



कोचिन पत्तन प्राधिकरण  
Cochin Port Authority

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**TENDER FOR RECONSTRUCTION OF Q2-Q3 BERTHS AT  
MATTANCHERRY WHARF OF COCHIN PORT.**

**BID DOCUMENT**

(Tender No.T10/T-2062/2025-C)

**COCHIN PORT AUTHORITY**  
**CIVIL ENGINEERING DEPARTMENT**

Tender No: T10/T-2062/2025-C

Tender for

**Reconstruction of Q2-Q3 berths at Mattancherry wharf of Cochin Port.**

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## **SECTION -I**

**SECTION I**  
**COCHIN PORT AUTHORITY**

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No.T10/T-2062/2025-C

Dated: 30/09/2025

**1. Notice Inviting Tender in Detail**

1. Electronic Tenders (**e-tenders**) on percentage basis are invited by Cochin Port Authority from reputed contractors in Single Stage Two Cover bidding procedure [Technical Bid and Financial Bid], meeting the Minimum Eligibility Criteria specified below for the work of "*Reconstruction of Q2-Q3 berths at Mattancherry wharf of Cochin Port*".
2. **Minimum Eligibility Criteria:**

**a) Experience**

The tenderers should have experience of having successfully completed during the last 7 (seven) years ending **31<sup>st</sup> August 2025**, at least either:

i) Three similar works each costing not less than **Rs. 1363.60 lakhs**

**(OR)**

ii) Two similar works each costing not less than **Rs. 1704.50 lakhs**

**(OR)**

iii) One similar work costing not less than **Rs. 2727.20 lakhs**

**b) Financial Turnover**

Average Financial Turnover of the tenderer over the last three financial years ending 31<sup>st</sup> March of the previous financial year [*2022- '23, 2023- '24 & 2024- '25*] shall not be less than **Rs. 1022.70 lakhs**.

*Explanatory notes to a) & b) :*

**Note 1:- Similar work(s) means “Construction of a berth/ jetty/ bridge/ marine structure in sea/ river/ backwater/ marine environment with bored cast in situ pile foundation”**

**Note 2:-** Following enhancement factors will be used for the costs of works executed for bringing the financial figures to a common base value in respect of the works completed in past years.

**Table 1**

<b>Year before</b>	<b>Multiplying factor</b>
One year [August 2024]	1.07
Two years [August 2023]	1.14
Three years [August 2022]	1.21
Four years [August 2021]	1.28
Five years [August 2020]	1.35
Six years [August 2019]	1.42

**Note 3:-** *The experience certificate of works executed in private sectors /organisations shall be considered for qualification, only on submission of TDS certificate along with work order and completion certificate.*

**Note 4:-** *Satisfactory Client /Owners' Certificate or documentary proof shall be submitted in support of the assignments / works performed and claimed by the tenderer to fulfill the eligibility criteria for qualification.*

**Note 5:-** *A statement duly certified by the Chartered Accountant showing the average annual Financial Turnover over the last 3 financial years and audited financial statements for the last three years shall be submitted.*

**Note 6:-** *The works reckoned for the above purpose are those executed by the tenderers as prime contractor or proportionately as member of joint venture or as a sub contractor, authorized and approved by the Employer of the work(s) against which the tenderer has claimed his experience.*

### 3. **Other Eligibility Considerations**

3.1 Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:

- i) made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements; and/or

ii) record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc.

3.2 The bidders having EPF/ ESI registration certificates shall only be considered for qualification in the tenders.

4. **Pertinent information to the tender is given in the following Tables:**

i) **Schedule of different activities till submission of the bid are detailed as under:**

**Table 2**

<b>Sl. No.</b>	<b>Particulars</b>	<b>Date and Time</b>
1	Tender e- publication date	<b>01/10/2025</b>
2	Download period of Bid Documents	<b>01/10/2025 to 28/10/2025</b>
3	Date of pre-bid meeting	<b>10/10/2025 at 11:00 hrs</b>
4	Last date for seeking clarification	<b>09/10/2025 at 15:30 hrs</b>
5	Last date and time of submission of bid	<b>28/10/2025 up to 15:00 hrs</b>
6	Date and time of opening the bid	<b>28/10/2025 after 15:30 hrs</b>

ii) **Bid information :**

**Table 3**

i)	Estimated Amount put to Tender	: <b>Rs.3409.00 lakhs.</b>
ii)	Earnest Money Deposit	<b>Rs.68.18 lakhs</b> furnished either through Demand Draft / Pay Order / Banker's Cheque / Insurance Security Bond drawn in favour of the FA & CAO, CoPA from any Nationalized Bank / Scheduled Bank in India or through an irrevocable Bank Guarantee (BG) valid for a period of 180 days from the date of opening of tender, enforceable and encashable at Cochin, drawn from any

