



PROGETTO: SSLNG Service - Adempimenti connessi al D.lgs. 105/15

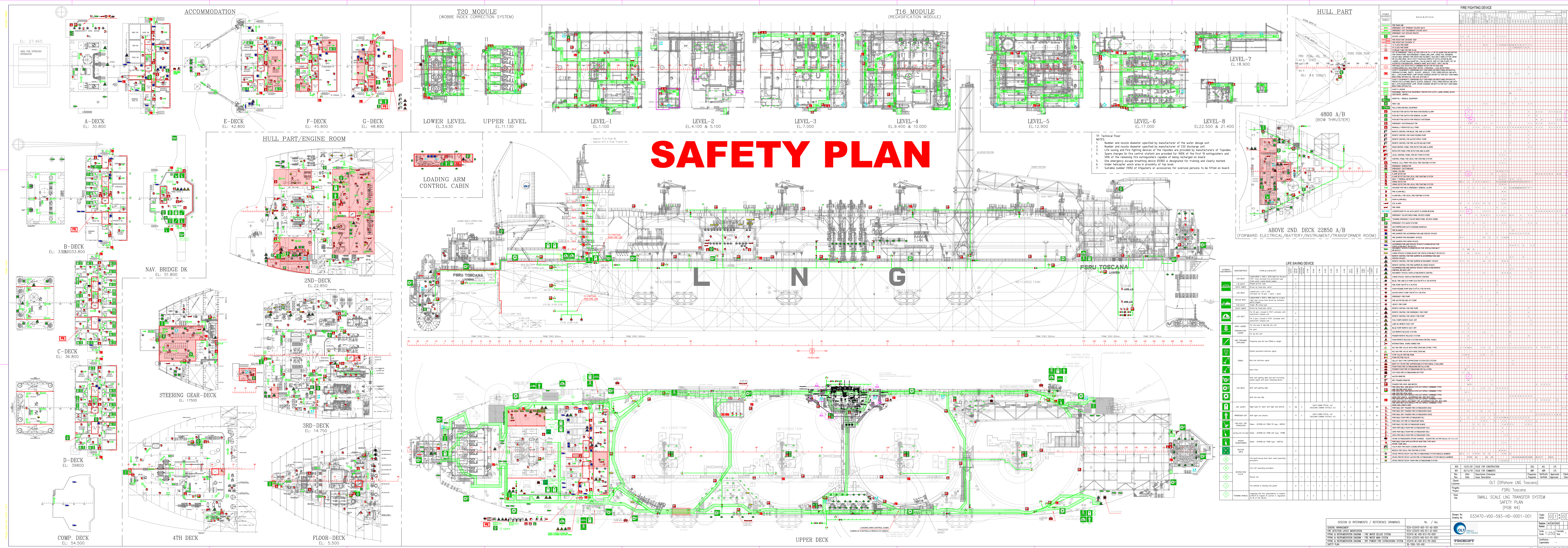
ATTIVITA': Dichiarazione di Non Aggravio ai sensi dell'art. 18 e dell'Allegato D del D.lgs. 105/15



ALLEGATO 2

Planimetrie antincendio e F&G

SAFETY PLAN



- 1. Number and serial identifier specified by manufacturer of the water release unit.
- 2. Life saving and fire fighting devices of the supplies are provided by manufacturers of Tosconia.
- 3. Spare charges for the control cabinet are provided on board of the vessel.
- 4. Spare charges for the extinguishers are provided on board of the vessel.
- 5. Spare emergency escape breathing device (ESB) is provided for fire and rescue number.
- 6. Under particular which area is a quantity of this type.
- 7. Serial number (S/N) of the device or accessories for reserve parts to be fitted on board.

NO.	DESCRIPTION	TYPE	QTY	UNIT	REMARKS
1	Water release unit	W	1	unit	
2	Life saving and fire fighting devices	L	1	unit	
3	Spare charges for the control cabinet	C	1	unit	
4	Spare charges for the extinguishers	E	1	unit	
5	Spare emergency escape breathing device (ESB)	B	1	unit	
6	Under particular which area is a quantity of this type	U	1	unit	
7	Serial number (S/N) of the device or accessories for reserve parts to be fitted on board	S	1	unit	

NO.	DESCRIPTION	TYPE	QTY	UNIT	REMARKS
1	Water release unit	W	1	unit	
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6	Under particular which area is a quantity of this type	U	1	unit	
7	Serial number (S/N) of the device or accessories for reserve parts to be fitted on board	S	1	unit	

DESIGN & REFERENCE / REVISIONS

NO.	DESCRIPTION	DATE
1	ISSUED FOR CONSTRUCTION	2024-01-15
2	ISSUED FOR CONSTRUCTION	2024-01-15
3	ISSUED FOR CONSTRUCTION	2024-01-15

Scale: 1:2500

Project: OLT (Offshore LNG Tosscona)

Client: FSRU Tosscona

System: SMALL SCALE LNG TRANSFER SYSTEM

Plan: SAFETY PLAN

Sheet: 44 of 44

Drawn by: 033470-V00-593-H0-0001-001

Checked by: [Signature]

Approved by: [Signature]

Scale: 1:2500

Project: OLT (Offshore LNG Tosscona)

