EQUIPMENT LIST

TAG No.	ITEM	QTY.	CAPACITY (EA)	SPECIFICATION	COMMENTS

NOTES

1. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE RULES, REGULATIONS AND REQUIREMENTS AS PER THE CONTRACT SPECIFICATION.
2. THIS DIAGRAM IS A SCHEMATIC DIAGRAM OF A SYSTEM, AND IS NOT MEANT TO SHOW THE FINAL LOCATION OF EQUIPMENT OR ITEMS. PIPE ROUTING IS SHOWN FOR GUIDANCE ONLY.
3. SYMBOL LIST SHOWN HAS COMBINED SYMBOLS FROM VIKING AND VARD. VIKING SYMBOLS ARE ON THE LEFT, VARD SYMBOLS ON THE RIGHT, WHERE USED.
4. GREYED OUT PORTIONS OF DRAWING REPRESENT THE ORIGINAL VIKING DRAWING, SEE REF #1. DARKER SECTIONS REPRESENT MODIFICATIONS.
5. FUEL OIL STORAGE TANKS NO.24 AND FUEL/RECOVERED OIL STORAGE TANKS NO. 01-06 SHOWN OUTBOARD FOR CLARITY, SEE REFERENCE #2 FOR TANK LOCATION.
6. EXISTING VENTS FOR BRINE/FO TANKS (FO STORAGE NO. 17, 18, 19, 24) TO BE REMOVED, SEE REFERENCE #3.
7. CONNECTION FROM HEELING TANKS TO FO VENT SYSTEM TO BE REMOVED.
8. A SIGNBOARD SHALL BE FITTED TO SIGNIFY THAT THE OVERFLOW STORAGE TANK ENSURES SUFFICIENT VOLUME FOR OVERFLOW (PART 4, CHAPTER 6, SECTION 4, 11.3.3).
9. OVERFLOW PIPES SHALL NOT BE LESS THAN 125% OF THE SECTIONAL AREA OF THE FILLING PIPE (PART 4, CHAPTER 6, SECTION 4, 11.2.1).
10. OVERFLOW PIPES SHALL BE SELF-DRAINING UNDER NORMAL CONDITIONS OF TRIM AND AMBIENT TEMPERATURE (PART 4, CHAPTER 6, SECTION 4, 11.3.6).
11. INDIVIDUAL TANK OVERFLOW LINES SHOULD HAVE LOOPS EXTENDING ABOVE THE DEEPEST WATERLINE DERIVED FROM DAMAGED STABILITY CALCULATIONS (PART 4, CHAPTER 6, SECTION 4, 11.3.5).
12. FUEL OIL IS MARINE DIESEL OIL, FLASHPOINT OF 69°C.