		Nationalized Bank/ Scheduled Bank operating in India. Payment can also be made online mode (NEFT/RTGS) as per Bank details at Annexure-14 of Bid document.
iii)	Cost of Bid document	<b>Rs.11,800/-</b> (Rs.10,000 + 18% GST) (Non refundable) furnished either through Demand Draft / Pay Order / Banker's Cheque in favour of the FA & CAO, Cochin Port Authority (CoPA), payable at Kochi, from any Nationalised Bank/ Scheduled Bank in India. Payment can also be made online mode (NEFT/RTGS) as per Bank details at Annexure-14 of Bid document.
iv)	Validity period of Tender	180 days from the Last Date of Submission of Bid.
v)	Time for Completion	<b>12 (Twelve) months</b>

5. This work essentially comprises of the following:

**A. Civil works :**

a) Reconstruction of Q2-Q3 Berths at Cochin Port comprising the following:

- (i) Dismantling a portion of existing Q2 berth for about 11 m length such as deck slab, beams, piles etc. and disposing of waste materials by mechanical / manual means, including loading, transporting, unloading to dumping ground as directed by Engineer-in-charge.
- (ii) Construction of a berth of 111.00 m length and 12.70 m width supported on 1200 mm dia. bored cast-in-situ piles founded at about (-)55m CD including fixing of cell type Rubber Fenders and Cast Steel bollards. The deck is of RCC beam and slab construction and the beams are combination of pre-cast and cast-in-situ portions.
- (iii) An approach bridge of about 29.50 m length with 11.00 m width supported on 1000 mm dia. bored cast-in-situ piles founded at about (-)55 m. The deck is of RCC beam and slab construction and the beams are combination of pre-cast and cast-in-situ portions.

## **B. Electrical works which consists of the following:**

- (i) Supply, installation including necessary foundation, testing and commissioning of 11 m long GI octagonal pole made of MS steel with suitable base plate and necessary single arm each, min sheet steel thickness 3mm, suitable for providing 200 W Flame proof light fittings of 2 numbers, with pressure die-cast housing, high performance polycarbonate optics and IP66 ingress protection.
- (ii) Supply, laying and fixing of 325 m of 3.5 C x 50 sq. mm Aluminium Power Cables XLPE Insulated, FR, cores laid up, PVC tape / Extruded Inner sheathed for Multi core cables, armour extruded PVC Type ST2 sheathed, 650/1100V grade as per IS 7098(Part 1) 1988 with end terminations with brass compression gland and aluminium lugs for 4C x4 sq mm and 3½ X 50 sq. mm (35mm).
- (iii) Supply, installation, testing and commissioning of one number each (a) Polycarbonate Lights control panel with timer , Contactor, Auto /M switch MCB etc. as required incomings (40A FP MCB - 1 No., 32A 4P CONTACTOR - 1 No., 24 Hr Digital Time Switch - 1 No. and 2A SP control MCB – 1 No.) and outgoings (10A SP MCB – 2 Nos.) and KV Thermoplastic outdoor Circuit Breaker Boxes IP 65 (with metric knockouts for cable entry, 1 row 4 modules, 126 x 228 x 111 mm, with suitable glands (HENSEL) including MCB - 4 Nos.
- (iv) Supply and laying of GI cable tray.

6. Bid Documents can be downloaded from the e-Tendering portal [www.tenderwizard.com/COPT](http://www.tenderwizard.com/COPT) on the dates specified in the above table by making online requisition. Bid Document will also be available in Cochin Port website ([www.cochinport.gov.in](http://www.cochinport.gov.in)) as well as Central Public Procurement (CPP) Portal which can be downloaded for submission. The cost of Bid Document shall be furnished in the form of Demand Draft / Pay Order/Banker's Cheque drawn in favour of FA & CAO, CoPA along with the submission of Bid. Payment can also be made online mode (NEFT/RTGS) as per Bank details at Annexure 14

7. The bidders need to obtain the one time User ID & password for log-in to in **e-Tendering** system from the service provider **KEONICS** by paying registration amount of **Rs.1124/-** by online Payment using Credit/Debit Card/Net banking or DD in favour of “KSEDCL, Bangalore”.

8. The intending bidder must have valid Class-II or III digital signature certificate to submit the bid. For further details and to obtain the digital signature, please contact e-Tender Help Desk No. 080-49352000 / 9605557738.

9. Tenders shall be submitted “**online**” strictly in accordance with the Instructions to Tenderers and Terms & Conditions given in the tender document.

10. The bidder is responsible to download Addenda/ Amendments/ Errata/ Replies to the queries of the bidders etc., if any, issued by the Employer, from the website before submission of the bid. Any shortfall in submissions of the said Addenda/ Amendments/Errata/Replies to the queries of the bidders duly signed etc. along with the downloaded documents while submitting the bid will not be considered. Incomplete bid documents may be rejected.

