Vessel Specifications

General Information

2014/ 93m/ DP2 Self-Propelled Pontoon Ship

Category	Details
Vessel Type	Dynamic Positioning Service Vessel
Built	2014
Complement	12 persons
DWT (Scantling/DWCC)	4,462 t / 3,840 t
Length (LF / LOA)	88.34 m / 92.9 m
Breadth	22 m
Depth	4.5 m
Draught (laden / ballast)	2.968 m / 1.290 m
GRT / NRT	2,569 t / 771 t
Air Draught	24.21 m (Ref: lightship)
Deck Area (L x B)	1,540 m² (70 m x 22 m)
Allowable Deck Load (Seagoing)	Min: 10 t/m² - Max: 15 t/m² (Refer to Loading Plan)
Allowable Deck Load (Harbour)	Min: 10 t/m² - Max: 25 t/m² (Refer to Loading Plan)

Dimensions and Tonnages

Category	Details
Hull Gross Tonnage	2,569 t
Net Tonnage	771 t
Deadweight	3,906 t
Overall Length	92.9 m
LPP (Length Between Perpendiculars)	90.67 m
Breadth	22 m
Depth	4.5 m
Draught	3.25 m
Freeboard	1,546 mm

Classification and Survey

Category	Details
Classification Society	Bureau Veritas (BV)
Classification Notation	BV, Class I*Hull*Mach*Pontoon Assisted Propulsion*Coastal Area*Dynapos-SAM, Inwatersurvey
Navigation Notation	Coastal area - temporary unrestricted navigation; Limited to 100 miles from Filyos Port Zonguldak
Add. Class Notation	Machinery: INWATERSURVEY, Dynapos SAM
Survey Type	Normal (Hull)

Speed

Condition	Number of Engines	Engine Load (%)	Speed
Laden (6.5 knots)	2 Engines	90% load	6.5 knots
Ballast (6.5 knots)	2 Engines	80% load	6.5 knots
Laden (8.5 knots)	4 Engines	85% load	8.5 knots
Ballast (8.5 knots)	4 Engines	75% load	8.5 knots

Fuel Consumption

Condition	Number of Engines	Engine Load (%)	Fuel Consumption (t/day)
6.5 knots Laden	2 Engines	90% load	~ 3.6 t/day
6.5 knots Ballast	2 Engines	80% load	~ 3.2 t/day
8.5 knots Laden	4 Engines	85% load	~ 6.9 t/day
8.5 knots Ballast	4 Engines	75% load	~ 6 t/day
Auxiliary Generator Sets (Idle)	-	-	~ 0.5 t/day
Auxiliary Generator Sets (Ballast)	-	-	~ 0.8 t/day

Dynamic Positioning and Navigation Equipment

Category	Details
Dynamic Positioning System	Praxis Megaguard DP0 (Dynapos-SAM)
IMO DP Notation	DP0 (Dynapos-SAM)
Accuracy	Up to 0.5 m
DGPS & MRU (Inclinometer)	Yes
DP Modes	Manual Joystick, Auto Joystick, Auto Positioning, Auto Pilot, Auto Tracking, Auto Heading
Navigation Equipment	JRC JMA 3314 RADAR, JRC GPS 124 Antenna for JLR-7500, JRC JHS 770S VHF Transceiver, JOTRON Tron Sart20 Radar Transponder, TRON TR 20 GMDSS VHF Radio, IMARINE B CLASS Model: TB CS Transponder

Ballast System

Category	Details
Number of Ballast Tanks	15
Ballast Tank Capacity	Total 4,050 m³
Ballast Pumps	2 pumps, 500 m³/h (each)
Coating	Jotun, PSPC Certification for Ballast Tanks
Anti-Heeling System	Besi, 900 m³/h at 0.45 bar, 50 Hz
Anti-Trim System	Besi, 900 m³/h at 0.45 bar, 50 Hz

Machinery

Category	Details
Propulsion System	Veth Propulsion / 4 x 405 kW (each) Thrusters + Scania / 4 x 405 kW (each) Diesel Engines
Generator Sets	Scania / 2 x 330 kW Auxiliary diesel generator sets + Deutz / 1 x 75 kW Emergency & Harbour diesel generator set
Dynamic Positioning System	Praxis Megaguard DP0 (Dynapos-SAM)
Anti-Heeling/Anti-Trim System	Besi / 900 m³/h Anti-heeling and Anti-trim pump (each)

Electrical Installation

Category	Details
Generators	2 Generators 413 kVA (330 kW), 400 V, 50 Hz
Emergency Generator	1 Emergency generator 94 kVA (75 kW), 400 V, 50 Hz

Anchoring and Equipment

Category	Details
Main Anchors	2 Main anchors, chain diameter 38 mm, steel quality very high tensile strength steel

Maintenance Summery

Maintenance Activity	Date	Details
Docking for 5-Year Certification Renewal	Last Week of January	- Thickness measurements on the shell plate - Renewal of shell plate painting - Replacement of anodes on the shell plate - Cleaning of sea chests - Maintenance of side valves - Chain measurements - Inspection of ballast tank painting
Safety Equipment Inspection	Last Week of January	- Safety equipment was inspected, and certification was renewed.
4-Year Tail Shaft Survey	Last Week of June	- Dismantling of four shaft/propeller systems - Blasting and re-painting of shafts - Replacement of anodes - Collection of oil samples for laboratory testing - Dismantling of four propellers; replacement of blocking rings, liners, seal housings, and gaskets, followed by re-assembly of propellers - Polishing of propeller blades

Attachments

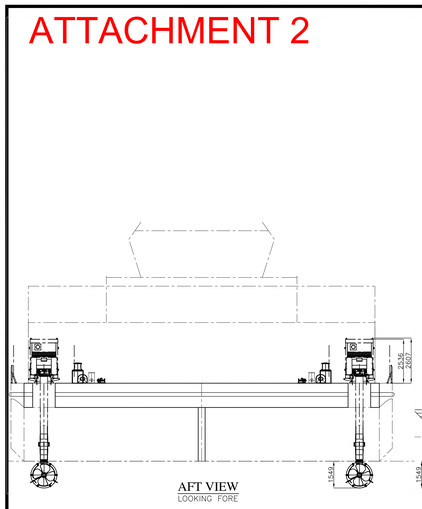
1. Makers List
2. General Arrangement drawing
3. Accommodation drawing
4. Loading Plan
5. Tank Plan
6. Dynamic Positioning Classification vs GMK-1

ATTACHMENT - 1

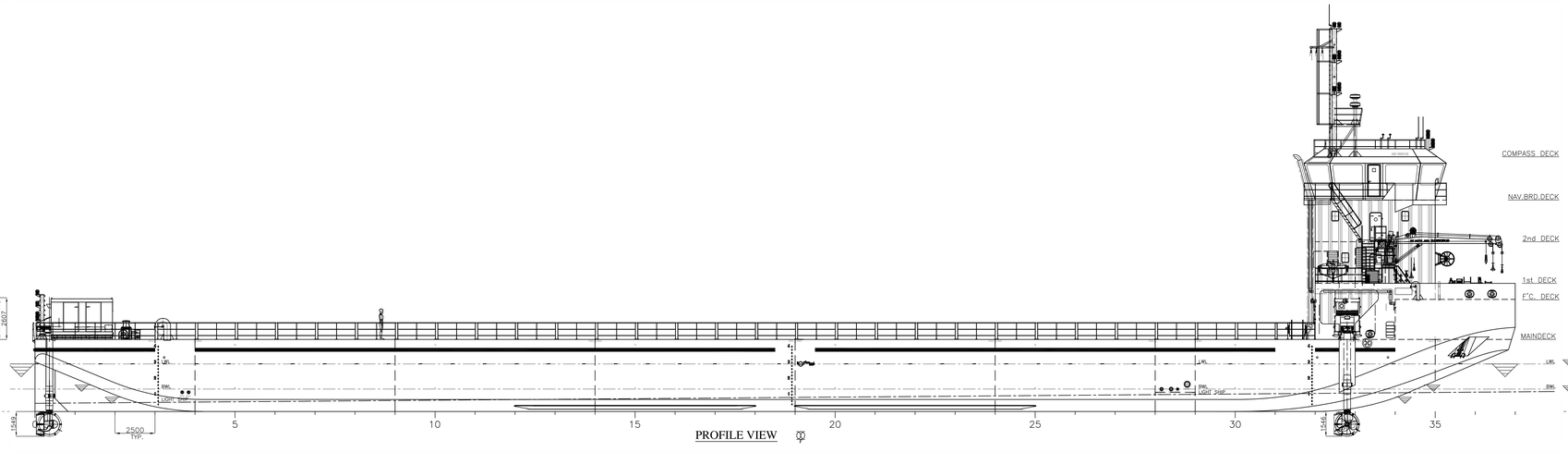
MAKERS LIST OF DYNAMIC POSITIONING SERVICE VESSEL

