



COCHIN SHIPYARD LIMITED

(A GOVERNMENT OF INDIA ENTERPRISE)

P.O. BAG NO.1653 COCHIN-682 015 INDIA

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Web: www.cochinshipyard.in

Tender for

CONSTRUCTION OF COMPOUND WALL ALONG CSL-CIFT BOUNDARY AT ISRF PROJECT SITE, WELLINGTON ISLAND

Tender No. INFRA/ISRF/229/2022

(Last date of submission of tender is on or before 15:00 Hrs of 04 August 2022)

Tender No: INFRA/ISRF/229/2022

Name of work: CONSTRUCTION OF COMPOUND WALL ALONG CSL-CIFT
BOUNDARY AT ISRF PROJECT SITE, WELLINGTON ISLAND

CHECK LIST

Bidder should compulsorily fill this check list and ensure that all details / documents as mentioned in the Tender Document is submitted along with their bid. Please put Yes or No (Y/N) in the box and ensure compliance

Sl.No.	Description	Yes	No
1	Whether the tenderer has agreed to all terms & conditions given in the tender		
2	Whether the tenderer has enclosed copy of GST Registration certificate, EPF/ESI certificates		
3	Whether the PAN Number, PAN Card of the tenderer is furnished. If exempted from IT, the exemption certificate shall be enclosed.		
4	Whether registration certificate with PWD, CPWD, CoPA, CSL or other government agencies is furnished along with technical bid		
5	Whether the tenderer has submitted cost of tender form of Rs.560/- along with technical bid in DD/Cheque/NEFT mode		
6	Whether the tenderer has submitted EMD of Rs. 54,000/- along with technical bid in DD/Cheque/NEFT mode.		
7	Whether the tenderer has submitted signed Certificates/undertaking/declaration as per clause 12 of conditions of contract. (Annexure-I & Annexure-II)		
8	Whether the tenderer has submitted technical tender & Financial tender in separate closed envelopes.		
9	Whether the tenderer has submitted entire tender documents duly signed and stamped in all pages by		

	authorized representative.		
10	Whether bidder has submitted NEFT details in relevant format		
11	Submitted un-priced Bill of Quantities in technical bid		
12	Submitted Undertaking regarding not blacklisted/put on holiday/terminated by CSL or any Govt. dept.		
13	Submitted Duly filled power of attorney in favour of signatory of bid documents		

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No. INFRA/ISRF/229/2022

13 July 2022

TENDER NOTICE

Sealed competitive tenders in the prescribed form are invited on behalf of Cochin Shipyard Limited from experienced civil contractors registered with PWD, CPWD, CSL, CoPA or other government agencies for the under mentioned work, so as to reach the undersigned on or before the date and time mentioned below:

Name of work : CONSTRUCTION OF COMPOUND WALL ALONG CSL-CIFT BOUNDARY AT ISRF PROJECT SITE, WELLINGTON ISLAND

Probable amount of contract (PAC) : Rs 27,00,000/- Incl. GST

Earnest money to be deposited : Rs 54,000/- Incl. GST

Cost of tender form : Rs 500/- + 12% GST = Rs 560/-

(Those who download the tender form from website also will be required to remit the cost along with the tender documents in the form of a separate DD/Cheque/NEFT drawn in favour of Cochin Shipyard Ltd.)

Last date and time of issue of tender form: 04 August 2022, 12:00 Hrs

Last date and time of receipt of tender : 04 August 2022, 15:00 Hrs

Date and time of opening of tender : 04 August 2022, 15:30 Hrs

Time of completion of work : 4 months

Short description of work: The scope of works envisaged consist of construction of balance portion of compound wall along CSL-CIFT boundary at ISRF project site premises and includes but not limited to clearing site premises of all vegetation, removal and shifting of earth inside CSL premises,

temporary site barrication works, demolition works, earthwork, PCC, RCC, masonry works, coping, plastering, painting, structural fabrication works, supply of skilled and unskilled manpower etc.

Tenderers have to submit EMD and certificates as per Clause No.12 of Conditions of contract in a separate sealed cover superscribed as 'Cover A', which have to be kept outside the cover containing the price bid. The price bids of only those contractor's who have submitted proof of remittance of EMD, cost of tender form, certificates signed by the contractor, other relevant documents specified in the tender shall be opened. Price bids super scribed as 'Cover B' shall be without any conditions and strictly in accordance with the tender schedule. Price bid with any clauses like reimbursement of taxes etc. or any other conditions added by the tenderer other than the price quote will be summarily rejected. **Rates quoted should be inclusive of all taxes, all cess and duties but excluding Goods and Services tax.**

The tender documents can be obtained from the office of the undersigned during office hours till the last date and time of issue of Tenders. All the tender documents (NIT, Conditions of contract, Specifications, bill of quantities, Tender level drawings, forms and formats etc.) are available on Cochin Shipyard's website www.cochinshipyard.in and CPPP website <https://eprocure.gov.in/epublish/app>. Tenderers can download the forms and use the same for submission of the tenders.

Sd/-

Deputy General Manager (Infra Projects)

Cochin Shipyard Limited



Tender No: INFRA/ISRF/229/2022

**NAME OF WORK: CONSTRUCTION OF COMPOUND WALL ALONG CSL-CIFT
BOUNDARY AT ISRF PROJECT SITE, WELLINGTON ISLAND**

CONDITIONS OF CONTRACT

1. Conditions of contract specified herein shall be read in conjunction with notice inviting tender, bill of quantities, technical specifications, drawings and other relevant documents forming part of the contract.
2. In the Contract (as hereinafter defined) the following words and expressions will have the meanings hereby assigned to them;
 - “Bidder” shall mean the individual, firm or Company submitting a bid / tender. “Bidder” is interchangeable with “Tenderer”.
 - “CIFT” means Central Institute of Fisheries Technologies
 - “Contract” means the formal agreement signed by both parties which includes Contract agreement, work order, schedule of accepted rates, Conditions of Contract, Technical specifications and drawings, Notice inviting tender including all attachments and appendices thereto and all documents incorporated by reference therein and all correspondences up to the date of signing of Agreement.
 - “Contractor” shall mean the individual, firm, or company who enters into the Contract with the Employer, and shall include his heirs, his executors, administrators, successors, legal representatives, as the case may be.
 - “Contract Period” shall mean the period during which the work shall be executed as agreed between the Contractor and the Employer in the ‘Contract’ including defect liability period with approved extensions granted.
 - “Contract Price” or “Contract Value” means the sum stated in the work order for the execution & completion of entire scope of the Works including Defects Liability Period subject to such additions thereto or deductions there from as may be made under the provisions of the Contract.
 - “CoPA” means Cochin Port Authority
 - “Date of Contract” shall mean the calendar date on which Employer and the



Contractor have signed the 'Contract'. Date of work order precedes the date of contract & 7th day of issue of work Order or site handing over whichever is later will be the zeroth date for commencement of work.

- "Defects Liability Period" means the specified period of guarantee or maintenance from the date of completion of the whole work as certified by the Engineer-in-charge and specified in the Contract.
- "Employer" shall mean Cochin Shipyard Limited (Hereinafter referred as "CSL"), having registered office at Perumanoor, Kochi – 682015, on whose behalf the enquiry is issued by its representative, the Employer and shall include his successors and assignees, as well as his authorized officers/ representatives.
- "Engineer-in-charge" means the Deputy General Manager (Infra Projects) of Cochin Shipyard Limited in charge of the work or his authorized representatives.
- "Extra work" shall mean all 'labour', 'equipment', 'materials', 'services', 'works' in addition to those required by the 'Contract' document & scope.
- "ISRF" means International Ship Repair Facility.
- "Net amount payable" shall mean amount eligible to the contractor after deducting all applicable statutory recoveries like Income tax, cess etc. and all other recoveries applicable under ambit of the contract as the case may be.
- "Ruling Percentage" shall mean the percentage by which the amount of the works actually awarded is higher or lower than the corresponding departmental estimated amount of the works. Departmental estimated amount of works shall be disclosed to L1 bidder during price negotiation and ruling percentage shall be defined based on the departmental estimated amount of works and amount of the works actually awarded.
- "Schedule of Rates/ Schedule of Price" means the priced and completed Bill of Quantities forming part of the Bid
- "Scope" shall mean execution of all the works covered in the contract in prescribed quantities, qualities & in a prescribed manner inclusive of those not explicitly mentioned but required for completion and intended performance of works.
- "Services" means the permanent and temporary works to be performed by the Contractor pursuant to the Contract. "Services" is interchangeable with "Works".
- "Specification" shall mean collectively all the terms and stipulations contained in those portions of the 'Contract' known as Conditions of Contract, the technical



Specifications and such Amendments, revisions, Deletions or Additions, as may be made in the agreement and all written agreements made or to be made pertaining to the method and manner of performing the 'Work' or to the quantities and qualities of the materials & services to be furnished under this 'Contract' as well as the manner or method of performing the Contract.

- "Substituted items" are items that are taken up with partial modification or in lieu of items of works in the contract.
 - "Tender" shall mean the offer made by individual, Firm, Company or corporation for the execution of the works. Tender includes the Technical Tender and the Financial Tender of the Bidder. "Tender" is interchangeable with "Offer", "Bid" or "Proposal".
 - "Work" or "Works" shall mean respectively the materials to be supplied and services to be provided by the Contractor under the 'Contract'. 'Works' shall include engineering, construction, manufacturing, supply of materials, equipment, labour, services & complete erection, commissioning including all transportation, handling, loading and unloading, storage etc. as per contract.
 - "Work Order" means the letter send by the Employer notifying the contractor that his proposal has been accepted and that the Vendor/ Contractor is required to sign the Contract Agreement.
 - Terms and expressions not herein defined shall have the same meaning as are assigned to them in the Indian Contract Act (1872).
3. If any difference is found in different parts of the tender documents, the following will be in order of precedence:
- (i) Bill of quantities/Financial bid
 - (ii) Addendum/Corrigendum etc. if any issued
 - (iii) Drawings
 - (iv) Conditions of contract
 - (v) Technical Specifications
 - (vi) Notice inviting tender.
 - (vii) All other correspondences between employer and bidder

However, all of the above shall be read in conjunction while operating any item. The order of precedence shall only govern in case of any discrepancy.



4. Throughout the bidding documents, the terms “bid” and “tender” and their derivatives (“bidder / tenderer”, “bid /tender”, “bidding / tendering”, etc.) are synonymous, and day means calendar day. Singular also means plural.
5. The location of the site is at ISRF project area of Cochin Shipyard Limited at Wellington Island, Kochi adjacent to CIFT premises.
6. The scope of works consists of construction of balance portion of compound wall adjacent to CSL-CIFT boundary and includes but not limited to clearing site of all vegetation, removal and shifting of earth inside CSL premises, temporary site barricade works, demolition works, earthwork, PCC, RCC, masonry works, coping, plastering, painting, structural fabrication works, supply of skilled, unskilled manpower etc.
7. Bidders may note that substantial progress in the construction of compound wall along CSL-CIFT boundary is realized. However, for reasons not attributable to CSL, the contract with previous CME contractor had to be terminated. Bidders should note that work has to be recommenced on ‘As is where is’ basis. Clearing of vegetation, removal of staging and shuttering materials/debris/garbage, other unwanted items, preparatory works such as chipping of existing concrete joints, cleaning and preservation of reinforcement steel, repainting etc. may be required prior to commencement of work. Hence bidders are requested to visit the site and thoroughly understand and assess the current site conditions, balance scope of works to be executed before submission of bid.
8. The tenderers are expected to have inspected the site before quoting, read the conditions thoroughly and understand the nature of works to be executed and site conditions in all respect. Clarifications, if any may be obtained from Engineer-in-charge before the tender is submitted, and if clarifications/details are not obtained before the tender is submitted, no claim on this account will be admitted.
9. The contractor is expected to acquaint himself with the site conditions, labour situation, wage and benefits applicable to labourers, working hours, out turn of work by labour and the fluctuations which are likely to happen till the work is completed on all the above aspects prior to quoting the rates. The submission of a tender by tenderer implies that he has made himself aware of all the above situations and conditions. Any extra claim on this account will not be entertained.
10. All the tender documents (NIT, conditions of contract, specification, tender schedule, drawings, annexures and proforma of check list) are available on Cochin Shipyard’s website www.cochinshipyard.in and Govt. website <https://eprocure.gov.in/epublish/app>. Tenderers can download the forms and use the



same for submission of the tenders.

11. All corrigenda, addenda, amendments and clarifications to Tender Specifications will be hosted only in the CSL website www.cochinshipyard.in. Bidders shall keep themselves updated with all such developments till the last date and time of submission of tender. All corrigenda, addenda, amendments and clarifications will be part and parcel of the contract agreement.
12. The tender for the work will be based on Single Bid two cover system. The tender has to be submitted as technical bid and Financial/Price bid in two covers.

Cover -A

Technical bid shall consist of two separate covers A1 & A2. Cover A1 shall contain cost of tender form specified in notice inviting tender and EMD for Rs 54,000/- in the form of Demand Draft/Bankers Cheque/NEFT encashable at Cochin drawn from any nationalized/scheduled banks in India in favour of Cochin Shipyard Limited and shall be kept inside of cover A. EMD will not accrue any interest. Bank Account details of CSL for remitting cost of tender form/EMD are mentioned below;

State bank of India

Shipyard branch

Account no: 10319928321

IFS code: SBIN0003229

Cover A2 shall consist of the following

- i. Proforma of checklist duly filled and signed.
- ii. Following declaration (Annexure-1) signed by the contractor.

“I / WE HAVE INSPECTED THE SITE AND GONE THROUGH THE TENDER TERMS AND CONDITIONS IN FULL AND UNDERSTAND AND ACCEPT THE SAME AND HEREBY TRULY CONFIRM AND DECLARE THAT THE RATES QUOTED IN THE PRICE BID ARE INCLUSIVE OF ALL TAXES, ALL CESS AND DUTIES BUT EXCLUDING GOODS AND SERVICES TAX. I / WE ALSO CONFIRM THAT COVER B (PRICE BID) DO NOT CONTAIN ANY CONDITIONS”

“I / WE HAVE NOT MADE ANY PAYMENT OR ILLEGAL GRATIFICATION TO ANY PERSON/AUTHORITY CONNECTED WITH THE BID PROCESS SO AS TO INFLUENCE THE BID PROCESS AND HAVE NOT COMMITTED ANY OFFENCE UNDER THE PC ACT IN CONNECTION WITH THE BID.”



- iii. Declaration at Annexure- 2 duly filled and signed by the contractor.
- iv. Signed and stamped tender documents
- v. Any other document as per requirement of tender

Cover -B

Financial /price bid shall contain the rates and amount for each item of work. There shall not be any clause like reimbursement of taxes, price variation etc., added by the tenderers in the price bid. Price bid with any clause and conditions other than rates and amount will be summarily rejected.

The cover A & cover B shall be then put together in another cover marked Cover C. All the covers shall be sealed and super scribed with name of work, due date, name and address & Contact No: of contractor.

Cover C shall be opened at 15:30 Hrs on 04 August 2022 at the Conference room of Infra Projects department at CSL main building. At first, cover A1 containing EMD, cost of tender form and cover A2 containing technical bid shall be opened. In case the cost of tender form, earnest money is not deposited or is not in order, the tender shall be returned to the tenderer unopened either on the spot, if the tenderer is present or later by post. Only a mention to this effect shall be made in the tender opening register.

Price bid (cover B) of those tenderers who have submitted cost of tender form, EMD and found technically qualified and have submitted undertaking that Cover B does not contain any conditions and submitted all other relevant proformas /certificates duly filled and complete in all respects shall only be opened on the same date. Tenderer should ensure that his quoted amount as per cover B is not mentioned anywhere in other documents, directly or indirectly. If any such mention is made the tender will become invalid and shall become liable for rejection.