11. All bids are to be submitted **online only** on the website [www.tenderwizard.com/COPT](http://www.tenderwizard.com/COPT). No Bids shall be accepted off-line (Hard copy).
12. Cochin Port Authority will not be held responsible for any technical snag or network failure during online bidding. It is the bidder's responsibility to comply with the system requirements i.e. hardware, software and internet connectivity at bidder's premises, to access the e-Tender portal. Under any circumstances, Cochin Port Authority shall not be liable to the bidders for any direct/indirect loss or damages incurred by them arising out of incorrect use of the e-Tender system or internet connectivity failures.
13. The bidder shall submit Originals of (i) DD / Bankers Cheque / BG etc. towards the cost of tender and EMD, (ii) Power of Attorney in favour of signatory(s) to the tender and (iii) Integrity Pact along with letter of submission in a sealed cover **to The Chief Engineer, Cochin Port Authority, W/Island, Cochin – 682009, KERALA**, before opening date and time of the tender. **Non submission of original financial documents towards cost of Tender document, EMD and Integrity Pact, before opening date and time, of the tender will be liable for rejection.**
14. **Integrity Pact (IP)** shall cover this tender throughout its various phases, and IP would be deemed as a part of the contract through an appropriate provision. The bidders should sign and submit an “Integrity Pact” to be executed between the bidder and Cochin Port Authority along with the bid in a separate envelope superscribed “Integrity Pact” in Technical Bid. Bids not accompanied by a duly signed “Integrity Pact” shall be liable for rejection. IP would be implemented through the following Independent External Monitor (IEM) for this tender:
  1. Sri.M J Joseph, ICAS (Retd)  
37, DA Costa Square, 3<sup>rd</sup> Cross, Cooke Town,  
Bangalore-560 084.  
Email: [joseph.iem@cochinport.gov.in](mailto:joseph.iem@cochinport.gov.in)
  2. Shri. Punati Sridhar, IFoS (Retd)  
8C,Block-4,14-C cross, MCHS Colony  
HSR 6<sup>th</sup> Sector, Bangalore-560 102.  
Email: [Sridhar.iem@cochinport.gov.in](mailto:Sridhar.iem@cochinport.gov.in)
 For full details of the scheme of IP, you may visit the website of Central Vigilance Commission, New Delhi.
15. The undersigned reserves the right to reject/cancel/postpone any one or all tenders at any stage of the tender, which shall be binding on all bidders.

**CHIEF ENGINEER  
COCHIN PORT AUTHORITY**

**SECTION I**  
**COCHIN PORT AUTHORITY**

**2. INSTRUCTIONS TO TENDERERS**

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## **SECTION I** **COCHIN PORT AUTHORITY**

### **2. INSTRUCTIONS TO TENDERERS**

#### **1. Introduction**

The work is for Reconstruction of Q2/Q3 berths at Mattancherry wharf of Cochin Port.

The existing Mattancherry wharf is on the western side of W/Island and it comprises of four berths (Q1 to Q4). It was originally constructed with steel pile quay wall during the year 1939 for 457.60m length, with Steel Sheet Pile Quay wall tied back to a Random Rubble deadman anchor located at 32.3m behind the sheet pile wall face. During 1943-46 the wharf was extended towards Northern and Southern sides with earth retaining structures with CC/RR Monoliths, for a total wharf length of 679.10m. The depth available originally was about 4.50m.

The wharf was subsequently modified in stages and during 1950s the frontage structure was constructed for a length of 577m, which was made of RCC decking with width of 10.70m and founded on 1070mm diameter screwcrete piles. In 1980s, the frontage was extended by 33.15m on either side , with extensions founded on 500mm square hollow RCC piles. Thus total frontage was of about 643m length. The maximum permissible dredged depth was 9.75m to cater for vessels upto 9.14m draft.

Considering the old age and its condition being beyond economic repairs, Cochin Port initiated action for its reconstruction. During 2008, berth for a total length of 251m at the northern end of the wharf, i.e. Q4 berth and a portion of Q3 berth was reconstructed, for a width of 28.70m, for accommodating vessels of draft upto 12.50m and work was completed during 2010.

Now, the present work is for reconstruction of balance portion of Q3 berth of about 90 m and Q2 berth of about 21m.

#### **2. General Instructions**

- 2.1 The work is to be executed as described in the Bid document and in particular in the Technical Specifications, Special Conditions, Schedule of Quantities and Drawings and in general includes, but is not limited to supplying all including consumables and equipment necessary to execute the work as described in the Bid Document.

