

HOOGHLY COCHIN SHIPYARD LIMITED



Development of Ship Repair Facility at Pandu, Guwahati, Assam

Engineering, Supply, Installation and Commissioning of
800 T Boat Hoist/Boat Lift

Volume I

Instruction to Tenderers

*Hooghly Cochin Shipyard Ltd
(HCSL), Satyen Bose Road
P.O-Danesh Shaikh Lane,
Nazirgunge, Howrah, West
Bengal-711109, India*

Request for Proposal of

Engineering, Supply, Installation, and Commissioning of 800T Boat Hoist/ Lift for the Ship Repair Facility (SRF) at Pandu, Guwahati, Assam.

VOLUME I

Instructions to Tenderers

Tender No.: HCSSL/PUR/TEN/2025/020



Hooghly Cochin Shipyard Limited
Satyen Bose Road P.O. Danesh Shaikh Lane,
Nazirgunge, Howrah, West Bengal 711109, India
Phone: +91(33)-29558283/+91(33)26888282
Web: www.hooghlycsl.com

10th March 2025

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1 General Information

1.1 Employer

Name: Hooghly Cochin Shipyard Limited (HCSL) on behalf of IWAI
Address: Hooghly Cochin Shipyard Limited
Satyen Bose Road P.O. Danesh Shaikh Lane,
Nazirgunge, Howrah, West Bengal-711109, India
Phone: +91(33) 26888282
Website: www.hooghlycsl.com

1.2 Introduction and Objective

Inland Waterways Authority of India (IWAI), entrusted Hooghly Cochin Shipyard Limited (HCSL) (A 100% subsidiary of Cochin Shipyard Ltd (CSL), a premier Ship Building & Ship Repair company owned by the Government of India) for the development of the Ship Repair Facilities at Pandu, Guwahati, Assam, India.

Pandu Multimodal IWT Terminal is a riverine Terminal in the Indian state of Assam, serving North Eastern states in general and Assam and Guwahati in particular. This Terminal has been developed on the bank of the Brahmaputra River. This terminal is strategically important and one of the largest river Terminal in the North Eastern state of the country wherein, in order to accommodate ship anchorage, a marine terminal/permanent jetty has been created. In addition, many passenger ships are anchored with the tourists at this Terminal. The Terminal is also included in the 'Port of call' agreement between India and Bangladesh, known as Indo-Bangla Protocol Route. Presently, no major ship repair facility is available in the Brahmaputra. Due to lack of IWT ship repair facility in the entire North Eastern region especially for under water repair of the vessels the IWT operators are put in to substantial financial and economic losses since the vessels need to sail to Kolkata (through Bangladesh territorial waters), which takes a voyage time of 30 days to 40 days.

The proposal ship repair facility is on the eastern side of existing jetty at Pandu multimodal IWT terminal at a distance about 350m. It is proposed to construct a Boat lift/hoist facility with open piled structure parallel to river flow.

The geographic location of the SRF is (Google earth, 2014):

Geographic longitude (east)	91°40' 59.87"E
Geographic latitude (north)	26°10'15.01" N

The SRF (Ship Repair Facility) project includes 800 T boat lift for lifting and launching boats for repair work. The boat repair will be performed at the work stations on the concrete deck slabs as well as along jetties. All transport operations of boats from the work station and to the boat lift pier are also to be carried out by Boat hoist system. The boat lift/hoist system is the key transport equipment to ensure a high flexibility of the boat repair processes including the lifting and launching procedures.

In total, the planned facility envisages developing

- A 800 T Boat hoist/lift for vessels up to 90 m LOA & 15 m beam;
- work stations for dry docking of vessels;
- afloat repair berths;
- Construction of workshops etc.

HCSL on behalf of IWAI invites offer in two envelope process (Technical & Financial) from Original Equipment Manufacturers (OEM) meeting the stipulated eligibility criteria for the turn-key contract for Design (Engineering), Supply, Installation & Maintenance of a new boat lift /hoist system at Pandu, Guwahati, Assam.

It is anticipated that the Contract will include the following scope of works:

- Design (engineering) of complete boat lift system;
- Fabrication, Supply & installation of complete boat lift system;
- Commissioning of boat lift;
- Third party certification of boat list
- Guarantee, warranty etc.

For detailed information reference is made to Volume III – Employer’s Requirements.

1.3 Definitions

The following words and expressions shall have the meanings stated:

- a) “Applicable Law” means the laws and any other instruments having the force of law in the Employer’s country, or in such other country as may be specified in the Data Sheet (see Clause 7), as they may be issued and in force from time to time.
- b) “Consortium” means an association with or without a legal personality distinct from that of its members, of more than one Contractor where one member has the authority to conduct all business for and on behalf of any and all the members of the Consortium, and where the declared lead members of the Consortium is sole liable to the Employer for the performance of the Contract.
- c) “Consultant” means a legally-established professional consulting firm or an entity that may provide or provides the Design Services to the Client under the Contract.
- d) “Contract” means a legally binding written agreement signed between the Employer and the Contractor and includes all the attached documents listed in the General Conditions of Contract (GCC), the Special Conditions of Contract (SCC) and the Appendices.
- e) “Contractor” means a legally-established professional enterprise or an entity that may provide or provides the Services to the Employer under the Contract.
- f) "Contractor" is interchangeable with "Supplier".
- g) “Data Sheet” means an integral part of the Instructions to Tenderers (ITT) that is used to reflect specific country and assignment conditions to supplement, but not to over-write, the provisions of the ITT.
- h) “Day” means a calendar day.
- i) "Employer" is interchangeable with "Client".
- j) “Employer” means the implementing agency that signs the Contract for the Services with the selected Contractor.
- k) “Experts” means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Contractor, Subcontractor or Joint Venture / Consortium member(s).
- l) “Government” means the government of the Client’s country.

- m) "SRF" means Ship Repair Facility.
- n) "ITT" means the Instructions to Tenderers that provides the Contractors with all information needed to prepare their Tender.
- o) "Joint Venture (JV)" means an association with or without a legal personality distinct from that of its members, of more than one Contractor where one member has the authority to conduct all business for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Employer for the performance of the Contract.
- p) "Key Expert(s)" means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose CV is taken into account in the technical evaluation of the Consultant' tender.
- q) "Letter of Acceptance" means the letter send by the Employer to the successful Tenderer to inform it about the acceptance of its Tender.
- r) "Non-Key Expert(s)" means an individual professional provided by the Contractor or its Sub-consultant and who is assigned to perform the Services or any part thereof under the Contract and whose CVs are not evaluated individually.
- s) "Services" means the "Works" to be performed by the Contractor pursuant to the Contract.
- t) "Subcontractor" means an entity to whom the Contractor intends to subcontract any part of the Services while remaining responsible to the Employer during the performance of the Contract.
- u) "Tender" means the Technical Tender and the Financial Tender of the Contractor.
- v) "Tender" is interchangeable with "Offer", "Bid" and "Proposal".
- w) "Tenderer" is interchangeable with "Bidder".
- x) "Tendering" is interchangeable with "Bidding".
- y) Words indicating the singular also include the plural and words indicating the plural also include the singular, in case of doubts the singular shall prevail.
- z) "Works" is interchangeable with "Services".

1.4 Tender Procedure

The Tender procedure will be executed as a 02 (two) envelope, post-qualification procedure as stated below.

- a) The Tenderers have to submit their Tender according to Clause 2.
- b) The evaluation of the Technical Tenders will be made by the Employer according to set eligible criteria's (post-qualification criteria's) in Clause 1.5. The Financial Tenderers shall be retained in the custody of the Employer without being opened.
- c) The Employer invite Tenderers who have submitted substantially responsive Technical Tenders and who have determined as being post-qualified for award to attend the opening of the Financial Tenders.

- d) The Employer will inform Tenderers who have not submitted substantially responsive Technical Tenders and who have been determined as being not post-qualified.
- e) The Contractor should familiarize themselves with the local conditions and take them into account in preparing their Tender; including attending a pre-tender meeting. Attending any such pre-tender meeting is at the Contractors' expense.

1.5 Eligible Tenderers

The Tendering is open to all firms meeting the following requirements:

1.5.1 General

- a) The Tenderers shall be a single firm registered in India with valid Shop & Establishment Registration Certificate or Certification of Incorporation from Registrar of Companies or registration certificate from Registrar of Firms or Certificate from Indian Chamber of Commerce. No JV or Consortium is allowed.
- b) The Tenderers shall be in the business of manufacturing of Boat lift system of capacity of 400 Ton to 800 Ton for the last 10 years.
- c) The Tenderers shall not be under a declaration of ineligibility issued by Govt. of India / Any States in India / Public Sector Undertakings etc.
- d) The Tenderers and its vendor subsidiaries / affiliates should not be involved as consultant for the services for the SRF project.
- e) Tenderer shall not be affiliated with a firm or entity that has been hired (or is proposed to be hired) by the Employer as Employer's Representative.
- f) GST Registration Certificate & Permanent Account Number (PAN) must be available.
- g) Bidder should have valid registration with Employees Provident Fund Organization under 'EPF and Miscellaneous Provisions Act, 1952
- h) Not black listed by Employer.

1.5.2 Technical Experience

- a) The Tenderer shall have over the past Ten (10) years experiences as original equipment manufacturer and supplier of a minimum of two (02) similar maritime Boat lift system, which have been in operation satisfactorily for at least one (01) year. The two Boat lifts systems may be part of different projects. Similar capacity shall mean Boat lift system between 400 Ton to 800 Ton with self-driven wheels and power unit. The projects shall include successful Design, Fabrication, Installation and Commissioning. Employer's certificates, third party Test Certificate and copy of the Contract comprising the maximum lifting capacity of the system have to be submitted in the Tender. If documents not mentioning the Employers or the tenderers company name additionally a clarification letter is required. The reference projects have to be filled in the form according Annex 5 and information related to present projects according Annex 6.

In case the work experience is for the work executed outside India, the bidders have to submit the completion/experience certificate issued by the owner duly signed & stamped, and affidavit to the correctness of the completion/experience certificates. The Contractor shall also get the completion/experience certificates attested by the Indian Embassy/Consulate/High Commission in the respective country. In the event of submission of completion/experience certificate by the Bidder in a language other than English, the English translation of the same shall be duly authenticated by Chamber of Commerce of the respective country and attested by the Indian Embassy/consulate/High Commission in the respective country. For the purpose of evaluation of Bidders, the conversion rate of such a currency into INR shall be the daily representative exchange rate published by the SBI as on the Date of completion of work.

- b) The Tenderers team shall consist of key personnel having adequate and specialized experiences, capable of discharging their responsibilities in the relevant field of maritime lifting devices, required for the design, implementation, execution and successful commissioning of the Boat lift system. A list of all such personnel to be employed/engaged for this project, along with details of their qualification and experience (CVs) according to Annex 7 shall be submitted in the Tender.

Minimum key personnel shall be but not limited to:

- i. Home Office
 - Project Manager
 - Design Engineers
 - Mechanical Engineers
 - Electrical Engineers
 - ii. Site Office
 - Project Manager
 - Site Superintendent (Mechanical)
 - Site Superintendent (Electrical)
 - HSE Engineer
 - Quality / Material Engineer
- c) The Tenderers have to submit a preliminary technical proposal (design) showing that the technical requirements according the Employer's Requirements for the Boat lift system are met (Annex 11).

1.5.3 Financial Capability

- a) The Tenderer shall have received at least an average annual turnover equivalent to Rs. 20 crore during the last three fiscal years (2022, 2023, 2024).
- b) The Tenderer shall enclose with its Tender certificate issued by its Statutory Auditors (CA) with their seal and signature, stating its net worth & revenues during the past three fiscal years (2022, 2023, 2024). Certificate shall be as per the format according Annex 2.

Note:

1. If an Indian company/firm claims the Work Experience criteria and/or Financial Criteria like Turnover, Net worth and Bid Capacity etc. on the basis of its Foreign Principals, the firm can participate in the tender subject to his submitting documentary evidence to prove that Indian company/ Firm is indeed a 100% subsidiary or branch of a foreign company. They shall submit balance sheet showing equity holdings or certificate by the company Chartered accountants/auditors showing equity holding patterns between the Foreign principal company and its Indian subsidiary / branch or a certificate by the Foreign principal company that the Indian company is their wholly owned subsidiary (which should be duly notarized) and the Indian subsidiary company / branch may be allowed to participate in the HCSL tenders.

The foreign principal must submit an undertaking to provide all required technical knowledge to Indian company/ firm for successful completion of the project including operation and defect liability period

In addition to above, Certificate of incorporation from respective Govt. body/Chamber of commerce having information that Foreign Principals is an “OEM of Boalt lift/Hoist” and indicating address of manufacturing facilities shall also be submitted in respect of Foreign Principals.

2. The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum, calculated from the date of completion to the last date or extended date of submission of bid.
3. Turnover, Net worth of foreign principal shall also be calculated by considering the Exchange rate (as notified by SBI) of foreign currency in INR on the date of ending of particular financial year of that country.

1.6 Confidentially

The Tenderer is committed to handle all information in relation to the project confidentially, including but not limited to the project name, name and logo of Employer or one of its shareholders furnished by the Employer to the Tenderer.

Information relating to the evaluation of Tenders, and recommendation for post-qualification, shall not be disclosed to Tenderers or any other persons not officially concerned with such process until the notification of post-qualification is made to all Tenderers.

1.7 Costs

The Tenderer shall bear all costs associated with the preparation and submission of the Tender and contract negotiations, including visits to the Employer and project site. The Employer shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the post-qualification process.

1.8 Pre-tender Meeting

- a) A pre-tender meeting will be held on the date and at the location mentioned in the Data Sheet (see Clause 7).
- b) The purpose of the meeting is to clarify any doubts, suggestions, modifications and other queries, if any, on the tender document.
- c) All Tenderers are advised to study the tender documents thoroughly and come prepared to the meeting.

- d) The meeting shall be attended by duly authorized technically competent representative(s) of the Tenderers.
- e) Tenderers requiring any clarifications must send a written request to the Employer in the pre-tender questionnaire attached as Annex 13 including reference to the subject within the tender document. Any request should be sent by the time and to the address mentioned in the Data Sheet (see Clause 7).
- f) The compilation of all queries discussed during the pre-tender meeting shall be distributed, together with replies, to all bidders to an official named email address.
- g) Any modification of the tender document which may become necessary as a result of the pre-tender meeting shall be made by the Employer through the issuance of an addendum (see Clause 2.3).

1.9 Site Visit

- a) The Tenderer should visit and examine the project site to obtain all necessary information for preparing the Tender.
- b) The Tenderer will be granted permission by the Employer for a site visit. It has to respect all rules prescribed by the Employer during the visit. Entering of the project site is on Tenderers own risk.
- c) The contact for requests for the site visit is mentioned in the Data Sheet (see Clause 7).

1.10 Clarifications of Tender Documents

- a) Any request in respect of the Tender Document by the Tenderers should be made by email to the Employer to the address and by the date mentioned in the Data Sheet (see Clause 7).
- b) Responses to requests for clarifications will be distributed by the Employer, without identifying the source of enquiry, not later than 7 days after the requested clarification was received or not later than 7 days prior to the Tender submittal date, to all prospective Tenderers who have requested the Tender Document.

1.11 One Tender per Tenderer

Each Tenderer shall submit only one Tender. A Tenderer who submits or participates in more than one tender shall be disqualified.

This excludes Subcontractors and Contractor's staff which is participating as Key Experts and Non-Key Experts in more than one Tender.

1.12 Alteration of Submitted Tenders

Any alterations, modifications or change in the submitted proposals can be made at any time prior to the tender submission date. No change, alterations or modification of the tender shall be accepted after closing time.

1.13 Employer's Right to Accept or Reject Tender

Notwithstanding anything contained in this Tender Document, the Employer reserves the right to accept or reject any Tender and to annul the tender process and reject all Tenders, at any

time without any liability or any obligation for such acceptance, rejection or annulment, without assigning any reasons.

The Employer reserves the right to invite revised Technical Tenders and / or revised Financial Tenders from Tenderers with or without amendment of the Tender document at any stage, without liability or any obligation for such invitation and without assigning any reason.

The Employer reserves the right to reject any Tender if:

- i. at any time, a material misrepresentation is made or uncovered, or
- ii. the Tenderer does not respond promptly and thoroughly to requests for supplemental information required for the evaluation of the proposal, or
- iii. the technical and/or financial tender not signed by the Competent Authority, or
- iv. the EMD is missing.
- v. the Tenderer includes in the Financial Part any counter conditions or remarks.

1.14 Subcontractor

For the following specialized works the Employer permits specialized Subcontractors, if required by the main contractor:

- i. design and manufacturing of Boat lift control system
- ii. fabrication of the boat lift structure (only steel works)

Tenderers planning to subcontract specialized works shall specify, in the Tender submission form, the activity(ies) or parts of the works to be subcontracted along with complete details of the Subcontractors and their qualification and experience. The Subcontractors proposed shall be fully qualified for their work proposed, and meet the specified criteria in Clause 1.5.1 b) - e) & g) and Clause 1.5.2 a) for his proposed works, failing which such Subcontractors will not be permitted to participate. The qualification and experience of Subcontractors proposed by the Tenderer will not be considered for evaluation of the Tenderer. The Tenderers on its own (without taking into account the qualification and experience of the Subcontractor) have to meet the post-qualification criteria. Each Subcontractor has to be listed in the form of Annex 8.

1.15 Corrupt or Fraudulent Practices

No Tenderer shall contact the Employer on any matter relating to its Tender from the time of the Tender opening to the time the Tender evaluation result is announced by the Employer.

The Employer wishes that Tenderers / Contractors observe the highest standard of ethics during all stages of post-qualification, tendering, planning and construction.

In pursuance of this policy, the Employer

- a) defines, for the purposes of this provision, the terms set forth below as follows:
 - i. "corrupt practice" means the offering giving, receiving or soliciting of anything of value to influence the action of a public official during prequalification or tendering process or contract execution; and

- ii. "fraudulent practice" means a misrepresentation of facts in order to influence a prequalification or tendering process or the execution of a contract to the detriment of the Employer, and includes collusive practice among Applicants / Contractors (prior to or after tender submission) designed to establish tender prices at artificial non-competitive levels and to deprive the Employer of the benefit of free and open competition;
- b) will reject a proposal for award if it determines that the Applicant / Contractor recommend for award has engaged in corrupt or fraudulent practices in competing for the Contract in question.

2 Preparation of Tender Document

2.1 General Considerations

The Tenderer should read all terms and instructions included in the document. Failure to provide all requested information will be at Tenderer's own risk and may result in rejection of the proposal.

2.2 Validity of Tenders

- a) The Tender shall be valid for the period specified in the Data Sheet (see Clause 7).
- b) If it becomes necessary, the Employer may request the parties to extend the Tender validity. The request and responses thereto shall be made in written form. The parties shall have the right to refuse such extension without forfeiting their EMD. In case a party extends the validity then it shall also extend the validity of its EMD for corresponding period.
- c) The Employer may extend the Tender Due Date by issuing an Addendum.
- d) If any of the Key Experts become unavailable for the extended validity period, the Tenderer shall provide a written adequate justification and evidence satisfactory to the Employer together with the substitution request. In such case, a replacement Key Expert shall have equal or better qualifications and experience than those of the originally proposed Key Expert. The technical evaluation, however, will remain to be based on the evaluation of the CV of the original Key Expert.
- e) If the Tenderer fails to provide a replacement Key Expert with equal or better qualifications, or if the provided reasons for the replacement or justification are unacceptable to the Employer, such Tender may be rejected by the Employer.
- f) If it is established that any Key Expert nominated in the Tenderer's Tender was not available at the time of Tender submission or was included in the Tender without his/her confirmation, such Tender shall be disqualified and rejected for further evaluation.

2.3 Amendment of Tender Documents

- a) At any time before the submission of Tender, Employer may, for any reasons, whether at its own initiative or in response to a clarification requested by an invited Tenderer, modify the documents by amendment. The amendment will be published only on CSL, HCSL's and Govt of India's website. It is the responsibility of the

Tenderers to check for any amendments prior to bidding. Employer may at its discretion extend the deadlines for the submission of Tender.

- b) Prospective Tenderers shall acknowledge receipt of each addendum in writing to the Employer. The Tenderer shall also confirm in the Form of Tender that the information contained in such amendment / addendum have been considered in preparing its Tender.
- c) If the amendment is substantial, the tender submission deadline might be postponed.

2.4 Language

- a) The Tender and all related correspondence and documents should be written in the language(s) specified in the Data Sheet (see Clause 7).
- b) Supporting documents and printed literature in any other language than specified in the Data Sheet furnished with the Tender must be sent along with a translation.
- c) Supporting documents, which are not translated will not be considered.

2.5 Currency

2.5.1 General

Prices shall be quoted in the following currencies:

- a) For Plant/Goods and Services which the Tenderer will supply from within India, the prices shall be quoted in Indian Rupees.
- b) For Plant/Goods and Services which the Tenderer will supply from outside India, the prices shall be quoted in Indian Rupees.
- c) The currencies of payment shall be in Indian Rupees.

2.6 Earnest Money Deposit

- a) Tenderers shall deposit an amount of Rs.50 Lakhs as Earnest Money Deposit (EMD) along with the tender through e-gateway of: STATE BANK OF INDIA, COCHIN SHIPYARD BRANC, COCHIN, ACCOUNT NO.37354232301, IFSC CODE. SBIN0003229.
- b) The EMD can be remitted in the form of Demand Draft (DD) / Banker's Cheque / Fixed Deposit Receipt (FDR)/ Bank Guarantee drawn in favour of 'Hooghly Cochin Shipyard Ltd. payable at Kolkata and shall be valid for a period of 6 (Six) months from the due date of opening of Techno-commercial Bids from any Nationalized/ Scheduled Bank or paid online through e-gateway of - EMD furnished by all Tenderers except the lowest Tenderer will be released (EMD without interest) after issuing Letter of Acceptance to whom the Works are awarded.
- c) EMD of the successful Tenderer will be refunded after remittance of the Performance Security as required under the Conditions of Contract.
- d) EMD deposited with the Employer will be forfeited,
 - i. if a bidder withdraws or modifies his Tender during the period of validity specified, or

- ii. if the successful Tenderer fails within the time limit to sign the Contract Agreement or fails to furnish the required Performance Security.
 - iii. request for enhancement in the quoted rates or bringing in new conditions after tender opening or unnecessary delayed acceptance of the order / commencement of work / submission of Performance Security / executing the agreement.
 - iv. in the event of party withdrawing his Tender before the expiry of 180 days from the due date of submission of proposal.
- e) The relevant documents pertaining to the EMD should be enclosed in a separate sealed cover, super scribing the Tenderer name, Tender Notice No. and Date in the Technical Tender.

TENDERS RECEIVED WITHOUT EMD WILL NOT BE CONSIDERED AT ALL.

2.7 Signing of Tender

- a) An authorized representative of the Tenderer shall sign the original Tender submission letters and shall initial all other pages of the Tender.
- b) The signing representative of the Tenderer must be authorized by an officially certified power of attorney in the form attached as Annex 9 to this tender document. The power of attorney shall be enclosed to the Technical Tender.
- c) The proposal shall not contain interlineations or overwriting except as necessary to correct errors made by the Tenderer itself. In such cases the corrections must be initialed by a person who is authorized to sign the Tender.

2.8 Elements of Tender

2.8.1 Technical Tender

- a) The Technical Tender shall not include any financial information. A Technical Tender containing material financial information shall be declared non-responsive.
- b) The Technical Tender shall comprise the documents and forms listed in the Data Sheet (see Clause 7). The Employer reserves the right to reject any Tender that is not in the specified formats.

2.8.2 Financial Tender

- a) The Financial Tender shall comprise the documents and forms listed in the Data Sheet (see Clause 7). The Employer reserves the right to reject any Tender that is not in the specified formats.
- b) The total Tender Price must include all applicable taxes, fees, royalties, etc. may applicable in the country of the Tenderer and Employer.
- c) The Tenderer is deemed to have included all prices in the Financial Tender, so neither arithmetical corrections nor price adjustments shall be made.
- d) The total Tender Price, including of taxes, fees, royalties, etc., specified in the Financial Proposal, shall be considered as the offered price.

- e) All single rates proposed by the Tenderer should be inclusive of all applicable taxes, customs duty, fees, royalties, etc.
- f) The tender price should be quoted in Indian Rupees only.
- g) A price adjustment provision for foreign and/or local inflation is not applicable.

2.9 Printing of Tender

The Proposal shall be prepared with indelible ink.

2.10 Tender Copies

- a) The Tender must be submitted in hard and digital copy (on CD or DVD). The required number is specified in the Data Sheet (see Clause 7).
- b) All copies and digital copy shall be made from the signed original. If there are discrepancies between the original and the copies, the original shall prevail.

2.11 Sealing of Tender

- a) The Tenderer shall seal the Technical Tender and the Financial Tender in two separate envelopes. These both envelopes shall then be sealed in an outer envelope.
- b) The envelope of the Technical Tender shall be clearly marked with "TECHNICAL TENDER", "[Name of the Assignment] ", reference number, name and address of the Tenderer, and with the warning "DO NOT OPEN BEFORE [INSERT THE DATE AND THE TIME OF THE TECHNICAL PROPOSAL SUBMISSION DEADLINE]" and sealed.

Within the envelope of the Technical Tender the relevant documents pertaining to the EMD (see Clause 2.6) should be enclosed in a separate sealed cover, super scribing the Tenderer name, Tender Notice No. and Date in the Technical Tender.

- c) The envelope of the Financial Tender shall be clearly marked with "FINANCIAL TENDER", "[Name of the Assignment] ", reference number, name and address of the Bidder, and with the warning "DO NOT OPEN BEFORE NOTIFICATION FOR POST-QUALIFIED TENDERERS IS ISSUED" and sealed.
- d) Technical and Financial Tender envelopes shall be placed in an outer envelope and sealed. The outer envelope shall indicate the submission address, reference number, name of the assignment, reference number, name and address of the Tenderer, and with the warning "DO NOT OPEN BEFORE [INSERT THE DATE AND THE TIME OF THE TECHNICAL PROPOSAL SUBMISSION DEADLINE]"
- e) If the envelopes are not sealed and marked as instructed above, the Tender may be deemed to be non-responsive and would be liable for rejection. The Employer takes no responsibility for the misplacement or premature opening of such Tender.

2.12 Submission of Tenders

- a) Tenders shall be submitted at the address and not later than the time mention in the Data Sheet (see Clause 7).
- b) Any Tender submitted after the submission date mentioned in the Data Sheet will not be taken into account.
- c) Proposals submitted by facsimile transmission, telex or email will not be accepted.

2.13 Alternative Tender

- a) If the Tenderer can offer a proposal which provides better value for money for the Employer than the requested proposal, it can, in addition to its Tender, submit an alternative tender.
- b) Alternative tenders will only be considered if they are submitted in accordance with the tender document.
- c) Alternative tenders shall be in the form of the requested Tender with fully priced schedule or bill and sufficient drawings and explanatory matter to enable them to be technically assessed.
- d) Alternative tenders have to be submitted in two separate envelopes for Technical Tender and the Financial Tender and to be clearly marked as "Alternative Tender".

3 Tender Opening

3.1 Technical Tender

- a) At the opening of the Technical Tender the following shall be checked:
 - i. name and address of Tenderer;
 - ii. presence or absence of Financial Tender in duly sealed envelope;
 - iii. presence or absence of EMD;
 - iv. presence or absence of Integrity Pact;
 - v. any modifications of Tender submitted prior to proposal submission deadline.
- b) The technical content of responsive bids shall be examined in detail.
- c) The envelope with the Financial Tender shall remain sealed and shall be securely stored until the technical evaluation (post-qualification) is completed.
- d) The evaluators of the Technical Tenders shall have no access to the Financial Tenders until the technical evaluation (post-qualification) is completed.

3.2 Financial Tender

- a) The Financial Tender shall be opened by the Employer in the presence of the representatives of those Tenderers whose Tender has passed the post-qualification.
- b) At the opening, the name and country of Tenderer shall be read aloud.
- c) Before opening, the Financial Tenders will be inspected to confirm that they have remained sealed and unopened. These Financial Tenders shall then be opened, and the total prices read aloud and recorded.

4 Tender Evaluation

4.1 Queries by Employer

The Tenderer shall name an official email address in case queries arise during Tender evaluation by the Employer.

During evaluation stage, the Employer or his representatives may, at its own discretion, ask the Tenderer for clarifications on their post-qualification application. The Tenderer is required to respond within the time frame prescribed by the Employer. During the course of evaluation, Tenderer may be asked to visit the Employer for discussion, if required. The Employer reserves the right to make inquiries with any of the clients listed by the Tenderer in their previous experience record. The Employer or authorized representative reserves the right to visit the Boat lift system installations done by the Tenderer in order to have firsthand information regarding the performance of the system. The Tenderer shall co-ordinate for the above-mentioned visit whereas travelling and lodging expense for the same shall be borne by the Employer.

4.2 Evaluation Criteria

The Employer shall use the methods, criteria, and requirements defined in Clause 1.5 to evaluate the post-qualification Tender of the Tenderers, and no other methods, criteria, or requirements shall be used.

4.3 Preliminary Scrutiny

In case a Tender is received without the requisite and proper EMD, it is likely to be rejected and the second envelope of such Tender containing Financial Proposal will not be opened.

4.4 Responsiveness of Tender

Tenders received on time with the requisite and proper EMD shall thereafter be examined for responsiveness. A responsive tender is one which conforms to all requirements of the Tender Document. A Tender shall be treated non-responsive for any or all of the following reasons:

- i. Necessary information as indicated in Tender Document is not complete.
- ii. Validity of proposal not confirmed.
- iii. Tender documents not signed and sealed in the manner prescribed in Clause 2.11 and 2.12.
- iv. Tender and supporting documents show significant variations and or inconsistency (ies).
- v. Tender included in the Financial Part any counter conditions or remarks.

4.5 Post-qualification of Tenderers

All Tenderers, including their proposed Specialist Sub-contractors, whose Tender have been determined to be substantially responsive to the requirements and who have met or exceeded the specified criteria under Clause 1.5 shall be post-qualified by the Employer.

4.6 Notification of post-qualification

Once the Employer has completed the evaluation of the Tenders, it shall notify all Tenderers in writing regarding their status of post-qualification, included the date and venue for the opening of the Financial Tenders for the Tenderers considered post-qualified.

4.7 Opening of Financial Tender

Promptly after the notification of the results of the post-qualification, the Employer shall invite the post-qualified Tenderers for the opening of the Financial Tender.

After the opening of the Financial Tenders the Employer will execute an evaluation of the Financial Tenders regarding completeness, soundness, significant variations and or inconsistency(ies).

5 Contract Negotiations

- a) Prior to expiration of the tender validity, the Employer will invite the successful Tenderer who submitted the lowest financial proposal among the qualified Tenderer in technical evaluation (post-qualification), in writing by letter or facsimile, to negotiate the Contract.
- b) The negotiations will be held at the date notified and address indicated in the Data Sheet (see Clause 7) with the Contractor's representative(s) who must have a written certified power of attorney to negotiate and sign the Contract on behalf of the Contractor.
- c) The Employer shall prepare minutes of negotiations signed by the Employer and the Contractor's authorized representative.

6 Award of Contract

6.1 Notification of Contract Award

- a) Prior to expiration of the Tender validity and successful Contract Negotiations under Clause 5 the Employer should inform the successful Tenderer with issuing the "Letter of Acceptance" about the acceptance of his Tender.
- b) The "Letter of Acceptance" should be send by fax or emailing a scan following by registered letter for signature of the Contractor.
- c) The "Letter of Acceptance" must specify the sum the Employer will pay to the Contractor in consideration of the execution of the Services.
- d) The "Letter of Acceptance" is not part of the Contract.
- e) The Instructions to Tenderers do not constitute part of the Tender or the Contract documents.