NO	DESCRIPTION	MAKER
1	Deck Mounted Propulsion System	Veth Propulsion / The Netherlands
2	Diesel engine inside propulsion system	Scania / Sweden
3	Dynamic Positioning System	Praxis / The Netherlands
4	Auxiliary Diesel Generator Sets	Scania / Sweden
5	Emergency/Harbour Diesel Generator Set	Deutz / Germany
6	Anti-heeling / trim systems	BESI / Germany
7	HVAC System	Heinen Hopman / The Netherlands
8	Pumps	Desmi / Denmark
9	Loading Computer	Kockum Sonics / Sweden
10	Lashing Equipment	International Lashing Systems / Belgium
11	Navigation Equipment	Polar Marine Electronics (JRC)
12	Deck Machinery	Gürdesan / Turkey
13	Alarm & Monitoring System	Selco / Denmark
14	Oily Bilge Separator	Kockum Sonics / Sweden
15	MDO Separator	Alfa Laval / Sweden

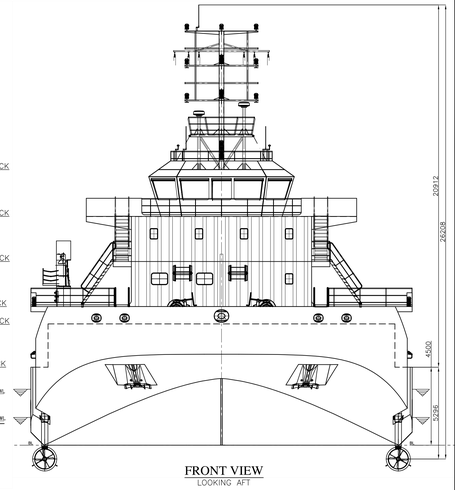
ATTACHMENT 2



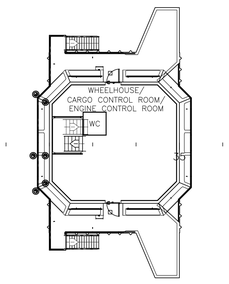
AFT VIEW
LOOKING FORE



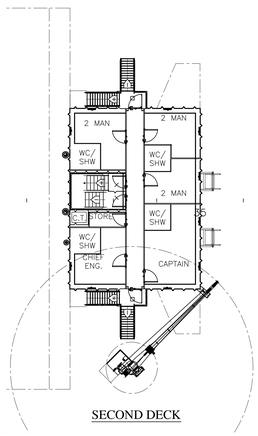
PROFILE VIEW



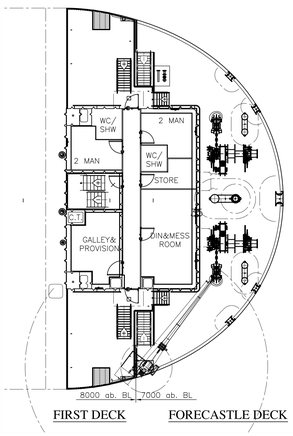
