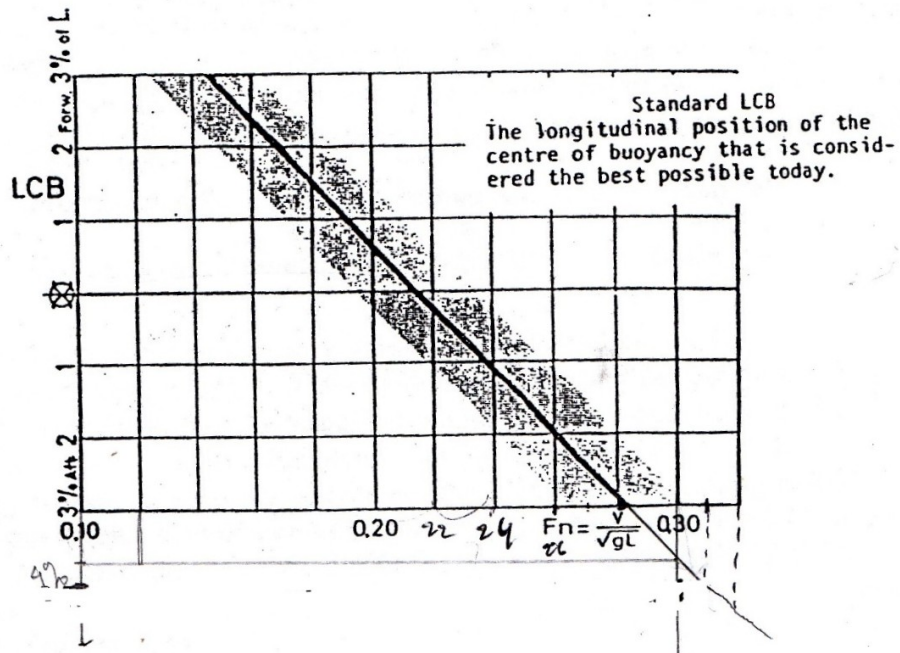


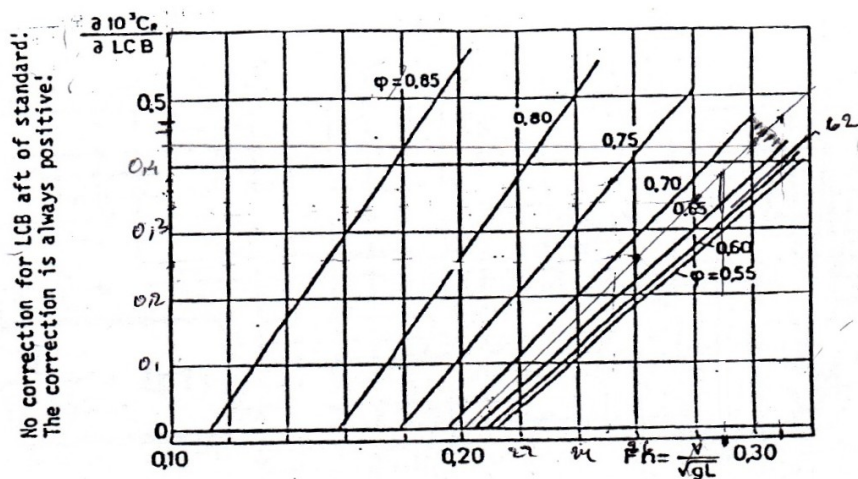
DAFTAR LAMPIRAN

Lampiran 1

LCB Standart



Koreksi C_R



Gb.9.8 Koreksi C_R untuk tiap 1% perbedaan lokasi LCB di depan LCB kapal standard

Lampiran 2

Diagram Kurva *Residual Resistance Coefficient*

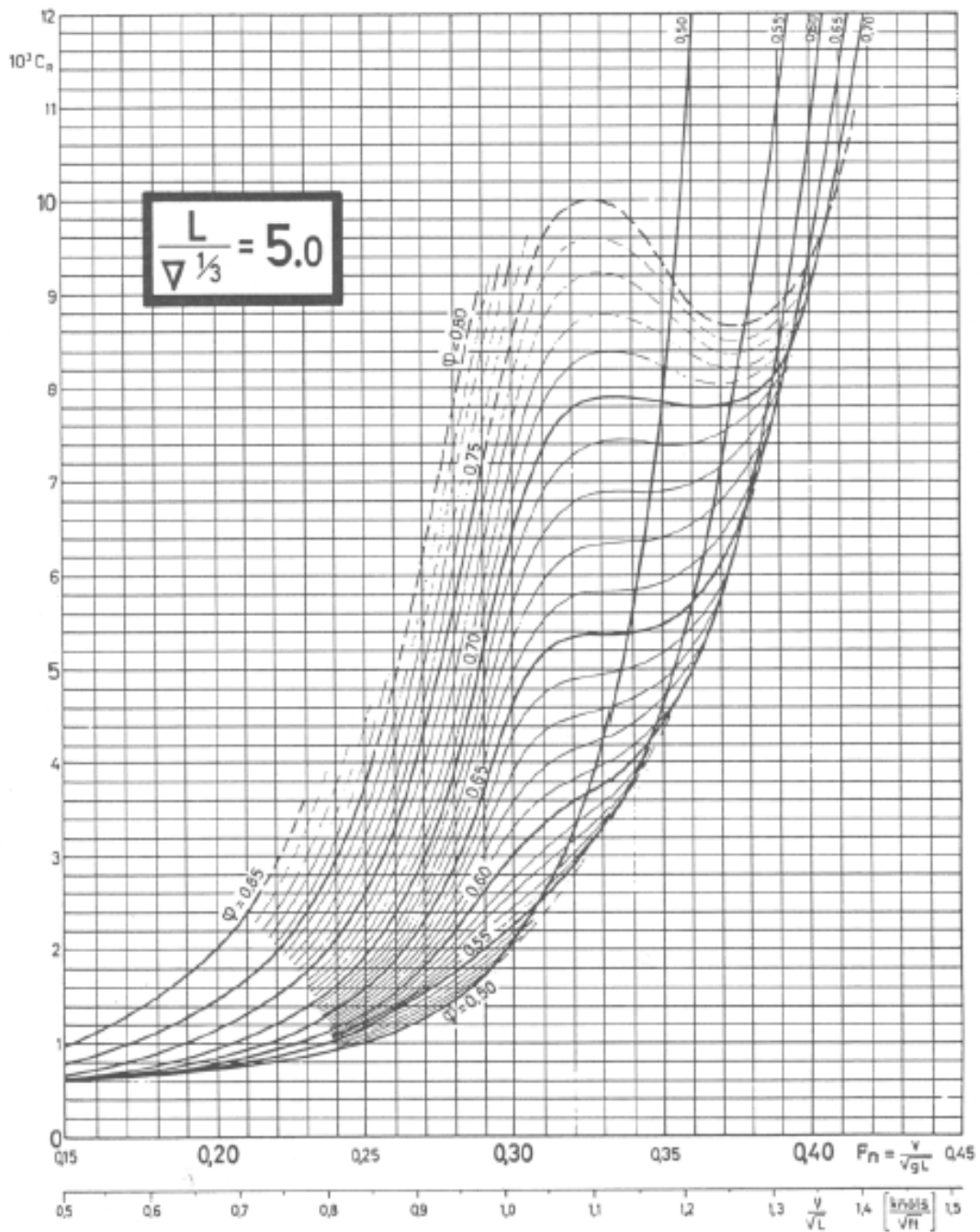
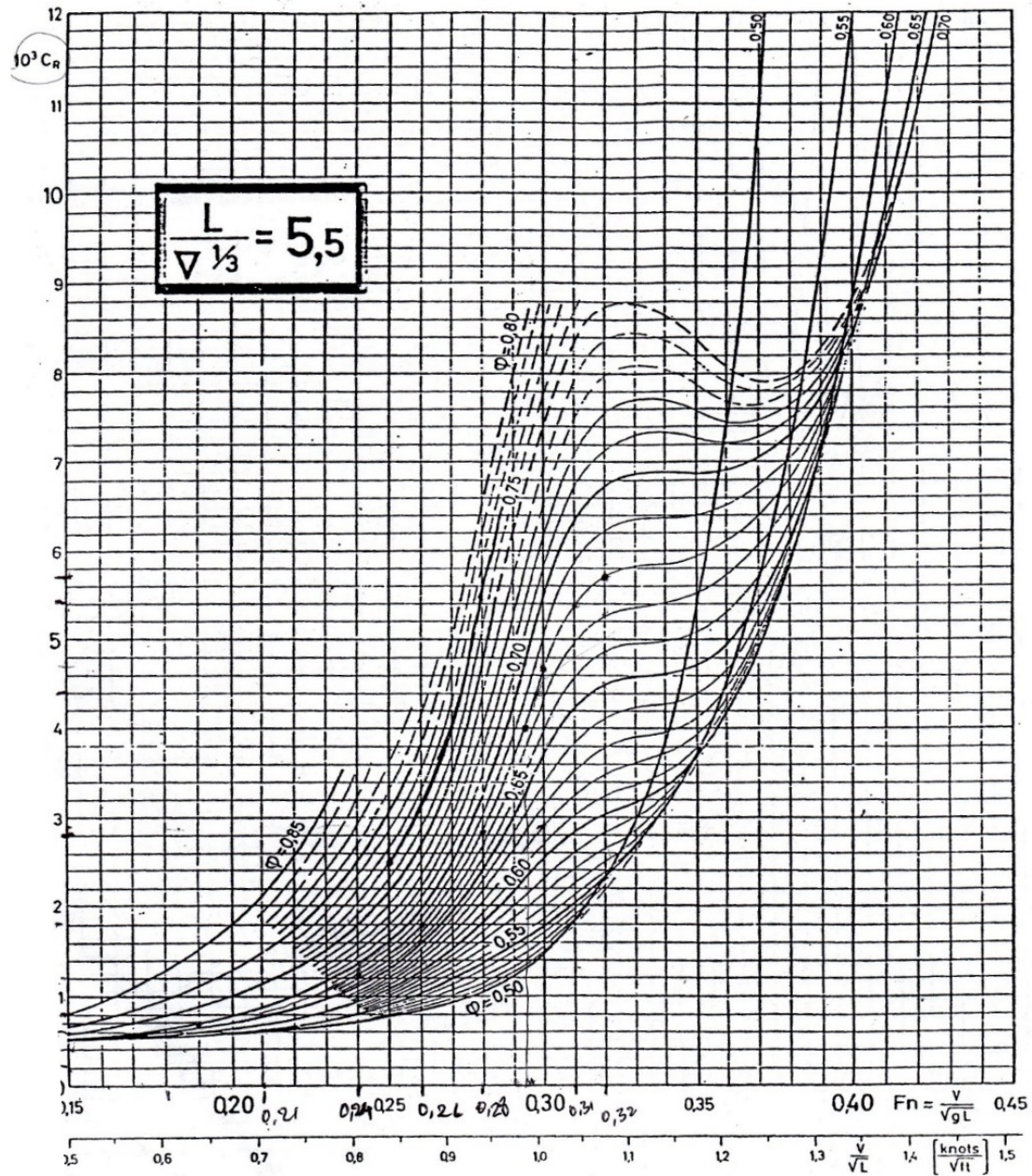


Figure 5.5.7. Residual resistance coefficient versus speed-length ratio for different values of longitudinal prismatic coefficient. $L/\nabla^{1/3} = 5.0$.

Lampiran 3

Diagram Kurva *Residual Resistance Coefficient*



Gb.9.9.4 Diagram kurva *Residual Resistance Coefficient* C_R vs Angka Froude Fr pada rentang harga *Prismatic Coefficient* $\phi (= C_p) = 0,50 \sim 0,80$ untuk *Volumetric Coefficient* $C_\Delta (= L / \Delta^{1/3}) = 5,5$ (8)

Lampiran 4

Diagram Bp 4.40 dan 4.55

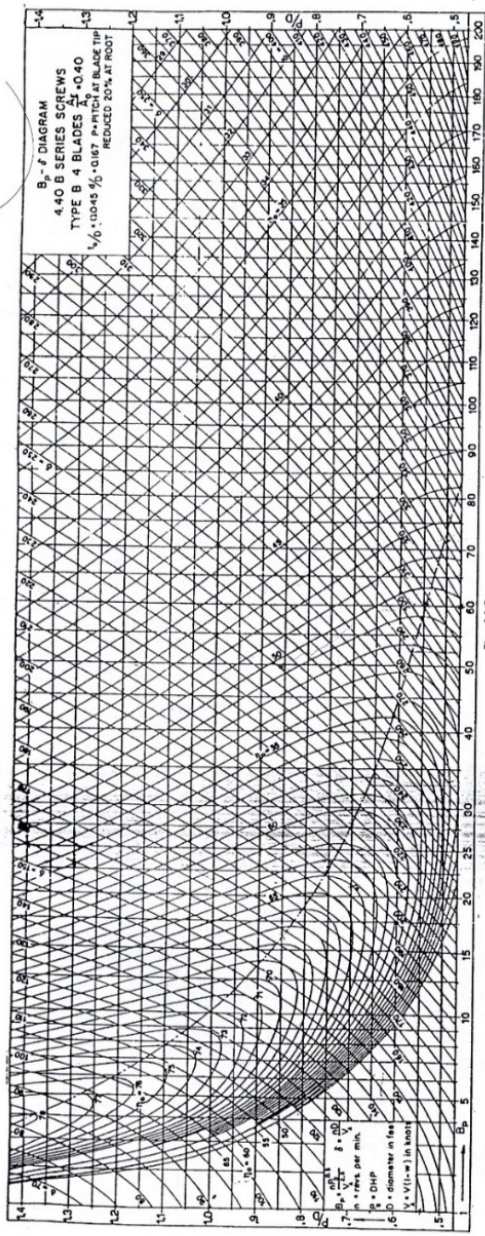


Fig. 115

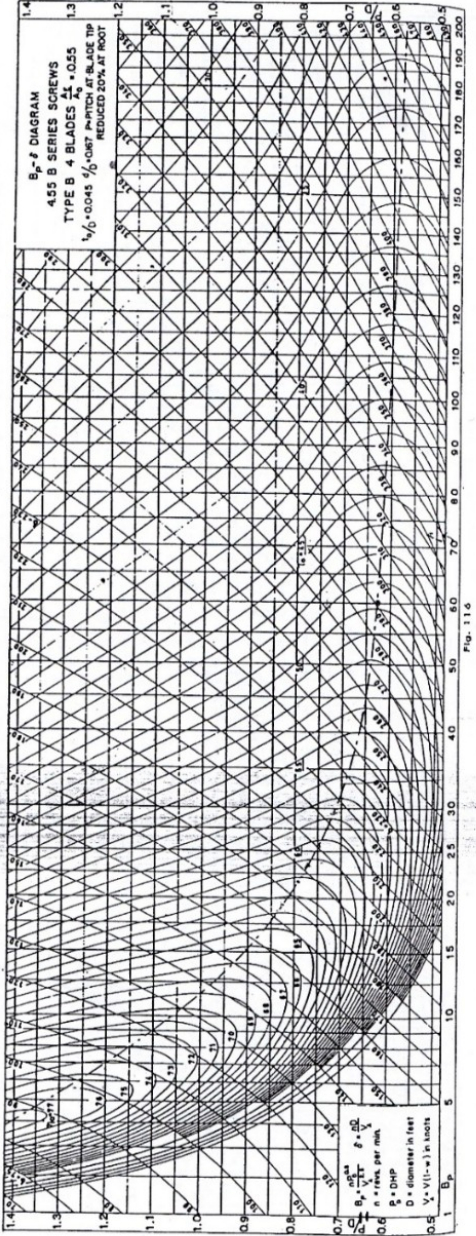


Fig. 116

414

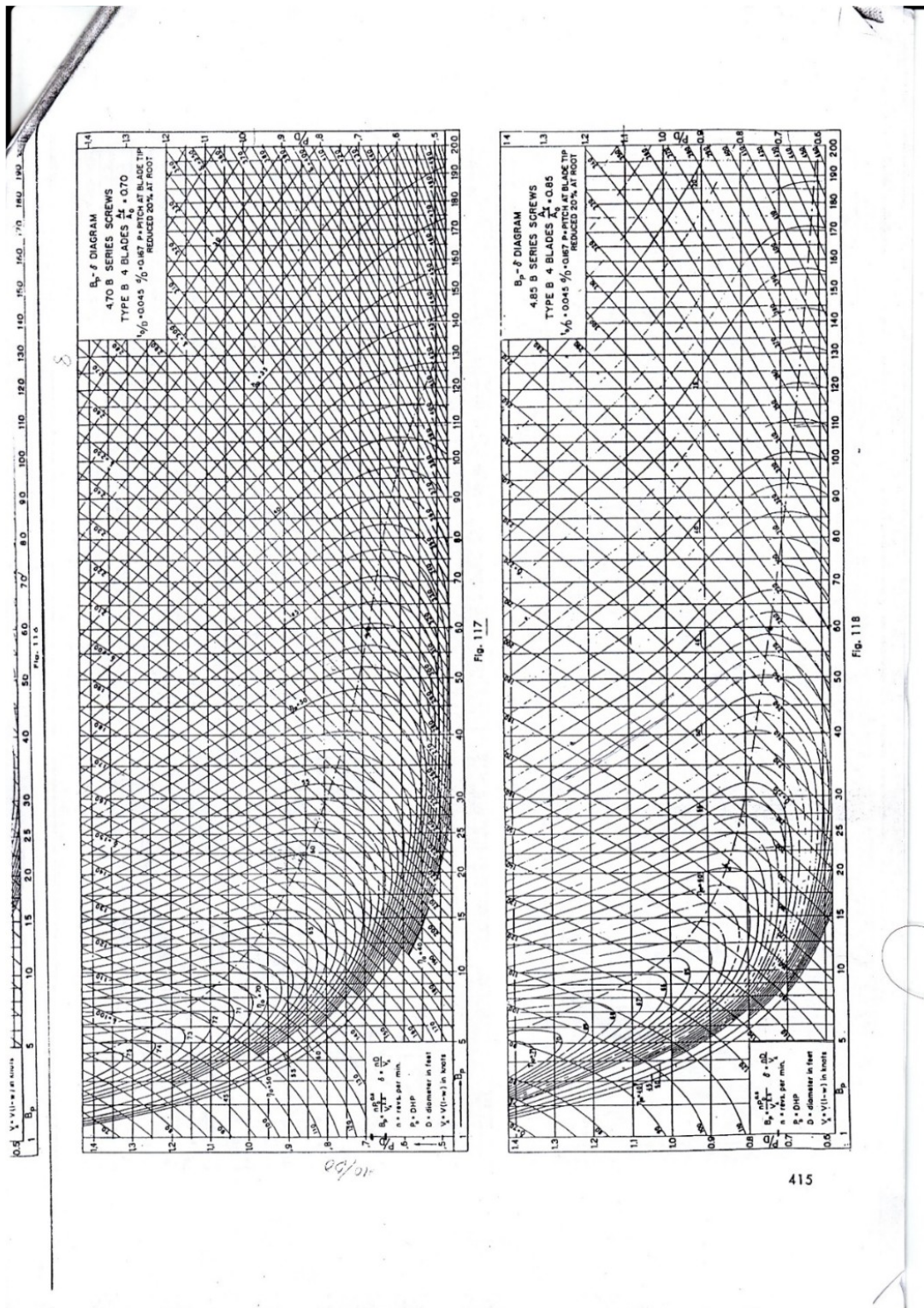
140
107



B 3-70

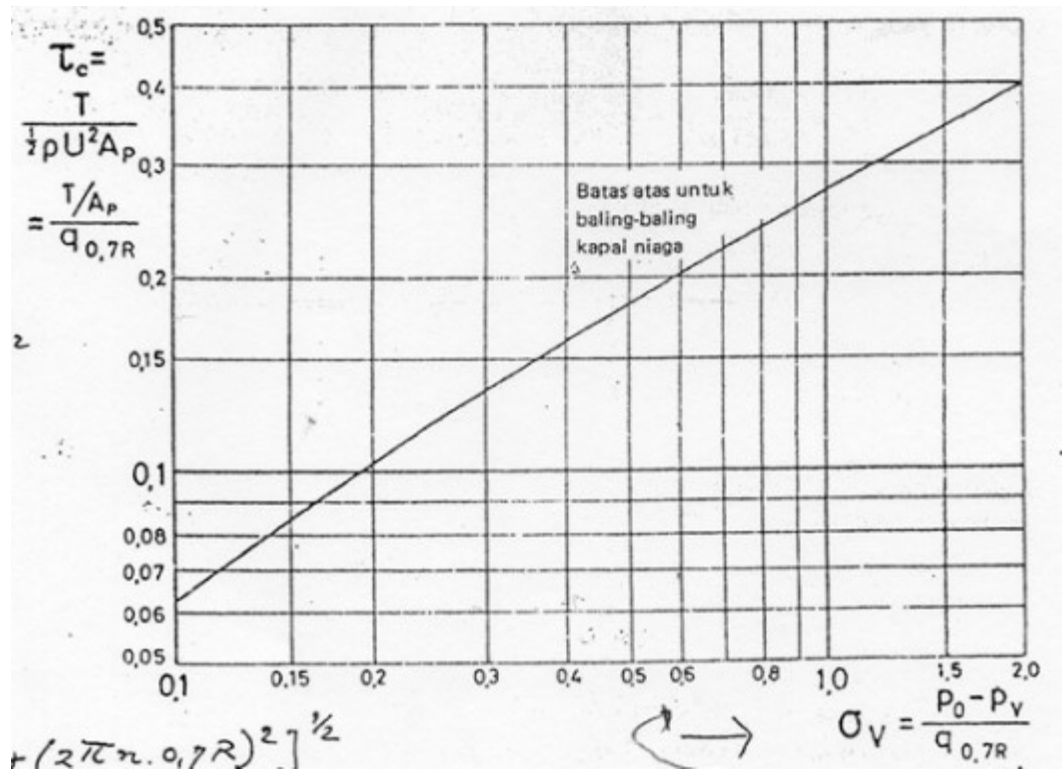
Lampiran 5

Diagram Bp 4.70 dan 4.85



Lampiran 6

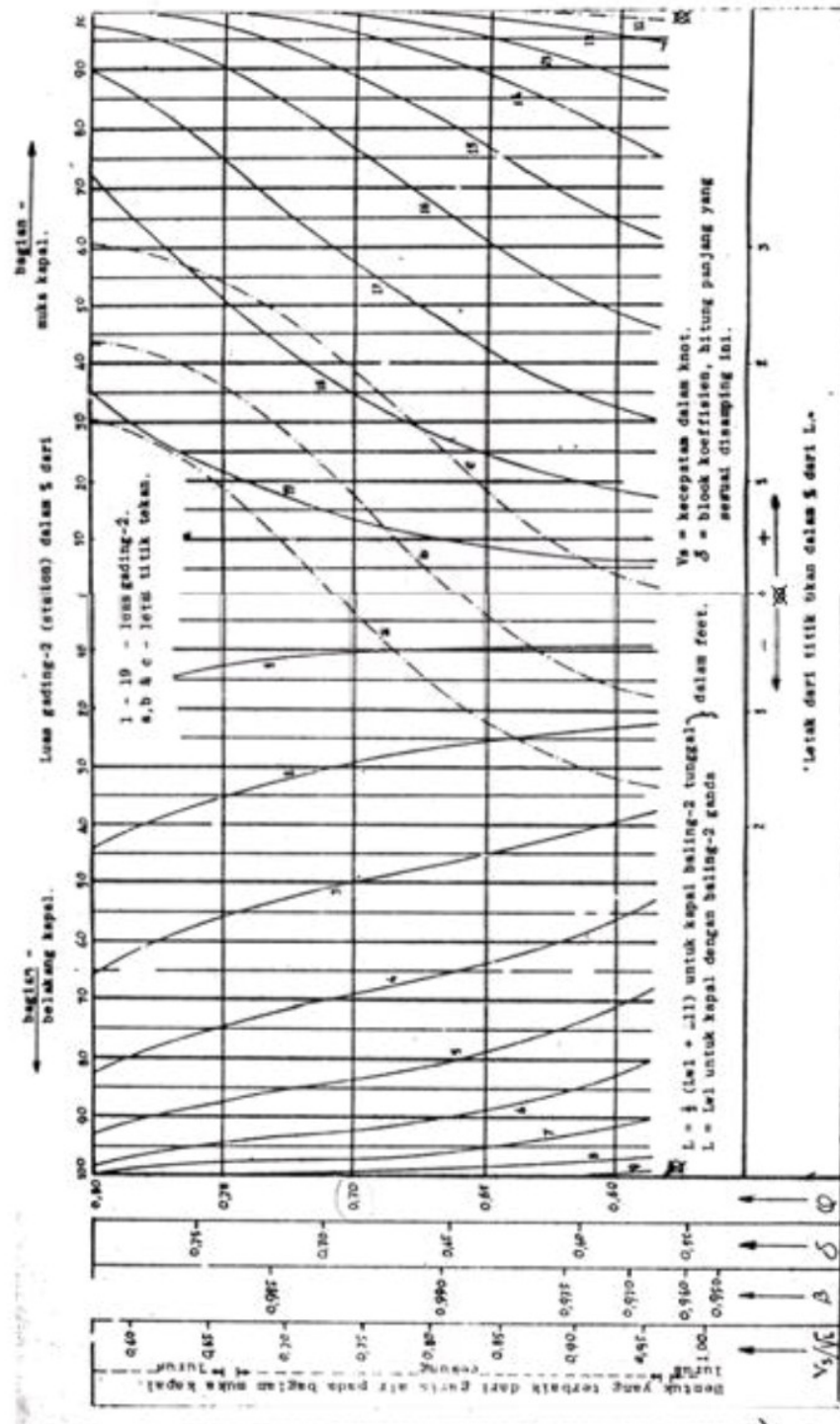
Diagram *Burril*



Lampiran 7

Grafik NSP

DIAGRAM NSP



Lampiran 8

Main Engine

6MG28HX

Specifications



Model	Max. Continuous Rating		Engine Speed	Cyl. Bore	Piston Stroke	Approx. Dry Mass
	kWm	PS	min ⁻¹	mm	mm	t
6MG19HX	761	1035	1000	190	260	7.0
6MG22HX	1062	1445	1000	220	280	9.1
6MG25HX	1368	1860	750	250	350	13.0
6MG26HLX	1518	2065	750	260	350	13.5
6MG28HX	1897	2580	750	280	370	16.0
8MG28HX	2427	3300	750	280	370	21.5
6MG34HX	3033	4125	620	340	450	33.6
8MG34HX	3640	4950	600	340	450	43.5
6MG41HX	4552	6190	520	410	560	64.0