2.2 Before submitting the bid, the bidder shall examine carefully all conditions of contract, specifications, drawings etc. supplied herewith. The bidders shall inspect the site of work with prior appointment with the concerned Section Engineer of the work to get himself acquainted with the site conditions and to assess and satisfy himself of the difficulties and constraints which may be involved in executing the work in the location. It will be deemed that prior to the submission of tender, the tenderer has visited the site and has satisfied himself as to the nature and location of the work, general and local conditions, particularly those pertaining to transportation, handling and availability and storage of materials, availability of labour, weather conditions, tidal variations at site, working conditions, ground level, nature of soil etc. and that the tenderer has estimated his cost accordingly and the Port Authority will be in no way responsible for the lack of such knowledge and also consequences thereof to the tenderer. Failure to visit the site will in no way relieve the successful bidder of any of the obligations in performing the work in accordance with this Bid Document including addenda/corrigenda, within the quoted price.

2.3 A bidder shall be deemed to have full knowledge of all documents, site conditions etc. whether he has inspected them or not. The submission of a bid by the bidder implies that he has read the notice and conditions of contract and has made himself aware of the scope and specifications and other factors bearing on the bid and that they are binding on him.

2.4 The bidders may please note that the EMPLOYER will not entertain any correspondence or query on the status of the offers received against this Bid. Bidders are also requested not to depute any of their personnel or agents to visit the Employer's offices for making such enquiries till finalization of the bid. Should the EMPLOYER find it necessary to seek any clarification, technical or otherwise, the concerned bidder will be duly contacted by the EMPLOYER.

2.5 Canvassing in any form by the bidder or by any other agency acting on behalf of the bidder after submission of the bid may disqualify the said bidder. The Employer's decision in this regard shall be final and binding on the bidder.

2.6 EMPLOYER will not be liable for any financial obligation in connection with the work until such time the EMPLOYER has communicated to the successful bidder in writing his decision to entrust the Work (covered by the bid document issued to him).

2.7 E-mail offers will not be considered. Bidders should prepare their bid themselves and submit it "online". Bids submitted by agents will not be recognized.

2.8 Bids received after the due date and time and any change in bid after the specified date & time will be rejected. EMPLOYER will not be responsible for the loss of the bid document or for the delay in postal transit.

2.9 In case of an unscheduled holiday on the prescribed closing/opening day of the bid, the next working day will be treated as the scheduled prescribed day of closing/opening of the bid.

- 2.10 While evaluating the document, regard would be paid to National defense and security considerations, at the discretion of the Cochin Port Authority. Bid received from any bidder may be summarily rejected on National security consideration without any intimation thereof to the bidder.
- 2.11 If there are varying or conflicting provisions made in any document forming part of the contract, the Chief Engineer, Cochin Port Authority, Cochin – 682009, shall be the deciding authority with regard to the intention of the document which shall be binding on the Bidder.
- 2.12 In case the department desires to inspect the equipments/ machinery for confirmation of its availability and capacity etc., necessary arrangements shall be made by the contractor for such inspection at his own cost.
- 2.13 Any error in description, and any omissions there from shall not vitiate the contract or release the contractors from the execution of whole or any part of the works comprised therein according to drawings and specifications or from any of his obligations under the contract
- 2.14 All the Bank Guarantees (BGs) to be furnished except for EMD by the contractors in connection with the tender shall be sent to the Chief Engineer, Cochin Port Authority directly by the issuing bank under registered post with AD. The contractor shall take the responsibility of sending BGs directly to the Port Authority by the issuing bank.
- 2.15 *The contractor shall comply with all the provisions of the Indian Workmen's Compensations Act, Provident Fund Regulations, Employees Provident Fund and ESI Act etc. amended from time to time and rules framed there under and other laws affecting the contract labour that may be brought into force from time to time.*
- 2.16 *The contractor shall be registered under EPF and ESI Act and the employees employed under them shall be covered in the EPF and ESI scheme. Work Order shall be issued only to the contractors who are registered under EPF organization and ESI Corporation. The contractors shall regularly remit the employer and employee contribution to the authorities. If not, the Department would remit the same and the amount so remitted shall be deducted from the part/final bill of contractors.*
- 2.17 *The contractor shall be registered under GST and shall furnish documentary evidence in support of valid GST registration.*
- 2.18 If a bidder has already been awarded or qualified for a similar nature work with a higher value or equivalent value within the last 6 months from the date of notice inviting tender, the tender of such bidder shall be evaluated / considered for qualification with the documents submitted by the bidders in those tenders. Bidder shall clearly state the details of above such works in the Letter of Submission.

### **3. Invitation for Bids:**

The Invitation for Bids is open to all eligible bidders meeting the Minimum

Eligibility Criteria.

**4. Downloading of Tender Documents:**

Tender documents can be downloaded from the e-Tendering portal [www.tenderwizard.com/COPT](http://www.tenderwizard.com/COPT) on the dates specified in NIT by making online requisition. Tender document can also be downloaded from Cochin Port website [www.cochinport.gov.in](http://www.cochinport.gov.in) as well as Central Public procurement Portal (CPP portal). The cost of Bid shall be furnished in the form of Demand Draft / Pay order / Banker's cheque drawn in favour of the Financial Adviser & Chief Accounts Officer(FA & CAO), CoPA from any Scheduled / Nationalized Bank having its branch at Cochin. The bidders are also permitted to pay the cost of Bid Document by online mode (NEFT/RTGS). The Bank Account details of Cochin Port Authority is attached as Annexure 14. The bidders shall upload the proof of payment made towards the Cost of Bid Document along with the Bid Document while submitting the Bid electronically in the e-tendering Portal.