FRONT VIEW
LOOKING AFT



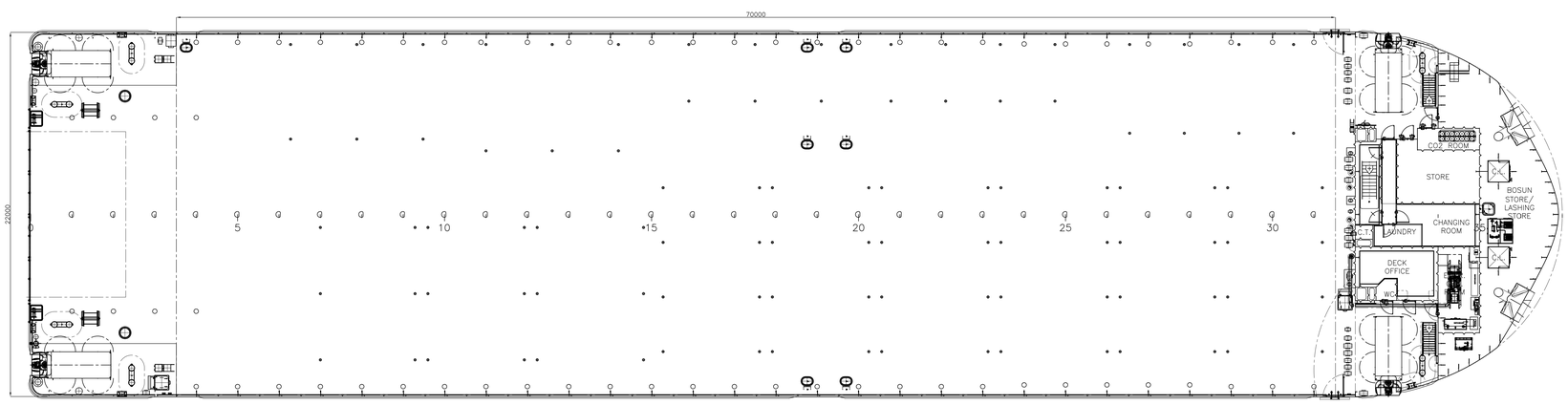
NAVIGATION BRIDGE DECK



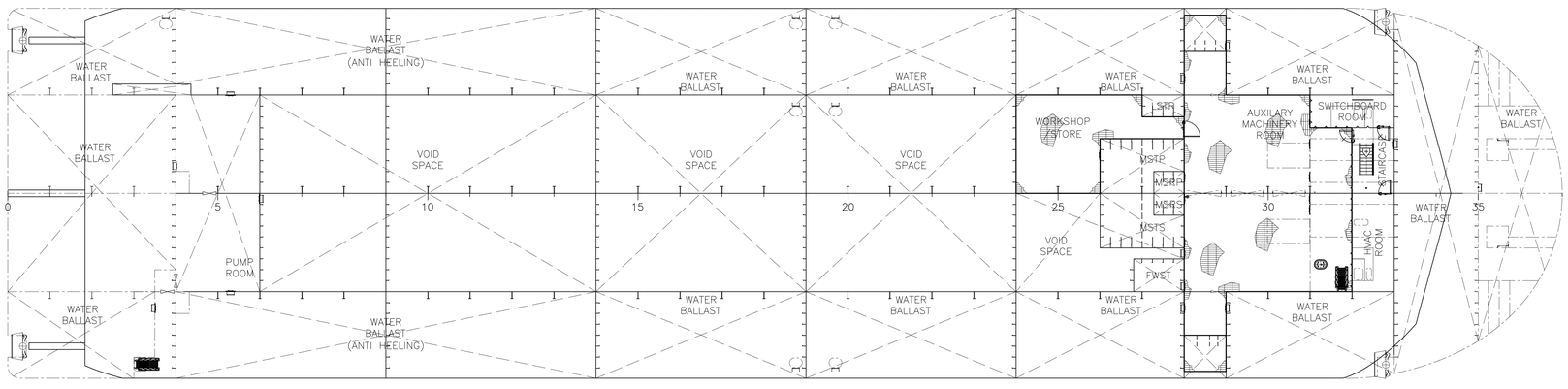
SECOND DECK



FIRST DECK FORECASTLE DECK

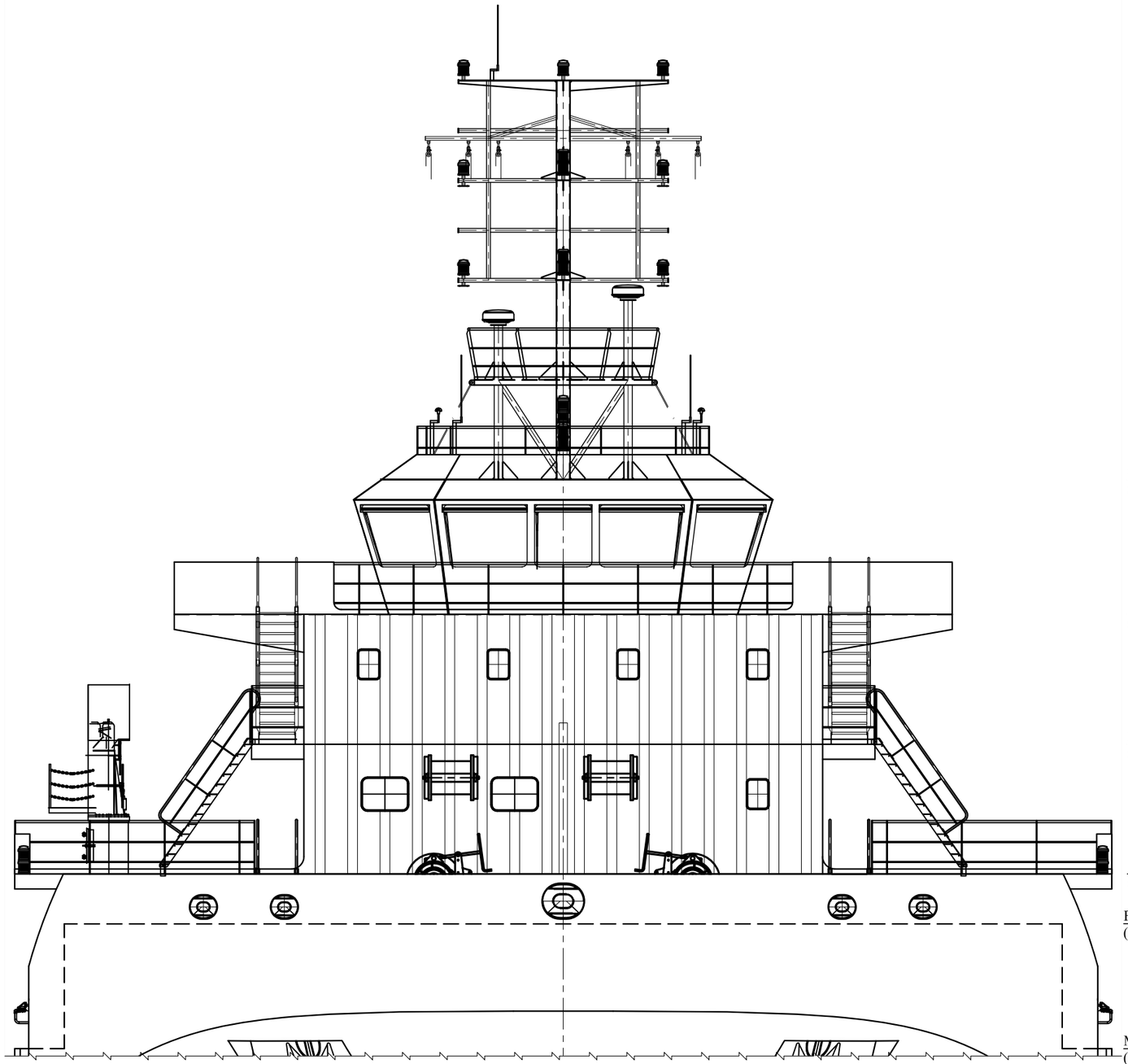


MAIN DECK



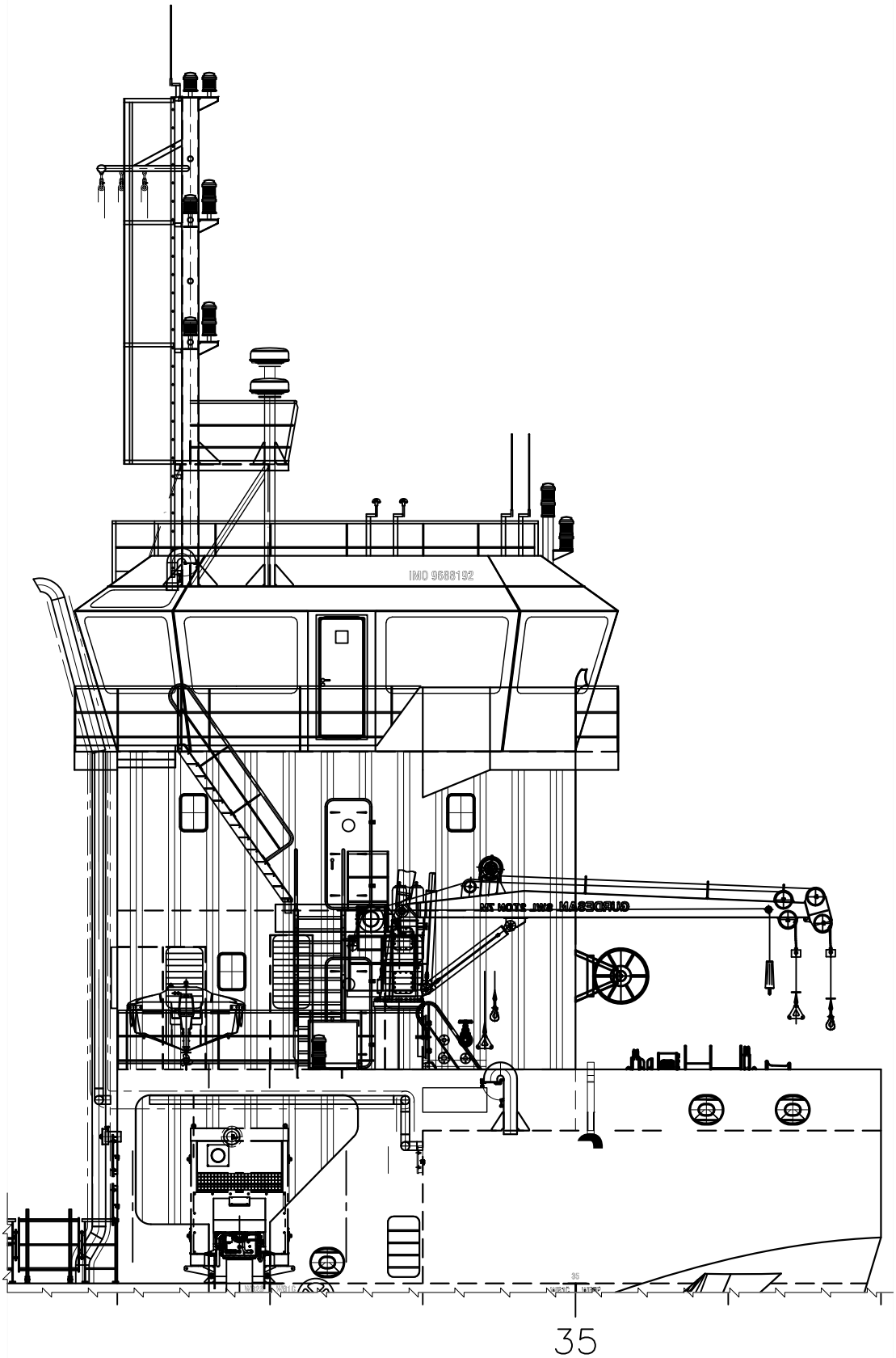
BOTTOM VIEW

ATTACHMENT 3



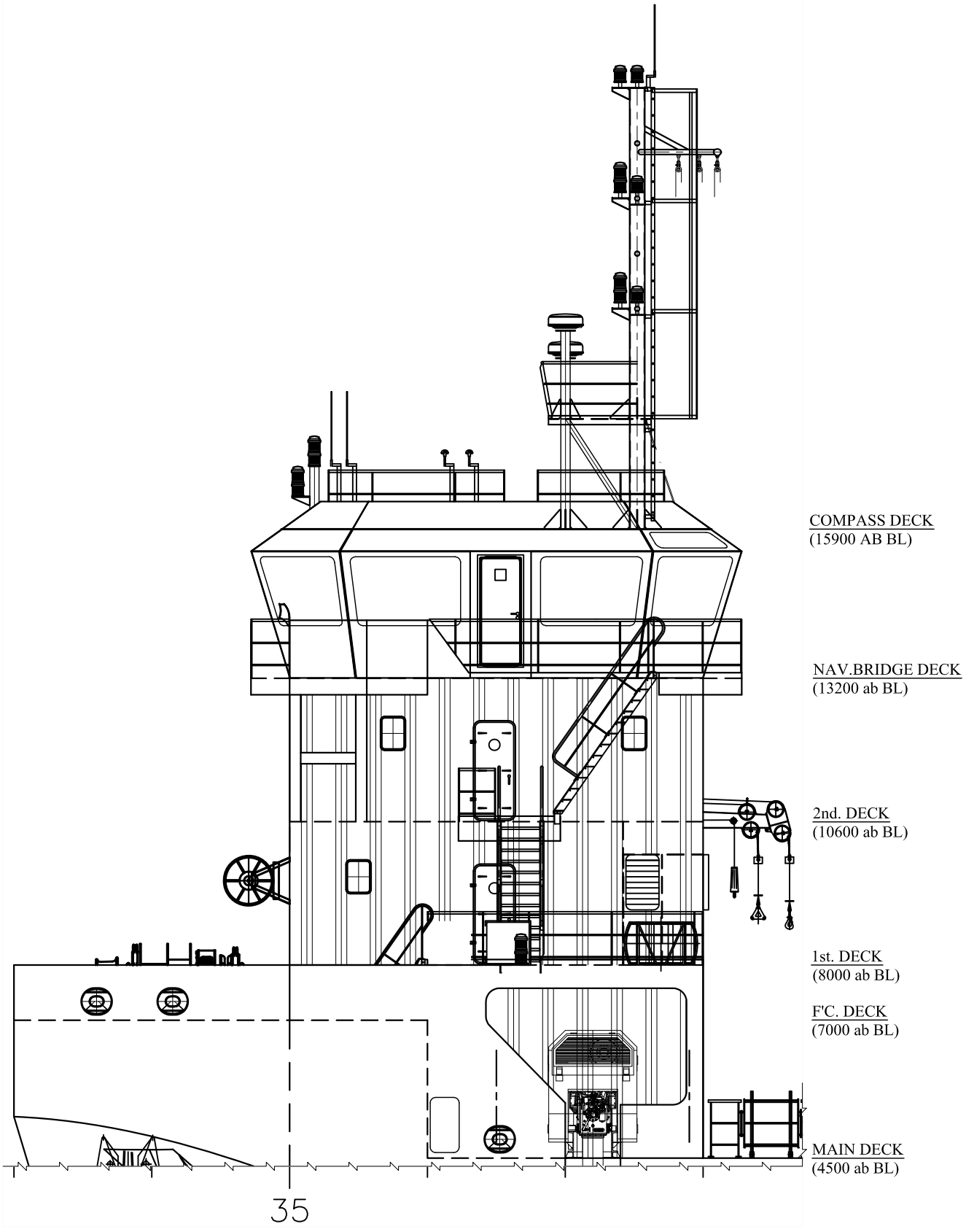
FRONT VIEW
(Looking From FORE to AFT)

ATTACHMENT 3



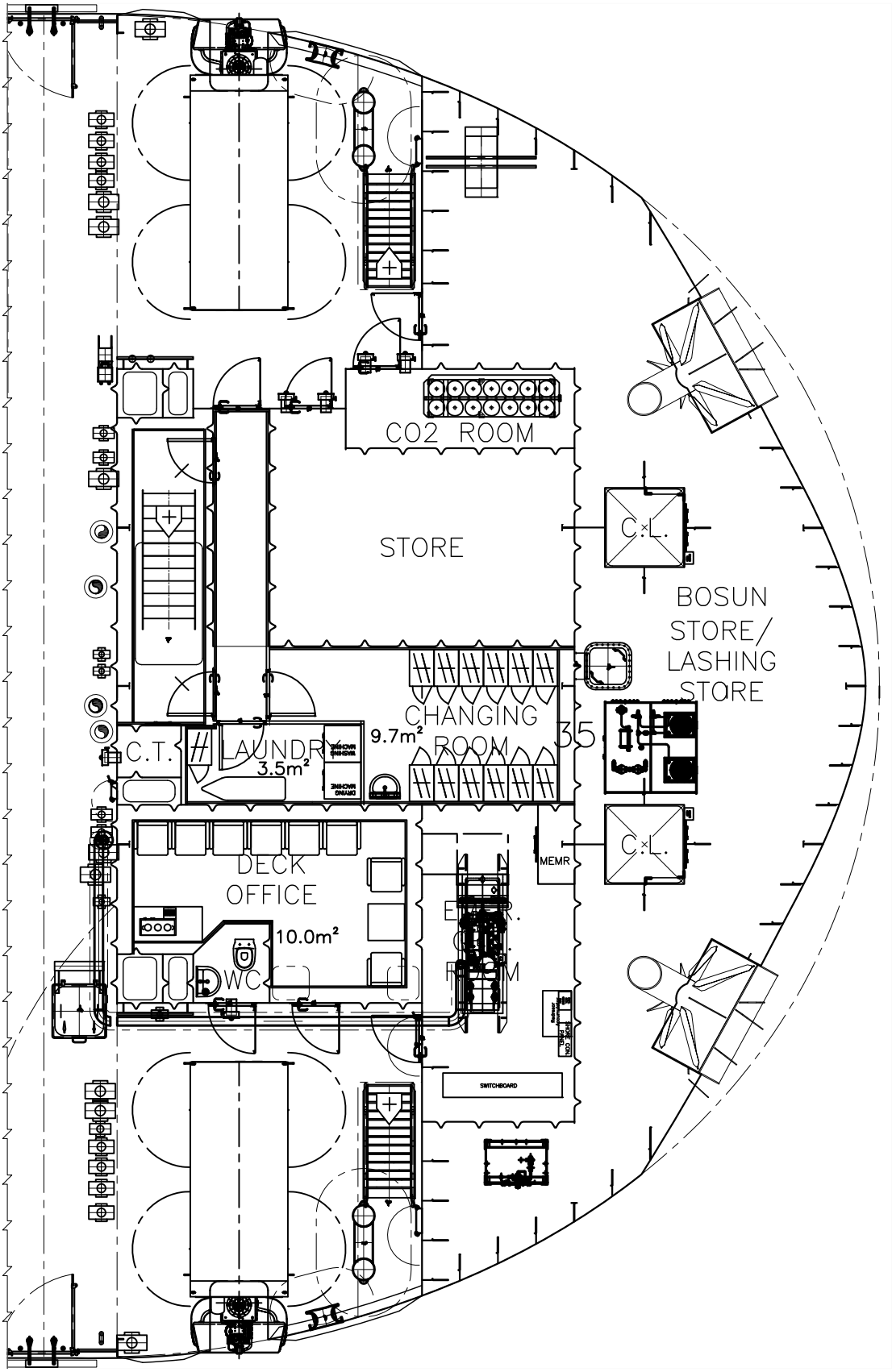
PROFILE VIEW
(STARBOARD SIDE)