6.2 Signing of Contract Agreement

- a) The Employer will send to the successful Tenderer the Form of Contract Agreement duly filled in and incorporating all agreements between the parties for signing and return it to the Employer.
- b) After receiving the of the duly signed Contract Agreement the Performance Security have to be submitted within the period stated in the "Conditions of Contract" (see Volume II) and the "Appendix to Tender" (see Volume II).
- c) The Contract Agreement shall be signed by both parties. All other pages of the Contract shall be initialed by both parties.

6.3 Performance Security

- a) The successful Tenderer should furnish a Performance Security in accordance with the "Conditions of Contract" (see Volume II) and the "Appendix to Tender" (see Volume II). The Performance Security has to be issued in the form attached to the Appendix of the Condition of Contract (Volume II). Failure to comply with these requirements constitutes a breach of Contract and may lead to the annulment of award and forfeiture of EMD.
- b) The Performance Security is to be provided not later than 14 days after signing of the Contract Agreement and as BG issued by a Scheduled Bank in India.

7 Data Sheet

ITT Clause	Subject
1.3	Country of the Employer: Republic of India
1.8	The Pre-Tender meeting will be held at the Employer's premises given under Clause 1.8 at 15:30 hrs (IST) on 21.03.2025 Request for clarification by Tenderers shall be submitted not later than 7 days before the Pre-Tender meeting.
1.9 / 1.10 / 1.11 / 5	Chief Executive Officer Hooghly Cochin Shipyard Limited Satyen Bose Road P.O. Danesh Shaikh Lane, Nazirgunge, Howrah, West Bengal 711109, India Email: sanil.peter@cochinshipyard.in with a copy to: manaspratim.hcsl@nic.in and sajal.sengupta@hooghlycsl.com
2.2	Tender validity period is 180 days after the due date of Tender submission.
2.4	English
2.6	EMD can be remitted as fund transfer through NEFT/RTGS to the following bank account: STATE BANK OF INDIA, COCHIN SHIPYARD BRANC, COCHIN, ACCOUNT NO.37354232301, IFSC CODE. SBIN0003229.
2.8.1	The following documents have to be submitted within the Technical Tender: Annex 1: APPLICATION LETTER Annex 2: FINANCIAL CAPABILITY; original certified by statutory auditor Annex 3: STRUCTURE AND ORGANIZATION Annex 4: RESOURCES: CONTRACTOR'S EQUIPMENT AND FACILITIES

ITT Clause	Subject
	<p>Annex 5: EXPERIENCE: RELEVANT PROJECTS COMPLETED; along with Employer's certificates, Test Certificate (or Lloyd's Register Certificate) or copy of the Contract comprising the maximum lifting capacity of the system (certified English translation, if applicable)</p> <p>Annex 6: EXPERIENCE: RELEVANT PRESENT PROJECTS</p> <p>Annex 7: CURRICULUM VITAE (CV) FOR PROPOSED PROFESSIONAL STAFF</p> <p>Annex 8: WORK TO BE PERFORMED BY SUB-CONTRACTOR.</p> <p>Annex 9: POWER OF ATTORNEY (notarized or equivalent) Earnest Money Deposit in a separate sealed cover</p> <p>Annex 10: PRE-CONTRACT INTEGRITY PACT</p> <p>Annex 11: METHOD OF PERFORMING THE WORKS</p> <p>Annex 12 PROPOSED WORK PROGRAMME OF WORKS</p> <p>Annex 13: PRE-BID QUESTIONNAIRE</p> <p>Approval/quality certification/registration with the Govt. agency</p> <p>Time Schedule according to the Employer's Requirements (Volume III)</p> <p>Unpriced Schedule of Prices (Volume IV)</p> <p>Deviations or suggestions, if any</p>
2.8.2	<p>The following documents have to be submitted within the Financial Tender:</p> <ul style="list-style-type: none"> a) Schedule of Prices b) Summary of Tender Price c) Estimated Payment Schedule d) Lump Sum Cost Breakdown for Major Items
2.10	<p>The Technical Tender Part has to be submitted as one (01) original and two (02) copies and one (01) digital copy on CD / DVD.</p> <p>The Financial Tender Part has to be submitted as one (01) original, only.</p>
2.12	<p>The Employer must receive the Tender not later than: 15:00 hrs (IST) on 11.04.2025</p> <p>The employer's address is given above in this Data Sheet.</p>
2.12	<p>Opening of the Technical Tender will be conducted: 15:30 hrs (IST) on 11.04.2025</p> <p>Bidders are not allowed to attend the opening of the technical part of the proposal.</p>

8 List of Annexes

- Annex 1 APPLICATION LETTER
- Annex 2 FINANCIAL CAPABILITY
- Annex 3 STRUCTURE AND ORGANIZATION
- Annex 4 RESOURCES: CONTRACTOR'S EQUIPMENT AND FACILITIES
- Annex 5 EXPERIENCE: RELEVANT PROJECTS COMPLETED
- Annex 6 EXPERIENCE: RELEVANT PRESENT PROJECTS
- Annex 7 CURRICULUM VITAE (CV) FOR PROPOSED PROFESSIONAL STAFF
- Annex 8 WORK TO BE PERFORMED BY SUB-CONTRACTORS
- Annex 9 POWER OF ATTORNEY
- Annex 10 PRE-CONTRACT INTEGRITY PACT
- Annex 11 METHOD OF PERFORMING THE WORKS
- Annex 12 PROPOSED WORK PROGRAMME OF WORKS
- Annex 13 PRE-BID QUESTIONNAIRE

Annex 1

APPLICATION LETTER

(On Applicant's letterhead)

(Date and Reference)

To
The Chief Executive Officer
Hooghly Cochin Shipyard Limited
Satyen Bose Road P.O. Danesh Shaikh Lane,
Nazirgunge, Howrah, West Bengal
711109, India

Subject: Request for Proposal for "Engineering, Supply, Installation, Commissioning of an 800T Boat Hoist/Lift " for the Development of a Ship Repair Facility at Pandu, Guwahati, Assam

Dear Sir,

With reference to your Request for Proposal referred above, We, _____ (*name of the applicant*) having examined all relevant documents and understood their contents, hereby submit our Tender and state that:

1. All information provided in the Tender and in the Appendices is true and correct.
2. We shall make available to HCSL any additional information it may find necessary or require to supplement or authenticate the Tender.
3. We are not under a declaration of ineligibility issued by Govt. of India / Any State Govts. of India / Public Sector Undertakings.
4. We intend to subcontract the following key activities and/or parts of the works: *[Insert any of the key activities identified in Clause 1.14 which the Employer has permitted under the tender document and which the Tenderer intends to subcontract along with complete details of the subcontractors, their qualifications and experience]*
5. We agree and undertake to abide by all the terms and conditions of the Request for Proposal.
6. We confirm that no counter conditions or remarks are made in the Financial Part of this Bid.
7. The proposal validity is 180 days from the date of opening of the technical part, which is mentioned in the data sheet.



Thanking you,

Yours faithfully,

(Signature of the Authorized Representative)

(Name and designation of the Authorized Representative)

Annex 2

FINANCIAL CAPABILITY

Sr. No.	Financial Year	Annual Revenue (Turnover)	Net worth as at the end of the financial year
1			
2			
3			

Signature of the authorized representative of Tenderer with seal and date.

Certificate from the Statutory Auditors:

This is to certify that _____ (*name of the Tenderer*) has received the payments shown above in the respective years and that the net worth is as computed.

Name of Statutory Auditors:

Designation:

Name of firm:

(Signature of the Authorised Signatory Auditors)

(Seal of Firm)

Annex 3

STRUCTURE AND ORGANIZATION

1. Name of company:

Address:

Phone:

Fax:

Email:

Authorized representative:

Registered office address:

2. Description of company (for example, General Engineering equipment manufacturer):

3. Number of years' experience as a general Engineering equipment manufacturer:

- in own country:

- internationally:

4. Number of years' experience as a subcontractor:

- in own country:

- internationally:

5. Names and addresses of associated companies to be involved in the project – and whether parent/subsidiary/other:

6. If the company is a subsidiary, what involvement, if any, will the parent company have in the project?

7. Please indicate here or attach an organization chart showing the company structure including the positions of directors and key personnel, if relevant

Annex 4

RESOURCES: CONTRACTOR'S EQUIPMENT AND FACILITIES

Name of company:

On the basis of the information provided in the tender document please indicate the equipment and facilities considered by the company to be necessary for undertaking the project and whether this is already in the company's ownership or will be purchase or hired:

Annex 5

EXPERIENCE: RELEVANT PROJECTS COMPLETED

Please fill in information about the relevant projects completed over the past ten years.

Name of company:

Sr. No.	Name of Employer	Name, location, details of project and details of boat lift	Name of (consulting) engineer responsible for supervision	Contract value and date	Percentage of participation of company in project	Was the contract satisfactorily completed including time provision
1						
2						
3						
4						
5						

Annexure 6

EXPERIENCE: RELEVANT PRESENT PROJECTS

Name of company:

Give information about all projects in progress, including those where the company has received a letter of intent, but a formal contract has not been awarded.

Sr. No.	Name of Employer	Name, location, details of project and details of boat lift	Name of (consulting) engineer responsible for supervision	Contract value and date	Value completed and certified	Percentage of participation of company in project	Percentage of practical completion	Scheduled date of completion of work
1								
2								
3								
4								
5								



Certification:

I, the undersigned, certify that to the best of my knowledge and belief these data correctly describe me, my qualifications and my experience.

_____ Date: _____
(Signature of staff member and authorized representative of the Contractor)(Day/Month/Year)

Full name of staff member:

Full name of authorised representative:

Annex 8

WORK TO BE PERFORMED BY SUBCONTRACTORS

The Tenderer will do the work with his own forces except the part (s) of the Works listed below which he intends to subcontract.

Items of Works to be subcontracted	Name and address of Subcontractor	Statement of similar works previously executed (attach evidence)
---	--	---

Note:

1. No change of Subcontractor shall be made by the Tenderer without prior approval of the Employer.
2. The truthfulness and accuracy of the statement as to the experience of Subcontractors is guaranteed by the Tenderer. The Employer's judgment shall be final as to the evaluation of the experience of Subcontractors submitted by the Tenderer.
3. Statement of similar works shall include description, location & value of work, year completed and name & address of the clients.
4. This may include manufacturer(s) who are proposed here and their relevant details to be provided accordingly including make, capacity and salient features to make it particularly suitable for the works. The technology used should also be detailed adequately.

Annex 9

POWER OF ATTORNEY

(On Applicant's letter head)

(Date and Reference)

To
Chief Executive Officer
Hooghly Cochin Shipyard Limited
Satyen Bose Road P.O. Danesh Shaikh Lane,
Nazirgunge, Howrah, West Bengal
711109, India

Subject: Power of Attorney

Mr. / Mrs. / Ms..... (Name of the Person(s)), domiciled at
.....
(Address), acting as..... (Designation and
name of the company), and whose signature is attested below, is hereby appointed as the
Authorized Representative and authorized on behalf of
..... (Name of the company) to provide
information and respond to enquiries etc. as may be required by the Employer for the project
of (Project title) and is hereby further authorized to sign
and file relevant documents in respect of the above.

(Attested signature of Mr.)

For.....
(Name & designation of the company Board member)

Annex 10

PRE-CONTRACT INTEGRITY PACT

HOOGHLY COCHIN SHIPYARD LIMITED

General

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on day of the month of , between, on one hand, the President of India acting through Deputy General Manager, Hooghly Cochin Shipyard Ltd (HCSL) having its registered office at Howrah, West Bengal, India (hereinafter called the “PRINCIPAL”, which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns) of the First part and M/s..... represented by Shri....., Chief Executive Officer (hereinafter called the “BIDDER/Seller” which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the second part.

WHEREAS the PRINCIPAL proposes to procure and the BIDDER/Seller is willing to offer/has offered the stores and

WHEREAS the BIDDER is a private company / public company / Government undertaking / partnership/registered export agency, constituted in accordance with the relevant law in the matter and the PRINCIPAL is a Government of India PSU performing its functions on behalf of The President of India.

NOW, THEREFORE,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to:-

Enabling the PRINCIPAL to obtain the desired said stores/equipment/item at a competition price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling BIDDERS to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the PRINCIPAL will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this Integrity Pact and agree as follows: -

1. Commitments of the PRINCIPAL

1.1 The PRINCIPAL undertakes that no official of the PRINCIPAL, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BIDDER, either for themselves or for any person, organization or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting on implementation process related to the contract.

1.2 The PRINCIPAL will, during the pre-contract stage, treat all BIDDERS alike and will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to other BIDDERS.

1.3 The officials of the PRINCIPAL will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.

2 In case any such preceding misconduct on the part of such official(s) is reported by the BIDDER to the PRINCIPAL with full and verifiable facts and the same is prima facie found to be correct by the PRINCIPAL, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the PRINCIPAL and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the PRINCIPAL the proceedings under the contract would not be stalled.

3. Commitments of BIDDERS

The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following: -

1.1 The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the PRINCIPAL, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.

1.2 The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the PRINCIPAL or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract of any other contract with the government for showing or forbearing to show favour or disfavor to any person in relation to the contract of any other contract with the Government.

1.3 BIDDERS of foreign origin shall disclose the name and address of their Indian agents and representatives, if any and Indian BIDDERS shall disclose their foreign principals or associates, if any.

1.4 BIDDERS shall disclose the payments to be made by them to their Indian agents/brokers or any other intermediary, in connection with this bid/contract and the payments have to be in Indian Rupees only.

1.5 The BIDDER further confirms and declares to the PRINCIPAL that the BIDDER is the original manufacturer/ integrator/authorized agent of the stores/equipment/items and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the PRINCIPAL or any of its functionaries, whether officially or unofficially to the award of the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.

1.6 The BIDDER, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the PRINCIPAL or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.

1.7 The BIDDER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.

1.8 The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.

1.9 The BIDDER shall not use improperly, for purposes of competition or personal gain, pass on to others, any information provided by the PRINCIPAL as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.

1.10 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.

1.11 The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.

1.12 If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER, either directly or indirectly, is a relative of any of the officers of the PRINCIPAL, or alternatively, if any relative of an officer of the PRINCIPAL has financial interest/stake in the BIDDER's firm, the same shall be disclosed by the BIDDER at the time of filing of tender.

The term 'relative' for this purpose would be as defined in section 6 of the Companies Act 1956.

1.13 The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee or the PRINCIPAL.

4. Previous Transgression

4.1 The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify; BIDDER's exclusion from the tender process.

4.2 The BIDDER agrees that if it makes incorrect statement on this subject, BIDDER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

5. Earnest Money (Security Deposit)

5.1 While submitting commercial bid, the BIDDER shall deposit an amount NIL (to be specified in RFP) as Earnest Money as applicable/Security Deposit, with the PRINCIPAL through any of the following instruments:

(i) Bank Draft of Pay Order in favor of HCSL.

(ii) A confirmed guarantee by an Indian Nationalized Bank, promising payment of the guaranteed sum to the PRINCIPAL on demand within three working days without any demur whatsoever and without seeking any reasons whatsoever. The demand for payment by the PRINCIPAL shall be treated as conclusive proof of payment.

(iii) Any other mode or through any other instrument (to be specified in the RFP).

5.2 The Earnest Money if applicable/Security Deposit shall be valid upto the complete conclusion of the contractual obligations to the complete satisfaction of both the BIDDER and the PRINCIPAL, including warranty period.

5.3 In case of the successful BIDDER a clause would also be incorporated in the Article pertaining to Performance Bond in the Purchase Contract that the provisions of sanctions for Violation shall be applicable for forfeiture of Performance Bond in case of a decision by the PRINCIPAL to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

5.4 No interest shall be payable by the PRINCIPAL to the BIDDER on Earnest Money/Security Deposit for the period of its currency.

6. Sanctions for Violations

6.1 Any breach of the aforesaid provisions by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitle the PRINCIPAL to take all or any one of the following actions, wherever required:-

i. To immediately call off the pre contract negotiations without assigning any reason or giving any; compensation to the BIDDER. However, the proceedings with the other BIDDER(s) would continue.

ii. The Earnest Money Deposit (in pre-contract stage) and/or Security Deposit/Performance Bond (after the contract is signed) shall stand forfeited either fully or partially, as decided by the PRINCIPAL and the PRINCIPAL shall not be required to assign any reason therefore.

iii. To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.

iv. To recover all sums already paid by the PRINCIPAL, and in the case of an Indian BIDDER with interest thereon at 2% above the prevailing Prime Lending Rate of State Bank of India, while in case of a BIDDER from a country other than India with interest thereon at 2% above the LIBOR (London Inter Bank Offer Rate). If any outstanding payment is due to the BIDDER from the PRINCIPAL in connection with any other contract for any other stores, such outstanding payment could also be utilized to recover the aforesaid sum and interest.

v. To encash the advance bank guarantee and performance bond/warranty bond, if furnished by the BIDDER, in order to recover the payments, already made by the PRINCIPAL, along with interest.

vi. To cancel all or any other contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to the PRINCIPAL resulting from such

cancellation/recession and the PRINCIPAL shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.

vii. To debar the BIDDER from participating in the future bidding processes of HCSL for a minimum period as deemed appropriate, which may be further extended at the discretion of the PRINCIPAL.

viii. To recover all sums paid in violation of this Pact by BIDDER(s) to any middleman or agent or broker with a view to securing the contract.

ix. In cases where irrevocable Letters of Credit have been received in respect of any contract signed by the PRINCIPAL with the BIDDER, the same shall not be opened.

x. Forfeiture of Performance Bond in case of a decision by the PRINCIPAL to forfeit the same without assigning any reason for imposing sanction for violation of this pact.

6.2 The PRINCIPAL will be entitled to take all or any of the actions mentioned at para 6.1(i) to (x) of this pact also on the Commission by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER), of an offence as defined in chapter IX of the Indian Penal code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.

6.3 The decision of the PRINCIPAL to the effect that a breach of the provisions of this pact has been committed by the BIDDER shall be binding on the BIDDER. However, the BIDDER can approach the Independent Monitor(s) appointed for the purposes of this Pact.

7 Fall Clause

7.1 The BIDDER undertakes that it has not supplied/is not supplying similar product/systems/items or subsystems at a price lower than that offered in the present bid in respect of any other Ministry/Department of the Government of India or PSU and if it is found at any stage that similar product/systems or sub systems/items was supplied by the BIDDER to any other Ministry/Department of the Government of India or PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the PRINCIPAL, if the contract has already been concluded.

8 Independent Monitor

8.1 The PRINCIPAL has appointed Independent Monitors (hereinafter referred to as Monitors) for this Pact in consultation with the Central Vigilance Commission.

Dr. Vinod Bihari Mathur, IFoS (Retd.) D302, Arborea Luxury Homes, Tarla Nagal, Near Doon Helidrome, Dehradun, Uttarakhand - 248001 Mobile: 9412054648 Email: ybm.ddn@gmail.com

8.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.

8.3 The Monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.

8.4 Both the parties accept that the Monitors have the right to access all the documents relating to the project/procurement, including minutes of meetings.

8.5 As soon as the Monitors notice, or has reason to believe, a violation of this pact, he will so inform the Authority designated by the PRINCIPAL.

8.6 The PRINCIPAL accepts that the Monitors have the right to access without restriction to all Project documentation of the BUYER including that provided by the BIDDER. The BIDDER will also grant the Monitors, upon his request and demonstration of a valid interest, unlimited access to his project documentation. The same is applicable to Subcontractors. The Monitors shall be under contractual obligation to treat the information and documents of the BIDDER/Subcontractor(s) with confidentiality.

8.7 The PRINCIPAL will provide to the Monitors sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitors the option to participate in such meetings.

8.8 The Monitors will submit a written report to the designated Authority of PRINCIPAL /Secretary in the Department/ within 8 to 10 weeks from the date of reference or intimation to him by the PRINCIPAL /BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.

9 Facilitation of Investigation

In case of any allegation of violation of any provisions of this pact or payment of commission, the PRINCIPAL or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER. The BIDDER shall provide necessary information and documents in English and shall extend all possible help of the purpose of such examination/inspection.

10 Law and Place of Jurisdiction

10.1 This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the PRINCIPAL.

10.2 A person signing Integrity Pact shall not approach the Courts while representing the matters to Independent External Monitors and shall await their decision in the matter.

11 Other Legal Actions

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extent law in force relating to any civil or criminal proceedings.

12 Validity

12.1 The validity of this Integrity Pact shall be from date of its signing and extend upto 5 years or the complete execution of the contract to the satisfaction of both the PRINCIPAL and the BIDDER/Seller, including warranty period, whichever is later. In case BIDDER is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract.

12.2 Should one or several provisions of this Pact turn out to be invalid; the remainder of this pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.

13 The parties hereby sign this Integrity Pact at..... on.....



Development of Fire Fighting Works for SRF at Pandu,
Guwahati, Assam



PRINCIPAL
Name of the Officer
Designation

Bidder

Dept./MINISTRY/PSU

CHIEF EXECUTIVE OFFICER

Annex 11

METHOD OF PERFORMING THE WORKS

The Tenderer is required to submit a narrative outlining the method of performing the Works. The narrative should indicate in detail and include but not be limited to:

- Preliminary technical proposal (design) showing that the technical requirements according to the Employer's Requirements for the 800 T Boat lift system are met.
- The sequence and methods in which he proposes to carry out the Works, including the number of shifts per day and hours per shift, he expects to work.
- A list of all major items of constructional and erection plant, tools and vehicles proposed to be used in carrying out the Works at Site, including number of each kind, make, type, capacity of all equipment, working condition, which shall be deployed by him for Erection, Testing and Commissioning of the Works, in sufficient detail to demonstrate fully that the equipment will meet all the requirements of the Employer's Requirements.
- The procedure for installation/erection of equipment and transportation of equipment and materials to the site. Especially the method of manufacturing and installation of the ship lift/hoist structure has to be described.
- Details regarding mobilization in India, the type of facilities including personnel accommodation, office accommodation, provision for maintenance and for storage, communications, security and other services to be used.
- The Contractor shall provide description of his construction camp's facilities and staff housing requirements.
- The Contractor shall be responsible for pumps, electrical power, water and electrical distribution systems, and sewerage system including all fittings, pipes and other items necessary for servicing the Contractor's construction camp and staff housing facilities.
- The Tenderer shall list or explain his plans for providing these facilities for the service of the Contract as follows:
 1. Site Preparation (clearing, land preparation, etc.).
 2. Provision of Services.
 - a) Power (expected power load, etc.).
 - b) Water (required amount and system proposed).
 - c) Sanitation (sewage disposal system, etc.).

Remark: Electricity, fresh water all other may be required services remain in the responsibility of the Contractor. Distribution of all services to the Site shall also be carried out by the Contractor at his costs for the sole use of works related to the construction of Boat Hoist/Lift of 800T capacity until the Performance Certificate is issued.
 3. Construction of Facilities
 - a) Contractor's Office, Workshop and Work Areas (areas required and proposed layout, type of construction of buildings, etc.).



-
- b) Warehouses and Storage Areas (area required, type of construction and layout).
 - c) Housing and Staff Facilities (Plans for housing for proposed staff, layout, type of construction, etc.)
 - 4. Construction Equipment Assembly and Preparation (detailed plans for carrying out this activity).
 - 5. Verification, testing & commissioning methodology for each major equipment at factory and complete system tests on site during and after fabrication/installation.
 - 6. Other Items Proposed (Security services, etc.).

Initials of Signatory to Bid:

Annex 12

PROPOSED PROGRAMME OF WORKS

The tenderer shall provide a program in a bar-chart/CPM/PERT form showing the sequence of work items by which he proposes to complete the Work of the entire Contract. The program should indicate the sequences of work items and the period of time during which he proposes to complete the Works including the activities like designing, schedule of submittal of drawings, ordering/procurement of materials, manufacturing, delivering, design & construction of associated civil works (if any), installation/erection, testing and commissioning of Works to be executed under the Contract.

Initials of Signatory to Bid:



Annex 13

PRE-BID QUESTIONNAIRE

SI no.	Reference Clause	Page no.	Description	Tenderer Suggestion / Query	HCSL Reply
1					
2					

HOOGHLY COCHIN SHIPYARD LIMITED



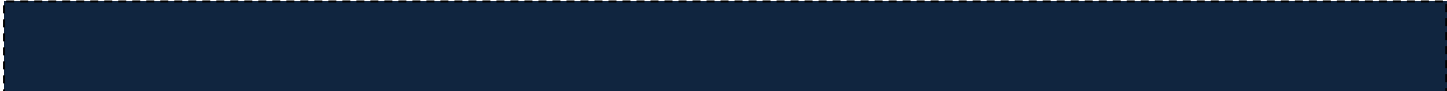
Development of Ship Repair Facility at Pandu, Guwahati, Assam

Engineering, Supply, Installation, Commissioning of
800T Boat Hoist/Boat Lift

*Hooghly Cochin Shipyard Ltd
(HCSL), Satyen Bose Road
P.O-Danesh Shaikh Lane,
Nazirgunge, Howrah, West
Bengal-711109, India*

Volume II

Conditions of Contract



Request for Proposal of

Engineering, Supply, Installation and Commissioning of a
Boat Hoist/ Lift of 800T Capacity
For the Development of a Ship Repair Facility (SRF) at Pandu, Guwahati, Assam,
India

VOLUME II

Conditions of Contract

Tender No.: HCSL/PUR/TEN/2025/020



Hooghly Cochin Shipyard Limited

Satyen Bose Road P.O. Danesh Shaikh Lane,
Nazirgunge, Howrah, West Bengal

711109, India

Phone: +91(33)-29558283/+91(33)26888282

Web: www.hooghlycsl.com

10th March 2025

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 Invitation to Tender
 Instructions to Tenderers (ITT) with Appendices to ITT

<p>Volume II Conditions of Contract General Conditions of Contract (GCC) Particular Conditions of Contract (PCC) Standard Forms</p>

Volume III Employer's Requirements

Volume IV Financial Part
 Preamble to Schedule of Prices
 Schedule of Prices
 Summary of Tender Price
 Estimated Payment Schedule
 Lump Sum Cost Breakdown for Major Items

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1 General Conditions of Contract

Hooghly Cochin Shipyard Limited

**“Engineering, Supply, Installation, Commissioning of
800T Boat Hoist/Boat Lift at Pandu, Guwahati, Assam, India”**

CONDITIONS OF CONTRACT

GENERAL CONDITIONS OF CONTRACT¹

The General Conditions of Contract shall be those of the "Conditions of Contract for EPC/Turnkey Projects" first edition 1999, prepared by the *Fédération Internationale des Ingénieurs-Conseils* (FIDIC). These Conditions are subject to the variations and additions in "Particular Conditions of Contract."

Copies of the FIDIC Conditions of Contract can be obtained from:

FIDIC Secretariat
P.O. Box 86
1000 Lausanne 12
Switzerland
Facsimile: 41 21 653 5432
Telephone: 41 21 654 4411

www: <http://www.fidic.org>

2 Particular Conditions of Contract

Sub-Clause 1.1 Definitions

(1.1.1.4) *The following is added at the end of the paragraph:*
The word “Tender” is synonymous with “Bid”, “Proposal” or “Offer” and the word “Tender Document” with “Bidding Document”.

(1.1.2.2) *The following is added at the end of the paragraph:*
The Employer is:

Name: Hooghly Cochin Shipyard Limited (HCSL) on
behalf of IWAI

Address: Hooghly Cochin Shipyard Limited
Satyen Bose Road P.O. Danesh Shaikh Lane,
Nazirgunge, Howrah,
West Bengal-711109, India

Phone: +91(33)29558283/+91(33)26888282.

Website: www.hooghlycsl.com

(1.1.2.4) *The following is added at the end of the paragraph:*

The Employer’s Representative is:

Name: Chief Executive Officer
Hooghly Cochin Shipyard Limited (HCSL)

Address: Satyen Bose Road P.O. Danesh Shaikh Lane,
Nazirgunge, Howrah, West Bengal
711109, India

Phone: +91(33)29558283/+91(33)26888282.

Email: sanil.peter@cochinshipyard.in

or any other competent person appointed by the Employer, and notified to the Contractor, to act in replacement of Employer’s Representative. Provided always that except in cases of professional misconduct, the outgoing Employer’s Representative is to formulate his certifications / recommendations in relation to all outstanding matters, disputes and claims relating to the execution of the Works during his tenure.

(1.1.3.3) *The following is added at the end of the paragraph:*

Time for Completion is specified under Sub-Clause 8.2.

(1.1.3.7) *Substitute last sentence of Sub-Clause 1.1.3.7 as follows:*

Defects Notification Period shall be 730 days (2 years).

(1.1.4.4) *The text is deleted and substituted with the following:*

“Foreign Currency” means Indian Rupees (INR) in which part (or all) of the Contract Price is payable.

(1.1.4.5) *The text is deleted and substituted with the following:*

“Local Currency” means Indian Rupees (INR) in which part (or all) of the Contract Price is payable.

(1.1.4.7) *The following is added at the end of the paragraph:*

Retention Money is specified under Sub-Clause 14.3 (c) and is also valid for Sub-Clause 14.4 if this Sub-Clause is applied.

(1.1.6.2) *The text is deleted and substituted with the following:*

“Country” means the Republic of India.

The following paragraphs are added:

(1.1.6.9) “Bidder or Tenderer” means any person or persons, company, corporation, or firm submitting a Tender.

(1.1.6.10) “Programme” means the programme to be submitted by the Contractor in accordance with Sub-Clause 8.3 and any approved revisions thereto.

Sub-Clause 1.2 Interpretation

Add the following sub-paragraph (e):

(e) In these Conditions, provisions including the expression “Cost plus reasonable profit” require this profit to be fifteen percent (15%) of this Cost which includes both overhead cost and profit.

Sub-Clause 1.3 Communications

Add the following sub-paragraph (c) and (d):

(c) Notices sent by post shall be either by registered post, with return receipt requested, or by special courier with acknowledgement of receipt. Hand delivered notices shall be confirmed by the addressee by dated signature. Notices sent by facsimile transmission or scanned letter shall be confirmed by dispatching the original copy by one of the aforementioned ways.

(d) Communications by email are only permitted if email addresses are nominated in the Contract Agreement. Communications sent by email transmission including scanned documents shall be confirmed by dispatching the original copy by one of the aforementioned ways.

Sub-Clause 1.4 Laws and Language

Add the following paragraphs at the end of Sub-Clause 1.4:

(a) The Contract, Communications and Contractor’s Documents shall be drawn up in the English language.

(b) The Contract shall be governed by the Laws of the Republic of India.

Sub-Clause 1.5 Priority of Documents

Substitute Sub-Clause 1.5 by the following:

The documents forming the Contract are to be taken as mutually explanatory of one another. For purposes of interpretation, the priority of the documents shall be in accordance with the following sequence:

- (1) the Contract Agreement,
- (2) the Particular Conditions of Contract,
- (3) the General Conditions of Contract,
- (4) the Employer's Requirements,
- (5) the Schedule of Prices,
- (6) the Drawings,
- (7) the Tender and any other documents forming part of the Contract.

In case of discrepancies between drawings, those of larger scale shall govern unless they are superseded by a drawing of later date regardless of scale. All Drawings and Employer's Requirements shall be interpreted in conformity with the Contract and these Conditions. Addendum, if any, shall be deemed to have been incorporated at the appropriate places in the documents forming the Contract.

Sub-Clause 1.10 Employer's Use of Contractor's Documents

Substitute Sub-Clause 1.10 by the following:

The Contractor shall be deemed (by signing the Contract) to give the Employer a non-terminable transferable non-exclusive royalty-free licence to copy, use and communicate the Contractor's Documents, including making and using modifications of them.

Sub-Clause 1.12 Confidential Details

Add the following paragraph at the end of Sub-Clause 1.12:

The Contractor shall treat the details of the Contract as private and confidential, except to the extent necessary to carry out obligations under it or to comply with applicable Laws. The Contractor shall not publish, permit to be published, or disclose any particulars of the Works in any trade or technical paper or elsewhere without the previous agreement of the Employer. On completion of the Contract or on instruction from Employer's Representative and / or Employer the Contractor shall hand over to the Employer all drawings, data, reports, maps and other similar documents prepared or received in connection with the Contract.

Sub-Clause 2.1 Right of Access to the Site

Substitute Sub-Clause 2.1 by the following:

The Employer shall give the Contractor right of access to, and possession of, all the Site parts of the Site 42 days prior to the completion date of the civil structure for the areas as mentioned in the Employer's Requirements and Drawings under Section 430 "Key Milestone Dates". The right and possession may not be exclusive to the Contractor. If, under the Contract, the Employer is required to give (to the Contractor) possession of any foundation, structure, plant or

means of access, the Employer shall do so in the time and manner stated in the Employer's Requirements. However, the Employer may withhold any such right or possession until the Performance Security has been received.

If the Employer fails to give any such right or possession within such time, the Contractor shall give notice to the Employer. For the event of a delay in right or possession of, all the Site parts of the Site the provisions as stated in the Employer's Requirements under Section 420 "Contract Hold Point" shall apply.

After receiving this notice, the Employer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

However, if and to the extent that the Employer's failure was caused by any error or delay by the Contractor, including an error in, or delay in the submission of, any of the Contractor's Documents, the Contractor shall not be entitled to such extension of time, Cost or profit.

Sub-Clause 2.4 Employer's Financial Arrangements

Sub-Clause 4.20 is not applicable and is deleted in its entirety.

Sub-Clause 3.1 The Employer's Representative

Add the following paragraphs at the end of Sub-Clause 3.1:

The Employer's Representative shall obtain the specific approval of the Employer before taking action under the following sub-clauses of these Conditions:

- (a) Sub-Clause 4.4 consenting to the subletting of any part of the Works;
- (b) Sub-Clause 8.4 determining an Extension of Time for Completion;
- (c) Sub-Clause 8.8 Suspension of Works;
- (d) Sub-Clause 11.9 issuing of Performance Certificate;
- (f) Sub-Clause 13.1 issuing a Variation, except in an emergency situation, as reasonably determined by the Employer's Representative;
- (g) Sub-Clause 13.3 determining adjustments to the Contract Price;
- (h) Sub-Clause 14.11 issuing of Final Payment Certificate; and
- (i) alteration of the mandatory requirements and design criteria stipulated in the Employer's Requirements.

Sub-Clause 4.1 Contractor's General Obligations

Add the following paragraph at the end of Sub-Clause 4.1:

The Contractor shall be responsible for the clearance from customs, transportation and security to the Site of any & all Materials and Plant for the Permanent Works, as well as of Contractor's Equipment and Temporary Works required at Site. All deliveries have to be according DDP Incoterms 2010 (Carriage & Insurance Paid until delivery on Site) regulations.

Sub-Clause 4.2 Performance Security

Substitute second sentence of the second paragraph of Sub-Clause 4.2 as follows:

Such Performance Security shall be in the form of either (a) bank guarantee from any Scheduled Bank in India. The cost of complying with requirements of this Sub-Clause shall be borne by the Contractor.

Add the following paragraph at the end of Sub-Clause 4.2:

Performance Security shall be of an amount equal to 10% of the Contract Price stated in the Contract Agreement.

The Performance Security shall be binding irrespective of changes in the quantities or variations in the Works or extensions of Time for Completion of the Works which are granted or agreed upon under the provisions of the Contract.

Sub-Clause 4.3 Contractor's Representative

Add the following paragraph at the end of Sub-Clause 4.3:

The Contractor's authorized representative at Site shall be authorized to exercise adequate administrative and financial powers on behalf of the Contractor so as to achieve completion of the Works as per the Contract.

Sub-Clause 4.4 Subcontractors

Substitute first sentence of the first paragraph of Sub-Clause 4.4 as follows:

The Contractor shall not subcontract any other part of the Works, except the parts of the Works as nominated in the Tender including the accepted Subcontractors.

Substitute sub-paragraph (c) by the following:

- (c) the intended replacement of a Subcontractor, with detailed particulars which shall include his relevant experience,

Sub-Clause 4.19 Electricity, Water and Gas

Substitute last paragraph of Sub-Clause 4.19 as follows:

Electricity and fresh water will not be arranged and provided free of charge by the Client. Distribution to the Site also shall be carried out by the Contractor at his costs for the sole use of works related to the erection and commissioning of 800T Boat Lift/Hoist until the Performance Certificate is issued. All other services if required shall also remain in the responsibility of the Contractor.

Sub-Clause 4.20 Employer's Equipment and Free-Issue Material

Sub-Clause 4.20 is not applicable and is deleted in its entirety.

Sub-Clause 4.21 Progress Reports

Add the following paragraph at the end of Sub-Clause 4.21:

Additional to the monthly progress reports, as mentioned above, the Contractor shall keep a daily record of the work progress, which shall

be made available to the Employer / Employer's Representative. Daily record shall be prepared at the time Works on Site commence. The daily record shall be in a form approved by the Employer / Employer's Representative and have to be provided within 24 hours to the nominated email addresses. The original daily records have to be delivered within 48 hours.

The daily record shall include particulars of weather conditions, number of men working in different categories, deliveries of materials, quantity, location and assignment of equipment.

Sub-Clause 4.24 Fossils

Sub-paragraph (b) of Sub-Clause 4.24 is deleted in its entirety.

Sub-Clause 6.1 Engagement of Staff and Labour

Add the following paragraph at the end of Sub-Clause 6.1:

The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labour from sources within India.

Sub-Clause 6.5 Working Hours

Add the following paragraph at the end of Sub-Clause 6.5:

The normal working hours on the Site shall be in accordance with the applicable labour laws of India. Normal working hours are assumed to be 8 hours/day from Monday to Saturday.

Sub-Clause 6.7 Health and Safety

Delete in the first line of first paragraph the word "reasonable".

Add the following wording at the end of first paragraph:

“, including provision of suitable prophylactics for the Contractor's Personnel, use of appropriate insecticides and regular distribution of HIV-preservatives, all in compliance with the regulations of the local health authorities.”

Add the following paragraphs at the end of Sub-Clause 6.7:

In order to provide for the safety, health and welfare of persons, and for prevention of damage of any kind, all operations for the purposes of or in connection with the Contract shall be carried out in compliance with the Safety Requirements of the Government of India with such modifications thereto as the Employer's Representative may authorise or direct.

The Contractor shall take or cause to be taken such further measures and comply with such further requirements as the Employer's Representative may determine to be reasonably necessary for such purpose. The Contractor shall maintain such records and make such reports concerning safety, health and welfare of persons and damage to property as the Employer may from time to time prescribe. The Contractor shall, so far as is reasonably practicable, having regard to local conditions, provide on the Site, to the satisfaction of the Employer's Representative, adequate supply of drinking and other water for the use of his staff and labour.

In the event of any outbreak of illness of an epidemic/pandemic nature, the Contractor shall comply with and carry out such regulations, orders and requirements as may be made by the Government, or the local medical or sanitary authorities, for purpose of dealing with and overcoming the same.

The Contractor has to respect the HSE Guidelines of the Employer which are attached hereto in Annex D.

Sub-Clause 6.9 Contractor's Personnel

Add the following paragraphs at the end of Sub-Clause 6.9:

The Contractor shall comply with and pay all costs including national insurance contributions for all his employees, whether local or foreign, involved in or concerned with the execution of the Works, and all other costs relating to the employment of labour, health, working hours and conditions and rates of pay, whether referred to in the Contract or not.

The Contractor shall pay rates of wages and observe conditions of labour not less favourable than those established for the trade or industry where the work is carried out. In the absence of any rates of wages or conditions of labour so established, the Contractor shall pay rates of wages and observe conditions of labour which are not less favourable than the general level of wages and conditions observed by other employers whose general circumstances in the trade or in industry in which the Contractor is engaged are similar.

Save insofar as the Contract otherwise provides, the Contractor shall provide and maintain such housing accommodation and amenities as he may consider necessary for all his supervisory staff and labour, employed for the purposes of or in connection with the Contract including all fencing, electricity supply, sanitation, cookhouses, fire prevention, water supply and other requirements in connection with such housing accommodation or amenities. On completion of the Contract, these facilities shall be handed over to the Employer or if the Employer so desires, the temporary camps or housing provided by the Contractor shall be removed and the Site reinstated to its original condition, all to the approval of Employers Representative.

The following Sub-Clauses are added:

Sub-Clause 6.12 Alcoholic Liquor or Drugs

The Contractor shall not, otherwise than in accordance with the Statutes, Ordinances and Government Regulations or Orders for the time being in force, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or suffer any such importation, sale, gift, barter or disposal by his Subcontractors, agents, staff or labour.

Sub-Clause 6.13 Arms and Ammunition

The Contractor shall not give, or otherwise dispose of to any person or persons, any arms or ammunition of any kind or permit or suffer the same as aforesaid.

Sub-Clause 6.14 Festivals and Religious Customs

The Contractor shall in all dealings with his staff and labour have due regard to all recognized festivals, days of rest and religious and other customs.

Sub-Clause 7.1 Manner of Execution

Add the following sub-paragraph (d):

- (d) The Contractor shall, so far as may be consistent with the Contract, make the maximum use of materials, supplies, plant and equipment indigenous to or produced or fabricated in India and services, available in India provided such materials, supplies, plant, equipment and services shall be of required standard.

Sub-Clause 7.4 Testing

Add the following paragraphs at the end of Sub-Clause 7.4:

Witnessing of Factory Acceptance Tests (as applicable):

Factory acceptance tests shall be witnessed by the two personnel of the Employer / Employer's Representative. All costs in connection with witnessing of the factory acceptance tests by the Employer / Employer's Representative shall be borne by the Contractor. These shall include the costs of air travel (economy class) from India to place of inspection/testing and back, hotel accommodation/boarding/lodging (as per actual), inland transportation and daily allowance @ US Dollars 200 per day per person for inspection/testing to be conducted outside India and 3,500 INR per day per person [besides other costs of travelling (economy class air travel , local taxi etc) and lodging etc. (as above)] for inspection/testing to be conducted inside India for each visit of every person to witness these tests.

Sub-Clause 8.2 Time for Completion

Add the following paragraphs at the end of Sub-Clause 8.2:

Time for Completion for Sections according Sub-Clause 1.1.5.6 are:

Phase 1

Preliminary Design	15 days
Detailed Design	15 days
Review period by the Employer	15 days
Final Detailed Design	15 days
Certification (design appraisal) by Third party certification agency like Lloyds Register, DNV, BV, IRS, TUV etc	15 days

Phase 2

Manufacturing Phase	4 months or 120 days
Delivery, Installation & Commission of Boat Lift	3 months or 90 days

Sub-Clause 8.3 Programme

Add the following paragraphs at the end of Sub-Clause 8.3:

The programme shall be submitted in the form of a Gantt Chart, with dates and milestones commencing at day 0 for the Commencement Date. A copy (in digital format and as hard copy) of the programme in the latest edition of Microsoft Project format shall be provided to the Employer's Representative.

Histograms of the planned number of staff at the Site on a monthly basis shall also be provided, and shall show administrative, civil works (if any), mechanical, electrical and supervisory personnel separately.

Sub-Clause 8.4 Extension of Time for Completion

Add the following sentence at the end of sub-paragraph (c) of Sub-Clause 8.4:

In order for an extension of Time for Completion to be considered the Contractor shall demonstrate that he has taken all reasonable steps to liaise with the Employer, Employer's Personnel and the Employer's other contractors in order to avoid or reduce delays caused by them.

Sub-Clause 8.7 Delay Damages

Add the following paragraphs at the end of Sub-Clause 8.7:

In Sub-Clause 8.7, the sum referred to in the second sentence shall be 0.05% of the Contract Price as delay damages in respect of the Works, payable (per day) in the proportions of currencies in which the Contract Price is payable. The maximum amount of delay damages shall be ten percent (10%) of the Contract Price stated in the Contract Agreement.

Sub-Clause 10.3 Interference with Tests on Completion

Sub-paragraph (b) of Sub-Clause 4.24 is deleted in its entirety.

Sub-Clause 11.10 Unfulfilled Obligations

Add the following paragraph at the end of Sub-Clause 11.10:

The liability of the Contractor for latent defects in his Works shall be in accordance with the governing Laws as stated in Sub-Clause 1.4. However notwithstanding the provisions of this Laws, the period of liability for such latent defects shall not be less than 10 (ten) years from the date of the Performance Certificate.

Sub-Clause 13.8 Adjustments for Changes in Cost

Substitute Sub-Clause 13.8 by the following:

The Contract Price shall not be subject to any adjustment in respect of rise or fall in the cost of labour, Materials, Plant or any other matters affecting the cost of execution of the Contract, except as stipulated in Sub-Clause 13.7.

Sub-Clause 14.1 Contract Price

Add the following sub-paragraph (c), (d) and (e):

- (c) The Contractor, Subcontractors and their employees shall be responsible for payment of all their income tax, super tax and

other taxes on income arising out of the Contract and the rates and prices stated in the Contract shall be deemed to cover all such taxes.

- (d) The Contract Price shall be inclusive of customs duty (if any).
- (e) GST at prevailing rate shall be paid extra over the agreed contract price.

Sub-Clause 14.2 Advance Payment

Add the following paragraph at the end of Sub-Clause 14.2:

In Sub-Clause 14.2, the sum referred to under item:

- (a) the amount of the advance payment shall be 10% of the Contract Price stated in the Contract Agreement
- (b) the advance payment shall be paid (upon submission of equivalent BG) in the currencies and proportions of those in which the Contract Price is payable,
- (c) deductions for repayment of the Advance Payment have to be made in each Application for Interim Payments or instalment quoted in the Payment Schedule. The Advance Payment has to be re-paid with the last Application for Interim Payments or instalment quoted in the Payment Schedule prior to the scheduled Taking Over according to Sub-Clause 10.1.

The advance payment guarantee shall be in the form of either (a) bank guarantee from any Scheduled Bank in India. The advance payment guarantee shall be valid till the end of contract period. The cost of complying with requirements of this Sub-Clause shall be borne by the Contractor.

Sub-Clause 14.3 Application of Interim Payments

Substitute sub-paragraph (c) of Sub-Clause 14.3 as follows:

- (c) any amount to deducted for retention, calculated by applying 10 % for each payment due to the Contractor, until the amount so retained by the Employer reaches the limited of Retention Money of 10% of the Contract Price stated in the Contract Agreement.

Sub-Clause 14.5 Plant and Materials intended for the Works

Sub-Clause 14.5 is not applicable and is deleted in its entirety.

Sub-Clause 14.6 Interim Payments

Substitute in the second line, “28” by “14”.

Add the following sub-paragraph (c):

- (c) if the Contractor fails to provide drawings, diagrams, operating and maintenance instructions or other documentation forming part of the Works, at the times specified in the Contract, payments which become due to the Contractor in accordance with the Contract may be delayed by a period of time equal to the delay in providing the documentation.

Sub-Clause 14.8 Delayed Payment

Add the following paragraph at the end of Sub-Clause 14.8:

The annual rate for the calculation of the financing charges shall be four percent (4%).

Sub-Clause 14.15 Currencies of Payment

Add the following paragraph at the end of Sub-Clause 14.15:

Payments to a Contractor shall be in Indian Rupee, only.

Sub-Clause 16.1 Contractor’s Entitlement to Suspend the Work

Sub-paragraph (c) of Sub-Clause 16.1 is deleted in its entirety.

Sub-Clause 16.2 Termination by Contractor

Sub-paragraph (a) of Sub-Clause 16.2 is deleted in its entirety.

Sub-Clause 16.4 Payment on Termination

Sub-paragraph (c) of Sub-Clause 16.4 is deleted in its entirety.

Sub-Clause 17.3 Employer’s Risks

Substitute Sub-Clause 17.3 by the following:

The Employers Risks are:

- (a) insofar as they directly affect the execution of the Works in India:
 - (i) war and hostilities (whether war be declared or not), invasion, act of foreign enemies,
 - (ii) rebellion, revolution, insurrection, or military or usurped power, or civil war, pandemic, epidemic
 - (iii) ionizing radiations, or contamination by radioactivity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radioactive toxic explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof,
 - (iv) pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds,
 - (v) riot, commotion or disorder, unless solely restricted to the employees of the Contractor or of his Subcontractors and arising from the conduct of the Works;

- (b) loss or damage due to the use or occupation by the Employer of any Section or part of the Permanent Works, except as may be provided for in the Contract;
- (c) loss or damage to the extent that it is due to the engineering / design of the Works, other than any part of the engineering / design provided by the Contractor or for which the Contractor is responsible; and
- (d) any operation of the forces of nature (insofar as it occurs on the Site) which an experienced contractor:
 - (i) could not have reasonably foreseen, or
 - (ii) could reasonably have foreseen, but against which he could not reasonably have taken at least one of the following measures:
 - (a) prevent loss or damage to physical property from occurring by taking appropriate measures, or
 - (b) insure against.

Sub-Clause 17.4 Consequences of Employer's Risks

Sub-paragraph (b) of Sub-Clause 17.4 is deleted in its entirety.

Sub-Clause 17.6 Limitation of Liability

Add the following paragraph at the end of Sub-Clause 17.6:

The total liability shall not exceed the Contract Price stated in the Contract Agreement.

Sub-Clause 18.1 General Requirements for Insurances

Add the following paragraph at the end of Sub-Clause 18.1:

The respective periods are for the items (a) and (b) stated above are:

- (a) 30 days for the evidence of the insurance, and
- (b) 90 days for the copies of the policies for the insurance.

Sub-Clause 18.2 Insurance for Work and Contractor's Equipment

Add the following paragraph at the end of Sub-Clause 18.2:

The amount for the items (d) stated above is:

- (d) The amount of this insurance shall not be less than the Accepted Contract Amount plus a further amount of ten (10) percent of this value.

Add the following paragraph at the end of Sub-Clause 18.2:

The Contractor shall be obliged to place all insurances relating to the Contract (including, but not limited to, the insurances referred to in Clauses 18.2, 18.3 and 18.4) with either National Insurance Company of India or any other insurance company operating in India and acceptable to the Employer. Costs of such insurances shall be borne by the Contractor.

Sub-Clause 18.3 Insurance against Injury to Person and Damage to Property

Add the following paragraph at the end of Sub-Clause 18.3:

The amount of this insurance shall not be less than ten (10) percent of the Accepted Contract Amount.

Sub-Clause 20.2 Appointment of the Dispute Adjudication Board

Substitute Sub-Clause 20.2 by the following:

Sub-Clause 20.2 Employer's Representative Decision

If a dispute of any kind whatsoever arises between the Employer and Contractor in connection with, or arising out of the Contract or the execution of the Works, whether during the execution of the Works or after their completion and whether before or after repudiation or termination of the Contract, including any dispute as to any opinion, instruction, determination, certificate or evaluation of the Employer's Representative, the matter in dispute shall, in the first instance, be referred in writing to the Employer's Representative. Such reference shall state that it is being made in accordance with this Clause. Within thirty (30) days of having received such notification the Employer's Representative shall give notice of his decision to the Employer and Contractor. Such decision shall state that it is being made in accordance with this Clause.

Unless the Contract has already been repudiated or terminated, the Contractor shall in every case, continue to proceed with the Works with all due diligence and care, and both Employer and Contractor shall give effect to every decision of the Employer's Representative unless and until the same shall be revised as hereinafter provided, in an amicable settlement or arbitrator's award.

If either the Employer or the Contractor is dissatisfied with any decision of the Employer's Representative, or if the Employer's Representative fails to give notice of his decision on or before the thirtieth (30th) day after having received notification by either party, then either the Employer or Contractor, on or before the thirtieth (30th) day after the expiry of the thirtieth (30th) day give notice to the other party, with a copy for the information of the Employer's Representative, of his intention to commence the arbitration, as hereinafter provided, as a

matter in dispute. Such notice shall establish the entitlement of the party giving the same to commence arbitration, as to such dispute and subject to provisions of this Clause, no arbitration in respect thereof shall be commenced unless such notice is given.

If the Employer's Representative has given notice of his decision as to a matter in dispute to the Employer and the Contractor and no notice of intention to commence arbitration as to such dispute has been given by either the Employer or the Contractor on or before the thirtieth (30th) day after the day on which the Employer's Representative decision was made, the said decision shall become final and binding upon the Employer and Contractor.

Sub-Clause 20.3 Failure to Agree Dispute Adjudication Board

Sub-Clause 20.3 is not applicable and is deleted in its entirety.

Sub-Clause 20.4 Obtaining Dispute Adjudication Board's Decision

Sub-Clause 20.4 is not applicable and is deleted in its entirety.

Sub-Clause 20.5 Amicable Settlement

Substitute Sub-Clause 20.5 by the following:

Where notice of dissatisfaction has been given under Sub-Clause 20.2 above, both Parties shall attempt to settle the dispute amicably before the commencement of arbitration. However, unless both Parties agree otherwise, arbitration may be commenced on or after the Ninety day after the day on which notice of dissatisfaction was given, even if no attempt at amicable settlement has been made.

Any approach for an amicable settlement shall be addressed to Hooghly Cochin Shipyard's Grievance Committee. All representations to this Committee shall be addressed to the nodal officer, Company Secretary, Hooghly Cochin Shipyard Limited, Kochi. The nodal officer would forward the submission to the Grievance Committee. The Committee would subsequently call the aggrieved parties, hold a hearing and settle the disputes amicably.

Sub-Clause 20.6 Arbitration

Add the following paragraph at the end of Sub-Clause 20.6:

Arbitration shall be governed under the (Indian) Arbitration and conciliation Act, 1996 and the rules made thereunder as amended from time to time.

Place of Arbitration shall be Kolkata , West Bengal , India.

The fees of Arbitrator/s shall be borne equally by the parties. However, the Arbitrator/s shall have the power to award costs (including the payment of Arbitration fees) to the party in whose favour the final decision is awarded.

Jurisdiction: Any further legal formalities will be at the court of Kolkata, West Bengal , India

Sub-Clause 20.7 Failure to Comply with Dispute Adjudication Board's Decision

Substitute Sub-Clause 20.7 by the following:

Sub-Clause 20.7 Failure to Comply with Employer's Representative Decision

In the event that:

- (a) neither Party has given notice of dissatisfaction within the period stated in Sub-Clause 20.2 [Employer's Representative Decision],
- (b) the Employer's Representative's related decision (if any) has become final and binding, and
- (c) a Party fails to comply with this decision,

then the other Party may, without prejudice to any other rights it may have, refer the failure itself to arbitration under Sub-Clause 20.6 [Arbitration]. Sub-Clause 20.2 [Employer's Representative Decision] and Sub-Clause 20.5 [Amicable Settlement] shall not apply to this reference.

Annex A EXAMPLE FORM OF PERFORMANCE SECURITY DEMAND GUARANTEE

To: [Hooghly Cochin Shipyard Limited]

Brief description of Contract:

Turnkey Supply, Installation, Commissioning of 800T Boat Hoist/Lift at Pandu, Guwahati, Assam, India

Name and address of Beneficiary

HOOGHLY COCHIN SHIPYARD LIMITED

Satyen Bose Road P.O. Danesh Shaikh Lane,

Nazirgunge, Howrah, West Bengal

711109, India

(whom the tender documents define as the Employer).

We have been informed that (hereinafter called the "Principal") is your contractor under such Contract, which requires him to obtain a performance security.

At the request of the Principal, we (*name of bank*) hereby irrevocably undertake to pay you, the Beneficiary/ Employer, any sum or sums not exceeding in total the amount of (the "guaranteed amount", say:.....) immediately upon receipt by us of your demand in writing and your written statement stating:

- (a) that the Principal is in breach of his obligations under the Contract, and
- (b) the respect in which the Principal is in breach.

Any demand for payment must contain your authorized signature(s) which must be authenticated by your bankers or by a notary public. The authenticated demand and statement must be received by us at this office on or before (*the date 70 days after the expected expiry of the Defects Notification Period for the Works*) (the "expiry date"), when this guarantee shall expire and shall be returned to us. Any demand for payment received before such date shall remain valid notwithstanding the expiry date of this guarantee.

We have been informed that the Beneficiary may require the Principal to extend this guarantee if the Performance Certificate under the Contract has not been issued by the date 28 days prior to such expiry date. We undertake to pay you such guaranteed amount immediately upon receipt by us, within the period of 28 days prior to the expiry date, of your demand in writing and your written statement that the Performance Certificate has not been issued, for reasons attributable to the Principal, and that this guarantee has not been extended.

This guarantee shall be governed by the laws of India and shall be subject to the Uniform Rules for Demand Guarantees, published as number 458 by the International Chamber of Commerce, except as stated above.

Date

Signature(s).....

Annex B EXAMPLE FORM OF ADVANCE PAYMENT GUARANTEE

To: [Hooghly Cochin Shipyard Limited]

Brief description of Contract:

Turnkey Supply, Installation, Commissioning of 800T Boat Hoist/Lift at Pandu, Guwahati, Assam, India

Name and address of Beneficiary

HOGHLY COCHIN SHIPYARD LIMITED

Satyen Bose Road P.O. Danesh Shaikh Lane,

Nazirgunge, Howrah, West Bengal

711109, India

(whom the Contract defines as the Employer).

We have been informed that (hereinafter called the "Principal") is your contractor under such Contract and wishes to receive an advance payment, for which the Contract requires him to obtain a guarantee.

At the request of the Principal, we (*name of bank*) hereby irrevocably undertake to pay you, the Beneficiary/Employer, any sum or sums not exceeding in total the amount of (the "guaranteed amount", say:) immediately upon receipt by us of your demand in writing and your written statement stating:

- (a) that the Principal has failed to repay the advance payment in accordance with the conditions of the Contract, and
- (b) the amount which the Principal has failed to repay.

Such guaranteed amount shall be reduced by the amounts of the advance payment repaid to you, as evidenced by your notices issued under Sub-Clause 14.6 of the Conditions of the Contract. Following receipt (from the Principal) of a copy of each purported notice, we shall promptly notify you of the revised guaranteed amount accordingly.

Any demand for payment must contain your authorized signature(s) which must be authenticated by your bankers or by a notary public. The authenticated demand and statement must be received by us at this office on or before (*the date 70 days after the expected expiry for Completion*) (the "expiry date"), when this guarantee shall expire and shall be returned to us. Any demand for payment received before such date shall remain valid notwithstanding the expiry date of this guarantee.

We have been informed that the Beneficiary may require the Principal to extend this guarantee if the advance payment has not been repaid by the date 28 days prior to such expiry date. We undertake to pay you such guaranteed amount upon receipt by us, within such period of 28 days, of your demand in writing and your written statement that the advance payment has not been repaid and that this guarantee has not been extended.

This guarantee shall be governed by the laws of India and shall be subject to the Uniform Rules for Demand Guarantees, published as number 458 by the International Chamber of Commerce, except as stated above.

Date

Signature(s).....

Annex C EXAMPLE FORM OF RETENTION MONEY GUARANTEE

To: [Hooghly Cochin Shipyard Limited]

Brief description of Contract:

Turnkey Supply, Installation, Commissioning of 800T Boat Hoist/Lift at Pandu, Guwahati, Assam, India

Name and address of Beneficiary

HOOGHLY COCHIN SHIPYARD LIMITED

Satyen Bose Road P.O. Danesh Shaikh Lane,

Nazirgunge, Howrah, West Bengal

711109, India

(whom the Contract defines as the Employer).

We have been informed that (hereinafter called the "Principal") is your contractor under such Contract and wishes to receive early payment of [part of] the retention money, for which the Contract requires him to obtain a guarantee.

At the request of the Principal, we (*name of bank*) hereby irrevocably undertake to pay you, the Beneficiary/Employer, any sum or sums not exceeding in total the amount of (the "guaranteed amount", say:) immediately upon receipt by us of your demand in writing and your written statement stating:

- (a) that the Principal has failed to carry out his obligation(s) to rectify certain defect(s) for which he is responsible under the Contract, and
- (b) the nature of such defect(s)

At any time, our liability under this guarantee shall not exceed the total amount of retention money released to the Principal by you, as evidenced by your notices issued under sub-clause 14.6 of the conditions of the Contract with a copy being passed to us.

Any demand for payment must contain your authorized signature(s) which must be authenticated by your bankers or by a notary public. The authenticated demand and statement must be received by us at this office on or before (*the date 70 days after the expected expiry of the Defects Notification Period for the Works*), (the "expiry date"), when this guarantee shall expire and shall be returned to us. Any demand for payment received before such date shall remain valid notwithstanding the expiry date of this guarantee.

We have been informed that the Beneficiary may require the Principal to extend this guarantee if the Performance Certificate under the Contract has not been issued by the date 28 days prior to such expiry date. We undertake to pay you such guaranteed amount immediately upon receipt by us, within the period of 28 days prior to the expiry date, of your demand in writing and your written statement that the Performance Certificate has not been issued, for reasons attributable to the Principal, and that this guarantee has not been extended.

This guarantee shall be governed by the laws of India and shall be subject to the Uniform Rules for Demand Guarantees, published as number 458 by the International Chamber of Commerce, except as stated above.

Date

Signature(s).....

Annex D HOGHLY COCHIN SHIPYARD LIMITED – HSE GUIDELINES

- 1) No person above 60 years shall be permitted entry into the yard for any work except otherwise specially permitted by the occupier of HCSL.
- 2) Smoking is strictly prohibited.
- 3) Unauthorized use of cameras and mobile phones in HCSL Pandu work site is forbidden.
- 4) Parking of vehicle is only in approved parking locations. Priority is for Material Movement and private vehicles shall make way for material movement.
- 5) The use or possession or influence of non-prescription drugs, alcohol and the abuse of substances is strictly prohibited in HCSL.
- 6) Speed Limit of vehicle in the yard is 20 km/hr.
- 7) Ensure walking on the roads to be near to the line marked on the road.
- 8) Fishing is not permitted in the yard.
- 9) Everyone should observe and obey regulatory signs.
- 10) Use of mobile phones is strictly prohibited while at work and driving including while cycling.
- 11) Usage of Safety Helmet with chin strap, safety shoe and cotton working dress are compulsory at HCSL work site. Suitable PPEs (Personal Protective Equipments) are to be used.
- 12) Risk assessment of non-routine works to be done and control measures identified before commencement of work. This shall be approved by HCSL officer In-charge and confirm by HCSL Safety & Fire Dept. These control measures are to be communicated to the workers.
- 13) Workers and supervisors engaged in the works shall be competent.
- 14) Briefing of HSE points related to the day activities is to be carried out by the supervisor in-charge.
- 15) People to be engaged in activities preferable in group only. In case a person has to work alone, the same shall be known to at least two persons who are working nearby.
- 16) Using Paint tin, CO2 welding cable bobbin and oil drums as working platform is strictly prohibited.
- 17) Don't store thinners in beverage bottles.
- 18) Adequate precautions should be taken during welding or gas cutting against situations such as electric shocks, burns, fumes, explosion and arc eyes.
- 19) When welding or gas cutting in elevated positions, precautions should be taken to prevent sparks of hot metal slag falling out to the people or to the flammable material below / nearby and suitable barricade to be done at the ground.
- 20) Never use Oxygen for ventilation purpose.

- 21) It is to be ensured that fuel gas (Oxygen, Acetylene, LPG), CO₂, Compressed air, Mixed gas, Nitrogen, argon etc. manifold coke valves must be closed before leaving the work space. It is ensured that main valve to manifold must be closed during break time.
- 22) Fuel gas (Oxygen, Acetylene) lines to be taken out from the confine space when you are leaving for break.
- 23) Ensure that no hot work should be carried out in the presence of hydrocarbon fumes.
- 24) Arc welding equipments should be properly earthed.
- 25) Ensure that ELCB is fitted on all Welding Machines or the same to be tapped from switchboards with ELCB protection.
- 26) Ensure cables used for all electrical equipments/tools with sufficient current carrying capacity.
- 27) Electrical hand tools used in HCSL is of double insulated type.
- 28) Voltage Reducing Devices (VRD) (Safety relay) must be fitted on AC welding Machines.
- 29) Never Bypass Safety Relay on AC welding machines.
- 30) Electrical extension switch boards are in metallic construction with ELCB & MCB. Only industrial type plug and socket to be used.
- 31) Only authorized persons are allowed to operate any machine/equipment/ Switch boards. Unauthorized operation of any switch gear is strictly prohibited.
- 32) Never tamper with machine guards.
- 33) Ensured that all portable equipments, welding transformers/rectifiers must be switched off after use.
- 34) Good quality welding cables, cutting hoses and hand tools must be used in the yard.
- 35) For getting temporary electrical connections (welding sets, power plug boards), a Load Centre (LC) number shall be obtained through licensed electrical contractor and submitted to HCSL Chief Project Engineer (CPE).
- 36) Works to be performed only on certified scaffolding (Hand rails, planks without gap, access to working platform). All working platform having 2m and above shall be certified by HCSL safety personal.
- 37) Always wear full body harness while working at height (eg. While working on scaffolding). The anchor points of harness should be strong enough.
- 38) While it is liable to fall into water bodies, floating vest are to be worn.
- 39) Height of handrail should be of 90 cm with intermediate railing of 45 cm, wherever protective hand rails are provided for fall protection.
- 40) Excavated materials should be put away from the edge of the excavated trench to avoid slopping of the excavated materials into the trench.

- 41) Open manholes and places where it is liable to fall, those areas must be protected by strong barricade with intermediate railings. Manhole covers should be replaced promptly when work is suspended.
- 42) All lifting tools and & tackles, pressure vessels including blasting hoppers to be tested every year by competent person and obtained valid test certificate. Ensured that items that are defect free and in good condition are used.
- 43) Any situation affecting the safety of an employee or his fellow employees shall be immediately brought to the notice of site supervisor or reported to HCSL.
- 44) Only authorized employees should be allowed to operate the mobile cranes and other hoisting equipment & Rigging/Signaling.
- 45) Standing under suspended loads is dangerous and is avoided.
- 46) Compressed air should not be used to clean the clothing. When not using the compressed air, the valve must be shut off.
- 47) Any kind of Gas cylinders (empty/full) should be secured in upright position and away from direct sunlight.
- 48) Air hoses, welding cables, fuel hoses, electric cables should not be allowed to lie across walkways etc. and they should be suspended from overhead.
- 49) Inflammable liquids must be handled in safe cans or containers approved by HCSL and shall be stored in space having good ventilation and acceptable to HCSL. All such containers must be clearly labeled and warnings exhibited visibly.
- 50) Rescue operations done only by authorized person. If there is life threat observed, anybody can clear the threat and wait for authorized rescue persons for further actions.
- 51) Everybody should be responsible for housekeeping at their work site.
- 52) Avoid activity/action that leads to air/water/soil pollution.
- 53) The Contractor before starting any work in the HCSL premises will be issued with these HCSL HSE guidelines and firm is expected to give a declaration that he receives one copy of the HCSL HSE guidelines and will comply with laid therein.
- 54) A responsible safety In-charge is to be designated by the firm for the activities. The details of the safety In-charge shall be communicated to HCSL Safety & Fire dept. He shall take a lead to ensure safe work environment for their work sites.
- 55) HCSL reserves its right to suspend work in the event of the contractor not complying with the HSE guide lines with regarding to HSE practices for which no claim of any kind will be entertained.
- 56) To ensure the safe conduct of safety operation, a representative of the contractor should maintain appropriate contact with the HCSL officer-in-charge of the work as may be necessary to acquaint himself with any changed conditions of other matters relating to the HSE performance.

HOOGHLY COCHIN SHIPYARD LIMITED



Development of Ship Repair Facility at Pandu, Guwahati, Assam

Engineering, Supply, Installation and Commissioning of
800T Boat Hoist/Boat Lift

*Hooghly Cochin Shipyard Ltd
(HCSL), Satyen Bose Road
P.O-Danesh Shaikh Lane,
Nazirgunge, Howrah,
West Bengal-711109, India*

Volume III Employer's Requirements

Request for Proposal of

Engineering, Supply, Installation and Commissioning of a
800T Boat Hoist/ Lift
For the Development of a Ship Repair Facility (SRF) at Pandu, Guwahati, Assam, India

VOLUME III

Employer's Requirements

Tender No: HCSL/PUR/TEN/2025/020



Hooghly Cochin Shipyard Limited

Satyen Bose Road P.O. Danesh Shaikh Lane,

Nazirgunge, Howrah, West Bengal

711109, India

Phone: +91(33)-29558283/+91(33)26888282

Web: www.hooghlycsl.com

10th March 2025

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Instructions to Tenderers (ITT) with Appendices to ITT

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000 General Information

001 Brief Project Description

Pandu Multimodal IWT Terminal is a riverine Terminal in the Indian state of Assam, serving North Eastern states in general and Assam and Guwahati in particular. This Terminal has been developed on the bank of the Brahmaputra River. This terminal is strategically important and one of the largest river Terminal in the North Eastern state of the country wherein, in order to accommodate ship anchorage, a marine terminal/permanent jetty has been created. In addition, many passenger ships are anchored with the tourists at this Terminal. The Terminal is also included in the ‘Port of call’ agreement between India and Bangladesh, known as Indo-Bangla Protocol Route. Presently, no major ship repair facility is available in the Brahmaputra. Due to lack of IWT ship repair facility in the entire North Eastern region especially for under water repair of the vessels the IWT operators are put in to substantial financial and economic losses since the vessels need to sail to Kolkata (through Bangladesh territorial waters), which takes a voyage time of 30 days to 40 days.

The proposal ship repair facility is on the eastern side of existing jetty at Pandu multimodal IWT terminal at a distance about 350m. It is proposed to construct a Boat lift/hoist facility with open piled structure parallel to river flow.

IWAI and HCSL (Hooghly Cochin Shipyard Limited) have entered into an agreement on 26 August 2021 for the development of the Ship Repair Facility at Pandu Guwahati, with NTCPWC, IITM as the Project Management Consultant.

As per this agreement HCSL shall be single point nodal agency for the execution of the project on deposit basis and HCSL shall appoint National Technology Centre for Ports, Waterways and Coasts (NTCPWC) – a centre of Excellency set up by Ministry of Ports, Shipping and Waterways (MoPS&W) for the Design consultancy and Project Management services (PMC) for the project, considering the expertise and the acquaintance of the ground realities at Pandu, for overall management of the project.

Foundation stone for the project “Development of Ship Repair Facility at Pandu, Guwahati, Assam” laid by the Hon’ble Prime Minister of India on 13 January 2023.

This project is considered by the Govt of India as a very important infrastructure development initiative for the North East as it will be first of its kind in North Eastern region of India.

The SRF (Ship Repair Facility) project includes a 800 Ton Boat lift for lifting and launching ships for repair work.

002 Project Location

The proposed project of development of ship repair facilities is located at Pandu, Assam. Pandu Multimodal IWT Terminal is a riverine Terminal in the Indian state of Assam, serving North Eastern states

in general and Assam and Guwahati in particular. This Terminal has been developed on the bank of the Brahmaputra River. The ship repair facility is proposed on the eastern side of existing jetty at Pandu Multimodal IWT Terminal at a distance of about 350m. The latitude and longitude of the ship repair facility is 26°10'15.01"N and 91°40'59.87"E. The location of the proposed site is shown in Figure 1.1 and the Ariel view of the Pandu site is shown in Figure 1.2.

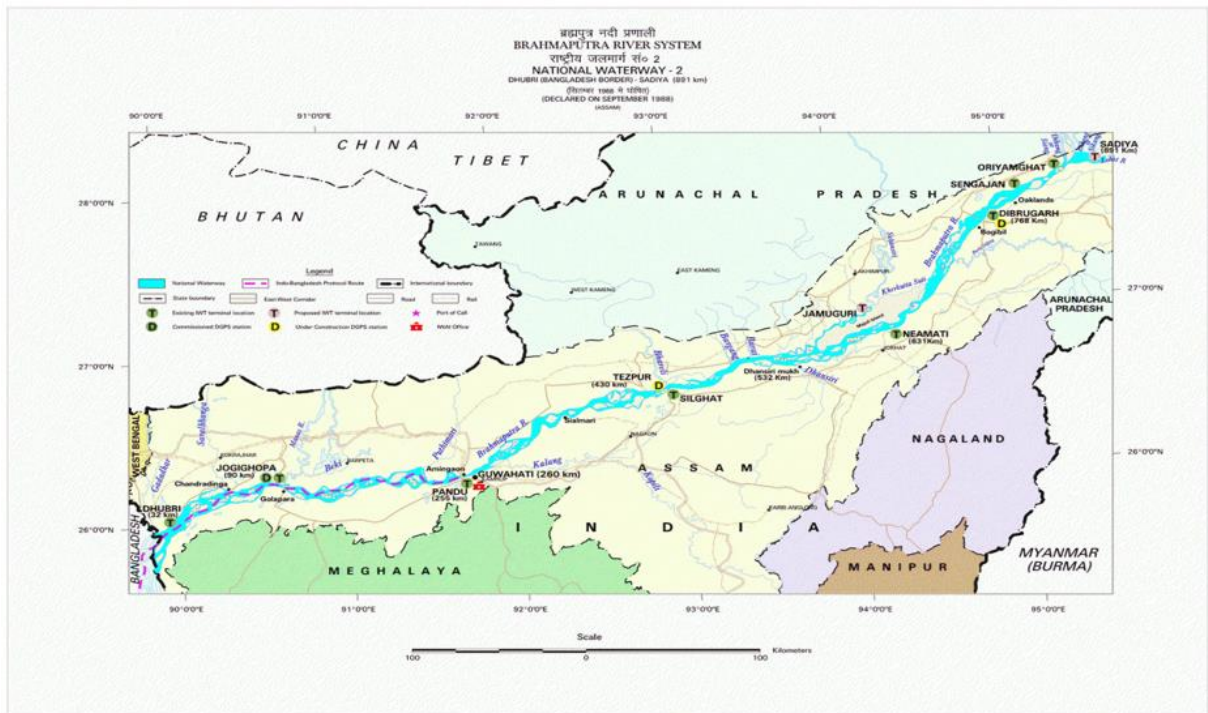


Figure 0.1 LOCATION OF PROPOSED SITE



Figure 0.2 ARIAL VIEW OF PANDU

The premise of the SRF at Pandu is directly accessible through the main roads. The Contractor has to investigate themselves the best ways of access with respect to the delivery of materials, goods and equipment they deem to be necessary to execute the Works. The Contractor has to make appropriate provisions in this regard and have to clearly describe the planned site and transport logistics in their

Tender.

003 Main Utilities Supply Sources

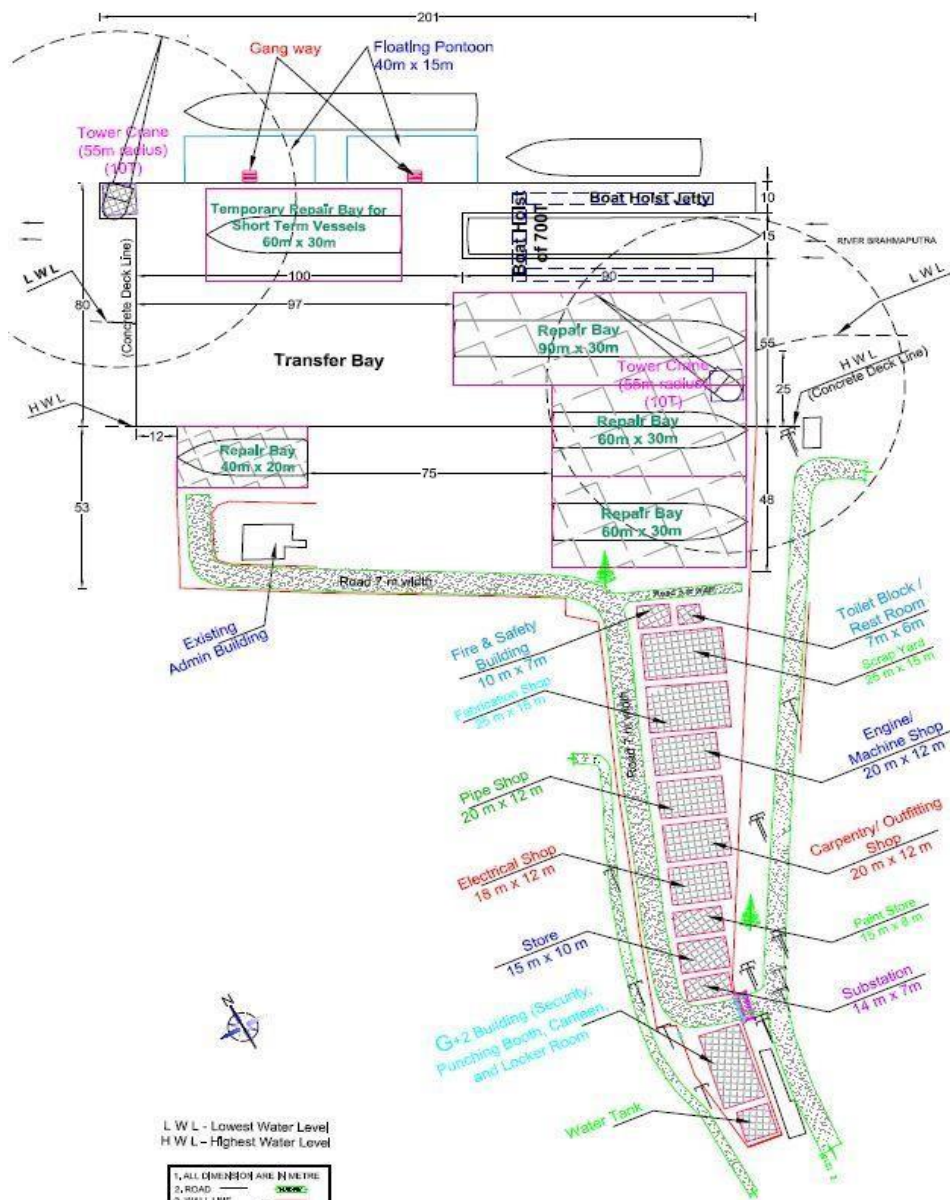
The Contractor has to make himself acquainted with the site conditions and the availability of supply sources. Electricity and fresh water and any other services may be required shall remain in the responsibility of the Contractor.

004 Volume of Works

The Works comprise of the design (engineering), manufacturing, delivery, installation, commissioning and elimination of any imperfection or deficiency of the Works covered by this Tender Document until the end of the Defects Notification Period or further as maybe specified in the Contract.

A general Shipyard Layout with the locations of the Works to be executed is presented below.

SHIP REPAIR FACILITY AT PANDU - MASTER PLAN OF GENERAL LAYOUT



Briefly, the Works include:

- Design (engineering), manufacturing, supply, installation and commissioning of a 800 Ton Boat Lift/hoist, which is able to accommodate vessels with 90 m LOA and 15 m beam, according to Third party agency certified design documents and commissioning.

010 Site Information

An overall environmental data on the location, connectivity, meteorological parameters, geotechnical aspects, and basic details of the project site are reproduced from the earlier reports for better appreciation.

110 011 Water level

The maximum and minimum water levels observed at Pandu over a period of 2004-2014 are tabulated in Table. 2.1. The observed Highest Flood level at Pandu is 50.05 m and lowest water level at Pandu is 40.31 m with reference to the Mean Sea Level.

Table. 2.1 Maximum and Minimum water levels observed at Pandu

		Year								
		2004	2005	2006	2007	2008	2009	2010	2011	2012
January	Max.	41.43	41.56	41.04	40.94	41.74	-	41.16	41.52	40.89
	Min.	41.26	41.20	40.50	40.41	41.38	-	40.52	41.10	40.38
February	Max.	41.26	42.33	41.11	40.79	41.78	-	40.50	41.45	40.70
	Min.	41.11	41.06	40.31	40.39	41.43	-	40.35	40.99	40.52
March	Max.	44.64	44.28	42.21	40.98	42.57	-	43.43	43.66	41.34
	Min.	41.06	41.75	40.92	40.51	41.43	-	40.40	40.94	40.60
April	Max.	45.39	45.15	-	-	42.92	-	47.26	44.13	44.24
	Min.	42.48	43.21	-	-	42.92	-	43.13	42.28	41.31
May	Max.	47.09	44.91	44.91	47.18	-	44.51	48.05	44.98	46.13
	Min.	43.03	43.60	44.01	44.57	-	42.61	44.16	42.94	43.19
June	Max.	48.21	46.84	48.70	48.34	-	45.29	48.79	46.27	48.87
	Min.	44.85	44.46	46.20	46.09	-	43.64	46.21	44.17	44.59
July	Max.	49.20	47.73	48.42	50.05	-	47.42	48.91	47.84	48.47
	Min.	46.88	46.02	47.24	47.16	-	45.40	48.30	45.71	47.22
August	Max.	47.56	47.89	47.45	50.05	-	47.78	49.39	47.79	48.16
	Min.	46.73	46.02	45.57	47.63	-	46.53	47.41	46.22	46.35
September	Max.	47.54	47.41	48.59	48.13	-	46.75	49.92	46.88	49.40
	Min.	45.42	44.38	45.87	46.17	-	45.05	48.09	45.21	46.18
October	Max.	47.64	45.39	46.15	45.92	-	46.22	-	46.58	48.23

	Min.	43.65	43.44	45.42	44.40	-	42.86	-	42.87	44.17
November	Max.	43.82	43.76	-	44.19	-	43.36	-	42.81	-
	Min.	42.12	42.00	-	42.62	-	42.45	-	41.65	-
December	Max.	42.15	41.96	-	42.56	-	41.90	-	41.63	-
	Min.	41.57	41.07	-	41.76	-	41.19	-	40.93	-

It could be observed that during the months of February and March the water levels are lowest, while during the months of July and August these are highest.

120 012 Rainfall

Annual rainfall in the catchment area varies widely from over 250 cm in the Assam Valley to less than 50 cm in Tibet. Rainfall in the region is negligible from November to March. The rainfall commences from April and reaches its peak towards end of May. The average annual rainfall is about 160 cm at Pandu.

130 013 Current

From available data on river velocities, the mean velocity during the normal and flood periods has been observed to be about 1 m/s and 4 m/s respectively. The annual records of maximum and minimum mean velocities of the river Brahmaputra at Pandu are tabulated in Table. 2.2. It could be observed that during months of higher discharge viz. June to September the maximum velocities could reach 3.0 to 5.0 m/s. These velocities are too high for the vessel to align along the slipway. However during these months minimum velocities are well below 2.0 m/s which could be considered as limit upto which the vessels could be handled at the slipway safely. The ship/vessel would be placed in position using tug boats of adequate capacity during monsoon season so as to transfer it to trolley for hauling upto slipway. Additional mooring structure such as buoy shall be installed during slipway operation.

Table. 2.2 Maximum & Minimum Mean Velocities (m/s) in Brahmaputra at Pandu

Months		1959	1961	1977	1978
Jan.	Max.	0.52	0.53	1.16	0.83
	Min.	0.39	0.47	0.83	0.73
Feb.	Max	0.54	0.53	1.1	0.86
	Min.	0.34	0.47	0.76	0.75
Mar	Max	0.58	0.8	1.31	0.93
	Min.	0.38	0.47	0.89	0.72
Apr	Max.	1.19	1.35	1.49	1.28
	Min.	0.47	0.68	1.02	0.86
May	Max.	2.21	2.74	2.05	1.76
	Min.	0.76	0.95	1.05	1.12
Jun	Max.	3.14	2.5	2.61	3.63

	Min.	1.28	1.52	1.76	1.29
Jul	Max.	2.14	3.21	3	2.57
	Min.	1.55	1.5	2	1.7
Aug	Max.	5.57	5.85	3.11	2.58
	Min.	1.61	1.84	2.55	1.63
Sep	Max.	2.1	2.19	2.9	2.16
	Min.	1.36	1.24	1.65	1.6
Oct	Max.	1.5	1.53	2.4	1.84
	Min.	1.08	0.92	1.16	1.2
Nov	Max.	1.15	0.97	1.14	1.33
	Min.	0.64	0.57	0.95	0.97
Dec	Max.	0.66	0.64	1.12	1.02
	Min.	0.32	0.45	0.82	0.78

140 Temperature

Guwahati enjoys moderate weather with average high temperature of 29°C and average minimum is 19°C. Summer (April-May) has a maximum of 40°C and winter (October to March) has a minimum 5°C.

150 Seismicity

Pandu is in Zone V of Indian Map of Seismic zones (IS-1893 Part-1 2016) which is a very severe risk seismic intensity zone. Accordingly, while carrying out the design this aspect shall be taken into account and all the relevant codal provision in this regard shall be followed.

100 General Technical Conditions

160 Layout and Operational Description

Inland Waterways Authority of India (IWAI)/ Hooghly Cochin Shipyard Limited (HCSL) shall carry out boat repairs utilizing an 800 Ton boat Lift /hoist. The lifting capacity and other technical details for the Boat Lift/Hoist are shown in Section 200.

The Vessel is being lifted to dry and then

- Firstly, transferred longitudinal to the transfer area
- Secondly transferred longitudinal and transversal to the Dry Berth/Workstation

The transfer area is designed at an elevation equivalent to the surrounding boat hoist piers in order to permit for short time repair and assembling works during busy periods in the workstations.

Mainly repairs at shaft and propeller as well as hull repairs, cleaning and painting works will be carried out at the Workstations. After repair at the dry berths vessels will be launched back and will usually berth at the Jetty for further repair such as machinery, cranes, technical equipment, superstructure painting etc.

170 Design of the Works

Contractor's general design obligations are stipulated in Clause 5 of the Conditions of Contract. Contractor's Documents are those defined under Sub-clause 5.2 of the Conditions of Contract. Accordingly, the Contractor shall be fully responsible for the engineering and design of the boat lift/hoist including respective Third-party agency (BV, DNV, IRS, LR etc) certification and for providing such plant, materials and workmanship necessary to meet the Employer's Requirements.

The Contractor shall give due consideration in the designs to minimizing operating and maintenance cost and to minimizing the extent and frequency of maintenance works. Contractor shall within 10 days after the Contract Agreement describe in detail the planned procedures of design submittals and approvals, method of re-submission, handling of changes at Site, etc., all in consideration of the stipulations under this Section 100.

The Contractor shall make available all required documents detailed at Phase-1 (Design Engineering Phase) mentioned at Section 411 such as design parameters, design details, load conditions, specifications and other information as may requested by the Employer within 28 days after the Contract Agreement.

In particular, deadlines have to be met for the submission of Contractor's Documents meeting the contractual requirements and milestones as stated under Section 400.

180 Drawings and Documents

131 Contractor's Documents

- 1) The Contractor is responsible to prepare and supply all design calculations, working and shop drawings and all other documents required for any Permanent and Temporary Works under the Contract.
- 2) As soon as practicable after award of the Contract, but not later than 15 days after the Contract Agreement, the Contractor shall propose to the Employer / Employer's Representative a complete list of design calculations, drawings, sketches, diagrams, load conditions, specifications and notes to be submitted to the Employer / Employer's Representative.
- 3) Employer / Employer's Representative reserves the right to request any additional detailed drawings at a later stage in order to facilitate proper execution and supervision of the Works and/or understanding of the suitability and functions of the Temporary Works.
- 4) As soon as practically possible but latest within 15 days after the Contract Agreement, the Contractor shall have provided the Employer / Employer's Representative with functional drawings and documentation of all items of the Boat Lift for review and final coordination with the Employer. A Preliminary and Critical Design Review as a precursor to approval is required.
- 5) Contractor should start detailed design works of the respective structures, systems, etc. only af-

ter formal acceptance by the Employer / Employer's Representative in Preliminary Design Review that the functional and support concepts submitted by the Contractor are compliant with the Employer's final operational shipyard concept.

- 6) This process shall ensure smooth release of working documents for construction by the Employer's Representative at the later stage.
- 7) The priority of submitting functional drawings and documentation shall be as required by the Contractor and as mutually agreed with the Employer / Employer's Representative based on Contractor's approved Programme.
- 8) The drawings and documents to be provided by the Contractor shall include, but are not limited, to the following:
 - Work and construction Programme inclusive of revisions, to the extent required as per Conditions of Contract;
 - Detailed site layout and installation drawings, to be supplied within 28 days after the Contract Agreement;
 - All required design parameters, design details, load conditions, specifications and other information, if any, requested by the Employer which are required for the structural design for the civil work or to be incorporated into the civil structure as permanent work within 28 days after the Contract Agreement.
 - Detailed work method statement for each category of the Works;
 - Surveying and setting-out drawings;
 - Detailed design calculations in full consideration of Employer's Requirements;
 - Drawings and calculations for all Temporary Works and construction stages planned by the Contractor;
 - Layout and working drawings and any other drawings normally required for the respective type of works;
 - Shop drawings;
 - Quality control records, including any notes, diagrams and specifications required by the Employer's Representative to assess:
 - compliance of the materials and methods with the Codes, Standards, Specifications and state of the art;
 - suitability of proposed materials and methods for intended use;
 - Reports and records of all tests to be carried out by the Contractor or his material suppliers;
 - Drawings, records and reports on specific construction measures to be supplied by the Contractor in accordance with the provisions of the Contract;

- As-built drawings, incorporating all changes or amendments made in the course of the construction works, for all Permanent Works. As-built drawings shall be supplied to the Employer / Employer's Representative immediately after completion of the respective section of Works;
 - Operation and maintenance instructions (in the form of lists, manuals and the like), which are required by the Employer for proper operation and maintenance of all equipment and systems supplied under the Contract.
- 6) Contractor shall throughout the Contract Period provide the number of copies of drawings and design documents that are required to obtain approval and release for construction by the Employer / Employer's Representative, including draft submittals, re-submissions, etc. The Contractor shall enact procedure for control of amendments / revisions to drawings, issuance of new drawings / processes for contract purposes to ensure only most recent drawings are available to relevant staff / offices.
- 7) The Contractor shall submit accurate design and drawings as part of Phase-1 (see chapter 400) of the Contract in accordance with the schedule for the delivery of various aspects of the design. Should the designs be revised due to error or inaccuracy, any additional costs shall be borne by the Contractor, including the additional costs incurred by the Employer / Employer's Representative or civil works contractor to rectify any Works incurred as a result of revision of the designs and drawings and the cost (whether to the consultants, civil works contractors or to the Employer) of any damages, delay or other consequences as a result of the revision.

132 Handling of Contractor's Documents by the Employer / Employer's Representative

- 1) All drawings and supporting calculations prepared by the Contractor for Temporary Works and construction stages are to be submitted to the Employer / Employer's Representative for information.
- 2) The procurement of materials and the execution of the Works according to the working and shop drawings of the Contractor shall not start until either a copy of the respective drawing, released for construction by the Employer / Employer's Representative is available or the consent is conveyed in writing or by facsimile or scanned letter in special cases.
- 3) Design calculations shall be sent with the drawings. In case working drawings require the release for construction by the Employer / Employer's Representative such release shall not be issued until the Contractor has provided the design calculations and drawings bearing the design approval stamp of the Employer / Employer's Representative and initials.
- 4) Each review period shall not exceed 15 days, calculated from the date on which the Employer / Employer's Representative receives a Contractor's Document and the Contractor's notice to

review. Same period is to be afforded to Contractor's replies.

- 5) The Employer / Employer's Representative may, within the review period, give notice to the Contractor that a Contractor's Document fails (to the extent stated) to comply with the Contract. If a Contractor's Document so fails to comply, it shall be rectified, resubmitted and reviewed (and, if specified, approved) in accordance with this subsection, at the Contractor's cost.
- 6) The formal release for construction or comments given by the Employer / Employer's Representative does not release the Contractor from his sole responsibility and liability for the proper design, execution and completion of the works or from the remedy of any defects therein, in accordance with the Contract.
- 7) If errors, omissions, ambiguities, inconsistencies, inadequacies or other defects are found in the Contractor's Documents, they and the works shall be corrected at the Contractor's cost, notwithstanding any release for construction, consent or approval under this subsection.

133 Care and Supply of Contractor's Documents

Each of the Contractor's Documents shall be in the custody and care of Contractor, unless and until taken over by the Employer.

The Contractor shall keep on the Site a copy of the Contract, Standards and publications named in the Employer's Requirements, the Contractor's Documents and variations, as-built drawings and other communications given under the Contract. The Employer / Employer's Representative personnel shall have the right of access to all these documents at all reasonable times.

If the Contractor or Employer / Employer's Representative becomes aware of an error or defect of technical nature in a document, which was prepared for use in executing the Works, the party shall promptly give notice to the other parties of such error or defect.

134 Standard Size of Drawings and Documents

- (1) Drawings shall only be prepared according to standard sizes DIN A3 (287 x 420 mm), DIN A1 (594 x 841 mm) or DIN A0 (841 x 1,189 mm).
- (2) Only special drawing film of excellent dimensional accuracy and high tear resistance shall be used for any original of the drawings or as-built drawings produced by the Contractor.
- (3) Documents shall be prepared on standard size DIN A4 (210 x 297 mm), except where particularly agreed otherwise with the Employer's Representative.
- (4) All drawings, documents (photos, etc.) of final nature shall be submitted both as hard copies and on CD-ROM / DVD in standard format (recent version of MS Word, Excel, Power Point, MS Project, *.jpg, *.dwg or *.dxf format or similar).
- (5) In case other than Microsoft standard office software is being used the Contractor shall provide the Employer and the Employer's Representative with complete licenses thereof.

135 Drawings

The drawings compiled in Volume V of the Tender Document comprise of conceptual drawings for illustration of functional requirements of the Works to be designed and build. The

Contractor shall verify any dimension given in the drawings. Where dimensions are not given, the Contractor shall determine the dimensions. Also, the location of particular plant and equipment shall be subject to the detailed design of the Contractor, if not otherwise stated in the Employer' Requirements.

136 Detailed Design and Working Drawings

Detailed design and working drawings are to be prepared by the Contractor on basis of the Employer Requirements.

In the case of electrical drawings, all cables and components shall be feruled and labeled correctly and the same shall match with the panel arrangement.

The drawings shall show sufficient dimensions, benchmarks, typical and specific details to define the various features covering the Boat Lift System and associated equipment as follows:

- Drawings showing general arrangement and principal dimensions of Boat lift system
- Machinery assembly drawings with itemized parts lists and component ratings as appropriate;
- Structural arrangement drawings with materials and quantities;
- List of equipment and devices complete with ratings as appropriate;
- Line diagrams of power distribution system;
- Control wiring diagram;
- PLC logic diagrams;
- Power supply termination details and dimensional requirements.
- Connection diagrams for all electrical equipment showing all terminal strips in their correct orientation with each wire and conduit identified;
- Electrical and hydraulic control systems;
- Machinery/mechanical erection drawings.

137 Contractor's Design Documentation

- (1) As part of Contractor's Documents the Contractor shall provide a complete and clear set of detailed design calculations, specifications and drawings of all Permanent Works, its service utilities, plant, equipment and materials, as well as of designs for any Temporary Works.
- (2) The preparation of design documentation, records and as-built documents shall proceed according to the agreed Programme. To ensure that all requirements are met, the Contractor shall submit drafts on request.
- (3) After completion of Works, the Contractor shall provide a comprehensive set of Design Documents, work records and as-built drawings, as well as operating and maintenance manuals for equipment and systems provided under the Contract, as hard copy and in editable format on CD-ROM / DVD.

The number of copies to be supplied by the Contractor shall be as follows:

	Hard copies	CD-R / DVD
Design calculations, specifications and method statements	5 copies	2 Nos.
Design drawings and drawings of temporary works, if applicable	5 copies	2 Nos.