13. Only experienced civil contractors registered with PWD, CPWD, CoPA, CSL or other government agencies are eligible for participating in this tender. Bidders have to submit their registration details/registration certificate along with the technical bid.
14. The bidder shall not be put on holiday by CSL or black listed or terminated by any Government Department / Public Sector undertaking etc.
15. Canvassing in connection with tender is strictly prohibited and tenders submitted by the contractors who resort to canvassing will be liable to rejection.
16. The bidder shall have valid GST, PAN, ESI/EPF registration etc. Contractors



registered under the GST Act should only participate in the tendering process. GST Registration number is to be clearly mentioned in the tender. The tenderer shall furnish documentary evidence in support of GST Registration. The income tax/labour cess/ any other statutory taxes, as per the rules /directions of the concerned government departments, prevailing in force at the time of payment of bills will be deducted while making payment or when crediting the amount to the account.

17. It will be mandatory for the bidders to indicate their bank account numbers and other relevant E-payment details as per Annexure-4 so that payments could be made through NEFT mechanism.
18. The rates quoted by the contractor shall be for finished items of works including supplying appropriate materials, labour, equipment/tools, conveyance, mobilization & demobilization charges, loading and unloading charges, transportation charges etc. all complete, unless specified in the tender schedule.
19. Rates shall be quoted both in figures and words. Rates quoted should be in Indian Rupees inclusive of all taxes, all cess and duties, but excluding GST in accordance with the tender schedule.
20. Optional items, if any, shall not be considered for the purpose of arriving at the total cost. However, in case the rates quoted by the selected bidder for optional item are considered high, the same shall be negotiated.
21. All rates including that of optional items shall be quoted in the price bid. In the event that no rate has been quoted for any item(s), then the rate for such item(s) will be considered as zero and tender evaluated accordingly. If the bidder becomes L1 during such evaluation, then non quoted items (s) of work have to be executed with zero rates.
22. The tenderer should keep open the validity of the tender normally for 60 days from the date fixed for its opening. However, it is also obligatory for the tenderer to keep the validity open for another 30 days for which request in writing/email by the Engineer-in-charge, before the expiry of the original validity, would be intimated. The receipt of the intimation of the Engineer-in-charge should be acknowledged. Should any tenderer withdraw his tender before this period, or makes any modifications in the terms and conditions of the tender which are not acceptable to CSL, the earnest money deposited by the tenderers shall be forfeited.
23. The tenderers should note that the tender is strictly on the item rate basis and their attention is drawn to the fact that the rates for each and every item should be correct, workable and self-supporting. The tenderer should quote for all the items in tender



schedule.

24. The rates quoted by bidder shall remain firm till completion of all works even during the extended period, if any, on any account what so ever nature.
25. The tenderers shall have to sign in each page of the tender documents with official stamp as a token of his acceptance of the conditions stated therein. The tender documents and drawings are to be returned along with the tender, duly signed by the contractor in all pages.
26. Person or persons signing the tender shall state in what capacity he/she or they is/are signing the tender, eg., as Sole Proprietor of the Firm concerned or as Managing Director or Director or Secretary or Manager of a Limited Company. In the case of partnership firm, the names of all the partners should be recorded and the tender shall be signed by all the partners or their duly constituted attorney, having authority to bind all the partners in all matters pertaining to the contract as accorded in the deed of Power of Attorney or in the partnership deed. In such a case, a registered copy of the "Partnership Deed" should be furnished along with the tender. It shall be obligatory on the part of every partner of the firm, which enters into agreement, to fulfill the conditions of agreement during the currency thereof, notwithstanding the dissolution of the partnership in the meantime. In the case of a Limited Company, the tender shall be signed by a person mentioned supra empowered to do so by the company. A copy of the Memorandum of Association and Articles of Association of the Company and the letter empowering the person mentioned supra shall be attached to the tender.
27. The person signing the tender form on behalf of another or on behalf of a firm, shall enclose to the tender, a Power of Attorney or the said deed duly executed in his favour or the partnership deed giving him such power showing that, he has the authority to bind such other persons or the firm, as the case may be, in all matters pertaining to the contracts. If the person so signing the tender, fails to enclose the said Power of Attorney, his tender shall be liable for being summarily rejected. The Power of Attorney shall be signed by all partners in the case of partnership concern, by the Proprietor in the case of a proprietary concern, and by the person who by his signature can bind the company in the case of a Limited Company.
28. Late tenders, tenders with conditions and conditional rebates / discounts will be summarily rejected.
29. Tenders duly filled shall be deposited in the Tender Box kept at conference room of Infra Projects department at Cochin Shipyard Ltd. before the date and time as specified in the Tender Notice.



30. Price Bids shall be evaluated based on overall total amount (Landed cost of CSL). The overall total amount is arrived from the sum of the total amount of individual items quoted by the contractor plus applicable GST.
31. The prices quoted by the Bidders shall be checked for arithmetic correction, if any, based on rate and amount filled by the Bidder in the Schedule of rates/Schedule of prices formats. If some discrepancies are found between the rate / amount given in figures, the total amount shall be corrected as per the following procedure, which shall be binding upon the Bidder;
 - When there is a difference between the rate in figures and in words for an item, the lowest of rate specified in words/figures shall be considered.
 - When the rate quoted by the Bidder in figures and words tallies but the amount specified is incorrect, the correct amount shall be worked out by the department by multiplying quoted rate with quantity specified in bill of quantities.
32. During the evaluation of tender, Engineer-in-charge may at his discretion ask the bidders for clarifications. Request for clarification will be given in writing and no change in prices or substance of the bid shall be sought, offered or permitted. No post-bid clarification to bidders will be entertained.
33. Normally CSL will award the contract to the Bidder whose bid has been substantially responsive to the bidding documents and who has offered lowest evaluated total amount. However, if in the opinion of CSL, the total price or certain item rates quoted by the lowest evaluated bidder are considered high, CSL may invite such bidder for price negotiation. Lowest quoted bidder shall attend such negotiation meetings and if requested by CSL shall provide the analysis of rates/ break-up of amount quoted by him for any or all items of Schedule of Rates/ Prices to demonstrate the reasonability. But CSL shall not be bound to recognize/accept the bidder's analysis. As a result of negotiation, bidder may offer rebate on his earlier quoted Price. The acceptance of tender will rest with Engineer-in-charge who does not bind himself to accept the lowest tender and reserves to himself the authority to reject any or all of the tenders received without assigning any reason.
34. CSL reserves the right to conduct negotiations with L1 bidder to have possible reduction from the original offer if the condition so warrants. The bidder shall attend the negotiation meeting in time upon intimation to them by CSL. Departmental estimated amount of works shall be disclosed to L1 bidder during price negotiation and ruling percentage shall be defined based on departmental estimated amount of works and tendered amount of work.
35. Cochin shipyard reserves the right to award the work to one or more contractors or



- delete any part of the work from the scope of the contract or cancel the tender without assigning any reason.
36. The successful tenderer will be required to execute an agreement at his expense on proper value Kerala State Non-Judicial Stamp Paper in the prescribed departmental form within 5 days of issuance of work order by employer. Till signing of agreement, the tender together with the acceptance letter/work order shall constitute a binding contract between the Contractor and Cochin Shipyard Ltd.
 37. In the event of the tenderer, after the issue of work order by CSL, failing / refusing to execute the agreement, the tenderer shall be deemed to have abandoned the contract and such an act shall amount to and be construed as the contractors calculated and the willful breach of the contract, the cost and consequence of which shall be to the sole account of the tenderer and upon such an event CSL shall have full right to claim damages thereof either together with or in addition to the forfeiture of Earnest Money Deposit.
 38. EMD of unsuccessful bidders except L1 and L2 bidders will be released after the checking of the comparative statement by the Finance department. EMD of L2 bidder will be released on issue and acceptance of the Work order by the successful bidder (L1 bidder) or after expiry of 3 months whichever is earlier. EMD of successful bidder shall be converted to security deposit and shall be released upon completion of defect liability period of 12 months.
 39. The contract shall come into effect on the date of signature of both the parties on the contract (effective date) and shall remain valid until the completion of the obligation of the parties under the contract. The deliveries, supplies and performance of the service shall commence from the effective date of the contract.
 40. The time of completion of work of 4 months shall be reckoned from the 7th day of the date of issue of work order or the date of handing over the site whichever is later. The time allowed for carrying out the work as mentioned above shall be strictly observed by the contractor. The work throughout the time period shall be executed with diligence keeping in view that time being deemed to be the essence of the contract.
 41. Total security deposit for the work shall be 5% of executed value of work. EMD of successful bidder (2% of PAC) shall be converted to security deposit. Balance amount of Security deposit shall be recovered from running account bills at the rate of 3% of Running account bills subject to maximum of 5% of executed value of works. Security deposit will not accrue any interest. Security deposit shall be released after the successful completion of the defect liability period of 12 months from the completion date of the work. However, If the contractor submits an irrevocable Bank



guarantee of value equivalent to security deposit, then security deposit available with CSL shall be released to the contractor. Irrevocable Bank guarantee in lieu of security deposit has to be taken from any nationalized or schedule bank in India and should be enforceable and encashable at Cochin and should be valid up to defect liability period. The contractor has to make good all defects during the defect liability period at his own cost. Security deposit shall be forfeited on failure to perform or non-fulfillment by the Contractor of the terms and conditions of the contract.

42. For the construction purpose, the entire site will be handed over. If this is not possible due to reasons, which cannot be anticipated now, the site will be handed over in parts. Proportionate extra time will be granted if found necessary by the Engineer-in-Charge and the decision of Engineer-in-Charge shall be final.
43. The successful bidder (contractor) shall not subcontract, transfer or assign the work to any other Agency nor shall transfers be made by the 'Power of Attorney' authorizing others to carry out the work or receive payment on behalf of the Contractor. In case any specialized part of the works is subcontracted, after getting written approval of CSL, the liabilities of those works shall also lie with the principal Contractor.
44. The quantities given in the Bill of quantities are indicative only. Variation is permitted in quantity of each individual item. Contractor is bound to execute the variation if any for individual items as per the quoted schedule of rates/prices without any additional cost to employer. Payment will be made as per theoretical drawing quantity or actual quantity of work done whichever is lower at accepted rates.
45. For items not existing in the Bill of Quantities (extra item), rate payable shall be determined by methods given below and, in the order, given below and whichever is lower shall be paid;
 - i) Rates and prices of relevant item in the Delhi Schedule of Rates 2021 plus cost index applicable.
 - ii) Market rates of materials and labour, hire charges of plant and machinery used, plus 15% extra for overheads and profits of Contractor. Contractor has to furnish site observed data jointly certified by contractor, employer for computing local market rates along with supporting documents such as tax invoice of materials procured, labour deployment log book, work order/purchase order showing hire charges of plant and machinery, work order showing labour rates etc. to employer.

But for items not listed in the bill of quantities, but can be considered as substitute item, rate payable shall be determined as below:



- i) Rates and prices derived from the accepted rate of similar items in Contract.

If there is delay in the Employer and the Contractor coming to an agreement on the rate of an extra/substitute item, rates as proposed by the Employer shall be payable provisionally till such time the rates are finally determined or till such date rates are mutually agreed.

46. Time is the essence of contract. In case the contractor fails to complete the whole work within the stipulated period including all approved extensions granted, contractor shall be liable to pay liquidated damages(not by the way of penalty) at the rate of 1% of the value of the contract per week and when the delay is not a full week or in multiples of a week and involves a fraction of week, the compensation payable for that fraction shall be proportional to the number of days involved subject to a maximum of 10% of the value of the executed contract amount. The parties agree that this is a genuine pre-estimate of the loss or damage which will be suffered by CSL on account of delay on the part of the contractor and said amount will be payable on demand without there being any proof of the actual loss or damages having been caused by such delay or breach. The Employer shall be at liberty to adjust or deduct the said amount of liquidated damages (not by the way of penalty) from any amount due to the contractor including security deposit.
47. If the contractor abandons the contract or fails to commence the work in time or suspend the work for long duration (10 days) or delay the progress of the works without valid reasons acceptable to CSL or labour dispute with their workers or poor safety records or poor quality of work or workmanship etc. is noticed, then CSL will terminate the contract and arrange the work at the risk and cost of the terminated contractor. In such case, security deposit submitted by the contractor shall be forfeited forthwith.
48. The contractor shall not stop the work or abandon the site for whatsoever reason except force majeure conditions. The following shall amount to force majeure: -
 - a) War, hostilities (whether war be declared or not), invasion, act of foreign enemies
 - b) Rebellion, terrorism, revolution, insurrection, military or usurped power, or civil war
 - c) Riot, commotion, disorder, strikes or lockout by persons other than the contractor's personnel and other employees of the contractor
 - d) Munitions of war, explosive materials, ionizing radiation or contamination by radioactivity, except as may be attributable to the contractor's use of such munitions, explosives, radiation or radio- activity, and Natural catastrophes such



as earthquake, flood, Tsunami, hurricane, typhoon or volcanic activity.

- e) Epidemic, pandemic, famine etc.
- f) Strikes, Harthal or boycotts interrupting supplies and services to the site (excluding strikes or boycotts by employees, agents or representatives of contractor, or its subcontractors for any reason whatsoever);
- g) Fire caused otherwise than by any act or omission on the part of the contractor or its agents, servants or employees or its subcontractor;
- h) Quarantine and lockdowns etc. enforced by statutory authorities
- i) Any event or circumstance of nature analogues to any of the above or an Act of God.

49. If the contractor suffers delay in due execution of the contractual obligation due to delays caused by force majeure as defined above, the agreed time of completion of the job covered by this contract or the obligations of the contractor shall be extended by a period of time equal to period of delay, provided that on the occurrence of any such contingency, the contractor should report in writing to CSL within three days of occurrence of event with all supporting evidences. A hindrance register shall be maintained by CSL in which the hindrances due to force majeure and hindrances attributable to CSL/Contractor shall be recorded and signed by both parties. The hindrance so recorded will be regularized in accordance with the Contract provisions. The contractor shall resume performance of its obligations under this Contract as soon as possible after the Force Majeure event no longer exists. During the period of Force Majeure, CSL shall not be responsible for any cost resulting from a Force Majeure event.

50. The monthly payment shall be based on the bill submitted by the contractor. The bill for previous month along with detailed measurement shall be prepared and submitted on 7th working day of the current month and payment shall be released within one month from the date of submission of claim (bill) by the contractor or date of acceptance of the bill by both parties whichever is later. The contractor shall submit running account bills in one Original and one copy along with joint measurements. The contractor shall inform the Engineer-in-Charge or his representative well in advance for recording the joint measurement. The contractor shall raise only one bill in a month and shall submit the bill after joint measurement along with all necessary site documents such as pour card, and other statutory documents such as workmen attendance register, wage register, EPF/ESI remittance details etc. Based on the joint measurement of works, CSL shall prepare computerized measurement book which shall be certified and returned back to CSL by the contractor in one Original and one copy along with the bill claim.