ATTACHMENT 3



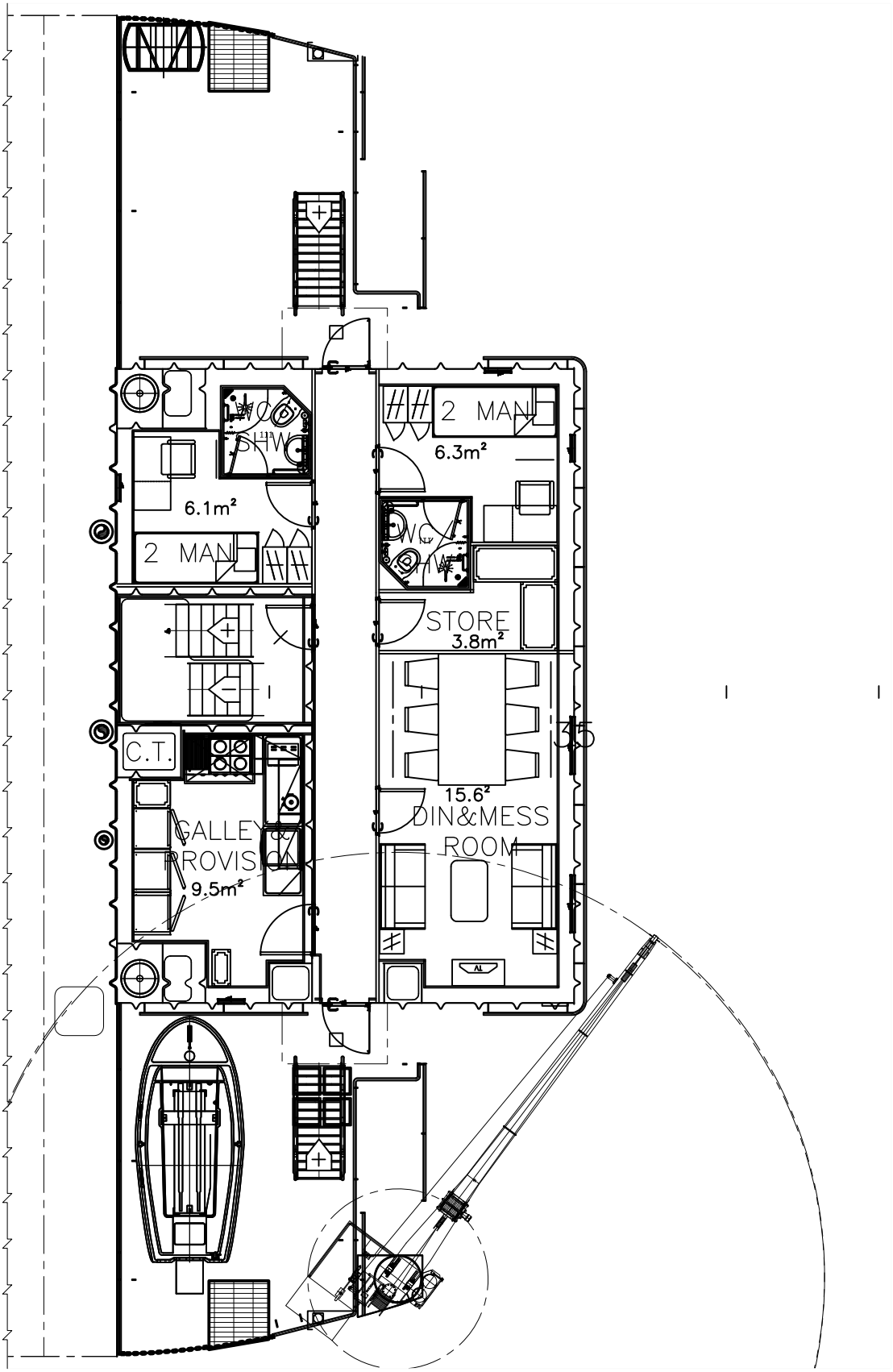
PROFILE VIEW
(PORT SIDE)

ATTACHMENT 3



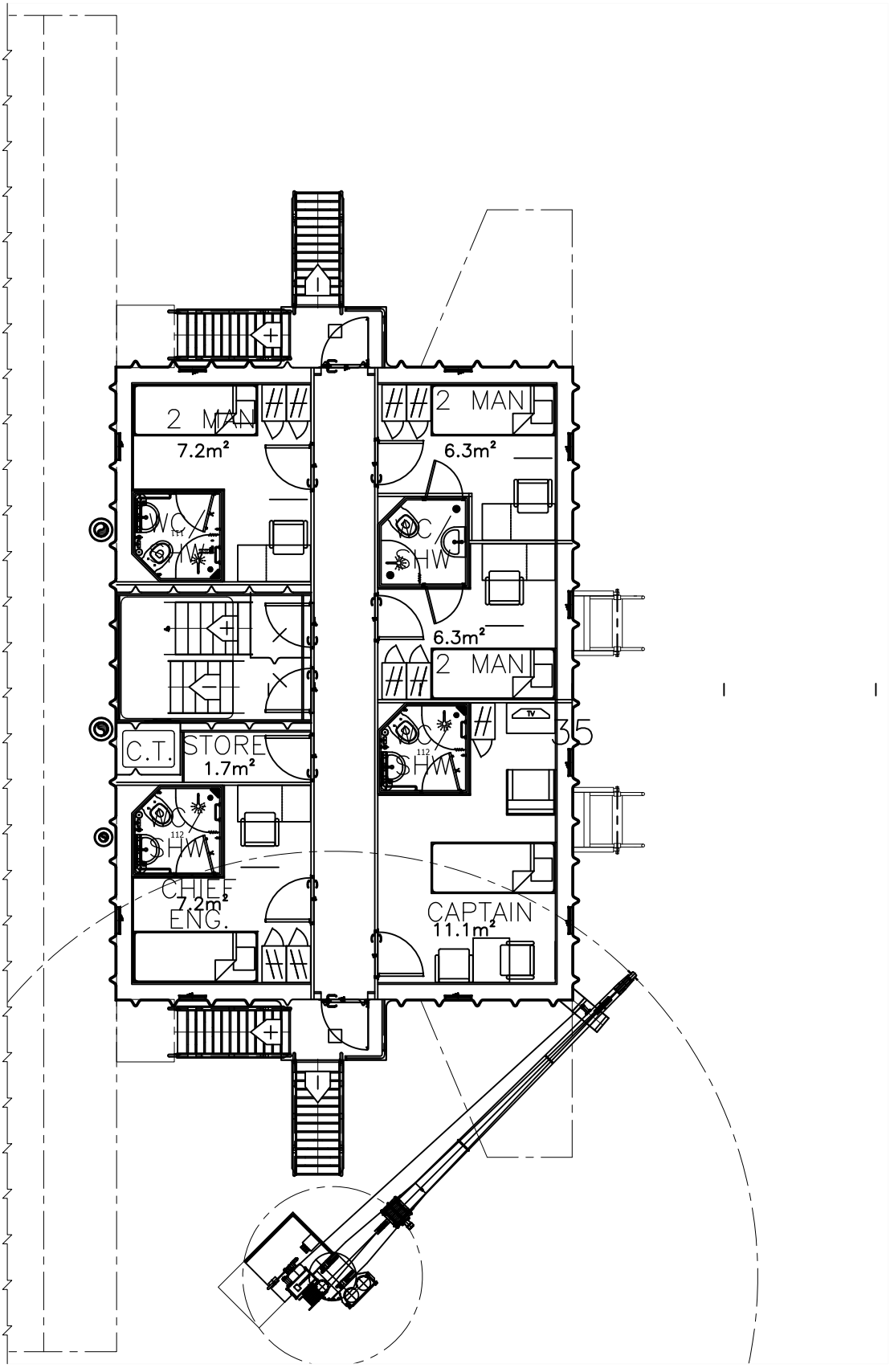
MAIN DECK
(4500 ab BL)