As-built drawings	5 copies	2 Nos.
Manuals	5 copies	2 Nos

138 Drawing Register

Within 10 days after Contract Agreement the Contractor shall propose in detail the

- coded numbering system for the drawings to be prepared by the Contractor,
- indices for any drawing revisions, and
- drawing title layout to be used

Once agreed with the Employer's Representative the Drawing Register shall be maintained by the Contractor as Internet-based data base and the agreed forms and numbering systems shall be used throughout the project.

190 Technical Standards and Regulations

141 General

- (1) The term "Standard" used anywhere in the Employer's Requirements means a Standard or Code of Practice relevant to the subject, whether already indicated in the Employer's Requirements or otherwise agreed to by the Employer / Employer's Representative.
- (2) The design, the Contractor's Documents, the execution and the completed Works shall comply with the technical standards, construction and environmental laws and other standards detailed in the Employer's Requirements applicable to the works, or defined by the applicable laws.

All these Standards and laws shall, in respect of the Works and each section thereof, be those prevailing when the Works or section are taken over by the Employer under Sub-Clause 11.9 (Performance Certificate) of the Conditions of Contract.

If changed or new applicable standards come into force in the country after the Commencement Date, the Contractor shall give notice to the Employer / Employer's Representative and (if appropriate) submit proposals for compliance. In the event that:

- (a) the Employer / Employer's Representative determines that compliance is required, and
- (b) the proposal for compliance constitute a variation,

then the Employer / Employer's Representative shall initiate a variation in accordance with Clause 13 (Variations and Adjustments) of the Conditions of Contract.

- (3) Wherever reference is made in the Contract to specific standards and codes to be met by the designs, goods and materials to be furnished, and work performed or tested, the provisions of the latest current edition or revision of the relevant standards and codes in effect shall apply, unless otherwise explicitly stated in the Contract.
- (4) Any Standard which is utilized for the Works shall determine the absolute minimum requirement to be met by the Contractor's design, testing and construction work or by any other duties within the Contract.

Any shortfall to the respective conditions will be followed by automatic rejection of any application for consent or approval. However, it is the responsibility of the Contractor to introduce, propose and agree with the Employer / Employer's Representative any enhancement of the minimum requirements for the proposed structure type, to ensure a durable structure as stipulated in the Employer's Requirements.

- (5) If Standards conflict with the Employer's Requirements, the latter shall govern.

142 Basic Standards

- (1) The boat lift system shall be confirmed to the international code and standards and those codes standards shall be the basis for the design and execution of the Works.
- (2) The boat Lift System shall be able to resist the lateral acceleration forces generated by earth quakes of the severity and frequency defined for Guwahati, Assam as per IS 1983 (2002).
- (3) Suppliers shall supply the respectable confirmation in accordance with the EC-Declaration of Conformity (declaration that the equipment complies with all relevant requirements of the Machinery directive 2006/42/EC).
- (4) Applied harmonized standard: DIN EN ISO 12100:2010 Safety of machinery - General principles for design – Risk assessment and risk reduction
- (5) Applied harmonized standard: DIN EN 60204-1 Safety of machinery - Electrical equipment of machines – Part 1: General requirements (IEC 44/617/CD:2010)
- (6) The Indian Standards, European Standards (EC), German Industrial Standards (DIN), British Standards (BS, CP) and American Standards (ASTM, ACI) or equivalent shall be the basis for the design and execution of the Works.
- (7) Where no particular specifications are given for the design, an article or material to be used under the contract or the execution of the Works, the relevant Indian, European Standards (EC), German Industrial Standards (DIN), British Standards (BS, CP) and American Standards (ASTM, ACI) or equivalent shall apply, provided they exist.
- (8) All electrical installations shall be carried out as per Central Electricity Authority regulation and The Electricity Act amended up-to-date.
- (9) Only the SI system shall be used throughout the Contract.

143 Equivalent Standards

Where standards and codes are national, or relate to a particular country or region, other authoritative standards, which ensure an equal or higher quality than the standards and codes, will be accepted subject to the Employer / Employer's Representative prior written approval.

Differences between the Standards specified and the proposed alternative standards must be fully described in writing by the Contractor and submitted to the Employer / Employer's Representative at least 15 days prior to the date by which the Contractor desires the approval of the Employer / Employer's Representative.

In the event that the Employer / Employer's Representative determines that such proposed deviations do not ensure equal or higher quality, the Contractor shall comply with the Standards specified in the Contract or the minimum requirements as defined in the Employer's Requirements, whichever is stricter.

144 Standards to be on Site

The Contractor shall obtain and keep on Site at least one copy in English of each Standard which is referred to in the Employer's Requirements or otherwise required for the Works. These Standards shall at all times be available for inspection and use by the Employer / Employer's Representative.

145 Manufacturer's Directions

The Contractor shall observe the directions of the manufacturers and suppliers, with regard to the use and application of materials and installation of equipment. If these are in conflict with any relevant standard or with the Contract, the Contractor shall liaise with the manufacturer and shall propose an appropriate solution to the Employer / Employer's Representative for consent.

146 Design Service Life

The design and construction of the Works shall be undertaken to meet international design, construction and durability standards to all sections of the Works.

The Design Service Life of the Boat Lift System shall be as follows:

Boat Lift System	30 years
Minor mechanical equipment such as (bearings, gaskets, hydraulic pipes etc.)	15 years
Paintwork of steelwork	10 years
All other items except tyres	25 years

The Design Service Life is defined as the period for which elements are to be used for their intended purpose subject to routine maintenance, but without major repair and / or replacement.

147 Quantities and Descriptions

- (1) As part of the Tender for this EPC Turnkey Contract Contractors are required to prepare their own schedule of prices including quantities, detailing the respective main items of work, quantities, rates and total amounts for their proposal and variants (if any) proposed by the Contractor.
- (2) The schedule of prices are to be responsive to the Tender Document and the Tenderer / Contractor shall be deemed to have thoroughly acquainted himself with the Employer's Requirements and all risks and other conditions and requirements of this EPC Turnkey Contract.
- (3) The descriptions and quantities set against each of the items specified by the Tenderer / Contractor in accordance with paragraph (1) are determined at Tenderer's / Contractor's sole risk and responsibility within the present lump sum contract. Any error, omission or otherwise deficiencies in this regard are at Tenderer's / Contractor's risk and responsibility.

200 Construction Materials

151 General

- (1) The materials for Permanent Works shall be new and must be generally of high standard to ensure durability throughout the lifetime of the structures and facilities.
- (2) Insofar as certain construction materials or equipment for Temporary Works and Permanent Works are not mentioned or no additional special tests are specified, the materials and equipment must at least meet the respective requirements of the Standards.
- (3) When any material is to comply with a particular Standard, the product or its original container shall bear the stamp of the registered certification trademark of the relevant Standard.
- (4) For all supply items, in particular for imported materials, the Contractor shall submit from different manufacturers the technical literature and certificates of approval for the destined use issued by recognized authoritative bodies to the Employer / Employer's Representative.
- (5) Sufficient spare material must be maintained at the Site. Any delays resulting from non-compliance will not be accepted for claims under Clause 20 of the Conditions of Contract.

152. LIST OF SUPPLIERS OF MAIN BOUGHT-IN COMPONENTS

The following preferred suppliers have been identified by the Employer

Any change in the recommended makes required by contractor to be communicated before pre-bid meeting. As far as possible, the contractor shall stick to the above list of approved brands while quoting their offer.

After the award of the work, in the event that approved makes are not available, for which the contractor has to submit proof of non-availability, the contractor shall submit proposal for substitute by a similar item to Employer during execution. If other brands are proposed, then they should guarantee the same quality level and performances of the above approved makes.

COMPONENT	BRAND
Steel structures	The entire structure is to be manufactured in steel S355 and S355J2H as per standards UNI-EN10025. EN 10210.1 – EN 10210.2 certified
Pumps and hydraulic motors	BOSCH-REXROTH(Germany) SAUER(USA)
Proportional hydraulic distributors	DANFOSS(Denmark)
Diesel engine	CUMMINS(USA)
Mechanic couplers	TECHNODRIVE(Germany)

Epicyclical reducers on the lifting winches	BOSCH-REXROTH(Germany)
Wheel group Hubs	BOSCH-REXROTH(Germany)
Steering siew drivers	IMO(Germany)
Tiers(OTR brand new)	MRF(India)
Lifting slings	SPANSET(Germany) STROPS(Italy)
Lifting ropes	TREFILEEUROPE-ARCELOR(France), Teci (Ita) or equivalent
Electrical components	LEGRAND(France) TELEMECANIQUE(France) STROMAG(Germany) OMRON(Japan) SIEMENS(Germany) TER(Italy) BAUMER(Germany) LEINE LINDE(Germany) Schneider,
PLC	SIEMENS(Germany)
Weighing system	BCS(Italy)
Remote Control	AUTEC(Italy)
Hydraulic Pipes	MARCEGAGLIA(Italy) ALFA GOMMA(Italy)
Hydraulic Fitting	VOSS(Germany) STAUFF(Germany)
Oil Filters	MP Filters(Italy) HYDAC(Germany)
Pulleys Manufacturer	Licharz GmbH (Ger) or equivalent
Bearings on pulleys	Shield Radial Bearing (SKF/FAG)
Hydraulic moto reducers	Bonfiglioli Trasmital (Ita) , Brevini,
Winches Hydraulic motors	Dana Brevini (USA),
Wheels Hydraulic motors	Bosch Rexroth (Ger)
Hydraulic distributors	Parker (USA) , Sauer Danfoss, Hawe
OC Hydraulic pumps	Parker (USA) , Bosch Rexroth, Sauer Danfoss, Linde

CC Hydraulic pumps	Linde (Swe), Bosch Rexroth, Sauer Danfoss, Linde
Diesel engine (tier3/stage III A Turbocharged water-cooled engine)	FPT (Fiat Power Train) or Volvo, Perkins UK, cummins(USA)

153 Origin of Materials and Equipment

Contractor is encouraged to use to maximum extent materials and products from India, always provided that they are fully compliant or superior to the specifications of the Employer's Requirements. Satisfactory proof of compliance has to be submitted by the Contractor to the Employer / Employer's Representative prior to ordering any such material or equipment.

154 Examination and Tests

- (1) Materials or articles shall be made available or delivered to the Site a sufficient period before they are required for the Works, enabling the Employer's Representative to take such samples as he may consider suitable for examination and testing.
- (2) The costs of all tests required in accordance with the Standards or the Employer's Requirements are deemed to be covered by surcharges included in the Contract Price.

155 Protection

- (1) All materials or other items intended to form a part of the Works shall be adequately protected against contamination, deterioration, damage and the like, at all stages, whether during transport or stored at Site and arising from any reason.
- (2) Such items, which, in the opinion of the Employer / Employer's Representative, became unfit for use in the Works, must be removed from the Site and replaced at the expense of the Contractor.

156 Rejection of Materials

- (1) Any materials, articles or equipment not in accordance with the Standards and the Employer's Requirements may be rejected by the Employer / Employer's Representative.
- (2) Any materials, articles or equipment rejected by the Employer / Employer's Representative shall be removed immediately from the Site. The Contractor at his own expense shall provide replacement.
- (3) A rejection by the Employer / Employer's Representative shall not release the Contractor from his obligation to adhere to the approved time schedule.
- (4) If the rejection and retesting cause the Employer and/or Employer / Employer's Representative to incur additional costs, the Contractor shall pay these costs to the Employer.

157 Manufacturer's Guarantee

Without limiting the responsibility of the Contractor for the sound execution and completion of the Works and for remedy of any defects therein, the manufacturer(s) of any materials must submit a written commitment to the Employer through the Employer / Employer's Representative certifying that the respective material is suitable taking into account the type of work for which it is to be used, the application method, as well as all other relevant circumstances and parameters, including the environmental conditions, prevailing at the Site.

210 Workmanship

161 General

- (1) The Contractor shall carry out the manufacture of materials, and all other execution on the Works:
 - (a) in the manner (if any) specified in the Contract,
 - (b) in a proper workmanlike and careful manner, in accordance with recognized best practice, and
 - (c) with properly equipped facilities and non-hazardous materials, except as otherwise specified in the Contract.
- (2) Workmanship shall be of the best quality appropriate to each category of work and shall be in accordance with the Standards, Employer's Requirements and the present state of art.

162 Information to the Employer / Employer's Representative

- (1) All operations have to be carried out in close coordination with the Employer / Employer's Representative, who is to be informed well in advance of the start of any new operation and of the day to day activities.
- (2) Prior to the commencement of any particular work, the Contractor shall submit details of his proposed methods, schedule and sequence of operations to be followed.
- (3) No new operation or work in any new area shall be started until the Employer / Employer's Representative consent has been obtained.

163 Contractor's Responsibility

- (1) Notwithstanding any testing and/or approval by the Employer / Employer's Representative, the Contractor shall be fully responsible for the quality and functioning of the Works in accordance with the Contract.
- (2) Authorization to repair or refinish shall not constitute a waiver of the Employer / Employer's Representative right to require replacement of any item or work, if and when after such repairing and/or refinishing the work is unsatisfactory in the Employer / Employer's Representative opinion.

164 Relationship with Civil Works Designer

The Consultant NTPCWC is responsible for the design of the civil works and building works that are to be carried out as part of the SRF project.

The boat hoist Contractor shall interact with the Consultant as required to collect information about the civil design loads and civil works executed and the contractor should take those information into considering while designing the boat lift system.

The Contractor shall comply with instructions given by the Employer/Employer's Representative including those relating to:

- Control of the site including site amenities, delivery and set down areas
- Setting out of the works
- Site occupational health & safety
- Industrial Relations
- Environmental management

- Security
- Communications

165 Relationship with Civil Works Contractor

The civil works contractor is currently executing the civil works at site. The Boat hoist Contractor shall afford all reasonable co-operation to the civil works contractor. The civil works contractor will have overall control of the site.

220 Testing and Inspection

171 General

- (1) Testing and inspection of the built-in materials and the completed Works shall follow Clause 7 and 9 of the Conditions of Contract, the rules of the Quality Assurance Programme, Section 230 of the Employer's Requirements, all in consideration of the criteria and requirements stipulated otherwise in the Employer's Requirements and/or as agreed with the Employer / Employer's Representative.
- (2) All materials and items intended to form or forming a part of the Works, all workmanship and all work under the Contract shall be subject to the approval of the Employer / Employer's Representative and from time to time be subjected to such examinations and tests as provided for in the Standards and Employer's Requirements and as the Employer / Employer's Representative may direct at the place of manufacture or of fabrication or at the Site, or at any other place or at all or any of such places.
- (3) The personnel of the Employer and/or the Employer / Employer's Representative shall at all reasonable times:
 - (a) have full access to all parts of the Site and to all places from which natural materials are being obtained, and
 - (b) during production, manufacture and construction (at the Site and elsewhere), be entitled to examine, inspect, measure and test the materials and workmanship, and to check the progress of production and manufacture of materials.
- (4) The Contractor shall give the personnel of the Employer and/or Employer's Representative full opportunity to carry out these activities, including providing access, facilities, permissions and safety equipment. No such activity shall relieve the Contractor from any obligation or responsibility.
- (5) The Contractor shall give notice to the Employer / Employer's Representative whenever any work is ready and before it is covered up, put out the sight, or packaged for storage or transport. The Employer / Employer's Representative shall then either carry out the examination, inspection, measurement or testing without unreasonable delay, or promptly give notice to the Contractor that the Employer / Employer's Representative does not require to do so. If the Contractor fails to give the notice, he shall, if and when required by the Employer / Employer's Representative uncover the work and thereafter reinstate and make good, all at the Contractor's cost.
- (6) The costs for samples, sampling, testing and inspection intended and provided for in the Standards and Employer's Requirements, including the Quality Assurance Programme are deemed to be covered by surcharges and overheads included in the Contract Price.

172 Samples

- (1) Samples shall be taken in accordance with the relevant Standards and the Employer's Requirements, and in such a way and in sufficient number to be considered as

representative for the full quantity of materials and items from which they are taken or for the workmanship to be tested.

- (2) Samples submitted for approval of materials and items to be supplied or of workmanship and which are subsequently approved, will be kept by the Employer / Employer's Representative.

173 Tests Prior to Delivery

All materials and items intended to form a part of the Works shall be tested in accordance with the Standards and Employer's Requirements before leaving the manufacturer's or supplier's premises. The Contractor shall furnish the Employer / Employer's Representative with the test certificates of each consignment from the manufacturer or supplier, as the case may be.

174 Inspection at Manufacturer's or Supplier's Premises

- (1) All materials and equipment forming a part of the Works may be inspected by the Employer and/or the Employer / Employer's Representative or their nominated inspectors to test or to witness the tests of the materials and items to be provided by the Contractor under the Contract before leaving the manufacturer's or supplier's premises.
- (2) The Employer, Employer / Employer's Representative and the nominated inspectors shall have free access to all such places of testing, and the Contractor shall impose these conditions on all his Subcontractors, manufacturers and suppliers.
- (3) The Contractor shall make all arrangements to facilitate due inspection by the delegation of the parties at any of the places where the materials are being manufactured.
- (4) The Contractor shall bear all cost and expenditure, including travelling (domestic and international), boarding and lodging, etc., all of which shall be deemed to be covered by surcharges included in the Contract Price.

175 Rejection

- (1) If, as result of an examination, inspection, measurement or testing, any materials, design or workmanship is found to be defective or otherwise not in accordance with the Contract, the Employer / Employer's Representative may reject the materials, design or workmanship by giving notice to the Contractor, with reason. The Contractor shall then promptly make good the defect and ensure that the rejected item complies with the Contract.
- (2) If the Employer / Employer's Representative requires these materials, design or workmanship to be retested, the tests shall be repeated under the same terms and conditions. If the rejection and retesting cause the Employer / Employer's Representative to incur additional costs, the Contractor shall pay these costs to the Employer.

176 Employer / Employer's Representative Right to Reject

Neither the production of a manufacturer's test certificate, nor the omission of the Employer / Employer's Representative to send an inspector, nor the presence of the Employer or Employer / Employer's Representative or their nominated inspectors during testing or manufacture at the manufacturer's or supplier's premises, shall prejudice the right of the Employer / Employer's Representative and the Employer to reject after delivery to the Site, materials or items intended to form a part of the Works, which are found unsuitable or not to be in accordance with the Standards and the Employer's Requirements.

177 Remedial Work

Notwithstanding any previous test or certification the Employer's Representative may instruct the Contractor to:

- (a) remove from the Site and replace any materials, which are not in accordance with the Contract,
- (b) remove and re-execute any other work, which is not in accordance with the Contract, and to
- (c) execute any work which is urgently required for the safety of the works, whether caused by an accident, unforeseeable event or otherwise.

The Contractor shall comply with the instruction within a reasonable time, which shall be the time (if any) specified in the instruction, or immediately if urgency as specified under subparagraph (c) has been identified.

If the Contractor fails to comply with the instruction, the Employer shall be entitled to employ and pay other persons to carry out the work. Except to the extent that the Contractor would have been entitled to payment for the work, the Contractor shall pay to the Employer all costs arising from this failure.

230 Quality Assurance Programme

181 Preliminary Remarks

Contractor's Quality Assurance Programme (QAP) must ensure that the design, the materials and the Works, including all testing at manufacturer's premises, in-situ testing, pre- and post-testing of the Works meet the predetermined criteria stipulated in the Employer's Requirements.

The Contractor shall, within 15 days of the receipt of the Contract Agreement submit to the Employer / Employer's Representative for approval his proposal for a comprehensive QAP. In drawing up the proposal, the fundamentals of the Employer's Requirements, as well as of the Conditions of Contract, shall be taken into consideration by the Contractor.

182 Organizational Responsibilities

- (1) The management and direction of the QAP rests solely with the Contractor's Representative nominated in accordance with Sub-Clause 4.3 of the Conditions of Contract.
- (2) The Contractor shall nominate a highly qualified and well-experienced material testing engineer (the Quality Assurance Engineer - QAE) for the execution and strict adherence to the QAP. The QAE shall not otherwise be involved in the direction and supervision of Contractor's activities being inspected and shall have direct reporting responsibility to the Contractor's Representative as well as to the Employer / Employer's Representative. The

QAE shall exercise due care to facilitate prompt communication on all matters related to the QAP.

183 Control of Contractor's Documents

The basic requirements and respective responsibilities are stipulated under Section 180, as well as in the Conditions of Contract.

184 Material Control

(1) General Requirements

The basic requirements and respective responsibilities are stipulated under Sections 200, 210 and 220 as well as in the Conditions of Contract. The QAP shall assure that the constituent materials forming part of the Works meet the Employer's Requirements prior to procurement and use.

(2) Manufacturer Evaluation and Selection

The selection of the material manufacturer(s) shall be based on the evaluation of manufacturer's capability to fabricate the respective material in accordance with the requirements of the Contract.

(3) Procurement Documents

Material procurement documentation is to be submitted to the Employer's Representative prior to final placing of the order(s), to assure that all material specifications, testing and quality control requirements are met. To this extent, the procurement document should specify

- The type of work for which the material is required;
- Technical and material requirements including applicable Standards, specifications and drawings;
- Right of access of the Employer's Representative to the manufacturer's facilities, test facilities, records, etc., for inspection, and
- Documentation/test reports/application instructions to be prepared and submitted.

All factory quality control records shall be transmitted to the Employer's Representative prior to delivery of the goods to the Site.

(4) Receiving Inspection

A receiving inspection for material supplies shall be performed to verify the

- Identification, completeness and correctness of the supply;
- Damage (if any) to the supply;
- Completeness of documentation to be submitted;
- Acceptance of material by inspection and/or testing, and
- Segregation and handling of rejected material to prevent its inadvertent use.

(5) Storage and Handling of Materials

Adequacy and maintenance of storage and transport facilities shall be verified by suitable activities.

(6) Material Qualifications

Routine quality control tests are to be carried out at the Site in accordance with the Contract and Standard costs shall be borne by the Contractor.

185 Records

Qualifying as well as routine and quality control records for all materials shall be established. These should include

- manufacturer's test reports and certificates of compliance;
- delivery slips;
- material routine test and quality control reports, and
- qualifications of the personnel.

186 Inspections and Workmanship

(1) General Requirements

An inspection programme shall be established and implemented to ensure that the construction works and materials meet the requirements of the Contract. The inspection programme shall contain provisions for specific verification and acceptability of the Works, including implemented field changes.

The basic requirements and respective responsibilities are stipulated under Section 220 of the Employer's Requirements, as well as in Clauses 7, 9 and 12 of the Conditions of Contract.

(2) Inspection Personnel

Qualified inspectors, other than those who performed or supervised the works being inspected, shall carry out quality assurance inspection. The inspector qualification shall have the consent of the Employer / Employer's Representative.

(3) Inspection Programme

The inspection programme shall include check lists for each item of work, and shall include the quantitative and qualitative criteria for acceptance.

Photographs shall be included in the quality assessment inspections, documenting construction sequence, work progress, construction details and deficiencies.

(4) Inspection Records

Records of all quality assessment inspections shall be submitted promptly to the Employer's Representative in two (02) copies as the work progresses, but five (05) copies of the complete construction documentation is to be submitted to the Employer's Representative prior to tests on completion of the Works or Sections thereof.

The QAE shall be responsible for record legibility, retention, validity and transmission.

The form of inspection records is to be coordinated and agreed with the Employer / Employer's Representative. The records shall at least include the following information:

- Date of inspection;
- Identification and location of item inspected;
- Inspection result;
- Acceptance criteria;
- Statement of compliance or non-compliance;
- Special remarks;
- Inspector's name and signature;
- Ambient conditions;

- Comments and signature of the QAE, and
- Comments (if any) and signature of the supervisor.

187 Testing and Evaluation

- (1) The QAP shall include a programme for sampling and testing of all materials to be used in the construction of the Works, to establish reliable data from which the completed Works can be evaluated.
- (2) All such testing shall be performed by qualified personnel, using standard test methods and frequencies established by the respective standards, respectively Sections and Subsections of the Employer's Requirements. The testing programme shall include, but is not limited to, suitability testing and routine qualification of the basic materials to be used in the Works.
- (3) The extent to which the testing programme addresses each component of the Works depends on its type, functioning and location as well as the environment to which it is exposed, and on the assurance the Employer / Employer's Representative deem necessary.
- (4) Evaluation of test results shall be performed on completion of each testing operation by a qualified person, applying the acceptance criteria established in the respective Sections and Subsections of the Employer's Requirements.
- (5) Any non-conformity of test results identified during the evaluation shall be brought immediately to the attention of the Employer / Employer's Representative and the QAE.
- (6) A copy of records (2-fold) of all tests performed shall be handed over promptly to the Employer / Employer's Representative and shall finally be compiled in the construction report of which five (05) copies are to be submitted to the Employer / Employer's Representative prior to tests on completion of the Works or Sections thereof.
- (7) The form of test reports shall be agreed with the Employer / Employer's Representative and shall at least contain the following information:
 - Date of test;
 - Identification and location where the material is used;
 - Test method;
 - Test results;
 - Acceptance criteria;
 - Statement of compliance and non-compliance;
 - Special remarks;
 - Testing personnel name and signature;
 - Comments and signature of the QAE, and
 - Comments (if any) and signature of the Employer's Representative.
- (8) Final evaluation of material tests shall be performed by the Employer / Employer's Representative to determine the adequacy of the test programme and to ascertain Contractor's compliance with the Contract.

188 Identification and Resolution of Non-Complying Conditions

- (1) General Procedures

- (a) Materials and/or executed works, which do not meet the Contract or otherwise agreed criteria and requirements, shall be promptly identified for implementation of corrective action.
- (b) An active interface between the Contractor and the Employer / Employer's Representative shall ensure the prompt determination whether a specific condition is to be accepted as it is, repaired, reworked, or rejected. Such dispositions are to be documented in a Non-Compliance Register (NCR) along with the signatures of the Contractor, QAE, the Employer / Employer's Representative and the specific instructions to accomplish the repair or rework. Any such records identifying the condition and corrective action are to be retained in the construction files and are to be serial numbered and to be included in the final construction report.
- (c) Within the foregoing context the following definitions may be applied:
- “Accepted as it is” a non-complying condition which satisfies functional engineering requirements, including those of performance, maintainability and fitness for use and safety.
- “Repair” a process of restoring an item to an acceptable condition, even though the item may not comply in all respect with the original requirements.
- “Rework” a process of restoring an item to the original requirements.
- “Reject” a disposition that indicates an item is unsuitable for its intended purpose and cannot be reworked or repaired technically sound and economically. Such items shall be segregated or removed.

(2) Non-complying Conditions

Significant non-complying conditions are those of a recurring nature or conditions which could adversely affect the satisfactory performance or appearance of the item of the Works, should they remain uncorrected.

Determining the cause of such conditions, as well as the appropriate corrective actions, shall preclude further similar non-complying conditions and unnecessary expenditures.

(3) Non-conformances

Repaired or reworked items shall be re-inspected. Since repaired items may not comply with the original requirements, criteria for the acceptability of the repair shall be established with the consent of the Employer's Representative. Reworked items shall generally be re-inspected in accordance with the original requirements.

189 Records

The serial numbered NCR shall compile the records and documentation generated through the QAP and shall furnish evidence of the quality of materials, equipment and the Works, and the Contractor, through the QAE is responsible for the technical content and accuracy. Records and documents shall be signed or otherwise authenticated and dated by the QAE, the Contractor's Representative as well as the Employer / Employer's Representative. An index shall be established and maintained to identify and retrieve a specific record or records at any time.

The Employer / Employer's Representative will implement a programme for ongoing review of records and documents and the Contractor shall facilitate the right of access to all applicable records and documents. The following compilation lists some of the records and documents that should be applicable:

- Contractual documents;

- Standards (India, DIN, BS, ACI, ASTM etc.);
- Quality procedures and instructions;
- Personnel qualification records;
- Drawings and design calculations;
- Technical specifications;
- Procurement documents;
- Material qualification records;
- Field sketches and working drawings;
- Change orders (Variations);
- Technical reports, photos;
- Inspection and test records;
- Non-conformance reports;
- Shop drawings;
- As-built drawings, etc.

240 Reporting

191 Daily Reports

The Contractor shall provide the Employer / Employer's Representative for the time of Site activities daily with the information needed to keep the work register in good order. The daily reports shall include details of works executed, the number of labour in different categories, equipment and materials in use, arrival of essential materials and equipment for the works, data on temperatures, rainfall, wind, humidity, water level, wave condition and information on all other facts and events of importance to the progress of the works, together with reasons for delay, if any.

192 Monthly Progress Reports

The Contractor shall submit comprehensive monthly progress reports in the form accepted by the Employer / Employer's Representative, together with detailed schedules showing the volume and percentages of works executed, materials and equipment in stock and to be expected during the following month. In case of delays in the works affecting the maintaining of the scheduled progress, the Contractor must give detailed reasons and justifications therefore and shall advance proposals for making up the lost time. The first report shall cover the period up to the end of the first calendar month following the commencement date. Reports shall be submitted monthly thereafter, each within 7 days after the last day of the period to which it relates. Reporting shall continue until the Contractor has completed the Works and the Employer has taken over the Works.

193 Each report shall include:

- (a) charts and detailed descriptions of progress, including each stage of design, Contractor's Documents, status of approval procedure, procurement, manufacture, delivery to site, construction, erection, testing, commissioning and trial operation;
- (b) updated drawing register, including drawing status and planned submittals;
- (c) payment / invoice status as well as insurance status;
- (d) photographs showing the status of manufacture and of progress on the Site;

- (e) names of the manufacturers, manufacture location, percentage progress of each main item of plant and materials, and the actual or expected dates of:
 - (i) commencement of manufacture,
 - (ii) contractor's inspections,
 - (iii) tests, and
 - (iv) shipment and arrival at the Site;
- (f) details showing the number of each class of Contractor's personnel and of each type of Contractor's equipment on the Site;
- (g) copies of quality assurance documents, test results and certificates of materials;
- (h) list of variations and notices given under the Contract;
- (i) health and safety statistics including details of any hazardous incidents and activities relating to environmental aspects and public relations;
- (j) comparison of actual versus planned progress, with details of any events or circumstances which may jeopardize the completion in accordance with the contract, and the measures being (or to be) adopted to overcome delays.

194 Distribution of Reports

The Contractor shall distribute hard copies of the reports as follows:

- 2 copies to the Employer,
- 2 copies to the Employer / Employer's Representative,

as well as a soft copy of each complete report (including all attachments) in a single *.pdf-file.

200 Boat Lift System

210 General

211 Introduction

As part of developing a Ship Repair Facility (SRF) at Pandu, Guwahati, Assam, Hooghly Cochin Shipyard Limited (CSL) of behalf of IWAI plans to install a 800 Ton boat Lift/hoist system, capable of handling vessels of size 90 m x 15 m, which will support IWAI's activities on boat repair and boat refit.

The Boat Lift facility will be used for the launching and repair of IWAI vessels as well as commercial vessels. The emphasis will be on repairs and re-fits of vessels.

These Employer's Requirements has been prepared as a basis for Boat Lift manufacturers to provide a quotation for the supply of the 800 Ton Boat Lift System required undertaking the above services.

The Works to be executed under the Contract shall include all items of work set out in the Contract Documents providing all equipment, labour, supervision, project administration and management, temporary works, materials and services necessary.

The scope of works includes the design, supplementary design (if any), fabrication, supply, installation, commissioning, testing, Third party certification (BV, LR, DNV, IRS TUV, etc), Guarantee and Taking Over of a Boat Lift System as described in this Contract Document.

212 Scope of Supply

The Boat Lift System shall be designed, manufactured, supplied, installed, commissioned, certified and handed over at SRF, at Pandu, Guwahati, Assam, India. Other work may be carried out off site.

It is the Contractor's responsibility to inspect and interpret the site information and assess conditions, which will arise during the Boat Lift System Works. Contractor's shall satisfy themselves that the existing conditions are acceptable to carry out the Boat Lift System Works and shall fully familiarize themselves with any possible constraints in advance of submitting their Tender.

HCSL will allocate a leveled site installation area to the Contractor for storage, assembly of components of the Boat lift system and installation of a site office.

