TENDER DOCUMENT FOR FOREIGN PURCHASE
DOCKYARD & ENGINEERING WORKS LTD
BANGLADESH NAVY
SONAKANDA, BANDAR, NARAYANGANJ
Web: www.dewbn.gov.bd, E-mail- commercial@dewbn.gov.bd

Price of tender document Tk. 1000.00 (Taka One Thousand only) (Non-refundable)

TENDER DOCUMENTS FOR SUPPLY OF FITTINGS MATERIALS (ITEMS SERIAL NO: 01-64)

RE-TENDER ENQUIRY NO- 06.02.6758.165.07.193.25.2468 DATE 14 MAY 2025

DUE FOR OPENING ON: 04 JUNE 2025; AT TIME: 12:30 PM

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

DOCKYARD & ENGINEERING WORKS LTD
BANGLADESH NAVY
SONAKANDA, BANDAR, NARAYANGANJ
Phone: 02-7661480, Fax: 02-7661027
E-mail- commercial@dewltd.gov.bd

IMPORTANT POINTS

1. **RE-TENDER NO:** 06.02.6758.165.07.193.25.2468 Dated 14 May 2025.

2. **DUE FOR OPENING ON:** 04 June 2025; AT Time: 12.30 PM.

3. **PRICE OF TENDER DOCUMENTS:** TK 1000.00 (Taka One Thousand only) non-refundable.

4. **EARNEST MONEY: 1%** (one) of the total quoted total value, either in Bangladesh currency or equivalent US$/ EURO/ GBP etc., favoring Dockyard & Engineering Works Ltd. in the form of Bank Draft/ Pay Order/ Bank Guarantee.

5. **NAME OF THE COMMODITY:** Fittings Materials (Items Serial No: 01-64)

6. **SOURCE OF FINANCE:** Cash.

7. **TERMS OF SUPPLY:** CFR Chattogram/ CPT Hazrat Shahjalal International Airport, Dhaka Bangladesh.

8. **Price:**

   a) Materials and freight should be shown separately.

   b) Freight should be shown/ endorsed on bill of lading.

   c) Freight will be paid at actual against Bill of lading but not exceeding the amount shown in quotation/ offer.

9. **DELIVERY/ SHIPMENT:** 45 (Forty Five) days after receiving Irrevocable Letter of Credit (ILOC).

10. **TENDER SHOULD REMAIN VALID**: 60 (Sixty) days from the date of opening.

11. **THE TENDER DOCUMENTS MUST BE WITH SEAL AND SIGN THEREOF ON EACH PAGE:**

The Dockyard & Engineering Works Ltd, BN, Narayanganj invites quotation in duplicate (Marked as "Original" and " Duplicate") from Manufactures/ Principal Suppliers for Supply of the item(s) described in the attached sheet schedule (Annex-B) on firm CFR Chattogram/ Hazrat Shahjalal International Airport, Bangladesh. Quotations will be received by this office up to **12:15** A.M. and will be Opened **12:30** AM in Public on the date specified above.

12. **AMENDMENTS TO TENDER DOCUMENTS:**

a. At any time prior to deadline for submission of bids the purchaser may, for any reason, whether of its own initiative or in response to a clarification requested by a prospective bidder, modify the tender documents by the amendment(s).

b. The amendment(s) will be notified in writing by letter/email or by cable to all prospective bidders who have purchased tender documents and the same will be binding on them.

c. In order to allow the prospective bidders reasonable time to take the amendment into account in preparing their bids, the purchaser may at its sole discretion extend the deadline for submission of bids.

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

PREPARATION AND SUBMISSION OF QUOTATION

13. **GENERAL :**

a. Offers are to be dropped in the tender box provided for the purpose at the office of DOCKYARD & ENGINEERING WORKS LTD, BNGLADESH NAVY, NARAYANGANJ

b. Tender number and opening date as above should be written on the envelope. The envelope containing quotation should be sealed and addressed as follows:

THE MANAGING DIRECTOR
DOCKYARD & ENGINEERING WORKS LTD
BANGLADESH NAVY
SONAKANDA, BANDOR
NARAYANGANJ, BANGLADESH

Tender number opening date as above should be written on the envelope.

c. Tender may be put into the Tender Box kept for this purpose at the above address, but care must be taken to ensure that it reaches this office on the date and time fixed. Late tenders will not be considered. Suppliers may also post the tender to THE MANAGING DIRECTOR, DOCKYARD & ENGINEERING WORKS LTD, BANGLADESH NAVY, SONAKANDA, BANDOR, NARAYANGANJ, BANGLADESH, so, as to reach him on due date and time .No responsibility will be accepted by buyer for late receipt.

d. The Manufacturers/ Principal Suppliers may quote in their own letter head, but it is essential that the tender schedule is also completed and returned, along with original money receipt to the buyer. If the schedule is not accordingly returned the quotation may not be considered.

e. Tenderers may quote price Bangladesh Taka/ US Dollar/ in any International trading currency.

f. Tenderers may quote price for Package or item Wise.

g. Tenders should enclose with the quotation the original proforma Invoice of their principal and the proforma should be based on FIRM CFR PRICE.

h. Quotation should be strictly in accordance with the following:

(1) Accounting unit prescribed in the tender enquiry.

(2) Terms of delivery and place of delivery as specified in the tender enquiry.

j. The name of the Manufacturers/ Principal suppliers and country/ countries of origin with port of shipment proposed should invariably be indicated.

k. Tenderers must submit the original proforma Invoice of their principals with the quotation and the proforma Invoice shall clearly indicate detail technical specification, the percentage of commission (if any) included in FOB price for the local agent. Commission is payable to the local agent by the foreign supplier. **Buyers will not pay any extra Commission or otherwise to the local Agent.**

l. No claims on the ground of typographical errors in calculating prices would be entertained later and the tendering firms would be asked under points of penalty and disciplinary action to supply at price they have originally quoted.

m. Indenting agent should also submit along with the tender valid registration certificate issued by the CCI & E and Bangladesh bank permission. In absence of original certificate photo state copy may serve.

n. Tenderers should quote the price as per schedule given in Annex A to this document.

p. Tenderers should submit a certificate along with the offer to the effect that they have gone through the instructions and terms and conditions stipulated in the tender documents and have accepted them into. **As a token of such acceptance each page of this tender documents must be signed by the supplier with their SEAL.** If the tender documents are not received accordingly, the quotation may not be considered. In case of

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

disagreement on any point this must be stated clearly in a separate sheet. Tenderers must give full and detailed specification of the items they like to offer. Expressing like as per your specifications should be avoided and will be treated as disqualification.

14. **CONTRACT:**

The terms and conditions of the tender document shall form an integral part of the contract/ purchase order document. The tenderer is requested to check this set of tender documents in order to ensure proper compliance and the "Form of Acknowledgement" along with the "Certificate as to **Corporate Principal**" Where applicable, duly filed in be returned along with **tender.**

15. **BID LANGUAGE**

The bid's, all correspondences and documents relating thereto exchanged between the bidders and the purchaser shall be written in English Language.

16. **TERMS OF PAYMENT:**

Necessary LC is to be opened in favour of the principal supplier but payment will be made as per following terms:

a. 80% of total value is to be paid on the receiving of necessary original shipping documents.

b. Remaining 20% of LC amount will be paid after received material receiving report (MRR) from our main Store.

c. Following documents are to be provided for payment:

(1) Complete set of original 'Clean on Board' Bill of lading /mentioning the amount of freight on Bill of Lading.
(2) Supplier's invoice signed in ink,
(3) Supplier's Packing list signed in ink,
(4) Authorized inspection agent's certificate (If required)
(5) Manufacturer Certificate
(6) Fax/E-mail/Swift advice for insurance cover,
(7) Country of origin Certificate
(8) Certificate showing that the material has been shipped in a non-Israil vessel,
(9) Undertaking regarding supply/re-placement of short supplied and defective materials on free of cost demanded by the buyer.

d. Bank charges in Bangladesh for opening of LC shall be borne by the buyer. Any Bank Charge for revalidation or amendment of the LC on the request of the supplier shall be exclusively borne by the beneficiaries and not by the DOCKYARD & ENGINEERING WORKS LTD. confirmation of letter of credit by foreign bank will not be entertained.

e. Bank charge for withdrawal against LC established by buyer will be borne by the beneficiary.

f. The beneficiary will have to borne the following foreign bank charge:-

(1) Negotiation commission.
(2) Payment Commission.
(3) Postage and Cable charges.
(4) LC confirmation charges/ additional (ADD) confirmation charges.
(5) LC amendment commission/LC extension commission.
(6) LC Cancellation charges.

17. **PACKING AND MARKING:**

a. The Seller shall be responsible for proper packing and marking the goods for shipment by rail, road and sea. Goods shall be assembled to the maximum extent practical prior to shipment. Goods shall be packed so as to withstand usually rough handling and ensure delivery without loss or damage.

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

b. Each Bundle must have the following information printed in **BOLD LETTERS** on the outside.

(1) Name of the consignee and Destination,
(2) Letter of credit number,
(3) Gross and net weight,
(4) Serial number of Bundle and,
(5) Name and address of seller,

18. **QUANTITY:**

a. Check of quality, quantity and condition of goods at the discharging port i.e, Chattogram/ Hazrat Shahjalal International Airport will be carried out by the buyer at their cost.

b. The quotation must be based on firm prices for package. Average prices should not be quoted.

c. Descriptive catalogue/ literature duly stamped should be furnished along with the Quotation.

d. The approximate weight of each Bundle should be shown separately on quotation.

e. The DOCKYARD & ENGINEERING WORKS LTD, reserves the right of awarding contracts for individual technically acceptable items on the lowest acceptable prices. Firms quoting on an average basis for joint items do so at their own risk. DOCKYARD AND ENGINEERING WORKS LTD, will not make any allowances for this action of the tendering firms when awarding contracts for individual items which if and when refused by tendering firms any lead to disciplinary action.

SPECIALLY CLAUSES:

19. **INSPECTION**: The buyer reserves the right to have the stores inspected before shipment by any agency of their choice. In that case inspection charges will be borne by the buyer. The name of the Inspector will be intimated at the time of placement of purchase order. The supplier will be liable to pay any expenses of rejected stores and also for such inspection, which will become payable to the inspector due to multiple intervention/ visits and or fruitless visits at the call of and to suit the convenience of the supplier. The Inspector should be provided with all facilities to carry out their job smoothly and without interference. The provision laid down above does not restrain the buyer, from a detailed inspection of quality and quantity of the cargo on arrival of the same at the port of discharge.

20. **INSURANCE:** Insurance of the consignment after shipment to destination port/ place (up to the buyer's premises) will be arranged by buyer. Quotation should, therefore, be exclusive of the insurance charges.

21. **LATE DELIVERY AND LIQUIDATED DAMAGES:** Liquidity damage equivalent to half percent per week or part thereof on the value of the undelivered goods may be realized from the supplier/ contractor.

In specific case where delay in delivery is likely to cause dislocation of work and financial loss, a higher rate of liquidity damage, not over one percent's per week or part thereof on the value of the undelivered goods may be charged.

In case of delay in delivery beyond one hundred days for importable item(s), purchase order/ contract may be cancelled in which case the performance guarantee shall be forfeited. On genuine reasons/ grounds beyond the control of the suppliers/contractor, extension of delivery period may, however, be granted by the purchase approving authority without realization of any liquidated damage provided validity of their performance guarantee cover such extension.

22. **GENUINENESS OF THE PRINCIPAL SUPPLIERS:**

The Principal supplier shall have to submit a certificate from the supplier's bankers regarding the bonafide and standing of the supplier.

AND/OR

Certificate from the chamber of Commerce and Industry from the supplier's country regarding its standing as an exporter/manufacturer along with the proforma invoice.

23. **QUALITY CERTIFICATE:** Tenderers should furnish guarantee from the original Manufacturers/ Suppliers/ Sole Agent to the effect that the goods will be of exact specification as laid down in the tender and in the event of placing order with the tenderers the Manufacturers/ Suppliers or their Sole agents will supply materials to them (Tenderers) for supply of the same against their tender. Tenderers for all purposes shall be responsible for the acts of omission and commission of their principal.

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

24. **EARNEST MONEY:** All bidders must submit earnest money for an amount equivalent to 01% (one percent) of the actual quoted CFR value of the stores either by Bangladesh currency or equivalent to any International Trading currencies favoring the Dockyard & Engineering Works Ltd, in bank draft/pay order /bank guarantee/ which will be issued by any scheduled bank of Bangladesh (Not applicable to enlisted suppliers). In case bank guarantee is submitted, the same should remain valid for 60 days from the date of opening of the tender. Neither any inland cheque for a cheque/ guarantee issue by bank of foreign countries will be entertained. Earnest money is liable to forfeiture if the bidder for any reason whatsoever withdraws or modifies its offer or violets the terms after opening of the tender and before expiry of the validity of the offer, or fails to furnish the required performance bond with in the stipulated time after issuance of letter of intent. Bid bond/ earnest money of unsuccessful tenderer would be returned once a decision of the tender is made. A tender not accompanied by earnest money/ bid bond would be rejected as non-responsive. Bid bond of the successful bidder shall be returned after furnishing performance bond. A specimen copy of bid bond is enclosed herewith as annex-C.

25. **PERFORMANCE BOND:** The successful tenderer will be required to furnish performance bond to the extent 05% of the total CFR value either in the form of pay order/ bank draft/ bank guarantee for the satisfactory execution of the order. The performance bond should be given by any Bangladesh Commercial Bank under their (Bank) full risk in liabilities. If the same is submitted by bank guarantee it must remain valid material receiving report (MRR) from our main Store. Performance bond must be furnished within 10(ten) days from the date of letter of intent. It will be liable for forfeiture if the supplier fails to supply the goods within the specified time or commits any breach of contract. A specimen copy of performance bond is enclosed herewith Annex-D.

26. **WARRANTY:** 18 (Eighteen) Months warranty from the date of acceptance is to be provided. Total 05% of contract price is to be cut as security money which will be paid after the end of warranty period or Bank Guarantee against the same amount is to be provided until the end of warranty period.

27. **INDEMNITY:** The supplier have to indemnity the buyer against all claims which may be made in respect of the stores for infringement of any right protected by patent, registration of design etc and shall take all risk of accident or damage which may cause failure of the supply from whatever cause arising and take entire responsibility for the sufficiency of the means used by the supplier for the fulfillment of the contract.

28. **INCREASE OR DECREASE IN QUANTITY OF CONTRACT:** The buyer reserves the right at the time of award of contract, with no adjustment in unit price (bid) to increase or decrease the quantity tendered. The buyer also reserves the right to accept or reject any or all the tenders or to waive any informality, minor deviation or omission.

Award would be made to the bidder whose responsive bid determined to be the lowest evaluated bid who meets specification and other terms and conditions of the tender document.

29. The buyer has the option to place orders either on CFR Chattogram/ CPT Hazrat Shahjalal International Airport Bangladesh.

30. Should the suppliers be adjudged insolvent, the buyer shall have the power to terminate the contract.

31. **DISQUALIFICATION OF OFFER :**

a. Telex/ E-mail/ Swift/ Fax offer may be considered provided signed copy of proforma invoice is received within 24 (twenty four) hours from the opening of the tender.

b. Any addition or alternator to the specification or rate quoted by a firm in the tender after not only be ignored but should also render the firms liable to disqualification.

c. Any tender received late and not strictly confirming to terms and conditions prescribed in the tender documents not accompanied with the requisite earnest money and the money receipt of tender price and registration certificate may be liable for rejection.

32. **SPECIFIC EXPERIENCE:** The principal supplier must have experience of supply of similar goods in Bangladesh and understand the Letter of Credit (LC) process of Bangladesh. The supplier must provide at least 2 letter of credit (LC) references of previous supply record to Bangladesh Buyer to prove its business relation and reliability in Bangladesh market.

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

33. **TAXES AND OTHER CHARGES:**

a. All duties, taxes and other charges levied on the goods by authorities in buyer's country shall be borne by the buyer and shall not be included in the bid price.

b. Charges of such nature in seller's country or in any country other than the buyer country shall be borne by the seller's.

34. **BREACH OF CONTRACT:** On any breach of contract by the seller, the buyer may recover the actual loss suffered and the amount may be realized by encasing the performance guarantee.

35. **UNDER TAKING:** The Manufacture/ Suppliers shall issue a certificate to be effect that they have shipped the goods strictly conforming to the quality and quantity stipulated in the purchase order and that they will replace defective materials and replenish the short supplied quantity free of charge on demand by the buyers. Such certificate shall form and integral part of the original shipping documents required to be submitted to the bank for drawing of payment against letter of credit by the supplier.

36. **APPLICABLE LAW:** The purchase order shall be interpreted in accordance with the law of the buyer's country.

37. **FORCE MAJEURE:** Should any circumstance arise preventing either of the contracting parties form wholly or party carrying its obligation under the present contract, namely natural calamities, Strikes, Riots, fire, acts of God, war, Military operation of any Nature, blockades any unforeseen event which is beyond human control, the period stipulated for the performance of this contract shall be extended for as long as the circumstances prevail. Provided that in the even of these circumstances continuing for more than 30(thirty) days, either party shall have the right to refuse to fulfill its obligation under these contract and in such case neither party shall be entitled to indemnification of any loss it may sustain. The party unable to carry out it obligation under this contract shall immediately advise the other party of the commencement and the termination of the circumstances preventing the performance of the contract. A certificate issued by the Chamber of Commerce of the sellers of the buyer's country shall be sufficient proof of the existence and duration of such circumstances.

38. **ARBITRATION:** In the event any dispute or difference arising out of the terms and conditions as specified above, the same shall be referred to the award of a sole. Arbitrator appointed by the parties on mutual agreement, falling which it shall be referred to the award of the two arbitrators, from each side (buyer and seller) or in the case of disagreement between the two arbitrators to the award of an umpire to be appointed by the two arbitrators in writing before proceeded on the reference of the decision of the sole arbitrator or of two Arbitrators in the writing before proceeded on the reference of the decision of the sole arbitrator or of two arbitrator or the umpire as the case may be shall final , conclusive and binding upon the parties. The provisions of the arbitration Act 2001 and rules their under and any statutory modification their of shall deem to apply to the said arbitration. The place of arbitration shall be Dhaka, Bangladesh any statutory modification enactment thereof for the time being in force in Bangladesh shall apply to the arbitration proceeding. The above terms and conditions are not absolute, the Dockyard & Engineering works Ltd, Bangladesh Navy, reserves the right to incorporate additional terms and condition, if necessary. The Dockyard Engineering & works Ltd, BN also is not bound to accept the lowest tender and reserves the right to reject any or all tenders without assigning any reason whatsoever.

Yours faithfully

RUDDRAW MOHAMMAD NABI
Lt Commander BN
For Managing Director

Enclosures:

A.	Format of price Schedule (Annex – A)	- 12 pages
B.	Technical Specification (Annex-B)	- 10 Pages
C.	Design and Drawing	- 18 pages
D.	Format of Bank Guarantee in Lieu of Earnest money (Annex-C)	- 01 page
F.	Format of performance Bank guarantee (Annex-D)	- 01 page

ANNEX-A

DOCKYARD & ENGINEERING WORKS LTD
BANGLADESH NAVY
SONAKANDA, BANDAR, NARAYANGANJ

SCHEDULE TO RE-TENDER ENQUIRY NO: 06.02.6758.165.07.193.25.2468 DATED 14 MAY 2025 DUE FOR RETURN BY 04 JUNE 2025 AT 12.15 HOURS

SL No	DESCRIPTION OF GOODS	Unit	QTY	Unit Price	TOTAL PRICE
1.	**Adaptor Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN50 Material: ST37 DIN Standard (As per technical specification -Annex-B)	Nos	15		
2.	**Adaptor Flange(Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN100 Material: ST37 DIN Standard (As per technical specification -Annex-B)	Nos	15		
3.	**CUNI Collar Lap-Joint with Galvanized Steel Flange** Pressure Rating: PN16 Size/ Dimension: DN50 Material: CuNi10Fe1.6Mn DIN Standard 86037 (As per technical specification -Annex-B)	Nos	60		
4.	**CUNI Collar Lap-Joint with Galvanized Steel Flange** Pressure Rating: PN16 Size/ Dimension: DN65 Material: CuNi10Fe1.6Mn DIN Standard 86037 (As per technical specification -Annex-B)	Nos	15		
5.	**CUNI Collar Lap-Joint with Galvanized Steel Flange** Pressure Rating: PN10 Size/ Dimension: DN50 Material: CuNi10Fe1.6Mn DIN Standard 86037 (As per technical specification -Annex-B)	Nos	15		
6.	**CUNI Collar Lap-Joint with Galvanized Steel Flange** Pressure Rating: PN10 Size/ Dimension: DN65 Material: CuNi10Fe1.6Mn DIN Standard 86037 (As per technical specification -Annex-B)	Nos	10		

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

7.	**CUNI Collar Lap-Joint with Galvanized Steel Flange** Pressure Rating: PN16 Size/ Dimension: DN65 Material: CuNi10Fe1.6Mn DIN Standard 86037 (As per technical specification -Annex-B)	Nos	50		
8.	**CUNI Collar Lap-Joint with Galvanized Steel Flange** Pressure Rating: PN16 Size/ Dimension: DN200 Material: CuNi10Fe1.6Mn DIN Standard 86037 (As per technical specification -Annex-B)	Nos	05		
9.	**CUNI Collar Lap-Joint with Galvanized Steel Flange** Pressure Rating: PN16 Size/ Dimension: DN250 Material: CuNi10Fe1.6Mn DIN Standard 86037 (As per technical specification -Annex-B)	Nos	10		
10.	**Special (Set-On) Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN50 Material: ST37 DIN Standard 86041 (As per technical specification -Annex-B)	Nos	05		
11.	**Special (Set-On) Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN125 Material: ST37 DIN Standard 86041 (As per technical specification -Annex-B)	Nos	05		
12.	**Special (Set-On) Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN200 Material: ST37 DIN Standard 86041 (As per technical specification -Annex-B)	Nos	10		
13.	**Special (Set-On) Flange (Galvanized)** Pressure Rating: PN16 Size/ Dimension: DN15 Material: ST37 DIN Standard 86041 (As per technical specification -Annex-B)	Nos	05		

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

14.	**Special (Set-On) Flange (Galvanized)** Pressure Rating: PN16 Size/ Dimension: DN50 Material: ST37 DIN Standard 86041 (As per technical specification -Annex-B)	Nos	05		
15.	**Special (Set-On) Flange (Galvanized)** Pressure Rating: PN16 Size/ Dimension: DN65 Material: ST37 DIN Standard 86041 (As per technical specification -Annex-B)	Nos	10		
16.	**Special (Set-On) Flange (Galvanized)** Pressure Rating: PN16 Size/ Dimension: DN80 Material: ST37 DIN Standard 86041 (As per technical specification -Annex-B)	Nos	10		
17.	**Special (Set-On) Flange (Galvanized)** Pressure Rating: PN16 Size/ Dimension: DN200 Material: ST37 DIN Standard 86041 (As per technical specification -Annex-B)	Nos	05		
18.	**Special (Set-On) Flange (Galvanized)** Pressure Rating: PN16 Size/ Dimension: DN 250 Material: ST37 DIN Standard 86041 (As per technical specification -Annex-B)	Nos	05		
19.	**Slip-On Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN 40 Material: ST37 DIN Standard 2573 (As per technical specification -Annex-B)	Nos	05		
20.	**Slip-On Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN 50 Material: ST37 DIN Standard 2573 (As per technical specification -Annex-B)	Nos	15		

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

21.	**Slip-On Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN 65 Material: ST37 DIN Standard 2573 (As per technical specification -Annex-B)	Nos	05		
22.	**Slip-On Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN 80 Material: ST37 DIN Standard 2573 (As per technical specification -Annex-B)	Nos	10		
23.	**Slip-On Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN 100 Material: ST37 DIN Standard 2573 (As per technical specification -Annex-B)	Nos	10		
24.	**Slip-On Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN 125 Material: ST37 DIN Standard 2573 (As per technical specification -Annex-B)	Nos	100		
25.	**Slip-On Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN 200 Material: ST37 DIN Standard 2573 (As per technical specification -Annex-B)	Nos	60		
26.	**Slip-On Flange (Galvanized)** Pressure Rating: PN10 Size/ Dimension: DN 50 Material: ST37 DIN Standard 2576 (As per technical specification -Annex-B)	Nos	15		
27.	**Slip-On Flange (Galvanized)** Pressure Rating: PN10 Size/ Dimension: DN 65 Material: ST37 DIN Standard 2576 (As per technical specification -Annex-B)	Nos	10		

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

28.	**Slip-On Flange (Galvanized)** Pressure Rating: PN10 Size/ Dimension: DN 100 Material: ST37 DIN Standard 2576 (As per technical specification -Annex-B)	Nos	20		
29.	**Slip-On Flange (Galvanized)** Pressure Rating: PN10 Size/ Dimension: DN 125 Material: ST37 DIN Standard 2576 (As per technical specification -Annex-B)	Nos	05		
30.	**Slip-On Flange (Galvanized)** Pressure Rating: PN10 Size/ Dimension: DN 150 Material: ST37 DIN Standard 2576 (As per technical specification -Annex-B)	Nos	15		
31.	**Slip-On Flange (Galvanized)** Pressure Rating: PN10 Size/ Dimension: DN 200 Material: ST37 DIN Standard 2576 (As per technical specification -Annex-B)	Nos	05		
32.	**MARPOL Flange** Pressure Rating: PN6 Size/ Dimension: DN 50 Material: ST37 System: Sanitary Discharge System (As per technical specification -Annex-B)	Nos	05		
33.	**Spectacle Flange** Pressure Rating: PN6 Size/ Dimension: DN 50 Material: Steel DIN Standard (As per technical specification -Annex-B)	Nos	05		
34.	**Spectacle Flange** Pressure Rating: PN10 Size/ Dimension: DN 50 Material: Steel DIN Standard (As per technical specification -Annex-B)	Nos	05		

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

35.	**Elbow (Galvanized)** Long radius: 1.5D Angle: 90° Size/ Dimension: 60.3×4.5 Material: ST37 Connection: Seamless & welded DIN Standard 2605 (As per technical specification -Annex-B)	Nos	20		
36.	**Elbow (Galvanized)** Long radius: 1.5D Angle: 90° Size/ Dimension: 76.1×4.5 Material: ST37 Connection: Seamless & welded DIN Standard 2605 (As per technical specification -Annex-B)	Nos	05		
37.	**Elbow (Galvanized)** Long radius: 1.5D Angle: 90° Size/ Dimension: 114.3×4.5 Material: ST37 Connection: Seamless & welded DIN Standard 2605 (As per technical specification -Annex-B)	Nos	40		
38.	**Elbow (Galvanized)** Long radius: 1.5D Angle: 90° Size/ Dimension: 139.7×4.5 Material: ST37 Connection: Seamless & welded DIN Standard 2605 (As per technical specification -Annex-B)	Nos	65		
39.	**Elbow (Galvanized)** Long radius: 1.5D Angle: 90° Size/ Dimension: 168.3×8.8 Material: ST37 Connection: Seamless & welded DIN Standard 2605 (As per technical specification -Annex-B)	Nos	15		
40.	**Elbow (Galvanized)** Long radius: 1.5D Angle: 90° Size/ Dimension: 219.1×5.9	Nos	15		

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

	Material: ST37 Connection: Seamless & welded DIN Standard 2605 (As per technical specification -Annex-B)				
41.	**Elbow - CUNI** Long radius: 1.5D Angle: 90° Size/ Dimension: 57.0×1.5 Material: CuNi10Fe1.6Mn Connection: Seamless & welded DIN Standard 86090 (As per technical specification -Annex-B)	Nos	05		
42.	**Elbow - CUNI** Long radius: 1.5D Angle: 90° Size/ Dimension: 76.0×2.0 Material: CuNi10Fe1.6Mn Connection: Seamless & welded DIN Standard 86090 (As per technical specification -Annex-B)	Nos	05		
43.	**Elbow - CUNI** Long radius: 1.5D Angle: 90° Size/ Dimension: 219.1×5.9 Material: CuNi10Fe1.6Mn Connection: Seamless & welded DIN Standard 86090 (As per technical specification -Annex-B)	Nos	05		
44.	**Reducer Concentric (Galvanized)** Size/ Dimension: 60.3×4.5/ 48.3×4.5 Material: ST37 Connection: Butt welding DIN Standard 2616 (As per technical specification -Annex-B)	Nos	05		
45.	**Reducer Concentric (Galvanized)** Size/ Dimension: 88.9×4.5/ 76.1×4.5 Material: ST37 Connection: Butt welding DIN Standard 2616 (As per technical specification -Annex-B)	Nos	05		

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

46.	**Reducer Concentric (Galvanized)** Size/ Dimension: 114.3×4.5/ 88.9×4.5 Material: ST37 Connection: Butt welding DIN Standard 2616 (As per technical specification -Annex-B)	Nos	10		
47.	**Reducer Concentric (Galvanized)** Size/ Dimension: 219.1×5.9/ 114.3×4.5 Material: ST37 Connection: Butt welding DIN Standard 2616 (As per technical specification -Annex-B)	Nos	10		
48.	**Reducer Concentric - CUNI** Size/ Dimension: 76.0×2.0/ 57.0×1.5 Material: CuNi10Fe1.6Mn Connection: Butt welding DIN Standard 86089 (As per technical specification -Annex-B)	Nos	10		
49.	**STUB-IN (Galvanized)** Size/ Dimension: 50/50 Material: ST37 DIN Standard 2615 (As per technical specification -Annex-B)	Nos	25		
50.	**STUB-IN (Galvanized)** Size/ Dimension: 50/80 Material: ST37 DIN Standard 2615 (As per technical specification -Annex-B)	Nos	05		
51.	**STUB-IN (Galvanized)** Size/ Dimension: 65/80 Material: ST37 DIN Standard 2615 (As per technical specification -Annex-B)	Nos	05		
52.	**STUB-IN (Galvanized)** Size/ Dimension: 80/80 Material: ST37 DIN Standard 2615 (As per technical specification -Annex-B)	Nos	05		
53.	**STUB-IN (Galvanized)** Size/ Dimension: 80/100 Material: ST37 DIN Standard 2615 (As per technical specification -Annex-B)	Nos	05		

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

54.	**STUB-IN (Galvanized)** Size/ Dimension: 100/100 Material: ST37 DIN Standard 2615 (As per technical specification -Annex-B)	Nos	10		
55.	**STUB-IN (Galvanized)** Size/ Dimension: 125/125 Material: ST37 DIN Standard 2615 (As per technical specification -Annex-B)	Nos	05		
56.	**STUB-IN (Galvanized)** Size/ Dimension: 100/200 Material: ST37 DIN Standard 2615 (As per technical specification -Annex-B)	Nos	10		
57.	**STUB-IN (Galvanized)** Size/ Dimension: 125/200 Material: ST37 DIN Standard 2615 (As per technical specification -Annex-B)	Nos	20		
58.	**STUB-IN (Galvanized)** Size/ Dimension: 200/200 Material: ST37 DIN Standard 2615 (As per technical specification -Annex-B)	Nos	20		
59.	**STUB-IN** Size/ Dimension: 50/50 Material: CuNi10Fe1.6Mn DIN Standard 86088 (As per technical specification -Annex-B)	Nos	05		
60.	**STUB-IN** Size/ Dimension: 50/65 Material: CuNi10Fe1.6Mn DIN Standard 86088 (As per technical specification -Annex-B)	Nos	20		
61.	**STUB-IN** Size/ Dimension: 65/65 Material: CuNi10Fe1.6Mn DIN Standard 86088 (As per technical specification -Annex-B)	Nos	20		

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

62.	**STUB-IN** Size/ Dimension: 50/250 Material: CuNi10Fe1.6Mn DIN Standard 86088 (As per technical specification -Annex-B)	Nos	05		
63.	**STUB-IN** Size/ Dimension: 65/250 Material: CuNi10Fe1.6Mn DIN Standard 86088 (As per technical specification -Annex-B)	Nos	10		
64.	**STUB-IN** Size/ Dimension: 200/250 Material: CuNi10Fe1.6Mn DIN Standard 86088 (As per technical specification -Annex-B)	Nos	05		
FOB including local agent commission as per manufacture/ principal/ supplier/ quotation/ profarma in voice					
Freight Cost					
TOTAL PRICE CFR (CTG)/ CPT (HAZRAT SHAHJALAL INTERNATIONAL AIRPORT)					

In wards:

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

Terms of conditions:

01	Name and Address of Manufacturer's	To be mentioned	
02	Country of Manufacture	To be mentioned	
03	Authorization of Manufacturer	To be mentioned	
04	Name and Address of Principal	To be mentioned	
05	Authorization of Principal	To be mentioned	
06	Name and Address of Local Agent	To be mentioned	
07	Port of shipment	To be mentioned	
08	Destination Port	To be mentioned	
09	Country of origin	To be mentioned	
10	Offer validity	60 (Sixty) days from the date of opening.	
11	Warranty	18 (Eighteen) Months	
12	H S Code	To be mentioned	
13	Transshipment	Allowed	
14	Partial Shipment	Not Allowed	
15	Original Proforma Invoice	To be provided	
16	Earnest Money	To be provided	

Ruddraw Mohammad Nabl
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

17	Shipment / Delivery	45 (Forty Five) days after receiving Irrevocable Letter of Credit (ILOC)	
18	Certificate	To be provided as per Technical Specification.	
19	Payment	a. 80% of total Letter of Credit (LC)/ CFR value is to be paid on production of necessary shipping documents. b. Remaining 20% of Letter of Credit (LC) amount will be paid after received material receiving report from our main Store.	
20	All other terms and conditions as laid down in tender documents to be followed.		

Your quotation No:

the tenderer:

Date:

Signature, name and address

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

ANNEX- B

TECHNICAL SPECIFICATION OF PUMPS

SL No	Technical Description, Specification and standard required	Unit	Qty	Specification offered by Bidder
1.	**Adaptor Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN50 Material: ST37 DIN Standard Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	15	
2.	**Adaptor Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN100 Material: ST37 DIN Standard Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	15	
3.	**CUNI Collar Lap-Joint with Galvanized Steel Flange** Pressure Rating: PN16 Size/ Dimension: DN50 Material: CuNi10Fe1.6Mn DIN Standard 86037 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	60	
4.	**CUNI Collar Lap-Joint with Galvanized Steel Flange** Pressure Rating: PN16 Size/ Dimension: DN65 Material: CuNi10Fe1.6Mn DIN Standard 86037 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	15	
5.	**CUNI Collar Lap-Joint with Galvanized Steel Flange** Pressure Rating: PN10 Size/ Dimension: DN50 Material: CuNi10Fe1.6Mn DIN Standard 86037 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	15	
6.	**CUNI Collar Lap-Joint with Galvanized Steel Flange** Pressure Rating: PN10 Size/ Dimension: DN65 Material: CuNi10Fe1.6Mn DIN Standard 86037 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	10	

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

7.	**CUNI Collar Lap-Joint with Galvanized Steel Flange** Pressure Rating: PN16 Size/ Dimension: DN65 Material: CuNi10Fe1.6Mn DIN Standard 86037 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	50	
8.	**CUNI Collar Lap-Joint with Galvanized Steel Flange** Pressure Rating: PN16 Size/ Dimension: DN200 Material: CuNi10Fe1.6Mn DIN Standard 86037 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
9.	**CUNI Collar Lap-Joint with Galvanized Steel Flange** Pressure Rating: PN16 Size/ Dimension: DN250 Material: CuNi10Fe1.6Mn DIN Standard 86037 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	10	
10.	**Special (Set-On) Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN50 Material: ST37 DIN Standard 86041 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
11.	**Special (Set-On) Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN125 Material: ST37 DIN Standard 86041 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
12.	**Special (Set-On) Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN200 Material: ST37 DIN Standard 86041 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: manufacturer Certificate	Nos	10	
13.	**Special (Set-On) Flange (Galvanized)** Pressure Rating: PN16 Size/ Dimension: DN15 Material: ST37 DIN Standard 86041 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: manufacturer Certificate	Nos	05	

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

14.	**Special (Set-On) Flange (Galvanized)** Pressure Rating: PN16 Size/ Dimension: DN50 Material: ST37 DIN Standard 86041 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
15.	**Special (Set-On) Flange (Galvanized)** Pressure Rating: PN16 Size/ Dimension: DN65 Material: ST37 DIN Standard 86041 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	10	
16.	**Special (Set-On) Flange (Galvanized)** Pressure Rating: PN16 Size/ Dimension: DN80 Material: ST37 DIN Standard 86041 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	10	
17.	**Special (Set-On) Flange (Galvanized)** Pressure Rating: PN16 Size/ Dimension: DN200 Material: ST37 DIN Standard 86041 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
18.	**Special (Set-On) Flange (Galvanized)** Pressure Rating: PN16 Size/ Dimension: DN 250 Material: ST37 DIN Standard 86041 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
19.	**Slip-On Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN 40 Material: ST37 DIN Standard 2573 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
20.	**Slip-On Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN 50 Material: ST37 DIN Standard 2573 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	15	

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

21.	**Slip-On Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN 65 Material: ST37 DIN Standard 2573 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
22.	**Slip-On Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN 80 Material: ST37 DIN Standard 2573 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	10	
23.	**Slip-On Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN 100 Material: ST37 DIN Standard 2573 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	10	
24.	**Slip-On Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN 125 Material: ST37 DIN Standard 2573 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	100	
25.	**Slip-On Flange (Galvanized)** Pressure Rating: PN6 Size/ Dimension: DN 200 Material: ST37 DIN Standard 2573 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	60	
26.	**Slip-On Flange (Galvanized)** Pressure Rating: PN10 Size/ Dimension: DN 50 Material: ST37 DIN Standard 2576 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	15	
27.	**Slip-On Flange (Galvanized)** Pressure Rating: PN10 Size/ Dimension: DN 65 Material: ST37 DIN Standard 2576 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	10	

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

28.	**Slip-On Flange (Galvanized)** Pressure Rating: PN10 Size/ Dimension: DN 100 Material: ST37 DIN Standard 2576 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	20	
29.	**Slip-On Flange (Galvanized)** Pressure Rating: PN10 Size/ Dimension: DN 125 Material: ST37 DIN Standard 2576 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
30.	**Slip-On Flange (Galvanized)** Pressure Rating: PN10 Size/ Dimension: DN 150 Material: ST37 DIN Standard 2576 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	15	
31.	**Slip-On Flange (Galvanized)** Pressure Rating: PN10 Size/ Dimension: DN 200 Material: ST37 DIN Standard 2576 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
32.	**MARPOL Flange** Pressure Rating: PN6 Size/ Dimension: DN 50 Material: ST37 System: Sanitary Discharge System Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
33.	**Spectacle Flange** Pressure Rating: PN6 Size/ Dimension: DN 50 Material: Steel DIN Standard Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
34.	**Spectacle Flange** Pressure Rating: PN10 Size/ Dimension: DN 50 Material: Steel DIN Standard Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

35.	**Elbow (Galvanized)** Long radius: 1.5D Angle: 90° Size/ Dimension: 60.3×4.5 Material: ST37 Connection: Seamless & welded DIN Standard 2605 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	20	
36.	**Elbow (Galvanized)** Long radius: 1.5D Angle: 90° Size/ Dimension: 76.1×4.5 Material: ST37 Connection: Seamless & welded DIN Standard 2605 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
37.	**Elbow (Galvanized)** Long radius: 1.5D Angle: 90° Size/ Dimension: 114.3×4.5 Material: ST37 Connection: Seamless & welded DIN Standard 2605 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	40	
38.	**Elbow (Galvanized)** Long radius: 1.5D Angle: 90° Size/ Dimension: 139.7×4.5 Material: ST37 Connection: Seamless & welded DIN Standard 2605 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	65	
39.	**Elbow (Galvanized)** Long radius: 1.5D Angle: 90° Size/ Dimension: 168.3×8.8 Material: ST37 Connection: Seamless & welded DIN Standard 2605 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	15	
40.	**Elbow (Galvanized)** Long radius: 1.5D Angle: 90° Size/ Dimension: 219.1×5.9 Material: ST37 Connection: Seamless & welded DIN Standard 2605	Nos	15	

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

	Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate			
41.	**Elbow - CUNI** Long radius: 1.5D Angle: 90° Size/ Dimension: 57.0×1.5 Material: CuNi10Fe1.6Mn Connection: Seamless & welded DIN Standard 86090 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
42.	**Elbow - CUNI** Long radius: 1.5D Angle: 90° Size/ Dimension: 76.0×2.0 Material: CuNi10Fe1.6Mn Connection: Seamless & welded DIN Standard 86090 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
43.	**Elbow - CUNI** Long radius: 1.5D Angle: 90° Size/ Dimension: 219.1×5.9 Material: CuNi10Fe1.6Mn Connection: Seamless & welded DIN Standard 86090 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
44.	**Reducer Concentric (Galvanized)** Size/ Dimension: 60.3×4.5/ 48.3×4.5 Material: ST37 Connection: Butt welding DIN Standard 2616 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
45.	**Reducer Concentric (Galvanized)** Size/ Dimension: 88.9×4.5/ 76.1×4.5 Material: ST37 Connection: Butt welding DIN Standard 2616 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
46.	**Reducer Concentric (Galvanized)** Size/ Dimension: 114.3×4.5/ 88.9×4.5 Material: ST37 Connection: Butt welding DIN Standard 2616 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	10	

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

47.	**Reducer Concentric (Galvanized)** Size/ Dimension: 219.1×5.9/ 114.3×4.5 Material: ST37 Connection: Butt welding DIN Standard 2616 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	10	
48.	**Reducer Concentric – CUNI** Size/ Dimension: 76.0×2.0/ 57.0×1.5 Material: CuNi10Fe1.6Mn Connection: Butt welding DIN Standard 86089 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	10	
49.	**STUB-IN (Galvanized)** Size/ Dimension: 50/50 Material: ST37 DIN Standard 2615 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	25	
50.	**STUB-IN (Galvanized)** Size/ Dimension: 50/80 Material: ST37 DIN Standard 2615 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
51.	**STUB-IN (Galvanized)** Size/ Dimension: 65/80 Material: ST37 DIN Standard 2615 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
52.	**STUB-IN (Galvanized)** Size/ Dimension: 80/80 Material: ST37 DIN Standard 2615 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
53.	**STUB-IN (Galvanized)** Size/ Dimension: 80/100 Material: ST37 DIN Standard 2615 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
54.	**STUB-IN (Galvanized)** Size/ Dimension: 100/100 Material: ST37 DIN Standard 2615 Country of Origin: To be mentioned	Nos	10	

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

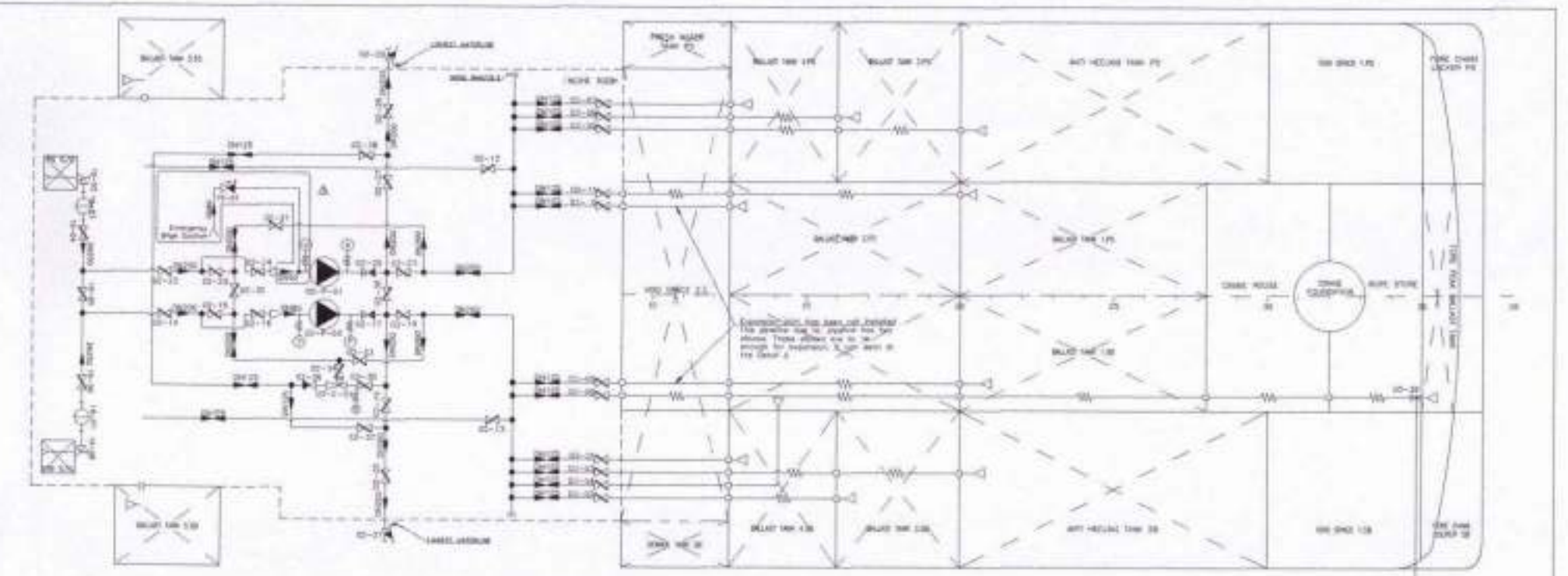
	Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate			
55.	**STUB-IN (Galvanized)** Size/ Dimension: 125/125 Material: ST37 DIN Standard 2615 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
56.	**STUB-IN (Galvanized)** Size/ Dimension: 100/200 Material: ST37 DIN Standard 2615 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	10	
57.	**STUB-IN (Galvanized)** Size/ Dimension: 125/200 Material: ST37 DIN Standard 2615 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	20	
58.	**STUB-IN (Galvanized)** Size/ Dimension: 200/200 Material: ST37 DIN Standard 2615 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	20	
59.	**STUB-IN** Size/ Dimension: 50/50 Material: CuNi10Fe1.6Mn DIN Standard 86088 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
60.	**STUB-IN** Size/ Dimension: 50/65 Material: CuNi10Fe1.6Mn DIN Standard 86088 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	20	
61.	**STUB-IN** Size/ Dimension: 65/65 Material: CuNi10Fe1.6Mn DIN Standard 86088 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	20	

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

62.	**STUB-IN** Size/ Dimension: 50/250 Material: CuNi10Fe1.6Mn DIN Standard 86088 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	
63.	**STUB-IN** Size/ Dimension: 65/250 Material: CuNi10Fe1.6Mn DIN Standard 86088 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	10	
64.	**STUB-IN** Size/ Dimension: 200/250 Material: CuNi10Fe1.6Mn DIN Standard 86088 Country of Origin: To be mentioned Country of manufacturer: To be mentioned H S Code: To be mentioned Certification: Manufacturer Certificate	Nos	05	

Compliance Statement. A compliance statement (in a tabular format) fulfilling all the requirement of the tender is to be submitted for evaluation of the quotations. Stating mere **'Yes'** or **'No'** or **'Complied'** will not suffice and detailed description/ information as required is to be given. An incomplete compliance statement may attribute to cancellation of the offer. If any clause of this specification does not commensurate with offered laser guided alignment machine, the deviation has to be spelt out clearly.

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj



Pipe No.	DN	Material	Type	Qty (Set)
01-01	DN80	G025	Butterfly Valve	6
01-02	DN125	G025	Butterfly Valve	6
01-03	DN125	G025	Butterfly Valve	6
01-04	DN125	G025	Butterfly Valve	6
01-05	DN	G025	Butterfly Valve	6
01-06	DN	G025	Butterfly Valve	6
01-07	DN	G025	Butterfly Valve	6
01-08	DN	G025	Butterfly Valve	6
01-09	DN	G025	Butterfly Valve	6
01-10	DN	G025	Butterfly Valve	6
01-11	DN	G025	Butterfly Valve	6
01-12	DN	G025	Butterfly Valve	6
01-13	DN	G025	Butterfly Valve	6
01-14	DN	G025	Butterfly Valve	6
01-15	DN	G025	Butterfly Valve	6
01-16	DN	G025	Butterfly Valve	6
01-17	DN	G025	Butterfly Valve	6

Pipe No.	DN	Material	Type	Qty (Set)
02-18	D1200	G025	Butterfly Valve	6
02-19	D1200	G025	Butterfly Valve	6
02-20	D1200	G025	Butterfly Valve	6
02-21	D1200	G025	Non-Return Wafer Valve (Type Approved)	6
02-22	D1200	G025	Butterfly Valve	6
02-23	D1200	G025	Butterfly Valve	6
02-24	D1200	G025	Butterfly Valve	6
02-25	D1200	G025	Non-Return Valve	6
02-26	D1200	G025	Butterfly Valve	6
02-27	D1200	G025	Butterfly Valve	6
02-28	D1200	G025	Butterfly Valve	6
02-29	D1200	G0640	Non-Return Wafer Valve (Type Approved)	6
02-30	D1200	G025	Butterfly Valve	6
02-31	D1200	G025	Butterfly Valve	6
02-32	D1200	G025	Butterfly Valve	6
02-33	D1200	G025	Butterfly Valve	6

Pipe No.	DN	Material	Type	Qty (Set)
03-35	DN150	G025	Butterfly Valve	6
03-36	DN125	G025	Non-Return Valve	6
03-37	DN150	G025	Butterfly Valve	6
03-38	DN125	G025	Butterfly Valve	6
03-39	DN150	G0640	"GML" Valve (Type Approved)	6

No	Description	Type	Capacity
03-F-01	Ballast Pump No.01	Self Priming	1500 m³/h x 1.8 bar
03-F-02	Ballast Pump No.02	Self Priming	1500 m³/h x 1.8 bar
03-F-03	Anti Heeling Pump	Self Priming	800 m³/h x 2.0 bar
03-F-07	Eductor	-	10 m³/h

Symbol	Description
	Butterfly Valve
	Butterfly Butterfly Valve
	Flow Direction
	Bulkhead Penetration
	Expansion Joint
	Suction Bell
	Vacuum Gauge
	Pressure Gauge
	Double Seat Regulating Valve
	Manometer

Nominal Diameter	Outer Dia.& Wall Thickness	Material
4"	DN100 x14.3x6.0	Seamless Steel Pipe
5"	DN125 x 139.7x14.0	
6"	DN150 x 168.3x16.0	
12"	DN300 x 323.8x8.0	

Thread thicknesses are the minimum requirements of class 40kgs

Notes:
- This drawing is schematic only.
- Working pressure is 1.0 bar
- Design pressure is 1 bar
- Test pressure is 1 bar
- Pipe class: Class A
- All pipes are hot galvanized after fabrication.
- All manual operated valves are to be provided with seal indicative showing whether they are opened or closed
- Total ballast capacity is 4023.28m³
- *Minimum 600mm above the bottom platform
- For details of valves that have start number 19, please see "Ships & Sea Water System" dwg no. P-19.
- This number 02-30 valve is use for engine stream, see number 03-34 valve in sea top section.
- For air vents and sounding please see "Air Vent & Sounding System" dwg no. P-03
- For tanks locations and volumes see "Tank Capacity Plan" dwg no. P-01.

Rev.	Date	Rem. By	Revision Note
03	01.08.2018	S.E.M.	Pump pressure and eng. suction pipe dim. have been revised.

TOMAY

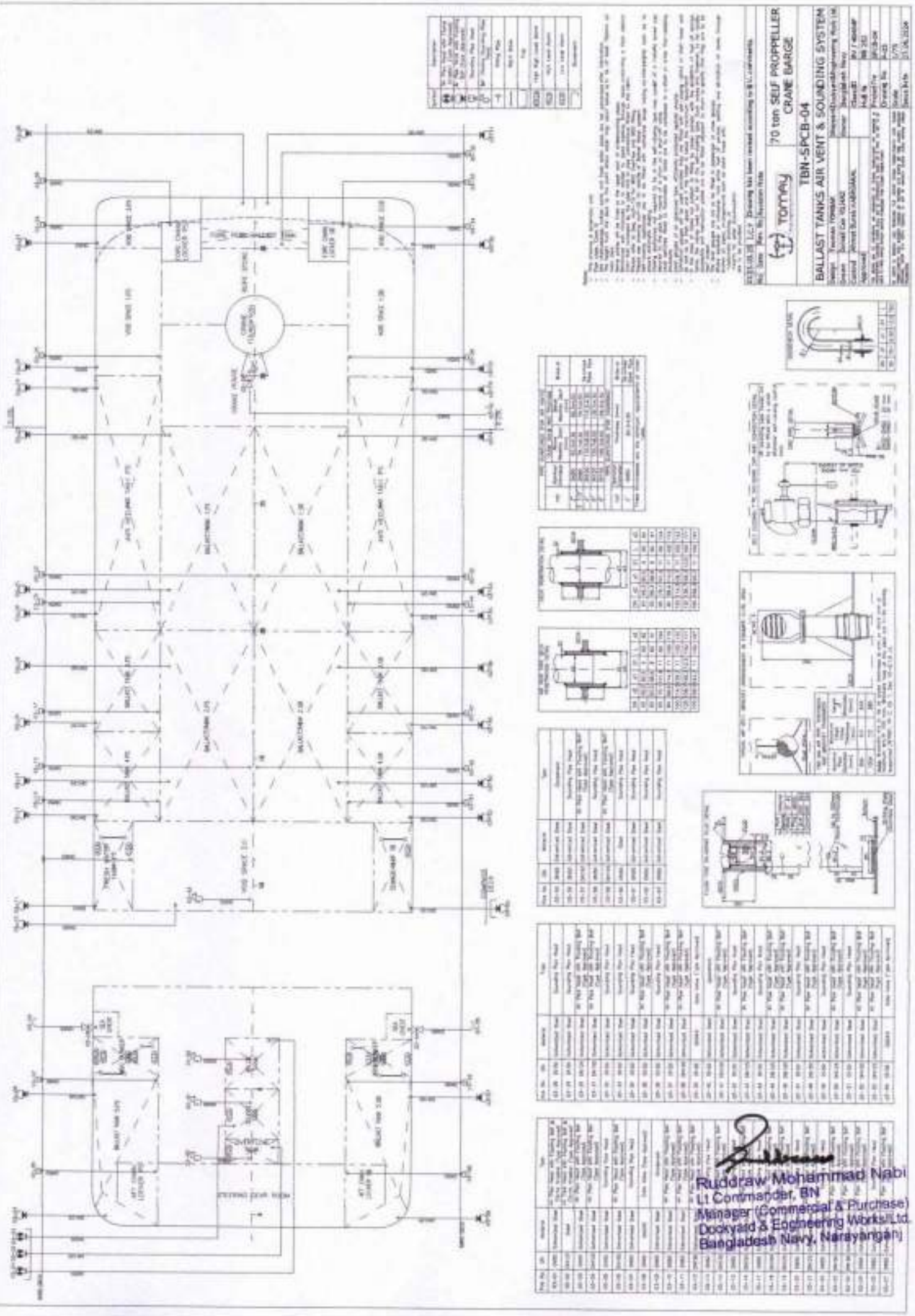
70 ton SELF PROPPELLER CRANE BARGE

TBN-SPCB-04

BALLAST PIPING SYSTEM

Designer	Tanveer TONMOY	Shipyard	Shipyard/Engineering Work Ltd.
Drawn	Sumit Lal MURAZ	Owner	Bangladesh Navy
Checked	Ahmed Bulbul KHANDAKAR		Drawing No. 01 / Revised
Approved			Hull No. 803-212
			Project No. SPCB-04
			Drawing No. P-02
			Scale 1:175
			Issue Date 15.08.2018

Rudrew Mohammed Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj


70 ton SEIF PROPELLER CRANE BARGE
TBN-SPCB-04
BALLAST TANKS AIR VENT & SOUNDING SYSTEM
Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works(Ltd.
Bangladesh Navy, Narayangonj

Notes:
- This drawing is schematic only.
- Working pressure is 2 bar.
- Design pressure is 3 bar.
- Test pressure is 4.5 bar.
- Design temperature is 50°C
- Pipe class: class B
- Fuel lines may not pass through tanks containing feedwater, drinking water, lubricating oil or chemical oil.
- Fuel lines are not to be laid directly above or in the vicinity of boilers, turbines or equipment with high surface temperatures (over 220 °C) or in way of other sources of ignition.
- Flanged and screwed socket connections in fuel oil lines are to be screened or otherwise suitably protected to avoid, as far as practicable, oil spray or oil leakages onto hot surfaces, into machinery air intakes, or other sources of ignition. The number of detachable pipe connections is to be kept to a minimum. Flanged connections in accordance with recognized standards are required.
- Flanged and socket connections in fuel oil lines which lay directly above sources of ignition are to be screened and drip pans arrangements.
- Flanged connections in fuel oil lines with a maximum working pressure of more than 0.18 N/mm² and within about 3 m of hot surfaces, sources of ignition and direct sight of burners, are to be screened or otherwise protected. Drip pan arrangements need not to be provided.
- Flanged connections in fuel oil lines with a maximum working pressure of more than 0.18 N/mm² and within about 3 m of hot surfaces, sources of ignition are to be screened and drip pans arrangements. Having regard working pressure, type of coupling and
- Flanged connections in fuel oil lines with a maximum working pressure of more than 1.8 N/mm² need normally to be
- Flanged connections in the machinery spaces are to be operate
- Fuel tanks, filling of the top of a tank and with inside extension pipe to the bottom. In holes shall be drilled in the pipe near the bottom to avoid the siphoning effect.
- Fuel tanks are to be located on the tank itself.
- Arrangements to be used should fulfil all of the following
- Fuel tanks are to be directly accessible.
- Each filling pipe for a fuel tank should be located in a position shielded from any heated surface or electrical equipment and the shielding device or construction should be sturdy enough to endure leaks, ruptures or spray under design pressure of the fuel oil supply line so as to preclude impingement of fuel oil onto such surface or equipment.
- The sampling arrangement should be provided with suitable drainage to the drain tank or other safe location.

- For air vents and sounding pipes see "Air Vent & Sounding System" dwg no: P-03.
- For drip tray and tank this please see "Drip Tray & Sea Valve Arrangement" dwg no: P-20.
- For tanks locations and volumes see "Tank Capacity Plan" dwg no: P-07.
- "L" marks and outlets of the main engines and gensets will be connected according to the supplier's recommendations.

SERVICE TANK CAPACITY CALCULATION:
Main Engine: SFOHR: 213 g/kWh
2 M/E, R hours=2,037m³
Diesel Generators: BHR: 198 g/kwh
2 D/G, R hours=0,317m³
Required service tank capacity=2,720m³
Actual service tank capacity=2,830m³

OVERFLOW TANK CAPACITY:
Transfer pump: 2m³/h
Required capacity=2,5m³
Actual capacity=2,380l+m³

DECK PENETRATION DETAIL FOR STEEL PIPE

DN	d2	d1	D1	t	d3
25	33.7	42.4	4	80	85
40	48.3	60.3	5	80	90
50	60.3	88.9	8	80	91
65	76.1	101.6	11	80	104
80	88.9	114.3	11	100	116
100	114.3	139.7	11	100	142
125	139.7	168.3	12.5	100	171

Pipe Scantlings			
Nominal Diameter		Outer Dia.& Wall Thickness	Material
1/4"	DN8	13.7x1.80	Seamless Steel Pipe
1/2"	DN10	21.3x2.00	
3/4"	DN20	26.7x2.00	
1"	DN25	33.4x2.00	
1 1/2"	DN40	48.3x2.50	
2"	DN50	60.3x2.50	
2 1/2"	DN65	76.1x2.80	
3"	DN80	88.9x2.80	
4"	DN100	114.3x3.20	
Pipe Scantlings (Overflow Pipes)			
2 1/2"	DN65	76.1x4.50	Seamless Steel Pipe
4"	DN100	114.3x4.50	

Pipe thickness values given above table are minimum according to BV Rules.

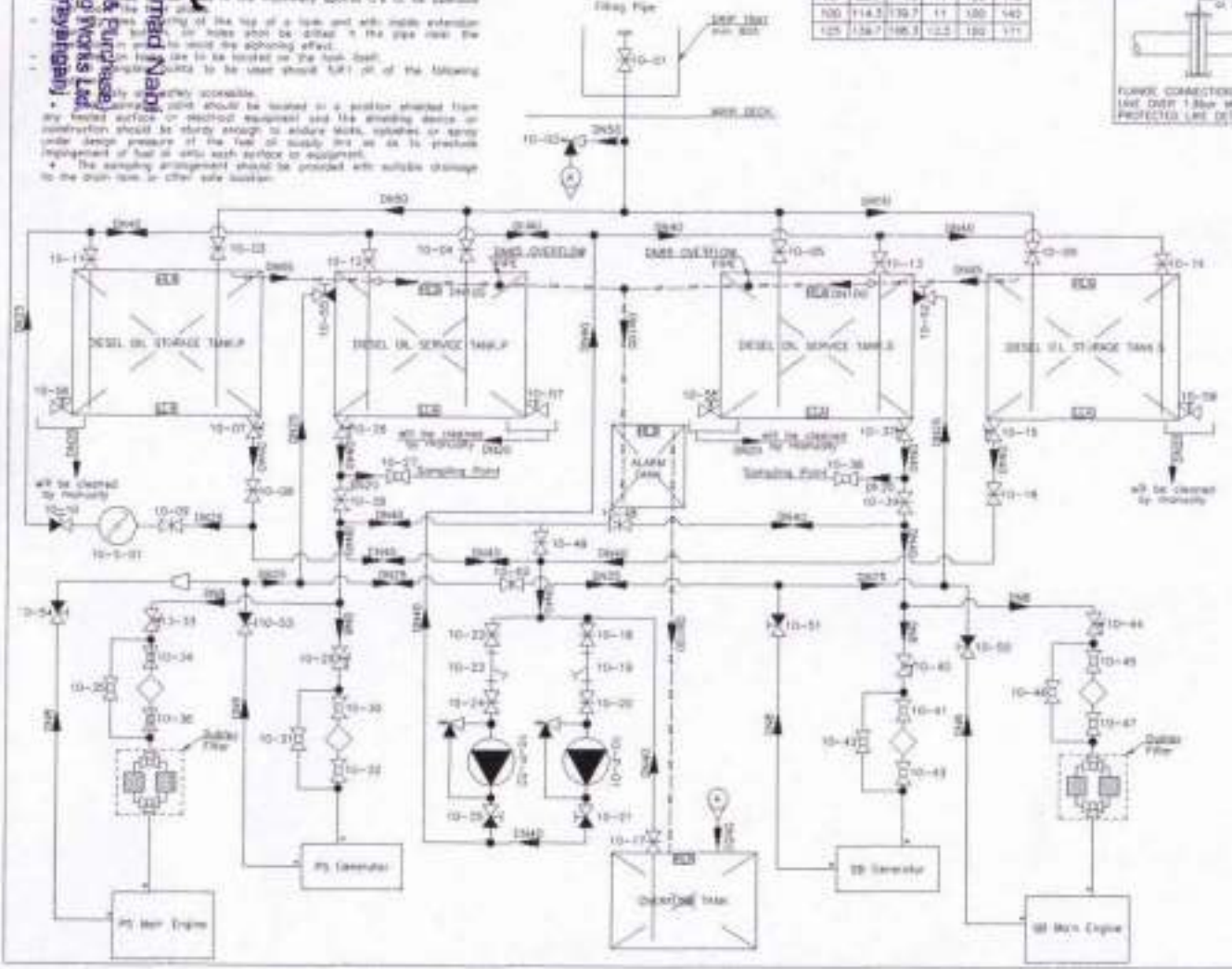
No.	Description	Type	Capacity
10-P-01	D.O. Transfer Pump	Gear Type	3 m³/h,2 bar
10-P-02	D.O. Transfer Pump	Gear Type	3 m³/h,2 bar
10-S-01	D.O. Separator unit, Pump	Gear Type	0.6 m³

GALVANISED STEEL or EQUIVALENT

FLANGE CONNECTIONS ON THE LINE OVER 1.8bar MUST BE PROTECTED LIKE DETAILED ABOVE

Pipe No.	Dia.	Material	Type	Qty (pcs)
10-01	DN50	GG25	Gate Valve	6
10-02	DN50	GG25	Pressure Relief Valve (Set: 2.25bar)	6
10-03	DN50	GG25	Gate Valve	6
10-04	DN50	GG25	Gate Valve	6
10-05	DN50	GG25	Gate Valve	6
10-06	DN50	GG25	Gate Valve	6
10-07	DN40	GGG40	Quick Closing Valve	6
10-08	DN40	GG25	Gate Valve	6
10-09	DN25	GG25	Gate Valve	6
10-10	DN25	GG25	Non-Return Stop Valve	6
10-11	DN25	GG25	Gate Valve	6
10-12	DN25	GG25	Gate Valve	6
10-13	DN25	GG25	Gate Valve	6
10-14	DN25	GG25	Gate Valve	6
10-15	DN40	GGG40	Quick Closing Valve	6
10-16	DN40	GG25	Gate Valve	6
10-17	DN40	GG25	Gate Valve	6
10-18	DN40	GG25	Gate Valve	6
10-19	DN40	Steel	Y-Filter	6
10-20	DN40	GG25	Gate Valve	6
10-21	DN40	GG25	Non-Return Stop Valve	6
10-22	DN40	GG25	Gate Valve	6
10-23	DN40	Steel	Y-Filter	6
10-24	DN40	GG25	Gate Valve	6
10-25	DN40	GG25	Non-Return Stop Valve	6
10-26	DN40	GGG40	Quick Closing Valve	6
10-27	DN50	GG25	Butter Valve	6
10-28	DN40	GG25	Gate Valve	6

Pipe No.	Dia.	Material	Type	Qty (pcs)
10-29	DN8	GGG40	Quick Closing Valve	6
10-30	DN8	GG25	Globe Valve	6
10-31	DN8	GG25	Globe Valve	6
10-32	DN8	GG25	Globe Valve	6
10-33	DN8	GGG40	Quick Closing Valve	6
10-34	DN8	GG25	Ball Valve	6
10-35	DN8	GG25	Ball Valve	6
10-36	DN8	GG25	Ball Valve	6
10-37	DN40	GGG40	Quick Closing Valve	6
10-38	DN25	GG25	Globe Valve	6
10-39	DN40	GG25	Gate Valve	6
10-40	DN8	GGG40	Quick Closing Valve	6
10-41	DN8	GG25	Globe Valve	6
10-42	DN8	GG25	Globe Valve	6
10-43	DN8	GG25	Globe Valve	6
10-44	DN8	GGG40	Quick Closing Valve	6
10-45	DN8	GG25	Ball Valve	6
10-46	DN8	GG25	Ball Valve	6
10-47	DN8	GG25	Ball Valve	6
10-48	DN40	GG25	Gate Valve	6
10-49	DN40	GG25	Gate Valve	6
10-50	DN8	GG25	Non-Return Stop Valve	6
10-51	DN8	GG25	Non-Return Stop Valve	6
10-52	DN25	GG25	Non-Return Stop Valve	6
10-53	DN8	GG25	Non-Return Stop Valve	6
10-54	DN8	GG25	Non-Return Stop Valve	6
10-55	DN25	GG25	Non-Return Stop Valve	6
10-56	DN20	GGG40	Self-Closing Valve	6
10-57	DN20	GGG40	Self-Closing Valve	6
10-58	DN20	GGG40	Self-Closing Valve	6
10-59	DN20	GGG40	Self-Closing Valve	6



Symbol	Description
	Gate Valve
	Non Return Stop Valve
	Quick Closing Valve
	Self Closing Valve
	Ball Valve
	Pressure Relief Valve
	Flow Direction
	Pump
	Fuel / Water Filter
HLA	High Level Alarm
LLA	Low Level Alarm
	Manometer

FUEL VALVES TANK CONNECTION DETAILS
VALVE FITTING DIMENSIONS (mm)(PN10)

d0	d1	d2	d3	#x	t
15	95	65	65	4xM12	16
20	105	75	75	4xM12	16
25	115	85	85	4xM12	16
40	150	100	110	4xM16	20

Threaded sleeve joints with parallel thread not allowed for:
- pipes with outside diameter of more than 60,3 mm
- piping systems conveying flammable media or services where fatigue, severe erosion or crevice corrosion is expected to occur.

FLANGE STANDARD IS EN1092

No	Date	Rev. No	Revision Note

Tommay

70 ton SELF PROPPELLER CRANE BARGE

TBN-SPCB-04

MDO TRANSFER & FILLING & OVERFLOW SYSTEM

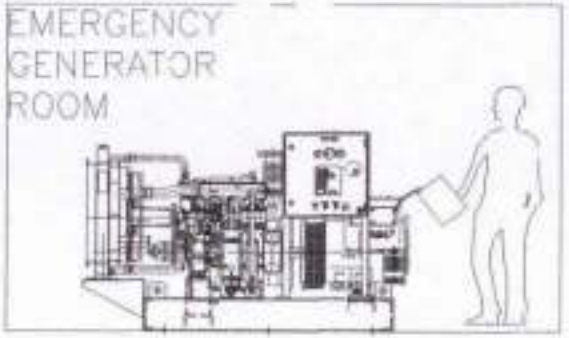
Design	Yasman TOMMAY	Shipyard	Dockyard&Engineering Work Ltd.
Drawn	Ismail Can YILMAZ	Owner	Bangladesh Navy
Control	Ahmet Burak HABAGMAL	Class/ID	BV / 48464F
Approved		Hull No	HB 252
		Project No	SPCB-04
		Drawing No	P-10
		Scale	1/50
		Issue Date	05.07.2024

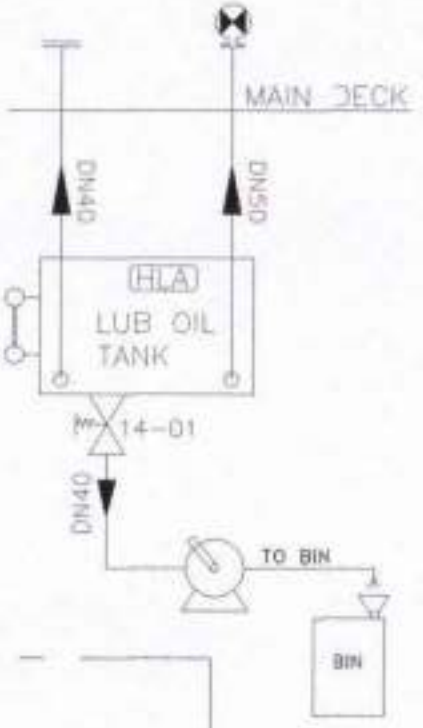
Ruddraw Mohammad Nabil
Lt.Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

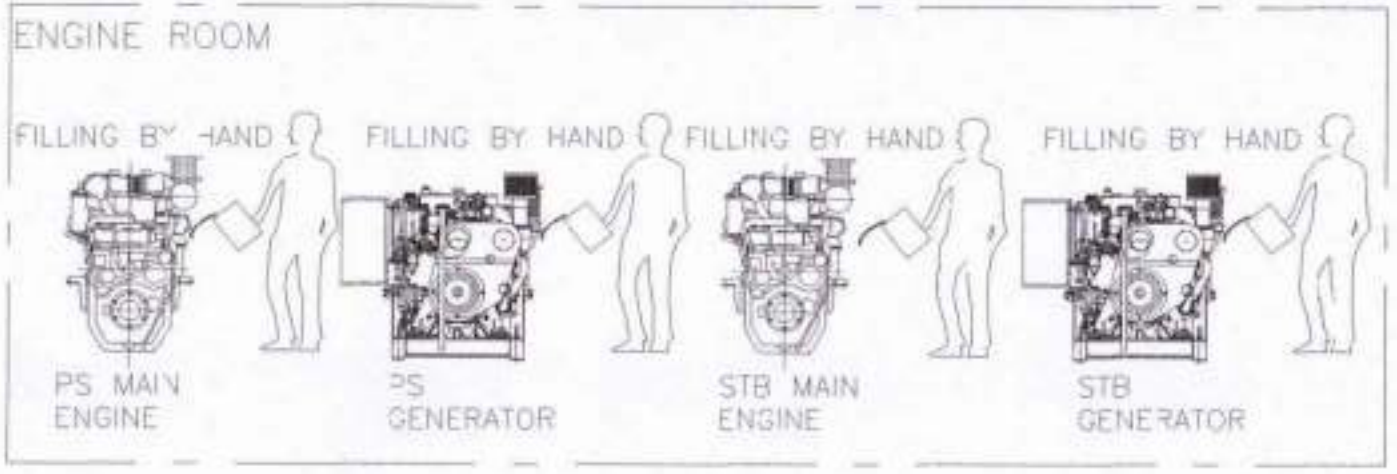
Pos. No.	DN	Material	Type
14-01	DN40	GGG40	Self Closing Valve
14-02	DN50	STEEL	Air Pipe Head with Flame Arrester (Type Approved)

Pipe Scantlings		
Nominal Diameter	Outer Dia.& Wall Thickness	Material
1 1/2" DN40	48.3x3.5	Seamless Steel
2" DN50	60.3x4.5	

DESCRIPTION	SYMBOL
HAND PUMP	
HIGH LEVEL ALARM	HLA
SELF CLOSING VALVE	
AIR PIPE HEAD WITH FLAME ARRESTER	
LEVEL TUBE	







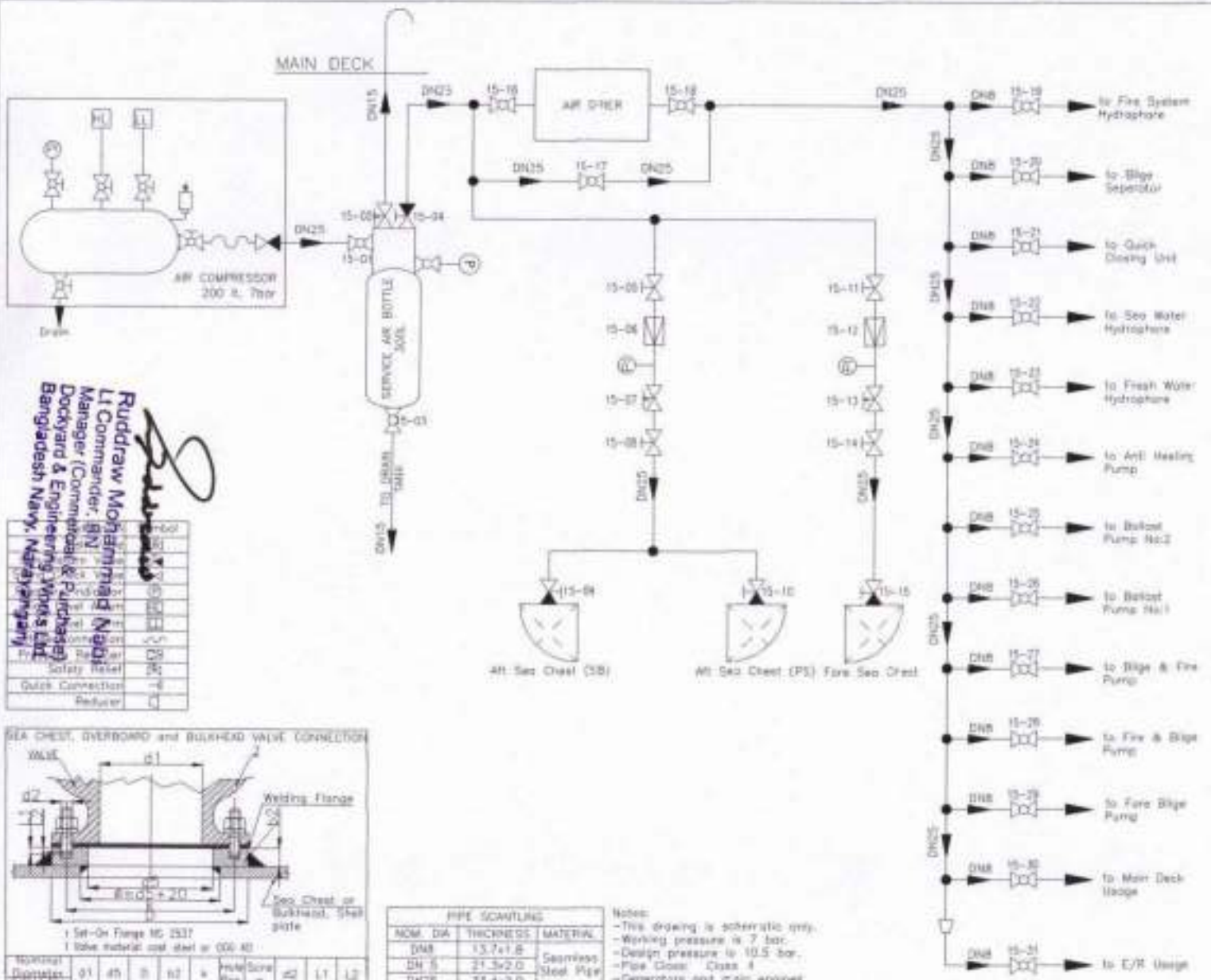
Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayangonj

THIS DESIGN AND ITS COPYRIGHTS ARE PROPERTIES OF TEOMAN TOMBAK. THE DRAWINGS & SPECIFICATIONS CONTAINED HEREIN SHALL NOT BE REPRODUCED IN WHOLE OR IN PART, OR NOT TO BE GIVEN TO THIRD PARTIES WITHOUT WRITTEN PERMISSION FROM TEOMAN TOMBAK.

BU DOSYA VE BUNDAKI BÜTÜN BİLGİLERİN TELİF HAKLARI TEOMAN TOMBAK A.Ş.'YE AİTTİR. TEOMAN TOMBAK'IN YAZILI MÜSAADESİ OLMADIKÇA BU DOSYANIN VEYA BUNUN BİR KISMININ ÜÇÜNCÜ ŞAHISLARA VERİLEMEZ, TEKSİR VEYA KOPYA EDİLEMEZ VE HİÇ BİR MANTIKLA DURUŞA GÖRE MAHSURİ DİĞERİNİ FEDA EDİLEMEZ.

TOMAY

TBN-SPCB-04	Design	Teoman TOMBAK	Shipyard	Class	BV / 40464F	Revision No	00
	Drawn	İsmail Can YILMAZ	Dockyard&Engineering Work Ltd.	Hull No	NB 252	Page	1/1
LUBRICATION OIL SYSTEM	Control	Ahmet Burak KABASAKAL	Owner	Project No	SPCB-04	Issue Date	23.01.2025
	Approved		Bangladesh Navy	Drawing No	P-12	Scale	1/50



Pos No.	DN	Material	Type	PN (bar)
15-01	DN25	GG25	Ball Valve	16
15-02	DN25	GG25	Ball Valve	16
15-03	DN15	GG25	Ball Valve	16
15-04	DN25	GG25	Non-Return Stop Valve	16
15-05	DN25	GG25	Stop Valve	16
15-06	DN25	GG25	Air Reducing Valve (7bar to 2bar)	16
15-07	DN25	GG25	Relief Valve (set press. 2.2 bar)	16
15-08	DN25	GG25	Stop Valve	16
15-09	DN25	GGG40	Non-Return Stop Valve	16
15-10	DN25	GGG40	Non-Return Stop Valve	16
15-11	DN25	GG25	Stop Valve	16
15-12	DN25	GG25	Air Reducing Valve (7bar to 2bar)	16
15-13	DN25	GG25	Relief Valve (set press. 2.2 bar)	16
15-14	DN25	GG25	Stop Valve	16
15-15	DN25	GGG40	Non-Return Stop Valve	16
15-16	DN25	GG25	Ball Valve	16
15-17	DN25	GG25	Ball Valve	16
15-18	DN25	GG25	Ball Valve	16
15-19	DN8	GG25	Ball Valve	16
15-20	DN8	GG25	Ball Valve	16
15-21	DN8	GG25	Ball Valve	16
15-22	DN8	GG25	Ball Valve	16
15-23	DN8	GG25	Ball Valve	16
15-24	DN8	GG25	Ball Valve	16
15-25	DN8	GG25	Ball Valve	16
15-26	DN8	GG25	Ball Valve	16
15-27	DN8	GG25	Ball Valve	16
15-28	DN8	GG25	Ball Valve	16
15-29	DN8	GG25	Ball Valve	16
15-30	DN8	GG25	Ball Valve	16
15-31	DN8	GG25	Ball Valve	16

Symbol	
	SB
	PS
	FS
	FW
	AH
	BP
Safety Relief	SR
Quick Connection	-0
Reducer	

SEA CHEST, OVERBOARD and BULKHEAD VALVE CONNECTION

1 Set-On Flange MS 2537
1 Valve material cast steel or GGG 40

Nominal Diameter DN / NPS	d1	d3	D	b2	k	Hole Pcs.	Screw	d2	L1	L2
1 1/2	DN100	71.5	22	95	25	85	4	M12	14	18	13

PIPE SCANTLING		
NOM. DIA	THICKNESS	MATERIAL
DN8	13.7x1.8	Seamless Steel Pipe
DN 15	21.3x2.0	
DN25	33.4x2.0	

Notes:
-This drawing is schematic only.
-Working pressure is 7 bar.
-Design pressure is 10.5 bar.
-Pipe Class: Class II
-Generators and main engines are start with battery.

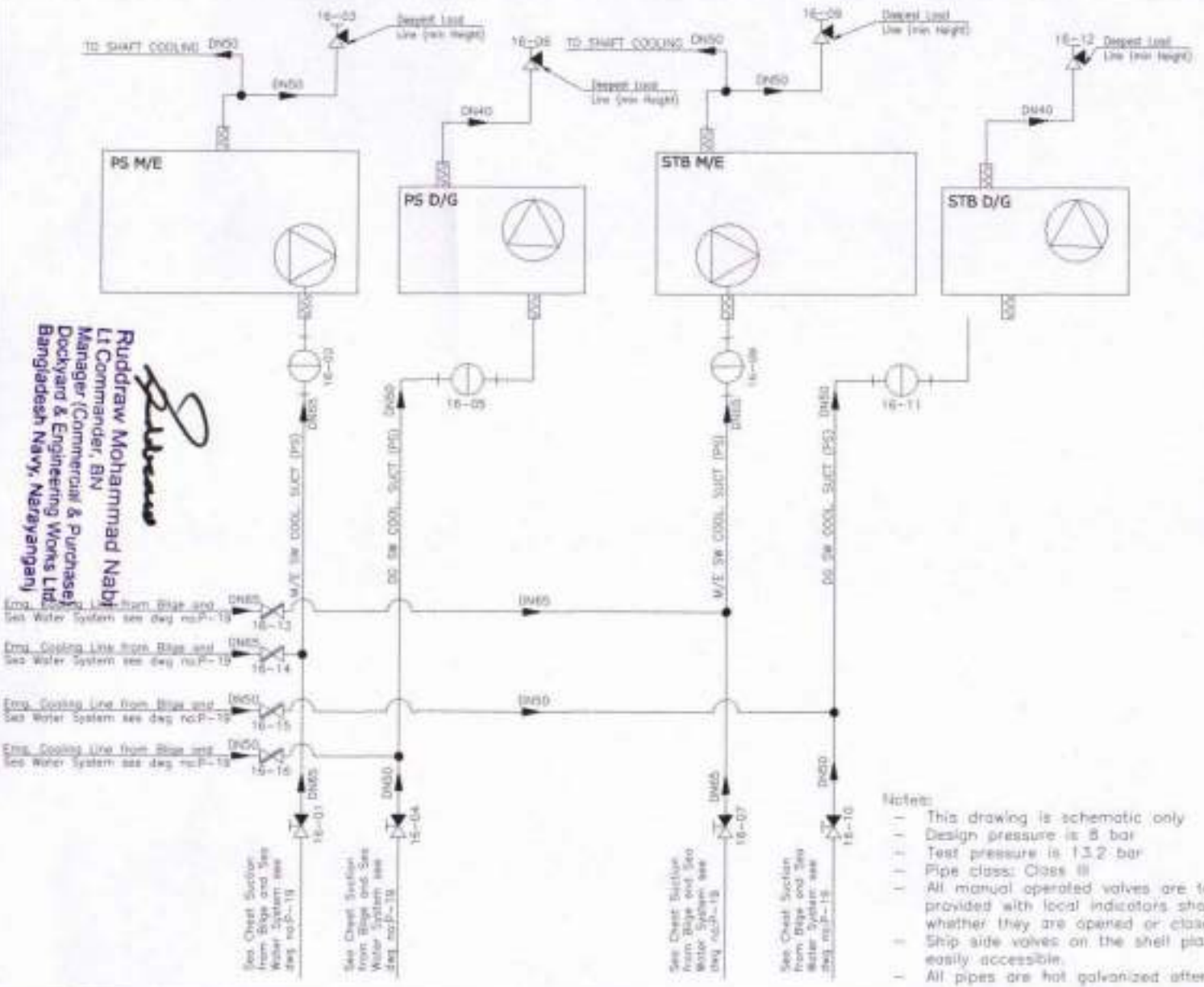
THE DESIGNS AND THE COPYRIGHTS ARE THE PROPERTIES OF TOMAY TOMBAK THE DRAWINGS & SPECIFICATIONS CONTAINED HEREIN SHALL NOT BE REPRODUCED IN WHOLE OR IN PART, OR PUT TO USE OTHER THAN THE PURPOSE WITHOUT WRITTEN PERMISSION FROM TOMAY TOMBAK

TOMAY
ship engineering tersane mühendislik

TBN-SPCB-04

COMPRESSED AIR SYSTEM

Design	Teoman TOMBAK	Shipyard		Class	BV / 48464F	Revision No	00
Drawn	Ismail Can Yilmaz	Dockyard&Engineering Work Ltd.		Hull No	NB 252	Page	1/1
Control	Ahmet Burak KABASAKAL	Owner		Project No	SPCB-04	Issue Date	12.09.2024
Approved		Bangladesh Navy		Drawing No	P-15	Scale	1/75



Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayangonj

Pos No	DN	Material	Type	PN (bar)
16-01	DN65	GG25	Non-Return Stop Valve	16
16-02	DN65	Steel	Filter	16
16-03	DN50	GGG40	Angle Non-Return Stop Valve (Type Approved)	16
16-04	DN50	GG25	Non-Return Stop Valve	16
16-05	DN50	Steel	Filter	16
16-06	DN40	GGG40	Angle Non-Return Stop Valve (Type Approved)	16
16-07	DN65	GG25	Non-Return Stop Valve	16
16-08	DN65	Steel	Filter	16
16-09	DN50	GGG40	Angle Non-Return Stop Valve (Type Approved)	16
16-10	DN50	GG25	Non-Return Stop Valve	16
16-11	DN50	Steel	Filter	16
16-12	DN40	GGG40	Angle Non-Return Stop Valve (Type Approved)	16
16-13	DN65	GG25	Butterfly Valve	16
16-14	DN65	GG25	Butterfly Valve	16
16-15	DN50	GG25	Butterfly Valve	16
16-16	DN50	GG25	Butterfly Valve	16

PIPE SCANTLINGS				
NOMINAL DIAMETER		OUTER DIAMETER	WALL THICKNESS	MATERIAL
1 1/2"	DN40	44.5	1.2	Copper Nickel 70/30 Pipe
2"	DN50	57	1.5	
2 1/2"	DN65	76.1	1.5	

Symbol	Description
	Butterfly Valve
	Stop Check Valve
	Angle Non-Return Stop Valve
	Flow Direction
	Pump
	Exp. Joint
	Filter

Notes:
- This drawing is schematic only
- Design pressure is 8 bar
- Test pressure is 13.2 bar
- Pipe class: Class III
- All manual operated valves are to be provided with local indicators showing whether they are opened or closed
- Ship side valves on the shell plating shall be easily accessible.
- All pipes are hot galvanized after fabrication.

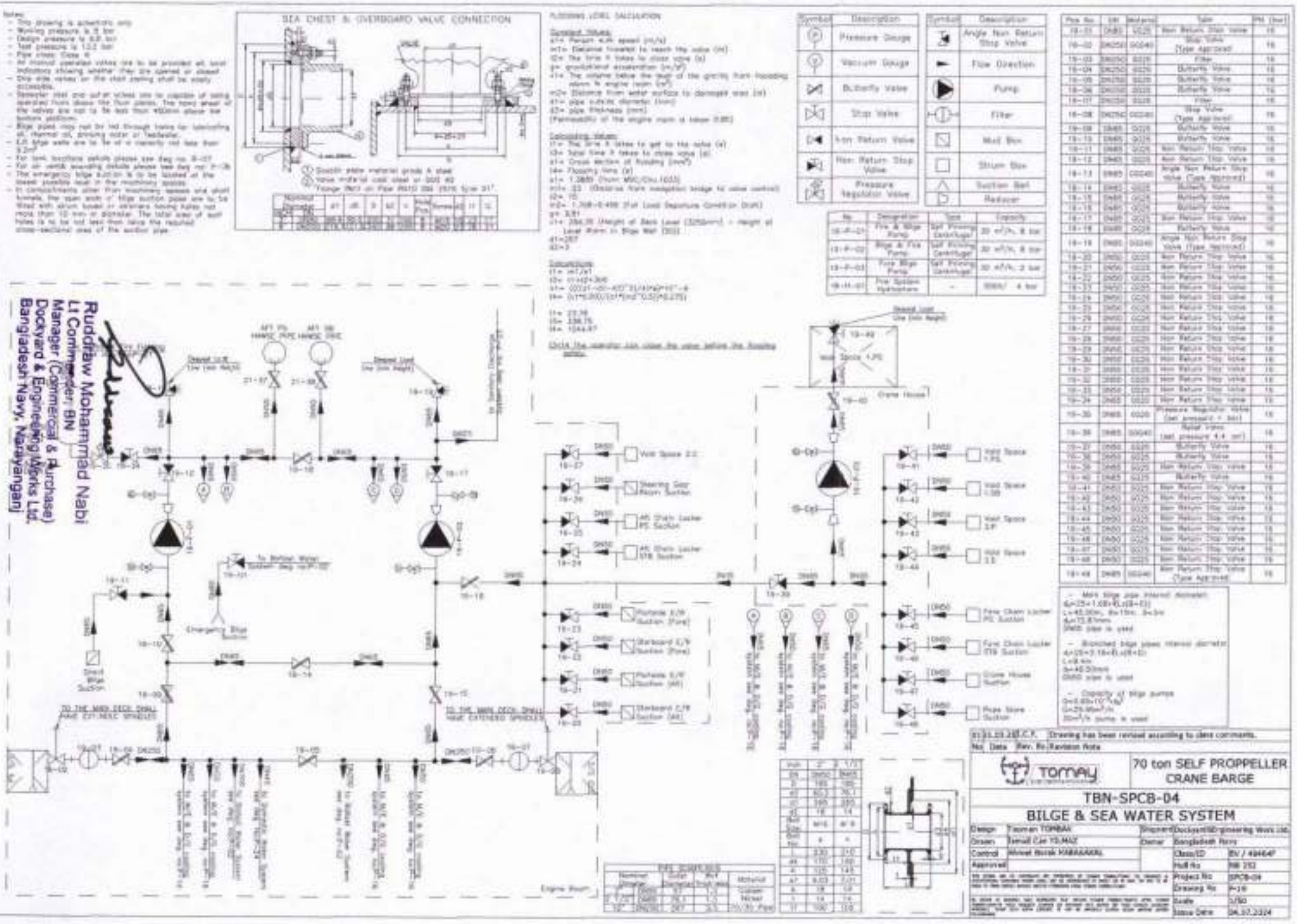
THIS DESIGN AND ITS COPYRIGHTS ARE PROPERTIES OF TOMAY ENGINEERING. THE DRAWINGS & SPECIFICATIONS CONTAINED HEREIN SHALL NOT BE REPRODUCED IN WHOLE OR IN PART, OR NOT TO BE GIVEN TO THIRD PARTIES WITHOUT WRITTEN PERMISSION FROM TOMAY ENGINEERING.

TOMAY
ocean engineering

TBN-SPCB-04

M/E & GENERATOR COOLING WATER SYSTEM

Design	Teoman TOMBAK	Shipyard		Class	BV / 48464F	Revision No	00
Drawn	İsmail Can YILMAZ	Dockyard&Engineering Work Ltd.		Hull No	NB 252	Page	1/1
Control	Ahmet Burak KABASAKAL	Owner		Project No	SPCB-04	Issue Date	10.01.2024
Approved		BANGLADESH NAVY		Drawing No	P-16	Scale	1/75



Notes:
- This drawing is authentic only
- Working pressure is 7 bar
- Design pressure is 8.8 bar
- Test pressure is 13.2 bar
- Pipe class: Class B
- All manual operated valves are to be provided all local indicators showing whether they are opened or closed
- Ship side valves on the shell plating shall be easily accessible.
- Seawater inlet and suction valves are to capable of being operated from above the main platform. The hand wheel of the valves are not to be less than 450mm above the bottom platform.
- Bilge piping may not be led through tanks for lubricating oil, thermal oil, drinking water or feedwater.
- E/R bilge wells are to be of a capacity not less than 0.2m³
- For tank bottoms details please see dwg no. B-07.
- For an overall sounding details please see dwg no. P-06
- The emergency bilge suction is to be located at the lowest possible level in the machinery spaces.
- In compartments other than machinery spaces and shaft tunnels, the open ends of bilge suction pipes are to be fitted with strum boxes or perforated mushroom valves not more than 10 mm in diameter. The total area of such holes is to be not less than twice the required cross-sectional area of the suction pipe.

FLOODING LEVEL CALCULATION

Symbol Values
a1= Percent sea speed (m/s)
m1= Distance traveled to reach the valve (m)
t2= The time it takes to close valve (s)
g= gravitational acceleration (m/s²)
z1= The volume below the level of the gravity from flooding above fr engine room (m³)
m2= Distance from water surface to damaged area (m)
d1= pipe outside diameter (mm)
d2= pipe thickness (mm)
(Permeability of the engine room is taken 0.85)

Calculating Values
t1= The time it takes to get to the valve (s)
t2= total time it takes to close valve (s)
a1= Cross section of flooding (mm²)
l4= Flooding time (s)
z1= 1.3851 (from MSC/Circ.1023)
m1= 33 (Distance from navigation bridge to valve control)
t2= 10
m2= 1.708+0.498 (For Load Departure Condition Draft)
g= 9.81
z1= 284.35 (Height of Back Level (3250mm) - Height of Level Alarm in Bilge Well (300))
d1=267
d2=3

Calculations
t1= m1/a1
t2= t1+a2+3(s)
a1= (22/21)*(d1-d2)^2/(4)(mm²)*4
l4= (z1*5.892)/(a1*(2m)^0.5)(MS.275)

t1= 22.78
t2= 338.75
l4= 1044.87

Once the operator can close the valve before the flooding water.

Symbol	Description
	Pressure Gauge
	Vacuum Gauge
	Butterfly Valve
	Stop Valve
	Non Return Stop Valve
	Pressure Regulation Valve

Symbol	Description
	Angle Non Return Stop Valve
	Flow Direction
	Pump
	Filter
	Mud Box
	Strum Box
	Suction Bell
	Reducer

No.	Description	Type	Capacity
19-P-01	Fire & Bilge Pump	Self Priming Centrifugal	30 m³/h, 8 bar
19-P-02	Bilge & Fire Pump	Self Priming Centrifugal	30 m³/h, 8 bar
19-P-03	Fore Bilge Pump	Self Priming Centrifugal	30 m³/h, 2 bar
19-H-01	Fire System Hydrophore	-	1000/ 4 bar

Pos No.	DN	Material	Type	PN (bar)
19-01	DN80	GG25	Non Return Stop Valve	16
19-02	DN250	GGG40	Stop Valve (Type Approved)	16
19-03	DN200	GG25	Filter	16
19-04	DN250	GG25	Butterfly Valve	16
19-05	DN250	GG25	Butterfly Valve	16
19-06	DN250	GG25	Butterfly Valve	16
19-07	DN250	GG25	Filter	16
19-08	DN250	GGG40	Stop Valve (Type Approved)	16
19-09	DN65	GG25	Butterfly Valve	16
19-10	DN65	GG25	Butterfly Valve	16
19-11	DN65	GG25	Non Return Stop Valve	16
19-12	DN65	GG25	Non Return Stop Valve	16
19-13	DN65	GGG40	Angle Non Return Stop Valve (Type Approved)	16
19-14	DN65	GG25	Butterfly Valve	16
19-15	DN65	GG25	Butterfly Valve	16
19-16	DN65	GG25	Butterfly Valve	16
19-17	DN65	GG25	Non Return Stop Valve	16
19-18	DN65	GG25	Butterfly Valve	16
19-19	DN65	GGG40	Angle Non Return Stop Valve (Type Approved)	16
19-20	DN50	GG25	Non Return Stop Valve	16
19-21	DN50	GG25	Non Return Stop Valve	16
19-22	DN50	GG25	Non Return Stop Valve	16
19-23	DN50	GG25	Non Return Stop Valve	16
19-24	DN50	GG25	Non Return Stop Valve	16
19-25	DN50	GG25	Non Return Stop Valve	16
19-26	DN50	GG25	Non Return Stop Valve	16
19-27	DN50	GG25	Non Return Stop Valve	16
19-28	DN50	GG25	Non Return Stop Valve	16
19-29	DN50	GG25	Non Return Stop Valve	16
19-30	DN50	GG25	Non Return Stop Valve	16
19-31	DN50	GG25	Non Return Stop Valve	16
19-32	DN50	GG25	Non Return Stop Valve	16
19-33	DN50	GG25	Non Return Stop Valve	16
19-34	DN65	GG25	Non Return Stop Valve	16
19-35	DN65	GG25	Pressure Regulator Valve (set pressure 7 bar)	16
19-36	DN65	GGG40	Relief Valve (set pressure 4.4 bar)	16
19-37	DN50	GG25	Butterfly Valve	16
19-38	DN50	GG25	Butterfly Valve	16
19-39	DN65	GG25	Non Return Stop Valve	16
19-40	DN65	GG25	Butterfly Valve	16
19-41	DN50	GG25	Non Return Stop Valve	16
19-42	DN50	GG25	Non Return Stop Valve	16
19-43	DN50	GG25	Non Return Stop Valve	16
19-44	DN50	GG25	Non Return Stop Valve	16
19-45	DN50	GG25	Non Return Stop Valve	16
19-46	DN50	GG25	Non Return Stop Valve	16
19-47	DN50	GG25	Non Return Stop Valve	16
19-48	DN50	GG25	Non Return Stop Valve	16
19-49	DN65	GGG40	Non Return Stop Valve (Type Approved)	16

- Main bilge pipe internal diameter:
d=25+1.68*L(B+D)
L=48.30m, B=15m, D=3m
d=72.87mm
DN80 pipe is used

- Branched bilge pipes internal diameter:
d=25+2.15*L(B+D)
L=8.4m
B=4.8.30mm
DN50 pipe is used

- Capacity of Bilge pumps
Q=0.83*(1/3)
Q=25.98m³/h
30m³/h pump is used

Pipe Schedule				
Nominal Diameter	Outer Diameter	Wall Thickness	Material
2"	DN50	60.3	5.4	Galvanized Mineral Pipe
2 1/2"	DN65	76.1	5.4	
3"	DN80	88.9	5.4	
10"	DN250	267	9.3	

Valve	A	B	L	H
DN	DN50	DN65		
P	165	185		
H	80.3	90.1		
L	165	185		
H1	195	220		
d	18	18		
Bolt Size	M16	M16		
No.	4	4		
A	230	210		
B1	170	160		
A1	125	145		
d1	9.03	7.01		
s	18	18		
f	14	14		
H	100	110		

No	Date	Rev. No	Revision Note
	21.03.23	C.F.	Drawing has been revised according to class comments.

TOMAY

70 ton SELF PROPPELLER CRANE BARGE

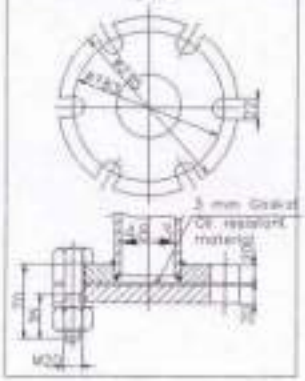
TBN-SPCB-04

BILGE & SEA WATER SYSTEM

Design	Tasmin TONBAR	Shipyard	Dockyard&Engineering Works Ltd.
Drawn	Ismail Cat YILMAZ	Owner	Bangladesh Navy
Control	Ahmet Burak KABAKAKIL		Class/ID BV / 494647
Approved			Hull No NB 252
			Project No SPCB-04
			Drawing No P-19
			Scale 1/50
			Issue Date 04.07.2024

Pos No.	DN	Material	Type	PN (bar)
20-01	DN25	Steel	Strum Box	-
20-02	DN25	GG25	Non-return Stop Valve	6
20-03	DN25	Steel	Strum Box	-
20-04	DN25	GG25	Non-return Stop Valve	6
20-05	DN25	Steel	Strum Box	-
20-06	DN25	GG25	Non-return Stop Valve	6
20-07	DN25	Steel	Strum Box	-
20-08	DN25	GG25	Non-return Stop Valve	6
20-09	DN25	Steel	Strum Box	-
20-10	DN25	GG25	Non-return Stop Valve	6
20-11	DN25	GG25	Non-return Stop Valve	6
20-12	DN25	GG25	Non-return Stop Valve	6
20-13	DN25	GG25	Non-return Stop Valve	6
20-14	DN25	GG25	Non-return Stop Valve	6
20-15	DN25	GG25	Non-return Stop Valve	6
20-16	DN25	GG25	Non-return Stop Valve	6
20-17	DN25	GG25	Non-return Stop Valve	6
20-18	DN40	GG25	Stop Valve	6

STANDARD DISCHARGE CONNECTION COMPLY WITH MARPOL 73/78 ANNEX I REG.13



Pipe Scantlings			
Nominal Diameter		Outer Dia.& Wall Thickness	Material
1"	DN25	33.7x3.2	Seamless Steel Pipe
1 1/2"	DN40	48.3x3.6	

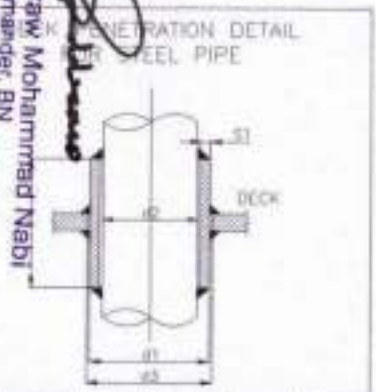
Symbol	Description
	Non Return Stop Valve
	Stop Valve
	Strum Box
	Shore Connection
	Flow Direction
	Pump
	Suction Bell

Notes:
- This drawing is schematic only
- Design pressure is 3 bar
- Test pressure is 4.5 bar
- Pipe class: Class III
- All pipes are hot galvanized after fabrication
- For air vent&sounding details please see dwg no: P-05
- For sea locations details please see dwg no: P-07
- Discharge connection will be locate suitable place near the superstructure.

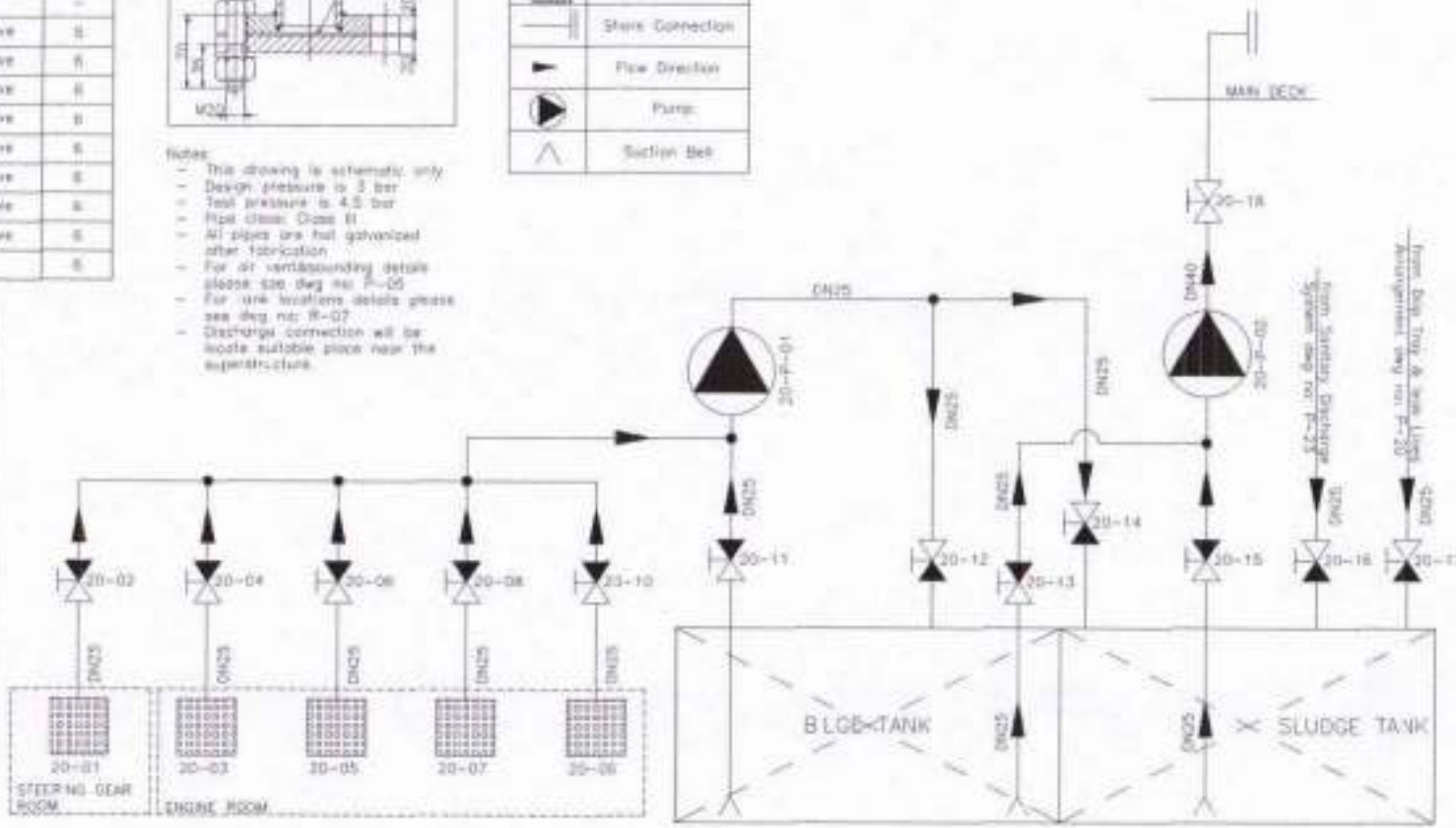
No	Designation	Type	Capacity
20-P-01	Bilge Collection Pump	Gear Type	3 m³/h,3 bar
20-P-02	Sludge Transfer Pump	Gear Type	3 m³/h,3 bar

BILGE TANK CAPACITY CALCULATION
Required Capacity according to MEPC.1/Circ.642
Above 1000kW up to 20000kW P/250
P: Main engine rating in kW
P=1004kW
Required Capacity=1004/250 =4.016m³
Actual Capacity=4.75m³

SLUDGE TANK CAPACITY CALCULATION
MARPOL Annex I Reg.12
V =KxCxD
K =0.005
C=0.977m³/day
D=30 days
V =1.046m³
Actual Capacity=4m³



DN	d2	d1	S1	L	d3
25	33.7	42.4	4	60	45
40	48.3	60.3	6	60	62



Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayangan

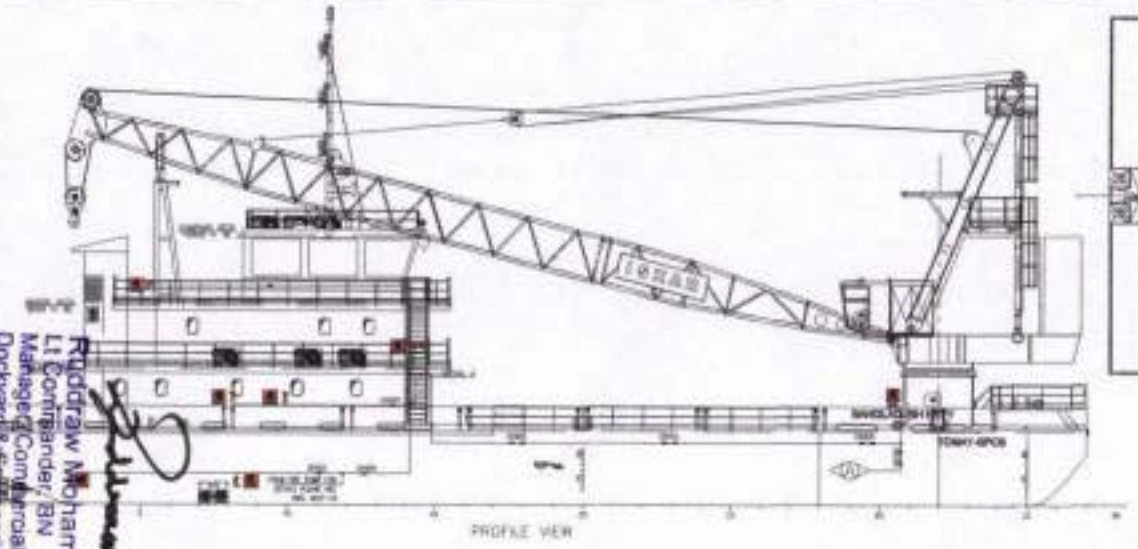
THIS DESIGN AND ITS COPYRIGHTS ARE PROPERTIES OF TEOMAN TOMBAK THE DRAWINGS & SPECIFICATIONS CONTAINED HEREIN SHALL NOT BE REPRODUCED IN WHOLE OR IN PART, OR NOT TO BE GIVEN TO THIRD PARTIES WITHOUT WRITTEN PERMISSION FROM TEOMAN TOMBAK

TOMAY design engineering services

TBN-SPCB-04

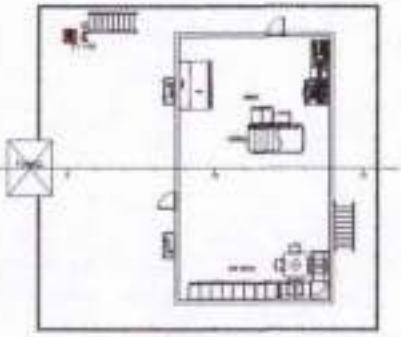
OILY WATER & SLUDGE SYSTEM

Design	Teoman TOMBAK	Shipyard		Class	BV / 48464F	Revision No	00
Drawn	İsmail Can YILMAZ	Dockyard&Engineering Work Ltd.		Hull No	NB 252	Page	1/1
Control	Ahmet Burak KABASAKAL	Owner		Project No	SPCB-04	Issue Date	19.09.2024
Approved		Bangladesh Navy		Drawing No	P-20	Scale	1/50

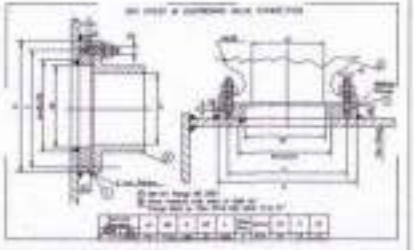


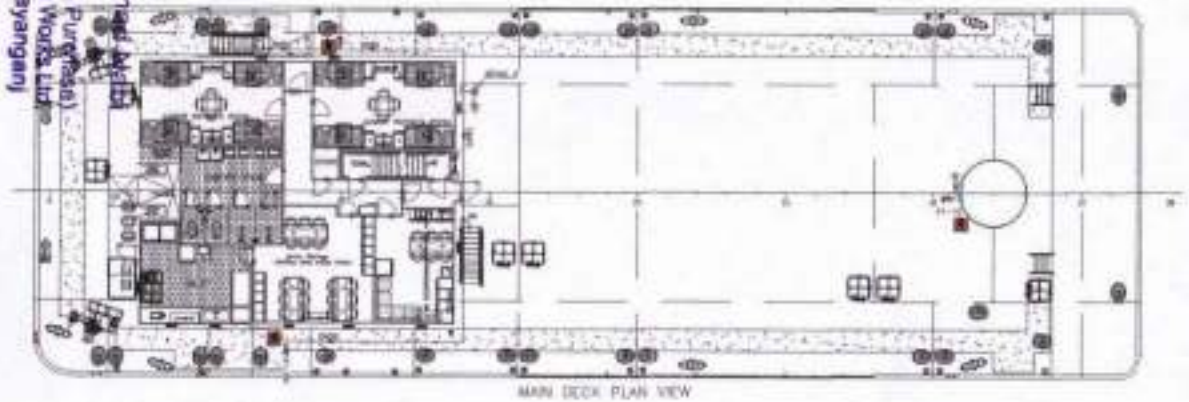
PROFILE VIEW

OFFICERS DECK

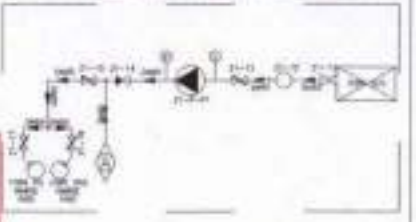


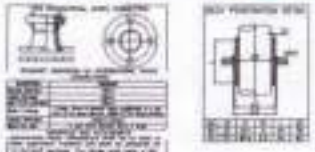
BRIDGE DECK

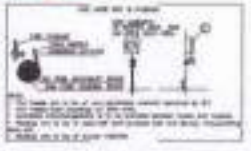


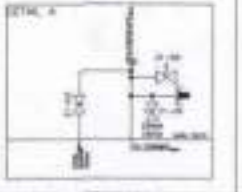


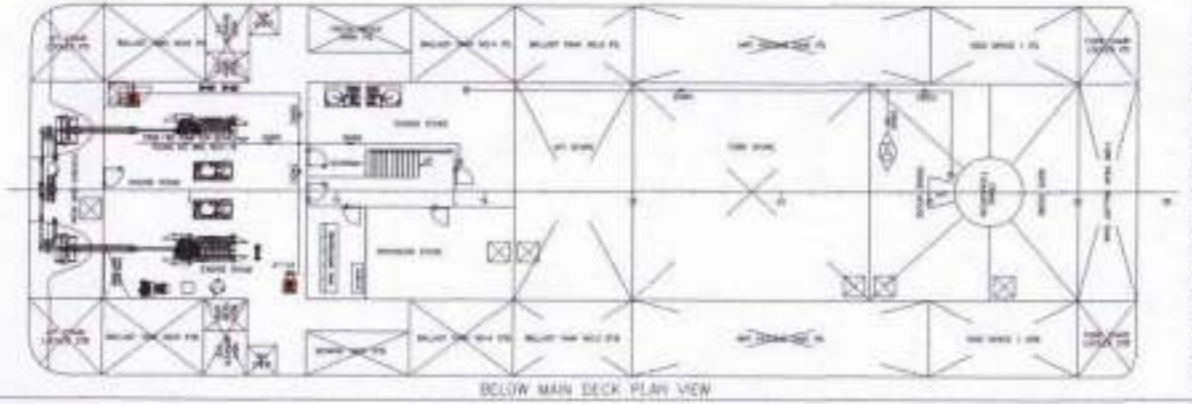
MAIN DECK PLAN VIEW











BELOW MAIN DECK PLAN VIEW

No	Date	Rev. By	Revision Note
01	21.02.24	T.C.Y.	Hydrants location on profile view have been revised.

TOMAY

800 DWT
OIL PRODUCT TANKER

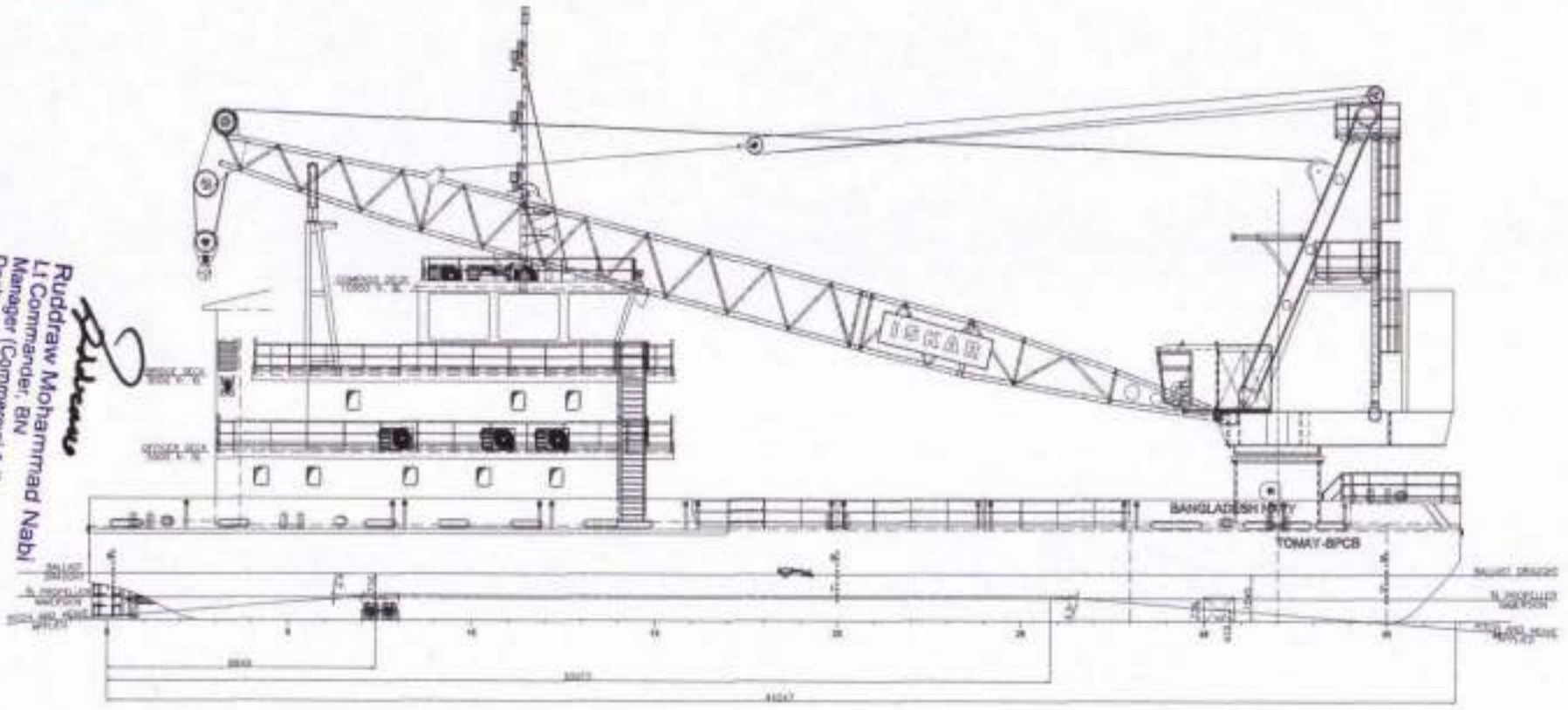
TBN-SPCB-04

FIRE SYSTEM

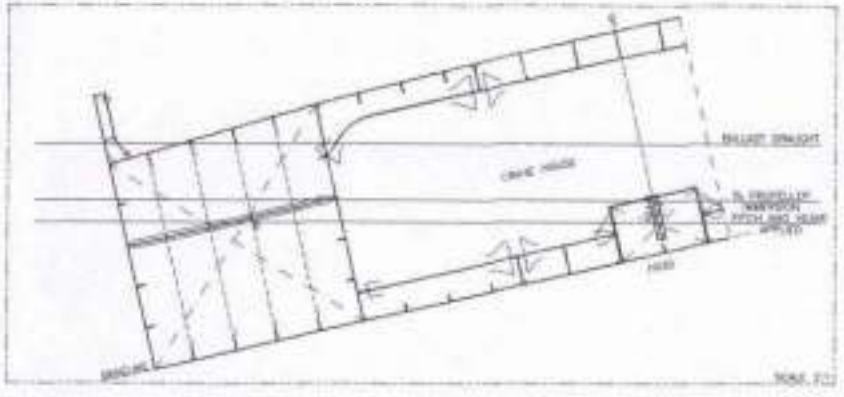
Design	Tasman TOMBAK	Shipyard	Dockyard & Engineering Works Ltd.
Drawn	Ismail Can YILMAZ	Owner	Bangladesh Navy
Control	Ahmet Burak YILMAZ	Class/ID	BV / 44464F
Approved		Hull No	NB 252
		Project No	SPCB-04
		Drawing No	P-01
		Scale	1/75
		Issue Date	27.08.2024

Ruddraw Mohammad Arif
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

BUREAU VERITAS
Technical Document, refer to 1st page



Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj



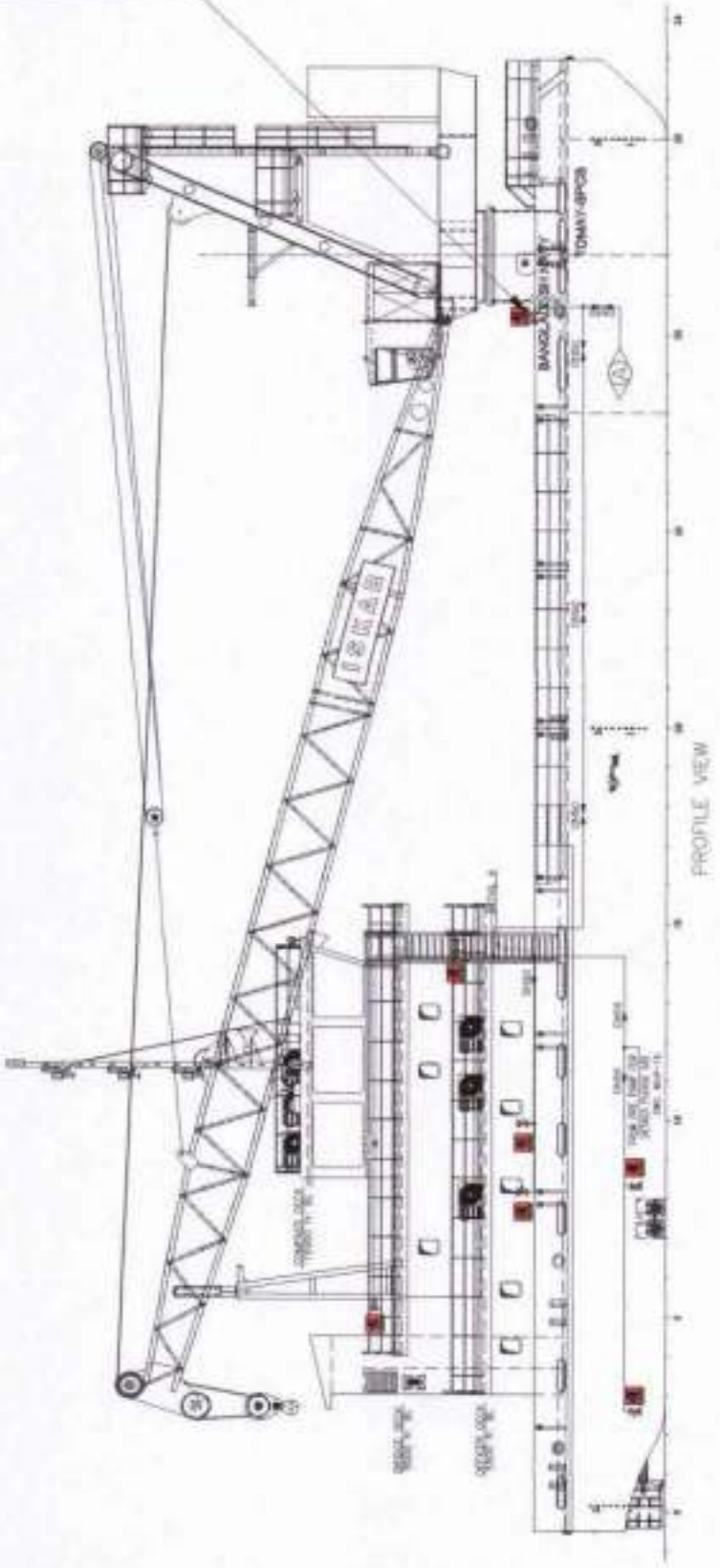
L = Length between perpendicolors at the ballast: 44.036 meters
ϕ = 4.50°
H = 0.73 m
Pos.1 – Waterline in the arrival ballast condition (acc.MSC/CIRC 1388 1.2.2)
Draught MS:1.456 m
Pos.2 –Waterline for which heave combined pitch is taken into account (acc.MSC/CIRC 1388 1.1.1)
Pos.3 – Static waterline drawn through the level at 2/3 immersion of the propeller at even keel (acc.MSC/CIRC 1388 1.2.1)
Propeller diameter D – 0.97m
Axis of propeller – 0.618 m ab.BL

BUREAU VERITAS
Stamped document, refer to 1st page

TOMAY
design engineering consultancy

TBN-SPCB-04 FIRE SYSTEM

OUTERMOST HYDRANT



BUREAU VERITAS
Stamped document, refer to 1st page

	PIPE NOMINAL DIAMETER	DN65	DN50	TOTAL	
	TOTAL PIPE LENGTH (L)	40.83	1.5	-	m
h_F	TOTAL PIPE HEAD LOSS	9.214	0.077	9.291	m
	TOTAL FITTING CONSTANTS	4.49	2.4	-	
h_L	TOTAL FITTING LOSS	2.086	0.334	2.42	m
V	SPEED	3.019	1.653	-	m/s
h_Z	ELEVATION DIFFERENCE (PUMP TO OUTERMOST HYDRANT)			3.2	m
This calculation has been calculated according to Hazen-Williams equation.				14.911	m
hF = (10.67*L*Q^1.852)/C^1852*D^4.87) C=120 (C is the Hazen-Williams coefficient (dimensionless) 120 for steel)	PUMP INFORMATION		TOTAL HEAD LOSS	1.462	bar
hL = K(V²/2g)	FLOW RATE (Q): 25	m^3/h		2.538	bar
hTotal = hZ + hL + hF	PRESSURE: 4	bar	PRESSURE AT OUTERMOST HYDRANT	**0.254**	MPa

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

BUREAU VERITAS
Stamped document, refer to 1st page

FOR DN65 LINE			
NAME	VALUE (K)	TOTAL	TOTAL VALUE
RESTR. 1A	0.13	0	0
RESTR. 1B	0.16	0	0
RESTR. 1C	0.20	12	2.4
RESTR. 2A	0.15	0	0
RESTR. 2B	0.20	0	0
RESTR. 2C	0.25	0	0
RESTR. 3	0.50	0	0
RESTR. 4	0.75	0	0
RESTR. 5	1.00	0	0
RESTR. 6	3.00	0	0
RESTR. 7	1.50	0	0
RESTR. 8	1.00	1	1
RESTR. 9	0.90	0	0
RESTR. 10	0.04	6	0.24
RESTR. 11	0.35	0	0
RESTR. 12	0.10	0	0
RESTR. 13A	0.02	0	0
RESTR. 13B	0.40	0	0
RESTR. 14A	0.30	0	0
RESTR. 14B	0.60	0	0
RESTR. 14C	1.25	0	0
RESTR. 15	2.50	0	0
RESTR. 16	5.00	0	0
RESTR. 17	0.25	0	0
RESTR. 18	0.05	0	0
RESTR. 19	0.70	0	0
RESTR. 20	0.25	2	0.5
RESTR. 21	0.35	1	0.35
RESTR. 22	2.00	0	0
RESTR. 23	0.01	0	0
		TOTAL	4.49

FOR DN50 LINE			
NAME	VALUE	TOTAL	TOTAL VALUE
RESTR. 1A	0.13	0	0
RESTR. 1B	0.16	0	0
RESTR. 1C	0.20	2	0.4
RESTR. 2A	0.15	0	0
RESTR. 2B	0.20	0	0
RESTR. 2C	0.25	0	0
RESTR. 3	0.50	0	0
RESTR. 4	0.75	0	0
RESTR. 5	1.00	0	0
RESTR. 6	3.00	0	0
RESTR. 7	1.50	0	0
RESTR. 8	1.00	0	0
RESTR. 9	0.90	0	0
RESTR. 10	0.04	0	0
RESTR. 11	0.35	0	0
RESTR. 12	0.10	0	0
RESTR. 13A	0.02	0	0
RESTR. 13B	0.40	0	0
RESTR. 14A	0.30	0	0
RESTR. 14B	0.60	0	0
RESTR. 14C	1.25	0	0
RESTR. 15	2.50	0	0
RESTR. 16	5.00	0	0
RESTR. 17	0.25	0	0
RESTR. 18	0.05	0	0
RESTR. 19	0.70	0	0
RESTR. 20	0.20	0	0
RESTR. 21	0.35	0	0
RESTR. 22	2.00	1	2
RESTR. 23	0.01	0	0
		TOTAL	2.4

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

BUREAU VERITAS
Stamped document, refer to 1st page

RESISTANCE OF VALVES AND FITTINGS TO FLOW OF FLUIDS

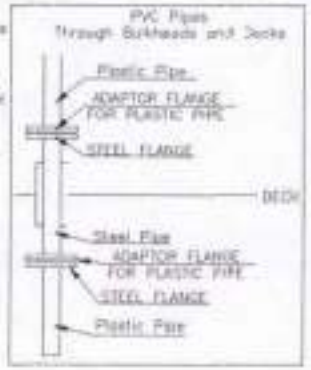
1		A		B		C		
		45°	0,13	60°	0,16	90°	0,20	
2		A		B		C		
		45°	0,15	60°	0,20	90°	0,25	
3		90° BENDS IN SERIES						0,5
4		90° BENDS IN SERIES						0,75
5		90° BENDS IN SERIES						1
6		CONFLUENCE IN TEE PIPE						3
7		ANGLE FLOW IN TEE PIPE						1,5
8		SEPARATION OF FLOW IN TEE PIPE						1
9		ANGLE FLOW IN TEE PIPE						0,9
10		STRAIGHT FLOW IN TEE PIPE						0,04
11		BRANCH PIPE (CONFLUENCE)				Q_b=0,5Q		
						Z_d=0,35		Z_s=0,35
12		BRANCH PIPE (CONFLUENCE)				Q_b=0,5Q		
						Z_d=0,1		Z_s=0,1
13		SEP. OF FLOW	$\left(\frac{Q_b}{Q}=0,5\right)$	A		B		
				Z_d=0,02		Z_s=0,4		
14		MITRE BENDS	A		B		C	
			45°	0,3	60°	0,6	90°	1,25
15		COMBINATIONS WITH 90° PIPE ELBOWS						2,5
16		COMBINATIONS WITH 90° PIPE ELBOWS						5
17		INLET						0,25
18		INLET						0,05
19		INLET						0,7
20		BUTTERFLY VALVE						0,25
21		DISCO CHECK VALVE						0,35
22		FIRE HYDRANT						2
23		SEP. OF FLOW	$\left(\frac{Q_b}{Q}=0,5\right)$	A		B		
				Z_d=0,01		Z_s=0,9		

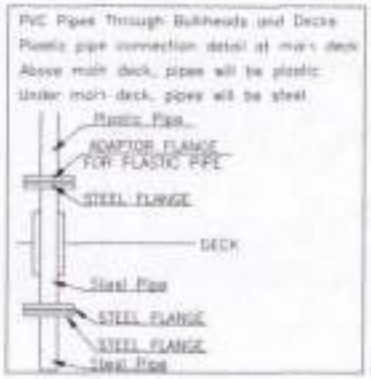
Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayangan

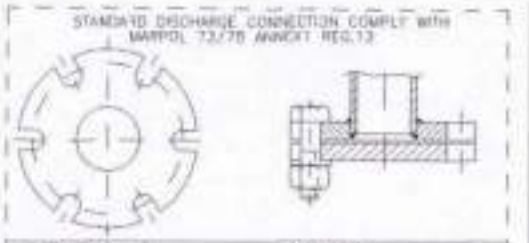
Speed(kts) / Draft(m)	4	5	6	7	8	9
1	0.556	0.695	0.833	0.972	1.111	1.250
1.2	0.667	0.833	1.000	1.167	1.333	1.500
1.4	0.778	0.972	1.167	1.361	1.556	1.750
1.6	0.833	1.042	1.250	1.458	1.667	1.875
1.8	0.889	1.111	1.333	1.556	1.778	2.000
1.7	0.945	1.181	1.417	1.653	1.889	2.125
1.9	1.000	1.250	1.500	1.750	2.000	2.250

Permitted values have been marked on table.

Maximum discharge rate calculation
The maximum permissible discharge rate is 1/200000 of swept volume as follows:
$D_{max} = 0.00026 \times V \times D \times B$
D_{max} is maximum permissible rate (m^3/h)
V is ship's average speed (knots) over the period
D is maximum summer draft (m)
V=9knots D=1.8m B= 5m $D_{max} = 2.25 m^3/h$



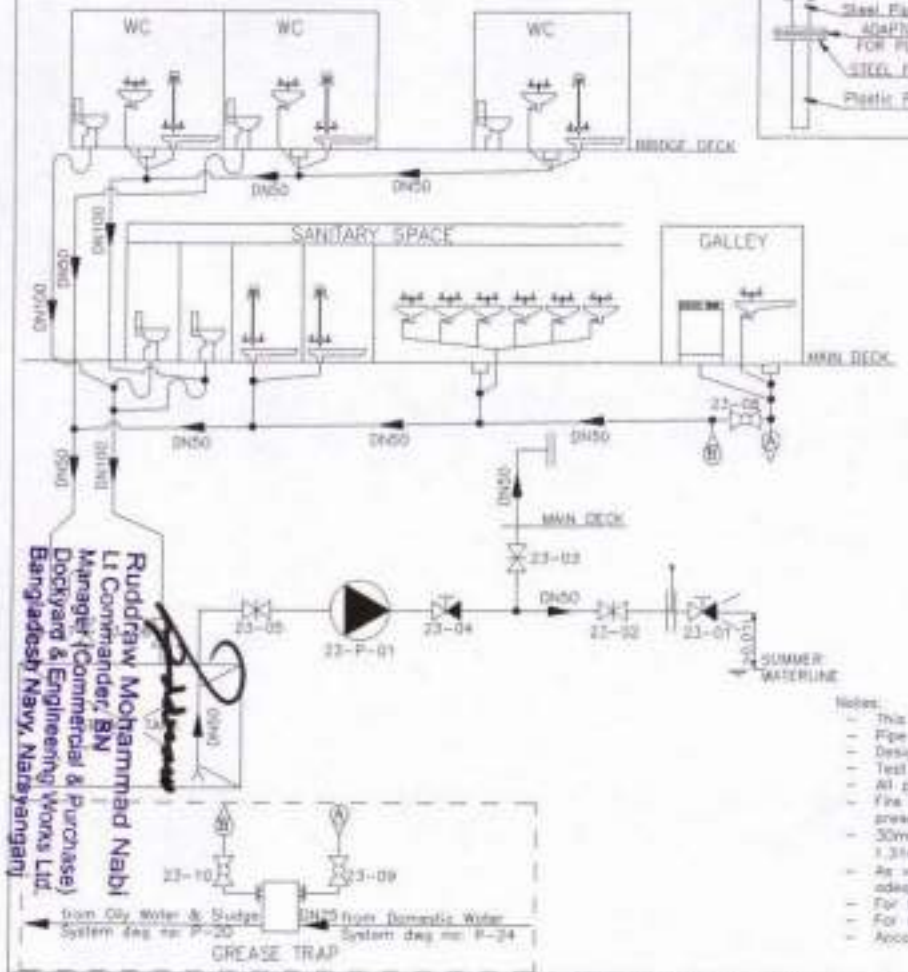




DESCRIPTION	DIMENSION
Outside Diameter	215mm
Inside Diameter	According to pipe outside diameter
Bolt Circle Diameter	183mm
Slots in Flange	6 holes, 22mm in diameter space equidistantly on a bolt circle of the above diameter, slotted to the flange periphery. The slot width to be 22mm
Flange Thickness	20mm minimum
Bolts and Nuts	6, each 20mm diameter and of suitable length

The flange is designed to accept pipes up to a maximum internal diameter of 125 mm and shall be of steel or other equivalent material having a flat face. The flange, together with a gasket of oil-proof material, shall be suitable for a service pressure of 600 kPa.

DN	d2	d1	S1	L	d3
50	60.3	88.9	8	60	91
100	114.3	139.7	11	100	142



Pos no	DN	Material	Type	PN (bar)
23-01	DN50	GG040	Non-return Stop Valve (Type Approved)	6
23-02	DN50	GG25	Gate Valve	6
23-03	DN50	GG25	Gate Valve	6
23-04	DN50	GG25	Non-return Stop Valve	6
23-05	DN50	GG25	Gate Valve	6
23-06	DN100	GG25	Gate Valve	6
23-07	DN50	GG25	Gate Valve	6
23-08	DN50	GG25	Ball Valve	6
23-09	DN50	GG25	Ball Valve	6
23-10	DN50	GG25	Ball Valve	6

Notes:
- This drawing is schematic only.
- Pipe class: Class III
- Design pressure is 4 bar
- Test pressure is 6 bar
- All pipes are hot galvanized after fabrication
- Fire integrity of the decks and bulkheads are to be preserved.
- 30mm bore diameter orifice. Reduces $4 m^3/h$ flow rate to $1.316 m^3/h$
- As voyage miles and sewage holding tanks capacity is adequate, no sewage treatment unit is installed on board.
- For tank locations details please see dwg no: P-07
- For air ventilation piping details please see dwg no: P-06
- Accommodation piping material will be UPVC

Pipe Scantlings			
Nominal Diameter		Outer Dia.& Wall Thickness	Material
1"	DN25	33.4x3.2	Seamless Steel Pipe
1 1/2"	DN40	48.3x3.6	
2"	DN50	60.3x4.0	
4"	DN100	114.3x4.5	
These thicknesses are the minimum requirements of class rules.			