Client: FSRU Tosscona

System: SMALL SCALE LNG TRANSFER SYSTEM

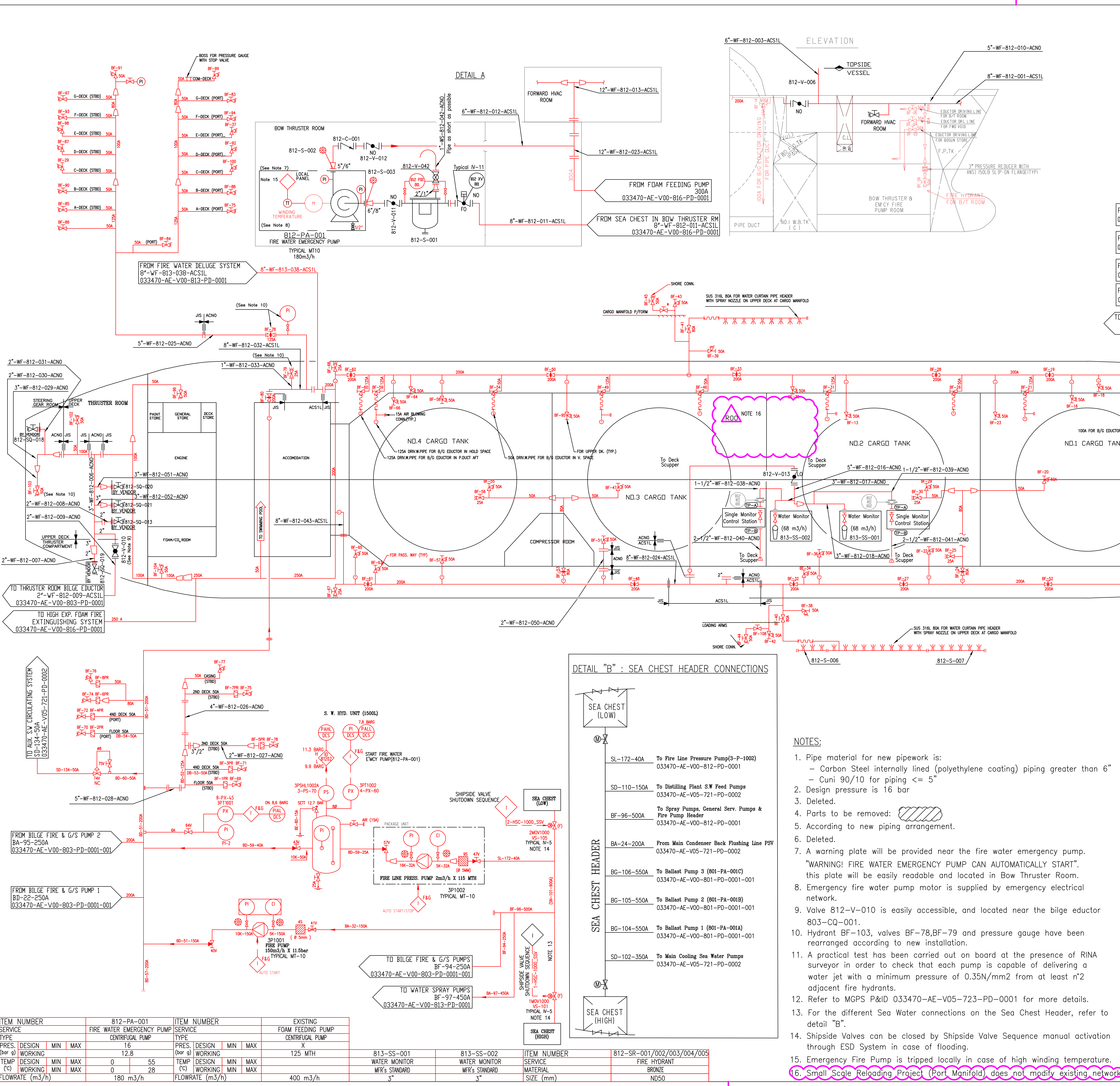
Plan: SAFETY PLAN

Sheet: 44 of 44

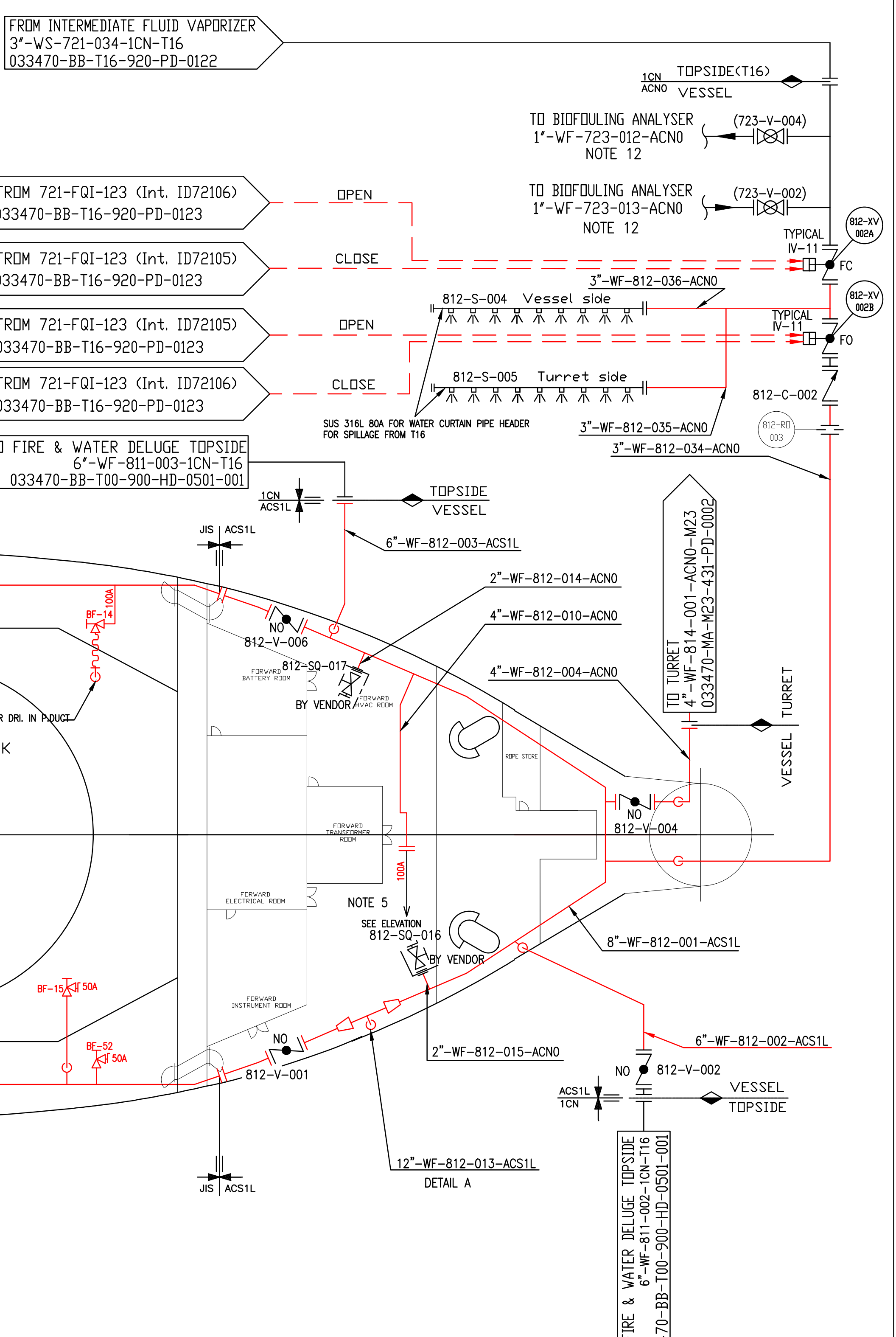
Drawn by: 033470-V00-593-H0-0001-001

Checked by: [Signature]

Approved by: [Signature]



DESENI DI RIFERIMENTO / REFERENCE DRAWINGS	Nr. / No.
P&ID - MAIN SEA WATER CIRCULATION SYSTEM	033470-AE-V05-384-PD-0001
P&ID - AUX. S.W. CIRCULATING SYSTEM	033470-AE-V05-721-PD-0002
P&ID - BILGE SYSTEM	033470-AE-V00-803-PD-0001
P&ID - FIRE WATER DELUGE SYSTEM	033470-AE-V00-813-PD-0001
P&ID - TURRET UTILITIES	033470-MA-M23-431-PD-0002
P&ID - TOPSIDE FIRE WATER	033470-BB-T00-900-HD-0501
P&ID - MARINE GROWTH PREVENTION SYSTEM	033470-AE-V05-723-PD-0001
P&ID - HIGH EXPANSION FOAM FIRE EXTINGUISHING SYSTEM	033470-AE-V00-816-PD-0001
P&ID - INTERMEDIATE FLUID VAPORIZER (920-HI-003)	033470-BB-T16-920-PD-0123
P&ID - INTERMEDIATE FLUID VAPORIZER (920-HI-002)	033470-BB-T16-920-PD-0122



- SYMBOLS:**
- For existing part refer to HHI standard:
 - in E/R => 3U-2400-103
 - in HULL part => 2T-7400-003
 - For new part refer to PID Legend 033470-BB-T00-900-PD-0100 to 0105 & 0109

Rev.	Date	Descrizione Emmissione Issue Description	Preparato Prepared	Verificato Verified	Approvato Approved	Cliente Client
AD1	20.09.18	ISSUE FOR COMMENTS	GGU	ACL	LFE	
AD1	20.09.18	ISSUE FOR COMMENTS	ABR	ACL	LFE	

Cliente Customer: OLT (Offshore LNG Toscana)

