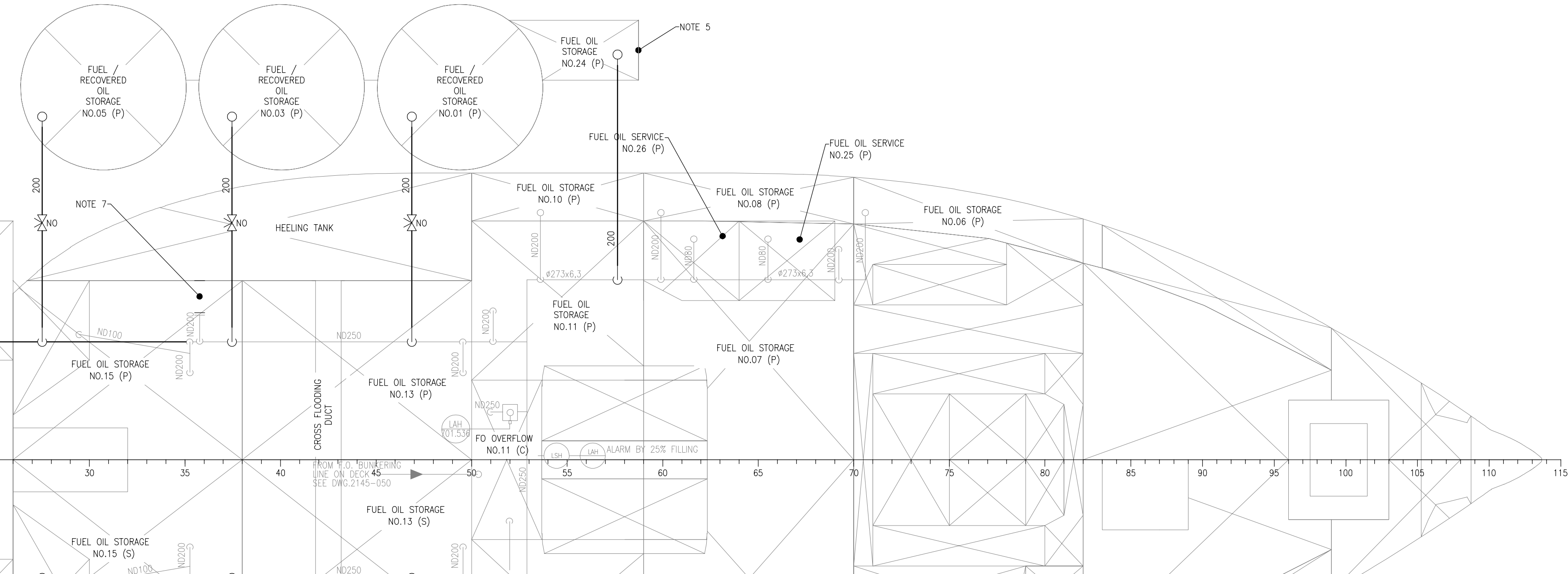


4. GREYED OUT PORTIONS OF DRAWING REPRESENT THE ORIGINAL VIKING DRAWING, SEE REF #1. DARKER SECTIONS REPRESENT MODIFICATIONS.
5. FUEL OIL STORAGE TANKS NO.24 AND FUEL/RECOVERED OIL STORAGE TANKS NO. 01–06 SHOWN OUTBOARD FOR CLARITY, SEE REFERENCE #2 FOR TANK LOCATION.
6. EXISTING VENTS FOR BRINE/FO TANKS (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.



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

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 THE NORMAL RATE OF FILLING.	
FILL RATE CAPACITY:	110 m ³ /HOUR (ASSUME UNCHANGED)
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 SET OUT IN SECTION 11.2.1.	
11.2.1: ...THE CALCULATIONS SHALL VERIFY THAT THE DYNAMIC PRESSURE INCREASES DO 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	