The scope of works includes the design, fabrication, supply, installation, commissioning, testing, Third party Agency (BV, DNV, IRS, LR , TUV etc) certification , Guarantee and Taking Over of the following:

- Boat Lift system including all steelwork with strong box steel girders, Longitudinal beam with Advanced cross beam with articulation hinge on the cross beam, Wind resistant spreader arrangement, Wheels mounted on hubs(idle and powered hubs) with bearings made of double conical rollers hydraulically controlled powered slew drives, Hydraulic translation system Braking system in the form of service and parking brake, lift cylinders, gearboxes, hydraulic motors, hydraulic connecting blocks, piping, interconnecting bars and hoses with stainless steel fast connectors, self driven and complete with hydraulic bed load distribution and control system
- Winch System with turning grooved drums on wire ropes which are wind on maximum two layers, lifting winches are fed by hydraulic pumps, independent distributor with own pressure valve, including all upper sheaves, wire ropes, load cells and limit switches.
- Electrical, Control and Safety System
- Design calculation and drawing approval of Boat Lift System.
- Third party Agency (BV, DNV, IRS, LR, TUV etc.) certification shall include inspections during fabrication.
- Commissioning of Boat Lift system.
- Load Testing and Operational Testing of 800 Ton Boat Lift System
- Supply of Operational and Maintenance Manuals.
- Training of IWAI/HCSL personnel.
- Supply of spare parts for 5 years operation and set of emergency spares.

Any other items or works not specifically mentioned above, but essentially required for the satisfactory commissioning of Boat Lift System as per Employer's Requirements, is also included in the scope of Works.

220 Technical Requirements

221 Design Standards and Loads

The main characteristics of the Boat Lift System are as follows:

Nominal Length of Boat lift	to accommodate vessels with 90 m LOA
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Nominal Width of boat lift	to accommodate vessels with 15 m beam
Maximum lifting capacity	800 tons
Maximum draught of vessel	4.50 m
Length of lifting ropes	The length of rope should be designed to lift vessels from low water level (40.31m with reference to MSL to work station top 53.5m

The Boat lift System equipment shall be new and unused, capable of performing its intended function in accordance with the operation and performance requirements specified herein.

The Boat Lift system shall be of the manufacturer's today's proven design. The Boat Lift design, capacity and performance characteristics, shall be proven through actual field application and will be substantially the same as those required for the Boat Lift system / equipment as specified herein.

The Boat Lift structure, winch systems, and its controls shall be suitable for operating in a marine environment with protection provided against the ingress of water and other foreign matter which may prove detrimental to any part of the Boat Lift System equipment.

The winch systems and control shall ensure synchronously lifting of the vessel maintaining a constant lifting and lowering speed while maintaining the vessel in a horizontal and level orientation regardless of the load distribution on the vessel.

The Boat Lift system shall be capable to be listed or trimmed, to enable proper and safe docking of vessels/boats with a special hull form or boats with a damaged keel section.

The Boat Lift System machinery shall be designed to be easily accessible for purposes of cleaning and maintenance.

Boats must be able to be docked and undocked in a forward as well as aft direction.

The electrical panel shall be enclosed in a sheet steel enclosure which is dust and damp protected to a minimum of IP 54 rating.

222 Codes

The principal applicable code for the Works to be executed shall conform to all international standards, applicable laws, regulations and Indian Standards (if applicable).

The list of standards shall be included within the Project Quality Plan. Deviation from any mandated standard shall be subject to formal concession.

The Contractor shall submit a list of all proposed standards indicating the applicability of each standard.

223 Vessels to be accommodated

The Boat Lift System shall be capable of launching/docking and transferring the following vessels:

Type of Boat	Length [m]	Width [m]	Draught [m]	Docking weight [t]
--------------	---------------	--------------	----------------	-----------------------

Survey Vessel	24.55-25.075	5.5-5.79	0.8-1.45	92-63.58
Cargo Vessel	50.6	9.6	0.7	111
Accommodation Boat	26.5	9	0.8	237
Cruise Vessel	44-55	8-10	1.2-1.6	various
Modern Vessel	25-38	7-8.2	0.7	111
Hull Loading Barge	31-36	8.5-10	0.7	111
Deck Loading Barge	30-55	7.3-10	0.7	various
Hydraulic Surface Dredger	28.3	10	1.32	185
Cutter Suction Dredger	42.7	9.48	1.5	194
Fishing vessel (coastal trawler)	25	8.0	2.4	400
Naval vessels	54-86	9.0-13.0	2.2-4.2	various
Tug boats	20-35	8.0-12.0	2.7-3.8	various

One docking and launching per day shall be considered in the design.

224 Boat lift Transfer Requirements

The minimum longitudinal / transverse transfer speed shall be 3 m/min under full load condition and 5 m/min under no load condition.

225 Boat Lift requirement

The boat Lift lifting / lowering speed shall be minimum 20 cm/min at full load and at minimum 30 cm/min in unloaded condition.

226 Notices and Labels

Safe working load notices shall be prominently displayed on the structure of the Boat Lift System in English.

All notices and labels shall be in English. Filling points for water, lubricating oils and greases, tank capacities and other similar maintenance instructions shall be in English.

All equipment with manufacturers rating and identification plates shall be shown in English. The Contractor must submit the locations, styles and sizes proposed for all significant notices for approval by the Employer / Employer's Representative. Notices and labels shall be manufactured from steel, brass or durable plastic. External notices shall be painted and manufacturer's rating plates stamped. General labels shall be engraved from white/black/white sandwich plastic or similar to provide black lettering on a white background. Emergency labels etc. shall be engraved to provide red lettering on a white background. All labels shall be mechanically secured by screws, rivets or similar. Adhesive labels are not permitted.

227 Commissioning and Certification

The Contractor shall provide a commissioning engineer(s) who is competent and experienced in Boat Lifts Systems together with any other necessary personnel to:

- Monitor the load testing of the Boat Lift System (provision of the test load will be arranged by the contractor).
- Commission the Boat Lift System.
- Provide training in the proper operation and maintenance of the Boat Lift System.
- Provide coordination and liaison with Third party certification inspector.

The commissioning tests shall be conducted by the Contractor's personnel and demonstrate the overall suitability of the Boat Lift System for the function intended together with proof of specified performance amply demonstrating operational reliability.

Arrangements related to dimensions and weight required for the commissioning of the Boat Lifts systems shall be also contractor's responsibility.

Any breakages or component or equipment failures that arise during commissioning shall be rectified or replaced at the Contractors cost and without penalty to the overall Boat Lift System guarantee. All tests associated with the breakage or failure shall be repeated.

The Contractor shall be responsible for obtaining third party Certification of the fully commissioned Boat Lift System.

Scope of Works covered under Third party Certification shall be, but not limited to:

- Design approval (approval of drawings & calculation)
- Survey of the manufacturing and testing of all systems at Contractor's premises or at Sub-Contractor's premises.
- Survey of the manufacturing of boat lift structure and other steel structures at Site and at Contractor's premises or at Sub-Contractor's premises.
- Attendance and certification of the final testing & commissioning at SRF, Pandu, Assam.
- For all primary materials a 3.1 B certificate must be provided.
- Any other points, if missing, to complete the Boat Lift System

300 Safety and Operation Requirements

310 Boat Lift

311 Safety Equipment and Requirements

The electrical control system shall effect and process, monitor and indicate all signals of the safety equipment as follows:

- In case of slack rope or overloading of a rope all motors shall be automatically cut off. For this, the loads on each individual rope shall be measured by a load measuring device and indicated.
- Reaching upper and lower final positions of boatlift, an automatic stop of all hoist motors will controlled by limit switches.
- The horizontal synchronous operation of the boatlift shall be monitored by vertical distance measuring units.
- In case of power failure, brakes will stop all hoists.
- All hoists must be added with emergency cut- off switches.
- The operation of the Boat lift shall be indicated by audible signals and flashing lamps.
- For communication between operator, boat lift area and vice versa, a respectively communication system (e.g. walkie-talkie or other) shall be designed, supplied and installed by the Contractor.

Covers, guards, or other safety devices shall be provided for all parts of equipment that present safety hazards. The safety devices shall not interfere with operation of the equipment. The safety devices shall prevent unintentional contact with the guarded part, and shall be removable to facilitate inspection, maintenance and repair of the parts.

The Contractor shall perform a comprehensive system safety programme, which shall be described in a System Safety Management Plan and which shall consider all potential hazards to the Boat Lift, the boats using the systems and the personnel operating them. The object of the programme is to provide assurance that all potential hazards have been assessed for significance and where necessary mitigated to a level where the hazard is either removed or reduced to an acceptable level. The Contractor shall specifically provide acceptable safety devices and show how these have been used in previous installations and their applicability to this project. The Contractor shall provide a fully detailed Operational and Emergency Procedure. This should include but not be limited to:

- (a) Failure of a single hoist rope and
- (b) Failure of a second and subsequent hoist rope, whilst the Boat Lift is under fully loaded condition. The Procedure is to fully detail the operational safety hazards associated with the above rope breakages and the management techniques to be adopted to protect operational staff, the vessel and the Boat Lift.

Notwithstanding the above, all other requirements to ensure smooth and safe operation of the Boat Lift and Transfer System shall be provided.

312 Operational Requirements and Control System

The control of the boat lift system shall meet the following requirements:

- The control system shall comprise state-of-the-art computer based programmable equipment (PLC of reputed make).
- Switchgear cabinets and control gear assemblies shall be provided with suitable access to allow for convenient maintenance, replacement and testing of electric equipment.

All operations of the boat lift (lifting, lowering, trim, stop, operation of individual hoists etc.) shall be actuated and controlled from remote control and are via “man-on-site” joysticks. During operation all important information shall be displayed as follows:

- Load of individual hoists
- Total load on hoists
- boat weight
- Load curve
- Reaching of bottom position
- Reaching of ground position
- Reaching of intermediate position(s)
- Differences in height between individual hoists
- Degree of trim in longitudinal direction
- Locking of platform
- Emergency stop

Operational data of the boat lift (including failures within the system) shall be individually documented.

Working hours of the boat lift shall be recorded by a working hour meter.

313 EMPLOYER’S SUGGESTED TECHNICAL REQUIREMENTS

The Employer requirements are tabulated hereunder. The firms respond to the this tender shall either confirm the details furnished and/or indicate the corresponding details to the equipment proposed by them. They can also amplify the indicative Technical requirements specified hereunder and offer the Lumpsum price for a turnkey solution and guarantee relating to the equipment proposed.

1. Technical Specification

♦ Max capacity	:		800	metric ton
♦ Dock span	:		17500	mm
♦ Clear inner width	:		18600	mm
♦ Track	:		20900	mm
♦ Max width	:	approx.	23400	mm
♦ Gauge	:		20500	mm
♦ Max length (at the base)	:	approx.	27500	mm
♦ Clear height under transversal beam	:		18520	mm
♦ Max height	:	approx.	22000	mm

♦ Groups of steering wheels	:		n. 8
♦ Electronic Steering System based on a PLC that permits the following special steering configurations			
✓ Steering on 16 wheels			
✓ Steering on 8 rear wheels			
✓ Steering on 8 frontal wheels			
✓ 90° - directional ± 5°			
✓ All Round Steering (Carousel Steering) by 360°			
✓ Crab Steering (diagonal steering) from 0 to 90°			
♦ Industrial tyres	:		
♦ Inflation pressure	:		
♦ N. of winches (synchronized and independent)	:		
♦ N. of lifting points	:		
♦ N. of mobile lifting points (trolleys)	:		
♦ Lifting speed when laden	:		
♦ Lifting speed when unladen	:		
♦ Travelling speed when laden	:		
♦ Travelling speed when unladen	:		
♦ Affordable slope at full load (on concrete or tarmac)	:		
♦ Water-cooled diesel engines brand			
♦ Hydraulic pumps with variable cubic capacity	:		
♦ Capacity of the fuel tanks	:		
♦ Capacity of the hydraulic circuit oil tanks	:		
♦ Polyester lifting slings, in two pieces (complete with textile cut-preventing protections) with a safety factor major than 7	:		
♦ Hoisted load displayed via high precision strain cells			
♦ Commands via remote control + cable-fed button strip			
♦ Weight of the equipment (shipping weight)	:		ton

1.1 Suggested Frame

- The frame consist of two vertical frames placed in a longitudinal travel direction and connected transversally by a single cross beam placed at the front end of the frames, obtaining a C shaped structure open at one end. To allows the yard to handle boats which are taller than cross beams connecting the two frames. This structure has box girders connected together with high strength bolted joints.
- The location of the connecting flange was studied considering that the hoist would be transported by containers/trucks and to facilitate assembly when on site using normal hoisting appliances. These box girders are constructed with flat arches and cores of sheet steel welded at full penetration. Internal stiffening diaphragms avoid any local instability.
- All welding should follow an automatic procedure approved by the competent control and test boards

- Frame welding detection should be controlled by checking and testing during the manufacture (ultrasonic, magnetic and other non-destructive tests are suggested).
- All welded plates on the steel structure should adopt the edge planer to process the groove according to the standard.
- Structural design and mechanisms should comply (please specify the standards)
- Between one of the upper longitudinal beam and the main transversal beam there should be an **articulation metallic hinge “pivot”** that enables the machine to adapt itself to the soil: the tires perfectly lean on the soil also when there are antithetic slopes. The machine should always work in isostatic conditions

1.2 OFFSET TRANSVERSAL BEAM

The machine is designed with the transversal beam positioned beyond the last lifting slings spreader.

1.3 WHEEL GROUPS

The Details of the displacement system of the machine to be provided by the bidder
The wheel should be mounted on hubs (idle and powered hubs) with bearings made of double conical rollers that can support not only the radial load but also the axial load tentatively or modify to suit the proposed equipment.

Tires : Details to be provided by the firm

▪ Rims	:	Details to be provided
▪ Bearings (for idle hubs) with conical and barrel rollers		Details to be provided
▪ Inflation pressure		Details to be provided

On each wheel group should be equipped with mushroom red button to stop the machine during emergency situations and revolving lights and acoustic signals that are put into action when the machine is at work or specify the alternative to the equipment specified.

1.3.1 Motorization for travelling

Travelling is achieved through wheels hub formed of a metal pipe with a motor reduction gear unit incorporated and closed in a housing supported by the central wheel holder.

Generally it may be vacuum tight and does not require maintenance and there should not be any moving elements on the outside. On the opposite side, coaxial to the reduction gear unit, there is a axial piston hydraulic motor.

Between the motor and the reduction unit there is a negative multiple disc parking brake.

This multiple disc brake shall work when there is no supply pressure always guaranteeing maximum safety with the engine off or if the Boat Hauler is parked on a slope.

Note:

The details are only indicative. The firm shall furnish the details of the equipment proposed

1.4 HYDRAULIC TRANSLATION SYSTEM

The displacement of the machine is to be achieved by a hydraulic system in closed loop.

The hydraulic circuit should be kept under continuous pressure by a feeding pump which is incorporated in the main pump and compensates the losses from the system. In this way the starting and the halting of the machine are properly adjusted by means of a joystick that moves the pump disc, guaranteeing a slow and graduated variation of the displacement speed.

When the joystick is released by the operator it goes in the neutral position (the central one) and the machine gradually stops.

Note:

The details are only indicative. The firm shall furnish the details of the equipment proposed

1.5 BRAKING SYSTEM

There should be two braking systems:

a) SERVICE BRAKE

This kind of brake is intrinsic in the type of hydrostatic transmission that is used for the starting of hydraulic engines.

b) PARKING BRAKE

The parking brake is installed between the hydraulic engine and the reduction gear.

It is sized to make the machine stay in its position when the maximum slope is climbed. Moreover, it compensates the wind stress on the machine during all the possible working conditions.

This should be dimensioned to support the system when the Boat Hauler reaches the maximum gradient with its load.

It should be capable of supporting the thrust provoked by wind conditions.

1.6 Steering Data

The machine should be provided with 4x2 steering wheel groups.

The rotation will be achieved by special powered slew drivers sized to support the various stresses along both the longitudinal and the horizontal direction.

The steering of the wheel group will be achieved by powered slew drives which are hydraulically controlled.

The steering should be controlled by a position sensor and is then processed by a PLC microprocessor which automatically commands the various steering degrees, always guaranteeing the most suitable working conditions and avoiding every possible sideslip. The possible steering options to be adopted:

- On all four groups
- On the front wheel groups
- On the rear wheels groups
- “Carousel” steering (360° all around steering) on the spot
- At 90° directional $\pm 5^\circ$
- “Slanting” (crab steering) from 0° to 90°

The slew drives should consist of a ring gear with n. 2 special endless screws that are activated by hydraulic engines. The whole system should be supported by special bearings with high resistance and is completely housed.

The supervision system should be controlled by a micro-processor, which automatically controls the stress on the slew drivers and, if necessary, works on parameters of the steering kinematics making it possible to achieve the optimal working conditions for the machine.

This continuous check enables the machine to smoothly steer in each condition, guaranteeing the maintenance of the components during the time.

Note:

The details are only indicative. The firm shall furnish the details of the equipment proposed.

1.7 HOISTING ELEMENTS

The lifting of the maximum load (800 ton) is to be achieved by ___ polyester lifting slings that are hanged to ___ spreaders (balance sling holders). Each main spreader should support 2 under-spreaders. N. 4 lifting slings are hanged to each of the under-spreader by means of articulated joints. Therefore, each main spreader to have ___ lifting slings. Furthermore, ___ attachments (picking points) for the end spreaders to be accounted for along the main spreader.

The spreaders will be connected by means of steel ropes and pulleys that return the ropes to the oscillating carrying blocks placed along the two upper longitudinal beams.

In the spreaders, the pulleys should be positioned in such a way that the pulley receiving the entering rope is aligned with the pulley releasing the exiting rope this prevents the rotation of the spreaders guaranteeing, at the same time, a compact pulley pack.

The spreaders are to be articulated in such a way to enable the slings to always work in the most proper way and are provided with pulleys mounted on ball bearings.

The connection between the slings and the spreaders should be made with pivots that are provided with a handle and are made of high resistance steel (hot deep galvanized) with safety splints. The system guarantees quick and safe operations (sling removal / sling collocation).

On the pulleys a bearing with two roller crowns to be specified or similar, should be installed. The bearings are to be fitted with a manual greasing system.

Note:

The details are only indicative. The firm shall furnish the details of the equipment proposed.

1.7.1 TRAVELLING SPREADERS – Trolleys

The machine is fitted with ___ lifting points; all lifting points will be hydraulically moved. Their positions are electronically tracked by the PLC via electronic sensors, in order to prevent contact between the spreaders. Moreover, the PLC combines this datum with the data received from the load cells and calculates the overall loading diagram, guaranteeing that the machine always works in an allowed and safe lifting configuration.

LIFTING LINE <i>(numeration starting from the open side)</i>	MOVABLE / FIXED TROLLEY	TROLLEY TRAVEL

Note:

The details are only indicative. The firm shall furnish the details of the equipment proposed.

1.7.2 WINCHES

A total of ___ winches , synchronized and independent, ___ on each side (i.e. one per each lifting point).

Each winch should have turning grooved drum on which the wire rope winds on maximum two layers.

The drum should be supported by a big-size bearing on one side, to allow for the rotation of the drum, while on the other side, coaxial to the drum, the geared epicyclical reduction gear unit in an oil bath as well as the hydraulic motor are mounted. A negative multiple disc brake is mounted between the reduction gear unit and hydraulic motor.

A screw limit switch stops the movement at the extreme travel points (up and down).

The winches are located four by four, on the lower longitudinal beams, in such a position to allow each access for servicing and maintenance.

As already specify the winches, with big-diameter drums, spool a maximum of 2 layers of rope: this ensures that the ropes themselves are always properly positioned, preventing any possibility of their superposing in the wrong way and, consequently, avoiding risky damages or wears on the ropes themselves.

The length and the diameter of the drums are such to ensure that the sling-carrying spreaders can descend beyond the dock level by approx. 1.5 m

The particular configuration with a direct correspondence between the winch and the spreader guarantees the utmost versatility about the possibility to handle – with no load suspended – the spreaders desired by the operator.

This is for sure the most reliable system, as when a winch is moved, the closest spreader is immediately moved, as a consequence.

Note:

The details are only indicative. The firm shall furnish the details of the equipment proposed.

1.7.3 HYDRAULIC PLANT FOR WINCHES FEEDING

- The lifting winches are fed by an hydraulic pump with variable cubic capacity that works on the compensated distributors.
- Each winch should be provided with an independent distributor with its own max pressure valve.
- The commands are processed by the remote control and are via “man-on-site” joysticks.
- The winches can be simultaneously or singularly commanded: it enables the perfect balancing of the ship, both in the longitudinal and in the transversal side.
- The descent movement is controlled by a counterbalance which is commanded by the oil pressure that will feed the engine during the descent operations.

1.7.4 LIFTING BRAKE SYSTEMS

Each winch is provided with a service brake installed between the hydraulic engine and the reduction gear (the brake type is a negative one).

Note:

The details are only indicative. The firm shall furnish the details of the equipment proposed.

1.7.5 SLINGS

The machine is equipped with ____ slings, fabricated in polyester 100%, with two thermally fixed layers, painted, treated against UVA rays and abrasions. They should be prepared in compliance with the standards- specify the standard, capacity of no less than ___ tons. when in the “U” shape – safety factor > 7:1, width reduced at the ends.

Lifting sling data

- N. of slings	:
- Type	:
- Total Length of the slings	:
- Length of the textile protections	:

Note:

The details are only indicative. The firm shall furnish the details of the equipment proposed.

1.8 SLINGS CONNECTIONS

Each sling is divided in 2 elements having a length of, respectively, ___ and ___ meters. The 2 parts of each sling is joined via metallic hot-zinc-plated joints. The sling connections have quick-release pins made in high resistance steel (hot deep galvanized). The pins are equipped with handle and safety cotter pin for quick and safe operations. Also, between the slings and the spreaders there are quick-release pins equipped with handle and safety cotter pin for easy and fast sling adjustment or removal.

Note:

The details are only indicative. The firm shall furnish the details of the equipment proposed.

1.9 LIFTING SECURITIES

- The lifting movement is provided with an upper limit switch that immediately blocks the travel when the spreader reaches the maximum height allowed. A low limit switch guarantees the same function in order to prevent the spreader from going further the dock maximum level in the chosen profundity
- When the load reaches a total capacity bigger than the allowed maximum load (which corresponds to 110% of the rated load) a load limit switch will stop the lifting travel and switch on a sound alarm (claxon).
- The load controlled descent is guaranteed by balancing valves.
- Upper and low extra-travel work on a general counter (redundancy system)
- Emergency stop button with key lock.
- The following critical situations due to breakdown situations are already controlled by our basic hydraulic design:
 - longitudinal load holding
 - horizontal displacement braking

Note:

The details are only indicative. The firm shall furnish the details of the equipment proposed.

1.10 HIGH PRECISION WEIGHING SYSTEM

The load reading is made by a weighing system with digital displays positioned near the thermo-hydraulic group. In the displays it is possible to read not only the total weight, but also the load lifted on the open and on the closed side and the load lifted by every single lifting line.

The system, microprocessor controlled, is made of _____ load cells placed on the pins of the return lifting pulleys: it enables a very precise weighing reading and the possibility to visualize the load lifted by each weighing lines.

Note:

The details are only indicative. The firm shall furnish the details of the equipment proposed.

1.11 THERMO-HYDRAULIC GROUPS

The sound-proof thermic groups is placed under the two lower longitudinal beams (one on each side) and are at men’s height in order to enable easy inspection and maintenance operations.

Each thermic group should be insulated with a sound-proofing foam and is fitted with large hinged doors, on the front and on the back of the group itself, in order to facilitate access to all of the group’s elements and components.

The “New Hydraulic Installation Optimizing System”, even in the event that one of the two engines should fail, allows the machine to perform all the movements such as travelling, steering, lifting and displacement of the upper trolleys. With only one engine at work, even at full load condition (800 ton), the machine will be able to perform all the movements in “emergency” at reduced speeds. This system, via the control of the hydraulic installation, permits to the running power unit to compensate the nonoperation of the other one, keeping all the functionalities of the machine.

Diesel engines data (n° 2 units)

- Cooling	:
- Type	:
- RPM	:
- Power	:
- Engine complying with	:
- Cylinders	:

Note:

The details are only indicative. The firm shall furnish the details of the equipment proposed.

1.12 GENERAL DESCRIPTION OF THE HYDRAULIC PLANT

Every pipe that feeds the engines and the hydraulic processors starts from the thermo-hydraulic group.

The pipes, whose diameter and thickness change based on the pipe’s specific use, are made of galvanized steel. Dimension of the commonly used pipes:

- External diameter = Internal diameter =
- External diameter = Internal diameter =
- External diameter = Internal diameter =
- External diameter = Internal diameter =
- External diameter = Internal diameter =
- External diameter = Internal diameter =
- External diameter = Internal diameter =
- External diameter = Internal diameter =

The pipes are connected to the structure by fixing elements provided with rubber rings that are also used to insulating the pipes.

The connections between the engines and the winches on the wheel groups are achieved by flexible pipes made of various metallic bands covered by rubber.

The rigid connections (fittings) are special ones components that are manufactured by Voss.

The treatment for corrosion to be specified.

After the preassembly on workshop on the boat lift's structure, all hydraulic hoses (rigid pipes + fittings) are removed from the structure ,undergo an internal cleansing, are carefully tapped and then painted in compliance with the marine paint cycle

Note:

The details are only indicative. The firm shall furnish the details of the equipment proposed.

1.12.1 Hydraulic installation layout

Hydraulic installation layout to be specified by the firm

It is recommended that oil is always kept in the best possible conditions, and this guarantees an excellent operation and, what is more important, guarantees an excellent performance of the pumps and the whole circuit.

Note:

The details are only indicative. The firm shall furnish the details of the equipment proposed.

1.13 Description of hose safety device

On the hydraulic hoses where there are high pressures involved and on those at ground level, safety system is installed to be specified by the firm

1.14 ELECTRICAL INSTALLATION AND CONTROL SYSTEM

1.14.1 General description

Electrical systems and components comply with standard- specify the standard

The electrical equipment is enclosed in two robust steel closed cabinets / casings, so as to prevent accidental contact to the parts under voltage. The electrical closed cabinets / casings steel to be specified by the firm.

Moreover, the electrical cabinets / casings and the remaining electrical equipment is located such that they will be easily accessible for maintenance and repair.

All the wire channels have removable covers for easy inspection. Each electrical component is duly labelled to be codified with the same reference of the electrical drawings supplied with the equipment. It will enable an easy and comfortable maintenance of the whole electrical installation.

Note:

The details are only indicative. The firm shall furnish the details of the equipment proposed.

Remote control

All the machine displacements are commanded via a remote control (the operator will be free to move around the machine, having the best visual over all of the machine's points rather than having to command the machine from a cabin, where he surely cannot have the same clear vision) The remote control is bidirectional: it does not only give the inputs to the machine but also captures the outputs sent by the equipment.

The outputs can be also visualized in the remote control display, where it is possible to visualize the weight and some diagnosis / alarms signals of the machine.

Moreover, the remote control is provided with an ABS tough case, having a shoulder belt for the operator. It is supplied with a battery already installed in the battery chamber, n. 2 spare batteries and n. 1 battery charger. The estimated duration of the battery's charge is 8 hours

Auxiliary box

There is an auxiliary box- Specify the details.

Emergency button strip

In some unforeseen conditions if the remote control fails Emergency button strip is provided- details to be specified by the firm.

1.14.2. Proportional distributors

In emergency situations (when all the above detailed command systems fail) is it possible to make the load safe by means of the proportional distributor levers- clarify.

1.14.3. Supervision and tele-assistance system

On the machine there is a graphic interface that enables the operator to supervise the machine status and visualize the alarms (by means of error codes and diagnosis messages).

The graphic interface consists of a display with alpha/number buttons and function buttons.

By means of the same graphic interface is it possible to set / parameterize some functions of the machine, in particular the steering and the displacement movements.

For this particular operation, a safety password is required.

Furnish the list of some of the possible operations and visualizations to be provided

400 Project Milestones

410 Project Delivery

The Boat Lift System Works are anticipated to be carried out in two (2) phases.

411 Phase 1 – Design (Engineering) Phase

Phase 1 shall consist of the preparation of the design (engineering) of the Boat Lift System. The design parameters and inputs about the civil engineering works already executed at site shall be provided by the Employer. The wheel load of the boat lift shall be limited to the design loads considered for the civil engineering works. The phase 1 shall comprise the following but not limited to

- general layout of all equipment
- maximum height of boat lift structures and other principal system dimensions including loads
- any other principal dimensions
- details of drive systems
- electrical requirements
- utility requirements
- provision of electrical cabling
- design for the Control system

The review period by the Employer as well the period for the Contractor is 15 days for each part.

The detailed design period for the Contractor is 15 days

The period for the certification (design appraisal) by Third party agency is 15 days.

412 Phase 2 – Fabrication, Installation and Commissioning

Phase 2 shall consist of the fabrication, supply, installation, commissioning, certification and Taking Over of the Boat Lift and Transfer System. The scope of Phase 2 work is all work required under the Contract and not included in Phase 1.

420 Contract Hold Point

It is anticipated that there will be no delay in the civil construction works from the civil works contractor shall complete his works by May 2025.

In order to allow for unforeseen delays in the execution of the civil works by the civil contractor, a Contract Hold Point is to be fixed after completion of Phase 1 – Preliminary Design Phase and Detailed Design,

The start of Phase 2 –Fabrication, Installation and Commissioning of Boat Lift System at SRF Pandu is therefore conditional to the Release of the Contract Hold Point (ROH).

In the event that the Contract Hold Point has not been released by the date indicated in the Schedule of Key Milestone Dates according Section 430, the following provisions shall apply:

- For a delay in the Release of the Contract Hold Point of up to six (6) months:

- (a) the Contract Price shall apply, and
- (b) no extension of time shall be granted.
- For a delay in the Release of the Contract Hold Point of between six (6) and twelve (12) months:
 - (a) an extension of time shall be granted each month or part thereof the Contract Hold Point release is delayed in excess of six (6) months, and
 - (b) no further costs will be compensated.
- For a delay in the release of the Contract Hold Point of greater than twelve (12) months either party can decide to terminate or renegotiate the Contract by 30 days written notice to the other party.

In the case of termination of the Contract there shall be no cancellation costs beyond the design costs already paid as part of Phase 1.

430 Key Milestone Dates

The key milestone project dates for the Contractor are:

1	Contract Agreement	A
2	Contractor provides preliminary design, detailed design, drawings, third party design appraisal etc as required for Phase 1.	$B = A + 75 \text{ days}$
3	Release of Hold Point (ROH) and commencement of Phase 2.	$C = B + 30 \text{ days}^{**}$
4	Completion of manufacturing /fabrication and production of boat lift structure and components	$D = C + 120 \text{ days}$
5	Completion of Delivery, Installation , Commission and certification of Boat Lift at Pandu site	$E = D + 90 \text{ days}$

** subject to conditions at 420 above.

500 Training / Maintenance

510 Maintenance during the Defects Notification Period

After taking over by the Employer, the Employer shall be fully responsible for the inspection and maintenance of the Boat Lift and all other Plant supplied under the Contract throughout the Defects Notification period. The Contractor shall submit to the Employer / Employer's Representative a fully detailed inspection and maintenance program for approval.

520 Maintenance Support

Conduct of maintainability and training needs analysis for initializing and set up proper continuous support for the Boat Lift System is expected.

The Contractor should have a service network to rapidly attend to Boat Lift System breakdowns and repairs during and after the Defects Notification period. Details are to be included in the Tender by the Contractor.

530 Spare Parts

A list of spare parts including prices for 5 years operation, maintenance and one set of emergency spares are to be provided for the Boat Lift System. Same can be adjusted against maintenance / repairs analyses with finalization of the design.

The Principal may elect to purchase any or all of the recommended spare parts, in addition to other spare parts, nominated by the Contractor.