In case of tender document being downloaded from the website, at the time of uploading, the tenderer shall give an undertaking that no changes have been made in the document. Port's Tender document will be treated as authentic tender and if any discrepancy is noticed at any stage between the Port's tender document and the one submitted by the tenderer, the Port's document shall prevail. For the discrepancies found at any time, the tenderer shall be liable for legal action.

**5. One Bid per Bidder:**

Each bidder shall submit only one bid. A bidder who submits or participates in more than one Bid will cause all the proposals with the Bidder's participation to be disqualified.

**6. The Bidder**

The Bidder shall be a single entity. JV/ Consortium will not be allowed.

**7. Cost of Bidding:**

The bidder shall bear all costs associated with the preparation and submission of his Bid, and the Employer will, in no case, be responsible and liable for those costs.

**8. Site visit:**

The Bidder, at the Bidder's own responsibility and risk is encouraged to visit and examine the work site and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into a contract for execution of the Works. The cost of visiting the site shall be at the Bidders' own expense.

**9. Clarification of the Bidding Documents:**

9.1 The Tenderers are advised to examine the Tender Document carefully and if there be or appear to be any ambiguity or discrepancy in the documents, or any

clarifications needed on the Tender Documents; these shall be referred to the Chief Engineer in writing at the following address, so as to reach them at least one day before the date fixed for the Pre-Bid Meeting. It is to be noted that no queries, clarifications will be answered after the Pre-Bid Meeting.

THE CHIEF ENGINEER,  
CHIEF ENGINEER'S OFFICE,  
COCHIN PORT AUTHORITY,  
WILLINGDON ISLAND,  
KOCHI-9,  
KERALA, INDIA.

Ph:- 91-0484-2666414/2582400/ 2582406.

Fax:-91-0484-2666414, Email: [ce@cochinport.gov.in](mailto:ce@cochinport.gov.in) / [cptce@gmail.com](mailto:cptce@gmail.com)

#### **9.2 Pre-Bid Meeting:**

A Pre-bid meeting will be held in the chamber of Chief Engineer of Cochin Port Authority, to answer clarifications, if any, on the bid document. This meeting will be held on the date notified in the Notice Inviting Tender. Non-attendance at the Pre-Bid Meeting will not be a cause for disqualification of a bidder. Minutes of the meeting, including the text of the questions raised (without identifying the source of enquiry) and the responses given will be published in the e- tender portal as well as in Cochin Port Authority official website as Addenda/Corrigenda. Any modification to the bid documents as a result of the Pre-Bid Meeting shall be made exclusively through the issue of Addenda/Corrigenda.

#### **10. Amendment of Bidding Documents:**

The Chief Engineer, Cochin Port Authority shall have the right to omit or suspend certain items of work or revise or amend the Bid documents prior to the due date of submission of the Bid by issuance of addenda/corrigenda. Any addendum / corrigendum thus issued shall be part of the tender documents. The addenda/corrigendum, if any, shall only be hosted in the e-tender portal as well as in the website of the Cochin Port. It is the responsibility of the Bidders to download such addendum/ corrigenda hosted in the website and submit the same duly signed along with the Bid. In order to afford the Bidders with reasonable time to take addendum into account, or for any other reason, the Port Authority may, at its discretion, extend the due date for submission of Bid and bid extension notice shall be hosted in the web site.

#### **11. Preparation of bids:**

All documents relating to the bid shall be in the English language.

#### **12. Minimum Eligibility Criteria:**

##### **a) Experience :**

The tenderers should have experience of having successfully completed during the last 7 (seven) years ending **31<sup>st</sup> August 2025**, at least either:

- (i) Three similar works each costing not less than **Rs. 1363.60 lakhs**  
**(OR)**
- (ii) Two similar works each costing not less than **Rs. 1704.50 lakhs**  
**(OR)**
- (iii) One similar work costing not less than **Rs. 2727.20 lakhs**

**b) Financial Turnover :**

Average Financial Turnover of the tenderer over the last three financial years ending 31<sup>st</sup> March of the previous financial year [2022-'23, 2023-'24 & 2024-'25] shall not be less than Rs. 1022.70 lakhs.

*Explanatory notes to a) &b):*

**Note 1:-** *Similar work(s) means “Construction of a berth/ jetty/ bridge/ marine structure in sea/ river/ backwater/ marine environment with bored cast in situ pile foundation”*

**Note 2:-** Following enhancement factors will be used for the costs of works executed for bringing the financial figures to a common base value in respect of the works completed in past years.

