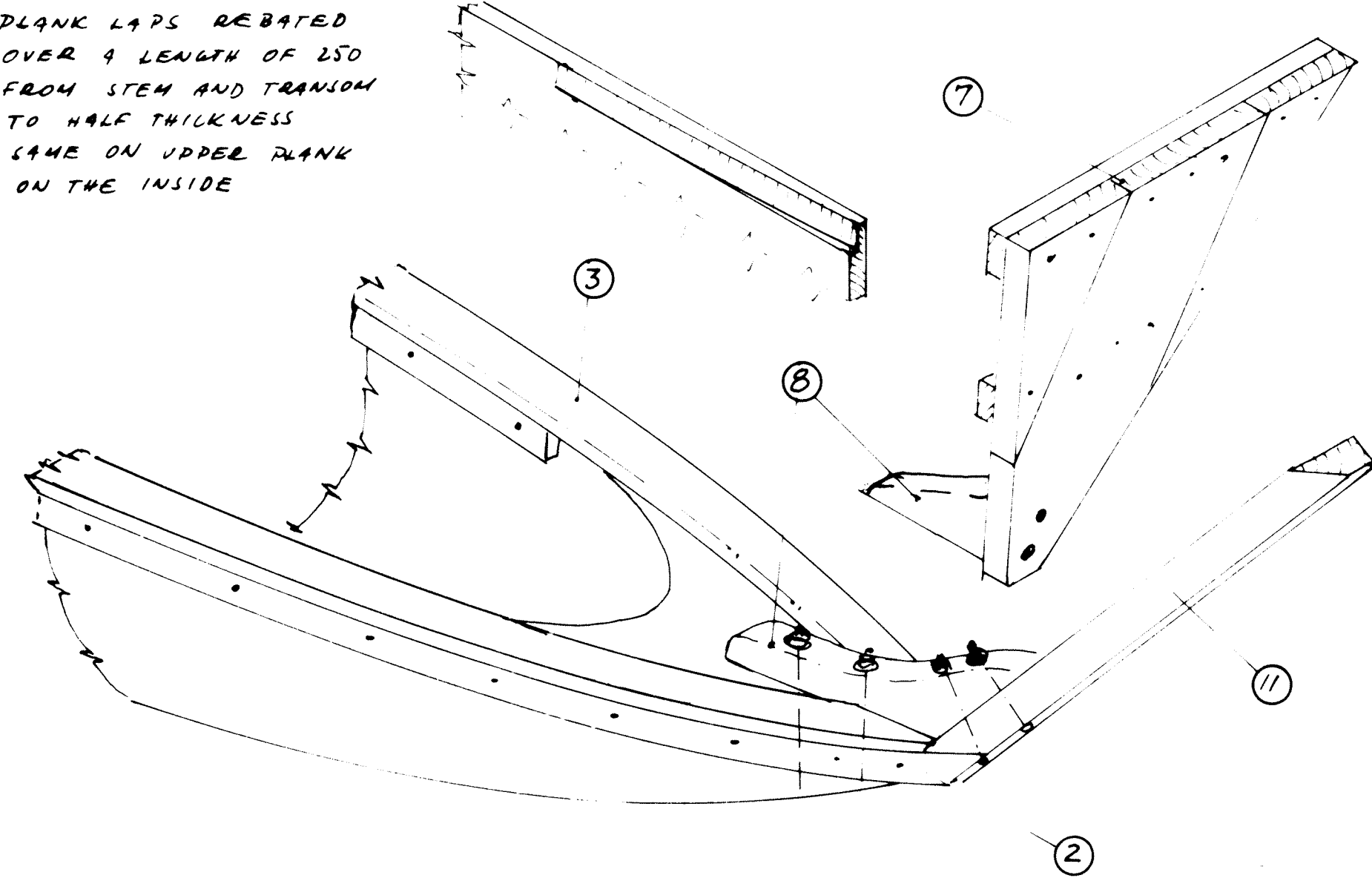
DETAIL FLOOR (6), KEEL (9), WORMSHOE (10)



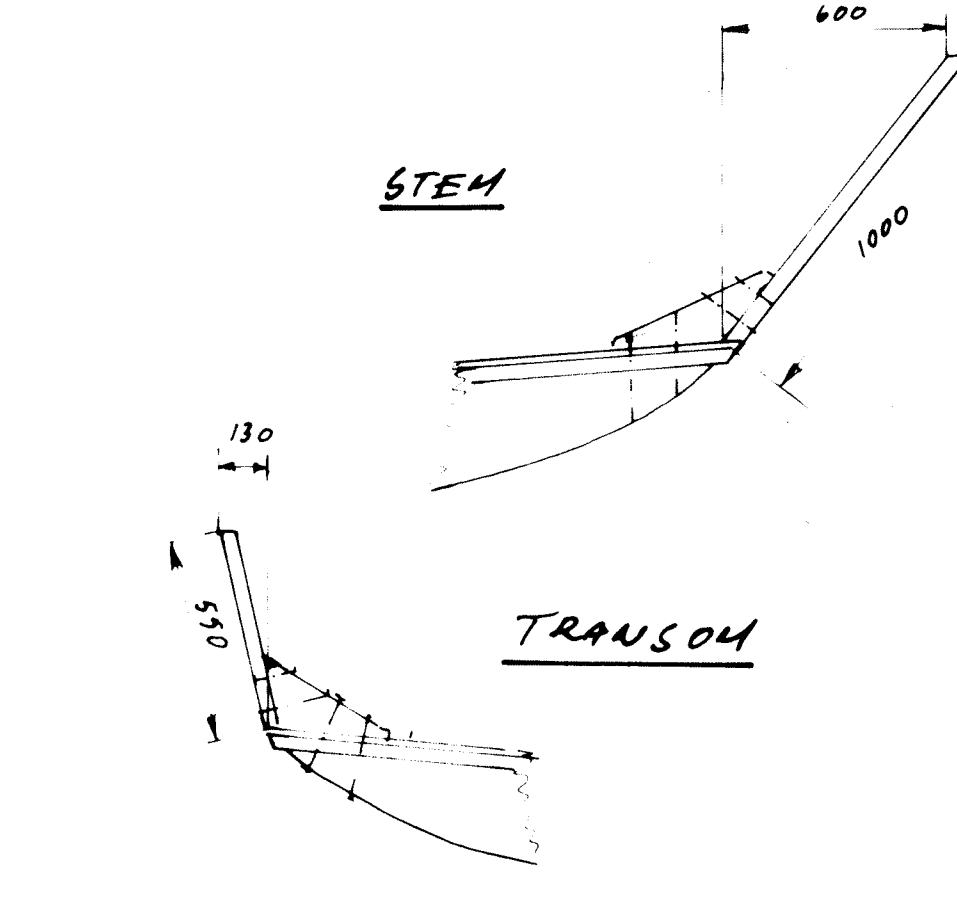
DETAIL LASHING BEAM - FRAME



- LASHING WITH 6MM BRAIDED TERNARENE ROPE. BREAKING STRENGTH = 470 KG. USE FIVE LASHINGS.
- START AND END TIEING WITH ROUND TURN AND TWO HALF HITCHES THROUGH SECOND HOLE.



DETAIL STEM AND TRANSOM



MODIFICATIONS - DUGOUT HULL

CONSTRUCTION DETAILS

SCALE: VARIOUS	DESIGN NO	DRAWG NO
DESIGN: P. GUL/BRAND/BA	PNG - 2	2
Grimstad, Maruk - 85	PNG - 3	