At the tender submission stage an itemized price listing of the manufacturer's recommended additional spare parts considered necessary to support the Boat Lift during the initial 5 years of operation. This listing shall include also the consumables.

To simplify the spares holding and procurement aspects, materials, equipment and components shall be standardized as far as is reasonable within the design of the Boat Lift System. All spare parts are to be fully interchangeable with the original parts and be manufactured to the same quality and standards.

All spare parts and any associated special tools shall be suitably boxed and/or preserved to prevent deterioration whilst in storage. All such packaged items shall be clearly labeled in English for ease of identification.

Spare parts and (main) components of the Boat Lift (except steel structures) shall be commercial off the shelf items and for the Employer direct available on the market.

540 Operator Training

Training shall be carried out during the testing and commissioning periods. Training shall be carried out for a maximum of ten persons from the Employer's workforce.

Full training at site in the safe operation and maintenance of the Boat Lift System and all equipment shall be provided to the Employer's nominated personnel by a suitably qualified person or persons, employed by the Contractor and approved by the Employer. The language for all training shall be English.

The proposed training programmes shall be submitted in advance to Employer / Employer / Employer's Representative for comment and approval, to ensure that the specific operational requirements of the yard and workforce are adequately addressed.

The Contractor shall administer tests and evaluate each trainee-candidate and certify that, he / she has attained the required competency in all respects. A continuous evaluation process is to be carried out by the Contractor to the approval of Employer / Employer's Representative. If

any trainee is found to be unsuitable, the Contractor shall inform the Employer and request for an immediate replacement.

Operational training shall include:

- a. Safety procedures
- b. Boat Lift, Boat In-Haul / Out-Haul System and Boat Transfer System operations
- c. Good practice in the operation of a Boat Lift facility
- d. Good record keeping and data logging
- e. Consequences of neglect and bad practices
- f. Application of the daily check list
- g. Instruction and familiarization regarding the overall operation of the Boat Lift System including Health and Safety provisions incorporated (including the operation etc. of items such as load weighing and limit switches etc.).
- h. Handling of emergencies in critical failure / hazard situations is to be imparted and included in the documentation.

550 Maintenance Training

Maintenance training shall be provided for a maximum of ten persons from Employer's workforce. Boat Lift familiarization at Contractor's facilities on maintenance (On the Job Training) is to be included.

Training at site will commence during the site assembly stage for the maintenance personnel and continue through testing and commissioning and into the setting to work phase for the Boat Lift System operators. The personnel being trained shall be given the opportunity to observe all aspects of assembly of the Boat Lift System.

The Contractor shall administer tests and evaluate each trainee-candidate and certify that, he / she has attained the required competency in all respects. A continuous evaluation process is to be carried out by the Contractor to the approval of Employer / Employer's Representative. If any trainee is found to be unsuitable, the Contractor shall inform the Employer and request for an immediate replacement.

Maintenance training shall include:

- a. Routine examination and maintenance
- b. Fault diagnosis (mechanical, electrical, hydraulic, control systems)
- c. Downloading and uploading of programmes
- d. Removal, dismantling and replacement of parts and components
- e. Basic electrical checks, safety routines and component replacement
- f. Approach to hydraulic systems overhaul
- g. Maintenance planning records and procedures
- h. Instruction and familiarization regarding the overall operation and maintenance of the Boat Lift System including Health and Safety provisions incorporated (including the operation etc. of items such as load weighing and limit switches etc.)
- i. Handling of emergencies in critical failure / hazard situations is to be imparted and included in the documentation.

560 Installation, Operational and Maintenance Manuals

The Contractor shall provide the following manuals:

- Installation Manual (to be submitted to the Employer at least 28 days prior to the start of any installation work on Site)
 - Operations Manual (to be submitted to the Employer as final version at least 28 days prior to the planned date for commencement of the Tests on Completion)
 - Maintenance Manual (to be submitted to the Employer as final version at least 28 days prior to the planned date for commencement of the Tests on Completion)
 - Component Repair Manuals (to be submitted to the Employer as final version at least 28 days prior to the planned date for commencement of the Tests on Completion)
- (1) The manuals shall be drawn in English language
 - (2) The Contractor shall submit to the Employer's Representative three (3) copies of each manual in draft form. On receipt of the Employer's Representative written comments of the submitted draft, the Contractor shall incorporate any alterations and/or amendments and supply five (5) copies of paper based and two (2) sets of CD-R / DVD disc based copies of the final edition of the manuals to the Employer.
 - (3) The final edition of the manual shall have rigid binding in plastic cover, and the subject and the name of the project shall be printed on the spine of each volume. The size of pages shall be DIN A4, and of drawings DIN A3, and the maximum format authorized for bindings shall suit DIN A4. The final edition of manual shall conform in every respect to the approved draft.
 - (4) The Installation Manual shall give general guidelines to the installation executed by the Contractor for the Boat Lift.
 - (5) The Operations and Maintenance Manuals shall provide instruction on the operation and maintenance of the Boat Lift System covering the operation, maintenance and parts identification for the Boat Lift System and associated equipment and components up to 4th level (component level). Proprietary equipment manufacturer's manuals may be provided where they comply with the requirements of these Employer's Requirements.
 - (6) The Manuals shall include as minimum:
 - Lubrication instructions
 - Trouble shooting methods
 - Spare Parts list and description, with exploded isometric drawings where possible identifying all components and their associated spare part numbers for all items
 - Schematic diagrams of electrical controls
 - Routine/Preventive maintenance schedule
 - Assembly sketches of manufactured parts
 - As Built Drawings including those mentioned in Section 136
 - Commissioning results section including settings of all equipment's

570 Special Tools

The Contractor shall supply to Employer / Employer's Representative one (1) complete set of special tools and fixtures necessary for the erection, removal, maintenance and subsequent

replacement of all assemblies, components, spare parts and consumables, required to ensure that no item exceeding 25 kg need be manually handled.

All special tools and fixtures shall be permanently marked as to their function and specific use.

Special Tools Specifications shall be provided with manufacturer details and manuals.

Any tool not included in Contract Price but found missed by the Contractor from provisioning as per maintenance / repair manuals would be provided free of costs before commissioning.

580 Embedded Software

All system software, application software, final uploaded programmes in PLC & HMI shall be handed over in a laptop. Interfacing cables between PLC to laptop & HMI to laptop shall be provided.

All system and embedded software in the Boat Lift system shall be listed and provided with their backup on CD / DVD with their version and update status.

Provision for trouble shooting and their reloading (with back-up) in case of problems / corruption shall be ensured.

HOOGHLY COCHIN SHIPYARD LIMITED



Development of Ship Repair Facility at Pandu, Guwahati, Assam

Turnkey Engineering, Supply, Installation and Commissioning of
800 T Boat Hoist/Boat Lift System

*Hooghly Cochin Shipyard Ltd
(HCSL), Satyen Bose Road
P.O-Danesh Shaikh Lane,
Nazirgunge, Howrah, West
Bengal-711109, India*

Volume IV Financial Part

Request for Proposal of

Engineering, Supply, Installation and Commissioning of 800T Boat Hoist/ Lift for the
Ship Repair Facility (SRF) at Pandu, Guwahati, Assam, India

VOLUME IV

Financial Part

Tender No.: HCSL/PUR/TEN/2025/020



Hooghly Cochin Shipyard Limited

Satyen Bose Road P.O. Danesh Shaikh Lane,
Nazirgunge, Howrah, West Bengal 711109, India
Phone: +91(33)-29558283/+91(33)26888282

Web: www.hooghlycsl.com

10th March 2025

Contents of EPC Turnkey RFP/ Tender Documents

Volume I Instructions to Tenderers
 Invitation to Tender
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 Preamble to Schedule of Prices
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 Lump Sum Cost Breakdown for Major Items

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1 Preamble to Schedule of Prices

1. General

- 1.1 The Schedule of Prices shall be read in conjunction with the Conditions of Contract and the Employer's Requirement and Drawings.
- 1.2 The Tenderer shall quote for all items of the Works executed on EPC/Turnkey basis and the prices shall be quoted for the complete scope of Work as described or implied from these Tender Documents in Schedule of Prices.

2. Description & Quantities

- 2.1 Price given in the Schedule of Prices against each item shall be for the scope covered by that item as detailed in the Employer's Requirements, Drawings or elsewhere in the Tender Document. The general directions and descriptions of work and materials are not necessarily repeated nor summarized in the Schedule of Prices and do not generally give a full description of the Plant and equipment to be supplied and the services to be performed under each item. References to the relevant sections of the Tender Document shall be made to ascertain the full scope of the requirements included in each item prior to filling in the rates and prices against each item in Schedule of Prices.

The Schedule of Prices only identifies major components of the structure and it does not restrict the responsibility of the Contractor to furnish all equipment's, materials and services as deemed necessary by the Employer for making the Boat lift/hoist operationally complete and satisfactory as specified and/or implied in the Tender Document and subsequent revisions thereto.

- 2.2 The quantities as shown in the Schedule of Prices are estimated quantities and provisional only being given as an indication of the Scope of Work to enable the Tenderer to bid for different items of the Works in accordance with his estimate of costs. The estimated quantities shall be used for comparing the Tenders. It is, however, be noted that the basis of payment will be the actual quantities of work executed and measured by the Contractor and verified by the Employer / Employer's Representative.
- 2.3 The sizes & dimensions mentioned and/or specified in the various technical descriptions and specifications including Drawings are tentative and not final as the responsibility for detailed design rests with the Contractor under the Contract. If, in the opinion of the Employer / Employer's Representative, at the time of review of Contractor's drawings/designs for approval, certain sizes & dimensions of some items have to be increased for proper completion and/or operation of the Works, then revised sizes & dimensions shall be supplied by the Contractor at no extra cost to the Employer.

3. Units & Abbreviations

- 3.1 Units of measurement, symbols and abbreviations expressed in the Tender Document shall comply both with FPS & MKS System.

The following abbreviations shall be used in the Schedule of Prices:

Abbreviation

Local Currency Component	LCC
Indian Rupees	INR
Ex Works	EXW
Quantity	Qty
Square Meters	m ²
Running Meters	rm

4. Rates and Prices

- 4.1 Except as otherwise expressly provided under the Conditions of Contract, the unit rates and lump sum amounts entered in the Schedule of Prices will be the rates at which the Contractor will be paid, and shall be deemed to include for the full scope and all costs incurred by the Contractor in the performance of the Works, the provision of services including his overheads, income tax, super tax, other indirect costs, customs & other duties, profits and costs of accepting the general risks, liabilities and obligations set forth or implied in the Contract, except for such costs which are specified as reimbursable under the Contract.

The unit rates shall be extended to show the total amount for each item. The total of the Schedule of Prices is the Total Tender Price and shall be entered in of the Form of Summary of Tender Price. Where a discrepancy exists between the unit rate and the extended total amount, the unit rate shall be taken as correct and the total amount adjusted accordingly.

- 4.2 Unless otherwise stipulated in the Conditions of Contract, the rates and prices entered by the Tenderer shall be fixed and firm and shall not be subject to adjustment during the performance of the Contract.
- 4.3 All duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as on the date twenty-eight (28) days prior to the deadline for submission of Tender shall be included in the rates and prices and the total Tender Price submitted by a Tenderer.

Additional/reduced duties, taxes and levies due to subsequent additions or changes in legislation shall be reimbursed/deducted as per provisions of the Conditions of Contract.

- 4.4 The whole cost of complying with the provisions of the Contract shall be included in the items provided in the priced Schedule of Prices, and where no items are provided in the Schedule of Prices for any work required to be executed by the Contractor on EPC/Turnkey basis under single responsibility for the completion of the Works and to make the Boat lift/hoist equipment operationally complete, the cost of such item(s) shall be deemed to be distributed among the rates and prices entered for the related items of the Works and no separate payment will be made by the Employer for those items executed by the Contractor.

The rates, prices and amounts shall be entered against each item in the Schedule of Prices. Where a Tenderer fails to quote a price of any item of the Schedule of Prices, the Employer will consider that the price of that item is included among other items and the Contractor will be obligated to furnish that item at no extra cost to the Employer, if awarded the Contract.

- 4.5 The Tenderer shall be deemed to have obtained all information as to port clearance facilities and charges, loading and unloading facilities and charges, storage facilities and charges, transportation facilities and charges, congestion and/or other conditions to be expected at Pandu Port and or any other seaport of India and all requirements related thereto.

The Contractor shall be responsible to make complete arrangements for the transportation of the Plant to the Site. The Tenderer shall be deemed to have included all clearing, forwarding and other incidental costs in this regard in his Tender. The Contractor will have the option to use either Kolkata Port or any other seaport of India, if transported by sea.

-
- 4.6 The Contractor shall provide all parts of the Works to be completed in every respect for commercial operation. Notwithstanding that any details, accessories, etc. required for the complete installation and satisfactory operation of the Plant, are not specifically mentioned in the Schedule of Prices, Employer's Requirements including Drawings, such details shall be considered as included in the Contract Price. All charges for the supply of goods, materials, accessories or work not specifically mentioned herein but necessary for the completion and operation of the Works shall be deemed to have been included in the quoted prices.
- 4.7 All costs in connection with third party agency inspection/certification and witnessing of Factory Acceptance Tests within and outside India as per provisions of Sub-Clause 7.4 of Particular Conditions of Contract shall be borne by the Contractor and shall be deemed to have been included in the quoted prices.

All costs in connection with the holding of meetings shall be borne by the Contractor.

The rates in the Schedule of Prices shall also include Contractor's cost for providing Performance Security and other Bank Guarantees required for performance of the Contract.

5. Tender Prices

5.1 Break-up of Tender Prices

The various elements of Tender Prices shall be quoted as detailed below:

a) Shipping & Insurance (if transported by sea)

i) Shipping

The Tenderer shall quote prices for shipping from port of shipment to the port of entry in India (India seaport) for the sub-totals of the Plant, Erection Equipment, Spare Parts, Workshop Equipment and other materials to be imported in India for the Contract. Such prices shall include all marine transportation costs including ocean freight, heavy lift charges, fees and other charges, etc.

The prices for shipping/marine transportation shall be quoted for shipment through any reputed shipping lines acceptable to the Employer.

Cost of shipment(s) affected by the Contractor at his option by aircraft shall be deemed to be included in the total Tender Price.

ii) Insurance

The Tenderer shall quote prices for insurance cover from ex-factory/ex-works to the Site (warehouse to warehouse) for the sub-totals of the Plant, Erection Equipment, Spare Parts, Workshop Equipment and other materials to be imported in India for the Contract. Such prices shall include all insurance costs covering the responsibility for all loss or damages while loading, unloading, storing and trimming on board the vessel at the port of shipment or on inland carrier and transportation to Site.

The prices for transportation/marine insurance cover shall be quoted on the basis of insurance through insurers from any country(ies) of the world acceptable to the Employer.

b) Unit Price for Supply of Goods

The Tenderer shall quote prices for Local Goods, materials (other than civil permanent works which is done by the Employer through another contractor) and equipment in the relevant column of Ex-Factory of "Schedule of Prices". Such prices shall include:

- i) Design documentation, drawings, drafting, planning services, manufacturing, testing, commissioning, training, third party agency certification, and packing of finished goods ready for delivery to Site including loading, unloading, transportation, storing and insurance costs,
- ii) All custom duties, sales tax and other taxes already paid or payable on the components and raw materials used in the manufacture or assembly of Local Goods, materials and equipment's.

c) Local Transport

Inland transportation for the Plant, Erection Equipment, Spare Parts and Workshop Equipment shall be the Contractor's responsibility in respect of:

- i) the Plant, Erection Equipment, Spare Parts, Workshop Equipment and other materials offered from outside India; from the port of entry in India to the storage area at the Site, and
- ii) indigenous Plant, Erection Equipment, Spare Parts, Workshop Equipment and other materials if any, offered from within India; from the factory in India to the storage area at the Site. The cost shall also include all insurance costs of Local Goods and other materials from factory to Site covering the responsibility of all losses or damages, while loading, unloading, storing, trimming on the carrier and transporting to Site. The cost of insurance of Local Goods shall be quoted on the basis of insurance through any insurance company listed in Clause 5.1 a) ii) here above, acceptable to the Employer.

All charges occurring there from including octroi, zila tax, fees etc. and charges for loading, forwarding and unloading expenses shall be borne by the Contractor. Unloading at the Site, handling of the Plant, Erection Equipment, Spare Parts, Workshop Equipment and other materials to the designated point of Site storage, checking and verifying all shipments received against shipping documents, issue of all receiving reports and issues of damage reports (when applicable) shall be the Contractor's responsibility.

The Tenderer shall recognize such elements of the costs which he expects to incur in the performance of the Works and shall include all such costs in the rates and amounts entered in the Schedule of Prices.

d) Erection & Other Work

The Tenderer shall quote prices for Erection & Other Work for the sub-totals of the Plant at the Site. Such prices shall include the costs of handling of the Plant and other materials from Site storage to point of final installation, erection, installation, testing, commissioning including all inspection, performance tests, reliability tests and responsibility for operation & maintenance of the Plant until issuance of the Taking-Over Certificate, the cost of foreign and local erection staff and labour, tools and equipment etc. It shall also cover the services of qualified representative(s) of the supplier(s) of Plant or adviser(s) to assure proper erection and commissioning of the Plant.

The price shall also include cost of arranging insurances in respect of Contractor's operations in India which insurances shall be effected by the Contractor with any insurance company listed in Clause 5.1 a) ii) here above, acceptable to the Employer.

e) Other Services

In the Schedule of Prices, under the relevant items, the Tenderer shall quote prices for all costs to be incurred in connection with inspections and witnessing of tests at manufacturers' works within or outside India by the Employer / Employer's Representative staff.

All payments towards guarantee, etc shall be covered in the quoted price.

5.2 Total Tender Price

The total of Tender prices in the Schedule of Prices shall be entered in the Summary of Tender Prices.

6. Erection & Testing Equipment and Maintenance Tools

6.1 The Tenderer shall be responsible to provide all Erection and Testing Equipment & Maintenance Tools at the Site, at his own expenses.

7. Provisional Sums

7.1 Provisional Sums included and so designated in the Schedule of Prices if any, shall be expended in whole or in part at the direction and discretion of the Employer / Employer's Representative. The Contractor will only receive payment in respect of Provisional Sums if he has been instructed by the Employer / Employer's Representative to utilize such sums.

Provisional Sums shall be expended for reimbursement of Contractor's invoices for any additional site protection works, relocation of services or any other work / payments as instructed by the Employer / Employer's Representative through Variation Order.

8. Payment Schedule

SI No	Milestone	Payment
1	Stage 1- On issuance of the purchase order for the material supply	10 % of the supply order value excluding taxes and duties against submission of equivalent bank guarantee, as per HCSL format, valid till completion of material supply.
2	Stage 2- Delivery of boat lift materials/ items at Pandu site after certification by third party Classification society. (Prior to dispatch for items)	60% of the supply order value including all taxes and duties
3	Stage 3- Positioning of Boat lift erection equipment at the site	10% of the supply order value including all taxes and duties and 10% of installation and commissioning value including all taxes and duties
4	Stage 4 - Completion of assembly , erection of structural frame work , transversal beam and wheel	10% of the supply order value including all taxes and duties and 30% of installation and commissioning value including all taxes and duties

	groups and certification by third party Classification society.	
5	Stage 5 - Completion of assembly, erection of all machineries, electrical and control system components and certification by third party Classification society.	10% of the supply order value including all taxes and duties and 30% of installation and commissioning value including all taxes and duties
6	Stage 6 Completion of installation and completion of functional and operational test and certification by third party Classification society.	20% of installation and commissioning value including all taxes and duties
7	Stage 7 Successfull commissioning of the boat lift, and certification by third party Classification society, providing operational training and maintenance training and receipt of BG towards performance and gurantee of the equipment	10% of installation and commissioning value including all taxes and duties

Towards stage 1 payment, a Bank Guarantee in CSL format equivalent to the stage 1 payment, to cover the period till entire completion of material supplies is to be furnished. On receipt of bank guarantee, stage-1 payment shall be released.

2 Schedule of Prices

Schedule 1 – Boatlift/hoist

SI No	Description	Lump sum price in INR	GST	Total amount in INR
1	Supply cost of boat lift/hoist and all accessories including cost of delivery to site at Pandu Guwahati, Assam, insurance, handling, transportation, loading, unloading, custom clearances, cost of third part certifications, cost of Supply of spare parts for 5 years operation and set of emergency spares etc complete			
2	Erection, installation, and commissioning, testing, and handing over the boat lift including third party certification and service assistance etc complete			
Grand Total of schedule 1				

Schedule 2 – Day Works Rates -Labour

Item	Description	Unit (hrs)	Rate (INR)	Amount (INR)
A.01	Design engineer	80		
A.02	Draftsmen (CAD)	120		
A.03	Foremen	60		
A.04	Skilled workmen	40		
A.06	Skilled carpenters	40		
A.07	Skilled welders	40		
A.08	Skilled machine operators	40		
A.10	Operator for crane	40		
A.11	Skilled mechanics	40		
A.12	Skilled electricians	40		
A.14	Unskilled workmen	800		
Subtotal				
(any additional items may be added by the Tenderer)				

Schedule 3 – Optional Works

Item No.	Description	Unit	Quantity	Rate (INR)	Amount (INR)
		U			
		U			
	(any additional items may be added by the Tenderer)				
Total Schedule (

Note: only schedule 1 will be considered for arriving L 1 bid. Day work and optional items would not be considered for the arrival/evaluation of L 1 bid

3 Estimated Payment Schedule

Tenderer's estimate of the value of work which would be executed by him during each of the periods stated below, based on his Programme of Works and the Rates in the Schedule of Prices, expressed in foreign and local currency of payments:

Period / Section	Amounts	
	LCC (100,000 INR)	FCC
Advance Payment		
At completion of Phase 1 (Design Phase)		
At successful factory tests of Boat lift		
At delivery to Site of Boat lift		
At completed installation of Boat Lift System		
At successful commissioning of Boat Lift System		
At successful completion of O&M Training to Employer's Employees		
(any additional items may be added by the Tenderer)		
Total Tender Price		

Initials of Signatory to Tender:

4 Lump Sum Cost Breakdown for Major Items

The Tenderer is to provide a detailed breakup of his Lump sum costs in a manner that the overall picture for the quoted price can be understood. It should include major heading wise cost breakup including rate analyses for at least 6 major cost items as required to analyse it.

HOOGHLY COCHIN SHIPYARD LIMITED



Development of Ship Repair Facility at Pandu, Guwahati, Assam

Engineering, Supply, Installation and Commissioning of
800 T Boat Hoist/Boat Lift

Volume V

Drawings

*Hooghly Cochin Shipyard Ltd
(HCSL), Satyen Bose Road
P.O-Danesh Shaikh Lane,
Nazirgunge, Howrah, West
Bengal-711109, India*

Request for Proposal of

Engineering, Supply, Installation, and Commissioning of 800T Boat Hoist/ Lift for the Ship Repair Facility (SRF) at Pandu, Guwahati, Assam.

VOLUME V

Drawings

Tender No.: HCSL/PUR/TEN/2025/020



Hooghly Cochin Shipyard Limited
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Schedule of Prices

Summary of Tender Price

Estimated Payment Schedule

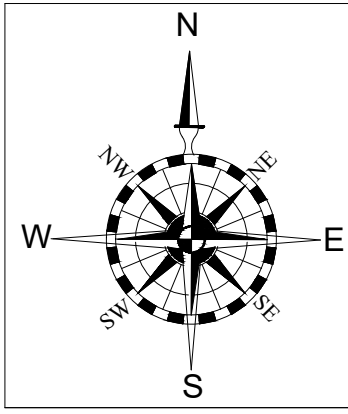
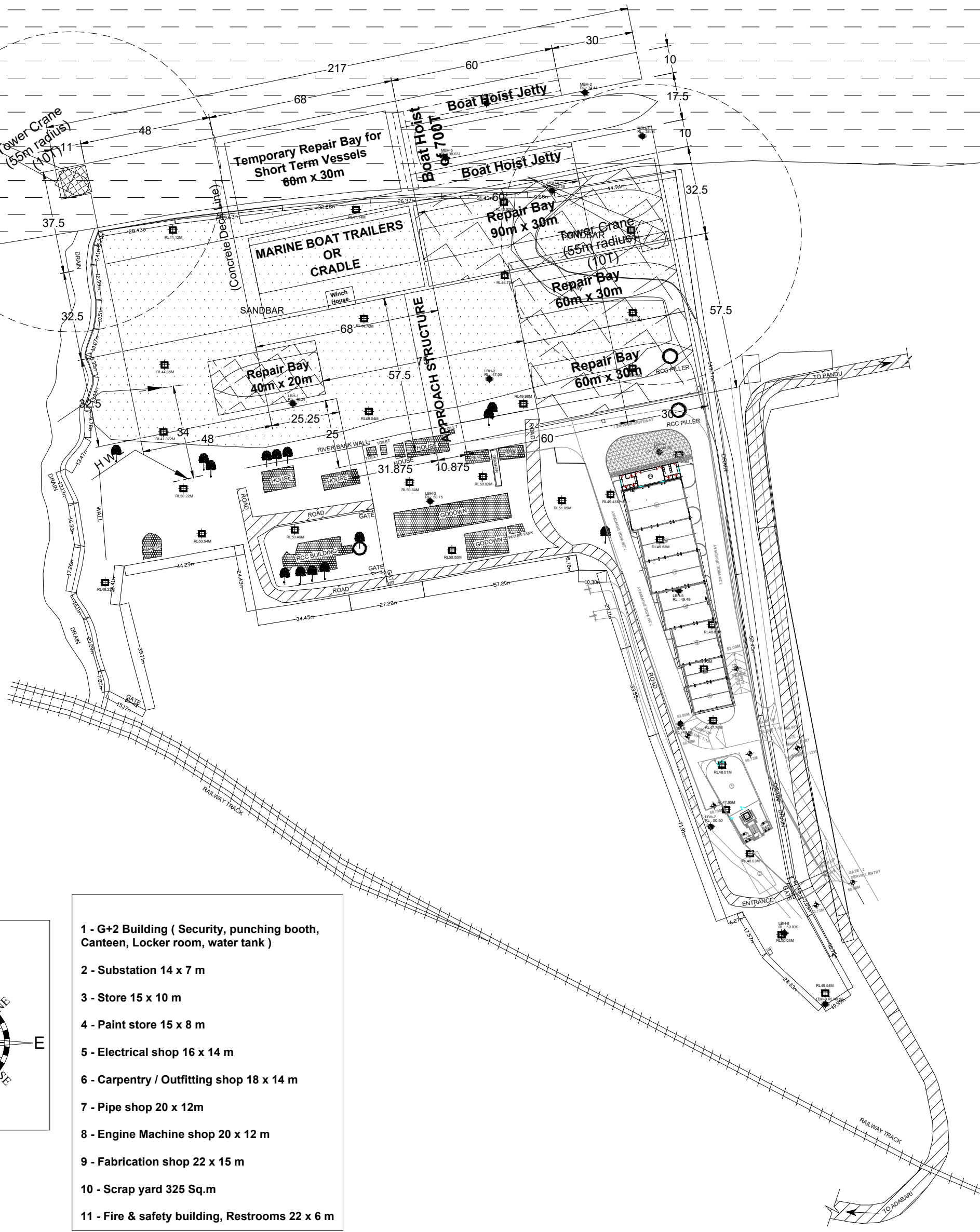
Lump Sum Cost Breakdown for Major Items

Volume V Drawings

DESIGN PROJECT FOR SHIP REPAIR FACILITY TO HANDLE INLAND
WATERWAYS VESSELS AT PANDU, GUWAHATI



BRAHMAPUTRA RIVER



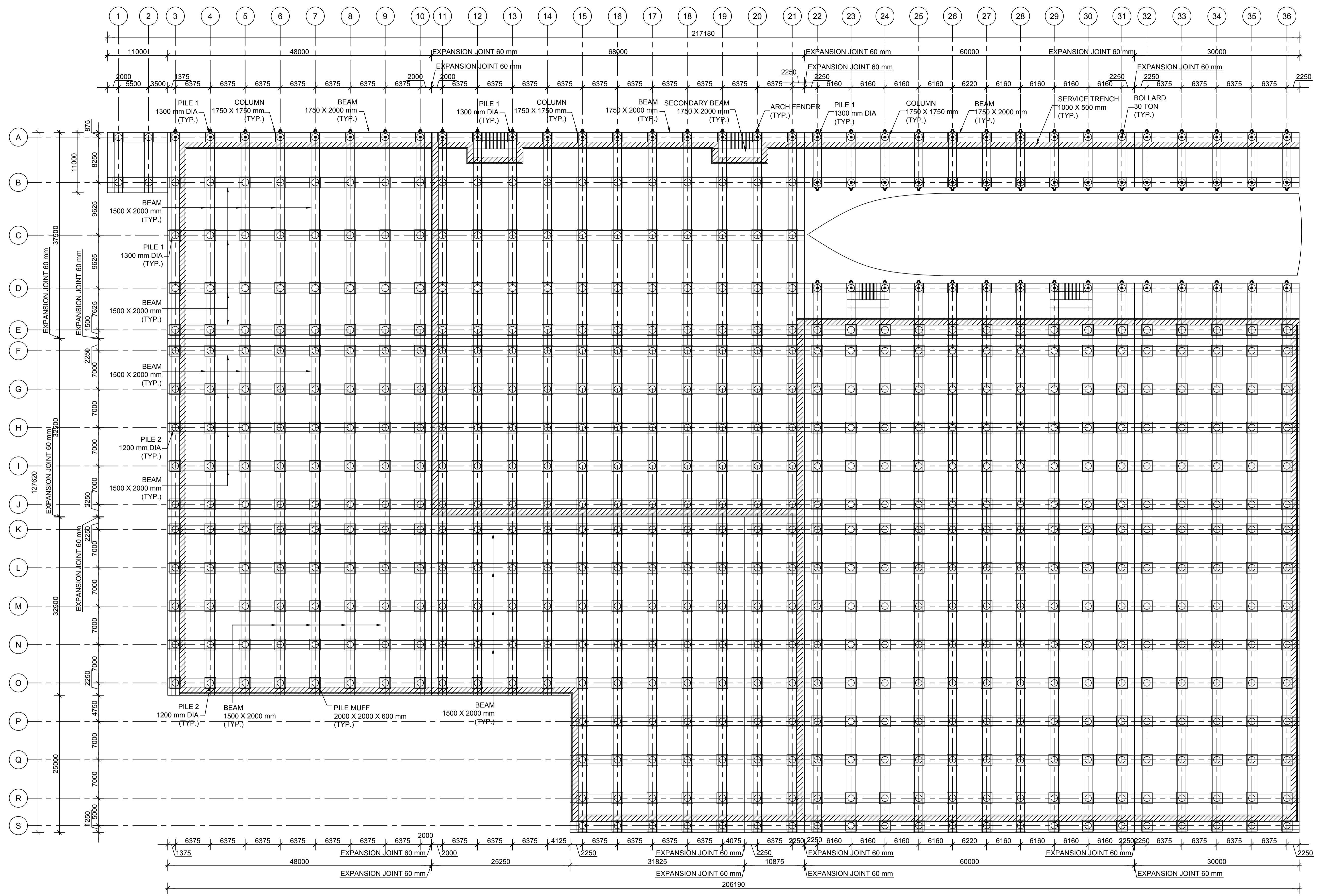
- 1 - G+2 Building (Security, punching booth, Canteen, Locker room, water tank)
- 2 - Substation 14 x 7 m
- 3 - Store 15 x 10 m
- 4 - Paint store 15 x 8 m
- 5 - Electrical shop 16 x 14 m
- 6 - Carpentry / Outfitting shop 18 x 14 m
- 7 - Pipe shop 20 x 12m
- 8 - Engine Machine shop 20 x 12 m
- 9 - Fabrication shop 22 x 15 m
- 10 - Scrap yard 325 Sq.m
- 11 - Fire & safety building, Restrooms 22 x 6 m

LAYOUT OF SHIP REPAIR FACILITY PHASE I & II

NOTES :-
 1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
 2. ALL LEVELS INDICATED ARE IN METERS WITH RESPECT TO MEAN SEA LEVEL .