Progetto Project: FSRU Toscana

Titolo Title: SMALL SCALE LNG TRANSFER SYSTEM PIPING & INSTRUMENT DIAGRAM FIRE WATER MAIN SYSTEM

Disegno No. Drawing No.: 033470-V00-812-PD-0001

Foglio Sheet: 01 di 01

Revisione Revision: 01/00

Scala Scale: 1:___ Formato Size: A1

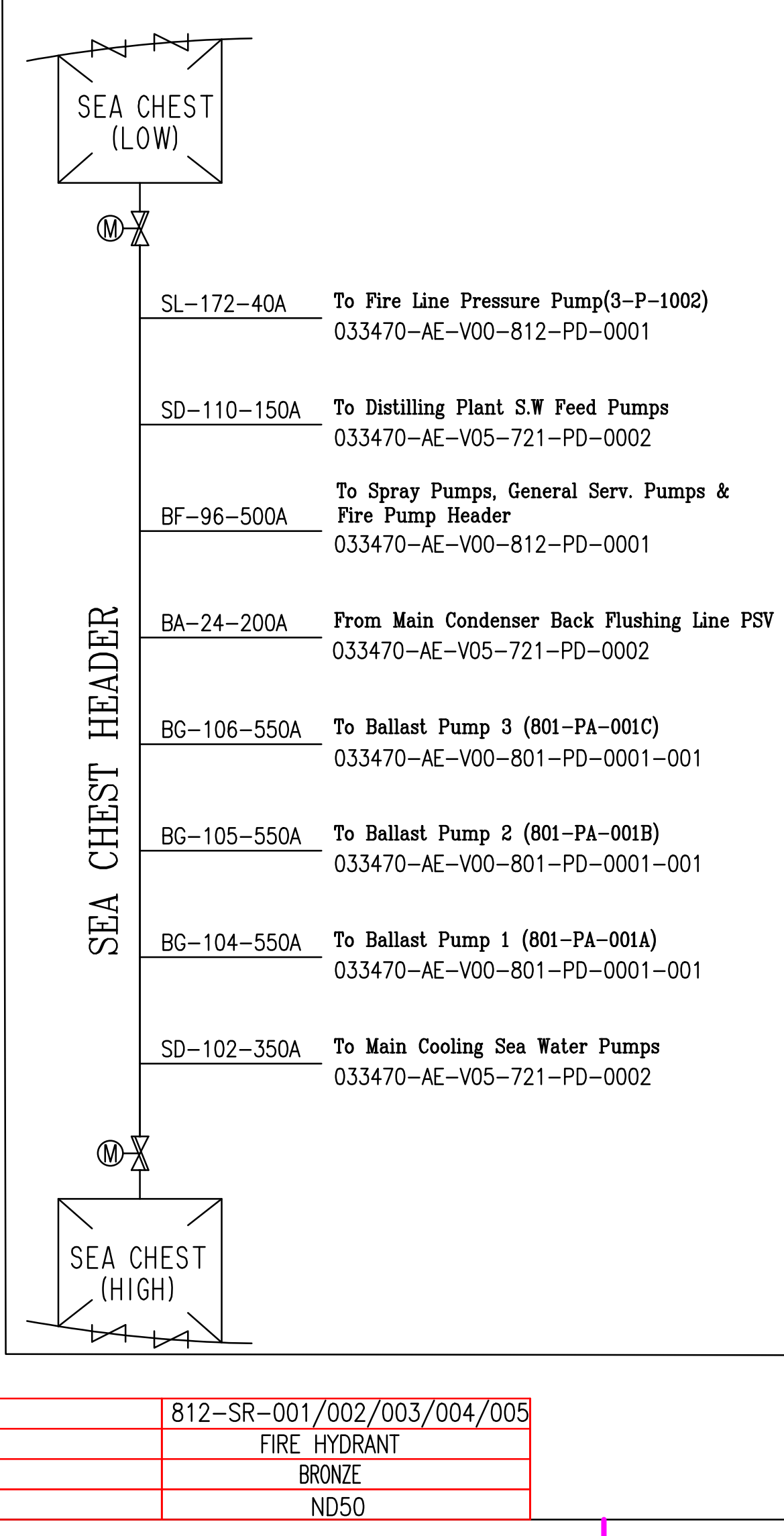
Sostituisce Supersedes: -

TECHINT Engineering & Construction

ITEM NUMBER	812-PA-001	ITEM NUMBER	EXISTING
SERVICE	FIRE WATER EMERGENCY PUMP	SERVICE	FOAM FEEDING PUMP
TYPE	CENTRIFUGAL PUMP	TYPE	CENTRIFUGAL PUMP
PRES. DESIGN (bar g)	16	PRES. DESIGN (bar g)	X
WORKING	12.8	WORKING	125 MTH
TEMP DESIGN (°C)	0	TEMP DESIGN (°C)	55
WORKING	0	WORKING	28
FLOWRATE (m3/h)	180 m3/h	FLOWRATE (m3/h)	400 m3/h