ATTACHMENT 3



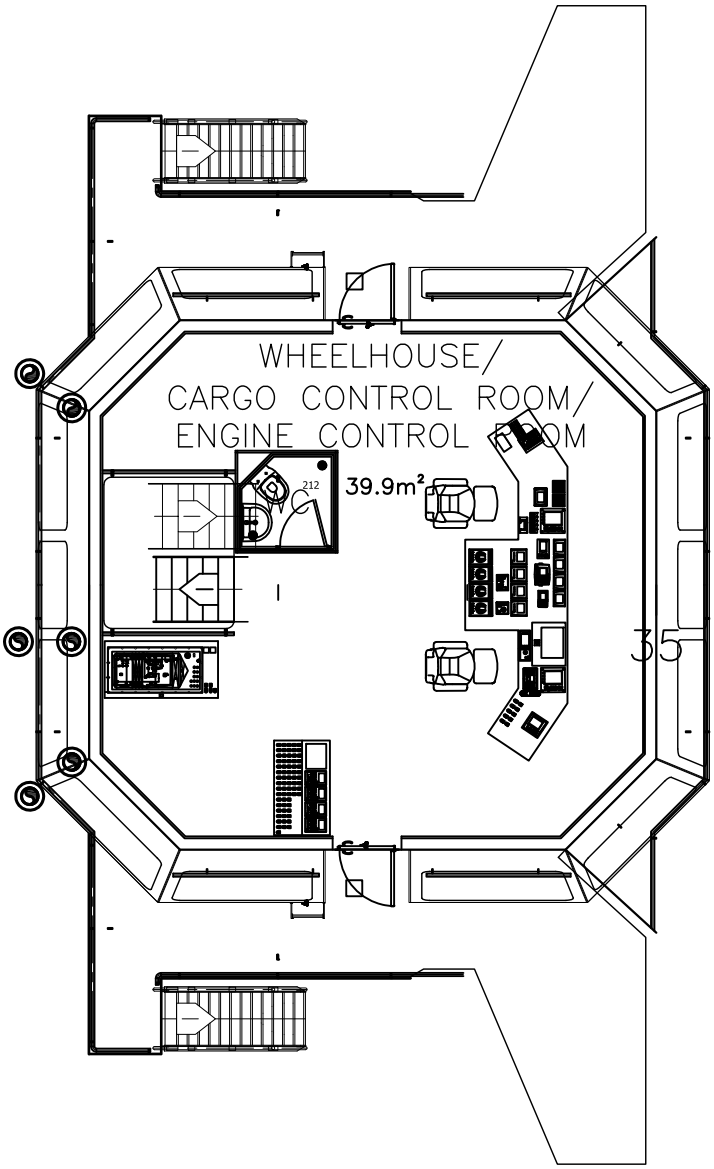
1st. DECK
(8000 ab BL)

ATTACHMENT 3



2nd. DECK
(10600 ab BL)

ATTACHMENT 3

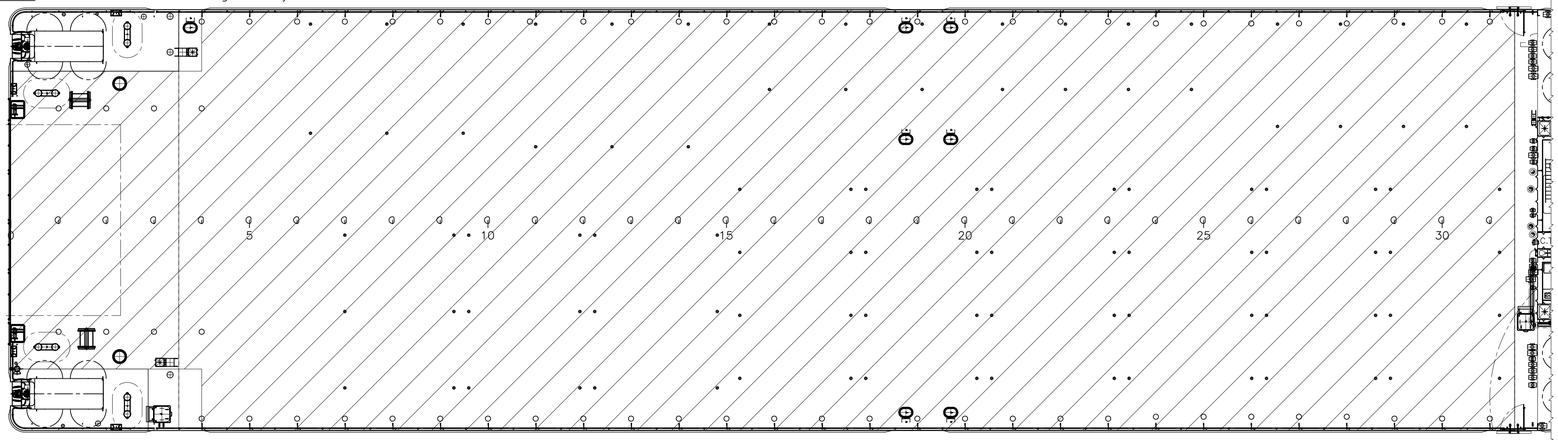


NAV. BRIDGE DECK

(13200 ab BL)