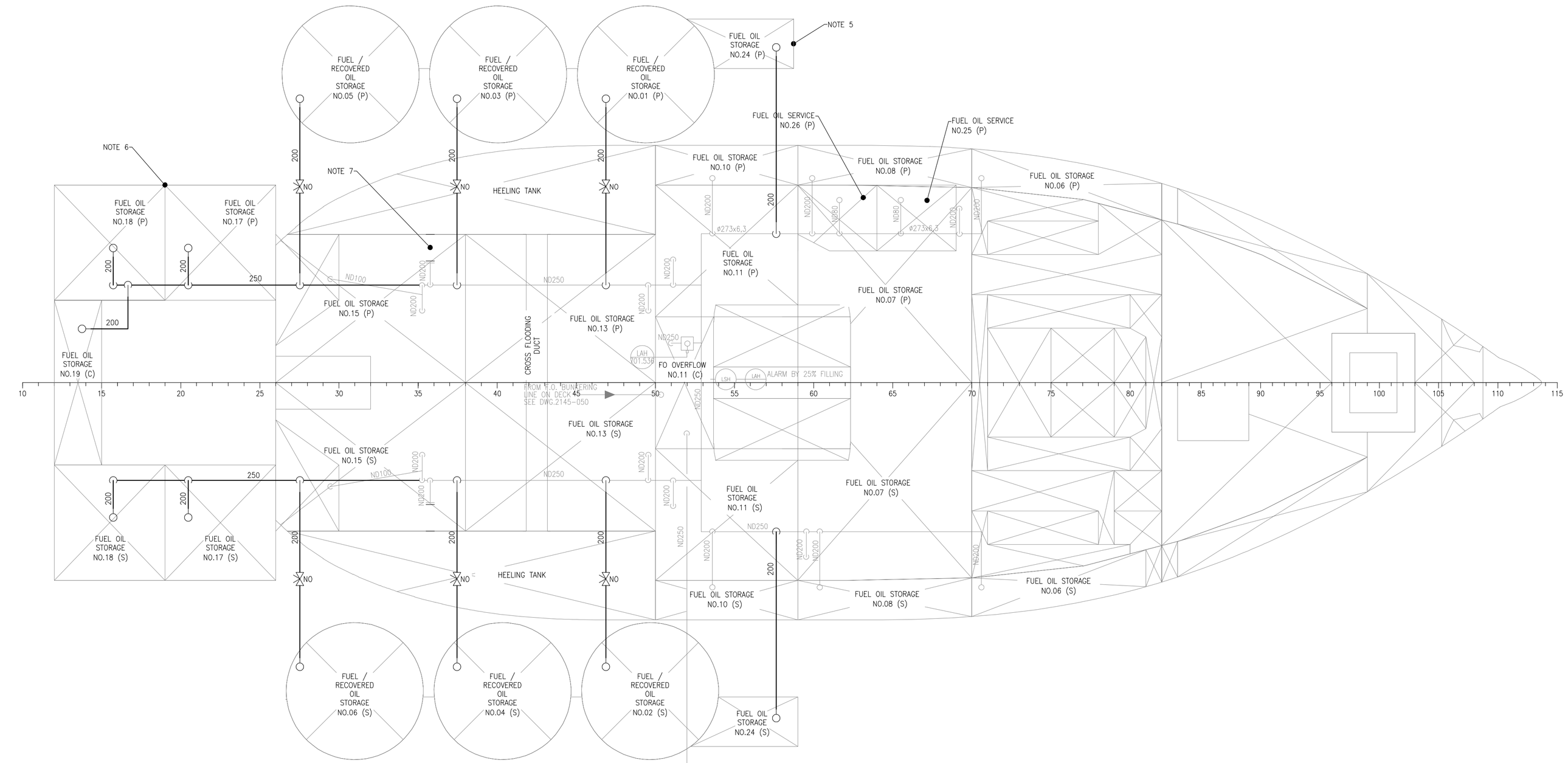
SYSTEM TEST PRESSURE

CLASS III PIPING	
DESIGN PRESSURE	5 BAR
TEST PRESSURE	7.5 BAR

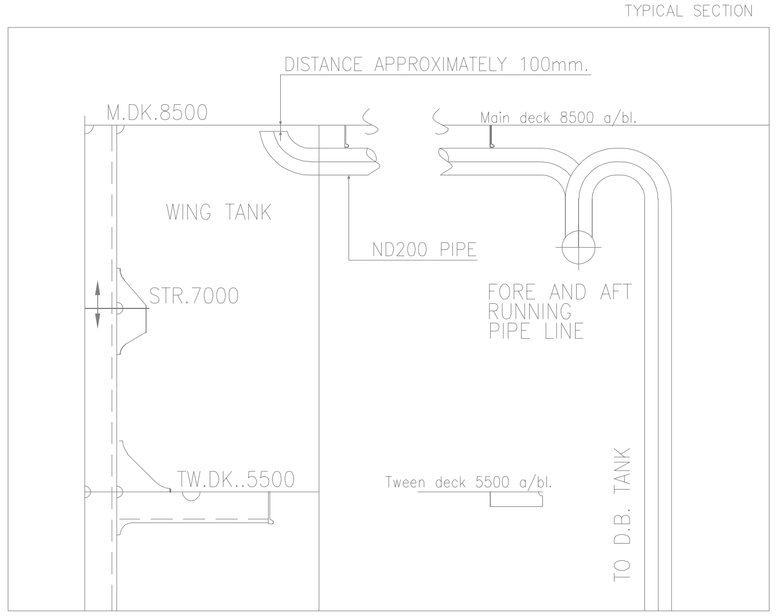
REVISIONS

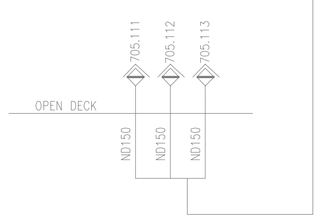
ZONE	REV	DESCRIPTION	DRAWN	CHECKED
–	0	INITIAL ISSUE.	PS	DI

