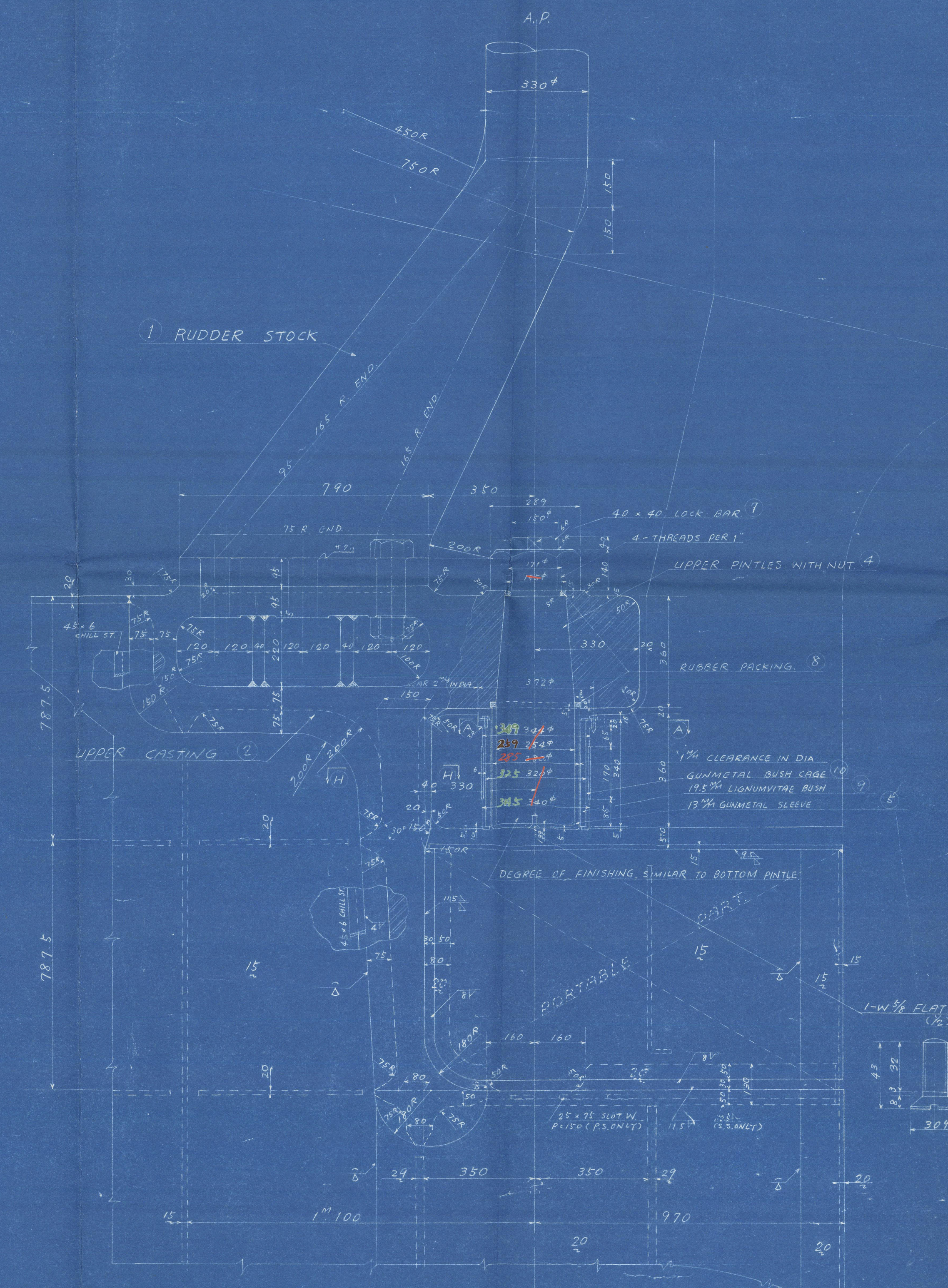
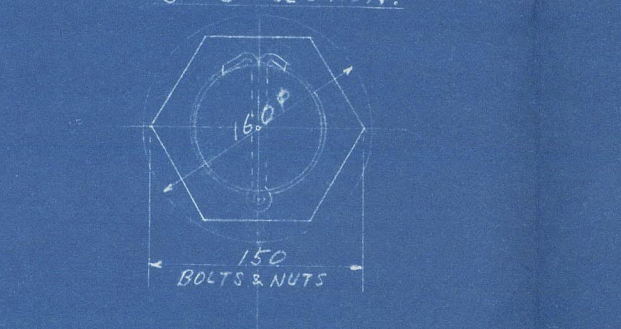


