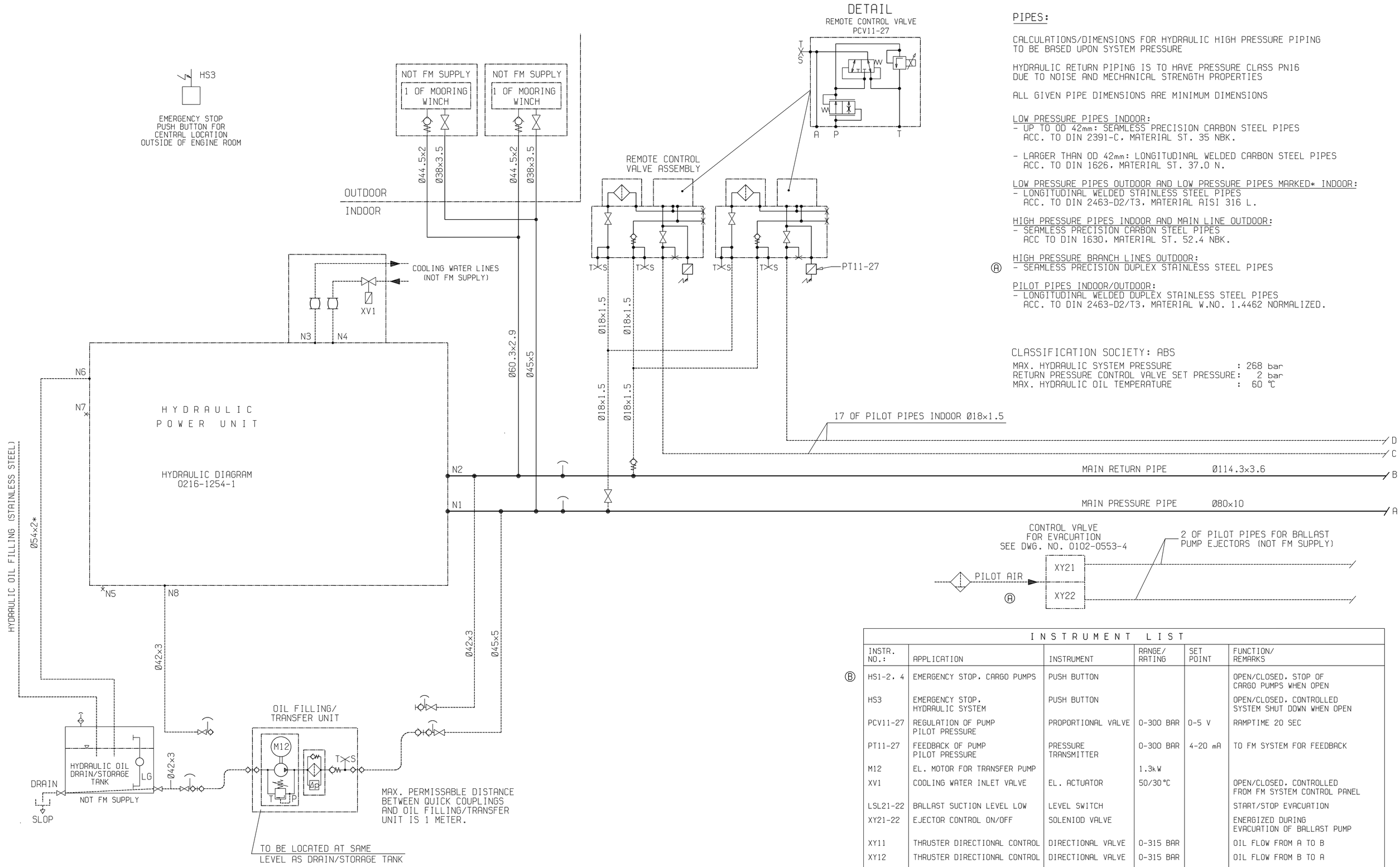

PIPES:

CALCULATIONS/DIMENSIONS FOR HYDRAULIC HIGH PRESSURE PIPING TO BE BASED UPON SYSTEM PRESSURE

HYDRAULIC RETURN PIPING IS TO HAVE PRESSURE CLASS PN16 DUE TO NOISE AND MECHANICAL STRENGTH PROPERTIES

ALL GIVEN PIPE DIMENSIONS ARE MINIMUM DIMENSIONS

LOW PRESSURE PIPES INDOOR:
- UP TO OD 42mm: SEAMLESS PRECISION CARBON STEEL PIPES ACC. TO DIN 2391-C, MATERIAL ST. 35 NBK.
- LARGER THAN OD 42mm: LONGITUDINAL WELDED CARBON STEEL PIPES ACC. TO DIN 1626, MATERIAL ST. 37.0 N.

LOW PRESSURE PIPES OUTDOOR AND LOW PRESSURE PIPES MARKED* INDOOR:
- LONGITUDINAL WELDED STAINLESS STEEL PIPES ACC. TO DIN 2463-D2/T3, MATERIAL AISI 316 L.