Model	Dimension (mm)								
	L	H	H ₁	H ₂	H ₃	H ₄	B ₁	B ₂	B ₃
6MG19HX	2912	2122	1472	650	320	1550	800	809	666
6MG22HX	3027	2389	1729	660	330	1690	890	865	688
6MG25HX	3408	2886	2166	720	380	2080	1040	992	758
6MG26HLX	3463	2921	2201	720	380	2080	1040	1030	765
6MG28HX	3704	3142	2260	882	400	2210	1130	1001	823
8MG28HX	4638	3319	2485	834	400	2210	1130	1001	823
6MG34HX	4530	3573	2580	993	515	2760	1390	916	1028
8MG34HX	5590	3573	2580	993	515	2760	1390	916	1178
6MG41HX	6890	3875	2875	1000	650	3030	1796	1225	1848

Lampiran 9

Auxiliary Engine



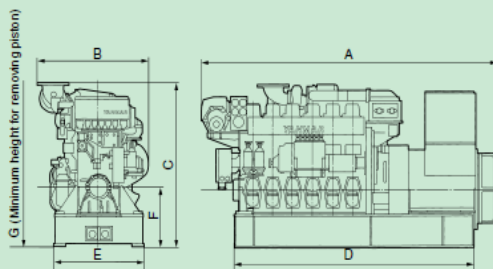
Specifications

Engine model	6NY16L-HN	6NY16L-DN	6NY16L-UN	6NY16L-SN	6NY16L-EN						
Type	Vertical water-cooled 4-cycle diesel engine										
No. of cylinders	6										
Cylinder bore×stroke	mm 160×200										
Total displacement	ℓ 24.13										
Continuous rated output	kW (PS)	200 (272)	265 (360)	245 (333)	310 (421)	270 (367)	355 (483)	310 (421)	400 (544)	353 (480)	441 (600)
Engine speed	min ⁻¹ (rpm)	1000	1200	1000	1200	1000	1200	1000	1200	1000	1200
Net mean effective pressure	MPa (kgf/cm ²)	0.995 (10.15)	1.097 (11.19)	1.218 (12.42)	1.284 (13.09)	1.343 (13.69)	1.472 (15.01)	1.540 (15.70)	1.658 (16.91)	1.756 (17.90)	1.829 (18.65)
Generator capacity	kWe	180	240	220	280	240	320	280	360	320	400
Combustion system	Direct Injection										
Starting system	Compressed Air										
External dimensions	Overall length	mm 1996									
	Overall width	mm 1085									
	Overall height	mm 1532									
Dry weight	kg 2880										

The engine dry weight may differ depending upon the specifications and attached accessories.
 Above generator capacity will vary according to actual generator efficiency.

Dimensions(Unit:mm)

The dimensions and weight for the diesel engine generator sets are simply reference values. The values may differ for different generator manufacturers.



Engine model	6NY16L-HN	6NY16L-DN	6NY16L-UN	6NY16L-SN	6NY16L-EN
A	2991	2991	2991	2991	2991
B	1136	1136	1136	1136	1136
C	1613	1613	1613	1613	1613
D	2530	2530	2530	2530	2530
E	940	940	940	940	940
F	600	600	600	600	600
G	1725	1725	1725	1725	1725
Dry weight of generating equipment (kg)	5500	5500	5500	5500	5500

Please confirm all specifications on the approval drawing.

Lampiran 11

Equipment Number

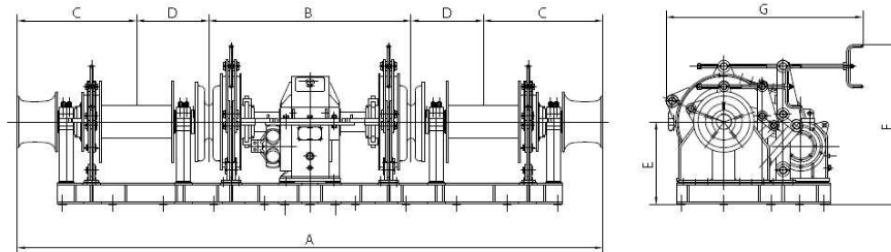
Table C27.1 Anchors, Chain Cables and Ropes

Equipment letter	Equipment number		Anchor		Chain cable for anchor (stud anchor for chain)			Tow line		Mooring line			
			number	Mass per anchor (stock-less anchor)	Total length	Diamete			Length	Breaking load	number	Length of each line	Breaking load
						Grade 1	Grade 2	Grade 3					
	Over	Up to		kg	m	mm	mm	mm	m	kN		m	kN
A1	50	70	2	180	220	14	12.5		180	↑ 98	3	80	↑ 34
A2	70	90	2	240	220	16	14		180	: 98	3	100	: 37
A3	90	110	2	300	247.5	17.5	16		180	: 98	3	110	: 39
A4	110	130	2	360	247.5	19	17.5		180	: 98	3	110	: 44
A5	130	150	2	420	275	20.5	17.5		180	: 98	3	120	: 49
B1	150	175	2	480	275	22	19		180	: 98	3	120	: 54
B2	175	205	2	570	302.5	24	20.5		180	● 112	3	120	: 59
B3	205	240	2	660	302.5	26	22	20.5	180	: 129	4	120	: 64
B4	240	280	2	780	330	28	24	22	180	: 150	4	120	: 69
B5	280	320	2	900	357.5	30	26	24	180	: 174	4	140	: 74
C1	320	360	2	1020	357.5	32	28	24	180	↓ 207	4	140	● 78
C2	360	400	2	1140	385	34	30	26	180	↑ 224	4	140	: 88
C3	400	450	2	1290	385	36	32	28	180	: 250	4	140	: 98
C4	450	500	2	1440	412.5	38	34	30	180	: 277	4	140	: 108
C5	500	550	2	1590	412.5	40	34	30	190	: 306	4	160	: 123
D1	550	600	2	1740	440	42	36	32	190	○ 338	4	160	: 132
D2	600	660	2	1920	440	44	38	34	190	: 371	4	160	: 147
D3	660	720	2	2100	440	46	40	36	190	: 406	4	160	: 157
D4	720	780	2	2280	467.5	48	42	36	190	: 441	4	170	: 172
D5	780	840	2	2460	467.5	50	44	38	190	↓ 480	4	170	: 186
E1	840	910	2	2640	467.5	52	46	40	190	↑ 518	4	170	: 201

Lampiran 12

Windlass dan Mooring Winch

Symmetrical Hy-combined Windlass Mooring Winch Drawing



生产图号 DWG.NO.	绞车部分 Part of weighing				系泊部分 Part of mooring				液压马达参数 Hydro-motor data				主要尺寸 (Main dimension)							
	钢丝绳直径 Chain cable dia. (mm)	额定拉力 Nom. Pull (kN)	锚钩深度 Anchoring depth (m)	额定速度 Nom. Speed (m/min)	卷筒直径 Drum dia. (mm)	公称速度 Nom. Speed (m/min)	钢丝绳直径 Rope dia. (mm)	容量 Capacity (m)	绞车额定拉力 W.E. load (kN)	型号 model	理论排量 Theoretical discharge (L/h)	额定压力 Rated Pressure (Mpa)	转速范围 Speed range (r/min)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)
226RAT800-00	19	15.3	825	≥9	40	13.6	34	19.5	110	1.6LJM 80-32	1.608	20	3250	2765	955	960	750	1020	530	1130
	20.5	17.9																		
	22	20.6																		
226RAT810-00	24	24.5	825	≥9	20	10.5	40	24	80	1.6LJM 80-32	1.608	20	3250	2650	955	900	795	1250	650	1195
	26	28.7																		
	28	33.3																		
	30	38.3																		
226RAT820-00	32	43.5	825	≥9	40	15	50	19.5	140	3.15/1.6LJM 100-40/20	3.14/1.57	20	3175	2650	730	970	950	1400	900	1830
	34	49.1																		
	36	55.1																		
226RAT830-00	38	61.4	825	≥9	50	15	50	18	140	3.15/1.6LJM 100-40/20	3.14/1.57	20	3172	3450	1085	1065	1300	1430	800	1600
	40	68.0																		
	42	75.0																		
226RAT840-00	44	82.3	825	≥9	50	15	50	22	140	3.15/1.6LJM 100-40/20	3.14/1.57	20	3175	3630	1100	1065	1455	1300	800	2030
	46	89.9																		
	48	97.9																		
226RAT850-00	50	106.3	825	≥9	80	15	55	22	140	3.15/1.6LJM 100-40/20	3.14/1.57	20	3175	3755	1120	1135	1500	1530	800	2140
	52	114.9																		
	54	123.9																		
226RAT860-00	56	133.3	825	≥9	80	15	55	22	140	3.15/1.6LJM 100-40/20	3.14/1.57	20	3175	3950	1260	1135	1555	1750	900	2430
	58	143.0																		
	60	153.0																		
226RAT870-00	62	163.4	825	≥9	100	15	60	24	140	3.15/1.6LJM 100-40/20	3.14/1.57	20	3175	4260	1430	1165	1665	1880	900	2590
	64	174.1																		
	66	185.1																		
226RAT880-00	68	196.5	825	≥9	125	12	66	26	160	3.15/1.6LJM 100-40/20	3.14/1.57	20	3175	4475	1520	1240	1715	1715	1200	2920
	70	208.3																		
	73	226.5																		

Lampiran 13

Liferaft



mm

Type	Capacity	Length	Width	Height	Weight	Container size
HSE-A-20	20	3000	4600	1570	≤195	720×1100
HSE-B-20	20	4100	2810	1450	≤100	680×1150
HSE-Y-20	20	3850	3850	1450	≤140	700×1300
HSE-D-20	20	3760	3760	2150	≤190	740×1500
HSE-S-20	20	4280	3080	1500	≤180	730×1500
HES-O-20	20	3850	3850	1500	≤140	700×1300
HSE-R-20	20	3840	3840	740	≤110	690×1150
HSE-L-20	20	3780	3780	2100	≤185	790×1390

Lampiran 14

Life Boat

Davit-launched Life Boat



Specification:

Model	Dimension(M)	Person (Max.)	Speed(Kn)	Total Weight(Kg)	Engine
HSEM45	4.50 * 1.86 * 0.86	6	≥20	1165	60HP
HSEM50	5.05 * 1.86 * 0.86	10	≥20	1870	88HP
HSEM601	6.00 * 2.20 * 1.05	15	≥20	2418	60HP
HSEM602	6.00 * 2.20 * 1.05	15	≥25	2563	90HP
HSEM603	6.00 * 2.20 * 1.05	15	≥25	2599	60HP *2
HSEM651	6.50 * 2.20 * 1.05	15	≥27	2551	144HP
HSEM652	6.00 * 2.20 * 1.05	15	≥27	2646	160HP
HSEM653	6.00 * 2.20 * 1.05	15	≥27	2646	170HP
HSEM654	6.00 * 2.20 * 1.05	15	≥35	2591	212HP
HSEM655	6.00 * 2.20 * 1.05	15	≥35	2591	250HP

Lampiran 15

Rescue Boat

DSB 3.5SR-DLRG



Länge außen / Length Overall	3,50 [m]
Länge innen / Length Inside	2,30 [m]
Breite außen / Beam Overall	1,72 [m]
Breite innen / Beam Inside	0,82 [m]
Gewicht Boot / Weight Boat	67 [kg]
Bemerkung / Note	Bootkörper mit Rumpf / hull and tube
Max. Kapazität / Max. Capacity	6 [Pers.]
Max. Zuladung / Max. Payload	600 [kg]
Schlauchdurchmesser / Tube Diameter	45 [cm]
Anzahl Luftkammern / Air Compartments	3 [Stk/pcs]
Material / Fabric	Hypalon/Aluminium
Max. Motorisierung / Max. Motorization	30/40 [kw/PS]
Bemerkung / Note	Langschaftmotoren / Long shaft engines

Heavy duty Rumpfkörper aus seewasserfestem Aluminium. Schlauchkörper aus UV beständigem Hypalon mit voneinander unabhängigen Luftkammern. Die Füll- und Entlüftungsventile sind verletzungsarm im Schlauchkörper versenkt.

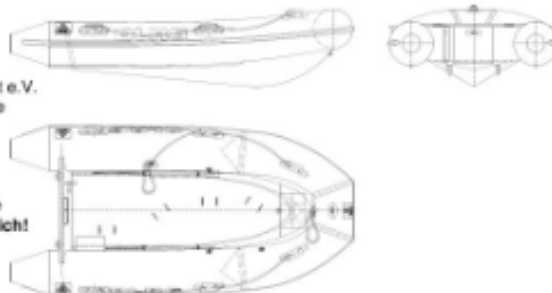
Designed für die DLRG – für die Lebensrettung.

Robust heavy duty seawater resistant aluminium hull. UV resistant buoyancy tube with independent air compartments and safe, flush integrated valves.

Designed for the DLRG- for life saving.

Bezug über:
Deutsche Lebens-
Rettungs-Gesellschaft e.V.
Bundesgeschäftsstelle
Bad Nenndorf
05723/955616

Förderung durch die
MPFS-Stiftung möglich!



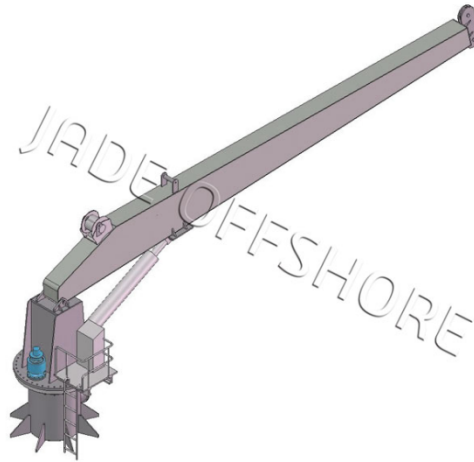
DSB
Deutsche Schlauchboot
GmbH
Angerweg 5
D-37632 Eschershausen
Germany

Phone: +49 (0)5534-301-0
Fax: +49 (0)5534-301-200

info@deutsche-schlauchboot.de
www.deutsche-schlauchboot.de

Lampiran 16

Hose Crane

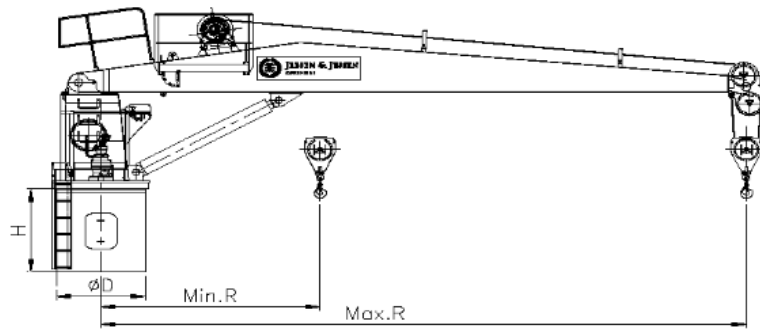


Design Specification

Model No	Lifting Capacity (T x m)	Min. Length R (m)	Max. Length R (m)	Pedestal Dia. OD (mm)	Pedestal Height H (mm)	Est. Power (kw)
FCRN40-2T8M	2T x 8m	2.7m	8m	920mm	1200mm	15kw
FCRN60-3T10M	3T x 10m	3.4m	10m	1020mm	1200mm	18.5kw
FCRN100-5T10M	5T x 10m	3.4m	10m	1270mm	1500mm	37kw
FCRN125-5T12M	5T x 12m	4.1m	12m	1420mm	1500mm	37kw
FCRN160-5Tx15M	5T x 15m	5.1m	15m	1620mm	1500mm	37kw
FCRN250-10Tx15M	10T x 15m	5.1m	15m	1820mm	1800mm	75kw
FCRN400-15Tx20M	15T x 20m	6.8m	20m	2020mm	1800mm	110kw
FCRN650-20Tx20M	20T x 20m	6.8m	20m	2260mm	1800mm	132kw
FCRN1300-25Tx25M	25T x 25m	8.5m	25m	2830mm	2000mm	160kw

Lampiran 17

Provision Crane

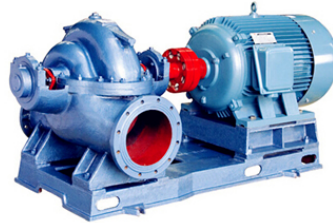


Model No	Lifting Capacity (T x m)	Min. Length R (m)	Max. Length R (m)	Pedestal Dia. OD (mm)	Pedestal Height H (mm)	Est. Power (kw)
FCRN40-2T8M	2T x 8m	2.7m	8m	920mm	1200mm	15kw
FCRN60-3T10M	3T x 10m	3.4m	10m	1020mm	1200mm	18.5kw
FCRN100-5T10M	5T x 10m	3.4m	10m	1270mm	1500mm	37kw
FCRN125-5T12M	5T x 12m	4.1m	12m	1420mm	1500mm	37kw
FCRN160-5Tx15M	5T x 15m	5.1m	15m	1620mm	1500mm	37kw
FCRN250-10T x 15M	10T x 15m	5.1m	15m	1820mm	1800mm	75kw
FCRN400-15T x 20M	15T x 20m	6.8m	20m	2020mm	1800mm	110kw
FCRN650-20T x 20M	20T x 20m	6.8m	20m	2260mm	1800mm	132kw
FCRN1300-25T x 25M	25T x 25m	8.5m	25m	2830mm	2000mm	160kw
FCRN1750-30T x 30M	30T x 30m	10.2m	30m	3170mm	2000mm	200kw
FCRN2600-40T x 35M	40T x 35m	12.0m	35m	4020mm	2200mm	250kw

Lampiran 18

Pompa Ruang Muat

HI-SEA



Parameters in case of power supply frequency of 50Hz

Type	(50Hz3φ380V) Main technical parameter					Motor type & power (kW)	Weight (Kg)
	Capacity (m ³ /h)	Head (m)	Speed (r/min)	NPSHr (m)	Shaft power (kW)		
150CWS-8.5	125	54	2950	2.9	25.2	Y200L2-2H37	147
	160	50		3.8	27.2		
	200	42		4.4	29.7		
150CWS-8.5A	105	44	2950	2.9	17.5	Y200L1-2H30	147
	140	40		3.8	20.3		
	170	35		4.2	21.9		
350CWS-8.5	945	82	1450	3.7	268.6	355	1200
	1260	75		5.3	299		
	1510	66		6.5	327		
350CWS-8.5A	890	70	1450	3.7	216	Y355L1-4H280	1200
	1190	64		5.3	244		
	1400	56.5		6.5	262.5		
350CWS-8.5B	825	57	1450	3.7	169.5	Y355M1-4H220	1200
	1100	52		5.3	190		
	1320	46		6.5	204		
350CWS-6	945	138	1450	3.7	493	710	1420
	1260	125		5.3	529.5		
	1510	107		6.5	590		
350CWS-6A	890	122	1450	3.7	416.5	560	1420
	1190	112		5.3	465		
	1400	96		6.5	501		
350CWS-6B	825	104	1450	3.7	329	450	1420
	1100	96		5.3	373.5		
400CWS-13	1320	83	1450	6.5	408.5	355	1420
	1200	59		3.8	248.6		
	1800	52		5.3	289.5		
	2100	45		6.3	312		
400CWS-13A	1160	54.5	1450	3.8	214.3	Y355L1-4H280	1420
	1740	45		5.3	250.7		
	2030	38		6.3	259.3		

Lampiran 19





























Katalog Pelat

CALCULATED PLATE WEIGHT (FROM THICKNESS & SIZE)

