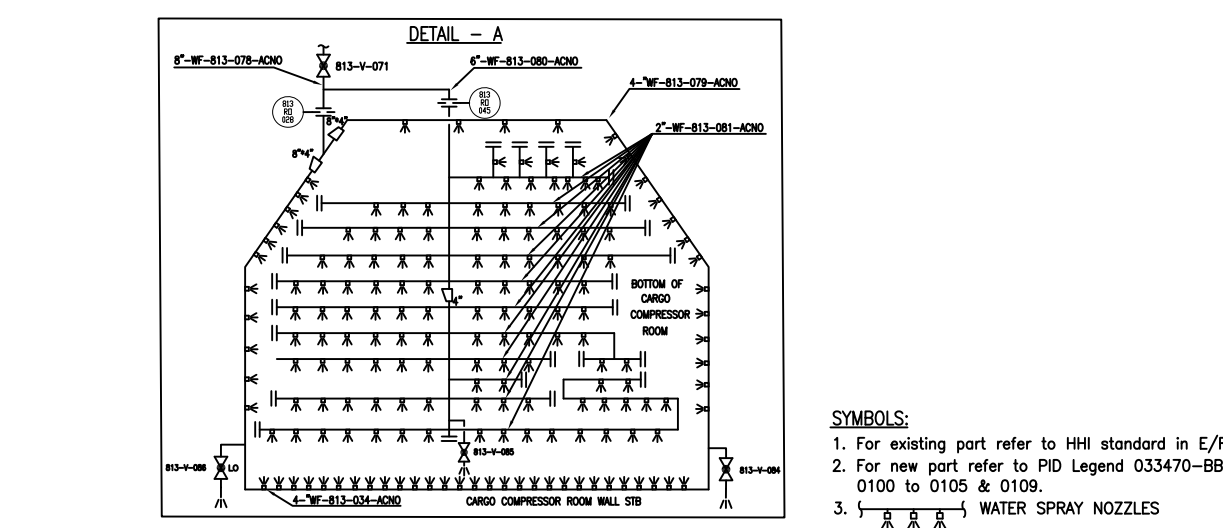
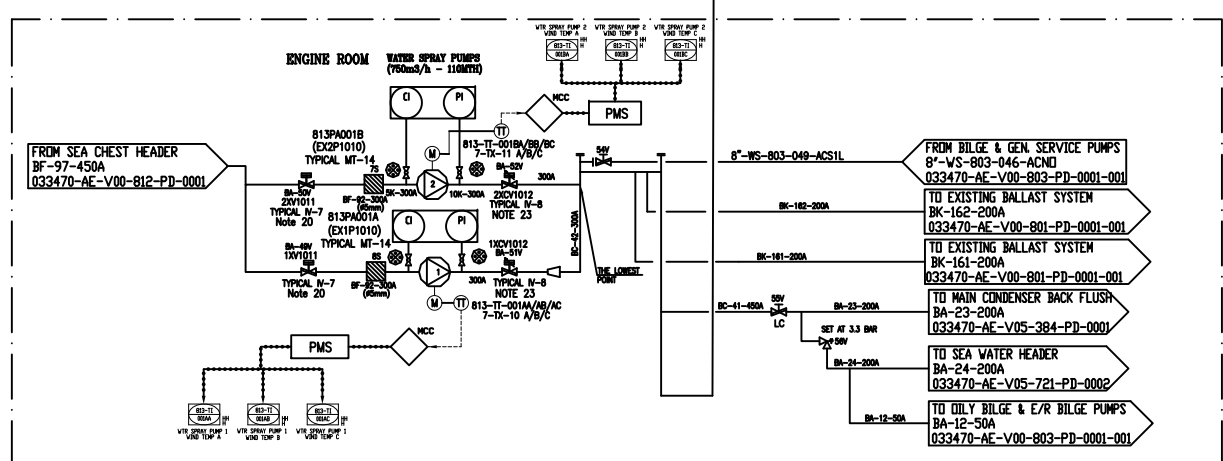
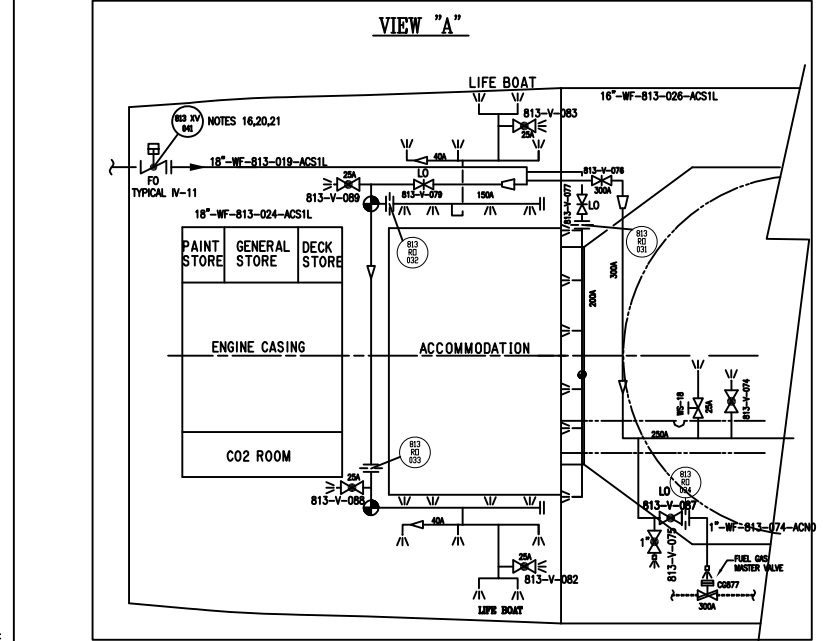
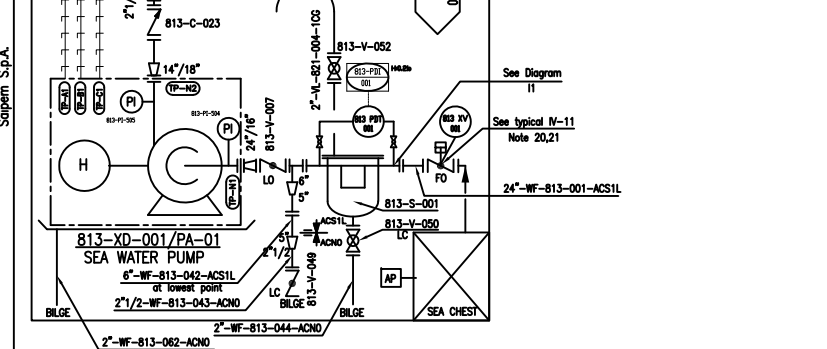
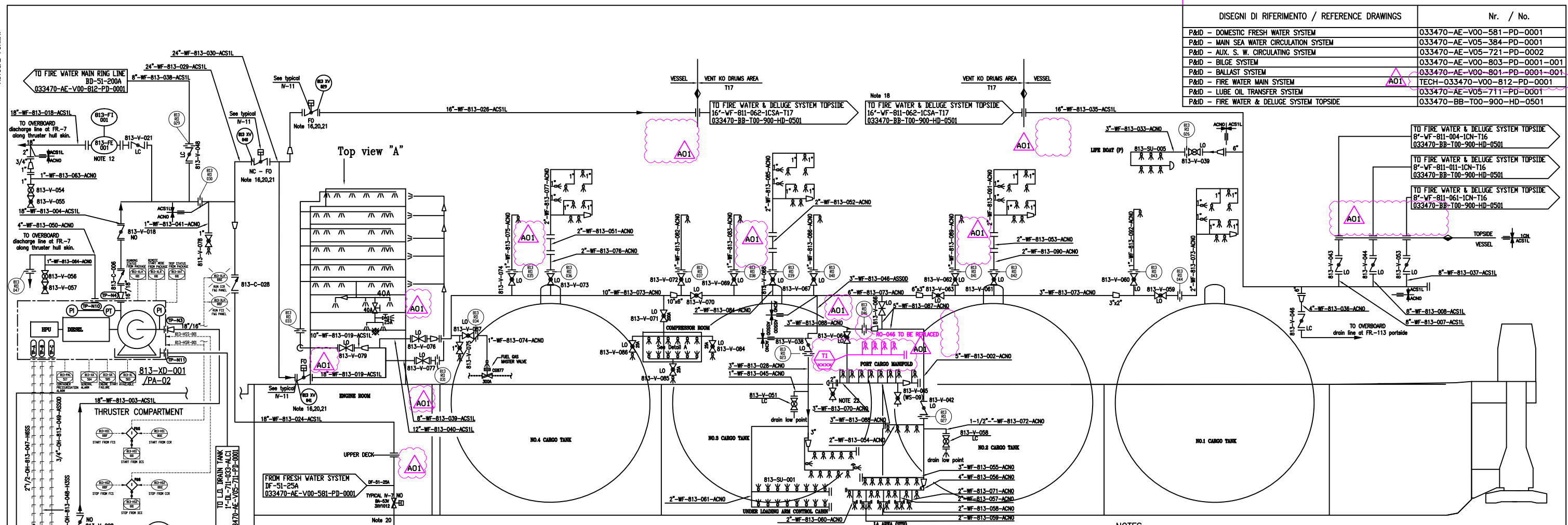