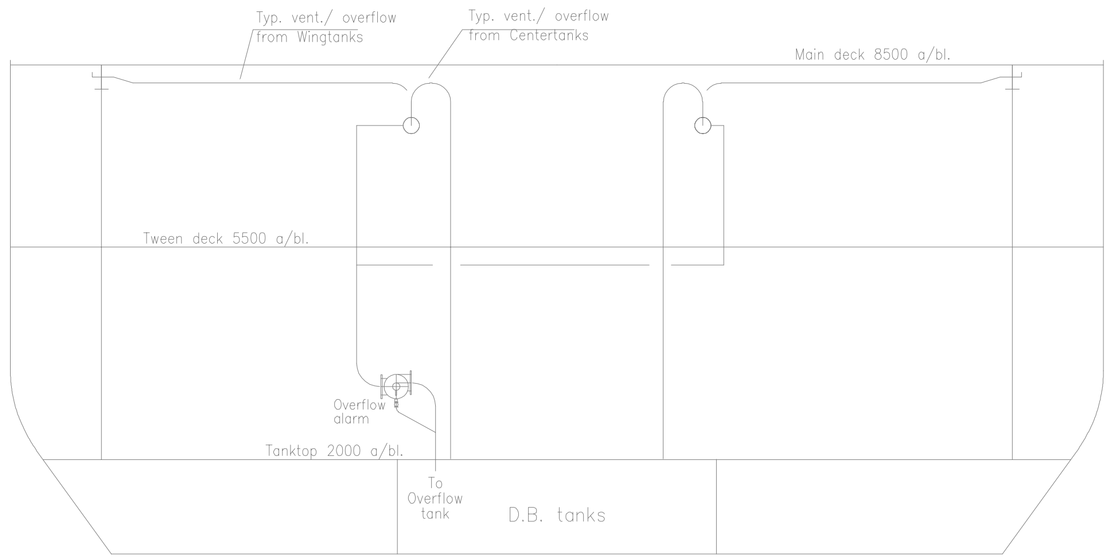
SYMBOL SEE NOTE #3		DESCRIPTION
		FLANGE / BLIND FLANGE
		PIPE DOWN
		PIPE UP
		AIR VENT HEAD VALVE
LSH		SWITCHES / SENSORS / INDICATORS
LAH		ALARM INDICATOR
		DIRECTION OF FLOW ARROW
		OVERFLOW ALARM
		BUTTERFLY VALVE



TYPICAL SECTION







TYPICAL SECTION

CALCULATIONS

DNV-GL RULES FOR CLASSIFICATION: SHIPS, PART 4, CHAPTER 6, SECTION 4:

11.3.2: THE OVERFLOWING TANKS SHALL HAVE A CAPACITY LARGE ENOUGH TO TAKE AN OVERFLOW OF TEN MINUTES AT THE NORMAL RATE OF FILLING.

FILL RATE CAPACITY: 110 m^3/HOUR (ASSUME UNCHANGED, SEE REFERENCE #1)
FILL VOLUME/10 MIN: 18.3 m^3
OVERFLOW TANK CAPACITY: 21.6 m^3 (REFERENCE #2)

11.3.4: THE SECTIONAL AREA OF THE OVERFLOW PIPES SHALL BE DIMENSIONED IN ACCORDANCE WITH THE REQUIREMENTS IN SECTION 11.2.1.

11.2.1: ...THE CALCULATIONS SHALL VERIFY THAT THE DYNAMIC PRESSURE INCREASE DURING... OVERFLOW DOES NOT EXCEED 25kN/m^2

ASSUME MARINE DIESEL OIL FROM FUEL OIL STORAGE TANK NO.19:
FILL RATE = 110 m^3/HOUR
DENSITY = 833.4 kg/m^3
KINEMATIC VISCOSITY = 2.96 mm^2/s
LENGTH OF PIPE @ 200ND = 4 m
LENGTH OF PIPE @ 250ND = 35 m
NUMBER OF 90 DEGREE ELBOWS = 2 @ 200ND + 5 @ 250ND
NUMBER OF TEES, LINE FLOW = 5 @ 250ND
NUMBER OF TEES, BRANCH FLOW = 1 @ 200ND + 3 @ 250ND

TOTAL DYNAMIC PRESSURE LOSS = 1.7 kN/m^2

11.2.1: ... THE SECTIONAL AREA OF THE AIR PIPES SHALL IN NO CASE BE TAKEN LESS THAN 125% OF THE SECTIONAL AREA OF THE FILLING PIPE.

DIAMETER OF THE FILLING PIPE = 114.3 mm (REFERENCE #4)
SECTIONAL AREA OF THE FILLING PIPE = 0.01026 m^2
125% OF AREA OF THE FILLING PIPE = 0.01283 m^2
MINIMUM DIAMETER = 127.8 mm
SPECIFIED DIAMETER = 200 mm

NO.	TITLE	DWG NO.
4	FUEL OIL FILL AND TRANSFER SYSTEM DIAGRAM	2625-VM-DD-5942-0102
3	OVERFLOWS, AIR ESCAPES AND SOUNDING TUBES	2625-VM-DD-5942-0089
2	TANK CAPACITY PLAN	2625-VM-DD-5942-0041
1	FUEL OIL VENT/OVERFLOW SYSTEM FOR MAIN BUNKER AND CARGO TANKS	204A4620

REFERENCES

APPROVED: ----	DATE: ----		
APPROVED: ----	DATE: ----		
DRAWN: PS	DATE: 11 JUN 19	PROJECT: 372	DWG. NO. 2625-VM-DD-5942-0134
CHECKED: DI	DATE: 19 JUN 19	FORMAT: A1	REV: 0
VERIFIED: ----	DATE: ----		

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TITLE: 541-02 - FUEL OIL VENT AND OVERFLOW SYSTEM DIAGRAM

SCALE: NONE
FILE NAME: 2625-VM-DD-5942-0134 541-02 - FUEL OIL VENT AND OVERFLOW SYSTEM DIAGRAM SHT1to1 REV0.dwg
SHEET: 1 OF 1
Plot Date: Thursday, June 20, 2019 by Shorey, Patrick