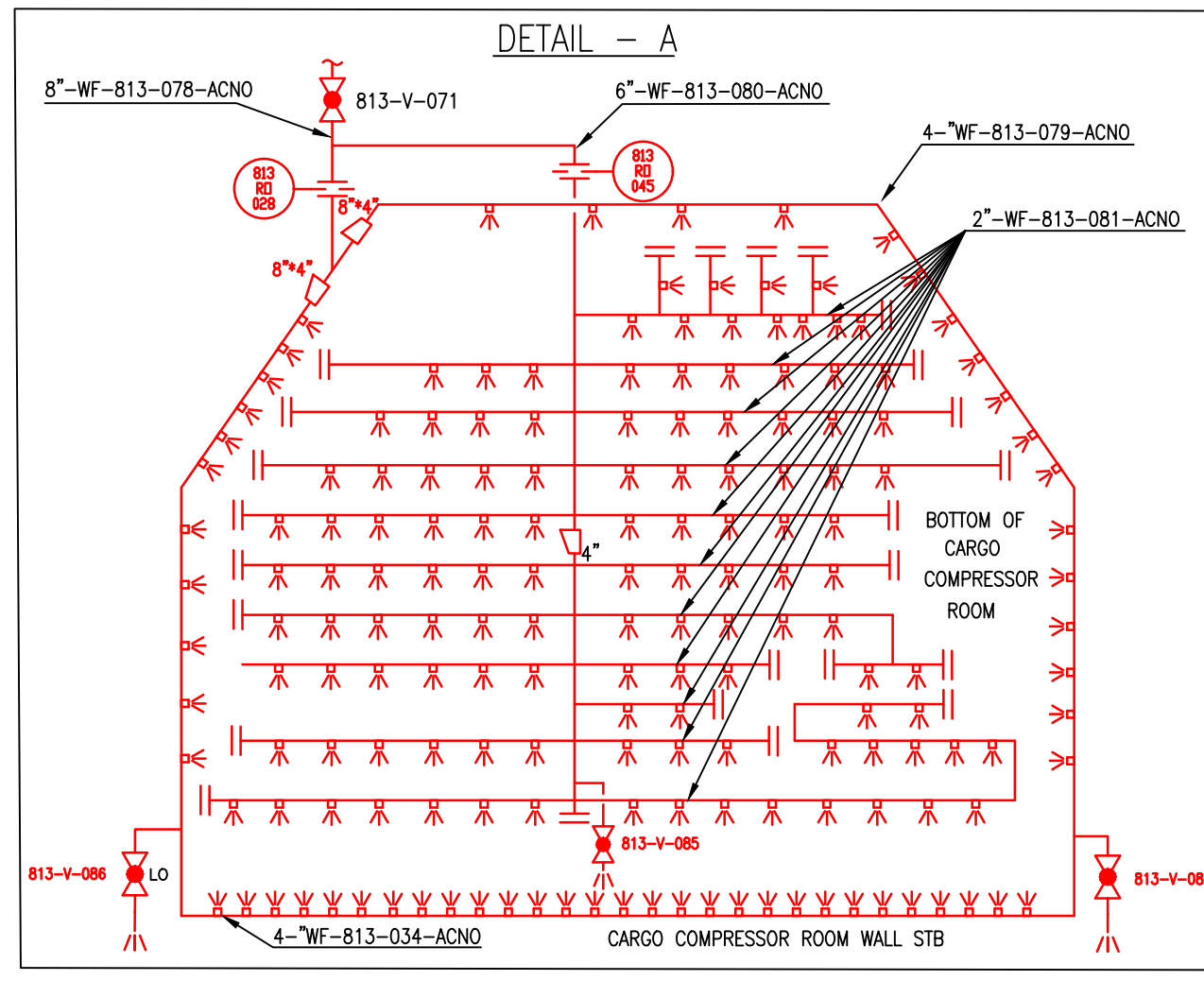
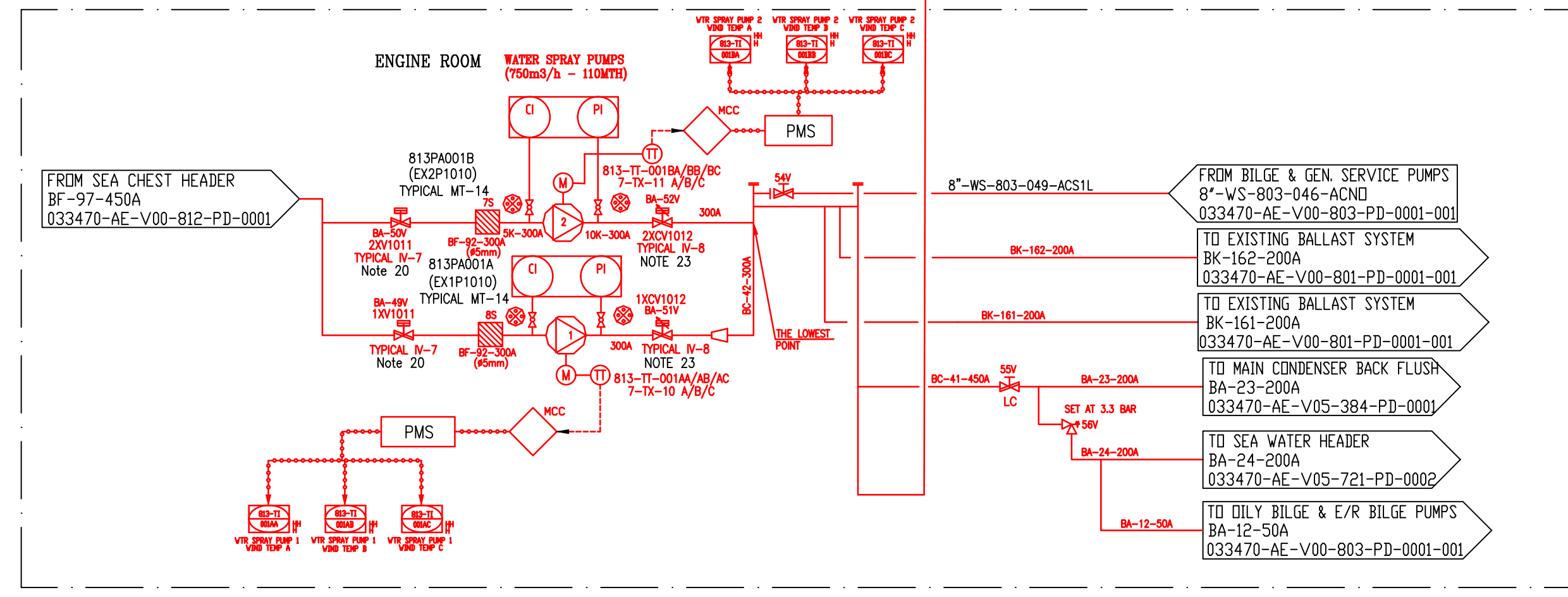
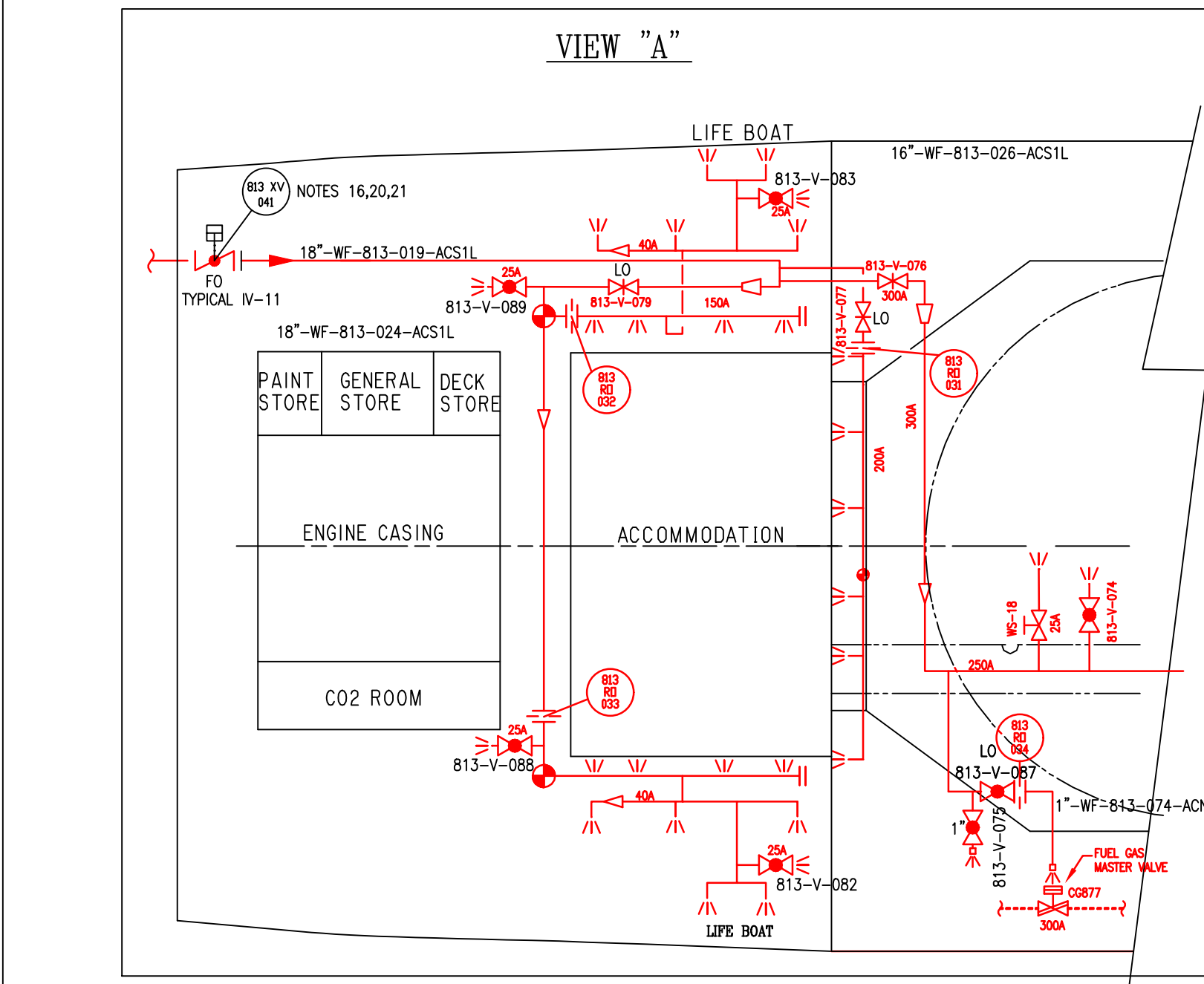