Width x Length (n mm)	1219 x 2438	1219 x 6096	1524 x 3048	1524 x 6096	1524 x 9144	1524 x 12192	1829 x 6096	1829 x 12192	2133 x 6096	2133 x 12192	2438 x 6096	2438 x 12192	2743 x 6096	2743 x 12192	3048 x 6096	3048 x 12192	3353 x 6096	3353 x 12192	
Width x Length (n ft)	4' x 8'	4' x 20'	5' x 10'	5' x 20'	5' x 30'	5' x 40'	6' x 20'	6' x 40'	7' x 20'	7' x 40'	8' x 20'	8' x 40'	9' x 20'	9' x 40'	10' x 20'	10' x 40'	11' x 20'	11' x 40'	
Width x Length (n Inch)	48 x 96	48 x 240	60 x 120	60 x 240	60 x 360	60 x 480	72 x 240	72 x 480	84 x 240	84 x 480	96 x 240	96 x 480	108 x 240	108 x 480	120 x 240	120 x 480	132 x 240	132 x 480	
Thickness (mm)																			
8	187	467	292	583	875	1.167	700	1.400	817	1.633	933	1.867	1.050	2.100	1.167	2.334	1.284	2.567	
9	210	525	328	656	985	1.313	788	1.575	919	1.837	1.050	2.100	1.181	2.363	1.313	2.625	1.444	2.888	
10	233	583	365	729	1.094	1.459	875	1.750	1.021	2.041	1.167	2.333	1.313	2.625	1.459	2.917	1.605	3.209	
12	280	700	438	875	1.313	1.750	1.050	2.101	1.225	2.450	1.400	2.800	1.575	3.150	1.750	3.501	1.925	3.851	
12.7	296	741	463	926	1.389	1.852	1.112	2.223	1.296	2.593	1.482	2.963	1.667	3.334	1.852	3.705	2.038	4.076	
14	327	817	511	1.021	1.532	2.042	1.225	2.451	1.429	2.858	1.633	3.267	1.838	3.675	2.042	4.084	2.246	4.493	
15	350	875	547	1.094	1.641	2.188	1.313	2.626	1.531	3.062	1.750	3.500	1.969	3.938	2.188	4.376	2.407	4.814	
16	373	933	583	1.167	1.750	2.334	1.400	2.801	1.633	3.266	1.867	3.733	2.100	4.200	2.334	4.667	2.567	5.134	
18	420	1.050	656	1.313	1.989	2.625	1.575	3.151	1.837	3.675	2.100	4.200	2.363	4.725	2.625	5.251	2.888	5.776	
19	443	1.108	693	1.386	2.078	2.771	1.663	3.326	1.939	3.879	2.217	4.433	2.494	4.988	2.771	5.543	3.049	6.097	
20	467	1.167	729	1.459	2.188	2.917	1.750	3.501	2.041	4.083	2.333	4.667	2.625	5.250	2.917	5.834	3.209	6.418	
22	513	1.283	802	1.604	2.407	3.209	1.926	3.851	2.246	4.491	2.567	5.133	2.888	5.775	3.209	6.418	3.530	7.060	
24	560	1.400	875	1.750	2.625	3.501	2.101	4.201	2.450	4.899	2.800	5.600	3.150	6.301	3.501	7.001	3.851	7.702	
25	583	1.458	912	1.823	2.735	3.646	2.188	4.376	2.552	5.104	2.917	5.833	3.282	6.563	3.646	7.293	4.011	8.023	
25.4	593	1.482	926	1.852	2.779	3.705	2.223	4.446	2.593	5.185	2.963	5.927	3.334	6.668	3.705	7.410	4.076	8.151	
26	607	1.517	948	1.896	2.844	3.792	2.276	4.551	2.654	5.308	3.033	6.067	3.413	6.826	3.792	7.585	4.172	8.344	
28	653	1.633	1.021	2.042	3.063	4.084	2.451	4.901	2.858	5.716	3.267	6.533	3.675	7.351	4.084	8.168	4.493	8.985	
30	700	1.750	1.094	2.188	3.282	4.376	2.626	5.251	3.062	6.124	3.500	7.000	3.938	7.875	4.376	8.751	4.814	9.627	
32	747	1.867	1.167	2.334	3.501	4.667	2.801	5.602	3.266	6.533	3.733	7.467	4.200	8.401	4.667	9.335	5.134	10.269	
36	840	2.100	1.313	2.625	3.938	5.251	3.151	6.302	3.675	7.349	4.200	8.400	4.725	9.451	5.251	10.502	5.776	11.553	
38	887	2.217	1.386	2.771	4.157	5.543	3.326	6.652	3.879	7.757	4.433	8.867	4.988	9.756	5.543	11.085	6.097	12.194	
40	933	2.333	1.459	2.917	4.376	5.834	3.501	7.002	4.083	8.166	4.667	9.333	5.250	10.501	5.834	11.669	6.418	12.836	
45	1.050	2.625	1.641	3.282	4.923	6.564	3.939	7.877	4.593	9.186	5.250	10.500	5.907	11.814	6.564	13.127	7.220	14.441	
50	1.166	2.917	1.823	3.646	5.470	7.293	4.376	8.752	5.104	10.207	5.833	11.667	6.563	13.126	7.293	14.586	8.023	16.045	
55	1.283	3.208	2.006	4.011	6.017	8.022	4.814	9.628	5.614	11.228	6.417	12.833	7.219	14.439	8.022	16.044	8.825	17.650	
60	1.400	3.500	2.188	4.376	6.564	8.751	5.251	10.503	6.124	12.249	7.000	14.000	7.876	15.751	8.751	17.503	9.627	19.254	
65	1.516	3.792	2.370	4.740	7.111	9.481	5.689	11.378	6.635	13.269	7.583	15.167	8.532	17.064	9.481	18.962	10.429	20.859	
70	1.633	4.083	2.553	5.105	7.658	10.210	6.127	12.253	7.145	14.290	8.167	16.333	9.188	18.377	10.210	20.420	11.232	22.463	
75	1.750	4.375	2.735	5.470	8.204	10.939	6.564	13.129	7.655	15.311	8.750	17.500	9.845	19.689	10.939	21.879	12.034	24.068	
80	1.866	4.667	2.917	5.834	8.751	11.669	7.002	14.004	8.166	16.331	9.333	18.667	10.501	21.002	11.669	23.337	12.836	25.672	
85	1.983	4.958	3.099	6.199	9.298	12.398	7.440	14.879	8.676	17.352	9.917	19.833	11.157	22.315	12.398	24.796	13.639	27.277	
90	2.100	5.250	3.282	6.564	9.845	13.127	7.877	15.754	9.186	18.373	10.500	21.500	11.814	23.627	13.127	26.254	14.441	28.882	
95	2.216	5.542	3.464	6.928	10.392	13.856	8.315	16.630	9.697	19.394	11.083	22.167	12.470	24.940	13.856	27.713	15.243	30.486	

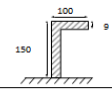
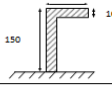
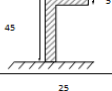
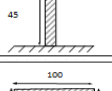
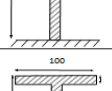
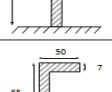
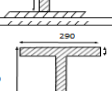
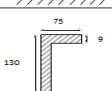
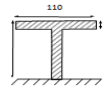
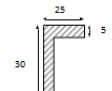
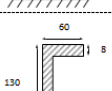
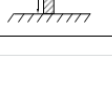
Lampiran 20

Perhitungan Tebal Pelat

URAIAN	CLASS NK 2017	RUMUS	HASIL	GAMBAR
Lebar Pelat Lunas	Chapter 16.2 Hal 124	$b = 2L + 1000$ (mm)	1200 mm	
Tebal Pelat Lunas		$t = \text{Tebal Pelat Alas} + 2$ (mm)	12 mm	
Pelat Alas	Chapter 16.3.4 Hal 126	$t = C_1 C_2 \sqrt{d + 0,035L'} + h_1 + 2,5$ (mm)	12 0m	
Pelat Inner Bottom	Chapter 6.5.1 Hal 59	$t = C'S\sqrt{h} + 2,5$ (mm)	10 mm	
Solid Floor Midship dan Ruang Mesin	Chapter 6.3.2 Hal 56	$t = 8,6 \sqrt{\frac{h^2 d^2}{c_1^2}} (t_1 - 2,5) + 2,5$ (mm)	12 mm	
Pelat Bilga	Chapter 16.3.5 Hal 126	$\left\{ 5,22 (d + 0,035L) \left(R + \frac{a+b}{2} \right)^{\frac{3}{2}} l \right\}^{\frac{2}{3}} + 2,5$ (mm)	12 mm	
Center Girder Midship dan Ruang Mesin	Chapter 29.6.3 Hal 211	$t_s = \frac{C_1 \times a}{\sqrt{R}} + 2,5$ (mm)	12 mm	
Side Girder Midship dan Ruang Mesin		$t_s = \frac{C_1 \times a}{\sqrt{R}} + 2,5$ (mm)	10 mm	
Tebal Floors, Center Girder dan Side Girder Haluan dan Buritan	Chapter 9.2.2 Hal 79	$4 + 0,6\sqrt{L}$ (mm)	10 mm	
Manhole	Chapter 35.2.5 Hal 348	tidak boleh kurang dari 600 mm x 800 mm.	600 x 800 mm	
Lightening Hole	Chapter 12.1.3 Hal 69	$d \leq \frac{d_G}{4}$	Diameter 0,50 m	
Tebal Dudukan Main Engine	Chapter 21.1.2 Hal 168	Ketebalan yang sama dengan Inner Bottom Plate	10 mm	
Pelat Sisi	Chapter 16.3.2 Hal 125	$c_1 c_2 S \sqrt{d - 0,125D + 0,05L'} + h_1 + 2,5$ (mm)	10 mm	
Pelat Sheer Strake	Chapter 16.3.3 Hal 126	Tidak boleh kurang dari 0,75 dan tidak boleh lebih dari pelat sisi	10 mm	
Tebal Pelat Deck 0,15L dari Haluan Kapal	Chapter 17.3.1 Hal 131	$1,47CS\sqrt{h} + 2,5$ (mm)	14 mm	
Tebal Pelat Deck Antara 0,15L Dan 0,3L Dari Haluan Kapal			12 mm	
Tebal Pelat Deck Antara 0,3L dari Haluan Dan 0,2L dari Buritan Kapal			9 mm	
Tebal Pelat Deck Setelah 0,2L Sebelum Akhir Buritan Kapal			12 mm	
Pelat Stiffeners	Chapter 6.3.3 Hal 58	$0,08 \times d_0$	9 mm	
Strength Deck	Chapter 16.3.1 Hal 124	$t_{SD} = \sqrt{L}$	10 mm	
Pelat Samping Superstruktur	Chapter 16.5.1 Hal 128	$1,15 S \sqrt{L} + 2,0$ (mm)	10 mm	
Tebal Pelat Sea Chest	Chapter 16.7.2 hal 129	$\sqrt{L} + 2$ (mm)	12 mm	
Tebal Brackets	Chapter 6.2.4 hal 55	$0,6 + 2,5$ (mm)	9 mm	
Tebal Pelat Watertight Bulkhead	Chapter 13.2.1 Hal 99	$3,2S\sqrt{h} + 2,5$ (mm)	9 mm	
Tebal Pelat Cargo Hold Bulkhead	Chapter 29.4.1 Hal 204	$t = C_1 C_2 S \sqrt{h} + 3,5$ (mm)	8 mm	
Tebal Pelat Collision Bulkhead	Chapter 13.2.5 Hal 103	Tidak boleh kurang dari tebal <i>Watertight Bulkhead</i> , Sekat Ruang Mesin, dan Sekat Buritan.	10 mm	
Pillar	Chapter 11.2.1 Hal 9	$\frac{0,223w}{2,72 \frac{t}{k_0}}$ (cm ²)	Ø350 x 12 mm	
Bulwark	Chapter 23.1.3 Hal 172	Tidak Boleh Kurang Dari 6 mm.	10 mm	

Lampiran 21

Perhitungan Modulus

NO	URAIAN	CLASS NK 2017	RUMUS	HASIL	GAMBAR (mm)
1	Modulus Longitudinal Bottom	Chapter 29.5.1 Hal 206	$Z = 100C_1C_2Shl^2 \text{ (cm}^3\text{)}$	202,90 (cm ³)	
2	Modulus Longitudinal Inner Bottom	Chapter 6.4.3.2 hal 58	$Z = \frac{100 C' Shl^2}{24-12fg} \text{ (cm}^3\text{)}$	190,357 (cm ³)	
3	Vertical Struts Midship	Chapter 6.4.4 Hal 59	$1,8CSbh \text{ (cm}^2\text{)}$	7,955 (cm ³)	
4	Modulus Side Longitudinal	Chapter 29.10.2 Ha 224	$Z = 9C_1KShl^2 \text{ (cm}^3\text{)}$	11,617 (cm ³)	
5	Modulus Side Stringers	Chapter 9.2.2 Hal 80	$Z = 8Shl^2 \text{ (cm}^3\text{)}$	329,871 (cm ³)	
6	Modulus Web Frame Midship dan Kamar Mesin	Chapter 8.2.1 Hal 76	$C_1Shl^2 \text{ (cm}^3\text{)}$	215,856 (cm ³)	
7	Modulus Ordinary Frame	Chapter 7.3.2 Hal 65	$C_0CSshl^2 \text{ (cm}^3\text{)}$	31,469 (cm ³)	
8	Modulus Longitudinal Deck Beam	Chapter 12.2.1 Hal 93	$Z = 1,29l(lb + kw) \text{ (cm}^3\text{)}$	2001,753 (cm ³)	
9	Modulus Longitudinal Deck	Chapter 10.3.3 Hal 87	$1,14Shl^2 \text{ (cm}^3\text{)}$	135,744 (cm ³)	
10	Modulus Deck Web Transverse	Chapter 12.3.1 Hal 95	$Z = 0,484 l(lb + kw) \text{ (cm}^3\text{)}$	546,842 (cm ³)	
11	Modulus Deck Transverse	Chapter 10.4.3 Hal 88	$0,43Shl^2 \text{ (cm}^3\text{)}$	8,818 (cm ³)	
12	Bulkhead Modulus Stiffeners	Chapter 13.2.3 Hal 99	$Z = 2,8CSshl^2 \text{ (cm}^3\text{)}$	101,846 (cm ³)	

Sumber : Perhitungan Pribadi

Lampiran 22

Oil Water Separator



Model	YWC-									
Technical Specifications	0.25	0.5	1	1.5	2	2.5	3	4	5	
Rated capacity(m ³ /h)	0.25	0.5	1	1.5	2	2.5	3	4	5	
Oil content of the discharged water	≥15ppm									
Power of the electric heater (kw)	1kw	3kw	6	6	6	6	6	12	12	
Electrical System	AC 380V/50Hz/3φ,AC 415V/50Hz/3φ,AC 440/60Hz/3φ,AC 480V/60HZ/3φ (optional)									
Power of the electric motor	0.37kw	0.55kw	0.75kw	1.1kw	1.1kw	1.5kw	1.5kw	2.2kw	2.2kw	
Suction head	≥6m-H ₂ O									
Pressure of the discharged water	5-10m-H ₂ O									
Outline Dimension (L*W*H) (mm)	1000*600*1250	1100*690*1460	1050*1000*1620	1100*1130*1650	1900*1120*1700	1900*1120*1900	1700*1500*1900	2280*1700*1900	2590*2000*1900	
Base	5#	6#	6#	6#	8#	8#	8#	10#	10#	
Weight	Dry Weight	400	600	800	1060	1260	1500	1800	2100	2500
	Wet Weight	550	900	1200	1650	2260	2800	3200	3900	4600
Applicable Vessel (KDWT)	<1	1-5	5-10	10-30	30-50	50-100	100-200	100-300	>300	

Lampiran 23

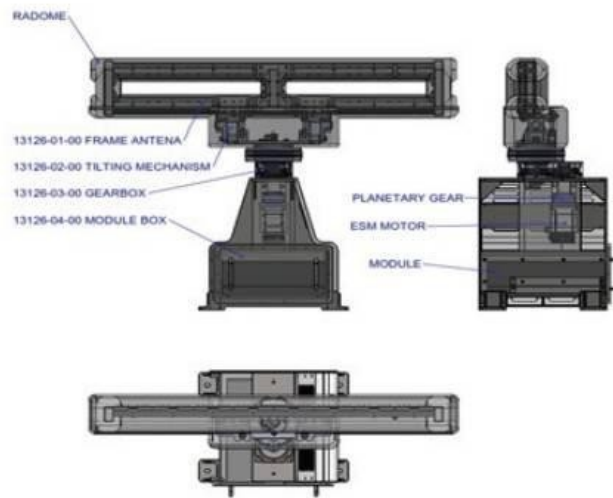
Kompas Magnetik



Project	Data
Dial Diameter	Φ 130mm
Dial graduation	0° ~ 360° 1° for each grid
Using temperature	-20°C~50°C
Indicating deviation (H=35 μ T, T=20 \pm 3°C)	\leq 1.5°
Half period (H=35 μ T, T=20 \pm 3°C)	\geq 5.59 S
Friction deviation (H=35 μ T, T=20 \pm 3°C)	\leq 0.26°
Main semicircle self heterodyne correcting energy	1° ~ 40°
Quadrant self heterodyne correcting energy	1° ~ 5°
Inclining self heterodyne correcting energy	- 75 ~ + 75 μ T
Lighting power supply	AC 220V, DC 24V
Outline Dimension	330 x 200 x 270mm
Packing size	400 x 240 x 340mm
Diameter of mounting holes	Pitchrow118 Aperture Φ 6.5
weight	3kg

Lampiran 24

Radar



SYSTEMS	
CMX12-22	X-BAND 12kW RADAR SYSTEM WITH 22" DISPLAY
CMX12-26	X-BAND 12kW RADAR SYSTEM WITH 26" DISPLAY
SPECIFICATION	
FREQUENCY BAND	X-BAND
FREQUENCY	9.4 GHz
PEAK POWER	12kW
MAGNETRON LIFE	10,000 HRS TYPICAL
SIGNAL PROCESSING	N/A
RECEIVER IF FREQUENCY	75MHz
MINIMUM RANGE	< 40m
ANTENNA LENGTH	1.9m
MASS	29kg

Lampiran 25

Echo sonder



Model	ES9000-08
Ukuran layar	8" TFT LCD warna
Resolusi	800 x 600
Eksternal dimensi	225mmx225mmx113.5mm
Pengolahan	Sinyal digital Processing(DSP)
Bahasa	Cina, Inggris, Korea, Vietnam
Rentang tegangan	12 ~ 36V DC
Frekuensi	200kHz
Output daya Transmit	300 ~ 600W
Tingkat emisi	3600 kali/menit di atas
Panjang pulsa	0,12 ~ 3.0ms
Ketepatan ukur	0.1m
Terendah buta	0, 2 m
Sensitivitas	7 dB μ V
Berbagai kedalaman	0 ~ 500m
Auto rentang	OFF/ON
Auto Gain	OFF/L/M/H
A-Mode	OFF/ON
Kedalaman Alarm	OFF/dalam kisaran / keluar jangkauan
Tegangan Alarm	OFF/ON
Skala Line	OFF/ON
Kekacauan	Ya
Memperkuat Mode Zoom modus	OFF / bawah kunci/Auto Zoom/Manual Zoom
Gambar muka kecepatan	7 langkah (berhenti, 1/8, 1/4, 1/2, x 1, x2, x3)
Warna latar belakang	8 macam
Bermacam-macam warna	256 warna
STC	OFF/L/M/H
Kekuatan TX	OFF/L/M/H
Kartu SD	Fungsi penyimpanan dan replay, pembaruan perangkat lunak
Ekspansi Mode	X2, X4, X8, XR (sebenarnya resolusi)
Kedalaman Unit	Meter(m), Feet(ft), Fathom(fa)
Jarak aman Kompas	\geq 1.5 m
Antarmuka	NMEA0183 Masukan: GPS informasi (GGA, RMC, VTG) NMEA0183 Output: kedalaman Data (DPT, DBT) Antarmuka serial cetak: cocok untuk printer DPU-414 Transduser antarmuka: x 1 Kekuatan antarmuka: DC 24V Suhu: -10°C ~ 40°C
Lingkungan	Perlindungan tingkat: tuan rumah mesin: IP23, transduser: IP66
Sertifikasi	CCS sertifikat

Lampiran 26

GPS (*Global Positioning System*)



Specifications :

Display Unit

Screen Type 4.2" Color LCD

Screen Resolution 480 (V) x 272 (H) pixels

GPS Antenna External

Display Modes Plotter, Highway, Steering, NAV Data, Satellite monitor, User Display (Digital, Speedometer, COG)

Language English, French, Spanish, Chinese, Vietnamese, Malay, Indonesian, Thai

GPS / SBAS (WAAS/EGNOS/MSAS)

Receiving Type GPS: 12 channels parallel, 12 satellites tracking, C/A code, all-in-view

SBAS: 2 channels

Receiving Frequency L1 (1575.42 MHz 1.023 MHz)

Accuracy GPS: 10 m (95% of the time, HDOP4)

WAAS: 3 m (95% of the time, HDOP4)

MSAS: 7 m (95% of the time, HDOP4)

PLOTTER

Memory Capacity 3,000 ship's track points

10,000 waypoints with comments

100 routes with 30 waypoints/route

OTHERS

Waterproofing Display unit: IP55

Antenna unit: IP56

Power Supply 12-24 VDC : 0.7-0.3 A

Weight 0.86 kg (Bracket mount)

Lampiran 27

Pillar



Outside Diameter		Thickness																		
Inch	mm	4	6	8	9	10	11	12	12.7	13	14	15	16	17	18	19	20	21		
7	177.8	17.34	25.42	33.30	37.48	41.38	45.25	49.05	51.71	52.81	56.55	60.22	63.84	67.41	70.93	74.40	77.83	81.20		
8	203.2	19.65	29.58	38.51	43.10	47.64	52.14	56.58	59.65	60.97	65.32	69.62	73.86	78.04	82.21	86.31	90.35	94.35		
10	254.0	24.66	36.69	48.53	54.38	60.17	65.92	71.61	75.57	77.25	82.86	88.41	93.91	99.36	104.76	110.11	115.41	120.66		
12	304.8	29.67	44.21	58.55	65.65	72.70	79.70	85.65	91.48	93.55	100.40	107.20	113.95	120.65	127.30	133.91	140.46	146.97		
14	355.6	34.68	51.79	68.57	76.92	85.22	93.48	101.68	107.99	109.83	117.93	125.99	133.99	141.95	149.85	157.71	165.52	173.28		
16	406.4	39.69	59.24	78.60	88.20	97.75	107.26	116.71	123.90	126.12	135.47	144.78	154.04	163.24	172.40	181.51	190.57	199.58		
18	457.2	44.70	66.76	88.82	99.47	110.28	121.04	131.74	139.21	142.40	153.01	163.57	174.08	184.54	194.95	205.31	215.63	225.89		
20	508	49.71	74.28	98.64	110.75	122.81	134.82	146.78	155.32	158.69	170.55	182.35	194.12	205.84	217.50	229.12	240.68	252.20		
22	558.8	54.73	81.79	108.65	122.02	135.33	148.60	161.81	171.09	174.97	188.09	201.15	214.17	227.13	240.05	252.92	265.74	278.51		
24	609.6	59.74	89.31	118.68	133.30	147.86	162.38	176.84	186.94	191.26	205.62	219.94	234.21	248.43	262.60	276.72	290.79	304.81		
26	660.4	64.75	96.83	128.71	144.57	160.39	176.16	191.87	202.85	207.54	223.16	238.73	254.25	269.73	285.15	300.52	315.85	331.12		
28	711.2	69.76	104.34	138.73	155.85	172.92	189.94	206.91	218.76	223.83	240.70	257.52	274.30	291.02	307.70	324.32	340.89	357.43		
30	762	74.77	111.86	148.75	167.13	185.44	203.72	221.94	234.67	240.11	258.24	276.32	294.34	312.32	330.25	348.13	365.95	383.73		
32	812.8	79.78	119.37	158.77	178.40	197.97	217.50	236.97	256.38	256.40	275.78	295.11	314.39	333.62	352.80	371.93	391.01	410.04		
34	863.6	84.79	126.89	168.79	189.67	210.50	231.28	252.01	266.49	272.69	293.32	313.90	334.43	354.91	375.34	395.73	416.06	436.35		
36	914.4	89.80	134.41	178.81	200.54	223.02	245.06	267.04	282.40	288.97	310.85	332.69	354.47	376.21	397.89	419.53	441.12	462.66		
38	965.2	94.81	141.92	188.84	212.22	235.55	258.84	282.07	298.31	305.26	328.39	351.48	374.52	397.50	420.44	443.33	466.17	488.95		
40	1016	99.82	149.44	198.86	223.49	248.08	272.82	297.10	314.22	321.54	345.93	370.27	394.56	418.80	443.09	467.33	491.23	515.27		
42	1066.8	104.83	156.96	208.88	234.77	260.61	286.40	312.14	330.13	337.83	363.47	389.06	414.60	440.10	465.54	490.94	516.28	541.58		
44	1117.6	109.85	164.47	218.90	246.94	273.13	300.58	327.17	346.03	354.11	380.01	407.85	434.65	461.39	488.08	514.74	541.34	567.89		
46	1168.4	114.86	171.99	228.92	257.82	285.66	313.96	342.20	361.94	370.40	398.55	426.54	454.69	482.69	510.64	538.54	566.39	594.19		
48	1219.2	119.87	179.51	238.95	268.59	298.19	327.74	357.23	377.85	386.58	416.08	445.43	474.73	503.99	533.19	562.34	591.45	620.50		
50	1270	124.88	187.02	248.97	279.87	310.72	341.52	372.27	393.76	402.87	433.62	464.22	494.78	525.28	555.74	586.14	616.50	646.81		
52	1320.8	129.89	194.54	258.99	291.14	323.34	355.30	387.30	409.67	419.25	451.16	483.02	514.82	546.58	578.29	609.95	641.55	673.11		
54	1371.6	134.90	202.05	269.01	302.42	335.77	369.08	402.33	425.58	435.54	468.70	501.81	534.87	567.88	600.84	633.75	666.61	699.42		
56	1422.4	139.91	209.57	279.03	313.89	348.30	382.81	417.37	441.49	451.83	485.24	520.60	554.91	589.17	623.39	657.55	691.65	725.73		
58	1473.2	144.92	217.09	289.05	324.85	360.83	396.64	432.40	457.40	468.11	503.77	539.99	574.95	610.47	645.98	681.35	716.72	752.04		
60	1524	149.93	224.60	299.08	336.24	373.33	410.42	447.63	473.31	484.60	521.31	558.18	595.00	631.78	668.48	705.13	741.77	778.34		
62	1574.8	154.94	232.12	309.10	347.51	385.88	424.20	462.46	489.22	500.68	538.85	576.97	615.04	653.06	691.03	728.95	766.81	804.65		
64	1625.6	159.95	239.64	319.12	358.79	398.41	437.94	477.50	505.33	516.97	556.39	595.76	635.08	674.34	713.54	752.76	791.88	830.95		