HIGH PRESSURE PIPES INDOOR AND MAIN LINE OUTDOOR:
- SEAMLESS PRECISION CARBON STEEL PIPES ACC TO DIN 1630, MATERIAL ST. 52.4 NBK.

HIGH PRESSURE BRANCH LINES OUTDOOR:
Ⓐ - SEAMLESS PRECISION DUPLEX STAINLESS STEEL PIPES

PILOT PIPES INDOOR/OUTDOOR:
- LONGITUDINAL WELDED DUPLEX STAINLESS STEEL PIPES ACC. TO DIN 2463-D2/T3, MATERIAL W.NO. 1.4462 NORMALIZED.

CLASSIFICATION SOCIETY: ABS

MAX. HYDRAULIC SYSTEM PRESSURE : 268 bar
RETURN PRESSURE CONTROL VALVE SET PRESSURE: 2 bar
MAX. HYDRAULIC OIL TEMPERATURE : 60 °C

INSTRUMENT LIST

INSTR. NO.:	APPLICATION	INSTRUMENT	RANGE/ RATING	SET POINT	FUNCTION/ REMARKS
Ⓑ HS1-2, 4	EMERGENCY STOP, CARGO PUMPS	PUSH BUTTON			OPEN/CLOSED, STOP OF CARGO PUMPS WHEN OPEN
HS3	EMERGENCY STOP, HYDRAULIC SYSTEM	PUSH BUTTON			OPEN/CLOSED, CONTROLLED SYSTEM SHUT DOWN WHEN OPEN
PCV11-27	REGULATION OF PUMP PILOT PRESSURE	PROPORTIONAL VALVE	0-300 BAR	0-5 V	RAMPTIME 20 SEC
PT11-27	FEEDBACK OF PUMP PILOT PRESSURE	PRESSURE TRANSMITTER	0-300 BAR	4-20 mA	TO FM SYSTEM FOR FEEDBACK
M12	EL. MOTOR FOR TRANSFER PUMP		1.3kW		
XV1	COOLING WATER INLET VALVE	EL. ACTUATOR	50/30°C		OPEN/CLOSED, CONTROLLED FROM FM SYSTEM CONTROL PANEL
LSL21-22	BALLAST SUCTION LEVEL LOW	LEVEL SWITCH			START/STOP EVACUATION
XY21-22	EJECTOR CONTROL ON/OFF	SOLENIOD VALVE			ENERGIZED DURING EVACUATION OF BALLAST PUMP
XY11	THRUSTER DIRECTIONAL CONTROL	DIRECTIONAL VALVE	0-315 BAR		OIL FLOW FROM A TO B
XY12	THRUSTER DIRECTIONAL CONTROL	DIRECTIONAL VALVE	0-315 BAR		OIL FLOW FROM B TO A
XY13	THRUSTER EMERGENCY CONTROL	DIRECTIONAL VALVE	0-315 BAR		EMERGENCY OPERATION/ MAX. TORQUE
PCV2	THRUSTER SPEED CONTROL	DIRECTIONAL VALVE	0-315 BAR		RAMPTIME 15 SEC.
ST1	THRUSTER RPM PICK UP		0-60 Hz		

Dim & tolerance	Upper limit	Lower limit
Permissible deviations for dimensions with a tolerance indication		
Surface roughness in Ra (µm)		
Fill. & edg. not dim.	Fillets	Edges

Permissible deviations for dimensions without a tolerance indication

Linear dimension or shortest leg of an angle: over	to	Machined: Tolerance linear	Machined: Tolerance angle	Welded: Tolerance linear	Welded: Tolerance angle
	6	± 0.1	± 0.5°	± 1	± 0.6°
6	30	± 0.2			
30	120	± 0.3	± 0.4°		
120	315	± 0.5	± 0.3°	± 1.5	
315	1000	± 0.8		± 2	± 0.5°
1000	2000	± 1.2	± 0.2°	± 3	
2000	4000	± 2		± 4	± 0.3°
4000	8000	± 3		± 5	

R.	Zone	R.O.no.	Sign./Date	Ctrl
B		Revised	JEOE/13Dec05	
A		Revised	JEOE/08Jul05	

0 10 20 30 40 50 60 70 80 90 100
Valid for original scale 1:1

Item	Qty	Id. no	Description

This drawing is our property. It is not to be traced, copied or published without our written consent, nor to be misused in any way.

Project. used | Original Scale

Status	Sign.	Date
Constr.	ØH	10Dec04
Drawn by	JEOE	10Dec04
Checked	KHe	10Dec04
Prot. rel.		
Prod. rel.	ØH	10Dec04

Drg. no./Type

Frank Mohn AS
FRAMO

HYDRAULIC DIAGRAM ENGINE ROOM

Material

Weld. drg./Cast. drg.

Replaces:

0216-1275-101

Replaced by: