

B	09.09.2024	ISSUED FOR APPROVAL.	MCM	MM	GC
REV.	DATE	DESCRIPTION	MOD.BY	CKD.BY	APP.BY
REVISIONS					
 Goltens Singapore Pte Ltd.		SHIP	JP 88 STORK		
		TITLE	FEASIBILITY STUDY REPORT		
SCALE N.T.S.	DRAWN CHECKED	MCM MM	DRAWING NUMBER GSPL-P1482-GE-0001	HULL NUMBER --	REV B
SIZE: A4	VERIFIED	GC	DATE:- 09.09.2024	SHEET:- 1 OF 20	

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1. Introduction

This report intends to check the feasibility BIO-SEA Ballast Treatment System retrofit on board 'JP 88 STORK'

Vessel Details	
Vessel Name	JP 88 STORK
Vessel Type	CARGO
IMO	9354947
Length x Breadth	70.7m x 16.00m
Class	LR
DWT	2463 t

The ballast system is operated by either one of Bilge/Ballast/Fire Pump or Bilge/G.S/Fire Pump of 60 m³/hr x 6 bar, located in the engine room starboard side. A 1 x 60 m³/h BIO-SEA Ballast Treatment System is considered as per Owner's request.

BWT system from BIO-SEA is integrated into the existing ballast system with some existing piping modifications.

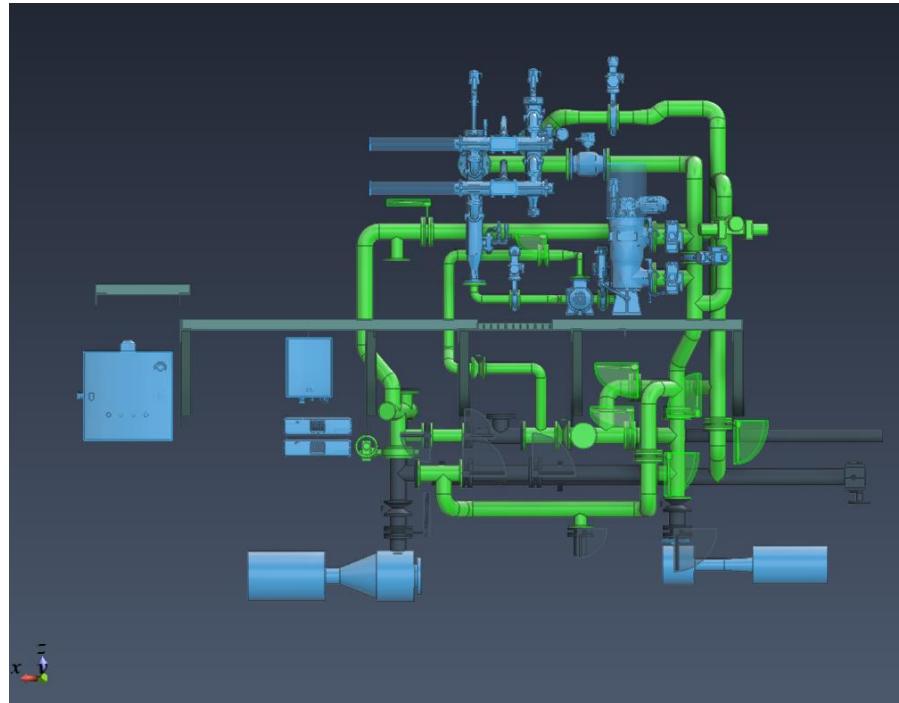
This BIO-SEA BWT system consists of the following components.

- Filter
- UV Assembly
- Back flush pump
- Control Cabinet
- Switch Board Cabinet
- Electronic Ballast (ELC)

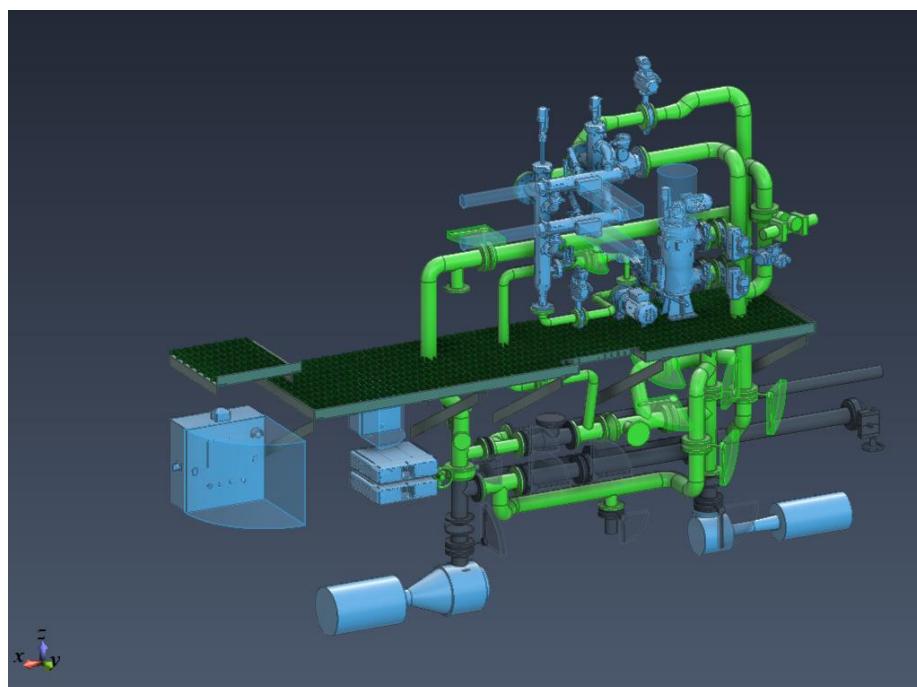
The BWTS equipment Filter, U.V reactor, Back Flush Pump, Switch Board Cabinet, ELC and Control Cabinet are arranged in the Starboard side of Engine Room.



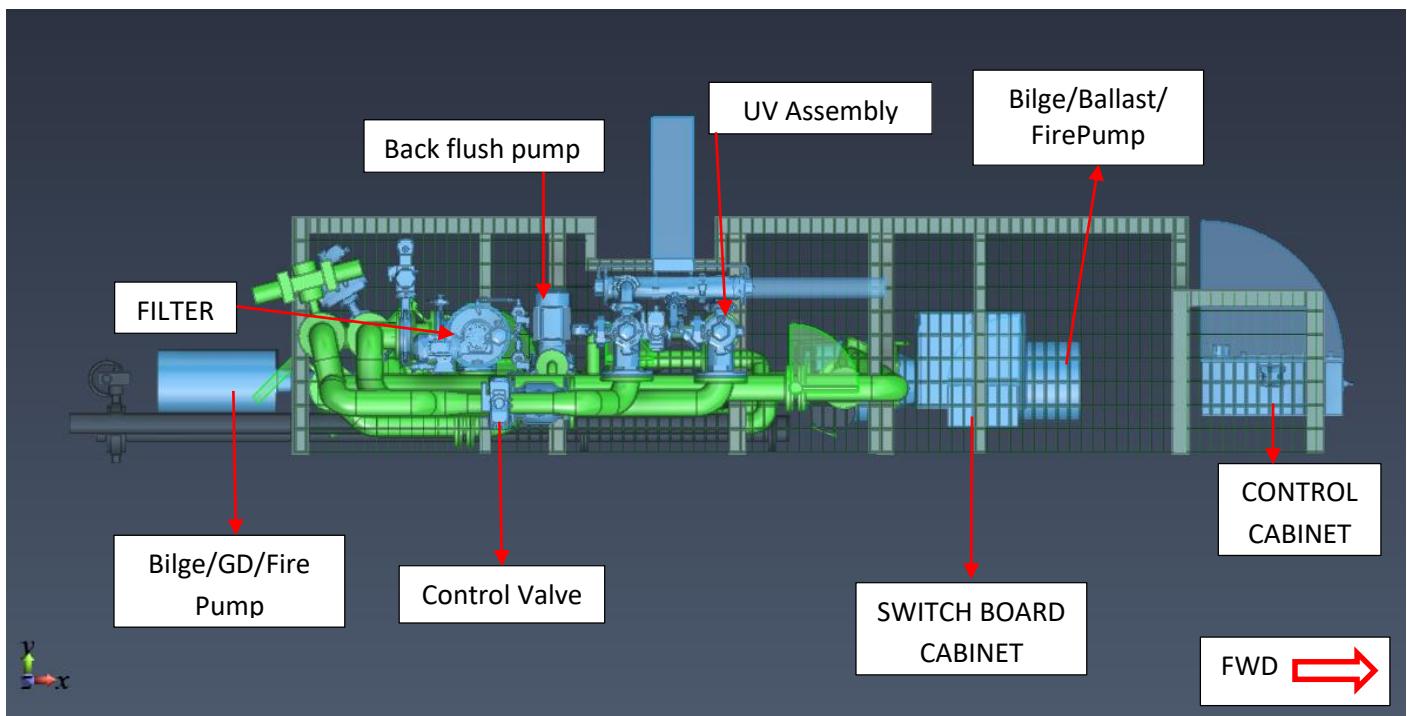
2. Proposed BWT System Arrangement



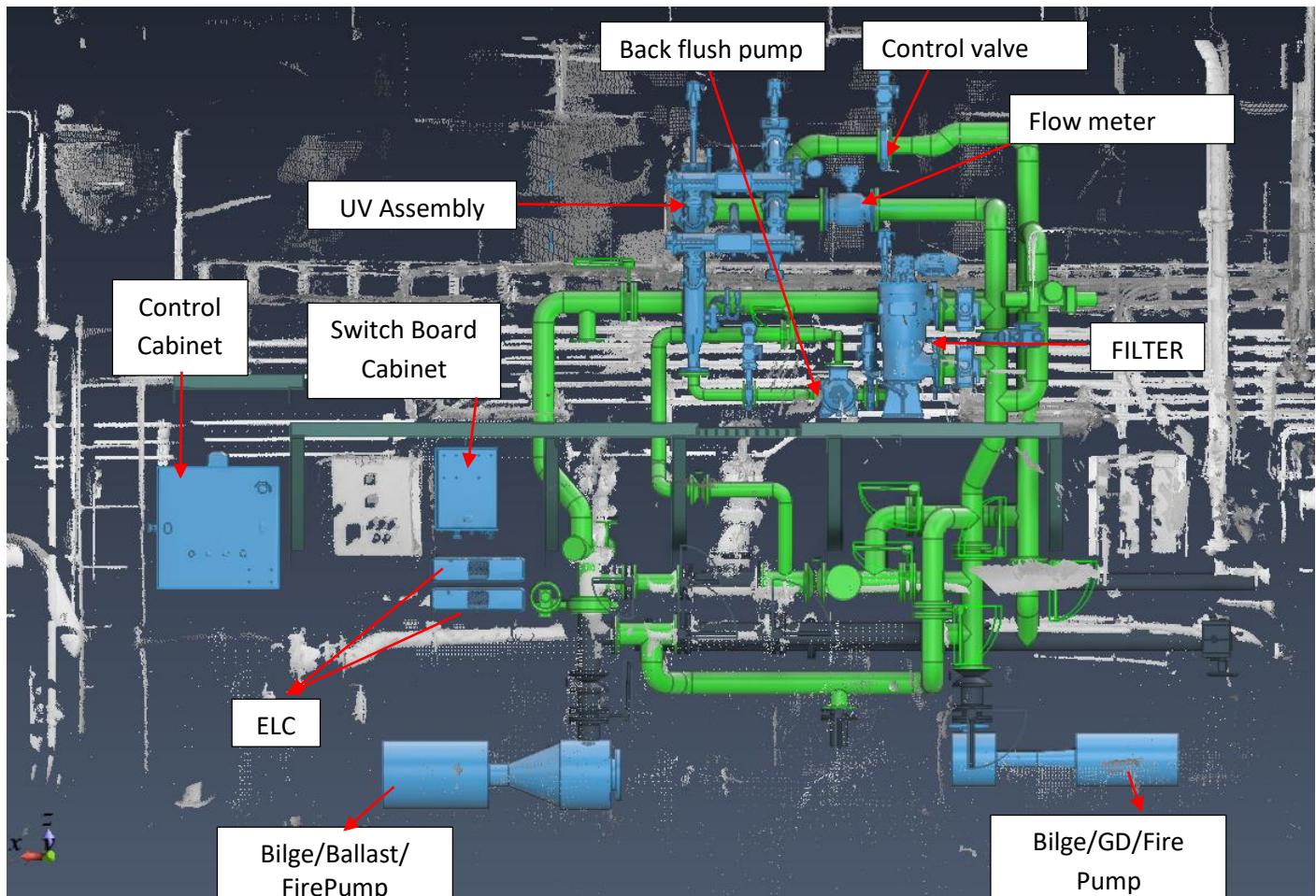
Ballast water treatment system overall layout (View looking STBD.)



Ballast water treatment system overall layout (Isometric View)



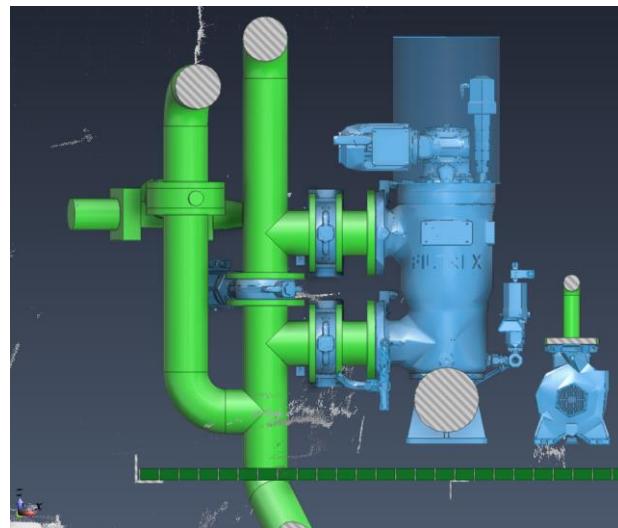
Ballast water treatment system overall layout (Plan View)



Ballast water treatment system overall layout (Looking STBD)

AFT 

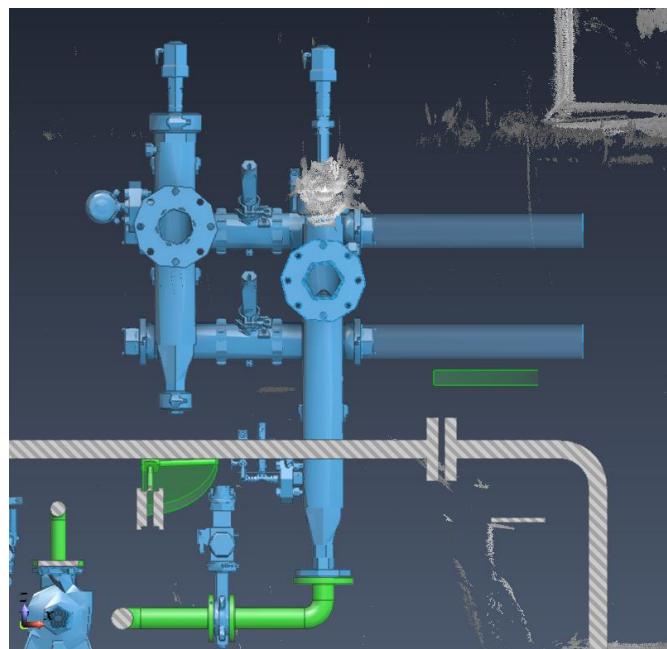
2.1 Proposed location of Filter and Backflush pump



Arrangement of Filter and Back flush Pump (View Looking P

FWD ➡

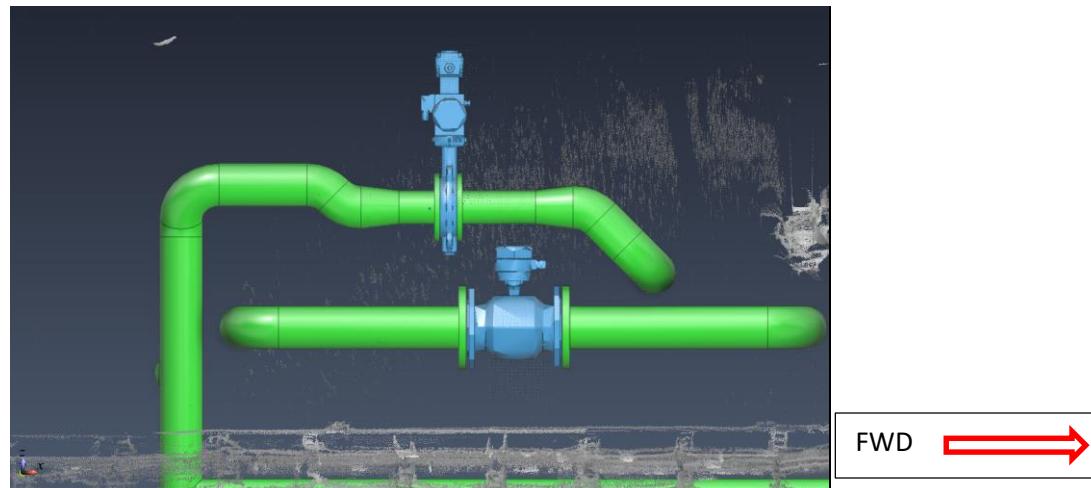
2.2 Proposed location of UV Assembly



Arrangement of UV Assembly
(View Looking Port.)

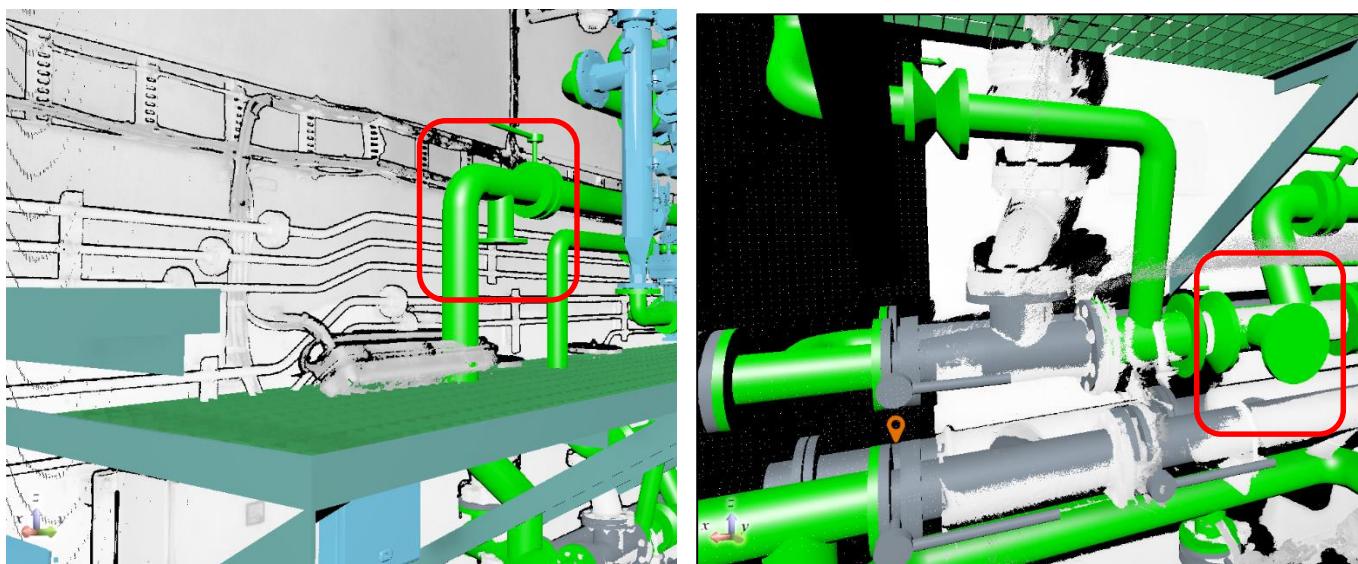
FWD ➡

2.3 Proposed location of Flow meter and Control Valve



Arrangement of Flowmeter and Control Valve (View Looking FWD)

2.4 Proposed Location of Sampling Point



Location of Sampling Point (View Looking AFT)

3. Electrical

From the Vessel's electric load analysis, it is observed that sufficient power is available for the installation of BWTS system.

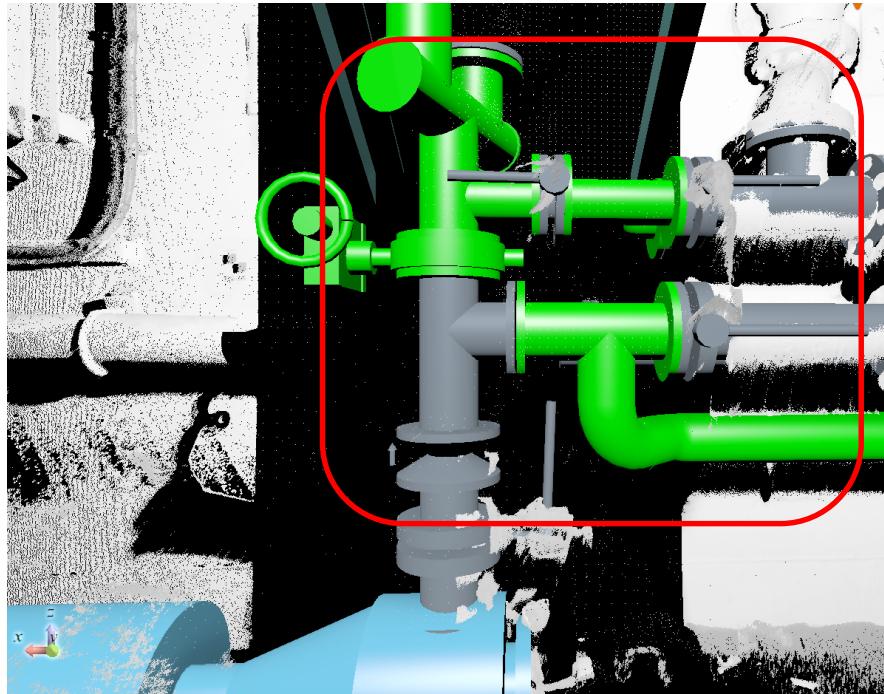
BWTS Electrical equipment are placed in the model as per the available spaces. Existing switchboards need to be modified in order to accommodate the additional BWTS Load. Details of those shall be updated in the wiring diagram of power



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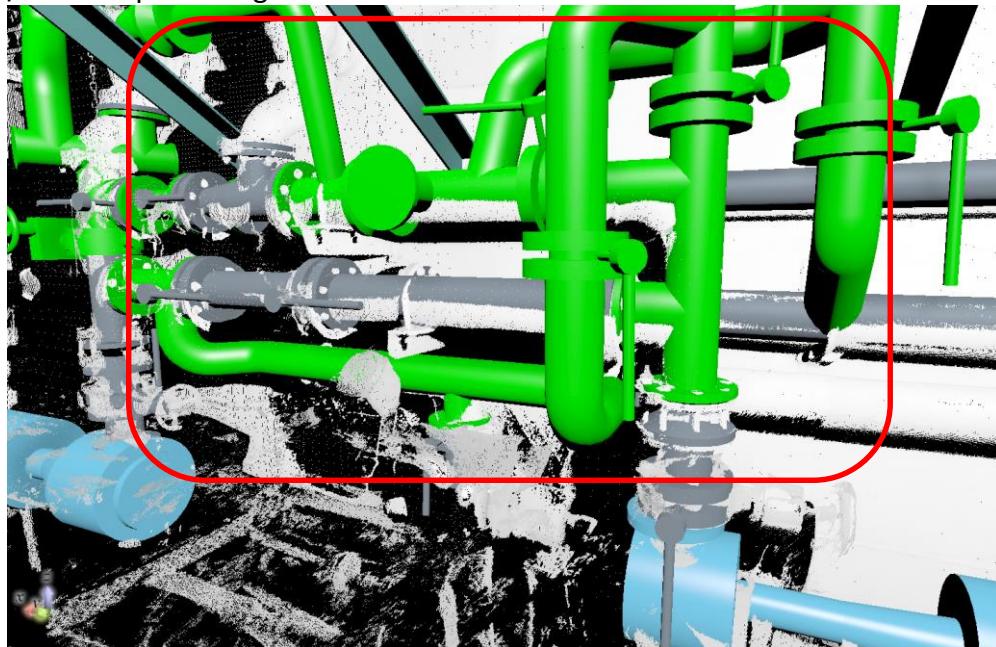
4. Points to Note

- Existing Bilge/ Ballast/ Fire Pump discharge manifold to be modified as shown.



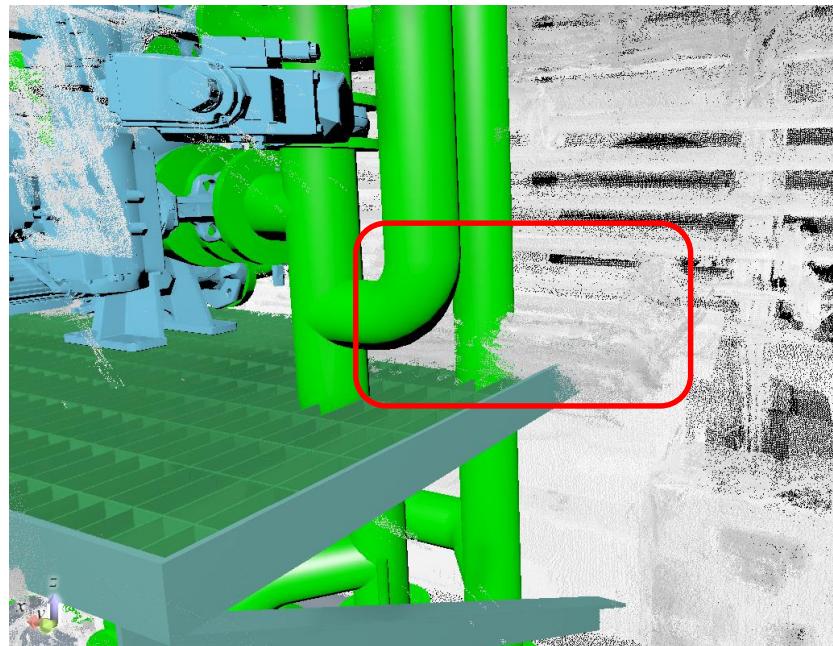
(View Looking STBD.)

- Bilge/GS/Fire Pump discharge manifold to be modified as shown in the marked location.