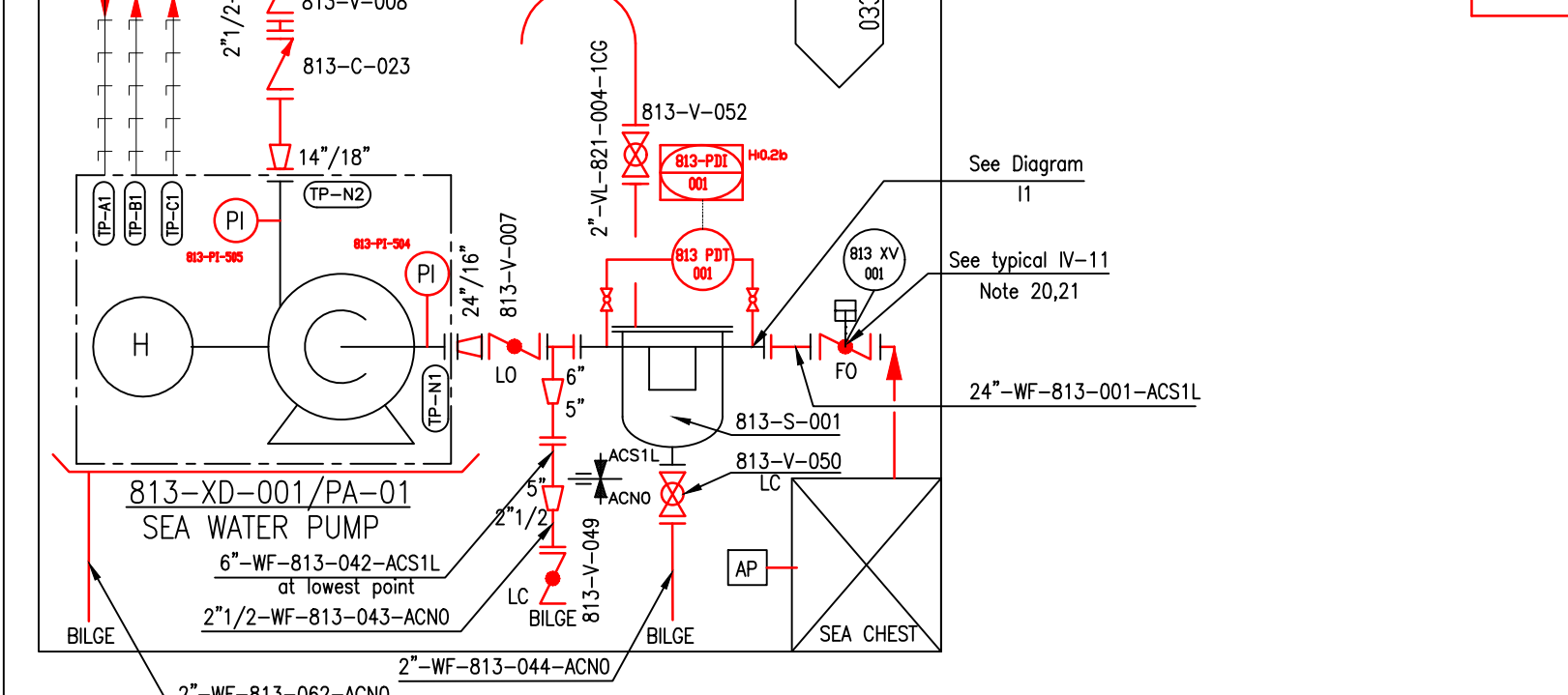
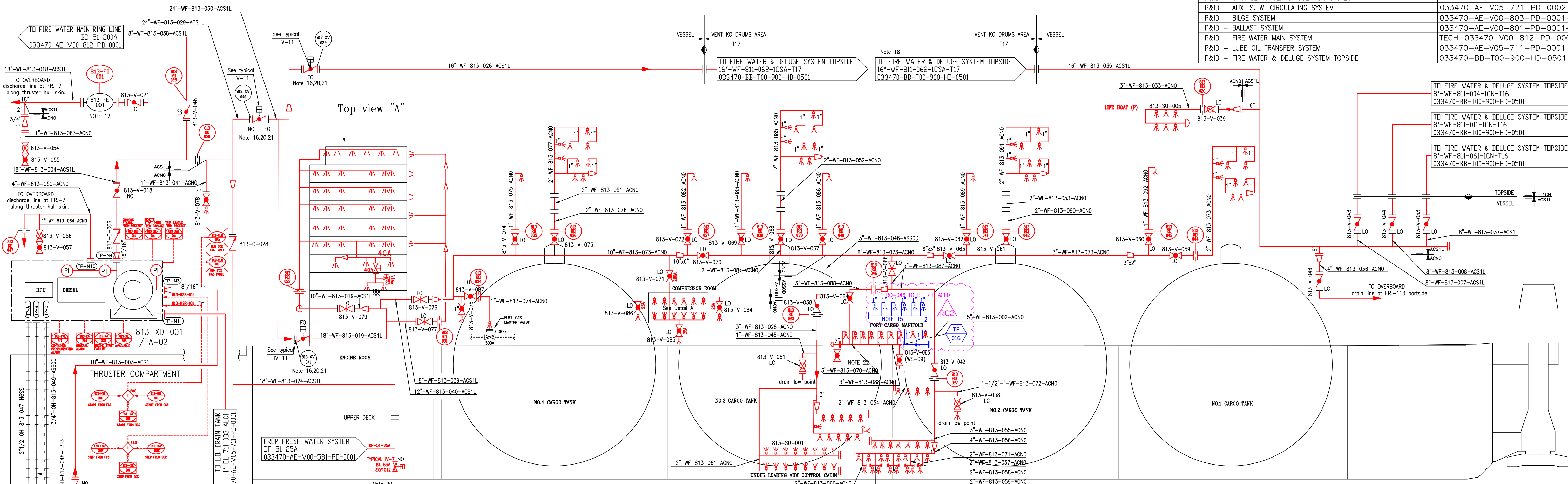
ITEM NUMBER	813-SS-001	813-SS-002	ITEM NUMBER	812-SR-001/002/003/004/005
SERVICE	WATER MONITOR	WATER MONITOR	SERVICE	FIRE HYDRANT
MATERIAL	MFR's STANDARD	MFR's STANDARD	MATERIAL	BRONZE
SIZE (mm)	3"	3"	SIZE (mm)	NDS0