Pipe Scantlings			
Nominal Diameter		Outer Dia.& Wall Thickness	Material
2"	DN50	60.3x3.91	UPVC
4"	DN100	114.3x8.02	

No	Designation	Type	Capacity
23-P-01	Sewage Pump	Screw	4 m^3/h,3 bar

Symbol	Description
	Gate Valve
	Non Return Stop Valve
	Shore Connection
	Pump
	Orifice Plate

Sewage tank capacity calculation:
Total Crew:25
Consume per day:0.3m^3
No discharge period:3 days
Required Capacity:22.5m^3
Actual Capacity:23.13m^3

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayangonj

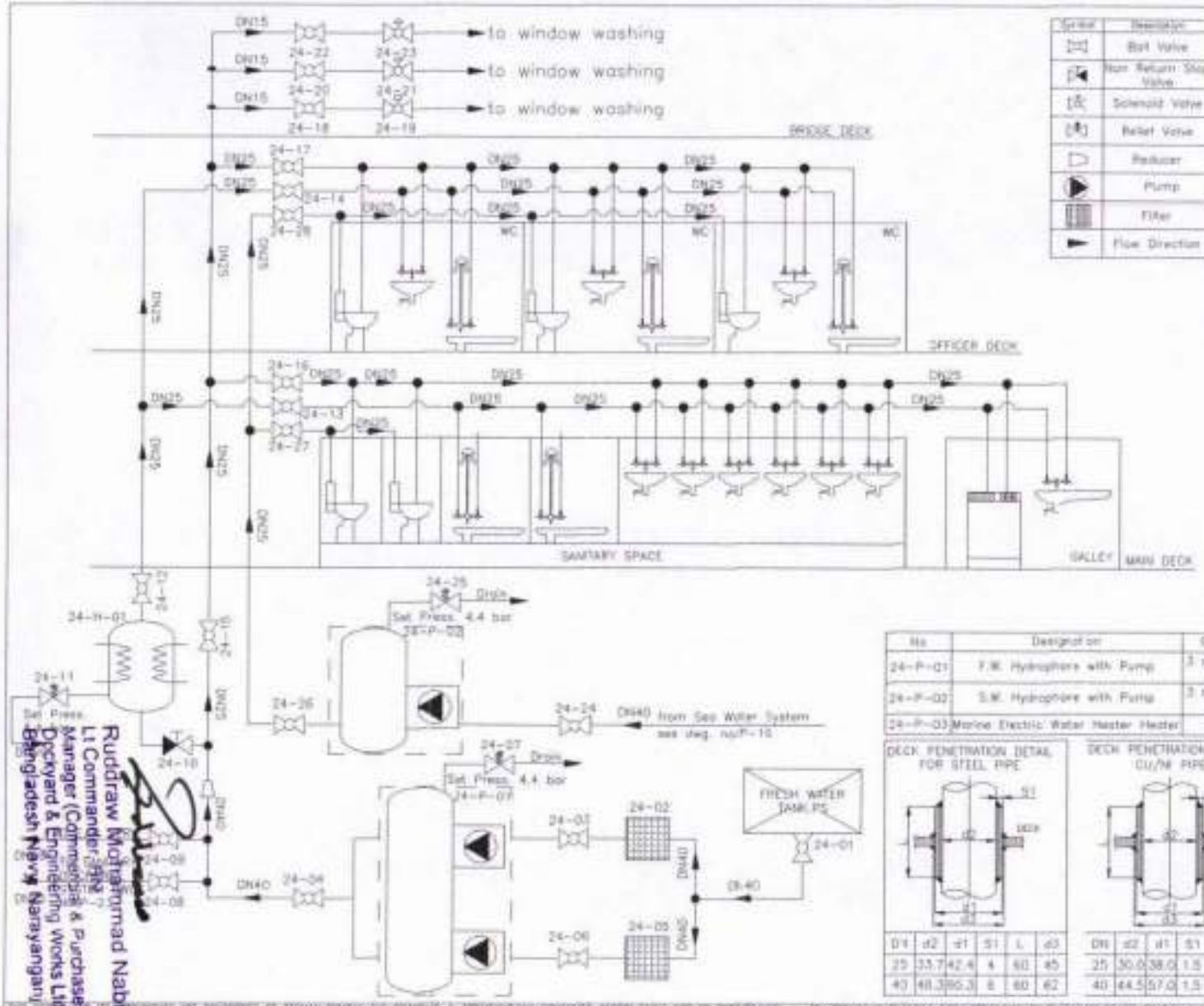
THE DESIGN AND THE COPYRIGHTS ARE PROPERTIES OF TOMAY YORUM. THE DRAWINGS & SPECIFICATIONS CONTAINED HEREIN SHALL NOT BE REPRODUCED IN WHOLE OR IN PART, OR NOT TO BE GIVEN TO THIRD PARTIES WITHOUT WRITTEN PERMISSION FROM TEOMAN TOMBAK

TOMAY
dunyo engineering consultancy

TBN-SPCB-04

SANITARY DISCHARGE SYSTEM

Design	Teoman TOMBAK	Shipyard	Class	BV / 48464F	Revision No	00
Drawn	İsmail Can YILMAZ	Dockyard&Engineering Work Ltd.	Hull No	NB 252	Page	1/1
Control	Ahmet Burak KABASAKAL	Owner	Project No	SPCB-04	Issue Date	13.09.2024
Approved		Bangladesh Navy	Drawing No	P-23	Scale	1/75



Symbol	Description
	Ball Valve
	Non Return Stop Valve
	Solenoid Valve
	Relief Valve
	Reducer
	Pump
	Filter
	Flow Direction

Pos No.	DN	Material	Type	PN (bar)
24-01	DN40	GG25	Ball Valve	10
24-02	DN40	Steel	Filter	10
24-03	DN40	GG25	Ball Valve	10
24-04	DN40	GG25	Ball Valve	10
24-05	DN40	Steel	Filter	10
24-06	DN40	GG25	Ball Valve	10
24-07	DN25	GG25	Safety Valve (set pressure 4.4 bar)	10
24-08	DN25	GG25	Ball Valve	10
24-09	DN15	GG25	Ball Valve	10
24-10	DN40	GG25	Non-Return Stop Valve	10
24-11	DN25	GG25	Safety Valve (set pressure 4.4 bar)	10
24-12	DN25	GG25	Ball Valve	10
24-13	DN25	GG25	Ball Valve	10
24-14	DN25	GG25	Ball Valve	10
24-15	DN25	GG25	Ball Valve	10
24-16	DN25	GG25	Ball Valve	10
24-17	DN25	GG25	Ball Valve	10
24-18	DN15	GG25	Ball Valve	10
24-19	DN15	GG25	Solenoid Valve	10
24-20	DN15	GG25	Ball Valve	10
24-21	DN15	GG25	Solenoid Valve	10
24-22	DN15	GG25	Ball Valve	10
24-23	DN15	GG25	Solenoid Valve	10
24-24	DN40	GG25	Ball Valve	
24-25	DN25	GG25	Safety Valve (set pressure 4.4 bar)	10
24-26	DN25	GG25	Ball Valve	10
24-27	DN25	GG25	Ball Valve	10
24-28	DN25	GG25	Ball Valve	10

No	Designation	Capacity
24-P-01	F.W. Hydrophore with Pump	3 m³/h-4 bar 100l
24-P-02	S.W. Hydrophore with Pump	3 m³/h-4 bar 100l
24-P-03	Marine Electric Water Heater Heater	80l

DECK PENETRATION DETAIL FOR STEEL PIPE

D1	d2	d1	S1	L	d3
25	33.7	42.4	4	60	45
40	48.3	60.3	5	60	62

DECK PENETRATION DETAIL CU/NI PIPE

DN	d2	d1	S1	L	d3
25	30.0	38.0	1.5	60	40
40	44.5	57.0	1.5	60	60

Pipe Scantlings			
For FreshWater			
Nominal Diameter		Outer Dia.& Wall Thickness	Material
1/2"	DN15	21.3x2.0	Seamless Steel Pipe
1"	DN25	33.7x2.0	
1 1/2"	DN40	48.3x2.3	
For SeaWater			
Nominal Diameter		Outer Dia.& Wall Thickness	Material
1"	DN25	33.7x1.2	Copper Nickel 70/30 Pipe
1 1/2"	DN40	48.3x1.5	

Notes:
- This drawing is schematic only.
- Working pressure is 4 bar.
- Design pressure is 4.4 bar.
- Test pressure is 6.6 bar.
- Steel pipes are not galvanized after fabrication.
- Steel pipe will be used for fresh water.
- Cu/Ni pipe will be used for sea water.
- Hot water line design temperature is 65°C.
- Drinking water pipe lines are not pass through tanks which do not contain drinking water.

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayangang

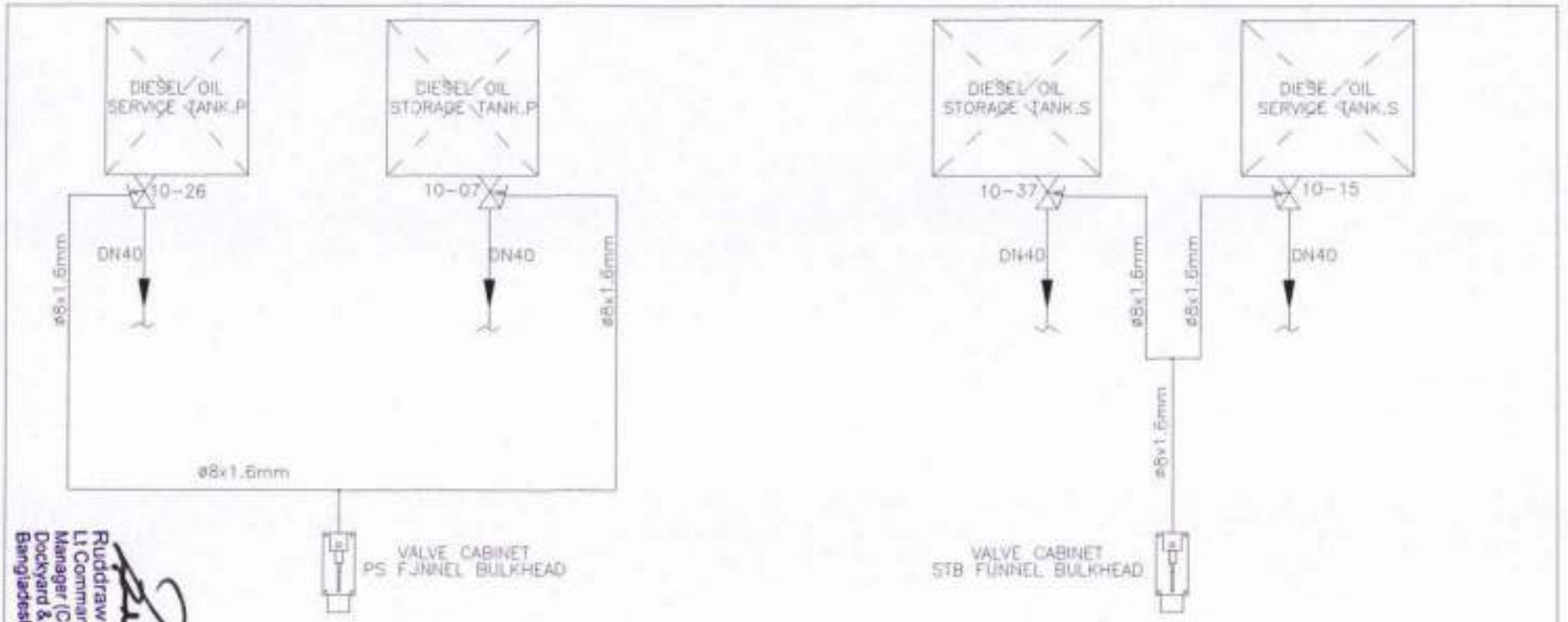
THIS DESIGN AND ITS INTELLECTUAL PROPERTY RIGHTS ARE PROPERTIES OF TEOMAN TOMBAK. THE DRAWINGS & SPECIFICATIONS CONTAINED HEREIN SHALL NOT BE REPRODUCED IN WHOLE OR IN PART, OR NOT TO BE GIVEN TO THIRD PARTIES WITHOUT WRITTEN PERMISSION FROM TEOMAN TOMBAK.

TOMAY

TBN-SPCB-04

DOMESTIC WATER SYSTEM

Design	Teoman TOMBAK	Shipyard		Class	BV / 48464F	Revision No	00
Drawn	İsmail Can YILMAZ	Dockyard&Engineering Work Ltd.		Hull No	NB 252	Page	1/1
Control	Ahmet Burak KABAGAKAL	Owner		Project No	SPCB-04	Issue Date	20.09.2024
Approved		Bangladesh Navy		Drawing No	P-24	Scale	1/50



Rudraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayangani

NO	DN	MATERIAL	TYPE	PN (bar)
10-07	DN40	GGG40	Quick Closing Valve	10
10-15	DN40	GGG40	Quick Closing Valve	10
10-26	DN40	GGG40	Quick Closing Valve	10
10-37	DN40	GGG40	Quick Closing Valve	10

Symbol	Description
	Quick Closing Valve
	Self Closing Valve
	Flow Direction

NOTES:
1) ALL PIPES 8mm. OD 1.6 mm WALL THICKNESS DIN2391 St.35 SEAMLESS PIPE.
2) REMOTE CONTROLLED VALVES ARE TO BE PROVIDED WITH INDICATORS ON THE LOCAL CONTROLS TO SHOW WHETHER THEY ARE OPEN OR SHUT.
3) VALVE HYDRAULIC ACTUATOR CABINETS PLACED ON MAIN DECK OUTSIDE, ON THE SIDE BULKHEADS OF FUNNEL.
4) FOR AIR VENTS AND SOUNDING PLEASE SEE "AIR VENT & SOUNDING SYSTEM" DWG NO: P-03.
5) FOR TANKS LOCATIONS AND VOLUMES SEE "TANK CAPACITY PLAN" DWG NO: R-07.

THIS DESIGN AND ITS COPYRIGHTS ARE PROPERTIES OF TEOMAN TOMBAK. THE DRAWINGS & SPECIFICATIONS CONTAINED HEREIN SHALL NOT BE REPRODUCED IN WHOLE OR IN PART, OR NOT TO BE GIVEN TO THIRD PARTIES WITHOUT WRITTEN PERMISSION FROM TEOMAN TOMBAK.

BU DIZAYN VE BUNUNLA ILGILI RESIMLERIN TELIF HAKLARI EDMAN TOMBAK A.S'YE TEOMAN TOMBAK'IN YAZILI MUSAADESI OLMADAN BU DOKUMANI VEYA BUNUN BIR KISMI VEYA/VEYA TAMAMINI VERILEMEZ, TEKRAR VEYA KOPYA EDILEMEZ VE HER HANGI BIR UCUNCU SAHISLARA OLUSTURULMAMALIDIR.

TOMAY	TBN-SPCB-04	Design	Teoman TOMBAK	Shipyard	Class	BV / 48464F	Revision No	00
		Drawn	İsmail Can YILMAZ	Dockyard&Engineering Work Ltd.	Hull No	NB 252	Page	1/1
	QUICK CLOSING VALVE SYSTEM	Control	Ahmet Burak KABASAKAL	Owner	Project No	SPCB-04	Issue Date	24.09.2024
		Approved		Bangladesh Navy	Drawing No	P-66	Scale	1/50

ANNEX-C

BANK GUARANTEE IN LIEU OF EARNEST MONEY

Guarantee No _____
Dated _____
For (mention amount) _____

Dear Sir,

Whereas (Name of tender floating organization) under tender No---------- ----------dated ----------inviting tenders for supplies of (described supplies) has agreed to waive the requirement of cash deposit /call deposit of US$/ £/ Tk---------- ----------being 1%(One percent) of the value of supplies as earnest money by the tender for making in accordance with the terms and conditions of the tenderer and the tenderer shall provide a bank guarantee for payment for the said amount .
And whereas the tenderer M/S,---------- of ----------has requested us (name of bank) of ----------to issue a guarantee for payment of the amount of US$/ £/ Tk----------when called upon.

In consideration of the aforesaid, we (name of bank) of ---------- hereby undertake and guarantee due performance of the tender by tenderer M/S---------- of ---------- and unconditionally and absolutely bind ourselves :

1. To make payment without any question whatsoever of US$/ £/ Tk----------to ---- ------- (name of organisation) or as direct by the organisation immediately on receipt of demand from the said , organisation in writing , in the event be tenderer fail to perform the tender , it is expressly understood that the organisation shall be the sole judge for deciding whether the tender has performed the tender and fulfill the terms and condition of the tender.

2. It is specially stipulated and understood by the bank that any grant of time or indulgence to the tenderer without reference to the bank shall not in any manner tent to absolve the bank from its liability to make the payment stipulated above under this guarantee.

3. The bank's commitment under this guarantee is limited to and amount of US$/ £/ Tk---------- ----------(----------) only .

4. The guarantee will remain valid up to ----------

Yours faithfully

(seal of the bank) ----------Bank

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj

ANNEX-D

PERFORMANCE BANK GUARANTEE

Managing Director
Dockyard& Engineering works Ltd
Bangladesh Navy
Sonakanda, Bandor, Narayanganj

Bank Guarantee no _____
Dated _____
For (Mention amount) _____

Dear Sir,

Whereas Dockyard & Engineering works Ltd, Bangladesh Navy, Sonakanda, Bandor, Narayanganj, hereinafter referred to as the buyers proposed to enter in to a contract through a letter of intent/Purchase Order No _____ dated _____ hereinafter called the contract with (name of the sellers) of _____ hereinafter referred to as the sellers for the supply of (described supplies) in accordance with terms and conditions of the contract. And whereas the sellers have requested us (name of the bank) to issue a guarantee for an amount of **US$/ £/ EURO/ Tk. _____** Being 5% of the CFR value of the supplies.

In Consideration aforesaid (name of bank) _____ here by undertake and guarantee due observance and performance of the terms and condition of the contract by the sellers and we unconditionally and absolutely bind ourselves.

To make payment on demand, without demur and without reference to the sellers, of US$/ £/ EURO/ Tk. _____ to the buyers or as directed by the buyers in writing , if the sellers shall fail to perform the contract of fulfill the terms and conditions thereof.

To keep guarantee valid and in force for 4 (four) months beyond the date of shipment but extendable if so required by the buyers.

The guarantee is unconditional and it is expressly understood that the buyers shall be sole judge for deciding whether the sellers have performed the contract and fulfilled the terms and conditions thereof.

It is specifically stipulated and understood by us (name of bank) that any grant of time of indulgence to the sellers without reference to us shall not in any manner tend to absolve us from our liability to make payment as stipulated above under the guarantee.

our commitment under this guarantee is limited to an amount of US$/£/EURO/Tk. _____ only.

Yours faithfully

(seal of the bank) ----------Bank

Ruddraw Mohammad Nabi
Lt Commander, BN
Manager (Commercial & Purchase)
Dockyard & Engineering Works Ltd.
Bangladesh Navy, Narayanganj