**Table 1**

<b>Year before</b>	<b>Multiplying factor</b>
One year [August 2024]	1.07
Two years [August 2023]	1.14
Three years [August 2022]	1.21
Four years [August 2021]	1.28
Five years [August 2020]	1.35
Six years [August 2019]	1.42

**Note 3:-** *The experience certificate of works executed in private sectors /organisations shall be considered for qualification, only on submission of TDS certificate along with work order and completion certificate.*

**Note 4:-** *Satisfactory Client /Owners's Certificate or documentary proof shall be submitted in support of the assignments / works performed and claimed by the tenderer to fulfill the eligibility criteria for qualification.*

**Note 5:-** *A statement duly certified by the Chartered Accountant showing the average annual Financial Turnover over the last 3 financial years and audited financial statements for the last three years shall be submitted.*

***Note 6:- The works reckoned for the above purpose are those executed by the tenderers as prime contractor or proportionately as member of joint venture or as a sub contractor, authorized and approved by the Employer of the work(s) against which the tenderer has claimed his experience.***

### **13. Other Eligibility Considerations**

13.1 Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:

- i) made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements; and/or
- ii) record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc.

13.2 The bidders having EPF/ ESI registration certificates shall be considered for qualification in the tenderers, if applicable, as per EPF/ESI Acts. In case, the tenderer does not have the required number of employees which makes such registration mandatory, an Undertaking as per Annexure- 17 to the effect shall be furnished.

### **14. Bid Prices:**

#### **14.1 Percentage Basis Contract**

The Bidder shall fill the percentage above / below in the Bidder's Quoting Area under " Percentage Quoted" in the schedule-II ( Schedule of Quantities to be done on Contract) both in **figures and words**. The Bidder shall also fill Above/Below column.

14.2 On scrutiny, if there are differences between the percentage given in figures and in words, the following procedure shall be followed:-

- a) When there is a difference between the percentage quoted in figures and in words , the percentage in words shall be taken as correct.
- b) When the (+)/(-) and Above/Below does not correspond to with each other, the "words" under " Above/ Below" shall be taken as correct.

14.3 The rate / percentage quoted by the Tenderer shall be inclusive of the cost of provision of plant and equipment, materials, labour, execution, supervision, maintenance, overheads and profits and every incidental and contingent cost and charges whatsoever excluding Goods and Service Tax (GST). GST as may be applicable from time to time shall be shown separately in the invoice.

The contract shall be for the whole Work based on the Priced Bill of Quantities submitted by the Bidder. **The Bidder should ensure that his tendered percentage as per Price Bid is not mentioned anywhere in any documents in**

**Technical Bid Submission, directly or indirectly. If any such mention is made, the tender will become invalid and shall become liable for rejection.**

**14.4 Currencies of Bid and Payment:**

The unit rates and the prices shown in Schedule II of this document are in Indian National Rupees (INR).

**15. Bid Validity:**

Bids shall remain valid for a period not less than one hundred and eighty days (180 days) after the deadline date for bid submission. A bid valid for a shorter period shall be rejected by the Employer as non-responsive. Should any tenderer withdraw his tender before these periods, or make any modification in the terms and conditions of the tender which are not acceptable to the department, the Earnest Money deposited by the tenderer shall be forfeited.

In exceptional circumstances, prior to expiry of the original time limit, the Employer may request that Bidder may extend the period of validity for an additional period. The request and bidders response shall be made in writing. A bidder agreeing to the request will not be permitted to modify his bid (ie, the extension shall be unconditional) and shall submit an extension of EMD in case it is submitted in the form of Bank Guarantee.

**16. Bid Security / EMD:**

16.1 Each tender should be accompanied by an Earnest Money amounting to **Rs. 68.18 lakhs. (Rupees Sixty Eight lakhs Eighteen Thousand only)** EMD shall be deposited /furnished either through Demand Draft / Banker's Cheque / Pay Order / Insurance Security Bond drawn in favour of Financial Adviser & Chief Accounts Officer, Cochin Port Authority from any Nationalized Bank/ Scheduled Bank in India or through an irrevocable Bank Guarantee (BG) valid for a period of 225 days from the date of opening of tender, enforceable and encashable at Cochin, drawn from any Nationalized Bank/ Scheduled Bank operating in India, as per the proforma at *Annexure - 12*. In case, BG is furnished for EMD, BG shall be verified independently by the Port with the bank before finalization of technical offers; In the event of lack of confirmation of issue of the BG by the bank, the bid shall stand disqualified. The Earnest Money deposit will not carry any interest. Any bid not accompanied by an acceptable Bid Security shall be treated as Non-responsive and shall be rejected by the Employer. Payment can also be made online mode (NEFT/RTGS) as per Bank details at *Annexure - 14*.