Weight/M (Kg/M) = (OD-T) x T x 0.2466

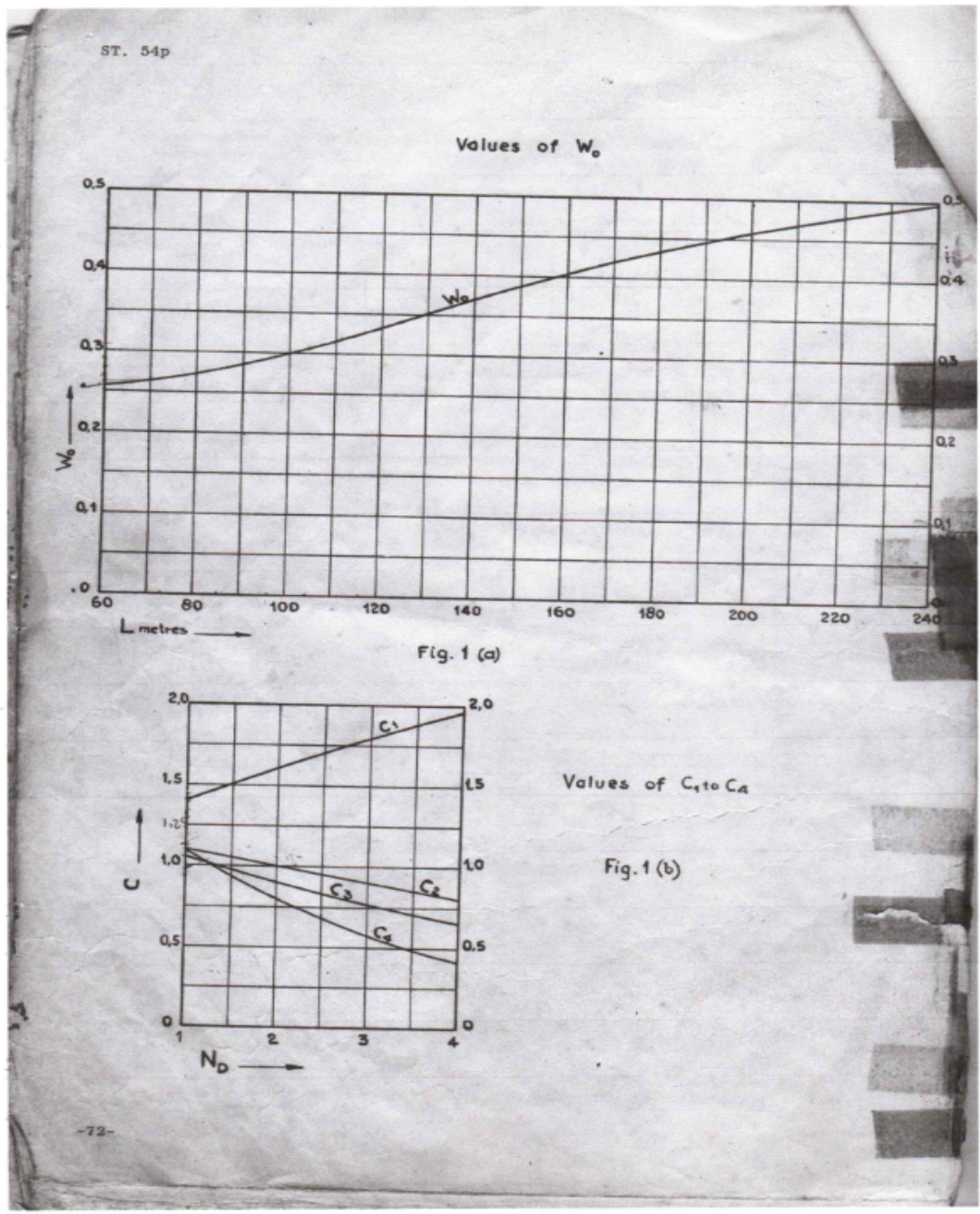
Not Available

NOTE : Non standard sizes are available upon request and subject to minimum quantity.

OD = Outside Diameter (mm)
T = Thickness (mm)