51. For the completed items of the work (where measurements are specifically noted in



- the measurements book as final measurements and as such have been signed and accepted by the contractor and CSL) 75% of the net amount payable on each bill can be paid as advance within 10 days from the date of acceptance of bill, on receipt of request from the contractor at the discretion of Engineer-in-charge. Balance amount will be paid after scrutiny and checking of the bill within 20 days from the date of release of advance.
52. Contractor shall clear all dues if any in connection with statutory authorities such as EPFO, labour department, ESIC, other government agencies prior to submission of final bill. The final bill shall be paid within two months from the date of submission of claim (bill) by the contractor or completion of all the items of work or date of acceptance of the final bill by both parties whichever is later.
 53. Engineer-in-charge shall have the right to take possession of or use completed or partially completed part of the work. Such possession or use shall not be deemed to be an acceptance of such work.
 54. Upon completion of all the works/termination of contract, the contractor has to clear all the debris and make the work site area neat and tidy and dismantle and demobilize all plant and machinery, temporary structures etc. within a period of two weeks. The final bill shall be paid only upon compliance of same.
 55. CSL is an ISO 9001, ISO 14001 and ISO 45001 certified firm. All the contractors and subcontractors shall comply with the measures related to the Quality, Health, and Safety & Environment (QHSE) policy of CSL.
 56. It is the responsibility of the contractor to follow all safety rules and regulations in force, during the currency of contract in CSL, and any violation of the same during the course of work will be at the risk and cost of the contractor and will attract penal action. CSL Safety instructions are available in CSL website and the same may be referred before quoting the rates.
 57. Welding Sets without ELCB and Safety Relay shall not be permitted at site. Also flashback arrester is to be provided in all cutting torches. Necessary instructions regarding safety shall be strictly adhered to by the contractor. Safety permits for working in height, excavation work etc. shall be taken prior to commencement of work.
 58. Any violation of Safety rules by the contractor, CSL will impose penalty of Rs 2000/- depending on the gravity of violation. Action for debarring the contractor also will be taken in case of repeated violation. If any accident is caused due to safety violation and any damage to the company property occurs, suitable penalty will be imposed by



CSL including termination of contract, if required.

59. The contractor shall report to the Engineer-in-Charge details of any accidents as soon as possible after its occurrence. In the case of any fatal or serious accident, the contractor shall in addition, notify the local police authorities immediately by available means.
60. The workmen are strictly banned from use of any kind of Narcotics drugs / Alcohol / smoking etc. at site and any illegal activity by the work men should be reported to Engineer-in-charge without delay and the contractor shall remove such persons from the work site forthwith.
61. The contractor shall provide all necessary superintendence during execution of the work and all along thereafter as may be necessary for proper fulfilling of the obligations under the contract.
62. All notices / written orders issued by CSL to the contractor under the terms of the contract shall be served by sending by Post or email or delivering the same to the contractors authorized site official nominated for this purpose. All notices to be given to CSL under the terms of contract shall be served by sending by post, email or delivering the same to Engineer-in-charge.
63. The Contractor may have to work round the clock including holidays, night shift and monsoon, if required to complete the work in time without any extra cost to CSL. However, works executing out of office hours and holiday shall be informed to the Engineer-in-charge well in advance and get his clearance.
64. The normal working time of the CSL is from 8:00 A.M. to 4.20 P.M on all weekdays and Saturdays with half an hour interval from 12.15 noon to 12.45 P.M. All Sundays, second Saturday and fourth Saturday are holidays. If the Contractor wishes to carry out the work beyond normal working hours and or on holidays, he should get specific approval from the Engineer-in-Charge for the same. Necessary supervision will be arranged by the department.
65. The contractor or his authorized representative with sufficient experience shall be available at site throughout the period of contract for receiving instructions from department, arranging and executing the work. Work should not be carried out without presence of contractor's technical staff with sufficient experience.
66. The Contractor / representative shall report at the office of the Engineer-in- charge on all working days before 8:30 Hrs and receive instruction regarding the works.
67. If any ambiguity arises as to the meaning and intent of any of portion of the



specifications and drawings or as to execution or quality of any work or material or as to measurement of the works the decision of the Engineer-in-Charge shall be final and binding on the Contractor.

68. The contractor shall thoroughly study the specifications and drawings and errors/omissions/modifications if any shall be brought to the notice of the Engineer-in-Charge well in advance so that a final decision in the matter could be given in time.
69. Contractor has to make arrangements at own risk and cost for ensuring water, electricity, material handling equipments, other equipments such as welding/grinding/buffing machine etc., site office, workers hygiene and sanitation facilities, material storage facility, watch and ward facility for safety of materials and equipments etc. at work site.
70. The contractor shall provide temporary barrication along CSL/CIFT boundary to prevent disturbance to nearby CIFT buildings and residential areas prior to commencement of work. All care shall be taken to keep the site clean without dumping any debris as far as possible. The contractor shall take into consideration the above aspect while quoting for the work.
71. If warranted, contractor shall dismantle, remove and shift staging and scaffolding materials, existing temporary barrication etc. from site premises as enabling work to ensure smooth execution of work as per instruction of engineer-in-charge at no extra cost to CSL.
72. Labour Accommodation at site is not permitted. But contractors can construct temporary site offices, workers change/rest room, material storage room etc. if any required after getting prior approval from CSL. Night Shift working is permitted.
73. The contractor shall not construct any structure, even of temporary nature, for any purpose at site, except with the written permission of the Engineer-in- Charge of the work and any construction so put up shall be removed by the contractor whenever the Engineer-in- Charge calls upon the contractor to do so.
74. The Contractor shall have total responsibility for all equipment and materials in his custody stored, loose, semi-assembled and/ or erected by him at site. The Contractor shall ensure the protection of all his materials, equipment and works from theft, fire, pilferage and any other damages and loss. All materials of the Contractor shall enter and leave the project site with the written permission of the Engineer-in-charge in the prescribed manner.
75. The steel reinforcement shall be stored by the contractor at site of work in such a way as to prevent distortion and corrosion and nothing extra shall be paid on this account. Cement shall be stored in weather proof air tight manner to prevent dampness and



formation of lumps.

76. A list of approved makes is specified in this tender. It will be deemed that the contractor has priced the respective items on the basis of those approved makes. However, it shall be the prerogative for CSL to choose any particular make among the list as the most appropriate one and the contractor shall be bound to provide the same without any variation in the contract rate. Whenever equivalent is specified in the list of approved makes, permission for use of equivalent make shall be subject to contractor submitting valid regret letters from the makes listed along with the comparison table of properties of proposed make w.r.t specified make. Decision of engineer-in-charge on approving equivalent makes shall be final and binding on the contractor.
77. All materials not herein detailed and fully specified but which may be required for use on works, shall be subjected to the approval of the Engineer-in-Charge without which they shall not be used anywhere in the permanent works.
78. Contractor shall submit tax invoice and material test certificate (MTC) wherever available of major bought out items such as reinforcement steel, structural steel, cement, solid blocks, paint etc. to CSL prior to use in permanent works.
79. All rejected materials shall be removed within 3 days from the date of written order to that effect. In case the rejected materials are not removed within the specified period mentioned above the same will be removed by CSL at the cost and risk of the contractor.
80. The work shall be carried out without damaging any of the existing structures/ structures under construction/ underground pipelines or cables, bought out items procured by CSL/CSL appointed contractors, etc. in the locality. If any damage occurs to the CSL property due to the contractor's operation, it shall be compensated / made good at contractor's risk and cost to the satisfaction of the Engineer-in-Charge of the works, failing which department will do the rectification work and the cost incurred will be recovered from his bill or from security deposit.
81. All labour, skilled and unskilled shall be provided by the contractor. Settling any dispute with the labour/ subcontractor will be contractor's responsibility. The workers engaged for works should have sufficient knowledge and experience in the respective fields. This shall be proved to the Engineer-in-charge. Contractor at own risk and cost has to meticulously follow the following statutory rules prevailing in India during the entire period of contract. Contractor shall take note that Employer is no way liable or responsible for any of its omissions, non-compliances and contractor should implement the same scrupulously. All disputes or non-compliance shall immediately be addressed and settled by the contractor at his risk and cost. The contractor shall



indemnify and keep employer indemnified against payments to be made under and for the observance of the laws aforesaid and relevant Labour Regulations without prejudice to his right to claim indemnity from his sub-contractors. It is also expressly informed that Employer is no way responsible or liable for in respect of any consequential damages or payments or remittances arising out of or in relation, including but not limited to the statutes mentioned below:

- Contract Labour (Regulation and Abolition Act)
- Employees Compensation Act.
- ESI Act
- EPF Act
- Minimum Wages Act
- Payment of Gratuity act.
- BOCW Act
- Any other acts/ rules stipulated by Govt. Authority during contract period

82. Waste materials like excavated earth, spilled over concrete etc. are to be cleared from site by the contractor.
83. While earthwork excavation is carried out near to any existing structure, utmost care should be taken to avoid any damage to the nearby structure by giving proper shoring etc. No extra claim is admissible on this account. If any damage occurs to the existing structure the same should be rectified at contractor's cost.
84. Empty cement bags are to be stacked in bundles and to be cleared from site at contractor's expense as directed by the Engineer-in-charge.
85. Waste materials are to be cleared from site on a day-to-day basis. Each area of working is to be cordoned off with necessary signboards and barriers to ensure safe transportation of men and material as directed by the Engineer-in-charge. Measures for dust control such as frequent sprinkling of water shall be ensured by the contractor at no extra cost to employer.
86. Contractor shall work in close co-ordination with those agencies working in the same work site at the same time. The space for storage of materials for each work should also be decided by mutual agreement among the contractors working in the same area. CSL will not entertain any claim regarding non-availability of space for storing materials nor can enter into any discussion to settle the dispute between contractors regarding usage of space for storing materials etc.
87. Any dispute(s) or differences arising out of or in connection with the Contract shall, to the extent possible, be settled amicably between CSL and the contractor. Any grievance in connection with the work/Contract can be addressed to the Grievance Redressal Committee of Cochin shipyard Ltd. All representations to the Grievance



Redressal Committee should be submitted to the Company Secretary, Cochin Shipyard Ltd in the specified format. The name and contact No: of Grievance Redressal committee members can be had from the Engineer-in-charge.

88. Any litigation in connection with contract shall be subjected to the exclusive jurisdiction of the Courts at Kochi, India.
89. CSL shall not be liable for, or in respect of, any damages or compensation payable at law in respect or in consequence of any accident or injury to any workmen or other person in the employment of the contractor or any sub- contractor, except an accident or injury resulting from any default of CSL, the contractor shall indemnify and keep CSL indemnified against all such damages and compensation and against all claims, demands, proceedings, costs, charges and expenses whatsoever in respect thereof or in relation thereto.
90. The contractor shall insure against such liability and shall continue such insurance during the whole of the time that any persons are employed by him on the works. Provided that, in respect of any persons employed by any sub- contractor, the contractor's obligations to insure as aforesaid under this sub- clause shall be satisfied if the sub-contractor shall have insured against the liability in respect of such persons in such manner that CSL is indemnified under the policy, but the contractor shall require such sub-contractor to produce before CSL, such policy of insurance and the receipt for the payment of current premium.
91. Neither Party shall be liable to the other Party for loss of use of any Works, loss of profit, loss of any Contract or for any indirect or consequential loss or damage which may be suffered by the other Party in connection with the Contract, other than Indemnities. The total liability of the Contractor to the Employer, under or in connection with the Contract other than against Site Facilities provided by the contractor, Indemnities and Intellectual and Industrial Property Rights shall not exceed accepted contract price. However, the provisions of this clause shall not limit liability in any case of fraud, deliberate default, acts of omissions or reckless misconduct by the defaulting Party.
92. The contract involves an obligation of secrecy and the contractor, his agents, servants or sub-contractor or their agents or servants shall observe and comply with the requirements of the Indian Official Secrets Act 1923, and the rules there under or any statutory modifications or re-enactments thereof. Any breach of this clause shall constitute a breach of the contract. The contractor shall not disclose to anybody the details of drawings prepared for the work without the approval of CSL. No photographs of the CSL area shall be taken or permitted by the contractor to be taken



- by any of his employees without the approval of the competent authority and no such photographs shall be published, or otherwise circulated without the approval of CSL.
93. Bidders should note that provisions such as mobilization advance, secured advance, price adjustment against reinforcement steel/structural steel/cement/labour/POL etc. is not applicable in this contract.
94. Before commencement of the work the contractor shall establish at suitable points (as directed by Engineer in charge) reference benchmarks based on the standard benchmark approved by the Engineer in charge. The construction and maintenance of these benchmarks shall be responsibility of the contractor at his cost and risk. These reference benchmarks established by the contractor shall be got checked and approved by the Engineer in charge at suitable intervals of time.
95. The contractor shall be responsible for the true and proper setting out of the works and for the correctness of the position, levels, dimensions, and alignment of all parts of the works and for the provision of all necessary instruments, appliances and labour in connection therewith. If at any time during the progress of the work any error shall appear or arise in the position, level, dimension or alignment of any part of the work, the contractor on being required to do so by the Engineer in charge, shall at his cost rectify such errors to the satisfaction of the Engineer in charge. The checking of any setting out of any line or level by the Engineer in charge shall not in any way relieve the contractor of his responsibility for the correctness thereof. The contractor shall provide all necessary instruments, appliances and labour required for the Engineer in charge for checking, if any, of the setting out. The contractor shall carefully protect and observe all benchmarks, site levels, pegs and other things used in setting out the works.
96. Wherever earth work is provided in the tender, such items include works such as dewatering, shoring, strutting etc., whether it is mentioned in the respective items or not. The rate for earth work includes all the above operations and nothing extra shall be paid for the same.
97. Foundation of temporary structures, if noticed, shall to be removed and trenches or holes thus created be filled back with earth. The contractor should clear the site of debris, rubbish and balance materials including any built-up structures for construction purpose and clean the area, to the satisfaction of the Engineer in charge when the work is completed, at no extra cost.
98. Measurement shall be as per relevant IS code IS 1200. In the absence of any code dealing with a particular aspect, sound engineering practice shall prevail. Decision of Engineer-in-charge in this aspect will be final. In case there is discrepancy between Indian Standard code and CPWD specifications, the former shall prevail.



99. Necessary chipping of brick /concrete surface for passing plumbing lines or surface preparation to receive next stage concrete and making good the chipped surface by cement mortar has to be done by the contractor free of cost.
100. For concrete works provisions of IS: 456 (2000) and its amendments shall be followed as general guidance, along with all other relevant Indian Standards, unless otherwise specifically mentioned. Contractor shall deploy mechanized system for production, transportation and placement of concrete.
101. The contractor shall at his risk and cost make all arrangements and shall provide all facilities as the Engineer-in-charge may require for collection, preparing, forwarding and testing the required number of samples for test (or for analysis) to places as may be directed by the Engineer-in-charge. Necessary arrangements for casting and curing of concrete cubes for testing, collection of reinforcement steel/solid block samples etc. for testing shall be ensured by the contractor. Sampling shall be done as per the direction of engineer-in-charge. CSL reserves the right to get concrete cubes, reinforcement steel, solid blocks etc. tested at CSL laboratory or any other NABL approved laboratories at its discretion. The charges for testing shall be borne by the contractor or deducted by CSL from running account bills or any money due to the contractor. Only materials conforming to specifications and approved by Engineer-in-charge shall be used in permanent works.
102. Sampling and testing of the material supplied by the contractor for use on the work shall be done as per the provisions of the relevant BIS codes/specifications. In the absence of BIS specification in a particular case, the sampling and testing shall be done as directed by the Engineer in charge as sound engineering practice. Material conforming to the specifications and approved by the Engineer in Charge shall only be used by the contractor.
103. Relevant I.S. codes are to be followed for all items of work. If any deviation for the work is found with this tender documents, Indian Standard specifications and Central Public Works Department specifications are to be followed. If specifications are silent about any aspect, other codes as directed by the Engineer-in-charge will be followed. In the absence of any code dealing with particular aspect, sound engineering practice shall prevail. Decision of the Engineer-in-charge in this respect will be final. In case there is a difference between Indian standard code and CPWD specification, the former shall prevail.
104. However, if employer incurs any cost or expense on account of inaction or non-compliance of statutory requirements and rules by the contractor or their sub-contractors, the expense incurred by the employer shall be deducted from any



payment due to the contractor or from security deposit or by actions of law.

105. Ready mix concrete (RMC) from outside source shall be allowed subject to the conditions that: (i) prior written permission shall be obtained from the Engineer-in-Charge, (ii) all quality control measures as stipulated by the Engineer-in-Charge are strictly adhered to by the contractor at his cost, (iii) batching shall be carried out as per CPWD manuals (iv) RMC Batch sheets shall be furnished by the contractor.
106. Contractor shall be permitted to use manufactured sand in place of “clean river sand” subject to the approval of Engineer-in-charge. Each type of aggregate shall be stored separately for the approval of the Engineer in charge. Wet aggregate delivered at site shall be kept in storage for at least 24 hours to ensure adequate drainage before being used for concreting.
107. Quality of cement used for the work shall be 43 grade, 53 grade ordinary Portland cement conforming to IS 269:2015 or pozzolana cement conforming to IS 1489 or Portland Slag cement conforming to IS 455 unless otherwise approved by the Engineer-in-Charge.
108. Supply of cement shall be taken in 50kg bags bearing manufacture’s name and ISI marking. Cement shall be procured only from approved makes specified in the tender document. Samples of cement arranged by the contractor shall be taken by the Engineer-in-Charge. The minimum quantity of cement specified shall be complied with. For all other items, theoretical requirements of cement as per CPWD data will be followed. It is responsibility of the contractor to keep the cement in bone dry conditions. The contractor shall be responsible for the watch and ward and safety of the cement and steel stock. Any cement that the Engineer-in-charge considers has become stale or unsuitable through absorption of moisture from the atmosphere or otherwise due to improper transport/ storage/ handling by the contractors shall be rejected.
109. The reinforcement steel used for the work will have to be procured by the contractor from approved makes specified in the tender document and shall be TMT bars of Fe 500D grade conforming to I.S. 1786 unless otherwise approved by the Engineer-in-Charge.
110. For the following items of work, theoretical requirements of cement will be calculated at the rates given below:
 - PCC 1:2:4 Grade – 320 kg/m³
 - RCC 1:1.5:3 Grade – 400 kg/m³
111. Any admixture if found necessary for concrete items by the contractor to suit his work



could be provided by him at his own cost with prior approval of the Engineer-in-charge. No extra payment will be made for the same by CSL.

- 112. All materials to be used for the work will have to be got approved by the Engineer-in-charge before use. Unless otherwise decided by the Engineer-in-charge all the materials are to be procured by the contractor.
- 113. Contractor shall strictly adhere to the instructions of CSL during execution of work.
- 114. The Performance of Contractors obligations under this agreement/ contract shall be notwithstanding any objection/ litigation instituted by old contractor and or any third party unless otherwise by any court order preventing such performance.
- 115. Contractor unequivocally undertakes that it has inspected the site and independently assessed the scope of work and its nature and is well aware about the circumstances under which such work is awarded to it, and that the same is accepted by Contractor at its own risk and on "As is where is" basis. Once accepted, any claim/excuses by Contractor on account of work performed by earlier contractor shall not be entertained
- 116. Specific points that require clarification should be submitted to DGM (Infra Projects) on or before 15:00 Hrs on 28 July 2022.
- 117. For site visit or any other clarifications, bidders are requested to contact following officials of CSL;

- Shri. Arif AG, Senior Manager (Infra Projects)
Mob:91-8138027522
Email Id: arif.ag@cochinshipyard.in
- Shri. Kiran K, Manager (Infra Projects)
Mob: 91-8138917197
Email Id: kiran.k@cochinshipyard.in

Deputy General Manager (Infra Projects)
Cochin Shipyard Limited

Signature & Date
Name & Address of contractor:

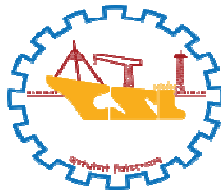
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CONSTRUCTION OF COMPOUND WALL ALONG CSL-CIFT BOUNDARY AT ISRF PROJECT SITE, WELLINGTON ISLAND

TECHNICAL SPECIFICATIONS

Tender Number: INFRA/ISRF/229/2022



COCHIN SHIPYARD LIMITED

(A GOVERNMENT OF INDIA ENTERPRISE)

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A. DISMANTLING AND DEMOLITION WORK

1. General

All materials obtained from dismantling or demolition shall be the property of the Employer unless otherwise specified and shall be kept in safe custody until they are handed over to the Employer / authorized representative. The demolition shall always be well planned before hand and shall generally be done in reverse order of the one in which the structure was constructed. The operations shall be got approved from the Engineer-in-Charge before starting the work. Necessary precautions shall be taken to keep noise and dust nuisance to the minimum. All work needs to be done under the direction of Engineer-in-Charge. Helmets, goggle, safety belts etc. should be used whenever required and as directed by the Engineer-in-Charge. The demolition work shall be proceeded with in such a way that it causes the least damage and nuisance to the adjoining building and the public. Dismantling shall be done in a systematic manner. Chisels and cutters may be used carefully as directed. The dismantled articles shall be removed manually or otherwise, lowered to the ground (and not thrown) and then properly stacked as directed by the Engineer-in-Charge.

The contractor shall maintain/disconnect existing services, whether temporary or permanent, where required by the Engineer-in-Charge. Temporary barricade should be providing where dismantling is commenced before work starts.

2. Measurements

Taking down walls and independent piers or columns of brick, stone or concrete shall be measured, in cubic meters. All copings, corbels, cornices and other projections shall be included with the wall measurements. In measuring thickness of plastered walls, the thickness of plaster shall be ignored. All steel and iron work shall be measured in kg. The weight shall be computed from standard tables unless the actual weight can readily be determined.

B. EARTHWORK

1. Excavation

The work to be done under this section comprise performance of all work necessary for excavation with shoring, dewatering, pumping including disposing of all surplus excavated material from the site to suitable location as directed by the Engineer-in-Charge. Excavation shall be carried out in any type of soil, gravel, conglomerate, soft rock, boulders, old foundation, hard rock, concrete, asphalt or stone paved surfaces old masonry or concrete (plain or reinforced) encountered within width, length and depths indicated in the drawings. Where directed by the Engineer-in-Charge trees encountered within the work site shall be uprooted as per approved manner and serviceable wooden logs shall be stacked at site / disposed of as directed by the Engineer-in-Charge. Branches of trees etc. shall be disposed of or stacked at site as directed by the Engineer-in-Charge. No permanent work shall be commenced in the excavated area until the foundations pits have been inspected and approved by the Engineer-in-Charge.



The Contractor may use any suitable excavated materials for incorporation in the permanent or temporary works as may be convenient subject to compliance with the specifications. Any obstacles encountered during excavation shall be reported immediately to the Engineer-in-Charge and shall be dealt with as directed by the Engineer-in-Charge. Before the work commences the Contractor shall carry out a survey of the levels of the site and obtain verification by the Engineer-in-Charge of these levels.

The Contractor shall adequately support the sides of excavation as may be necessary to prevent subsidence or movement of the material in which the excavation is being carried out and to ensure the safety of persons and nearby structures. The Contractor shall take all necessary precautions to prevent slips in excavations and shall at his own make good any damage or defect and remove to spoil dumps any surplus material caused by slips.

While execution of works, if so encountered, the Contractor shall provide for the purpose of excavation under water all the necessary dewatering equipment like well points, pumps (including stand byes), pipes, conduits, etc. and make necessary arrangement for proper drainage of the pumped water from the well points and its easy disposal without affecting the site and the adjoining areas. Any permission required for such disposal of water to other areas, shall be taken from the respective authorities by the Contractor at his own cost.

2. Earthwork in Filling and Site Clearing

Filling is to be carried out up to the level as shown in the drawing. Unless otherwise specified, selected excavated earth shall be used for refilling. For general area filling for raising formation level selected earth shall be used as directed by the Engineer-in-Charge. Before filling of such area existing top soil shall be scarified to remove all vegetation and soft or debris already existing. After cleaning of debris etc the top soil shall be compacted before filling with any new soil. In case the filling earth contains deleterious salts it shall not be used. Approval of filling materials is to be obtained well in advance to commencement of work. All clods of earth shall be broken or removed. Where the excavated material is mostly rock with boulders, the boulders shall be broken into pieces not bigger than 7.5 cm size in any direction mixed with fine materials consisting of decomposed rock, moorum or earth so as to fill up the voids as far as possible and then the mixture used for filling, as approved by the Engineer-in-Charge. However the decision / instructions of the Engineer-in-Charge shall be final.

Compaction of earth filling the degree of compaction achieved shall be good enough to obtain maximum dry density. After the compaction of each layer, the next layer of filling shall not be permitted to be deposited until the Engineer-in-Charge is satisfied that the previous layer has achieved required compaction. The contractor shall inform the Engineer-in-Charge in writing for inspection after filling and compaction of each layer. If any particular layer fails to meet the required compaction, it shall be re-compacted as directed by the Engineer-in-Charge. Such re-compaction shall be continued till the desired compaction is achieved. The thickness of each compacted layer shall not exceed 200 mm.

The filling after it reaches the required level, shall be dressed and finished as specified to the required alignment, levels, cross sections, dimensions and slopes as shown in the drawing or as directed by the Engineer-in-Charge. No deviation shall



generally be allowed from the levels shown in the drawings.

C. CONCRETE WORK

1. General

This section covers the requirements for furnishing of cement concrete including materials proportioning, batching, mixing, testing, placing, compacting, finishing, jointing, curing and all other work as required for cast-in-place plain and reinforced concrete. Cement concrete shall be composed of cement, fine aggregate, coarse aggregate, water, with or without admixture as approved, proportioned and mixed as specified herein.

2. Plant and Equipment

The contractor shall submit the proposed programme, methods and details of plant and equipment to be used for batching, mixing and placing of concrete to the Engineer-in-Charge, well in advance prior to start of work.

3. Certificates

Necessary testing as per instructions of Engineer in Charge shall be carried out as specified in special conditions of contract and all expenses incurred on testing shall be borne by the contractor. Test reports shall be handed over to employer for records.

4. Materials

Material Test Certificates of all relevant materials shall be submitted to the Engineer-in-Charge. All approved samples shall be retained in the office of the Engineer-in-Charge. The materials brought on to the works shall conform in every respect specifications.

Fresh samples shall be delivered to the Engineer-in-Charge whenever any material changes. The contractor shall check each fresh consignment of materials as it is brought on to the works to ensure that they conform to the specifications.

The Engineer-in-Charge shall have the option to have any of the materials tested to find whether they are in accordance with specifications. All bills, vouchers and test certificates which in the opinion of the Engineer-in-Charge are necessary shall be produced for his inspection when required.

Any materials which have not been found to conform to the specifications and not approved by the Engineer-in-Charge shall be removed from the site by the contractor within the time stipulated by the Engineer-in-Charge.

Cement

- I. The cement shall be Ordinary Portland Cement conforming to IS: 269
 - II. Whenever possible all cement of each type shall be obtained each from one constant source throughout the contract. Cement of different types
-



shall not be mixed with one another. Different brands of cement, or the same brand of cement from different sources, shall not be used without prior notification and approval of Engineer-in-Charge.

- III. The cement shall be supplied either packed in bags or in silos installed for the purpose of supply. Packed cement shall be delivered to the site in original sealed bags which shall be labeled with the weight, date of manufacture, name of manufacturer, brand and type. Cement received in torn bags shall not be used. Moreover bags of cement which vary in weight by more than 3% shall not be accepted.
- IV. All cement shall be fresh when delivered and at ambient atmospheric temperature.
- V. In fair faced elements, the cement used in the concrete for any complete element shall be from a single consignment. All cement for exposed concrete shall be from the same source and uniform in colour.
- VI. With each and every delivery of cement the contractor shall provide the manufacturer's certificate that the cement conforms to the relevant Indian Standard.

Aggregates

- I. Aggregates from natural sources shall be in accordance with IS: 383. Sampling and testing shall be carried out as per the relevant Indian standard or as directed by the Engineer-in-Charge. The aggregates shall be free from salts or other harmful chemical impurities.
- II. For fair faced concrete, the contractor shall ensure that aggregates are free from iron pyrites and impurities which may cause discolouration.

Fine Aggregates

- I. The fine aggregate shall be pit sand, river sand, M sand or other approved sand conforming to IS:383. It shall be free from clay, loam, earth or vegetable matter and from salt or other harmful chemical impurities. In case impurities cannot be removed by screening process, sand shall be washed and cleaned to the satisfaction of the Engineer-in-Charge. It shall be clean, sharp, strong, and angular and composed of hard siliceous material.
- II. Fine sand shall be within the limits of Grading Zone-IV given in Table I. When the grading falls outside the percentage limits given for sieve other than 600 micron, 300 micron and 150 micron (I.S.) sieve but not more than 5%, it shall be regarded as falling within this Zone. 5 per cent shall be summation of excess on all other sieves. For coarse sand the grading of sand as determined by the method prescribed in IS: 2386 Part I shall be within the limits of Grading Zone III given in Table I. When the grading falls outside the percentage limits given for sieves other than 600 micron, 300 micron and 150 micron (I.S.) sieves but not more than 5 percent, it shall be regarded as falling within this zone. 5 percent can be excess



summation on one or more sieves.

The maximum quantity of silt as determined by the Field method shall not exceed 8 percent by volume.

TABLE 1 - FINE AGGREGATE

I.S. Sieve Designation	Percentage Passing for Grading			
	Zone-I	Zone-II	Zone-III	Zone-IV
10 mm	100	100	100	100
4.75 mm	90-100	90-100	90-100	95-100
2.36 mm	60-95	75-100	85-100	95-100
1.18 mm	30-70	55-90	75-100	90-100
600 micron	15-34	35-59	35-60	80-100
300 micron	5-20	8-30	12-40	15-50
150 micron	0-10	0-10	0-10	0-15

Coarse Aggregate

- I. The coarse aggregate shall be crushed stone conforming to IS: 383, having nominal size of 20 mm as per requirements and as approved by Engineer-in-Charge.
- II. Coarse aggregate obtained from crushed or broken stone shall be angular, hard, strong, dense, durable, clean and free from soft, friable, thin flat, elongated or flaky pieces.
- III. Except where it can be shown to the satisfaction of the Engineer-in-Charge that a supply of properly graded aggregate of uniform quality can be maintained over the period of the works, the grading of aggregate shall be controlled by obtaining the coarse aggregate in different sizes and blending them in correct proportions as and when required.

Water

- I. Water used in the works shall be potable water and free from deleterious materials. Water used for mixing and curing concrete as well as for cooling and/or washing aggregate shall be fresh and clean, free from injurious amounts of oil, salts, acids, alkali, other chemicals and organic matter.



- II. Water used for both mixing and curing shall conform to IS: 456. Potable water is generally satisfactory. Water containing any excess of acid, alkali, sugar or salt shall not be used.
- III. The pH value of water shall not be less than 6.
- IV. Seawater shall not be used for concrete mixing and curing.

Admixtures and Additives

- I. Chemical admixtures shall conform to IS 9103 and are not to be used unless permitted by the Engineer-in-Charge. In case their use is permitted, the type, amount, chemical property and method of use of any admixture proposed by the contractor shall be submitted to the Engineer-in-Charge for approval prior to the approval of the same.
 - II. The contractor shall further provide the following information concerning each admixture to the Engineer-in-Charge.
 - a) Normal dosage and detrimental effects if any of under dosage and over dosage.
 - b) The chemical names of the main ingredients in the admixture.
 - c) The chloride ion content if any expressed as a percentage by weight of admixture.
 - d) Whether or not the admixture leads to entrapment of air when used in the manufacturer's recommended dosage.
 - e) Where two or more admixtures are proposed to be used in any one mix, the manufacturer's written confirmation of their compatibility.
 - III. In reinforced concrete, the chloride ion of any admixture used shall not exceed 2 percent by weight of the admixture as determined in accordance with IS: 6925 and the total chloride ion in all admixtures used in concrete mix shall not exceed 0.83 percent by weight of cement.
 - IV. The admixtures shall conform to IS: 9103. The suitability of all admixtures shall be verified by trial mixes.
 - V. The addition of calcium chloride to concrete containing embedded metal will not be permitted under any circumstances.
 - VI. Retarding admixtures when used shall be based on ligno sulphonates with due consideration to clause 5.2 and 5.3 of IS: 7861.
 - VII. Waterproofing admixtures shall comply with IS: 2645.
-



5. Plant

The contractor shall obtain the approval of the Engineer-in-Charge for all plant he proposes to use for the manufacture and placing of concrete.

6. Concrete Mix Proportions

All cement concrete not designated by strength but ingredients are in volumetric ratio shall be treated as ordinary concrete. The ratio of aggregates and cement shall be as specified. All Plain cement concrete in grade 1:2:4 and others are in grade 1:1.5:3 Theoretical requirements of cement will be calculated at the rates given below: -

PCC 1:2:4 Grade – 320 kg/m³

RCC 1:1.5:3 Grade – 400 kg/m³

Water Cement Ratio

The quantity of water added to the cement and aggregate during mixing shall be such as to produce a concrete having sufficient workability to enable it to be properly compacted to be worked into the corners of the shuttering and around reinforcement. Maximum water cement ratio for nominal mixes shall be as per IS 456.

The contractor shall ensure concrete workability in accordance with relevant Indian standard and slump test shall be conducted at site as and when required by the Engineer-In-Charge. The slump at the actual location of placing as measured in accordance with the methods laid down in IS: 1199 shall not be more than the values specified in IS 456 unless otherwise directed by the Engineer-in-Charge.

7. Concrete Testing

Test Cubes

- I. The strength of concrete either in assessing the suitability of the trial mixes or when placed in the works shall be determined from 150mm cubes made, cured, stored, transported and tested in accordance with IS:516 and as specified.
- II. Test cubes shall be made as and when required by the Engineer-in-Charge or as per the relevant IS Stipulation.
- III. Test cubes shall be made under the direct supervision of the competent person appointed by the contractor to supervise all stages of the preparation and placing of concrete. They shall be made by the contractor in the presence of the Engineer-in-Charge and generally from concrete taken at the point of discharge from the mixer and the contractor shall provide suitable facilities in the form of a hut or other covered protection as agreed with or directed by the Engineer-in-Charge for the storing and curing of the test cubes during the first 24 hours after making them and until they are dispatched to the testing laboratory.
- IV. Test cubes shall be marked and dated in such a manner that the trade



and the part of the works in which the concrete they represent has been placed can be readily identified.

- V. Testing shall be done in the field laboratory with due approval of Engineer-in-Charge or whenever so desired and directed by the Engineer-in-Charge, testing may be carried out in an NABL accredited laboratory or in a Civil Engineering Department of government institutions or in any other laboratory approved by Engineer-in-Charge and the results shall be submitted promptly by the contractor to the Engineer-in-Charge without any extra cost.

8. Concrete Production

Ready Mixed Concrete (RMC) from approved Agency can be used with the approval of Engineer-in-Charge. Contractor shall submit all the details of RMC to the Engineer-in-Charge for his approval.

9. Concrete Mixing

All concrete in the correct proportion of ingredients approved by the Engineer-in-Charge, whether ordinary or controlled, shall be mixed in an approved mixer for the minimum time necessary to ensure adequate quality and uniform distribution of the materials. The cement and aggregates shall normally be first mixed dry until all particles of aggregate are coated with cement after which the water shall be added along with admixture.

Allowance shall be made for the moisture content of the aggregates when calculating the amount of water to be added for each mix.

The temperature of the aggregate, water and cement when added to the mixer shall be such that the temperature of the concrete at the time of placement is less than 40° C.

Materials for concrete shall be deposited into the drum while it is in rotation. Mixers shall not be loaded beyond their rated capacity and each batch shall be completely discharged from the drum before recharging takes place.

Facilities shall be provided to spray the mixer drum with cool water between batches and on the completion of concreting the drum shall be washed thoroughly. The surface of the mixer drum shall be maintained in a clean condition at all times.

Retempering and/or mixing of concrete which has partially hardened and set will not be permitted under any circumstances.

10. Transporting

The period between mixing the concrete and placing it in the final position shall be kept to a minimum and the delivery of concrete shall be coordinated with the rate of placement to avoid delays in delivery and placement.

Concrete shall be handled from the place of mixing to the place of final deposit by methods which prevent segregation, loss of ingredients and contamination and maintain the required workability.



Should any segregation have occurred in any batches arriving at the place of deposition, such batches shall be rejected and shall not be allowed to use. Where concrete is conveyed by chutes, the chutes shall be made of metal or fitted with metal linings. The approval of the Engineer-in-Charge shall be obtained for the use of chutes more than 3 meters long.

All plant and equipment used in the transportation of concrete shall be thoroughly cleaned before and after each working period and at all changes of concrete mixes.

11. Preparation before Concreting

The inside surface of the forms against which concrete is to be placed shall be clean and free from dried or hardened spattering or coatings of concrete. The forms shall be wetted before placing concrete.

When the work has to be resumed on a surface which has hardened, such surface shall be roughened. It shall then be swept clean and covered with a coating of freshly mixed epoxy based concrete adhesive as per manufacturer's instructions immediately before placing of concrete.

Before any concrete is placed on the sub grade, the sub grade shall be checked and approved for degree of compaction and alignment. The sub grade shall be kept damp ahead of concreting.

Concrete shall not be placed in the works until the Engineer-in-Charge has inspected the formwork, reinforcement, inserts and sleeves if any and given his permission to place concrete.

12. Placing

Concreting of any portion of the works shall be done only in the presence of the Engineer-in-Charge or his representative.

Concreting shall be carried out continuously between construction or expansion joints, shown on the drawings or as agreed with the Engineer-in-Charge. The contractor shall closely follow the sequence of concreting where such is specified in the drawings or instructed at site. If concreting is interrupted before reaching the predetermined joint an approved construction joint shall be provided after obtaining necessary approval from the Engineer-in-Charge.

Concrete shall be deposited as nearly as is practicable to its final position and shall not be dumped in a large quantity at any point to be run or worked along the formwork manually or with vibrators. Concrete shall not be deposited at a faster rate than it can be placed and compacted. Concrete shall not be placed from a height more than 1.5m.

Concrete shall be thoroughly worked into the forms so that they are entirely filled; reinforcing bars adequately and tightly surrounded and entrained air released from the mass of concrete. Placing shall be carried with the use of vibrators in a manner approved by the Engineer-in-Charge. For members having thickness more than 300 mm, the concrete shall be placed in layers not greater than 300mm thickness and thoroughly compacted before succeeding layers are placed. Concrete shall be placed in single operation to the full thickness of slabs, beams and similar members. No concrete



shall be placed on concrete which has set sufficiently to cause the formation of planes of weakness and where these are likely to occur due to unforeseen circumstances and the procedure to be followed shall be as given earlier of this specification. As far as possible cold joints in concrete shall be avoided.

13. Compaction

Each layer of concrete whilst being deposited shall be compacted by approved methods to form a dense material with all surfaces free from honey combing, air holes or other blemishes. The contractor shall use mechanical vibration for all concrete and shall take care that internal vibrators shall not be brought into contact with the reinforcement or the formwork.

An adequate number of vibrators shall be used to ensure that compaction of concrete is achieved within 10 minutes of placing. Particular attention shall be given to the compaction of the concrete around the water bars to ensure that no voids or porous areas are left.

Compacting shall cease as soon as excess water appears on the face of concrete. Any water accumulating on the surface of newly placed concrete shall be removed by approved methods and no further concrete shall be placed thereon until such water has been removed.

Approved admixture/plasticizer shall be used to achieve the necessary workability, as approved by the Engineer-in-Charge and strictly in accordance with manufacturer's instructions.

The time elapsed between the discharge of the concrete from the mixer and the completion of compaction shall not exceed 30 minutes where concrete admixture is not used.

A sufficient number of spare vibrators of various capacities & types shall be kept readily accessible to the place of deposition of concrete to assure adequate vibration in case of breakdown of those in use.

14. Finish

All concrete surfaces shall have a good, dense finish. Except for slabs the exposed faces of concrete for which form work is not provided shall be smoothed with a steel or wooden trowel to provide a finish equal to that face where formwork is provided.

The top surfaces of slabs specified as smooth shall be leveled and trowel led before the concrete begins to set to a smooth finish at levels and falls shown on the drawings. The troweling shall be done at such a time and in such a manner that excess of mortar is not brought to the surface of concrete nor the aggregate displaced. The top surfaces of concrete slabs specified to receive an integral finish shall be uniformly roughened by deep hacking before the finish is laid.

Immediately after striking the formwork and removing any superficial water, honeycombed areas in normal unfinished concrete shall be inspected by the Engineer-in-Charge and where directed the contractor shall immediately make it good to the satisfaction of the Engineer-in-Charge. All air holes shall be similarly filled up.



The contractor shall be responsible for providing an adequate key in concrete where plastering or rendering is specified to be applied.

Hacking of the concrete surface after striking the formwork will be permitted only after 3 days after the concreting is done.

The faces of all fair faced concrete shall be of even colour throughout, free from air bubbles, cracks, honeycombing or other blemishes and will be inspected by the Engineer-in-Charge on report by the Contractor, immediately after the formwork has been struck. Such faces shall not be rubbed down or otherwise repaired to remove any defects or imperfections without the prior permission of the Engineer-in-Charge.

Concrete surface finishes shall accord to the requirements and all instructions by the Engineer-in-Charge with regard to the method of achieving such finishes as implemented.

15. Curing and Protection

Walling or further loading on concrete shall not be permitted for at least 48 hours after it has been placed in position, or for such additional length of time as the Engineer-in-Charge may direct.

Immediately after compaction and completion of any surface finishes, the concrete shall be protected from the evaporation of moisture by means of polythene sheeting, wet hessian or other suitable material kept soaked by spraying. As soon as the concrete has attained a degree of hardening sufficient to withstand surface damage, continuous moist curing shall be implemented and maintained for a period of at least 7 days from the date of placing concrete in case of ordinary Portland cement and at least 10 days where mineral admixtures or blended cements are used.

Method of curing and their duration shall be such that the concrete will have satisfactory durability and strength and members will suffer a minimum distortion, be free from excessive efflorescence and will not cause, by its shrinkage, undue cracking in the works.

The top surfaces of slabs and other horizontal surfaces shall be cured by ponding of water in cement mortar bunds. Steeply sloping and vertical formed surfaces shall be kept completely and continuously wet prior to and during the striking of formwork and thereafter by applying adequate water to the top surfaces and allowing it to pass down between the formwork and the concrete, if required by discharging water through hose pipes and pumps.

The Contractor shall give careful consideration to the curing methods and conditions for fair faced concrete. Components which are specified to have exposed concrete finish shall receive the same curing treatment. Moreover water used for curing shall be clean and free from deleterious materials so as not to discolour the concrete.

All fair faced concrete shall be protected from damage from the time of striking the formwork. All edges and surfaces of such concrete shall be protected from chipping using notched timber or aluminium corner pieces or other suitable covers which shall be maintained in place until the completion of the works.



The Contractor shall be responsible for ensuring all fair faced concrete free of blemishes defect & stains and shall remove all such staining as may occur as soon as possible to the satisfaction of the Engineer-in-Charge.

16. Inserts

The Contractors shall provide pockets/holes to fix all necessary inserts such as U angle post as per drawing at the time of formwork and concreting.

17. Cracks

If any cracks develop in the reinforced cement concrete construction which in the opinion of the Engineer-in-Charge may be detrimental to the strength of the construction, the contractor shall test the structural element in question. If under these test loads the cracks shall develop further the contractor shall dismantle the construction, cart away the debris replace the construction and carryout all consequential work thereto.

If the cracks are not detrimental to the stability of the construction in the opinion of the Engineer-in-Charge, the contractor shall grout the cracks with pneumatically applied mortar or epoxy grout or by other specified treatment as directed by the Engineer-in-Charge. The repair work shall be carried out to the satisfaction of the Engineer-in-Charge. The decision of the Engineer-in-Charge as to the extent of the liability of the contractor in the above matter shall be final and binding on the contractor.

18. Supervision

All concreting work shall be done under strict supervision of qualified and experienced representatives of the Contractor as well as those of the Engineer-in-Charge. The contractor's supervisor who is in charge of concreting work shall be experienced & skilled in this class of work and shall personally superintend all the concreting operations at all stages.

19. Special attention shall be paid to the following

- I. Proportioning, mixing and quality testing of the materials with particular control on the water cement ratio.
- II. Laying of material in place and thorough compaction of the concrete to ensure solidity and freedom from voids and honeycombing.
- III. Proper curing for the requisite period.
- IV. Reinforcement position is not disturbed during concreting and consolidation by vibration.

20. Quality Control

The Engineer-in-Charge reserves the right to make changes in the mix proportions including the increased cement content or/and a change in the Contractor's control procedure, should the quality control during progress of the works prove to be



inadequate in his opinion and the contractor shall carry out the same. Any extra cost due to change in mix proportions shall be deemed to have been included in relevant item rates.

All the concrete work shall be true to level, plumb and square within the acceptable tolerance. The corners, edges and rises in all cases shall be unbroken and finished properly and carefully.

21. Tolerances

The acceptable tolerances for formed concrete surfaces shall be as per relevant Indian standard.

22. Reinforcement Steel

Steel reinforcement TMT bars wherever specified shall conform to IS 1786 – (latest edition). The steel shall be marked or stamped with a private mark for the purpose of identification as may be directed by the Engineer-in-Charge. Steel reinforcement shall be stored in a way as to prevent distortion and corrosion. Bars of different classifications, sizes, and lengths shall be stored separately to facilitate issues in such sizes and lengths as to minimize wastage in cutting from standard lengths. All reinforcement shall be clean and free from loose mill scales, dust, loose rust, coats of paints, oil or other coatings which may destroy or reduce bond.

23. Storage of Steel Reinforcement

It shall be stored in such a way as to avoid distortion and to prevent deterioration and corrosion. Steel reinforcement, shall be stored clear of the ground, on rack or otherwise supported, covered in bundles indicating the type, number, size, length, diameter and date of delivery to the site of the bars and fabric reinforcement as per IS: 456 and as directed by the Engineer-in-Charge.

24. Approval of Reinforcement

The Contractor must obtain the approval of the Engineer-in-Charge to the reinforcement fixed in position, before concrete is deposited on the shutters.

25. Formwork General

Formwork shall include all temporary or permanent forms of moulds required for forming the concrete which is cast-in-situ, together with all temporary construction required for their support.

Formwork shall be of rigid construction true to shape and dimensions. It shall be strong enough to withstand the dead and live loads and forces caused by ramming and vibrations of concrete and other incidental loads, imposed upon it during and after casting of concrete. It shall be made sufficiently rigid by using adequate number of ties and braces. Screw jacks or hard board wedges, where required shall be provided to make up any settlement in the form work either before or during the placing of concrete.

Forms shall be so constructed as to be removable in sections in the designed sequence



without damaging the surface of concrete or disturbing other sections. All form work should be easy to strip after concreting and form work must be erected with this consideration in mind. Care shall be taken to see that no pieces remain keyed into the concrete. Details of formwork shall be properly designed by the Contractor and relevant drawings together with calculations for strength and deflection shall be submitted to the Engineer-in-Charge for approval before commencement of formwork erection. The completed formwork shall be inspected by the Engineer-in-Charge on receipt of information in this regard from the Contractor, before the reinforcement bars are placed in position.

Formwork surface in contact with concrete (sheathing) shall be of steel or plywood. Approved hard wood section could be used for the framework of shuttering board only. Sheathing for the form work of column shall be of steel with approved thickness. Props used for centering shall be of adjustable steel props without any deformation, damage & crack. Construction joints shall be positioned as instructed by the Engineer-in-Charge.

Before the concreting is started, the props and wedges shall be thoroughly checked to see that these are intact and take suitable action in case these are loose.

The surfaces of timber formwork that would come in contact with concrete shall be well wetted and coated with soap solution, raw linseed oil or form oil of approved material (such as polythene/polyethylene sheets) to prevent adhesion of concrete to formwork.

The formwork shall be so removed as not to cause any damage to concrete due to shock or vibration. The removal of centering and shuttering is to be done to the approval of the Engineer-in-Charge.

26. Minimum Stripping time of Formwork

(Except in case of any special type of form work)

S I No	Type of Formwork	Minimum period before striking formwork	
		For concrete made using OPC	For concrete made using cement other than OPC or using Mineral admixtures like fly ash and slag
1	Vertical formworks to columns,walls,beams	16-24 hrs	16-24 hrs
2	Soffit formworks to slabs(Props to be refixed immediately after removal of formwork)	3 Days	7 Days
3	Soffit formworks to beams(Props to be refixed immediately after removal of formwork)	7 Days	10 Days
4	Props to slabs		



	Spanning up to 4.5m	7 Days	10 Days
	Spanning over 4.5m	14 Days	14 Days
5	Props to beams and arches		
	Spanning up to 6m	14 Days	14 Days
	Spanning over 6m	21 Days	21 Days

Utmost care shall be taken to provide props. The props shall be provided immediately after stripping each shuttering panel and not after stripping all the panels of the entire slab.

The number of props left under, their sizes and disposition shall be such as to be able to safely carry the full dead load of the slab, beam or such as the case may be together with any live load likely to occur during curing or further construction.

27. Damage to Concrete

The Contractor is to make good at his own expense any injury to the concrete work and any damage caused by or arising from the removal and striking of formworks and supports.

28. Discolouration

Formation of blotches and stains due to detachment of formwork panel from the concrete when adjacent portion in the same lift is still adhering shall not be allowed to occur and for this purpose all shutters shall be struck off at the same time. Use of old and new plywood in the same board or different quality boards or mixing shutter panels of different numbers of uses shall be totally avoided to get rid of discoloration.

29. Ties

Use of ties shall be avoided and as far as possible. Formwork shall be supported mainly by propping against staging erected firmly for the purpose.

30. Clean up

After forms are stripped, all materials to be reused shall be thoroughly cleaned. All nails shall be pulled from the plywood board and no nail shall be bent over by hammering against the face of the material if reuse of forms is planned. Holes bored through sheathing for forms ties shall be plugged by driving in common corks or foamed plastics. Patching plaster may also be used to fill small holes, with approval of the Engineer-in-Charge. After cleaning and before refixing each formwork either of plywood or metal mould shall be got approved by the Engineer-in-Charge.

31. Internal Vibrators

These should invariably be used. However, vibrators shall not be used for displacing concrete. Overloading the vibrators by placing too much concrete per vibrator, over vibrating by using too many vibrators relative to quantity of concrete shall be avoided. Segregation by excessive vibration or excessive water content should be strictly avoided. Vibrator shall be withdrawn gradually and smoothly, and in a manner which shall not cause suction, voids or air entrapment.



D. MASONRY WORK

Masonry units solid concrete blocks shall conform to the requirements of IS: 2185 (Part 1). The height of the concrete masonry units shall not exceed either its length or six times its width.

The nominal dimensions of concrete block shall be as under.

Length 400, 300
Height 100, 150 mm.
Width 200

Half blocks shall be in lengths of 200, 250 or 300 mm to correspond to the full length blocks. Actual dimensions shall be 10 mm short of the nominal dimensions. The maximum variation in the length of the units shall not be more than + 5mm and maximum variation in height or width of the units shall not be more than + 3mm.

Concrete blocks shall be sound, free of cracks, chipping or other defects which impair the strength or performance of the construction. Surface texture shall be as specified. The faces of the units shall be flat and rectangular, opposite faces shall be parallel and all arises shall be square. The bedding surfaces shall be at right angles to the faces of the block.

The concrete mix used for masonry shall be one part of cement to five parts of combined aggregates by volume. i.e. (1:5).

Concrete blocks shall be of approved manufacture, which satisfy the limitations in the values of water absorption, drying shrinkage and moisture movement, as specified for the type of block as per relevant IS code. CONTRACTOR shall furnish the test certificates and also supply the samples, for the approval of Engineer-In-Charge.

The type of the concrete block, thickness and grade based on the compressive strength for use in load bearing and/or non-load bearing walls shall be as specified in the respective items of work.

The workmanship, shall generally conform to the requirements of IS: 2572 for concrete block masonry Curing of the mortar joints shall be carried out for at least 7 days. The walls should only be lightly moistened and shall not be allowed to become excessively wet.

Sampling and testing shall be in accordance with the relevant Indian standard/as directed by the Engineer-in-Charge.

E. STRUCTURAL STEEL WORK

1. Scope of Work

The work covered by this specification consists of supply, fabrication, painting and erection of structural steel components in accordance with the specifications and the applicable drawings.



2. Materials

The structural steel shall be of standard sections as marked on the drawings and shall be free of scale, blisters, laminations, cracked edges and defects of any sort.

3. Workmanship

- I. All workmanship shall be of first class quality in every respect to the greatest accuracy being observed to ensure that all parts will fit together properly on erection.
- II. All ends shall be cut true to planes. They must fit the abutting surfaces closely.
- III. All butt ends of compression member shall be in close contact through the area of joints.
- IV. The base connection shall be provided as shown on drawings and the greatest accuracy of workmanship shall be ensured to provide the best connections.
- V. Figured dimensions on the drawings shall be taken.

4. Welding

Welding works shall be carried out by only qualified and experienced welders who shall be periodically tested and graded as per IS 817, IS: 7310 (Part 1) and IS: 7318 (Part 1).

5. Erection and Marking

Erection and fabrication shall be according to IS: 800-1984 Section-11. During erection, the work shall be securely braced and fastened temporarily to provide safety for all erection stresses etc. No permanent welding shall be done until proper alignment has been obtained.

Any parts which do not fit accurately or which are not in accordance with the drawings and specifications shall be liable to rejection and if rejected, shall be at once made good.

Engineer-in-Charge shall have full liberty at all reasonable times to enter the contractor's premises for the purpose of inspecting the work and no work shall be taken down, painted or dispatched until it has been inspected and passed. The contractor shall supply free of charge all labour and tools required for testing of work.

6. Painting

Before paint is applied, the surface shall be dry and free from dust, dirt, scale and grease. All steel structures shall receive single coat primer (20microns). Primer paint shall be Red oxide zinc chromate of approved make. First coat of primer shall be given in shop after fabrication, before dispatch to erection. All paint delivered to the fabrication shop/site shall be ready mixed, in original sealed containers, as packed by



the manufacturer. Thinner shall not be permitted for usage unless specifically directed by the Engineer-In-Charge.

F. PLASTERING

1. Scope

This section shall cover external plastering works as shown in the drawings. Before commencing the work sample of works shall be made in accordance with the specifications indicated below and got approved by the Engineer-in-Charge. Exterior plaster where specified or shown shall be 20 mm thick in two coats(12mm+8mm) , Both coats shall be 1:3 cement sand mortar (1 cement: 3 sand). 8mm thick single coat plastering shall also be required in some areas where plastering works are partially completed.

2. Scaffolding

Generally scaffolding shall be as mentioned for Masonry work. Stage scaffolding shall be provided for plastering work as per standard practice and as directed by the Engineer-in-Charge. This shall be independent of the walls.

3. Preparation of Surface

Joints of Block work shall be raked-out properly. Dust and loose mortar shall be brushed out. Efflorescence if any shall be removed by brushing and scraping. Shuttering imperfections of all concrete shall be roughened by hacking with chisel and all resulting dust and loose particles cleaned and the surface shall be thoroughly hacked or bush hammered to the satisfaction of the Engineer-in-Charge. The surface shall be thoroughly washed with water, cleaned and kept wet before plastering is commenced. Special approval shall be taken from the Engineer-in-Charge before commencing each plastering work. No cutting of finished plaster shall be allowed under any circumstance. No portion shall be left out initially to be patched up later on.

4. Mixing

The ingredients shall be mixed in specific proportions by volume. The mixing shall be done in a mechanical mixer or by hand mixing on water- tight platform. The cement and sand shall first be mixed thoroughly dry in the mixer. Water shall then be added gradually and wet mixing continued for at least a minute until mortar attains the consistency of a stiff paste and uniform colour. Mortar shall be used within 30 minutes of addition of water. Mortar which has partially set shall not be used and removed from the site immediately.

Water proofing compound of approved make shall be added to the mortar and mixed strictly in accordance with manufacturer's printed instructions unless otherwise specified by the Engineer-In-Charge.

5. Plastering at Junction of Masonry/R.C.C



Fiber Mesh at Junctions

To avoid cracks at junction of RCC and CC block walls, 200 mm wide Fiber mesh as approved by Engineer-in-Charge shall be used fixed with suitable method on the joints before plastering

G. PAINTING

1. General

No work under this section shall start without approval from Engineer-in-Charge. The contractor shall ensure that approval has been obtained for all primer, paints, and oils, for each location/area to be finished and in respect to shades brand & manufacturer for such finishing materials, well in advance to commencement of work.

2. Materials

All materials shall be the best of their kind and of approved manufacture for each item. Painting materials such as shellac, thinner, oils, driers, brushes, rollers etc. shall be of the best approved quality and type. If for any reason, thinning is necessary in case of ready mixed paint, the brand of thinner recommended by the manufacturer or as instructed by Engineer-in-Charge shall be used. All materials shall be stored in a neat and orderly fashion in one single clean space. Care shall be taken to maintain this place as clean and dust- free as possible.

3. Sealed Containers

Paints of approved shade, brand & manufacturer shall be brought to the site of work by the Contractor in their original containers in sealed condition. The material shall be brought in at a time in adequate quantities to suffice for the whole work or at least a fortnight's work. The empty containers shall not be removed from the site of work, till the relevant item of work has been completed and permission obtained from Engineer-in-Charge.

4. Specialized Workmen

All work shall be done by the Contractor through specialised skilled workmen experienced in the trade.

5. Work as per Manufacturer's Instructions

All work shall be done strictly as per this specification and manufacturer's printed instructions. In case these specifications differ in any way from manufacturer's instructions, the latter shall apply.

6. Samples

Before starting work under this section large size samples of all types of coating



including preparation of surface shall be made at the site and approval obtained from the Engineer-in-Charge before proceeding with the finishing works. Only after specific approval has been given to the samples, work shall commence. The actual work shall be done as per the approved samples.

7. Preparation

The plastered surfaces shall be allowed to dry out completely. All surfaces to be finished shall be thoroughly brushed and cleaned of mortar drops, dust, dirt, fungi, rust, mill-scale, efflorescence and all other extraneous material. All loose pieces and scales shall be removed by scrapping. Surfaces shall be thoroughly sand-papered to a smooth finish. Further preparation work shall be done as specified under different types of finishes. Before starting painting work all floors shall be washed clean and wiped dry.

8. Finished Surface

All finished surface shall be smooth and of even shade to the satisfaction of Engineer-in-Charge

9. Protection

All work done shall be thoroughly protected from damage at all times by suitable and appropriate methods to the satisfaction of Engineer-in-Charge. All other adjacent areas which may not have received the finish at the same time shall also be thoroughly protected by suitable canvas, paper covering or by some other approved method.

H. FILLER BOARD FIXING AND SEALANT APPLICATIONS IN EXPANSION JOINTS

Filler board in expansion joints at columns used shall be with minimum density of 28 kg/cum & compressive strength of 0.21 Kg / Sqm, when tested as per ASTM D-357. . Filler board shall be positioned as per Specification. Joints and joint surfaces shall be clean, dry and free of any material that may have an adverse effect on the bonding and / or seal of the sealant and backer rod materials. Sealant and backer rod shall be applied under the conditions recommended by the manufacturers. All surfaces to receive sealant and backer rod shall be primed unless recommended otherwise in writing by the Manufacturers. No sealant that has started to set in its container or a sealant that has exceeded the shelf life published by the manufacturer shall be used. All sealant surfaces shall be tooled smooth. Where already filler board positioned sealant and backer rod shall be provided after necessary chipping and cleaning. Sealant shall be UV stable and of poly urethane based.

I. LIST OF APPROVED MAKES

It will be deemed that the contractor has priced the respective items on the basis of those approved makes. However, it shall be the prerogative for CSL to choose any particular make among the list as the most appropriate one and the contractor shall be bound to provide the same without any variation in the contract rate. Whenever



equivalent is specified in the list of approved makes, permission for use of equivalent make shall be subject to contractor submitting valid regret letters from the makes listed along with the comparison table of properties of proposed make w.r.t specified make. Decision of engineer-in-charge on approving equivalent makes shall be final and binding on the contractor.

Sl. No.	Item	Approved Makes
1	Grey Cement	Ultratech, Coromondal, Malabar, Ramco, Sankar, Gujarat Ambuja, Zuari, Chettinadu
2	Reinforcement Steel	Sail, Tata, RINL, JSW, Jindal Panther
3	Structural Steel	RINL, Sail, JSW, Tata, Arcelor Mittal Nippon Steel
4	Synthetic Enamel Paint/Wall emulsion paint/Primers	Berger, Hempel, Asian, Nerolac, Jotun,
5	Water proofing compounds	Pidilite, Fosroc, Sika
6	Expansion joint Filler Board & Baker road	Supreme Industries or Equivalent
7	Expansion Joint Sealant	Pidilite, Sika, Fosroc
8	Concrete Admixtures	Fosroc, Sika, Basf
9	Precast Concrete Cover Block	Astra or Equivalent
10	Welding rod	Esab, Ador, Modi, Philips, D &H Norma

COCHIN SHIPYARD LIMITED

TENDER NO: INFRA/ISRF/229/2022

INFRA PROJECTS DEPARTMENT

CONSTRUCTION OF COMPOUND WALL ALONG CSL-CIFT BOUNDARY AT ISRF PROJECT SITE, WELLINGTON ISLAND

FINANCIAL/PRICE BID

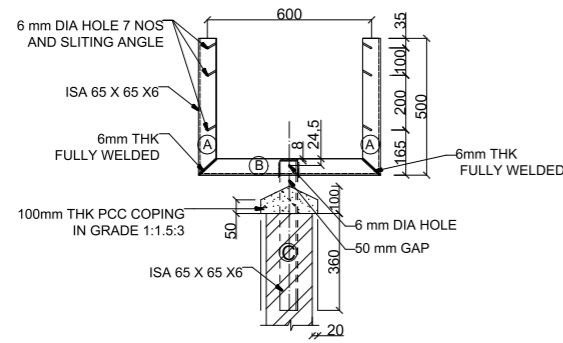
Item No	Item Description	Quantity	unit	Unit Rate (in Figures) [INR]	Unit Rate (in Words) [INR]	Amount (in Figures) [INR]	Amount (in Words) [INR]
1	Clearing of all vegetations including uprooting of rank vegetation, brush wood, trees of girth up to 30cm measured at a height of 1m above ground level,rubbish etc. and shifting outside the periphery of the area cleared including all equipments, labour, incidental expenses etc. complete as directed by Engineer-In-Charge.	20000	Sq.M				
2	Demolishing Brick / Stone / Concrete Block Masonry by suitable means manual or mechanical, including clearing all debris and shifting to suitable location within the ISRF project site including all equipments, labour, incidental expenses etc. complete as directed by Engineer-In-Charge.	14	Cu.M				
3	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches including dressing of sides and ramming of bottoms, depth upto 1.5 m, including getting out the excavated soil and shifting of surplus excavated soil within the ISRF Project site as directed ,Including all equipments, labour, dewatering,incidental expenses etc. all complete as directed by Engineer-In-Charge.	19	Cu.M				
4	Backfilling with earth excavated within the ISRF project site, in foundation trenches in layers not exceeding 20cm in depth , consolidating each deposited layer by ramming and watering Including all equipments, labour, incidental expenses etc. complete as directed by Engineer-In-Charge.	218	Cu.M				
5	Cutting and Shifting the earth heaps (unsuitable for filling) and debris within the ISRF Project Site including, loading, transportation and unloading, all equipments, labour, incidental expenses etc complete as directed by Engineer-In-Charge.	96	Cu.M				

6	Cutting and removing structural members like Angles, square rods, flats etc. by using suitable mechanical means and Handing over to CIFT including shifting & stacking the removed materials at suitable location within CIFT complex etc., as directed by Engineer-In-Charge.	500	Kg				
7	Providing and laying in position plain cement concrete 1:2:4 with 20 mm down graded coarse aggregate at all levels including ramming, leveling, curing, centering and shuttering, Dshuttering, all equipments, labour, incidental expenses etc. complete as directed by Engineer-In-Charge.	4	Cu.M				
8	Providing and laying in position plain cement concrete 1:1.5:3 with 20 mm down graded coarse aggregate for coping beam including ramming, leveling, curing, Shuttering, Dshuttering, scaffolding, all equipments, labour, incidental expenses etc. complete as directed by Engineer-In-Charge.	3	Cu.M				
9	Providing and casting Reinforced Cement Concrete 1:1.5:3 concrete with 20 mm downgraded coarse aggregate for following items, including shuttering, de-shuttering compacting with mechanical vibrators, hacking, curing,scaffolding, cleaning of already embeded reinforcement etc but excluding reinforcement,all equipments, labour, incidental expenses complete as directed by Engineer In Charge.						
9.1	Rafts & Beam	12	Cu.M				
9.2	columns	7	Cu.M				
10	Supplying, cleaning, cutting, bending, supporting, binding with double ply of 22 SWG soft annealed wire and placing in position High yield strength deformed TMT reinforcement bars conforming to IS:1786 of grade Fe 500D of approved make on/ at all levels and locations as per drawings, including handling and transport complete for all RCC works including supplying & placing concrete cover block of astra make or approved equivalent, all equipments, labour, incidental expenses etc complete as directed by Engineer-In-Charge. Note:- Only authorized laps, Chairs embedded in the concrete will be measured for payments.	3	MT				

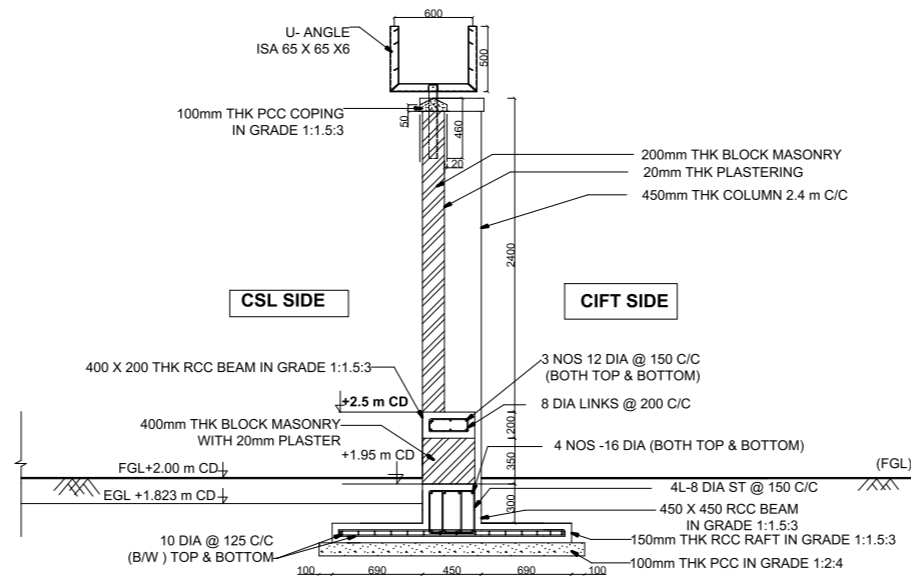
11	Providing & Fixing 25mm thick specifically extruded high performance polymer based sheet (SILFIL or equivalent) as filler board in expansion joints at columns, slab & beams, including placing the board in position using required adhesives to the casted surface, including applying & filling approved Polyurethane based sealant with backer rod and primer etc complete as directed by Engineer-In-Charge .	4	Sq.M				
12	Cutting and removing existing filler board 25mm wide at expansion joints in column to a depth of 25mm and filling the gap with approved Polyurethane based sealant with backer rod and primer etc complete as directed by Engineer-In-Charge.	44	Rmt				
13	Providing and laying 200/400mm thick Solid concrete block masonry, in cement mortar 1:5 using approved quality blocks of min.compressive strength 5.0 N/mm2 and conforming to IS:2185 (Part 1) including scaffolding, raking of joints, curing etc complete as directed by Engineer-In-Charge.	55	Cu.M				
14	Providing & Fixing in position by appropriate methods Fiber wire mesh in strips of 200mm widths or as required over junctions between concrete & brick / block masonry at all heights and locations prior to plastering including etc. complete as directed by Engineer-In-Charge.	91	Sq.M				
15	Providing and applying 20 mm thick exterior cement plaster in cement mortar 1:3 in two layers (12mm + 8mm) including providing and mixing of waterproofing compound as recommended by manufacturer (like Conplast X421 IC of Fosroc or equivalent), at all heights and locations for masonry and concrete surfaces (except for stone masonry) including scaffolding, chipping, hacking and cleaning the concrete surface, watering, finishing, making bands, grooves, curing, all equipments, labour, incidental expenses etc complete as per approved drawings & specifications and as directed by Engineer-In-Charge.	725	Sq.M				

16	Providing and applying 8 mm thick exterior cement plaster in cement mortar 1:3 on already plastered surface including providing and mixing of waterproofing compound Conplast X421 IC (Fosroc or equivalent) as recommended by manufacturer at all heights and locations for masonry and concrete surfaces including scaffolding, chipping, hacking and cleaning the concrete surface, watering, finishing, making grooves, bands, curing, all equipments, labour, incidental expenses etc complete as directed by Engineer-In-Charge.	186	Sq.M				
17	Supplying and applying one coat of approved matching primer and two coats of Anti-Algal/Fungal, Weather Proof, Exterior paint of approved colour, shade and make for compound walls at all heights including scaffolding, Cleaning and preparing the surface by removal of dust, fungus, algae, efflorescence, including filling the dents, cracks & holes with matching putty & sealer etc complete as directed by Engineer-In-Charge.	1230	Sq.M				
18	Providing & fixing U shaped structure of ISA 65 x 65 x 6 thk at spacing as specified, on top of solid masonry compound wall embedding the angle post in column concrete as per the drawing, including cleaning and preparing surface and painting with one coat of red oxide zinc chromate primer 20microns as per technical specification etc. complete as directed by Engineer-In-Charge.	1	MT				
19	Providing and erecting sturdy temporary barricade of height at least 2m using structural steel members and suitable sheet including cost of all material, tools, tackles, labour, machinery, transportation etc. complete as directed by engineer-in-charge. (Note :- After the completion of entire scope of works, the temporary barricade erected shall be dismantled and taken back by the contractor).	75	Rmt				
20.0	Carrying out miscellaneous works by arranging labour for 8hrs per day including hand tools and tackles as directed by Engineer-in-charge.						

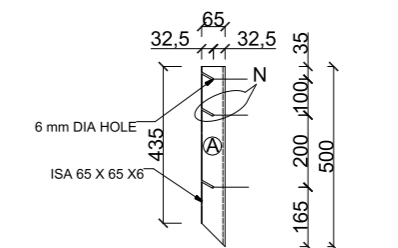
20.1	Skilled labour like Mason, Fitter, welder, Aluminium Fabricator, carpenter, plumber etc.	30	Day				
20.2	Unskilled labour like Mazdoor, beldar, coolie etc.	150	Day				
Total Amount (Excluding GST)							
Add GST @ 18%							
Total Amount (Including GST)							



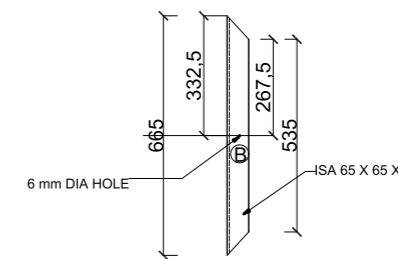
DETAILS OF U-ANGLE



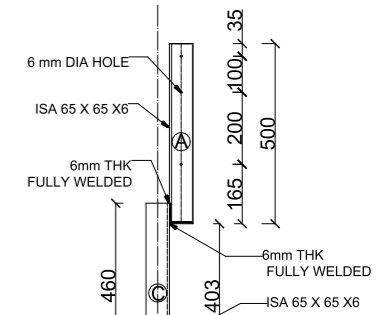
SECTION A-A



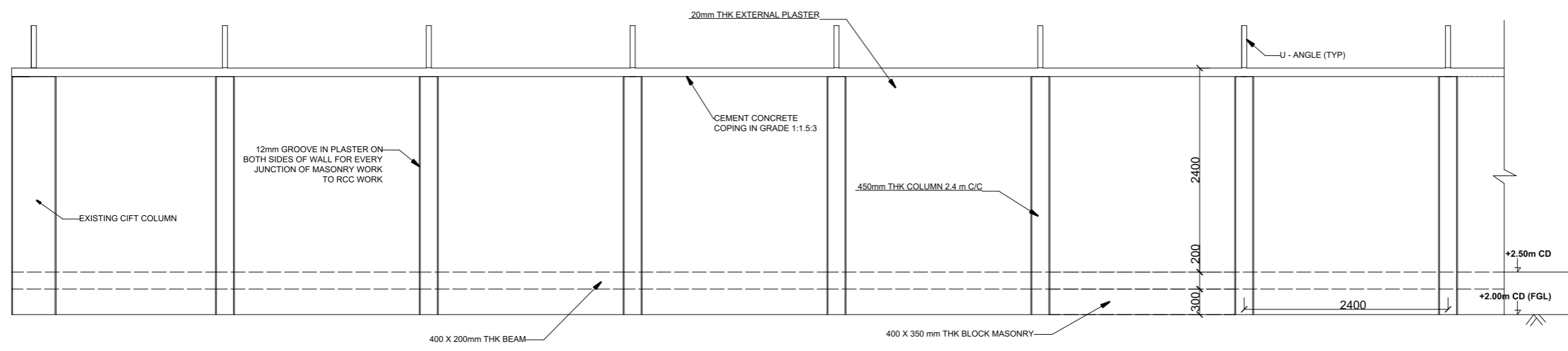
DETAIL - A



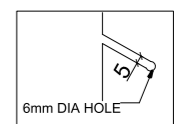
DETAIL - B



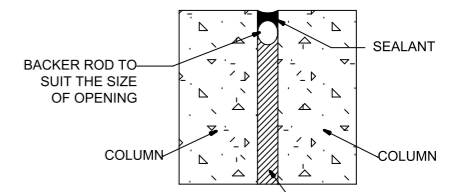
VIEW - C



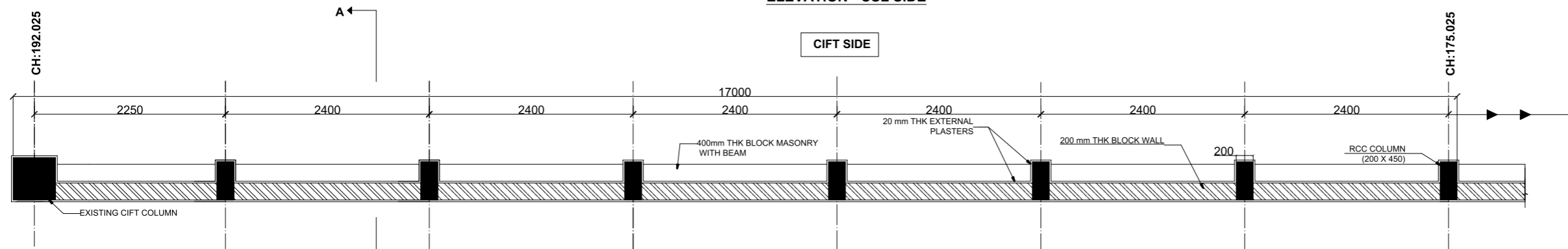
ELEVATION - CSL SIDE



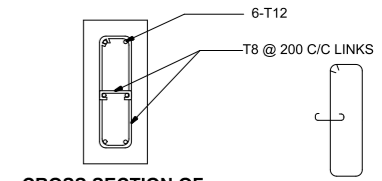
DETAIL - N



DETAILS OF EXPANSION JOINT



TYPICAL PLAN



CROSS SECTION OF COLUMN

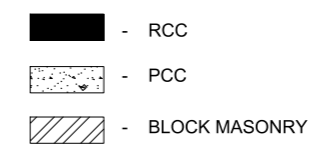
NOTE:

- All dimensions are in mm and levels in m CD
- Reinforcement grade - Fe 500D
- Cover to main reinforcement as follows
 - Beam -- 50mm all sides
 - Column -- 50mm all sides
 - Footing -- 50mm all sides
- Lap length - 46D (D is dia of bar)

- To maintain correct position of reinforcement and to prevent displacement of bars during placing & compaction of concrete, chairs conforming to IS:2502 and cover blocks shall be used
- For Block work cement mortar 1:5
- All materials / finishes to be as specified and approved by the Engineer -in charge