**16.2 Forfeiture of Bid security / EMD**

Bid Security/EMD will be forfeited in the following cases:

- (a) If a Bidder withdraws his Bid during the period of bid validity.
- (b) The Bidder does not accept the correction of the Bid Price pursuant to any arithmetical errors.
- (c) In case of a successful bidder fails:

- (i) to commence the work, within the specified time limit
- (ii) to sign the Agreement or furnish the required Performance Security within the specified time limit

**17. No Alternative Proposals by Bidders:**

Bidders shall submit offers that comply with the requirements of the bidding documents. Alternatives will not be considered.

**18. Format and Signing of Bid:**

- 18.1 The Tenderer shall prepare one set of his Tender, duly completed and signed, along with the set of Drawings and other documents mentioned hereinafter. The Power of Attorney (in original) authorizing the signatory(s) of the Tender shall be enclosed. All pages of the bid where entries or amendments have been made shall be signed by the person or persons signing the bid.
- 18.2 If the tender is made by an individual it shall be signed by his full name and his address shall be given. In the event of the tender being submitted by a registered partnership firm, it must be signed individually by each partner thereof. In the event of absence of any partner, it must be signed on his behalf by person holding a proper power-of- attorney authorizing him to do so and to bind the partner in all matters pertaining to the contract including the arbitration clause, such power-of- attorney to be attached with the tender which must disclose that the firm is duly registered under Indian Partnership Act. If the tender is made by a Limited Company it shall be signed by a duly authorized person who shall produce with the tender satisfactory evidence of the authorization. In the case of a Limited Company the tender should be accompanied by the Memorandum and Articles of Association of the Company.

**19. Bid Submission:**

- 19.1 Bid shall be submitted in two parts, **Part - I: Technical Bid** and **Part - II: Price Bid** through **e- tender mode**.
- 19.2 The Technical Bid document and the scanned copies of the documents as detailed in clause 20.1 below shall be submitted through e-Tendering mode on **www.tenderwizard.com/COPT**.
- 19.3 Price bid (Schedule-II) in the provided format shall be submitted **only through e-tendering mode on www.tenderwizard.com/COPT** at the time and date specified in the Table of NIT. **In no case shall filled in Price Bid (Schedule II) be submitted in hard copy, as it shall result in rejection of the tender.**
- 19.4 Tenders shall be submitted “**online**” strictly in accordance with the Instructions to Tenderers and Terms & Conditions given in the tender document. The bidders should submit scanned copy of all the required documents such as DD / Banker’s Cheque towards the cost of tender and EMD; proof of experience, financial details etc. through the e-tendering portal.

19.5 The Bidder shall submit Original (i) DD / Bankers Cheque /pay order / Insurance Security Bond / BG towards the cost of tender and EMD, (ii) Power of Attorney and (iii) Integrity Pact along with letter of submission in a sealed cover, super scribing thereon the Tender Number, Name of Work, date notified for submission of tender and the name of the tenderer should reach the office of **The Chief Engineer, Cochin Port Authority, W/Island, Cochin - 682009, KERALA**, before the time and the day notified in the Table-2 of NIT. The above documents in original can be brought either in person, or sent by registered post/courier.

19.6 **Tenders without submitting the original documents towards cost of Tender document, EMD, Power of Attorney and Integrity Pact, as above, before opening date and time of the tender will be liable for rejection.**

19.7 The successful Bidder shall submit original duly filled in signed copy of complete Technical Bid and Commercial Bid already submitted in e-mode within 7 days of receipt of Letter of Acceptance issued for the work.

## **20. Information Required in the Bid**

20.1 **Part I -Technical Bid** shall contain the following:

- a) Earnest Money Deposit as described in Clause 16.1 above
- b) Cost of tender document
- c) Integrity Pact, duly signed (vide *Annexure-11*)
- d) Check list as per *Schedule - I* attached along with Technical Bid in the e-Tendering Portal
- e) Letter of Submission (vide *Annexure-1*)
- f) Power of Attorney (in original) in favour of signatory/s to the Tender, duly authenticated by Notary Public. (vide *Annexure-2*)
- g) Organization Details (vide *Annexure-3*)
- h) Details of experience as per *Annexure-4(a) & 4(b)* and Certificates in proof of experience in similar works as detailed under Clause 12 of Instruction to bidders.

### **Explanatory notes:**

- (1) Original or Notary certified copy of completion certificates of each work along with it's work order / LoA issued by the owner/ the responsible officers of the owner under whom he has executed such contracts shall be attached. The certificate shall invariably contain the following among other things.
  - (i) Details of work involved specifying the nature of work
  - (ii) The completion cost of the work
  - (iii) Date of commencement ; and
  - (iv) Date of completion of the work.