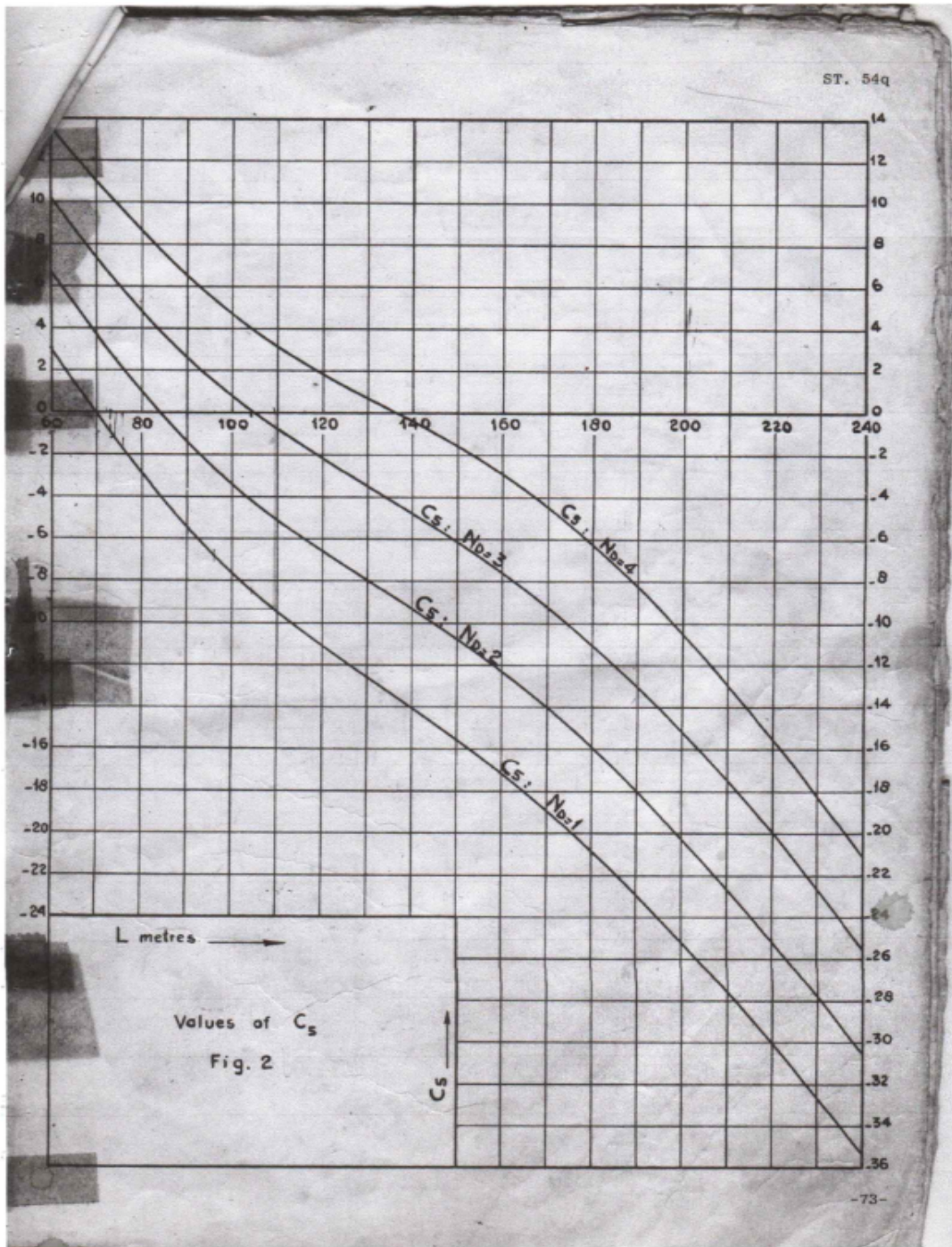
Lampiran 28

Grafik W_0 , C_1 , C_2 , C_3 Dan C_4



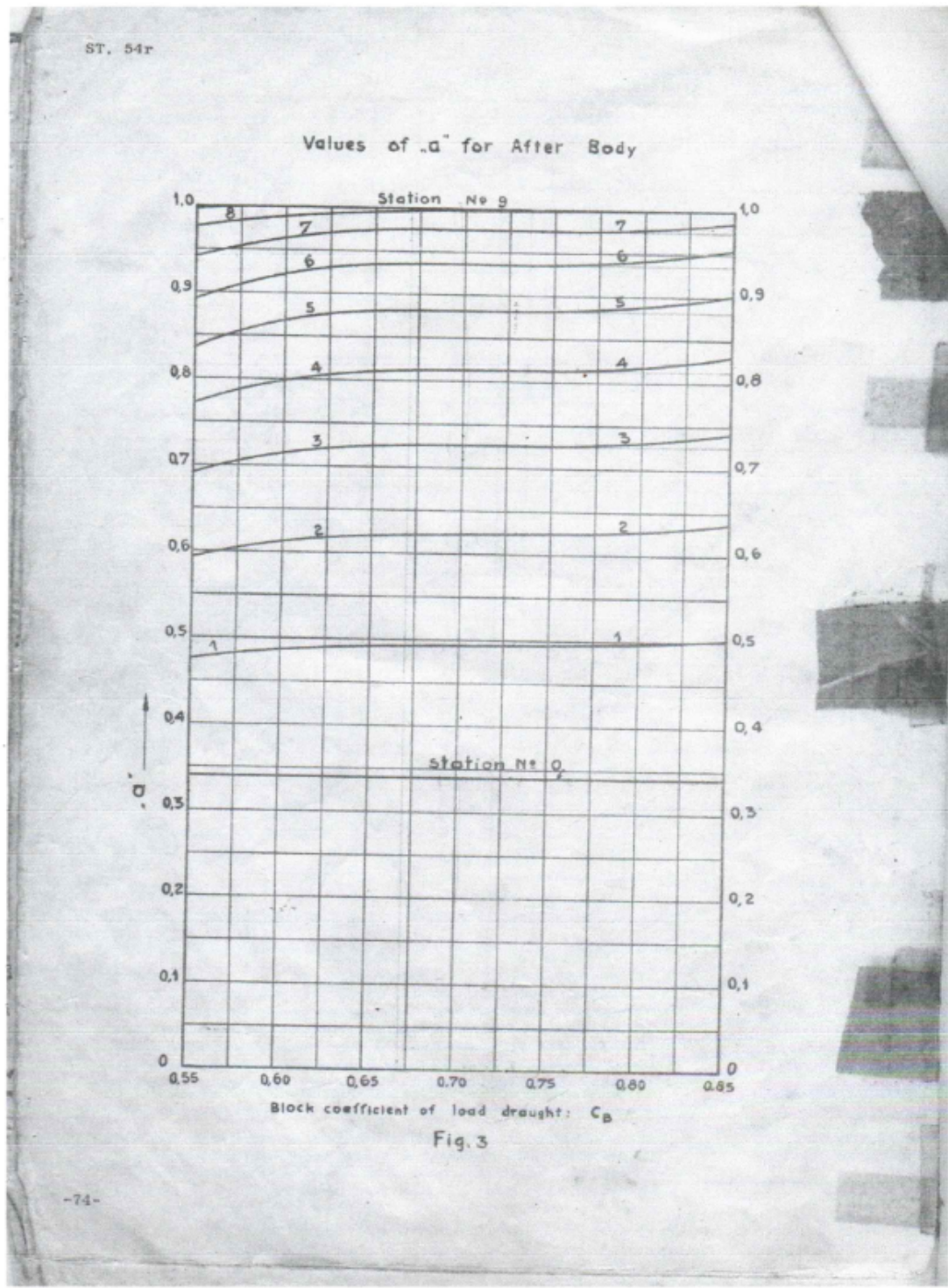
Lampiran 29

Grafik C5



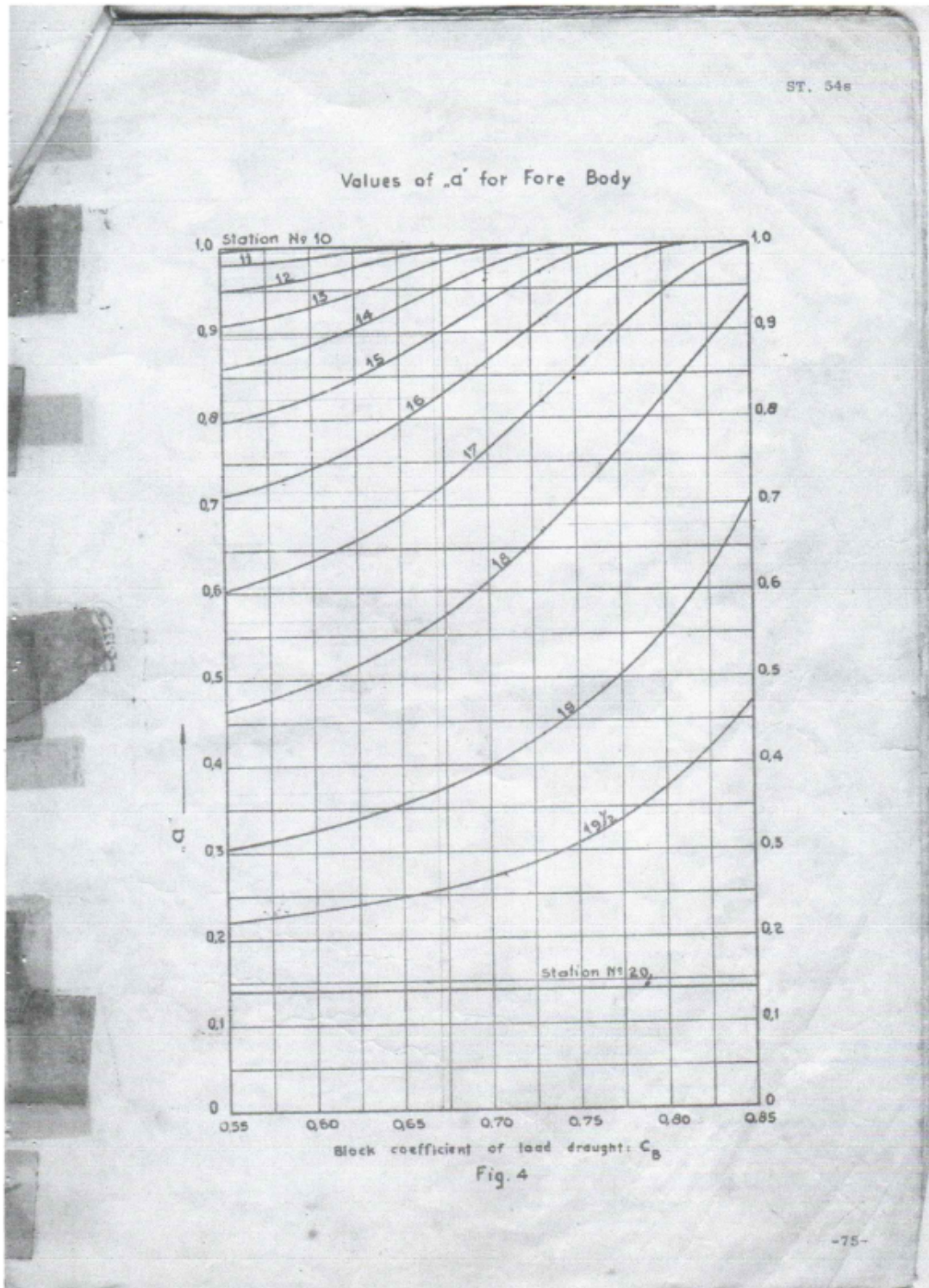
Lampiran 30

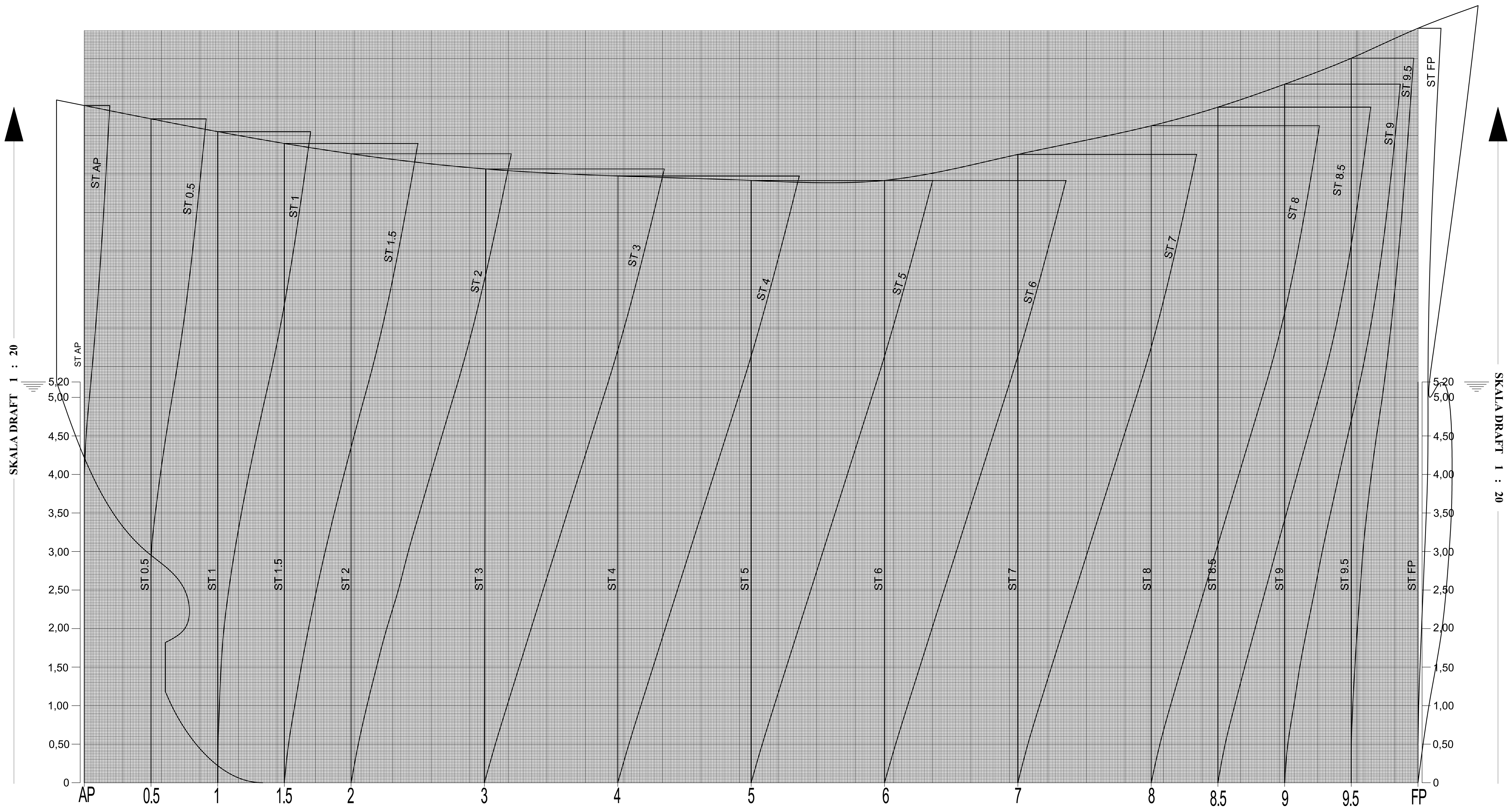
Grafik α For After Body



Lampiran 31

Grafik α For Fore Body



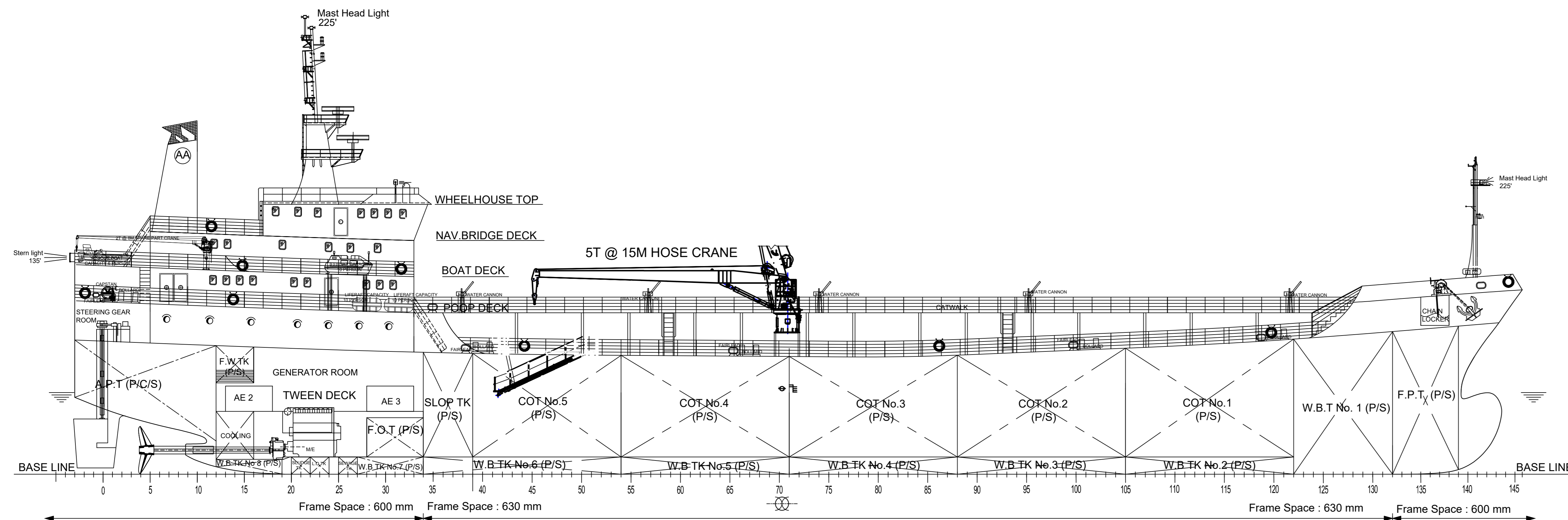


SKALA PANJANG
SKALA LUASAN

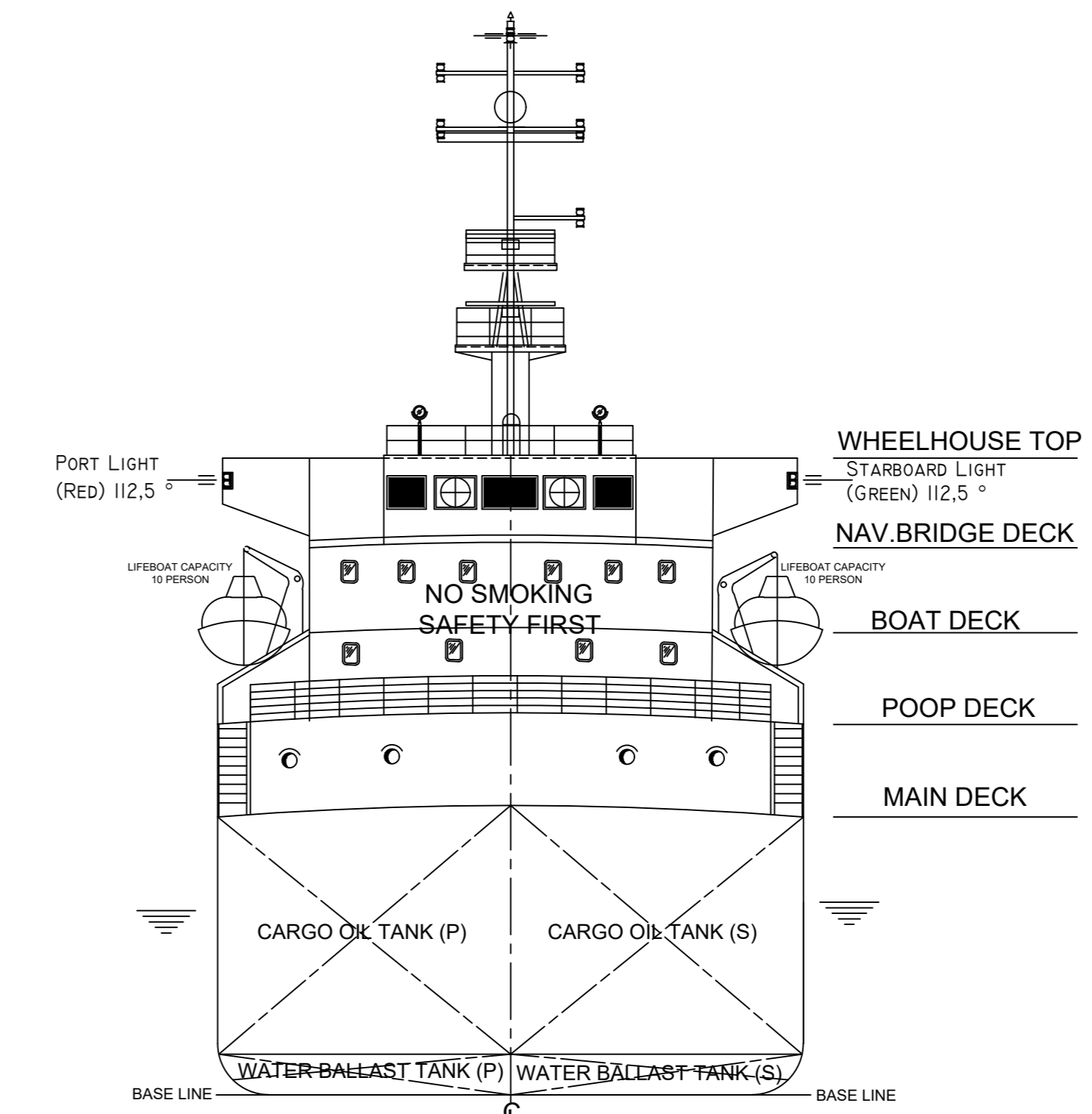
1 : 100
1 : 1000

PRINCIPLE DIMENSION	
LENGHT OVER ALL (LOA)	92.20 M
LENGHT BETWEEN PERPENDICULAR (LPP)	86.50 M
LENGHT WATER LINE (LWL)	88.30 M
BREADTH (B)	15.80 M
HEIGHT (H)	7.50 M
DRAFT (T)	5.20 M
SPEED (VS)	12 KNOTS
COEFFICIENT BLOCK (CB)	0.749
COEFFICIENT MIDSHIP (CM)	0.989
COEFFICIENT WATERLINE (CW)	0.823
COEFFICIENT PRISMATIC (CP)	0.757
DISPLACEMENT (Δ)	5456.098 TON

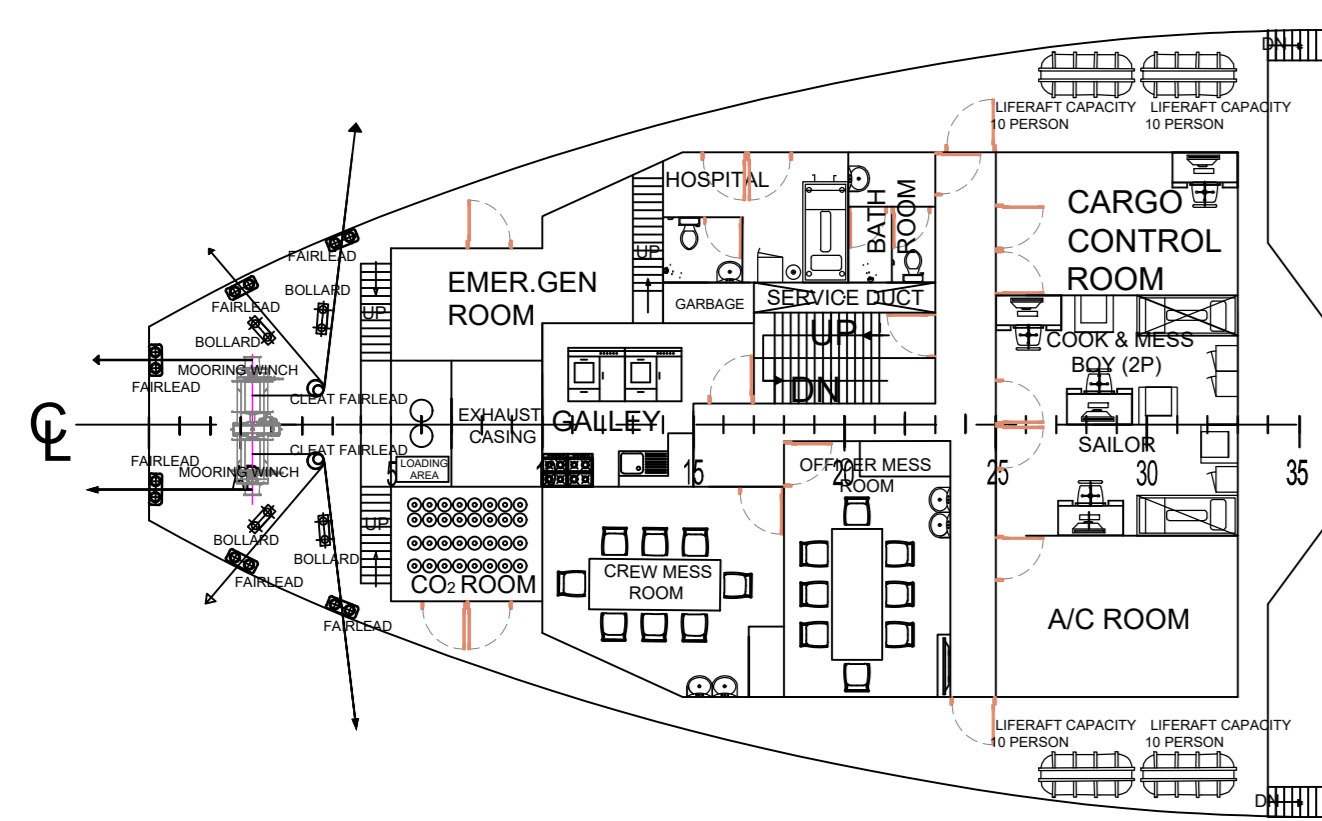
JURUSAN TEKNIK PERKAPALAN FAKULTAS TEKNOLOGI KELAUTAN UNIVERSITAS DARMA PERSADA			
SKALA	TANGGAL	PARAF	KET.
DIGAMBAR	AMELIA AZWAR		
N.I.M	2016310014		
DIPERIKSA	Ir. AUGUSTINUS PUSAKA, ST.M.SI		
DISETUJUI	Ir. AUGUSTINUS PUSAKA, ST.M.SI		
PERENCANAAN :	3750 DWT PRODUCT OIL TANKER		
GAMBAR :	BONJEAN CURVE'S		