DISEGNI DI RIFERIMENTO / REFERENCE DRAWINGS		Nr. / No.
P&ID - DOMESTIC FRESH WATER SYSTEM	033470-AE-V00-581-PD-0001	
P&ID - MAIN SEA WATER CIRCULATION SYSTEM	033470-AE-V05-384-PD-0001	
P&ID - AUX. S. W. CIRCULATING SYSTEM	033470-AE-V05-721-PD-0002	
P&ID - BILGE SYSTEM	033470-AE-V00-803-PD-0001-001	
P&ID - 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 values 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

- 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

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 CENTRIFUGAL, DIESEL DRIVEN	WATER DELUGE UNIT	WATER DELUGE UNIT	WATER DELUGE UNIT	WATER DELUGE UNIT	WATER DELUGE UNIT	WATER DELUGE UNIT	FLOW METER
TYPE								TBC
PRES. DESIGN (bar)	MIN 10 MAX 55	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 28							11.5
FLOWRATE (m3/h)	1500	16+17	115	3	3	29	50	2000

ITEM NUMBER	813-S-001
SERVICE	STRAINER
TYPE	CARBON STEEL G.W.
SIZE	24"-mesh 5mm

Rev.	Date	Issue Description	Prepared	Verificato	Approvato	Cliente
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 of 01

Scale: 1:1

Formato Size: A1

Software: Techint Engineering & Construction