DETAIL "B" : SEA CHEST HEADER CONNECTIONS



- NOTES:**
- Pipe material for new pipework is:
 - Carbon Steel internally lined (polyethylene coating) piping greater than 6"
 - In HULL part => 2T-7400-003
 - Design pressure is 16 bar
 - Deleted.
 - Parts to be removed: [diagram symbol]
 - According to new piping arrangement.
 - Deleted.
 - A warning plate will be provided near the fire water emergency pump. "WARNING! FIRE WATER EMERGENCY PUMP CAN AUTOMATICALLY START", this plate will be easily readable and located in Bow Thruster Room.
 - Emergency fire water pump motor is supplied by emergency electrical network.
 - Valve 812-V-010 is easily accessible, and located near the bilge eductor 803-CQ-001.
 - Hydrant BF-103, valves BF-78, BF-79 and pressure gauge have been rearranged according to new installation.
 - A practical test has been carried out on board at the presence of RINA surveyor in order to check that each pump is capable of delivering a water jet with a minimum pressure of 0.35N/mm2 from at least n2 adjacent fire hydrants.
 - Refer to MGPS P&ID 033470-AE-V05-723-PD-0001 for more details.
 - For the different Sea Water connections on the Sea Chest Header, refer to detail "B".
 - Shipside Valves can be closed by Shipside Valve Sequence manual activation through ESD System in case of flooding.
 - Emergency Fire Pump is tripped locally in case of high winding temperature.
 - Small Scale Reloading Project (Port Manifold) does not modify existing network