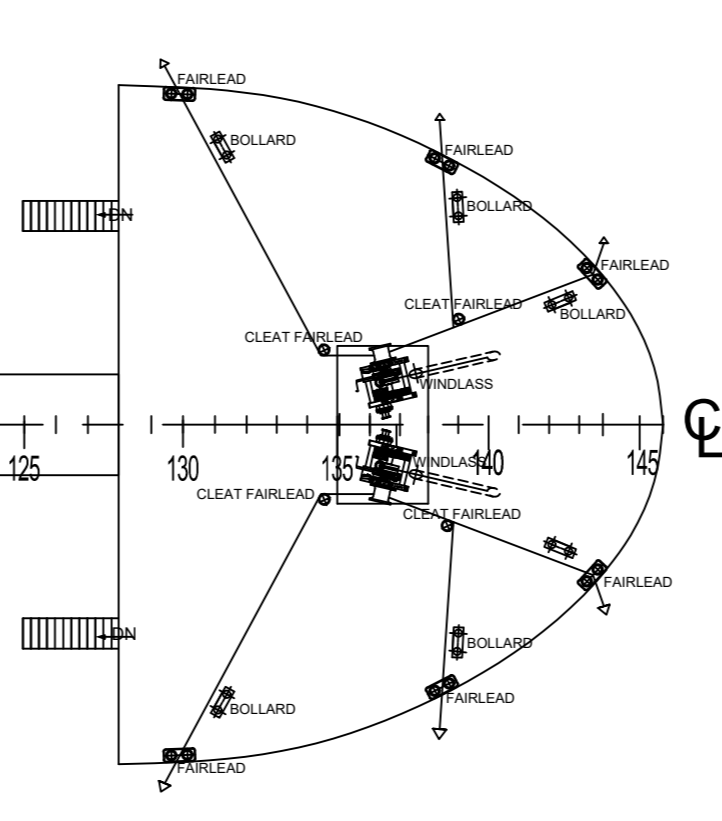
TAMPAK DEPAN



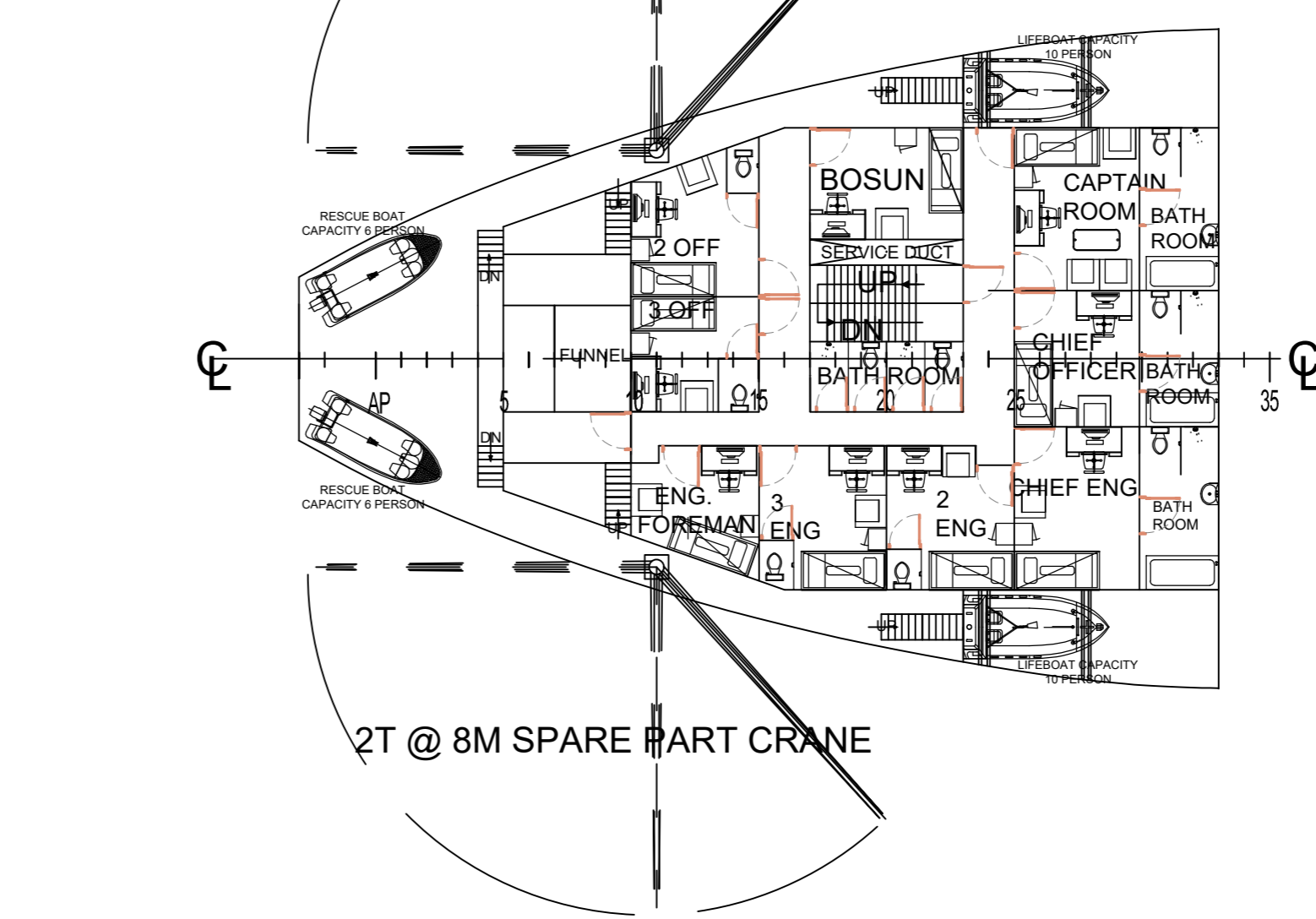
POOP DECK



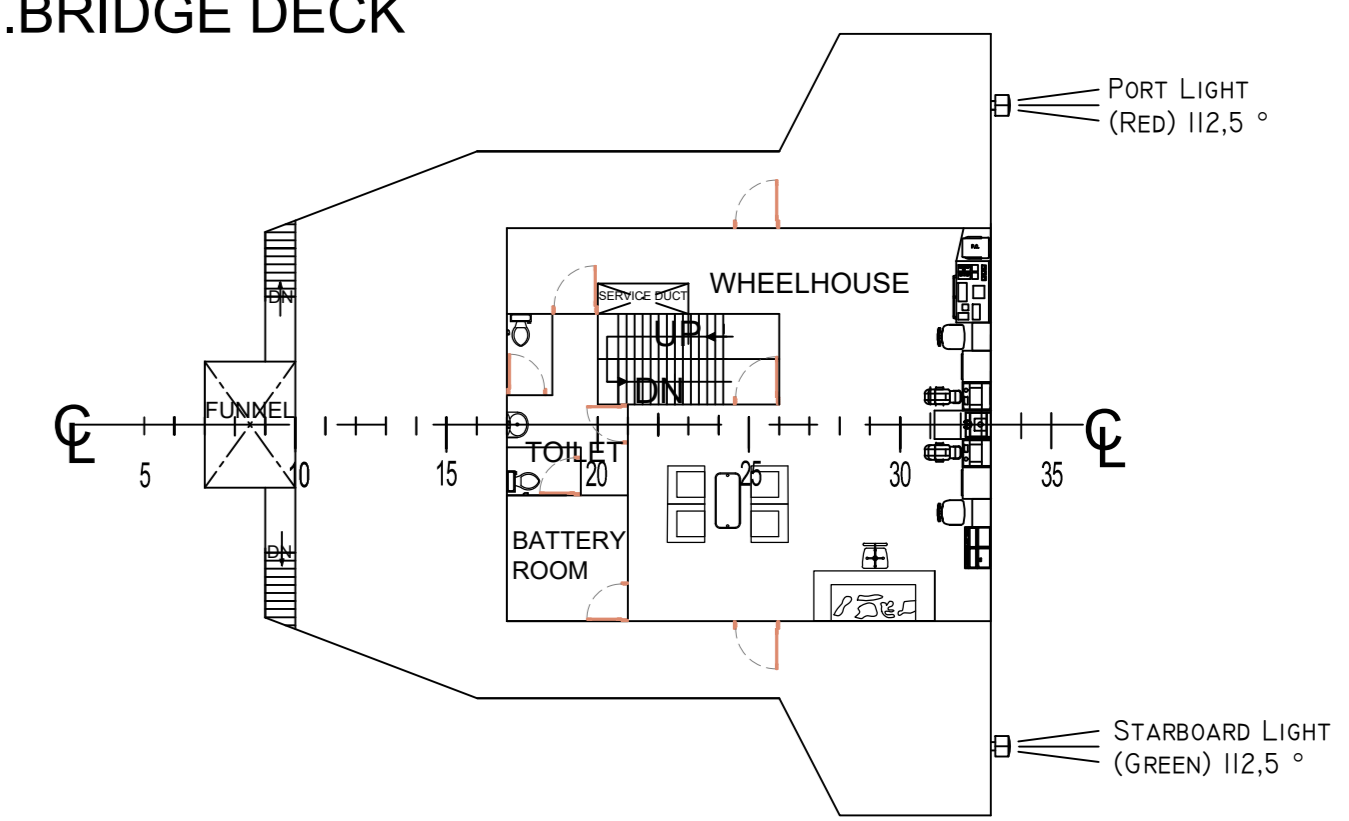
FORECASTLE DECK



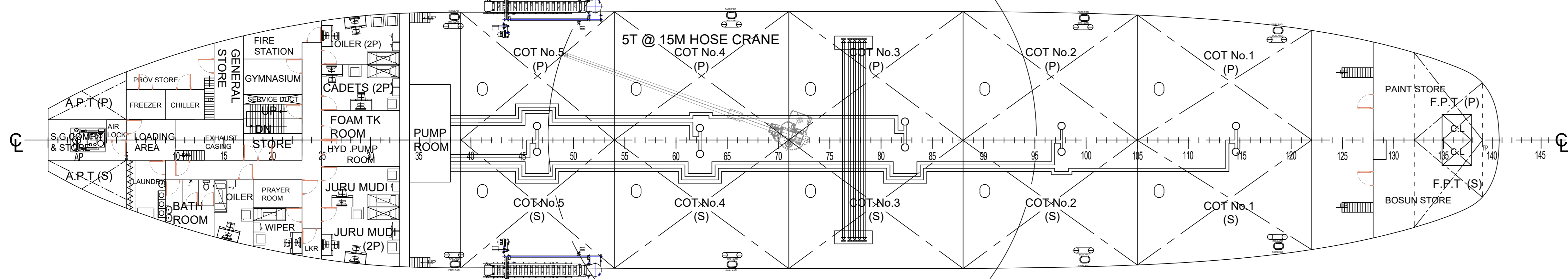
BOAT DECK



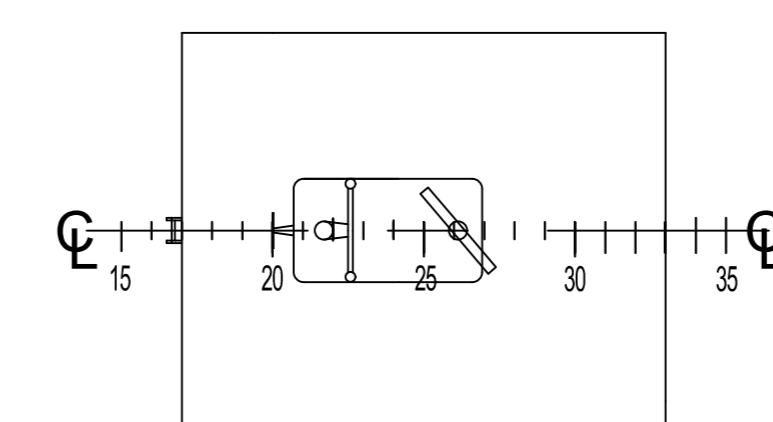
NAV. BRIDGE DECK



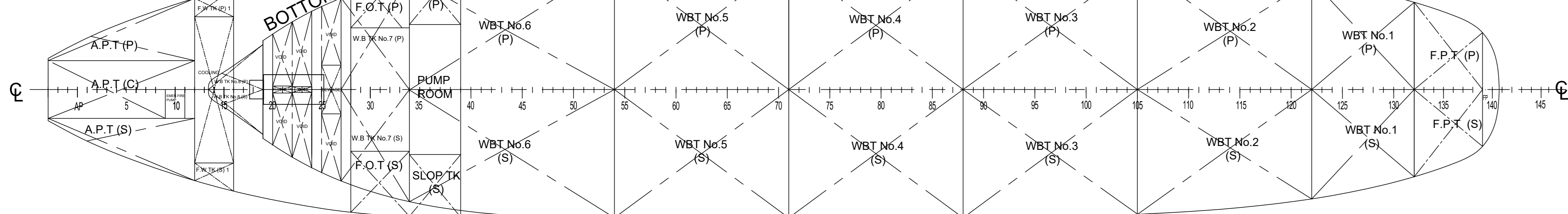
MAIN DECK



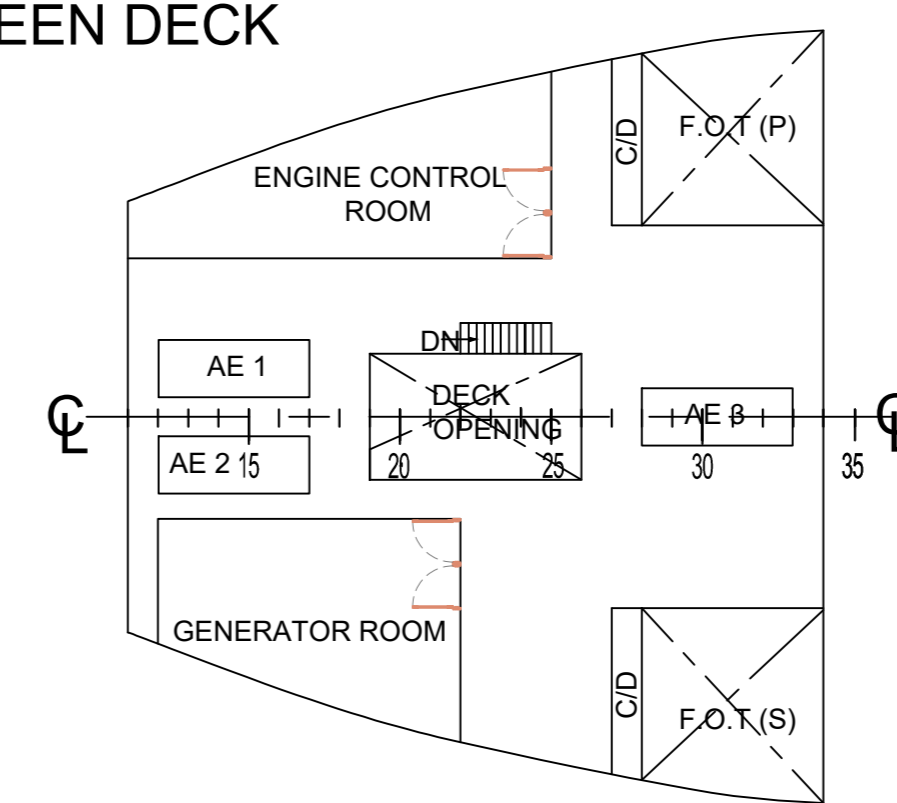
WHEELHOUSE TOP



BELOW MAIN DECK

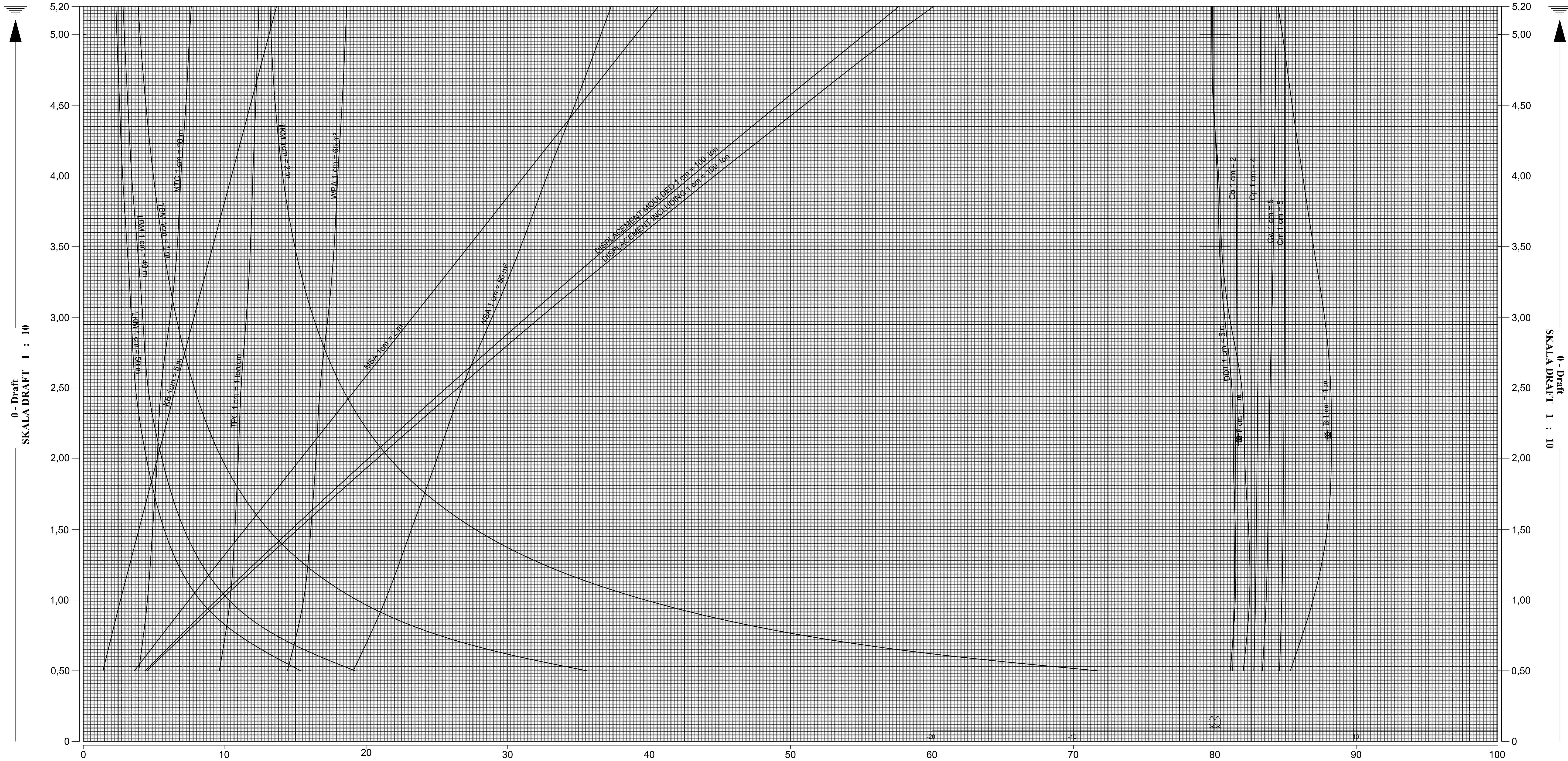


TWEEN DECK



PRINCIPLE DIMENSION		
LENGHT OVER ALL (LOA)		92.20 M
LENGHT BETWEEN PERPENDICULAR (LPP)		86.50 M
LENGHT WATER LINE (LWL)		88.30 M
BREADTH (B)		15.80 M
HEIGHT (H)		7.50 M
DRAFT (T)		5.20 M
SPEED (VS)		12.56 KNOTS
COEFFICIENT BLOCK (CB)		0.806
COEFFICIENT MIDSHIP (CM)		0.990
COEFFICIENT WATERLINE (CW)		0.868
COEFFICIENT PRISMATIC (CP)		0.815
DISPLACEMENT (D)		5993.733 TON
CLASS		NIPPON KAI KYOKAI
CREWS		21 PERSON

JURUSAN TEKNIK PERKAPALAN FAKULTAS TEKNOLOGI KELAUTAN UNIVERSITAS DARMA PERSADA				
SKALA	1 : 150	TANGGAL	PARAF	KET.
DIGAMBAR	AMELIA AZIWAR			
N.I.M	2016310014			
DIPERIKSA	Dr. ARIF FADILLAH, ST.,M.Eng,Ph.D			
DISETUJUI	Dr. ARIF FADILLAH, ST.,M.Eng,Ph.D			
PERENCANAAN :	3750 DWT PRODUCT OIL TANKER			
GAMBAR :	GENERAL ARRANGEMENT			



0 - Draft
SKALA DRAFT 1 : 10

0 - Draft
SKALA DRAFT 1 : 10

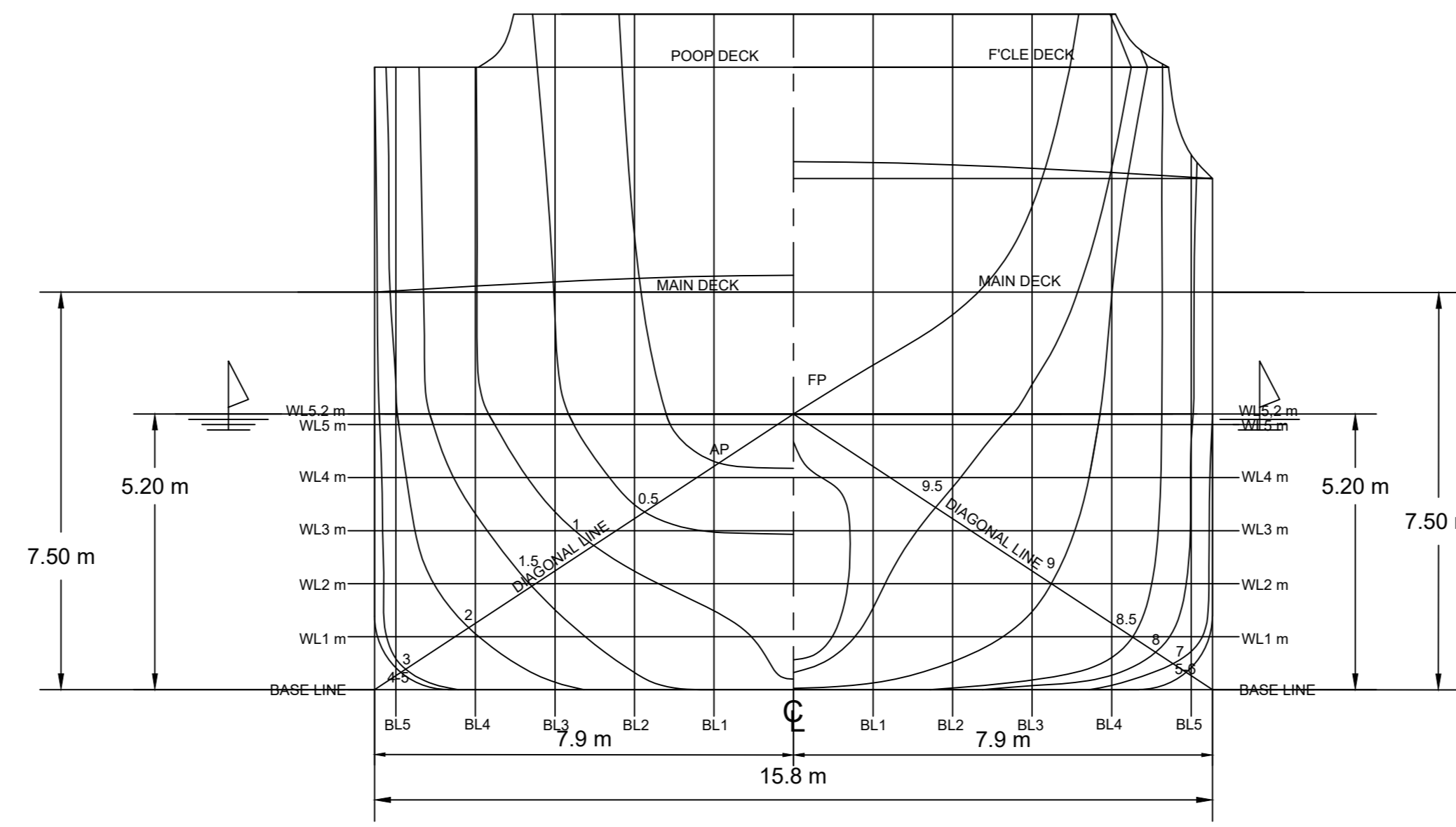
Skala Panjang 1 : 100

PRINCIPLE DIMENSION		
LENGTH OVER ALL	(LOA)	92.20 M
LENGTH BETWEEN PERPENDICULAR	(LPP)	86.50 M
LENGTH WATER LINE	(LWL)	88.30 M
BREADTH	(B)	15.80 M
HEIGHT	(H)	7.50 M
DRAFT	(T)	5.20 M
SPEED	(VS)	12 KNOTS
COEFFICIENT BLOCK	(CB)	0.749
COEFFICIENT MIDSHIP	(CM)	0.989
COEFFICIENT WATERLINE	(CW)	0.823
COEFFICIENT PRISMATIC	(CP)	0.757
DISPLACEMENT	(Δ)	5456.098 TON

JURUSAN TEKNIK PERKAPALAN FAKULTAS TEKNOLOGI KELAUTAN UNIVERSITAS DARMA PERSADA				
SKALA	TANGGAL	PARAF	KET.	
DIGAMBAR	AMELIA AZWAR			
N.I.M	2016310014			
DIPERIKSA	Ir. AUGUSTINUS PUSAKA, ST.M.Si			
DISETUJUI	Ir. AUGUSTINUS PUSAKA, ST.M.Si			
PERENCANAAN :	3750 DWT PRODUCT OIL TANKER			
GAMBAR :	<i>HIDROSTATIC CURVE'S</i>			

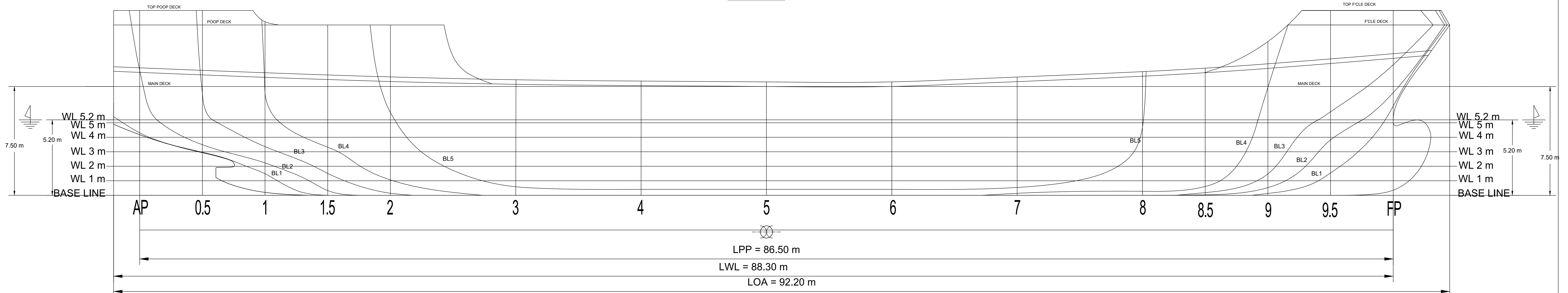
BODY PLAN

Ordinat Garis	HEIGHT OF BOW AND BUTTOCK LINE					MAIN DECK	F'CLE & POOP DECK	TOP F'CLE & POOP DECK
	BL 1	BL 2	BL 3	BL 4	BL 5			
AP	4.304	—	—	—	—	7.500	11.741	12.741
0.5	2.973	3.488	—	—	—	7.500	11.741	12.741
1	1.488	2.235	3.353	—	—	7.500	11.741	—
1.5	—	0.324	1.509	3.317	—	7.500	11.741	—
2	—	—	0.141	1.057	—	7.500	11.741	—
3	—	—	—	—	0.586	7.500	—	—
4	—	—	—	—	0.411	7.500	—	—
5	—	—	—	—	0.411	7.500	—	—
6	—	—	—	—	0.411	7.500	—	—
7	—	—	—	0.083	0.724	7.500	—	—
8	—	—	0.077	0.275	4.701	7.500	—	—
8.5	—	0.032	0.183	0.607	—	7.500	—	—
9	0.126	0.526	1.475	—	—	7.500	11.741	—
9.5	1.539	3.819	—	—	—	7.500	11.741	12.741
FP	—	—	—	—	—	7.500	11.741	12.741

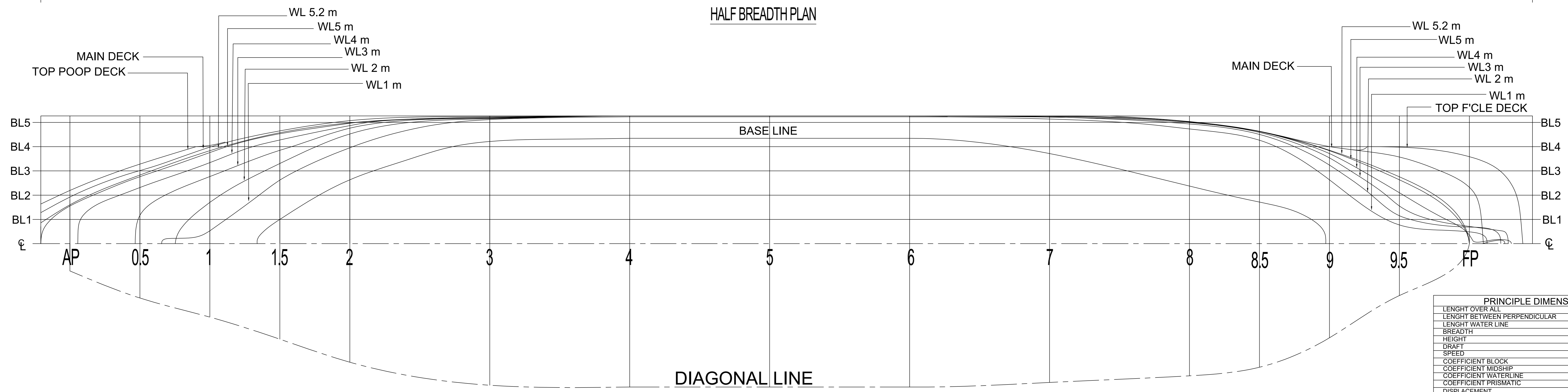


ORDINAT GARIS	WATER LINE (WL)						MAIN DECK	F'CLE & POOP DECK	TOP F'CLE & POOP DECK	
	BASE LINE	WL 1	WL 2	WL 3	WL 4	WL 5				WL 5.2
AP	—	—	—	—	—	2.326	2.403	2.876	3.236	3.291
0.5	—	—	—	1.748	3.473	4.144	4.243	4.522	4.832	4.921
1	—	0.794	2.552	4.148	5.010	5.635	5.751	5.970	5.982	—
1.5	1.500	3.930	4.981	5.775	6.413	6.799	6.862	6.977	6.065	—
2	3.950	5.932	6.786	7.142	7.305	7.446	7.473	7.610	7.687	—
3	6.320	7.676	7.727	7.750	7.764	7.805	7.814	7.851	7.900	—
4	6.516	7.846	7.900	7.900	7.900	7.900	7.900	7.900	7.900	—
5	6.516	7.846	7.900	7.900	7.900	7.900	7.900	7.900	7.900	—
6	6.516	7.846	7.900	7.900	7.900	7.900	7.900	7.900	7.900	—
7	5.574	7.712	7.833	7.837	7.850	7.890	7.900	7.900	—	—
8	3.560	7.094	7.405	7.485	7.485	7.522	7.539	7.554	—	—
8.5	2.571	6.398	6.758	6.879	6.928	6.945	6.947	6.953	—	—
9	—	3.949	4.861	5.306	5.572	5.748	5.779	6.006	6.674	—
9.5	—	1.157	1.727	2.331	3.148	3.948	4.136	5.360	6.369	5.971
FP	—	0.729	1.025	1.064	0.530	—	—	3.485	5.213	5.380

SHEER PLAN



HALF BREADTH PLAN



DIAGONAL LINE

PRINCIPLE DIMENSION		
LENGH OVER ALL	(LOA)	92.20 M
LENGH BETWEEN PERPENDICULAR	(LPP)	86.50 M
LENGH WATER LINE	(LWL)	88.30 M
BREADTH	(B)	15.80 M
HEIGHT	(H)	7.50 M
DRAFT	(T)	5.20 M
SPEED	(VS)	12 KNOTS
COEFFICIENT BLOCK	(CB)	0.749
COEFFICIENT MIDSHIP	(CM)	0.989
COEFFICIENT WATERLINE	(CW)	0.623
COEFFICIENT PRISMATIC	(CP)	0.757
DISPLACEMENT	(Δ)	5456.098 TON

JURUSAN TEKNIK PERKAPALAN
FAKULTAS TEKNOLOGI KELAUTAN
UNIVERSITAS DARMA PERSADA

SKALA	1 : 100	TANGGAL	PARAF	KET.
DIGAMBAR	AMELIA AZWAR			
N.I.M	2016310014			
DIPERIKSA	Ir. AUGUSTINUS PUSAKA, ST, M, SI			
DISETUIJUI	Ir. AUGUSTINUS PUSAKA, ST, M, SI			
PERENCANAAN	3750 DWT PRODUCT OIL TANKER			
GAMBAR	LINES PLAN			