DETAIL OF COUPLING, UPPER PIVOT & GUDGEON (1/2)



COUPLING FORMER BOLTS (1/2) S-S SECTION

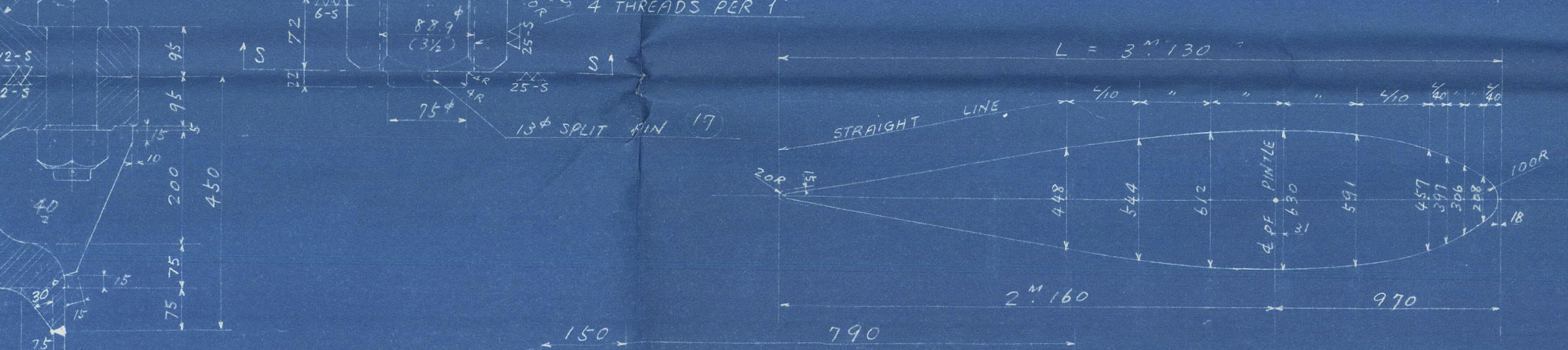


NOTES:-
THIS PLAN IS DESIGNED COMPLYING WITH L.R. RULE
STRENGTHENING FOR NAVIGATION IN ICE CLASS B.

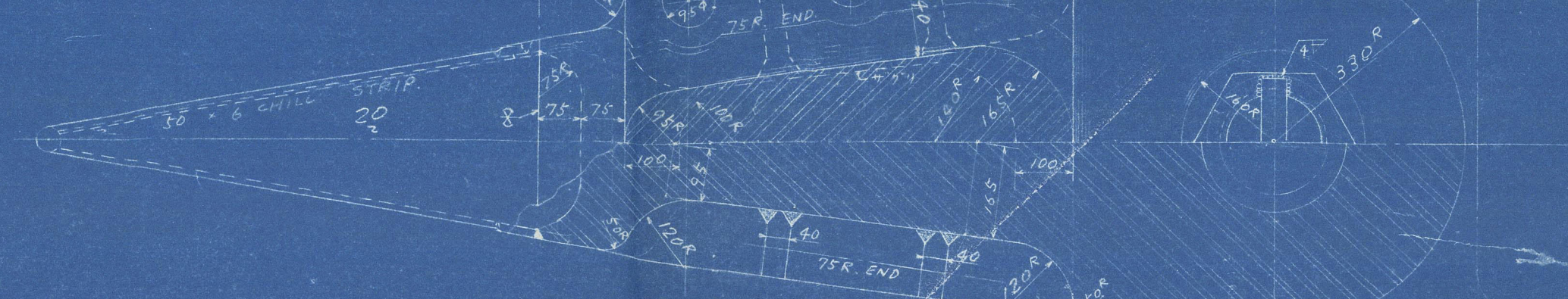
RUDDER NUMERALS:
L.B.P. = 103.00 $d = 9.30$
 $V = \text{SEA SPEED AT M.C.R. (4.5 KNOTS)} = 18.3 \text{ KNOTS}$
 $A = \text{TOTAL AREA OF RUDDER} = 18.99 \text{ M}^2$
 $D = \text{DISTANCE OF C.G. FROM THE CENTER LINE OF THE PIVOT} = 0.687$
 $\text{NUMERAL} = 100 \times A \times D = 1268.84$
 $A' = \text{RUDDER AREA ABOUT THE CENTER LINE OF THE PIVOT} = 73.48$
 $D' = \text{DISTANCE OF C.G. FROM THE CENTER LINE OF THE PIVOT} = 1.69$
 $\text{MIN. NUMERAL OF BALANCED RUDDER} = 100 \times A' \times D' = 1196$
 $L.B.P. / A = (103.00 / 18.99) = 5.42$

NOTES:-
1. THE MEASUREMENTS IN THIS PLAN ARE SHOWN IN THE FINISHED CONDITION.
2. THE SHELL OF RUDDER IS TO BE WORKED PERFECT WATER-TIGHT AND ELECTRIC ARC WELDING IS TO BE USED WHERE CHALKING IS DIFFICULT.
3. INTERNAL OF RUDDER IS TO BE PAINTED WITH 2 COATS OF BITUMASTIC SOLUTION.
4. THE RUDDER IS TO BE TESTED BY THE PRESSURE CORRESPONDING TO THE HEAD OF LEAD BATTERY (0.42 KG/CM²) AFTER COMPLETION.
5. FINAL FINISHING TO BE CARRIED OUT WHEN WELDING COMPLETED.