DESEI DI RIFERIMENTO / REFERENCE DRAWINGS	Nr. / No.
P&ID - DOMESTIC FRESH WATER SYSTEM	033470-AE-V00-581-PD-0001
P&ID - MAIN SEA WATER CIRCULATION SYSTEM	033470-AE-V05-384-PD-0001
P&ID - AUX. S. W. CIRCULATING SYSTEM	033470-AE-V05-721-PD-0002
P&ID - BILGE SYSTEM	033470-AE-V00-803-PD-0001-001
P&ID - BALLAST SYSTEM	033470-AE-V00-801-PD-0001-001
P&ID - FIRE WATER MAIN SYSTEM	TECH-033470-V00-812-PD-0001
P&ID - LUBE OIL TRANSFER SYSTEM	033470-AE-V05-711-PD-0001
P&ID - FIRE WATER & DELUGE SYSTEM TOPSIDE	033470-BB-T00-900-HD-0501



NOTES:

- Pipe material is - Carbon Steel internally lined (polyethylene coating) piping greater than 6" - Cuni 90/10 for piping <= 5"
- Design pressure is 16 bar
- Deleted.
- For water spray valves see calculation Report: 033470-BB-C00-000-HC-0010 & 33470-SH-C00-813-HC-0001.
- Deleted.
- Deleted.
- Deleted.
- Deleted.
- Deleted.
- Deleted.
- Deleted.
- For the installation of the flow element(813-FE-001) is taken into account at least straight line of 5D upstream the FE, and 3D downstream the FE.
- Deleted.
- All remote control valves provided with manual override.
- Drains provided in the lowest points in the system.
- Valves installed in a safe area.
- All pipes, valves, nozzles and fittings are to be resistant to corrosion by seawater and to effect of fire
- Water spray for Vent K.O DRUM AREA is seen on P&ID FIRE WATER & DELUGE SYSTEM TOPSIDE 033470-BB-T00-900-HD-0501
- Deleted.
- Start of pumps (813-PA-001A/B) by FIRE & GAS are permitted only if the WATER BALLAST EDUCTOR drive valves(1 and 2) are closed when operated from CCR/FCR Matrix Panel.
- Valves are opened in case of start of the diesel DELUGE FIRE WATER PUMP(813-XD-001).
- Tapping for Pressure Indicator.
- Valve Opens when the Pump is Starting to Run and Close with 50sec. Delay after Pump Stops

Rev.	Date	Descrizione Emissione Issue Description	Preparato Prepared	Verificato Verified	Approvato Approved	Cliente Client
R02	16.01.20	ISSUE FOR CONSTRUCTION	GGU	ACL	LFE	
R01	22.07.19	ISSUE FOR COMMENTS	DMA	MSN	LFE	
A01	21.01.19	ISSUE FOR COMMENTS	ABR	ACL	LFE	

Cliente Customer: OLT (Offshore LNG Toscana)

Progetto Project: FSRU Toscana

Titolo Title: PIPING & INSTRUMENT DIAGRAM
FIRE WATER DELUGE SYSTEM

Disegno No. Drawing No.: 033470-V00-813-PD-0001

Foglio Sheet: 01 di 01

Revisione Revision: 01/01 R02

Scala Scale: 1: - - - - -

Formato Size: A1

Disegno No. Drawing No.: 033470-V00-813-PD-0001

Revisione Revision: 01/01 R02

Scala Scale: 1: - - - - -

Formato Size: A1

Sostituisce Supersedes: -

ITEM NUMBER	813-XD-001	813-SU-001	813-SU-002	813-SU-003	813-SU-004	813-SU-005	813-SU-006	813-FE-001
SERVICE	FIRE WATER DELUGE PUMP	WATER DELUGE UNIT	WATER DELUGE UNIT	WATER DELUGE UNIT	WATER DELUGE UNIT	WATER DELUGE UNIT	WATER DELUGE UNIT	FLOW METER
TYPE	CENTRIFUGAL DIESEL DRIVEN	VENDOR	VENDOR	VENDOR	VENDOR	VENDOR	VENDOR	TBC
PRES. DESIGN (bar g)	MIN 10 MAX 10	3 (see note 13)	3 (see note 13)	3 (see note 13)	3 (see note 13)	3 (see note 13)	3 (see note 13)	15.5
TEMP DESIGN (°C)	MIN 0 MAX 55	0	0	0	0	0	0	11.5
FLOWRATE (m3/H)	1500	16+17	115	3	3	29	50	2000

SYMBOLS:

- For existing part refer to HHI standard in E/R: 3U-2400-103
- For new part refer to PID Legend 033470-BB-T00-900-PD-0100 to 0105 & 0109.
- WATER SPRAY NOZZLES