KAMAR MESIN
WEB FRAME NO 20
SOLID FLOOR TYPE

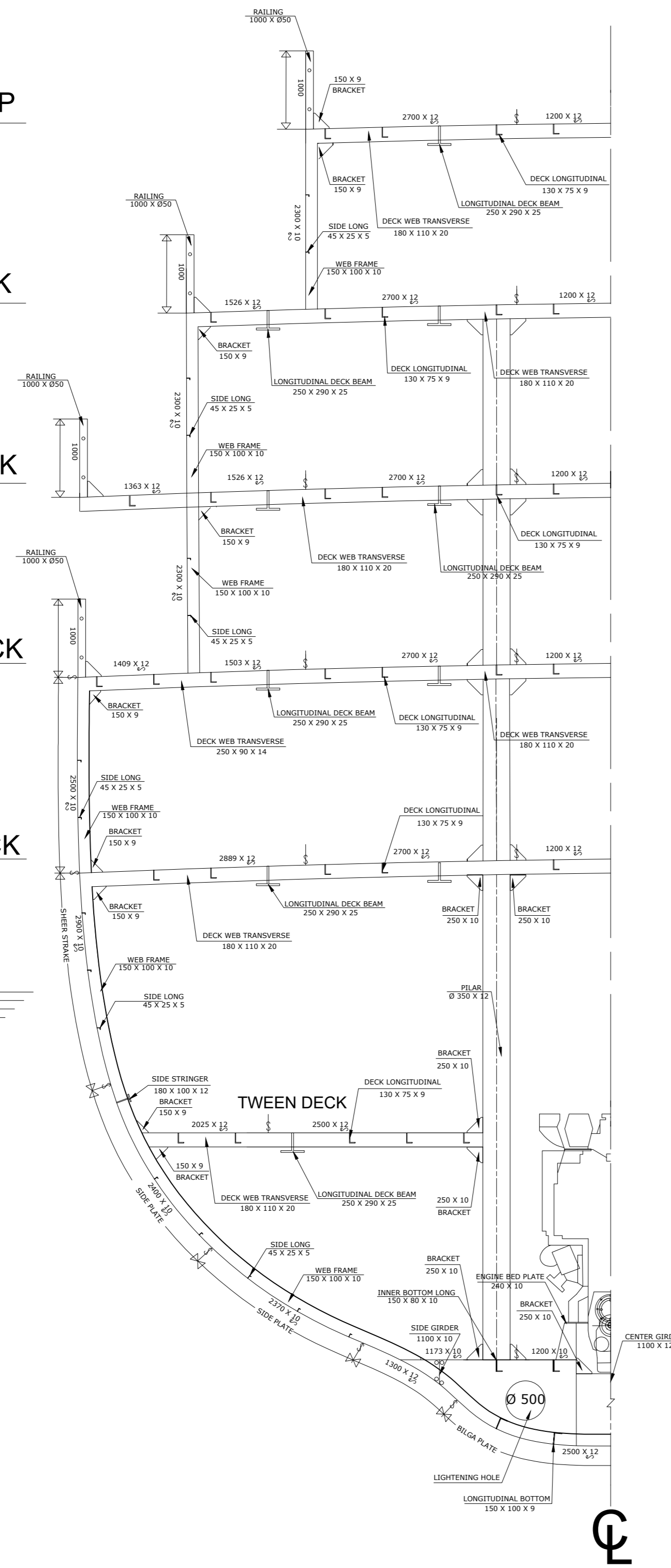
WHEELHOUSE TOP

NAV.BRIDGE DECK

BOAT DECK

POOP DECK

MAIN DECK



KAMAR MESIN
ORDINARY FRAME NO 24
OPEN FLOOR TYPE

WHEELHOUSE TOP

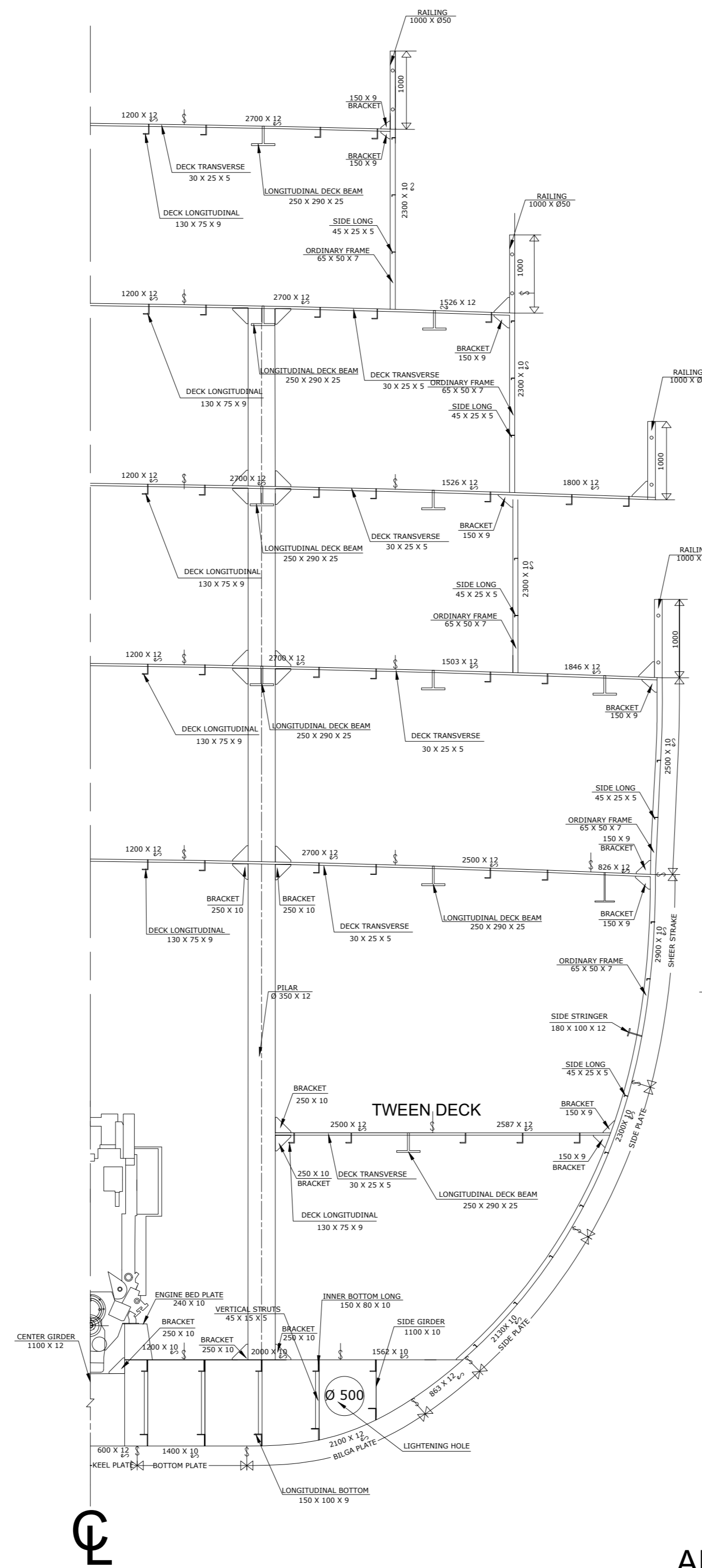
NAV.BRIDGE DECK

BOAT DECK

POOP DECK

MAIN DECK

MAIN DECK



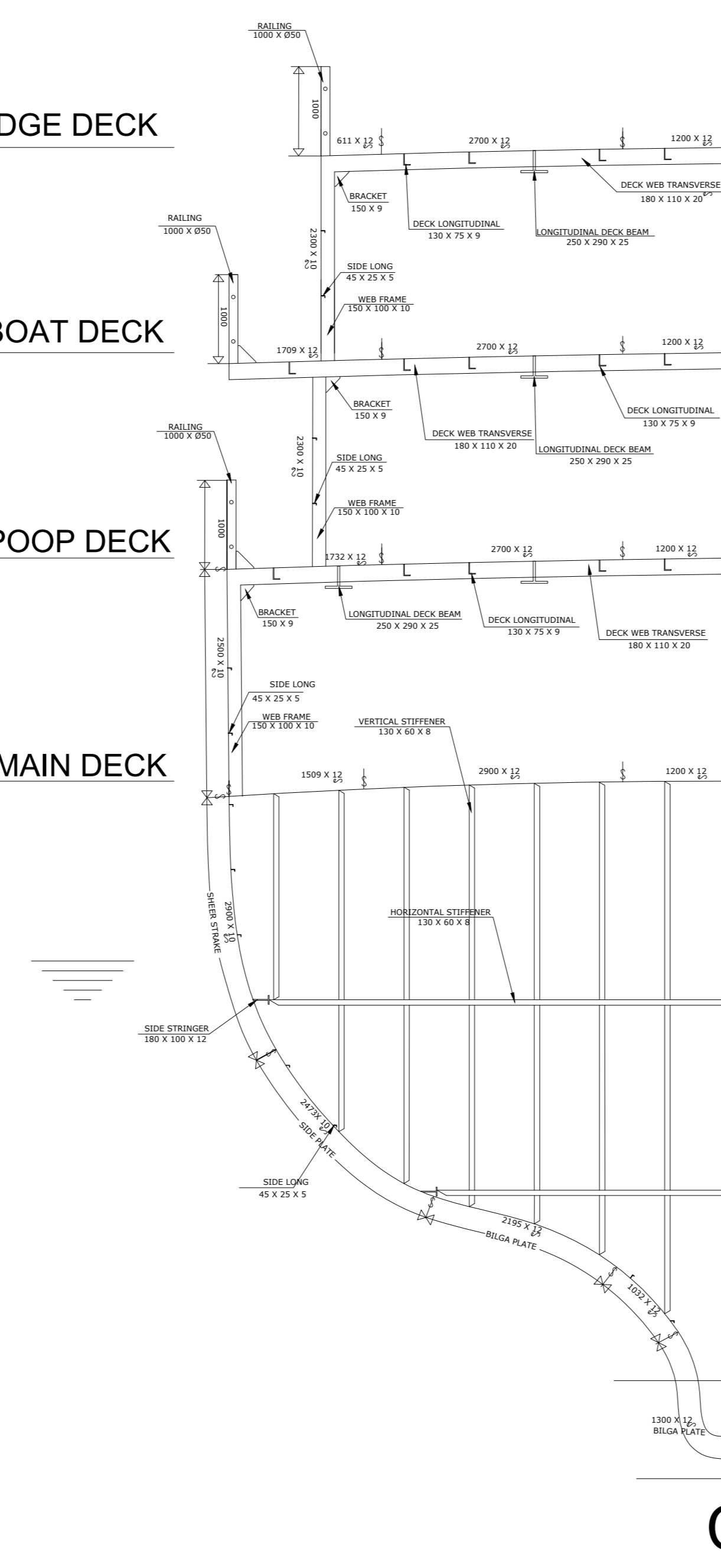
FRAME 12
AFTER PEAK BULKHEAD

NAV.BRIDGE DECK

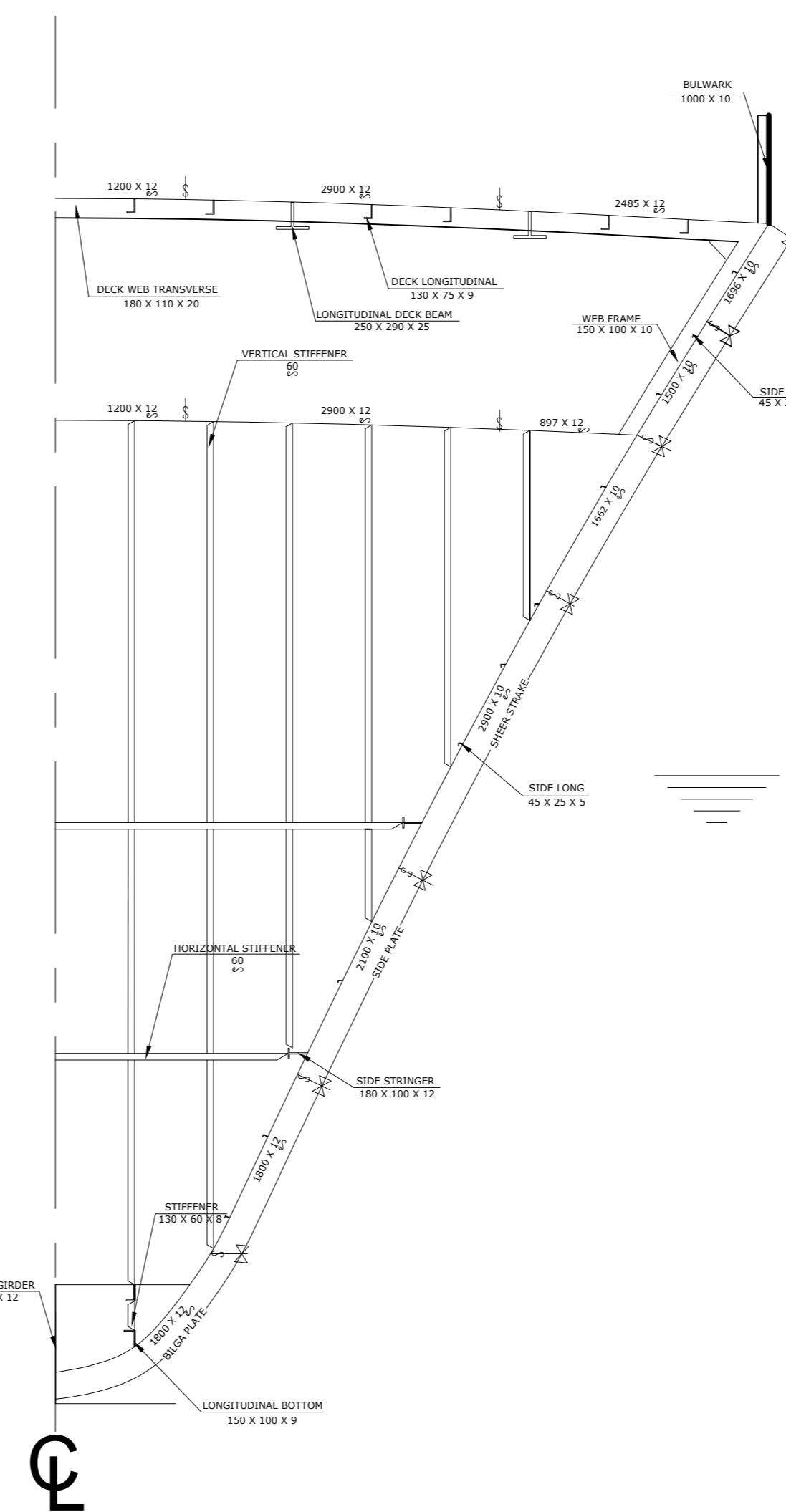
BOAT DECK

POOP DECK

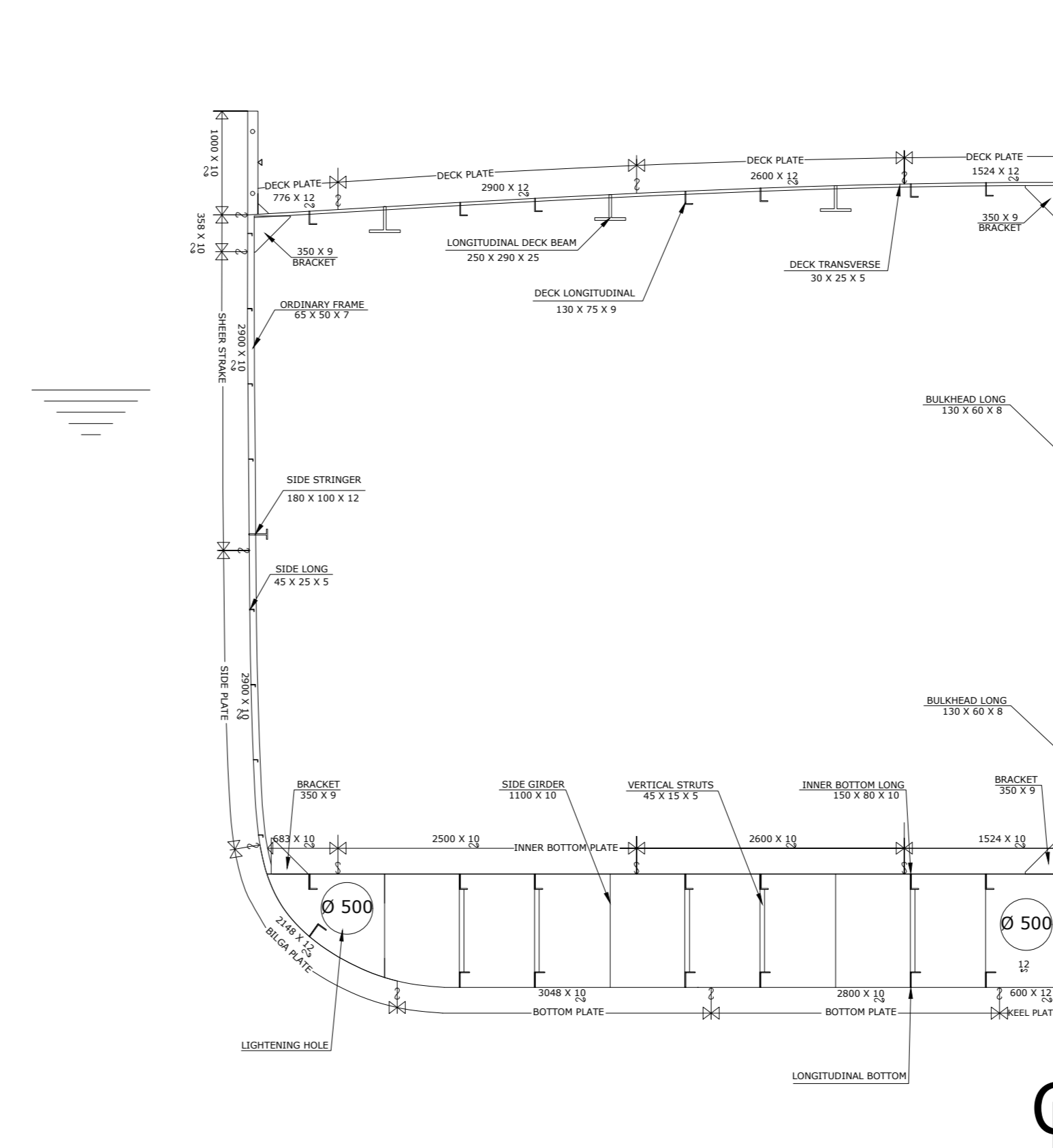
MAIN DECK



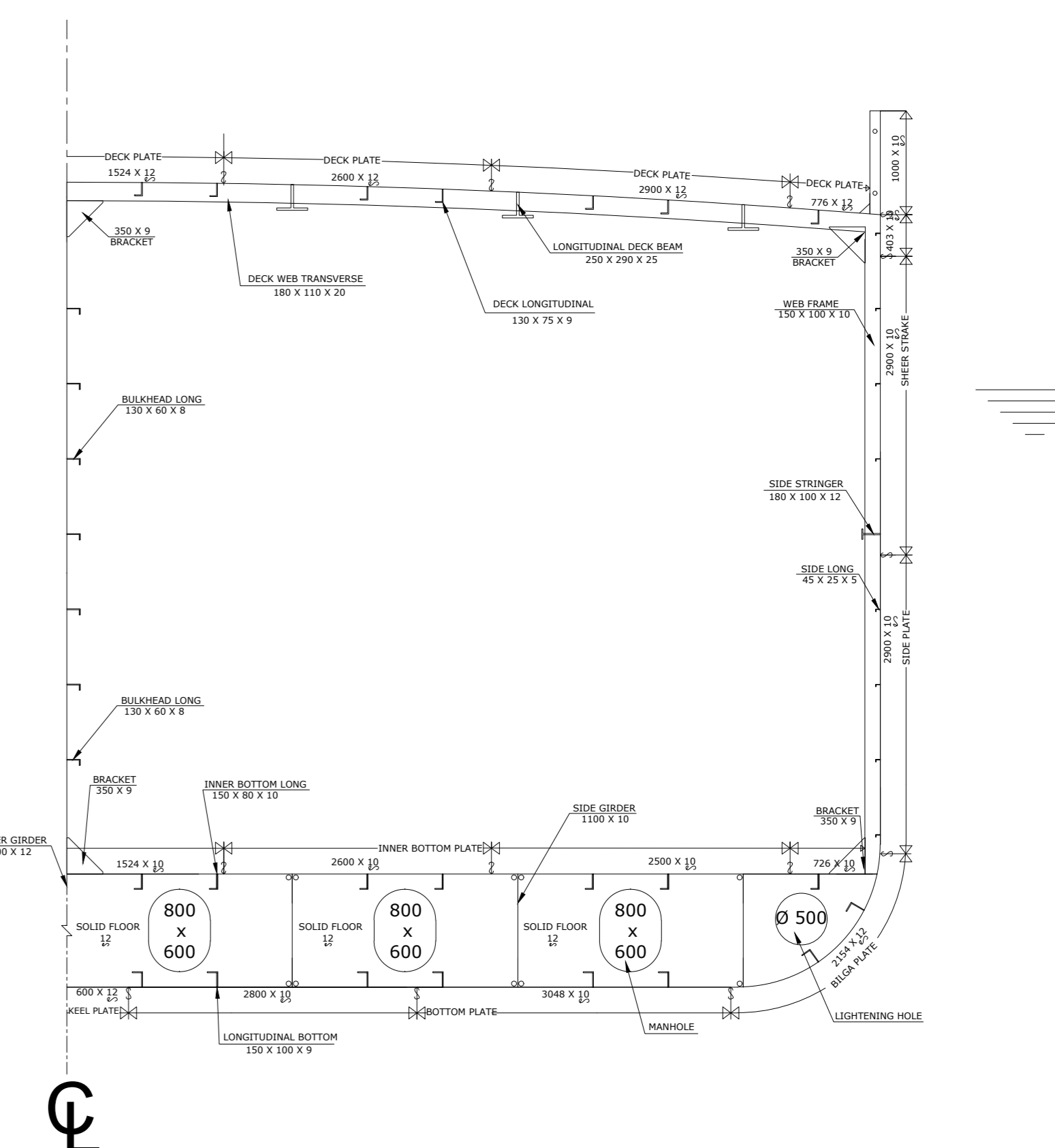
FRAME 132
COLLISION BULKHEAD



MIDSHIP ORDINARY FRAME
NO 94
OPEN FLOOR TYPE

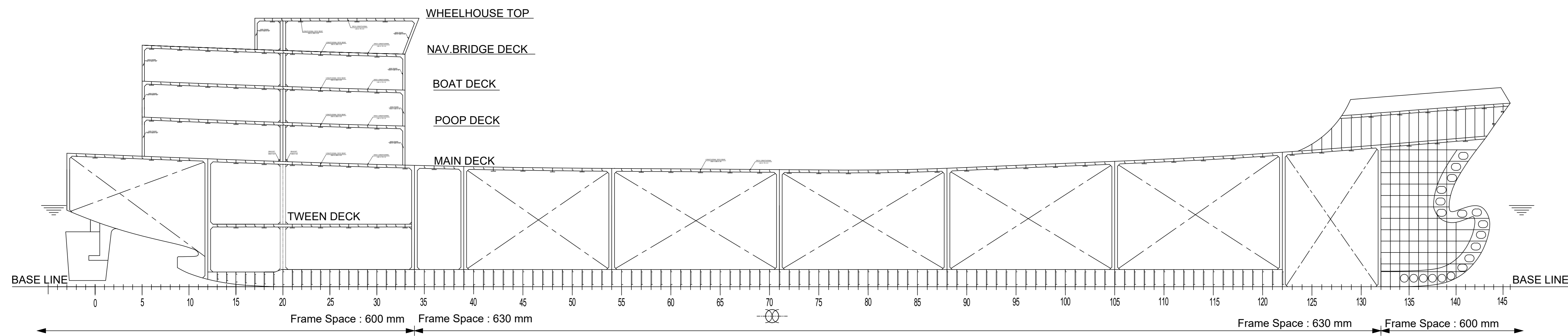


MIDSHIP WEB FRAME
NO 70
SOLID FLOOR TYPE



PRINCIPLE DIMENSION		
LENGHT OVER ALL (LOA)		92.20 M
LENGHT BETWEEN PERPENDICULAR (LPP)		86.50 M
LENGHT WATER LINE (LWL)		88.30 M
BREADTH (B)		15.80 M
HEIGHT (H)		7.50 M
DRAFT DESIGN (T)		5.20 M
DRAFT SCANTLING (T)		5.50 M
SPEED (VS)		12.56 KNOTS
COEFFICIENT BLOCK (CB)		0.806
COEFFICIENT MIDSHIP (CM)		0.990
COEFFICIENT WATERLINE (CW)		0.868
COEFFICIENT PRISMATIC (CP)		0.815
DISPLACEMENT (Δ)		5993.733 TON
CLASS		NIPPON KAIJI KYOKAI
CREWS		21 PERSON

JURUSAN TEKNIK PERKAPALAN FAKULTAS TEKNOLOGI KELAUTAN UNIVERSITAS DARMA PERSADA				
SKALA	1 : 50	TANGGAL	PARAF	KET.
DIGAMBAR	AMELIA AZWAR			
N.I.M	2016310014			
DIPERIKSA	ARIF FADILLAH, ST.,M.Eng,Ph.D			
DISETUJUI	ARIF FADILLAH, ST.,M.Eng,Ph.D			
PERENCANAAN :	3750 DWT PRODUCT OIL TANKER			
GAMBAR :	MIDSHIP SECTION			



- DECK LONGITUDINAL 130 x 75 x 8
- LONGITUDINAL DECK BEAM 250 X 290 X 28
- BULKHEAD 8
- WEB FRAME 150 X 100 X 10
- ORDINARY FRAME 65 X 50 X 7
- BRACKET 150 X 8

- DECK LONGITUDINAL 130 x 75 x 8
- LONGITUDINAL DECK BEAM 250 X 290 X 28
- CARGO HOLD BULKHEAD 8
- WEB FRAME 150 X 100 X 10
- ORDINARY FRAME 65 X 50 X 7
- BRACKET 150 X 8

- DECK LONGITUDINAL 130 x 75 x 8
- LONGITUDINAL DECK BEAM 250 X 290 X 28
- COLLISION BULKHEAD 10
- WEB FRAME 150 X 100 X 10
- ORDINARY FRAME 65 X 50 X 7
- BRACKET 150 X 8

POOP DECK

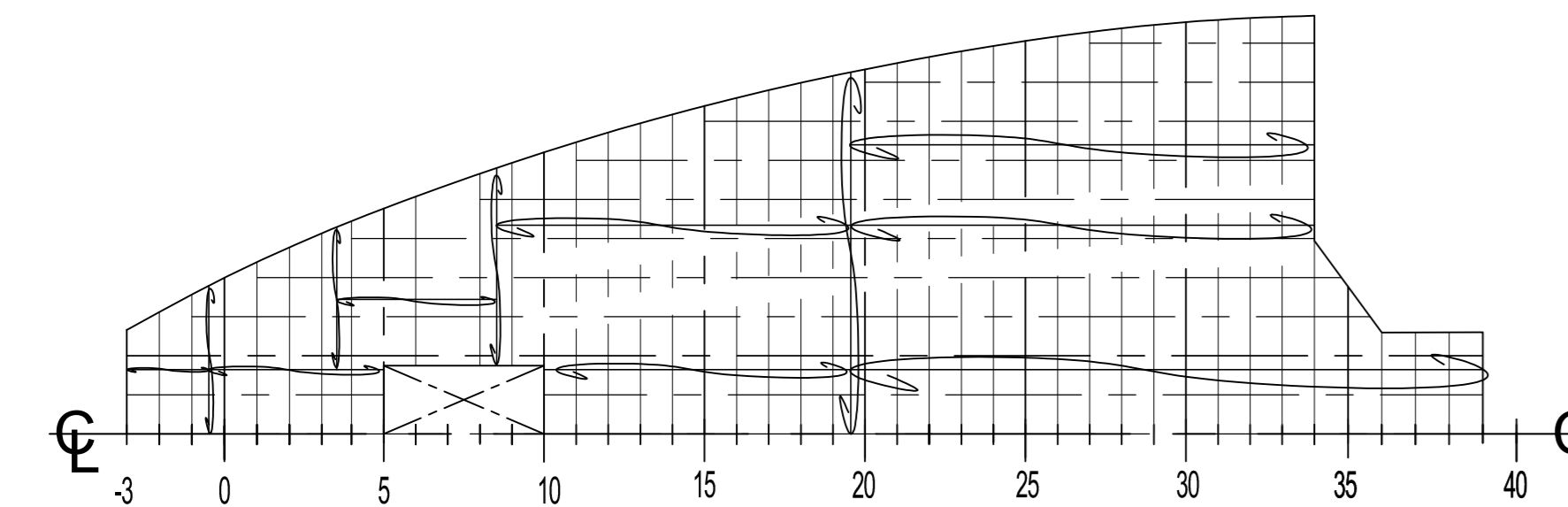
TWEEN DECK

BOAT DECK

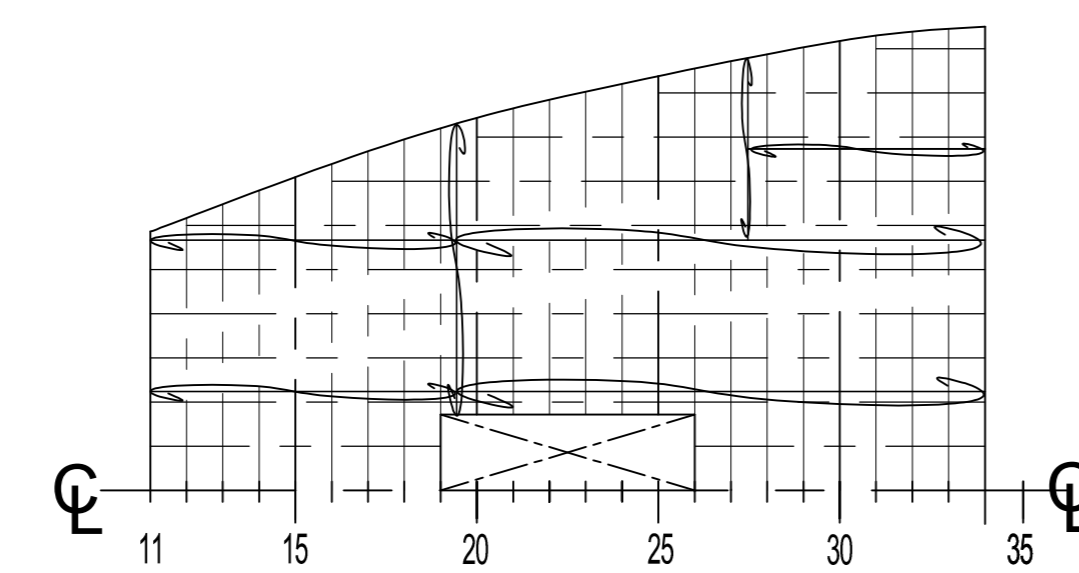
NAV. BRIDGE DECK

WHEELHOUSE TOP

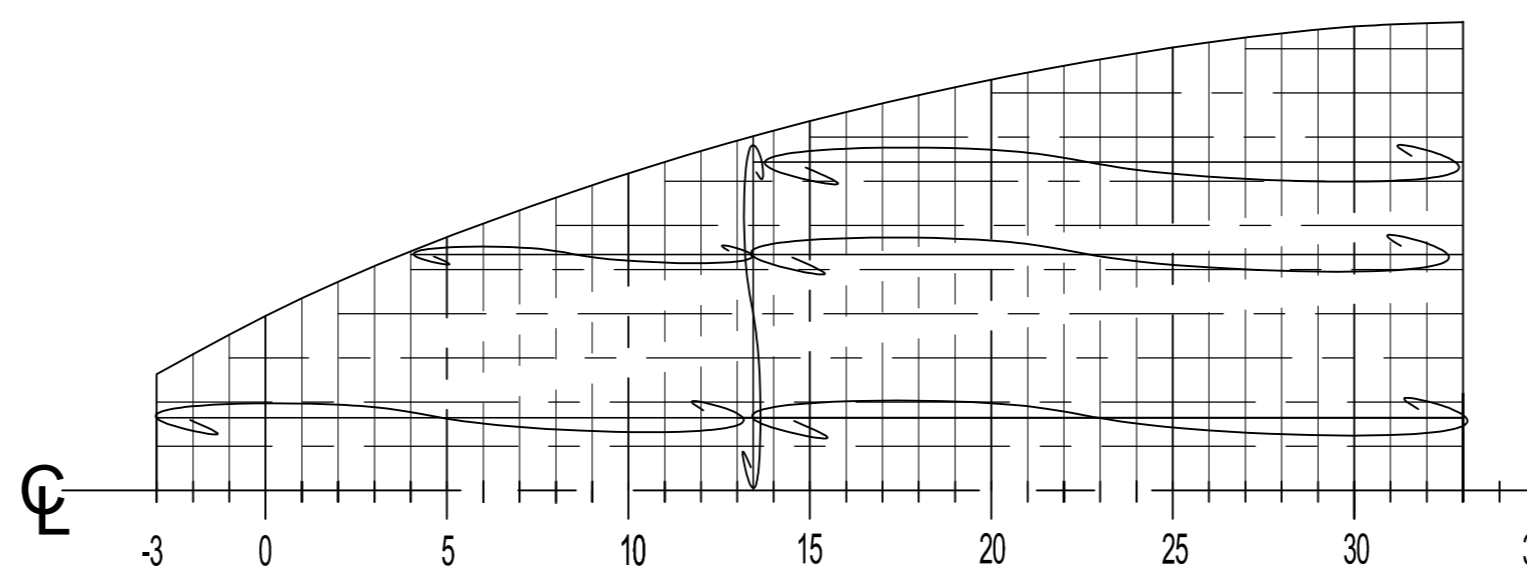
FORECASTLE DECK



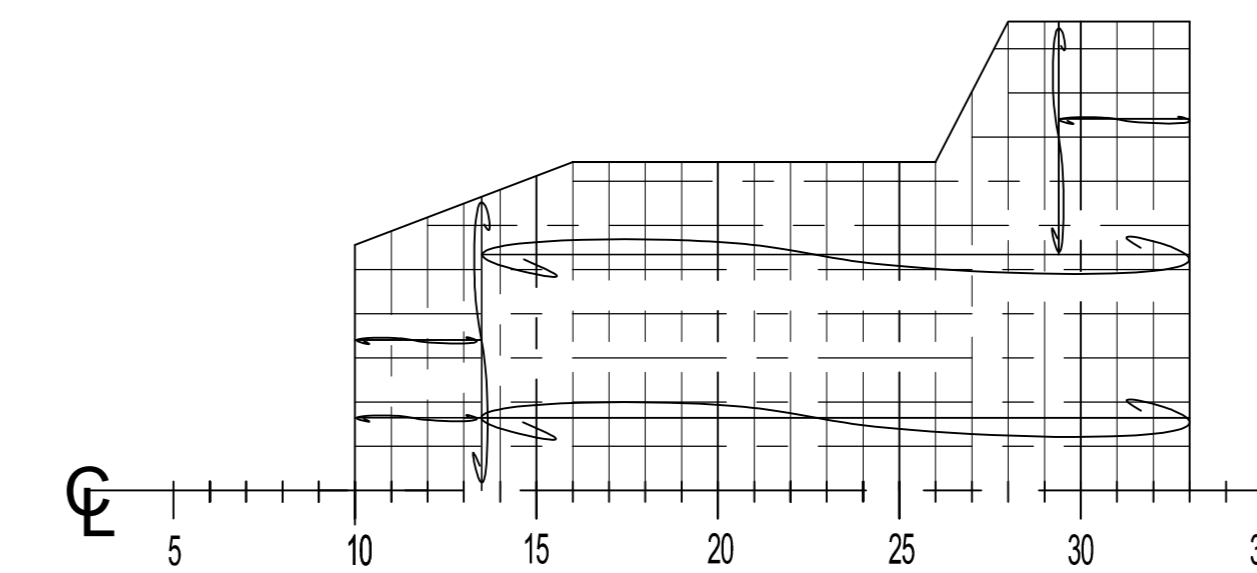
- DECK PLATE 12
- DECK LONGITUDINAL 130 x 75 x 8
- LONGITUDINAL DECK BEAM 250 X 290 X 28
- DECK TRANSVERSE 30 X 25 X 8
- SIDE LONGITUDINAL 45 x 25 x 8
- WEB FRAME 150 X 100 X 10
- ORDINARY FRAME 65 X 50 X 7
- DECK WEB TRANSVERSE 180 X 110 X 20
- SUPERSTRUCTURE 10
- BRACKET 150 X 8



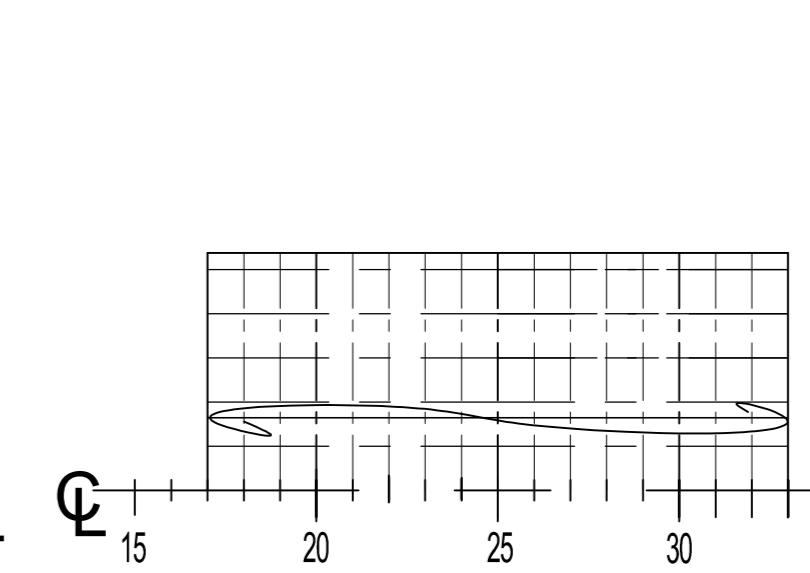
- DECK PLATE 12
- DECK LONGITUDINAL 130 x 75 x 8
- LONGITUDINAL DECK BEAM 250 X 290 X 28
- DECK TRANSVERSE 30 X 25 X 8
- SIDE LONGITUDINAL 45 x 25 x 8
- WEB FRAME 150 X 100 X 10
- ORDINARY FRAME 65 X 50 X 7
- DECK WEB TRANSVERSE 180 X 110 X 20
- SUPERSTRUCTURE 10
- BRACKET 150 X 8



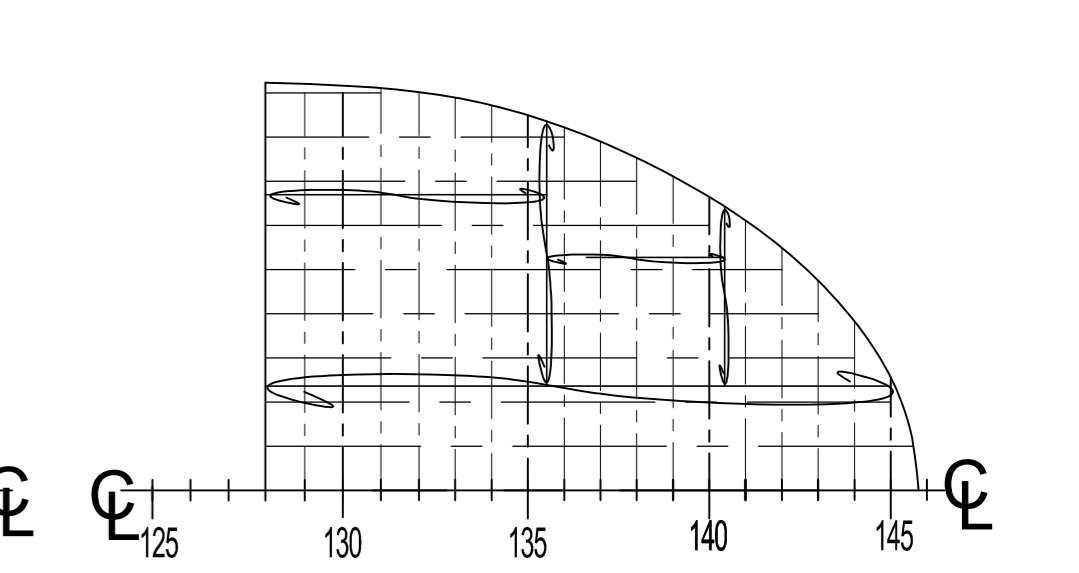
- DECK PLATE 12
- DECK LONGITUDINAL 130 x 75 x 8
- LONGITUDINAL DECK BEAM 250 X 290 X 28
- DECK TRANSVERSE 30 X 25 X 8
- SIDE LONGITUDINAL 45 x 25 x 8
- WEB FRAME 150 X 100 X 10
- ORDINARY FRAME 65 X 50 X 7
- DECK WEB TRANSVERSE 180 X 110 X 20
- SUPERSTRUCTURE 10
- BRACKET 150 X 8



- DECK PLATE 12
- DECK LONGITUDINAL 130 x 75 x 8
- LONGITUDINAL DECK BEAM 250 X 290 X 28
- DECK TRANSVERSE 30 X 25 X 8
- SIDE LONGITUDINAL 45 x 25 x 8
- WEB FRAME 150 X 100 X 10
- ORDINARY FRAME 65 X 50 X 7
- DECK WEB TRANSVERSE 180 X 110 X 20
- SUPERSTRUCTURE 10
- BRACKET 150 X 8

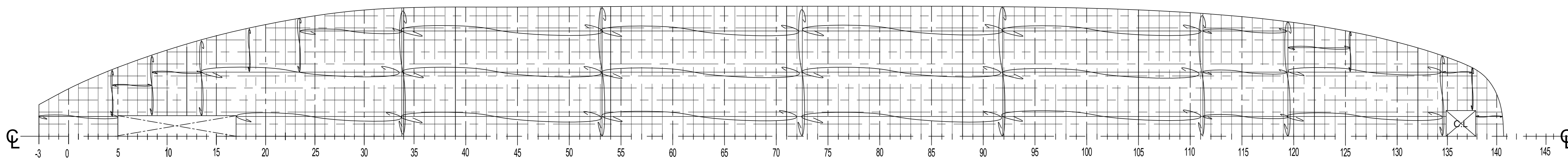


- DECK PLATE 12
- DECK LONGITUDINAL 130 x 75 x 8
- LONGITUDINAL DECK BEAM 250 X 290 X 28
- DECK TRANSVERSE 30 X 25 X 8
- SIDE LONGITUDINAL 45 x 25 x 8
- WEB FRAME 150 X 100 X 10
- ORDINARY FRAME 65 X 50 X 7
- DECK WEB TRANSVERSE 180 X 110 X 20
- SUPERSTRUCTURE 10
- BRACKET 150 X 8



- DECK PLATE 12
- DECK LONGITUDINAL 130 x 75 x 8
- LONGITUDINAL DECK BEAM 250 X 290 X 28
- DECK TRANSVERSE 30 X 25 X 8
- SIDE LONGITUDINAL 45 x 25 x 8
- WEB FRAME 150 X 100 X 10
- ORDINARY FRAME 65 X 50 X 7
- DECK WEB TRANSVERSE 180 X 110 X 20
- SUPERSTRUCTURE 10
- BRACKET 150 X 8

MAIN DECK

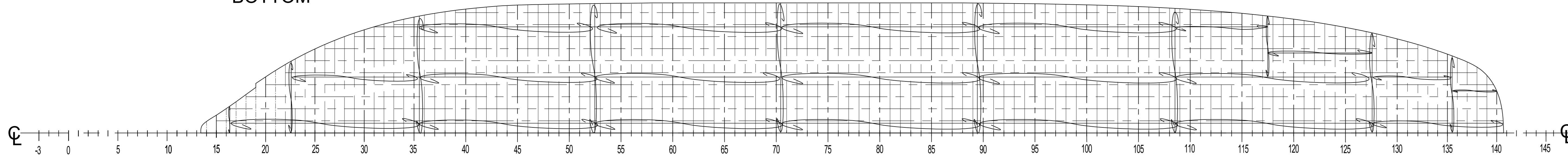


- DECK PLATE 12
- DECK LONGITUDINAL 130 x 75 x 8
- LONGITUDINAL DECK BEAM 250 X 290 X 28
- DECK TRANSVERSE 30 X 25 X 8
- SIDE LONGITUDINAL 45 x 25 x 8
- WEB FRAME 150 X 100 X 10
- ORDINARY FRAME 65 X 50 X 7
- DECK WEB TRANSVERSE 180 X 110 X 20
- SUPERSTRUCTURE 10
- BRACKET 150 X 8

- DECK PLATE 8
- DECK LONGITUDINAL 130 x 75 x 8
- LONGITUDINAL DECK BEAM 250 X 290 X 28
- DECK TRANSVERSE 30 X 25 X 8
- SIDE LONGITUDINAL 45 x 25 x 8
- WEB FRAME 150 X 100 X 10
- ORDINARY FRAME 65 X 50 X 7
- DECK WEB TRANSVERSE 180 X 110 X 20
- SUPERSTRUCTURE 10
- BRACKET 150 X 8
- CARGO HOLD BULKHEAD 8

- DECK PLATE 14
- DECK LONGITUDINAL 130 x 75 x 8
- LONGITUDINAL DECK BEAM 250 X 290 X 28
- DECK TRANSVERSE 30 X 25 X 8
- SIDE LONGITUDINAL 45 x 25 x 8
- WEB FRAME 150 X 100 X 10
- ORDINARY FRAME 65 X 50 X 7
- DECK WEB TRANSVERSE 180 X 110 X 20
- SUPERSTRUCTURE 10
- BRACKET 150 X 8
- COLLISION BULKHEAD 10

BOTTOM



- CENTER GIRDER 12
- SOLID FLOOR 12
- BULKHEAD 8
- LONGITUDINAL BOTTOM 150 X 100 X 8
- INNER BOTTOM LONGITUDINAL 150 X 80 X 10
- WEB FRAME 150 X 100 X 10
- ORDINARY FRAME 65 X 50 X 7
- SIDE GIRDER 10
- STIFFER 130 X 60 X 8
- BRACKET 150 X 8

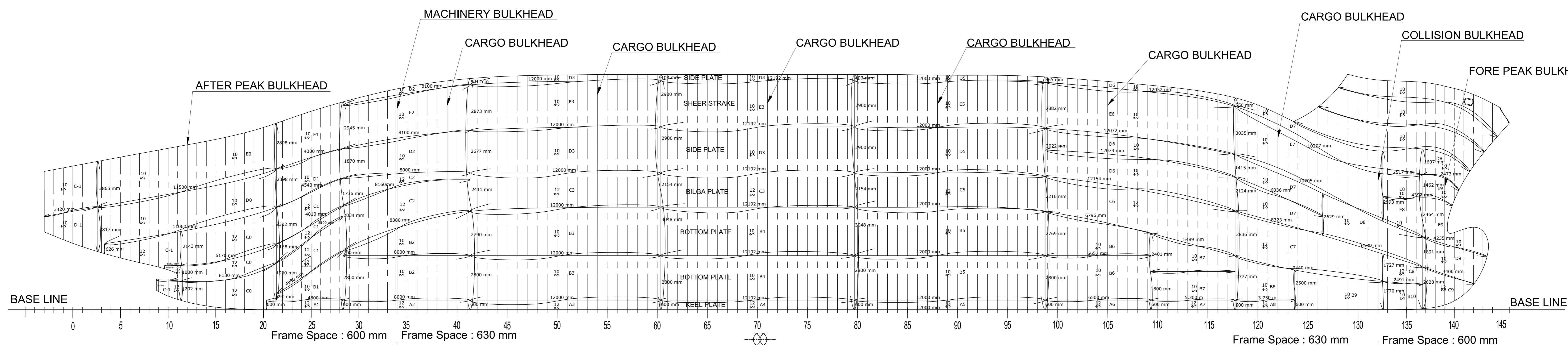
- CENTER GIRDER 12
- SOLID FLOOR 12
- CARGO HOLD BULKHEAD 8
- LONGITUDINAL BOTTOM 150 X 100 X 8
- INNER BOTTOM LONGITUDINAL 150 X 80 X 10
- WEB FRAME 150 X 100 X 10
- ORDINARY FRAME 65 X 50 X 7
- SIDE GIRDER 10
- STIFFER 130 X 60 X 8
- BRACKET 150 X 8

- CENTER GIRDER 12
- SOLID FLOOR 12
- CARGO HOLD BULKHEAD 8
- LONGITUDINAL BOTTOM 150 X 100 X 8
- INNER BOTTOM LONGITUDINAL 150 X 80 X 10
- WEB FRAME 150 X 100 X 10
- ORDINARY FRAME 65 X 50 X 7
- SIDE GIRDER 10
- STIFFER 130 X 60 X 8
- BRACKET 150 X 8
- COLLISION BULKHEAD 10

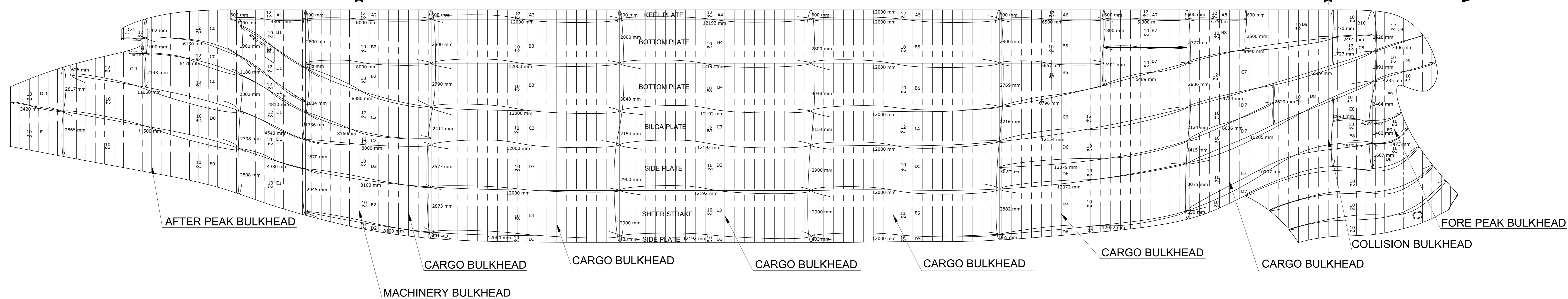
PRINCIPLE DIMENSION	
LENGHT OVER ALL (LOA)	92.20 M
LENGHT BETWEEN PERPENDICULAR (LPP)	86.50 M
LENGHT WATER LINE (LWL)	88.30 M
BREADTH (B)	15.80 M
HEIGHT (H)	7.50 M
DRAFT DESIGN (T)	5.20 M
DRAFT SCANTLING (T)	5.50 M
SPEED (VS)	12.56 KNOTS
COEFFICIENT BLOCK (CB)	0.806
COEFFICIENT MIDSHIP (CM)	0.990
COEFFICIENT WATERLINE (CW)	0.888
COEFFICIENT PRISMATIC (CP)	0.815
DISPLACEMENT (Δ)	5993.733 TON
CLASS	NIPPON KAIJI KYOKAI
CREWS	21 PERSON

JURUSAN TEKNIK PERKAPALAN FAKULTAS TEKNOLOGI KELAUTAN UNIVERSITAS DARMA PERSADA				
SKALA	1 : 125	TANGGAL	PARAF	KET.
DIGAMBAR	AMELIA AZWAR			
N.I.M	2016310014			
DIPERIKSA	Dr. ARIF FADILLAH, ST.,M.Eng.Ph.D			
DISETUJUI	Dr. ARIF FADILLAH, ST.,M.Eng.Ph.D			
PERENCANAAN :	3750 DWT PRODUCT OIL TANKER			
GAMBAR :	CONSTRUCTION PROFILE			

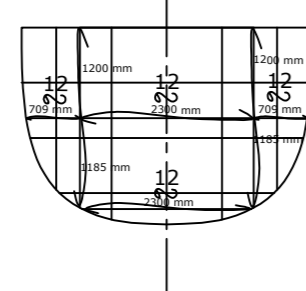
PORTSIDE



STARBOARD



TRANSOM



NOTES

- KEEL PLATE = A1 - A8
- BOTTOM PLATE = B1 - B10
- BILGA PLATE = C-1 - C9
- SIDE PLATE = D-1 - D9
- SHEER STRAKE = E-1 - E9

PRINCIPLE DIMENSION

LENGTH OVER ALL (LOA)	92.20 M
LENGTH BETWEEN PERPENDICULAR (LPP)	86.50 M
LENGTH WATER LINE (LWL)	88.30 M
BREADTH (B)	15.80 M
HEIGHT (H)	7.50 M
DRAFT DESIGN (T)	5.20 M
DRAFT SCANTLING (T)	5.50 M
SPEED (VS)	12.56 KNOTS
COEFFICIENT BLOCK (CB)	0.806
COEFFICIENT MIDSHIP (CM)	0.990
COEFFICIENT WATERLINE (CW)	0.868
COEFFICIENT PRISMATIC (CP)	0.815
DISPLACEMENT (Δ)	5983.733 TON
CLASS	NIPPON KALJI KYOKAI
CREWS	21 PERSON

**JURUSAN TEKNIK PERKAPALAN
FAKULTAS TEKNOLOGI KELAUTAN
UNIVERSITAS DARMA PERSADA**

SKALA	1 : 100	TANGGAL	PARAF	KET.
DIGAMBAR	AMELIA AZWAR			
N.I.M	2016310014			
DIPERIKSA	ARIF FADILLAH, ST.,M.Eng.Pn.D.			
DISETUJUI	ARIF FADILLAH, ST.,M.Eng.Pn.D.			
PERENCANAAN :	3750 DWT PRODUCT OIL TANKER			
GAMBAR :	SHELL EXPANSION			