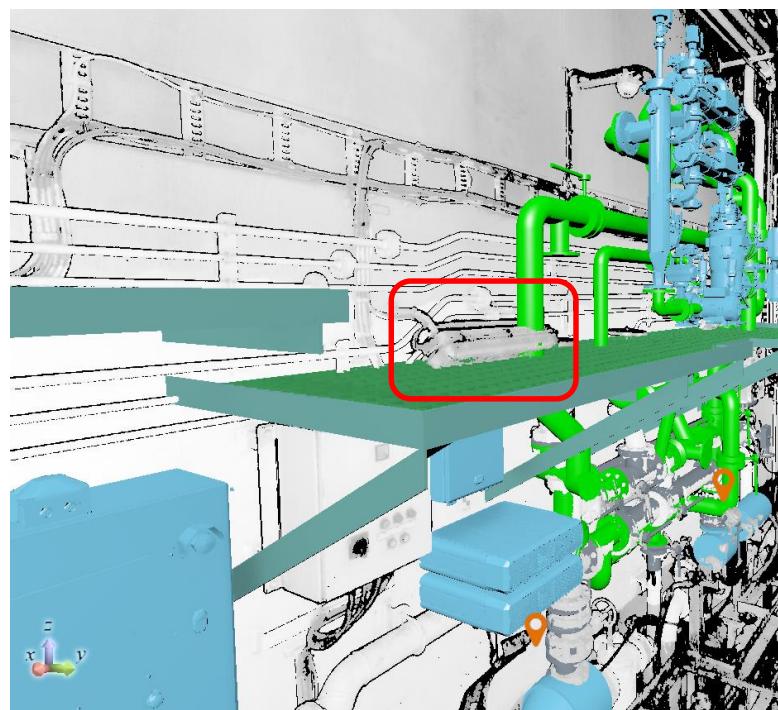
(View Looking STBD.)

- Electrical light clashing with the new BWTS pipes and platform to be suitably modified onsite.



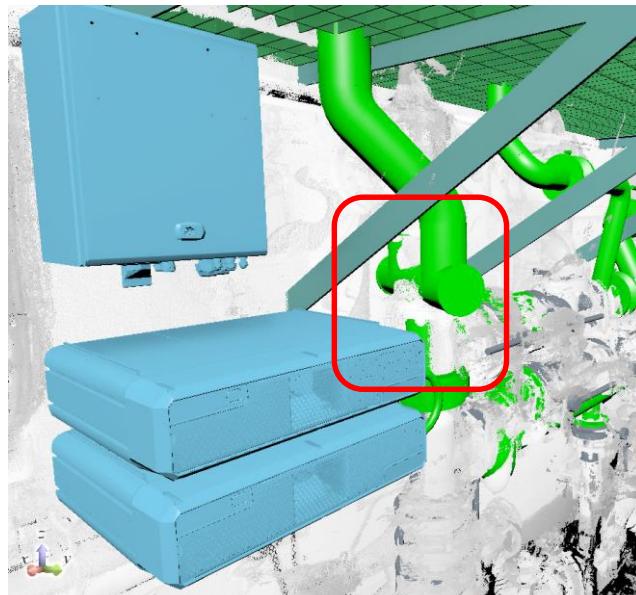
(View Looking STBD.)

- Electrical light clashing with the new BWTS pipes and platform to be suitably modified onsite.



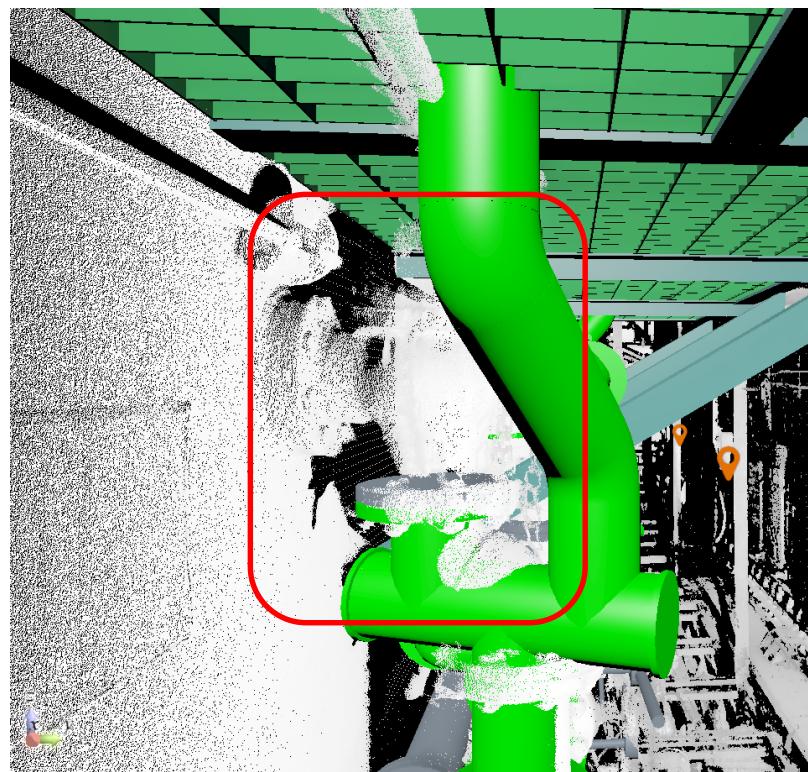
(View Looking AFT).

- Existing overboard pipe arrangement in the marked location to be modified as shown.



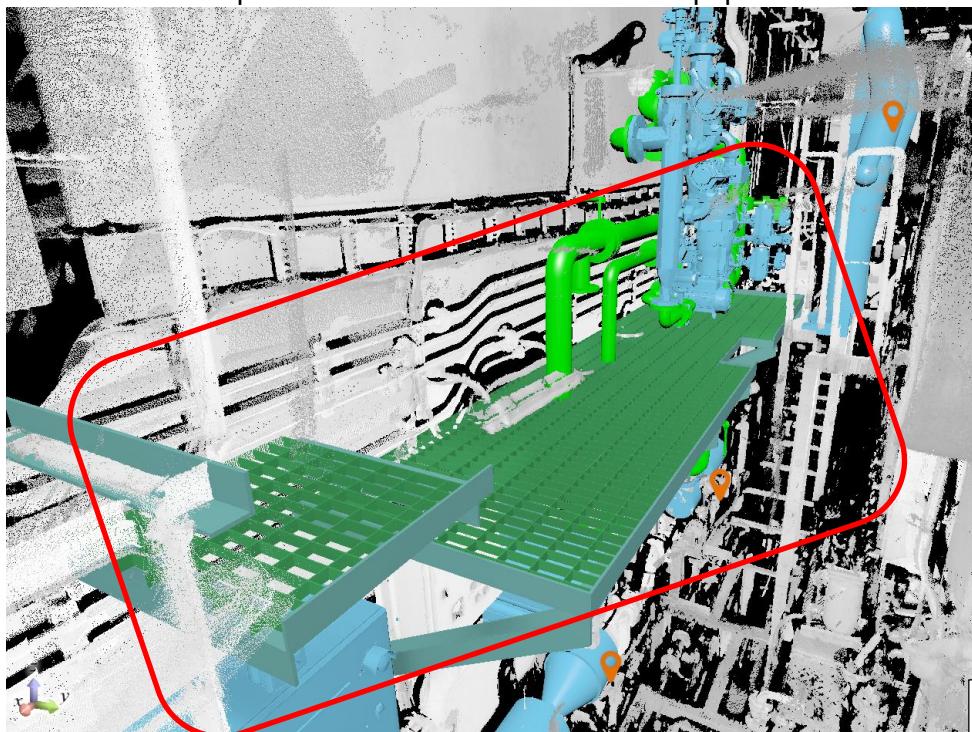
(View Looking AFT.)