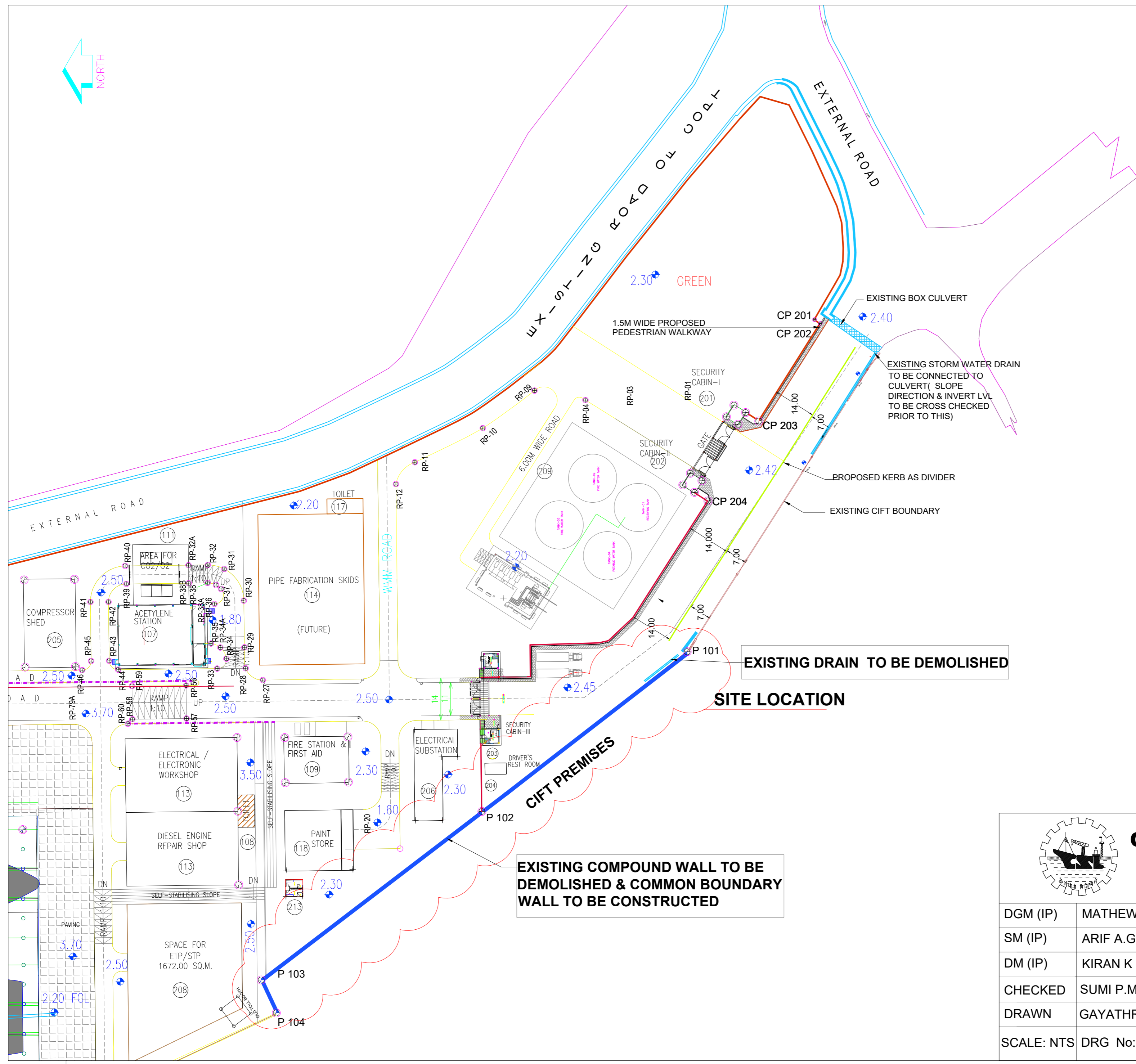
LEGENT

- FGL --- FORMED/FINISHED GROUND LEVEL
- FFL --- FINISHED FLOOR LEVEL
- THK --- THICK / THICKNESS
- RCC --- REINFORCED CEMENT CONCRETE
- PCC --- PLAIN CEMENT CONCRETE
- EGL --- EXISTING GROUND LEVEL



COCHIN SHIPYARD LIMITED
COCHIN - 682 015
INFRA PROJECTS DEPARTMENT

DGM (IP)	MATHEWS P.A.	Construction of Compound wall along CSL-CIFT boundary at ISRF Project site
SM (IP)	ARIF A.G.	
DM (IP)	KIRAN K	
CHECKED	SUMI P.M (PO - IP)	Plan, Elevation and Section of Compound wall
DRAWN	GAYATHRI DEVI P	
SCALE: NTS	DRG No: INFRA/ISRF/229/2022/01	REVISION : R0

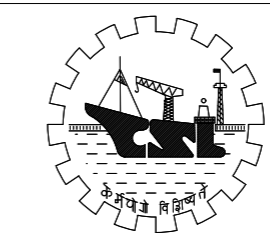


EXISTING DRAIN TO BE DEMOLISHED

SITE LOCATION

CIFT PREMISES

EXISTING COMPOUND WALL TO BE DEMOLISHED & COMMON BOUNDARY WALL TO BE CONSTRUCTED



COCHIN SHIPYARD LIMITED
 COCHIN - 682 015
 INFRA PROJECTS DEPARTMENT

DGM (IP)	MATHEWS P.A.	Construction of Compound wall along CSL-CIFT boundary at ISRF Project site
SM (IP)	ARIF A.G	
DM (IP)	KIRAN K	SITE LAYOUT WITH LOCATION
CHECKED	SUMI P.M (PO - IP)	
DRAWN	GAYATHRI DEVI P	
SCALE: NTS	DRG No: INFRA/ISRF/229/2022/02	REVISION : R0



Tender No: INFRA/ISRF/229/2022

**CONSTRUCTION OF COMPOUND WALL ALONG CSL-CIFT BOUNDARY AT ISRF
PROJECT SITE, WELLINGTON ISLAND**

UNDERTAKING BY CONTRACTOR

1. "I / WE HAVE INSPECTED THE SITE AND GONE THROUGH THE TENDER TERMS AND CONDITIONS IN FULL AND UNDERSTAND AND ACCEPT THE SAME AND HEREBY TRULY CONFIRM AND DECLARE THAT THE RATES QUOTED IN THE PRICE BID ARE INCLUSIVE OF ALL TAXES, ALL CESS AND DUTIES BUT EXCLUDING GOODS AND SERVICES TAX. I / WE ALSO CONFIRM THAT COVER B (PRICE BID) DO NOT CONTAIN ANY CONDITIONS"
2. "I/WE HAVE NOT MADE ANY PAYMENT OR ILLEGAL GRATIFICATION TO ANY PERSON/AUTHORITY CONNECTED WITH THE BID PROCESS SO AS TO INFLUENCE THE BID PROCESS AND HAVE NOT COMMITTED ANY OFFENCE UNDER THE PC ACT IN CONNECTION WITH THE BID."

Date & Signature:

Name & address of the contractor:



Tender No: INFRA/ISRF/229/2022

UNDERTAKING BY CONTRACTOR

To

Deputy General Manager (Infra Projects)
Cochin Shipyard Limited
Perumanoor PO
Kochi 682015

Subject: Tender for “**Construction of compound wall along CSL-CIFT boundary at ISRF project site, Wellington island**”

Dear Sir,

With reference to your tender enquiry 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 Annexure's is true and correct.
- 2) We have thoroughly read the tender conditions and have inspected the site and is fully aware of site conditions & scope of works envisaged under this contract and the circumstances under which work is awarded and hereby undertake to execute the work on “As is where is” basis at our own risk.
- 3) We shall make available to CSL any additional information it may find necessary or require to supplement or authenticate the Tender.
- 4) We are not under a declaration of ineligibility issued by CSL or Govt. of India or any State Govt. in India or any Public Sector Undertakings.
- 5) We are an experienced civil contractor registered with PWD/CPWD/CSL/CoPA or other government agencies.
- 6) We do hereby confirm that no changes have been made in the tender document downloaded and submitted by us for the above bid. Tender document will be treated as authentic tender and if any discrepancy is noticed at any stage between CSL tender document and the one submitted by the tenderer, the CSL document shall prevail.
- 7) We agree and undertake to abide by all the terms and conditions of the tender document.

Date & Signature:

Name & address of the bidder:



Tender No: INFRA/ISRF/229/2022

FORM OF BANK GUARANTEE IN LIEU OF SECURITY DEPOSIT

(On stamp paper of value Rs.200/-)

Guarantee No.....
Amount of Guarantee Rs.....
Guarantee Cover from.....
Last Date of Lodgment of Claim.....

1. In consideration of the Cochin Shipyard Limited (hereinafter called CSL) having agreed to exempt.....(hereinafter called “The said Contractor(s)”) from the demand, under the terms and condition of an Agreement between CSL andfor the execution of the work ofas per work order No.....dated..... (hereinafter called “the said agreement”) of Security Deposit for the due fulfillment by the said contractor(s) of the terms and conditions contained in the said agreement, on production of a Bank Guarantee for Rs(Rupees.....only)
We.....(Name of Bank) (hereinafter referred to as “the Bank) at the request of.....contractor(s) do hereby undertake to pay to CSL an amount not exceeding Rs(Rupeesonly) on demand.
2. We (name of bank)..... do hereby unconditionally and irrevocably undertake to pay the Employer to the extent of Rs...../- (Rs..... Only) without any demur merely on a demand from the Employer stating that the amount claimed is due by way of loss or damage caused to or suffered by the Employer by reason of breach by the Contractor of any of the terms and conditions contained in the said contract. Any such demand made on the (name of bank)..... shall be conclusive as regards to the amount due payable by the bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs...../(Rs..... Only)



3. Our liability under this present guarantee is absolute and unequivocal and we undertake to pay the Employer the amount so demanded without seeking the consent of the Contractor and notwithstanding the raising any dispute and/or disputes or filing any suit or proceeding before any court or tribunal Authority. The payment so made by us under this guarantee shall be a valid discharge of our liability for payment here under and the Contractor shall have no claim against us for making such payment.
4. Notwithstanding anything to the contrary, Employer's decision as to whether the Contractor has made any default or defaults and the amounts to which Employer is entitled by reason therefore shall be binding on us and we shall not be entitled to ask the Employer to establish the claims under the guarantee but will pay the same on demand without objection.
5. We, (name of bank),....., further agree that the guarantee herein contained shall remain in full force and effect during the periods that would be taken for the performance of the said contract and that it shall continue to be enforceable till all the dues of the Employer under or by virtue of the said contract have been fully paid and its claims satisfied or discharged and till the Employer certifies that the terms and conditions of the said contract have been fully and properly carried out by the said contractor and accordingly discharges this guarantee. Unless a demand or claim under this guarantee is made on us in writing on or before we shall be discharged from all liability under this guarantee thereafter.
6. This guarantee shall not be recoverable by us except with the written consent of the Employer and shall continue to be enforceable till should it be necessary to extend this guarantee beyond the said date. we undertake to extend the validity of this guarantee for such further period as may be required by the Employer, subject to the Employer giving in writing to Contractor the request for extension, and such extension shall be given before the expiry of the forthwith become payable to the Employer, notwithstanding that the contract is continuing and/or the Employer has or has not terminated the contract or preferred any claim against the Contractor.
7. We (name of bank)..., further agree with the Employer that the Employer shall have the fullest liberty without our consent and without affecting any manner our obligations hereunder to vary any of the terms and conditions of the said contract or to extend the time of guarantee by the said Contractor from time to time or to postpone for any time or from time to time exercise any of the powers exercisable by the Employer against the said Contractor and to forebear or enforce any of the terms and conditions relating to the said Contract and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said



Contractor or any indulgence which under the law relating to sureties, would but for this provision, have effect of so relieving us.

8. This guarantee shall not in any way be affected due to change in our constitution or by your taking or varying or giving up any securities from the Contractor or any other person, firm or Employer on its behalf or by change in the constitution, winding up, dissolution, insolvency or death as the case may be of the contractor.
9. In order to give full effect to the Guarantee herein contained you shall be entitled to act as if we are your principal debtors in respect of all your claims against the contractor hereby guaranteed by us as aforesaid and we here by expressly waive all our right of surety ship and other rights if any which are in any way inconsistent with the above or any other provisions of this guarantee.
10. We, (name of bank)..... also undertake not to revoke this guarantee during its currency except with the previous consent of the Employer in writing.
11. Notwithstanding anything contained herein above:
 - a. Our Liability under this guarantee shall not exceed Rs...../- (Rs..... Only).
 - b. This Bank Guarantee shall be valid up to and including and
 - c. We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before the expiry of this Guarantee.

Dated theday of.....

SIGNATURE AND SEAL OF BANK

FULL ADDRESS OF THE BANK



Tender No: INFRA/ISRF/229/2022

NEFT PAYMENT FORMAT

Electronic Payment Mandate Form

(Mandate for receiving payments through NEFT Cochin Shipyard Ltd)

- 1) Vendor/Contractor Name
- 2) Vendor/Contractor Address

- 3) Vendor Code
- 4) Permanent Account Number(PAN)
- 5) Particulars of Bank Account

a. Name of the Bank

b. Name of the Branch

c. NEFT/IFS Code of the Bank

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d. Branch Code

e. City Name

f. Branch Location

g. Branch Telephone No.

h. 9-Digit MICR Code

--	--	--	--	--	--	--	--	--	--	--

(where MICR is starting with "0". Please take the correct code from your bank for proper identification of city, bank,branch)

i. Type of the Account(S.B,Current or Cash Credit) with code (010/011/013)

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j. Account Number (as appearing on the cheque book)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

- 6) Email Address of Vendor
- 7) Date of Effect of RTGS/NEFT in your Bank

(Please enclose a cancelled un-signed cheque leaf to enable us to verify the details mentioned above)
We hereby declare that the particulars given above are correct and complete. If the transaction is delayed or lost because of incomplete or incorrect information, we would not hold the company responsible.

(.....)
Signature of vendor

Bank Certificate

We certify that _____ has an Account No. _____ with us and we confirm that the details given above are correct as per our records.

Date:
Place:

(.....)
Authorized official of Bank



Tender No: INFRA/ISRF/229/2022

PROFORMA OF CONTRACT AGREEMENT

(On kerala state stamp paper of value Rs ____/-)

THIS AGREEMENT MADE ON 2022 BETWEEN THE DEPUTY GENERAL MANAGER (INFRA PROJECTS), COCHIN SHIPYARD LIMITED, COCHIN-15 on behalf of Cochin Shipyard Limited (hereinafter called the “Engineer-in-charge”) which expression shall, unless excluded by or repugnant to the context, be deemed to include their successors in office on one part of and(hereinafter called “CONTRACTOR”) on the other part. WHEREAS THE ENGINEER-IN-CHARGE is desirous that certain work should be done viz. “**CONSTRUCTION OF COMPOUND WALL ALONG CSL-CIFT BOUNDARY AT ISRF PROJECT SITE, WELLINGDON ISLAND**” and had accepted the tender by the Contractor for the construction, completion & guarantee of such work,

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this agreement words & expression shall have the same meaning as respectively assigned to them in the conditions of contract hereinafter referred to.
2. The following documents shall be deemed to form part and be read and construed as part of this agreement viz.
 - a) The said tender.
 - b) The conditions of contract
 - c) The tender schedule.
 - d) All letters from contractor
 - e) All letters by CSL.
 - f) CSL Work Order
3. In consideration of the payment to be made by the Deputy General Manager (Infra Projects) to the contractor (hereinafter called the contractor) hereby covenants with the Deputy General Manager (Infra Projects) to construct, complete and guarantee the work in conformity in all respects, with the provisions of contract.



4. The Deputy General Manager (Infra Projects) hereby covenants to pay the contractor the contract price, in consideration of the construction, completion & guarantee of the work at the time and in the manner prescribed by the contract.

5. In witness whereof the parties hereto have caused their respective common seals to be hereunto affixed (or have hereunto set their respective hand & seals) the day and year first above written.

6. The common seal of the Deputy General Manager (Infra Projects), Cochin Shipyard Limited, Kochi-15 affixed and Deputy General Manager (Infra Projects) has signed.

For Cochin Shipyard Limited,

Signed & Sealed by Contractor: -

In the presence of: -

- 1.
- 2.



Tender No: INFRA/ISRF/229/2022

POWER OF ATTORNEY

To

Deputy General Manager (Infra Projects)

Cochin Shipyard Limited

Kochi 682015.

Kerala, India.

Dear Sir,

We _____

do here by confirm that Mr./Ms./Messrs _____

_____ (Name and Address) is /are authorized to represent us to bid, negotiate and conclude the agreement on our behalf with you against Tender No. INFRA/ISRF/229/2022.

We confirm that we shall be bound by all and whatsoever our said agents shall commit.

Yours faithfully,

Signature:

Name & Designation:

For & on behalf of: Signature, name and seal of the certifying authority