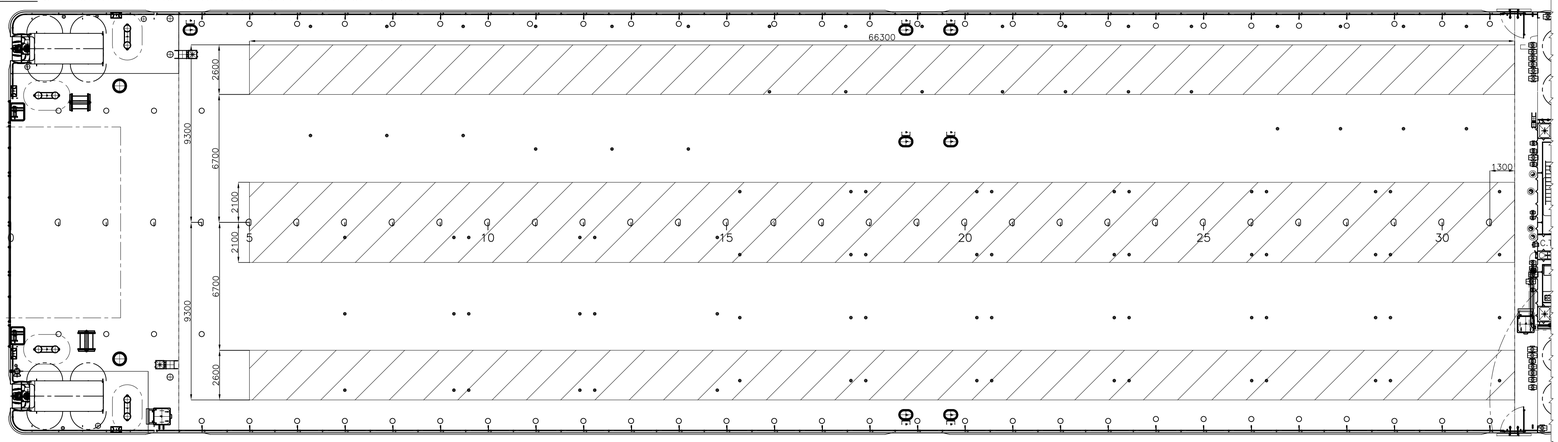
ATTACHMENT 4

LOAD CASE-1: SEAGOING CONDITION: Homogeneously distributed deck load = 10 ton/m2



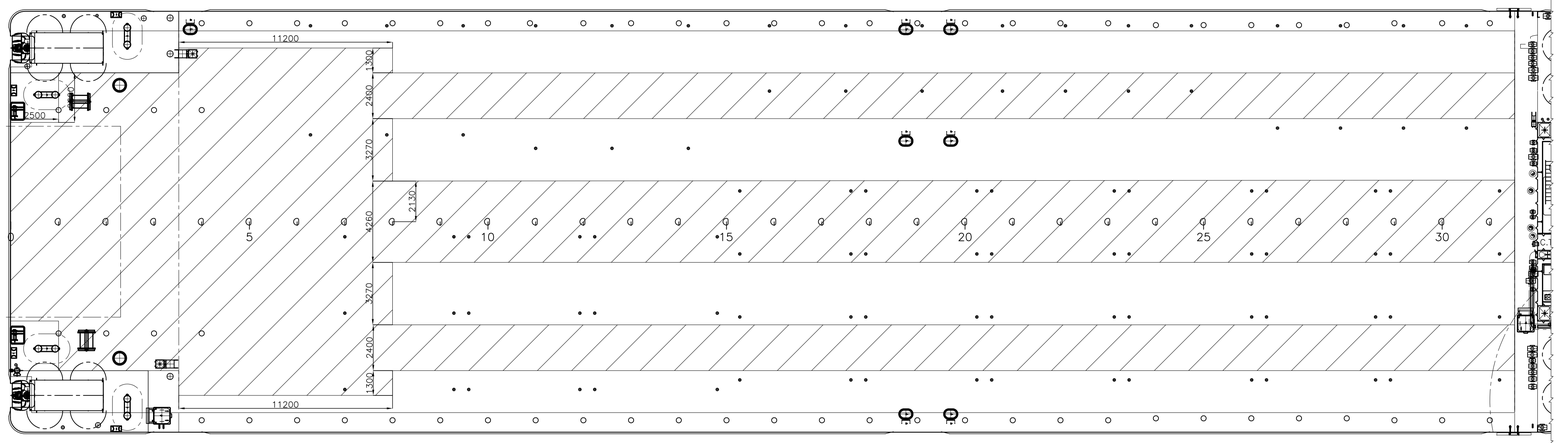
MAIN DECK

LOAD CASE-2 : SEAGOING CONDITION : Deck reinforced area for 15 ton/m2



MAIN DECK

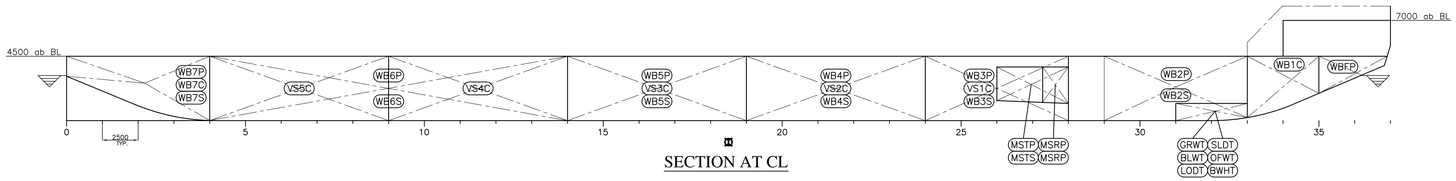
LOAD CASE-3 : HARBOUR CONDITION : Deck reinforced area for 25 ton/m2.



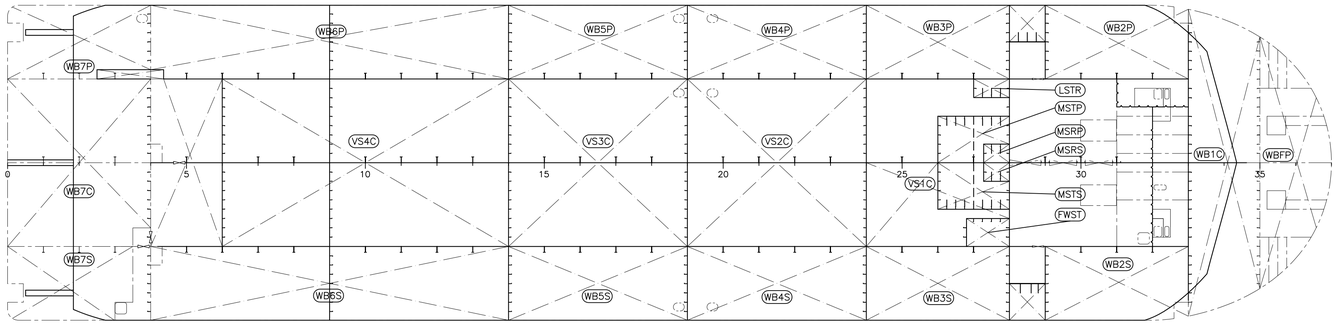
MAIN DECK

ATTACHMENT 5

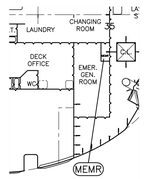
GENERAL NOTE:
- × U.N.O. : UNLESS NOTED OTHERWISE
- × BL : BASE LINE
- × KL : KNUCKLE LINE
- × ALL TRANSVERSAL SECTIONS, DRAWN AS "LOOKING TO FORE" (PORT SIDES ARE SHOWN, U.N.O.)
- × ALL LONGITUDINAL SECTIONS, DRAWN AS "LOOKING FROM STB. SIDE TO PORT SIDE" (U.N.O)
- × LCG : LONGITUDINAL CENTRE OF GRAVITY
- × TCG : TRANSVERSAL CENTRE OF GRAVITY, "-" FOR STARBOARD SIDE
- × VCG : VERTICAL CENTRE OF GRAVITY
- × M.E. : MAIN ENGINE
- × AUX. : AUXILARY



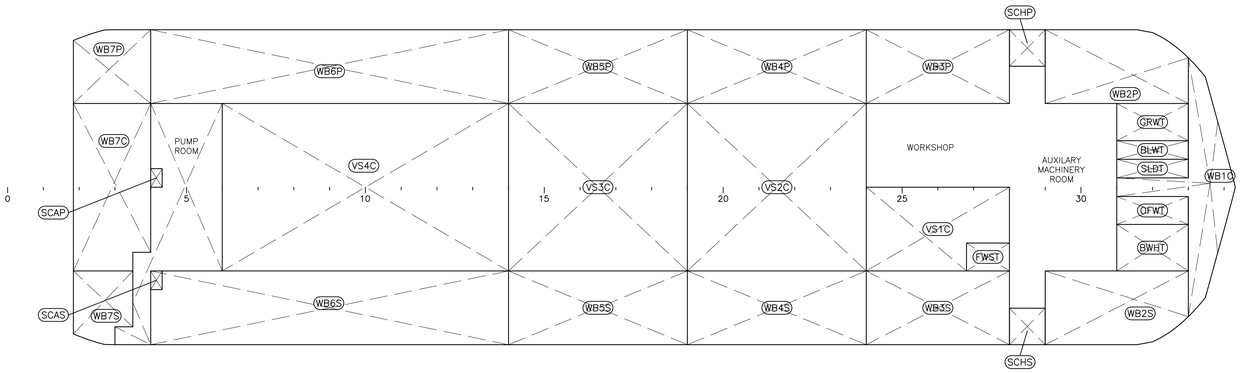
SECTION AT CL



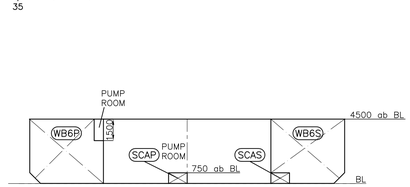
BELOW MAIN DECK



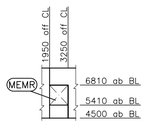
MAIN DECK



SECTION BELOW 1200 ab BL



FR4+250



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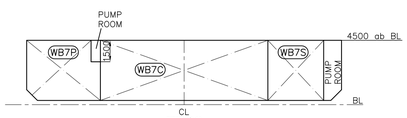

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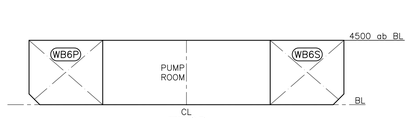

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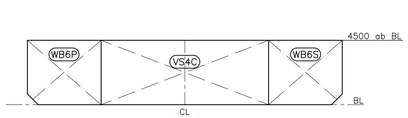

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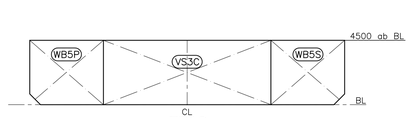

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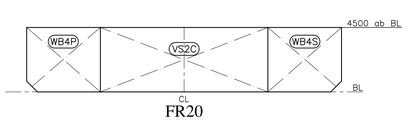