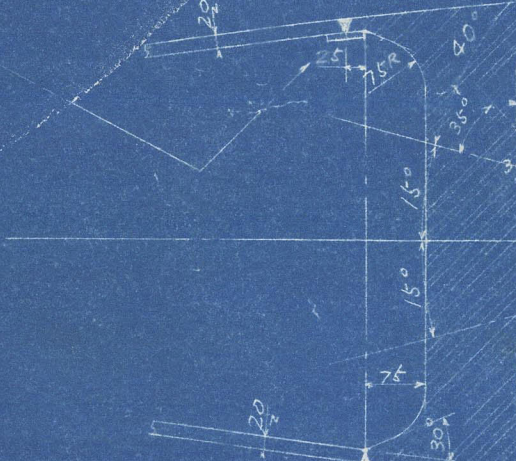
RUDDER FORM INSIDE LINE



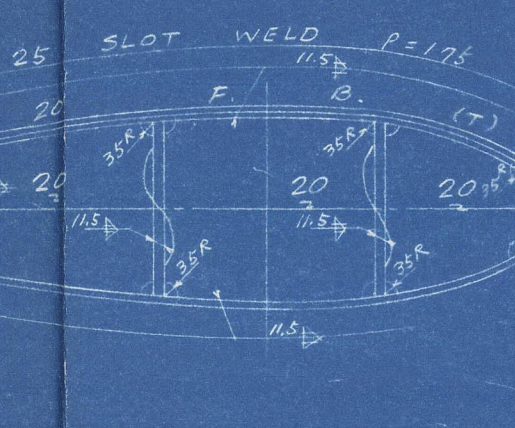
RUDDER TOP PLAN



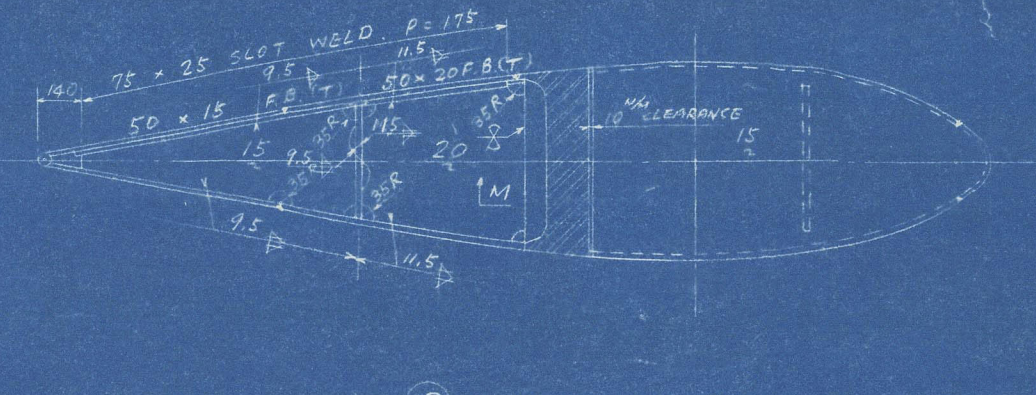
H-H SECTION



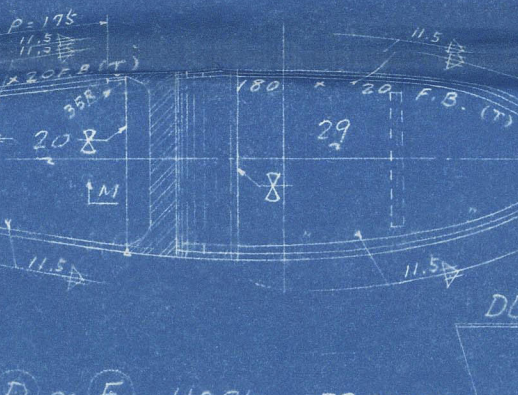
C-HORZ FRAME



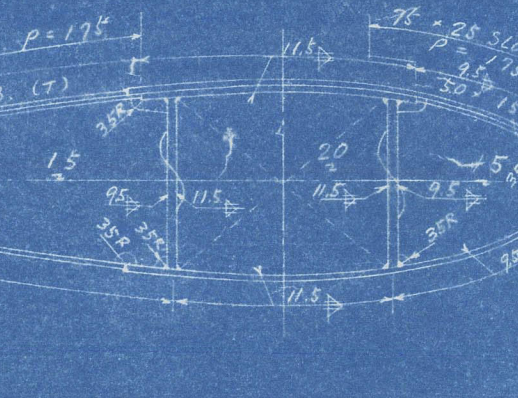
A-HORZ FRAME



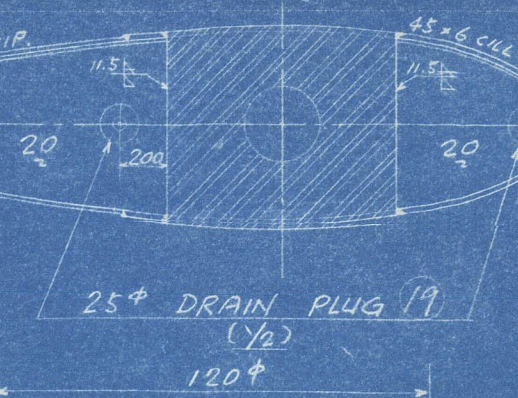
B-HORZ FRAME



G-HORZ FRAME



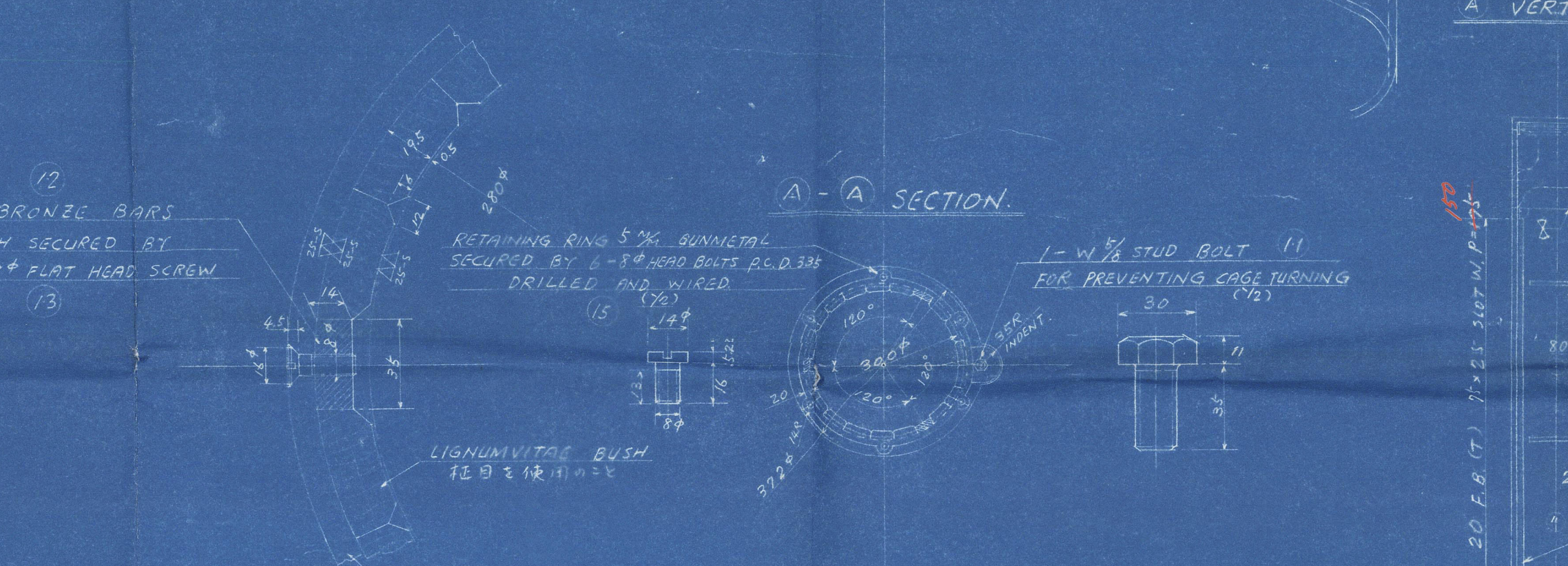
RUDDER BOTTOM PLAN