- Scan doubling issue in the highlighted area. The connecting spool to be suitably adjusted onsite.



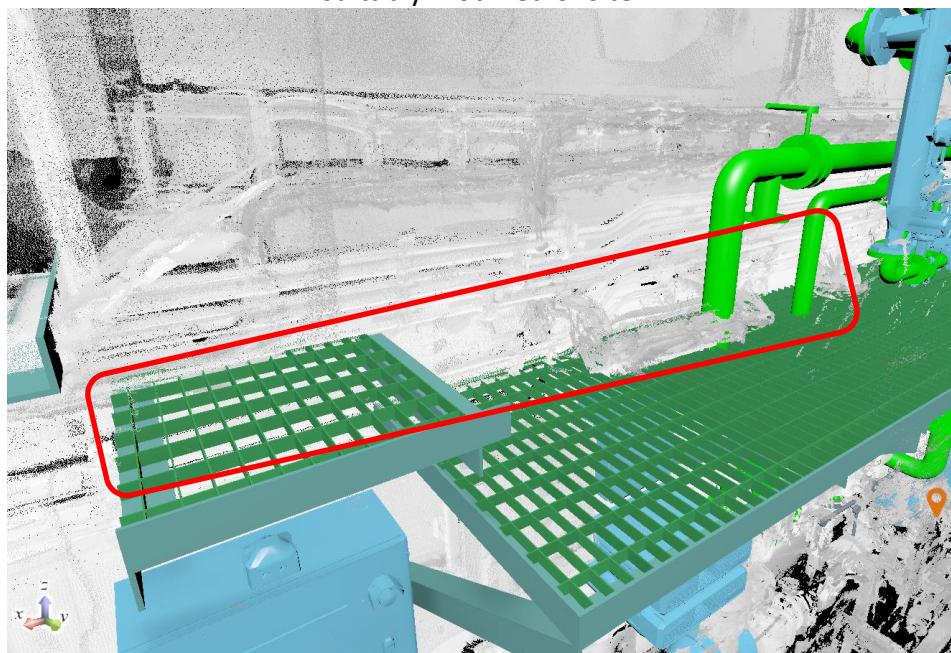
(View Looking AFT.)

- An elevated Platform to be provided as shown for the BWTS equipment and associated piping.



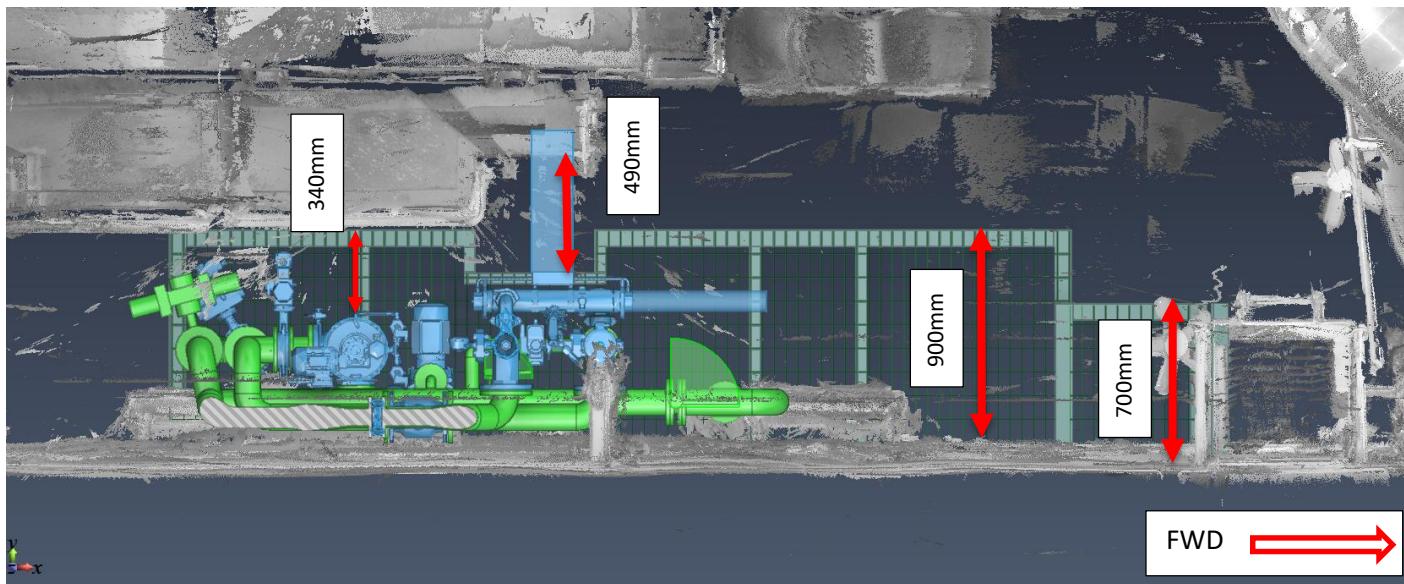
(View Looking AFT.)

- Existing small bore piping clashing in the marked location with the new elevated platform to be suitably modified onsite.



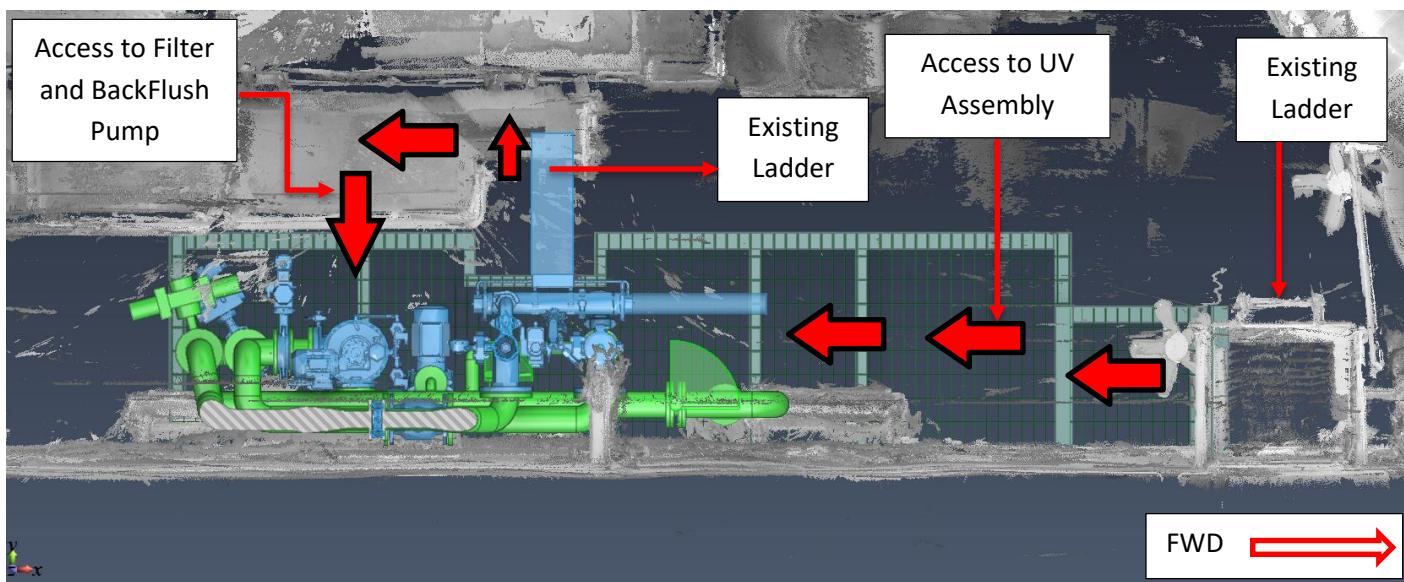
(View Looking STBD.)

- New elevated platform maximum available walking spaces are marked as below.



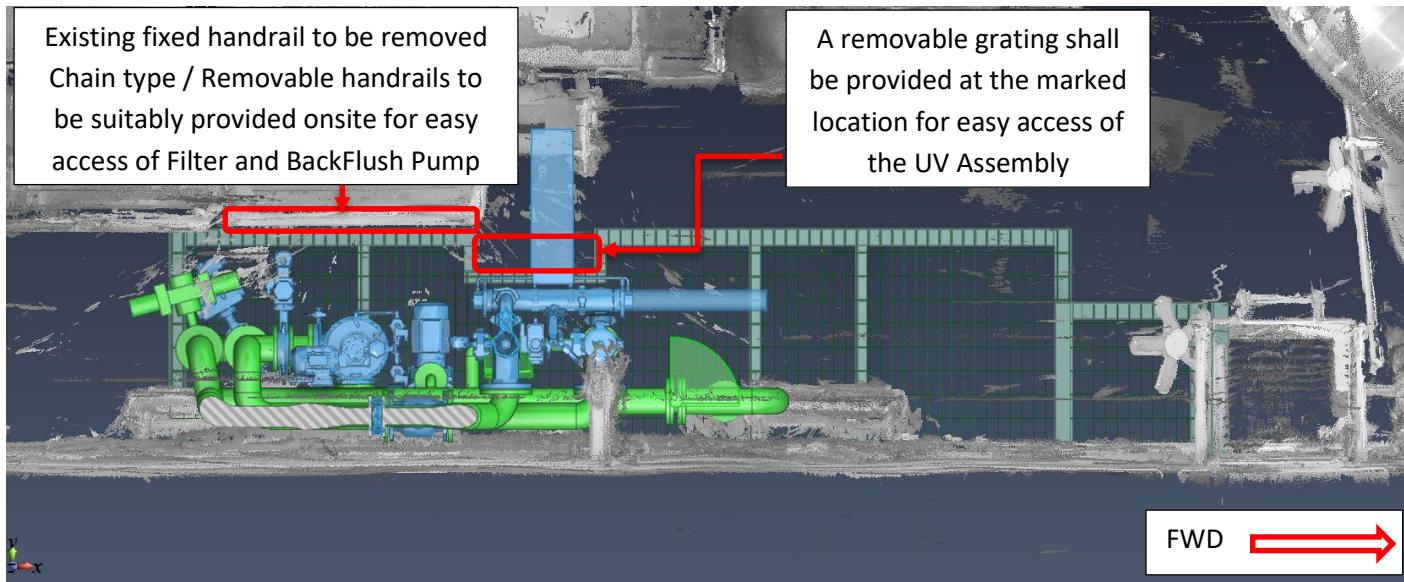
(PLAN VIEW.)

- New elevated platform access path is as marked below.



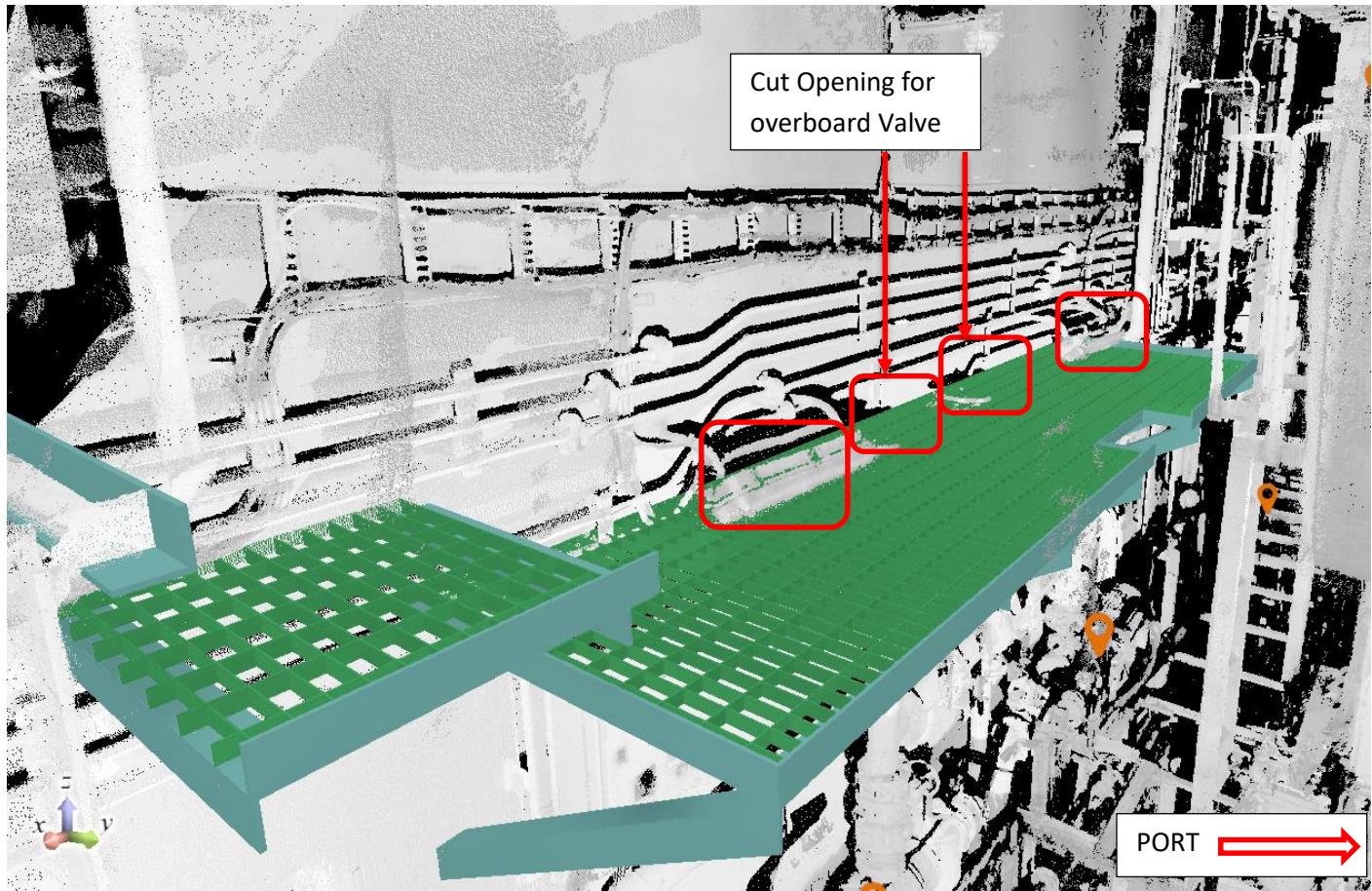
(PLAN VIEW.)

- The marked modifications to be suitably done onsite for easy access to the BWT equipment via Engine Platform.



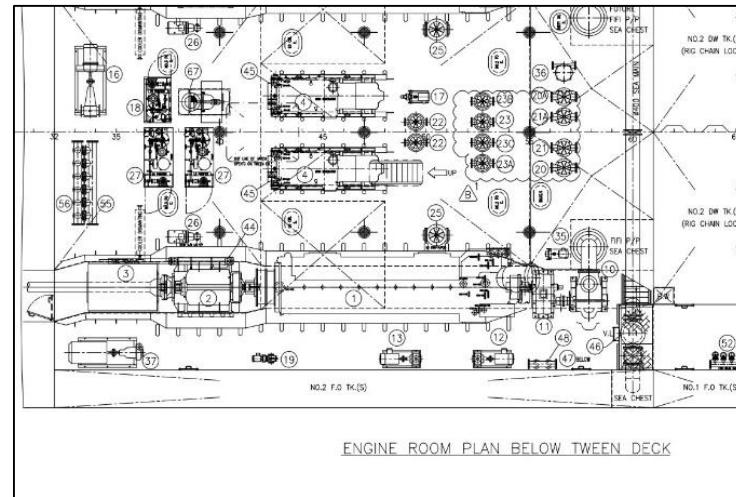
(PLAN VIEW.)

- The electrical lights in way of the elevated platform should be suitably relocated onsite.
- A cut opening shall be provided for the OBD Valves easy access.
- Existing small bore pipes in way of platform foundation shall be suitably modified onsite.



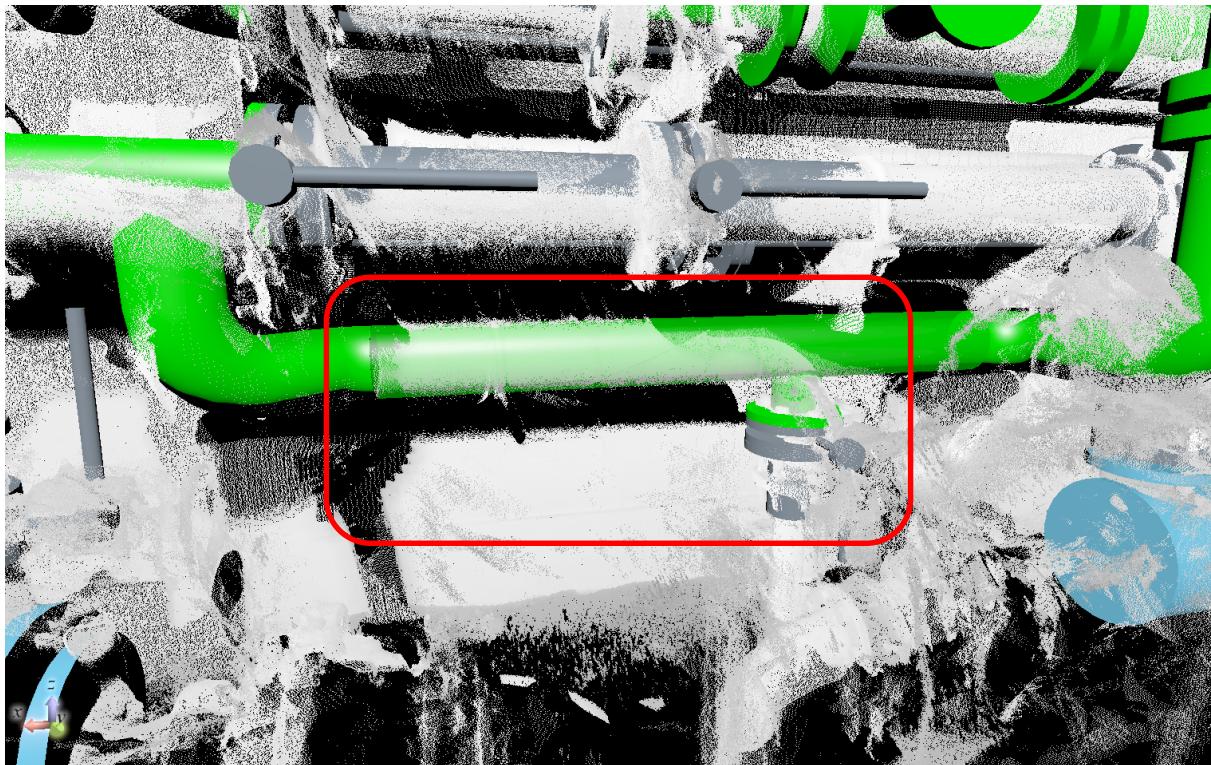
(View Looking AFT.)

- The elevated platform foundation landing bulkhead shares boundary with No.2 FO TK (S). Proper care shall be taken during hot work on this bulkhead.



(Excerpt from Machinery Arrangement.)

- The existing 80A pipe in the marked location to be modified as shown below.



(View Looking STBD)

5. Remarks

- In general, existing gratings, grating supports and handrails to be modified in the areas where new BWTS equipment are placed and same shall be carried out as per site convenience.
- Some existing pipe supports to be cut and modified during the installation of new BWTS system and same to be carried out suitably at site.
- The utility connections tapping from Fresh water and Compressed air system as detailed in the P&ID are to be suitably Tie in at site.
- In general, the drain lines are suitably terminated at site to the bilge wells.
- The locations where valves not accessible, provision to be provided to access the valve like reach rod or small platforms suitably at site.



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6. Conclusion

Effort has been put to minimize modifications to the existing ballast system as well as existing ship elements.

The flow analysis performed, and the pump can generate sufficient flow and pressure.

To conclude, 1 X 60 m³/h BIO-SEA Ballast Treatment system can be installed on board "JP 88 STORK" keeping the above-discussed points under consideration.



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