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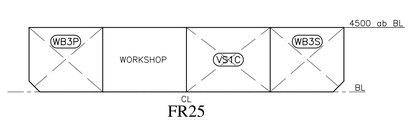

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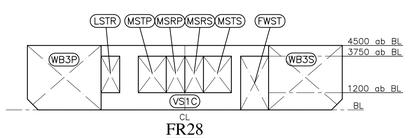

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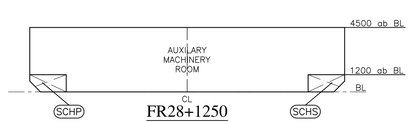

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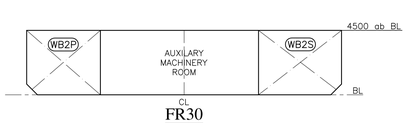

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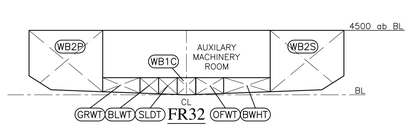

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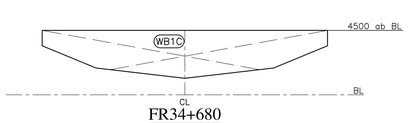

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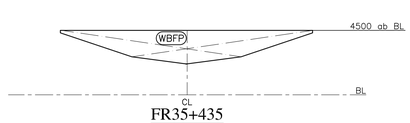

FR35+435

TANK ID	TANK NAME	LOCATION (FR.NO.)	CATEGORY	DENSITY (ton/m3)	VOLUME (m3)	LCG (m)	TCG (m)	VCG (m)	IYmax (m4)
WBFP	WATER BALLAST FORE PEAK	35-37	BALLAST	1,025	56,3	88,898	0,000	3,712	818
WB1C	WATER BALLAST NO:1 CENTER	31-35	BALLAST	1,025	291,7	84,527	0,004	2,867	3292
WB2P	WATER BALLAST NO:2 PORT	29-33	BALLAST	1,025	209,2	77,245	8,331	2,366	109
WB2S	WATER BALLAST NO:2 STB	29-33	BALLAST	1,025	209,2	77,245	-8,331	2,366	109
WB3P	WATER BALLAST NO:3 PORT	24-28	BALLAST	1,025	224,4	65,000	8,396	2,275	114
WB3S	WATER BALLAST NO:3 STB	24-28	BALLAST	1,025	224,4	65,000	-8,396	2,275	114
WB4P	WATER BALLAST NO:4 PORT	19-24	BALLAST	1,025	280,4	53,750	8,396	2,275	142
WB4S	WATER BALLAST NO:4 STB	19-24	BALLAST	1,025	280,4	53,750	-8,396	2,275	142
WB5P	WATER BALLAST NO:5 PORT	14-19	BALLAST	1,025	280,4	41,250	8,396	2,275	142
WB5S	WATER BALLAST NO:5 STB	14-19	BALLAST	1,025	280,4	41,250	-8,396	2,275	142
WB6P	WATER BALLAST NO:6 PORT	4-14	BALLAST	1,025	560,0	22,519	8,400	2,271	285
WB6S	WATER BALLAST NO:6 STB	4-14	BALLAST	1,025	560,1	22,517	-8,399	2,725	285
WB7C	WATER BALLAST NO:7 CENTER	0-4	BALLAST	1,025	369,0	5,774	0,100	2,725	1290
WB7P	WATER BALLAST NO:7 PORT	0-4	BALLAST	1,025	156,8	5,885	8,424	2,700	107
WB7S	WATER BALLAST NO:7 STB	0-4	BALLAST	1,025	126,3	5,067	-8,271	2,831	91
				TOTAL :	4109				
MSTP	MDO STORAGE PORT	26-28	MDO	0,840	31,9	67,263	1,794	2,480	11,4
MSTS	MDO STORAGE STB.	26-28	MDO	0,840	31,9	67,263	-1,794	2,480	11,4
MSRP	MDO SERVICE PORT	27+700-28	MDO	0,840	5,5	69,104	0,650	2,443	0,3
MSRS	MDO SERVICE STB.	27+700-28	MDO	0,840	5,5	69,104	-0,650	2,443	0,3
MEMR*	EMER. GENERATOR MDO TANK	34+1900-35	MDO	0,840	1,1	87,2	-2,6	6,11	0,1
				TOTAL :	75,9				
FWST	FRESH WATER TANK	26+2000-28	FW	1,000	21,5	68,500	-4,875	1,875	2,0
				TOTAL :	21,5				
LSTR	LUB OIL STORAGE	27-28	LUB.	0,900	7,6	68,759	-5,200	2,450	0,5
				TOTAL :	7,6				
BLWT	BLACK WATER	31-33	OTHER	1,000	6,8	79,866	2,595	0,662	0,9
GRWT	GREY WATER	31-33	OTHER	1,000	12,6	79,795	4,534	0,694	7,3
BWHT	BILGE WATER	31-33	OTHER	1,000	15,9	79,808	-4,191	0,689	14,3
SLDT	SLUDGE TANK	31-33	OTHER	1,000	7,1	79,907	1,295	0,639	0,9
OFWT	OVERFLOW TANK	31-33	MDO	0,840	10,5	79,897	-1,614	0,645	3,1
VS1C	VOID SPACE NO : 1	24-28	VOID						
VS2C	VOID SPACE NO : 2	19-24	VOID						
VS3C	VOID SPACE NO : 3	14-19	VOID						
VS4C	VOID SPACE NO : 4	6-14	VOID						
	* LOOSE TANK								
SCAP	SEA CHEST AFT PORT	4-4+800			0,78	10,4	0,65	0,38	
SCAS	SEA CHEST AFT STARBOARD	4-4+800			0,78	10,4	-6,5	0,38	
SCHP	SEA CHEST FORE PORT	28-29			6,9	71,25	9,62	0,64	
SCHS	SEA CHEST FORE STARBOARD	28-29			6,9	71,25	-9.62	0,64	

		BV Rules				GMK-1 Status
	Titles	Dynapos-SAM (DP0)	Dynapos AM/AT (DP1)	Dynapos AM/AT R (DP2)	Dynapos AM/AT RS (DP3)	
Equipment	Main switchboard	According to SOLAS and the present rules	According to SOLAS and the present rules	1 unit with bus tie circuit breaker (2 circuits equally distributed)	2 switchboards, tie circuit-breakers normally open, located in separate rooms	1 unit with bus tie circuit breaker (2 circuits equally distributed)
	Distribution system			redundant (1)	redundant in separate rooms	1 unit, redundant
	Electric generators			redundant	redundant in separate rooms	2 aux units (each 330 kW) + 1 emerg. Unit (75 kW)
	Thrusters and associated control systems			redundant	redundant in separate rooms	4 units (each 405 kW)
Power Management System	Power management system			redundant	redundant in separate rooms	1 set, redundant
Dynamic Positioning System	UPS	-	-	2 units	no statement defined	No UPS, 2 battery units
	Position reference system (DGPS)	1 unit	2 units	3 units	3 units, one of them connected to backup control station	1 unit
	Vertical reference system (MRU)	1 unit	1 unit	2 units	2 units, one of them connected to backup control station	1 unit
	Wind sensor	1 unit	1 unit	2 units	2 units, one of them connected to backup control station	1 unit
	Gyro compass	1 unit	2 units	3 units	3 units, one of them connected to backup control station	1 unit
	DP workstation with DP controller and operator panel	1 unit	1 unit	2 units	2 units, one of them connected to backup control station	1 unit
	Independent Joystick Control system with JC controller and operator panel	-	1 unit	1 units	2 units, one of them connected to backup control station	-
	Thruster I/O controller	1 unit	2 units	3 units (2x for DP, 1x for Joystick Control)	3 units (2x for DP, 1x for Joystick Control)	1 unit

Notes

1. Definition of redundancy: the ability to withstand, while on DP mode, the loss of equipment which is online, without losing position and/or heading.