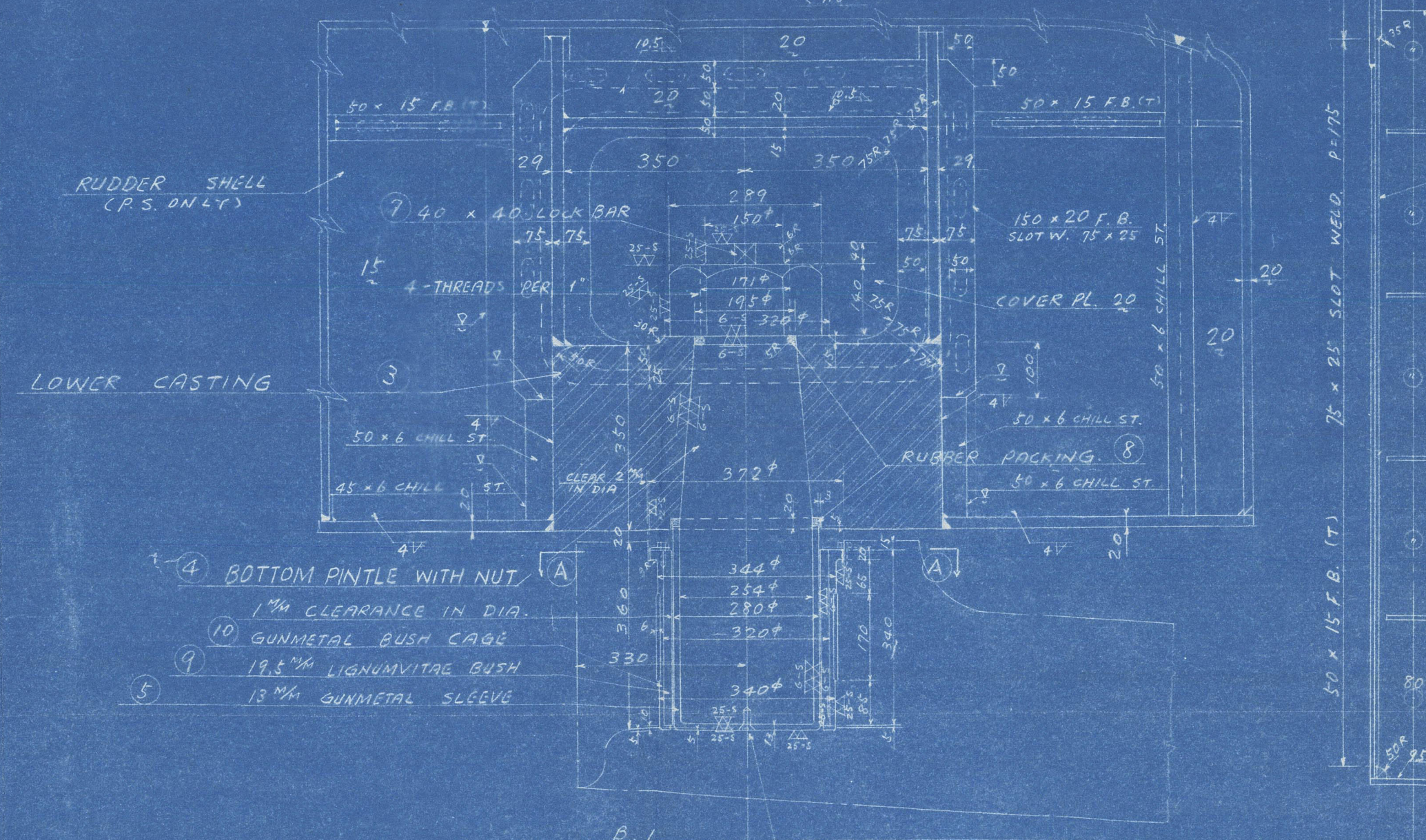
MATERIAL LIST				
NO.	QTY.	NAME OF PART	MATERIAL	REMARKS
1	1	RUDDER STOCK	FORGED STEEL	TESTED BY L.R.
2	1	UPPER CASTING	CAST STEEL	
3	1	LOWER CASTING	CAST STEEL	
4	1	UPPER LOWER PIVOT & NUT	FORGED STEEL	
5	1	PIVOT SLEEVE	QUARTZITE (RQ)	
6	1	W/FLAT HEAD SCREW	WALBRASS (RQ)	
7	1	NUT LOCKING BAR	WALBRASS (RQ)	
8	1	BRUSHING	SUBBIE	
9	1	BUSH	QUARTZITE	
10	1	BUSH CAGE	QUARTZITE (RQ)	
11	1	W/FLAT HEAD SCREW	WALBRASS (RQ)	
12	1	LOCKING BAR FOR BUSH	WALBRASS (RQ)	
13	1	W/FLAT HEAD SCREW	WALBRASS (RQ)	
14	1	RETAINING PLUG	QUARTZITE (RQ)	
15	1	W/FLAT HEAD SCREW	WALBRASS (RQ)	
16	1	COUPLING BOLT & NUT	FORGED STEEL	TESTED BY L.R.
17	1	W/FLAT HEAD SCREW	WALBRASS (RQ)	
18	1	ZINC PLATE	ZINC	
19	1	DRAIN PLUG	WALBRASS (RQ)	
20	1	PACKING	RUBBER	
21	1	LIFTING EYE BOLT	FORGED STEEL (RQ)	
22	1	TILLER LOCK NUT	WALBRASS (RQ)	
23	1	LOCKING PIECE	WALBRASS (RQ)	

8. MARKED MATERIALS CARBON CONTENT < 0.25%
Should change of loading section to be avoided
Should be the maximum of present design used from beginning

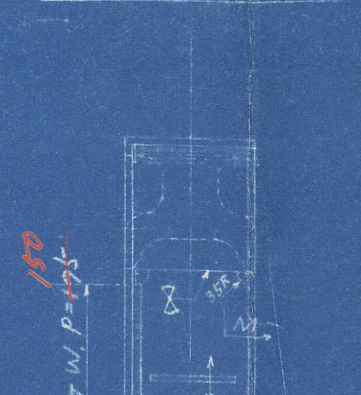
WELDING SYMBOLS	
BEVELLED INTERMITTENT	1-1-P
CHAIN INTERMITTENT	1-1-P
ANOTHER SIDE	1-1-P



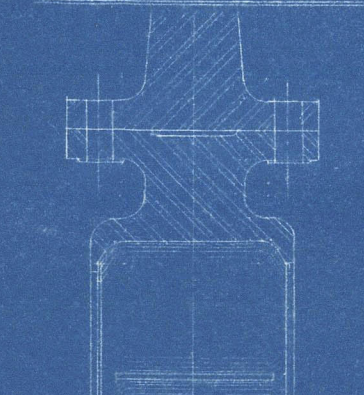
DETAIL OF BOTTOM PIVOT & GUDGEON (1/2)



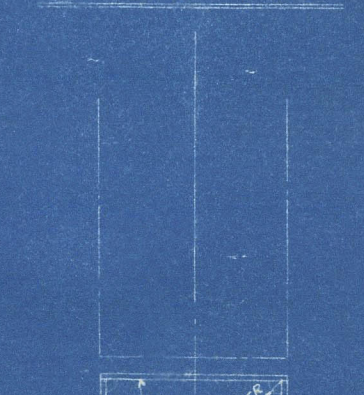
A-VERT. PR.



B-VERT. PR.



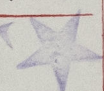
C-VERT. PR.



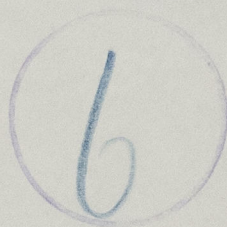
NOTE			
JAN-21-1961	MANUFACTURED	DATE	REMARK
DESIGNED FOR S. 3921-3			
COMPLYING WITH L.R.			

ALTERATIONS	
APPROVAL	DATE
SUBMITTED	APPROVED
L.R.	JAN-21-1961
OWNER	JAN-21-1961

S. 3921-3
RUDDER
SCALE 1/4" = 1'-0" & NOTES
HITACHI
SHIPBUILDING & ENGINEERING CO. LTD.
HEAD DESIGN OFFICE
HULL DESIGN SECTION
OSAKA, JAPAN
DATE 20-1-61
MANUFACTURED
NO. 11-3-92-10
CODE NO. 1540
DRAWN BY
NO. 0109121
SHEET NO. 150-01

Kobe Rpt. No.	10186
Port of Survey.	OSAKA, JAPAN
Name of Ship.	"OKHOTSK" 
Title of Plan.	RUDDER

RECORDS DEPT.,
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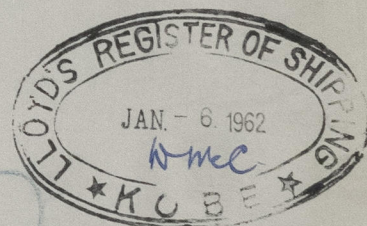
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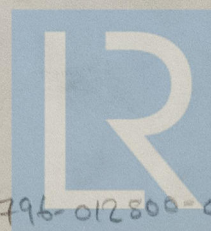
1/2

⑥

Kobe Rpt. No.	
Port of Survey	OSAKA.
Name of Ship	"OMCK"
Title of Plan	Rudder.



FOR APPROVAL



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