REV.	DDMMYY DATE	DESCRIPTION	INIT. SIGN.	INIT. SIGN.	INIT. SIGN.	INIT. SIGN.


ORIGINAL SIZE: A1	CLIENT:	HOOGLY COCHIN SHIPYARD LIMITED	DATE: 11.04.2022
	PROJECT:	DESIGN PROJECT FOR SHIP REPAIR FACILITY TO HANDLE INLAND WATERWAYS VESSELS AT PANDU, GUWAHATI	
	DRAWING TITLE:	LAYOUT OF SHIP REPAIR FACILITY (SHEET 2 OF 2)	REV 0
	DRAWING NO:	ITM-DOE-HCSL-SRF-100-02	
ENGINEERING FIRM:	Prof.S.A.SANNASIRAJ DEPARTMENT OF OCEAN ENGINEERING, IIT MADRAS, CHENNAI - 36		
		Prof.K. MURALI DEPARTMENT OF OCEAN ENGINEERING, IIT MADRAS, CHENNAI - 36	

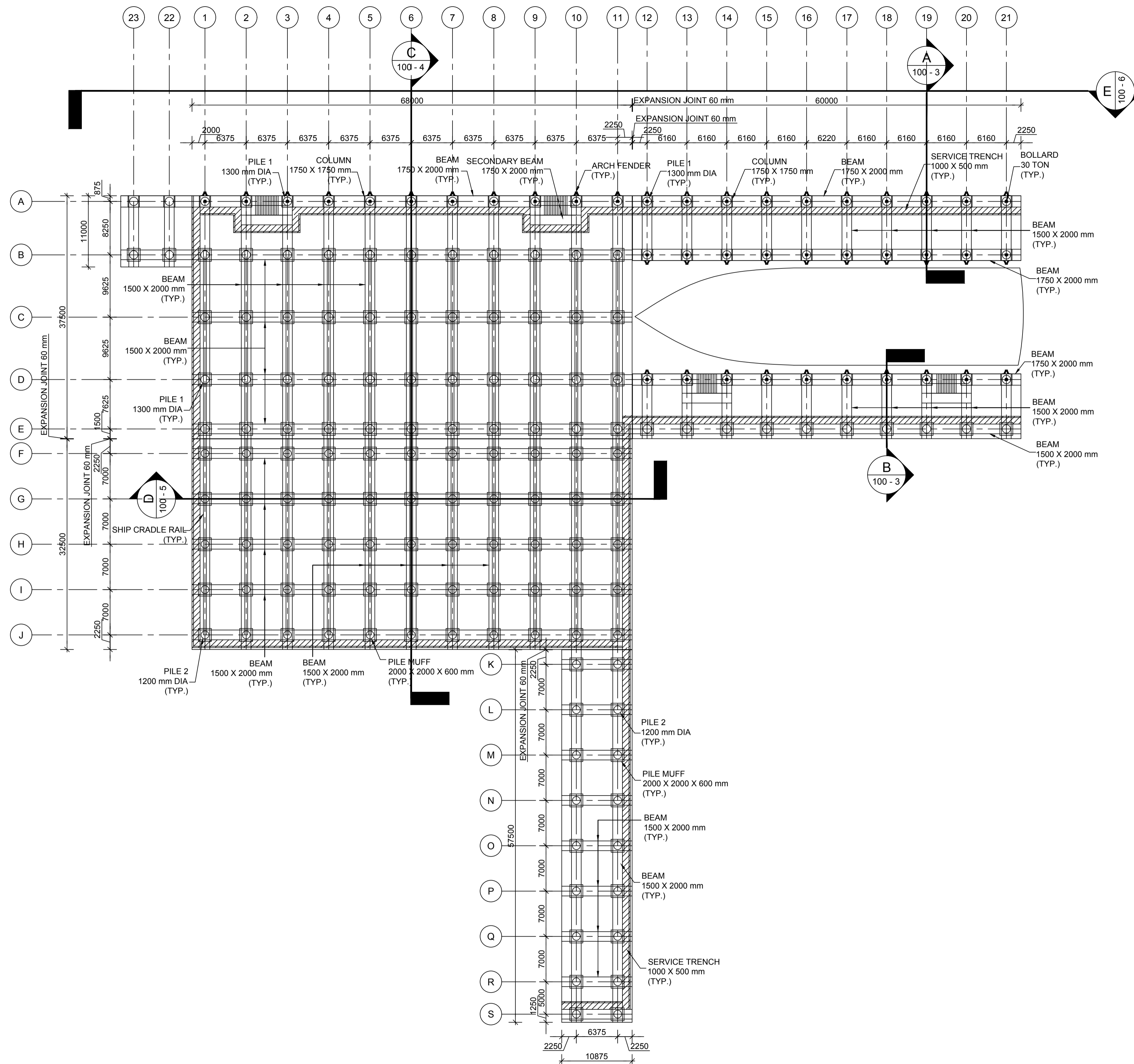


OVERALL PLAN VIEW OF SHIP LIFT PHASE I & II
Scale 1:350

- NOTES :-**
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
 2. ALL LEVELS INDICATED ARE IN METERS WITH RESPECT TO MEAN SEA LEVEL
 3. CONCRETE GRADE FOR ALL RC STRUCTURE SHALL BE M40 WITH MINIMUM 28 DAYS CHARECTERISTIC STRENGTH OF 40 MPa.
 4. STEEL GRADE FOR ALL REINFORCEMENTS USED IN RC STRUCTURES SHALL BE CORROSION RESISTANT STEEL WITH A MINIMUM YIELD STRESS OF 500 MPa.

REV.	DMMYY DATE	DRAWING NO.	TITLE	DRN	INIT. CHECKED	SIGN. APPROVED	INIT. APPROVED	SIGN.
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ORIGINAL SIZE: A1	CLIENT:	HOOGLY COCHIN SHIPYARD LIMITED	DATE: 25.03.2022
	PROJECT:	DESIGN PROJECT FOR SHIP REPAIR FACILITY TO HANDLE INLAND WATERWAYS VESSELS AT PANDU, GUWAHATI	
	DRAWING TITLE:	GENERAL ARRANGEMENT OF SHIP REPAIR FACILITY PHASE - II (SHEET 2 OF 6)	Scale as shown REV 0
	DRAWING NO.:	IITM-DOE-HCSL-SRF-100-02	
ENGINEERING FIRM:	 Prof.S.A.SANNASIRAJ DEPARTMENT OF OCEAN ENGINEERING, IIT MADRAS, CHENNAI - 36		
	Prof.K. MURALI DEPARTMENT OF OCEAN ENGINEERING, IIT MADRAS, CHENNAI - 36		

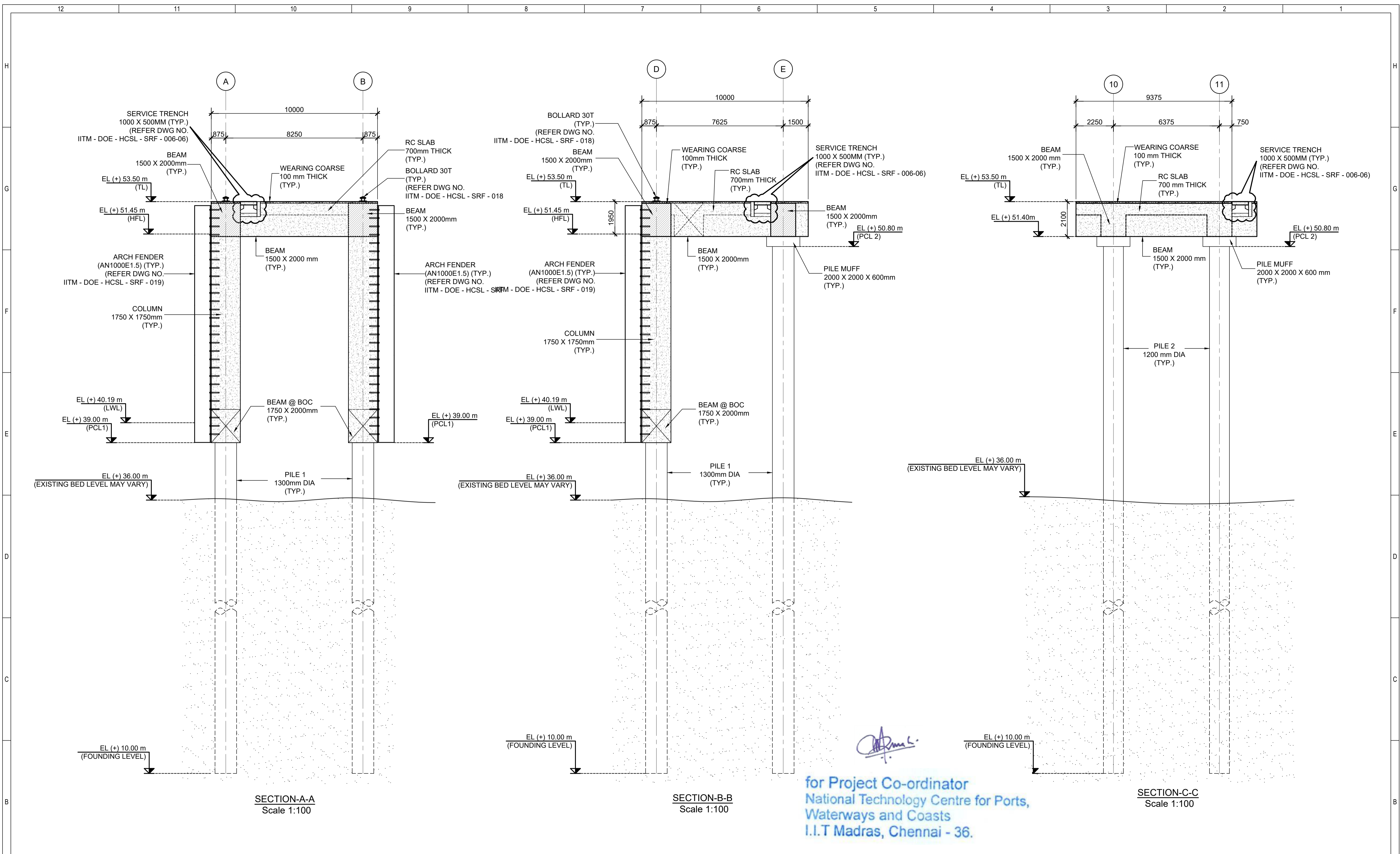


OVERALL PLAN VIEW OF SHIP LIFT PHASE I
Scale 1:350

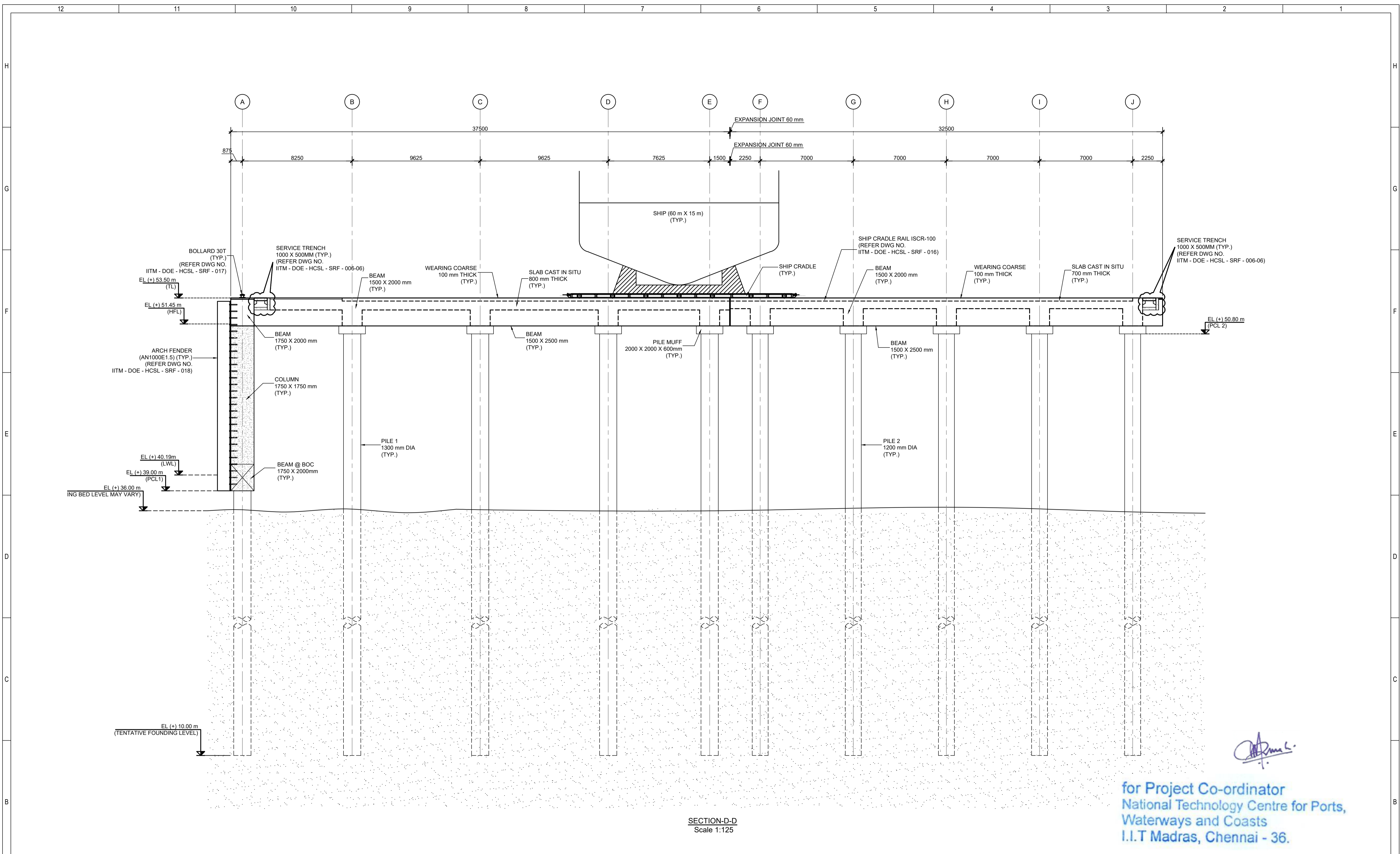
- NOTES :-**
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
 2. ALL LEVELS INDICATED ARE IN METERS WITH RESPECT TO MEAN SEA LEVEL
 3. CONCRETE GRADE FOR ALL RC STRUCTURE SHALL BE M40 WITH MINIMUM 28 DAYS CHARECTERISTIC STRENGTH OF 40 MPa.
 4. STEEL GRADE FOR ALL REINFORCEMENTS USED IN RC STRUCTURES SHALL BE CORROSION RESISTANT STEEL WITH A MINIMUM YIELD STRESS OF 500 MPa.

REV.	DDMMYY DATE	DRAWING NO.	TITLE	DRN	INIT. CHECKED	SIGN. APPROVED	INIT. CHECKED	SIGN. APPROVED

ORIGINAL SIZE: A1	CLIENT:	HOOGLY COCHIN SHIPYARD LIMITED	DATE: 25.03.2022
	PROJECT:	DESIGN PROJECT FOR SHIP REPAIR FACILITY TO HANDLE INLAND WATERWAYS VESSELS AT PANDU, GUWAHATI	
	DRAWING TITLE:	GENERAL ARRANGEMENT OF SHIP REPAIR FACILITY PHASE - I (SHEET 1 OF 6)	Scale as shown REV 0
	DRAWING NO.:	IITM-DOE-HCSL-SRF-100-01	
ENGINEERING FIRM:	 Prof.S.A.SANNASIRAJ DEPARTMENT OF OCEAN ENGINEERING, IIT MADRAS, CHENNAI - 36		
	Prof.K. MURALI DEPARTMENT OF OCEAN ENGINEERING, IIT MADRAS, CHENNAI - 36		



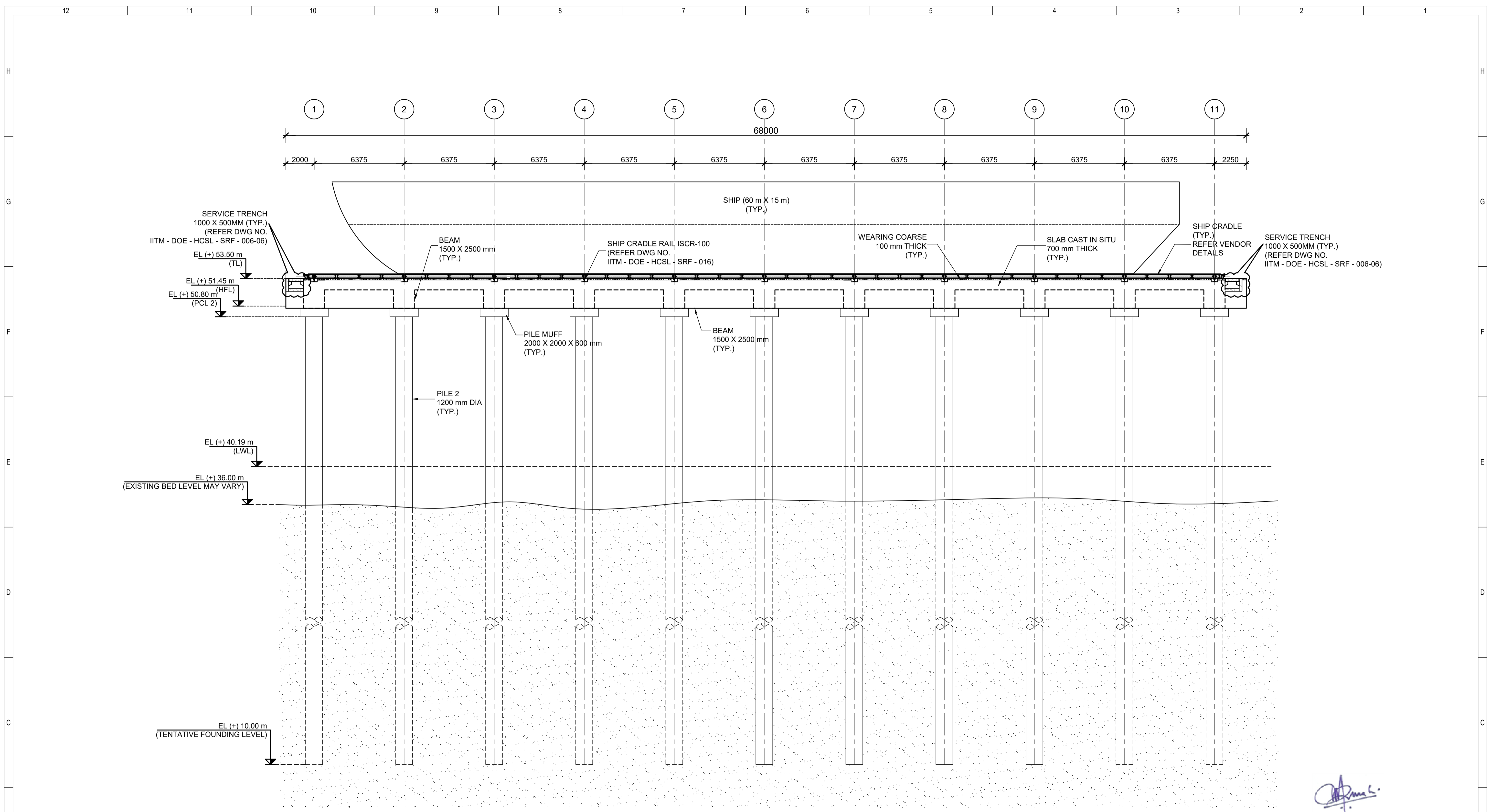
NOTES :- 1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE. 2. ALL LEVELS INDICATED ARE IN METERS WITH RESPECT TO CHART DATUM. 3. NO DIMENSION TO BE SCALED OFF FROM THIS DRAWING AND ONLY WRITTEN DIMENSION TO BE FOLLOWED. 4. CONCRETE GRADE FOR ALL RC STRUCTURE SHALL BE M40 WITH MINIMUM 28 DAYS CHARECTERISTIC STRENGTH OF 40 MPa. 5. T-DENOTES THERMO MECHANICAL TREATMENT BARS (TMT) OF GRADE Fe 500D HAVING YIELD STRENGTH NOT LESS THAN 500N/mm ² .	LEGEND :- C.D - CHART DATUM TL - TOP LEVEL HWL - HIGH WATER LEVEL LWL - LOW WATER LEVEL PCL - PILE CUTOFF LEVEL EL - ELEVATION BOC - BOTTOM OF COLUMN	REFERENCE :- 1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH LATEST STRUCTURAL DRAWING NO : a) IITM - DOE - HCSL - SRF - 006-01	REV.	DATE	DESCRIPTION	DESIGN	DRAWN	ORIGINAL SIZE A1 CLIENT: HOOGLY COCHIN SHIPYARD LIMITED PROJECT: DESIGN PROJECT FOR SHIP REPAIR FACILITY TO HANDLE INLAND WATERWAYS VESSELS AT PANDU, GUWAHATI DRAWING TITLE: SHIP REPAIR FACILITIES GENERAL ARRANGEMENT (SHEET 2 OF 7) DRAWING NO: IITM - DOE - HCSL - SRF - 006-02 ENGINEERING FIRM: NATIONAL TECHNOLOGY CENTRE FOR PORTS, WATERWAYS AND COASTS Prof.S.A.SANNASIRAJ Prof.K.MURALI DEPARTMENT OF OCEAN ENGINEERING, IIT MADRAS, CHENNAI - 36	DATE: 27.07.2023
			0	27.07.2023	ISSUED FOR CONSTRUCTION	EN	AKE		Scale as shown
									REV 0



SECTION-D-D
Scale 1:125

for Project Co-ordinator
National Technology Centre for Ports,
Waterways and Coasts
I.I.T Madras, Chennai - 36.

NOTES :- 1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE. 2. ALL LEVELS INDICATED ARE IN METERS WITH RESPECT TO CHART DATUM. 3. NO DIMENSION TO BE SCALED OFF FROM THIS DRAWING AND ONLY WRITTEN DIMENSION TO BE FOLLOWED. 4. CONCRETE GRADE FOR ALL RC STRUCTURE SHALL BE M40 WITH MINIMUM 28 DAYS CHARACTERISTIC STRENGTH OF 40 MPa. 5. T-DENOTES THERMO MECHANICAL TREATMENT BARS (TMT) OF GRADE Fe 500D HAVING YIELD STRENGTH NOT LESS THAN 500N/mm ² .	LEGEND :- C.D - CHART DATUM TL - TOP LEVEL HWL - HIGH WATER LEVEL LWL - LOW WATER LEVEL PCL - PILE CUTOFF LEVEL EL - ELEVATION BOC - BOTTOM OF COLUMN	REFERENCE :- 1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH LATEST STRUCTURAL DRAWING NO : a) IITM - DOE - HCSSL - SRF - 006-01					ORIGINAL SIZE A1	CLIENT:	HOOGLY COCHIN SHIPYARD LIMITED	DATE:	27.07.2023		
			PROJECT:	DESIGN PROJECT FOR SHIP REPAIR FACILITY TO HANDLE INLAND WATERWAYS VESSELS AT PANDU, GUWAHATI					DRAWING TITLE:	SHIP REPAIR FACILITIES GENERAL ARRANGEMENT (SHEET 3 OF 7)	Scale as shown		
			DRAWING NO:	IITM - DOE - HCSSL - SRF - 006-03					ENGINEERING FIRM:	Prof.S.A.SANNASIRAJ Prof.K.MURALI DEPARTMENT OF OCEAN ENGINEERING, IIT MADRAS, CHENNAI - 36			
			REV.	DATE	DESCRIPTION	DESIGN		DRAWN					
0	27.07.2023	ISSUED FOR CONSTRUCTION	EN	AKE									



SECTION EE
Scale 1:125

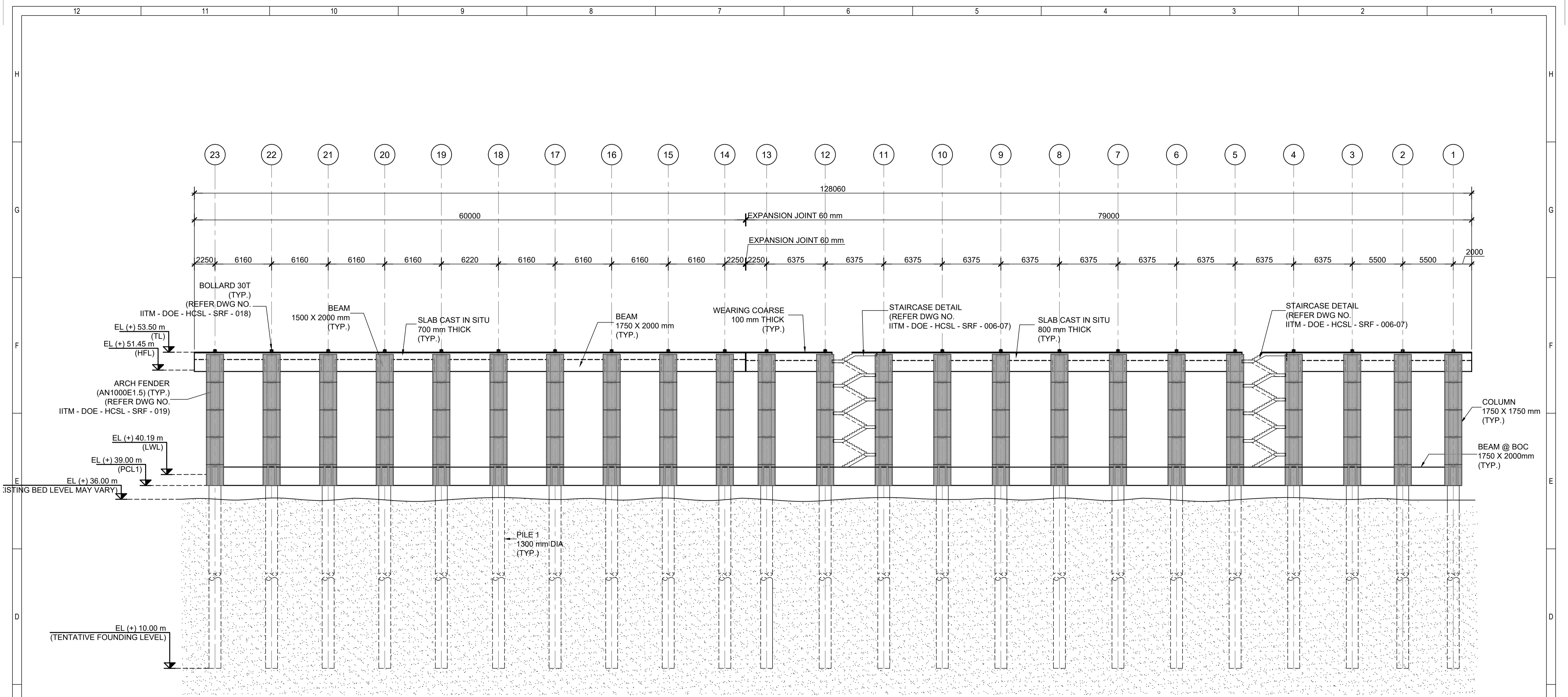
for Project Co-ordinator
National Technology Centre for Ports,
Waterways and Coasts
I.I.T Madras, Chennai - 36.

NOTES :-	
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.	
2. ALL LEVELS INDICATED ARE IN METERS WITH RESPECT TO CHART DATUM.	
3. NO DIMENSION TO BE SCALED OFF FROM THIS DRAWING AND ONLY WRITTEN DIMENSION TO BE FOLLOWED.	
4. CONCRETE GRADE FOR ALL RC STRUCTURE SHALL BE M40 WITH MINIMUM 28 DAYS CHARACTERISTIC STRENGTH OF 40 MPa.	
5. T-DENOTES THERMO MECHANICAL TREATMENT BARS (TMT) OF GRADE Fe 500D HAVING YIELD STRENGTH NOT LESS THAN 500N/mm ² .	
LEGEND :-	
C.D - CHART DATUM	
TL - TOP LEVEL	
HWL - HIGH WATER LEVEL	
LWL - LOW WATER LEVEL	
PCL - PILE CUTOFF LEVEL	
EL - ELEVATION	
BOC - BOTTOM OF COLUMN	

REFERENCE :-	
1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH LATEST STRUCTURAL DRAWING NO :	
a) IITM - DOE - HCSSL - SRF - 006-01	

REV.	DATE	DESCRIPTION	DESIGN	DRAWN
0	27.07.2023	ISSUED FOR CONSTRUCTION	EN	AKE

ORIGINAL SIZE A1	CLIENT:	HOOGLY COCHIN SHIPYARD LIMITED	DATE: 27.07.2023
	PROJECT:	DESIGN PROJECT FOR SHIP REPAIR FACILITY TO HANDLE INLAND WATERWAYS VESSELS AT PANDU, GUWAHATI	
	DRAWING TITLE:	SHIP REPAIR FACILITIES GENERAL ARRANGEMENT (SHEET 4 OF 7)	Scale as shown REV 0
	DRAWING NO:	IITM - DOE - HCSSL - SRF - 006-04	
ENGINEERING FIRM:	NATIONAL TECHNOLOGY CENTRE FOR PORTS, WATERWAYS AND COASTS Prof.S.A.SANNASIRAJ Prof.K.MURALI DEPARTMENT OF OCEAN ENGINEERING, IIT MADRAS, CHENNAI - 36		



SECTION EE
Scale 1:200

for Project Co-ordinator
National Technology Centre for Ports,
Waterways and Coasts
I.I.T Madras, Chennai - 36.

NOTES :-

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
- ALL LEVELS INDICATED ARE IN METERS WITH RESPECT TO CHART DATUM.
- NO DIMENSION TO BE SCALED OFF FROM THIS DRAWING AND ONLY WRITTEN DIMENSION TO BE FOLLOWED.
- CONCRETE GRADE FOR ALL RC STRUCTURE SHALL BE M40 WITH MINIMUM 28 DAYS CHARACTERISTIC STRENGTH OF 40 MPa.
- T-DENOTES THERMO MECHANICAL TREATMENT BARS (TMT) OF GRADE Fe 500D HAVING YIELD STRENGTH NOT LESS THAN 500N/mm².

LEGEND :-

C.D - CHART DATUM
TL - TOP LEVEL
HWL - HIGH WATER LEVEL
LWL - LOW WATER LEVEL
PCL - PILE CUTOFF LEVEL
EL - ELEVATION
BOC - BOTTOM OF COLUMN

REFERENCE :-

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH LATEST STRUCTURAL DRAWING NO :
a) IITM - DOE - HCSSL - SRF - 006-01

REV.	DATE	DESCRIPTION	DESIGN	DRAWN
0	27.07.2023	ISSUED FOR CONSTRUCTION	EN	AKE

ORIGINAL SIZE A1	CLIENT:	HOOGLY COCHIN SHIPYARD LIMITED		DATE: 27.07.2023
	PROJECT:	DESIGN PROJECT FOR SHIP REPAIR FACILITY TO HANDLE INLAND WATERWAYS VESSELS AT PANDU, GUWAHATI		
	DRAWING TITLE:	SHIP REPAIR FACILITIES GENERAL ARRANGEMENT (SHEET 5 OF 7)		Scale as shown REV 0
	DRAWING NO:	IITM - DOE - HCSSL - SRF - 006-05		
ENGINEERING FIRM:	NATIONAL TECHNOLOGY CENTRE FOR PORTS, WATERWAYS AND COASTS Prof.S.A.SANNASIRAJ Prof.K.MURALI DEPARTMENT OF OCEAN ENGINEERING,IIT MADRAS, CHENNAI - 36			