- (2) If the experience in similar works is as a member of joint venture, notary attested copy of joint venture agreement in this respect shall be attached.
- (3) If the experience in similar works is as a subcontractor, notary attested copy(s) of approval issued by the Employer(s) authorizing as a subcontractor; in proof of the claim of the tenderer as a sub-contractor shall be attached.
- (4) The works indicated in ***Annexure-4(a)*** will only be considered for evaluation. Mere submission of work completion certificate will not be considered as Eligible Assignments
- i) A statement duly certified by Chartered Accountant showing Average Financial turnover of the tenderer over the last three financial years [2024-'25, 2023-'24 & 2022-'23] (vide ***Annexure-5***) supported by Audited Financial statements for the last three years.
- j) Form of Bid duly signed and sealed
- k) **Bid document including all addenda / corrigenda duly signed and sealed**
- l) Registration certificate of the company / Partnership deed as the case may be.
- m) Copies of PAN, GST, EPF and ESI registration
- n) A detailed method statement (Technical Note) for carrying out of the works, along with a implementation schedule showing sequence of operation and the time frame for various segments of temporary and permanent works.(vide ***Annexure-6***). The information provided will form part of the work methodology and the same shall be in line with the Specifications and Bill of quantities.
- o) A list of Plant and equipment proposed to be engaged for work (vide ***Annexure-7***). The bidder shall have to engage the following minimum equipments for the work.
  - 1) Piling Gantry - 1 No. / Piling rig fitted on pontoon - 2 Nos.
  - 2) Crane mounted on Pontoon - 1 No.
- The equipment indicated in the ***Annexure-7*** will form part of contract agreement and as such the bidders are requested to indicate the availability of the equipment at site at what stage of the construction period the equipment would made available.
- p) A declaration to the effect that (vide ***Annexure-8***):
  - i) All details regarding construction plant and machinery, temporary work and personnel(s) for site organization considered necessary and sufficient for the work have been furnished in the ***Annexure-7*** and that such plant, temporary works and personnel for site organization will be available at appropriate time of relevant works for which the equipment have been

proposed at site till the completion of the respective work.

- ii) No conditions are incorporated in the financial bid. In case any conditions are specified in the financial bid, the tender will be rejected summarily without making any further reference to the bidder.
- iii) We have not made any payment or illegal gratification to any persons/ authority connected with the bid process so as to influence the bid process and have not committed any offence under PC Act in connection with the bid.
- iv) We disclose with that we have made / not made payments or propose to be made to any intermediaries (agents) etc. in connection with the bid.
- v) We do hereby confirm that no changes have been made in the tender document uploaded by us for the above bid. Port Tender document will be treated as authentic tender and if any discrepancy is noticed at any stage between the Port's tender document and the one submitted by the tenderer, the Port's document shall prevail.

q) Details of the bidder opting for Refund of EMD through e-payment system as per **Annexure-9**.

r) Bank information for e- Payment system as per **Annexure-10**.

**NOTE: If a bidder has already been awarded or qualified for a similar nature work with a higher value or equivalent value within the last 6 months from the date of notice inviting tender, the tender of such bidder shall be evaluated / considered for qualification with the documents submitted by the bidders in those tenders. Bidder shall clearly state the details of above such works in the Letter of Submission.**

20.2 **Part II : "Price Bid"** shall contain only the " Schedule of Quantities", which shall be submitted only in **e-tendering mode only**

### 20.3 **Submission of Bids through e-tender mode.**

The tenders are required to submit the tender, ie., Part-I: Technical Bid & Part-II: Financial Bid (Price Bid) in '**e-tender' mode only**'.

For online submission of Technicl Bid, the scanned copies of all the documents detailed in the clause - 20 above shall be submitted through e-tendering mode on [www.tenderwizard.com/COPT](http://www.tenderwizard.com/COPT). e-tenders attaching all documents shall be submitted 'online' in the e-tender portal strictly in accordance with the terms and conditions of the tender document before the time and the day notified in the Table of NIT.

## 21. **List of Documents to be Submitted**

### 21.1 **List of documents to be uploaded for online submission of Technical Bid**

- i) Scanned copy of financial instruments towards cost of tender document and

EMD / Bid security

- ii) Scanned copies of ***Annexures 1 to 17***, duly signed
- iii) Scanned copy of Form of Bid duly signed
- iv) Scanned copy of Registration Certificate of the company/ partnership deed as the case may be.
- v) Scanned notarized copies of completion certificates and work orders / agreement of similar works
- vi) Scanned copies of Audited Financial statements for the last three years.
- vii) Technical Bid document including all Addendum / Corrigendum and General Conditions of Contract with Amendments in PDF format.

**21.2 List of documents to be submitted in original.**

- i) DD / Pay Order/ Banker's Cheque towards Cost of Bid Document, as Applicable.
- ii) DD / Pay Order/ Banker's Cheque / Insurance Surety Bond /B G towards EMD, as applicable.
- iii) Power of Attorney, duly authenticated by Notary Public (vide ***Annexure-2***)
- iv) Integrity Pact, duly signed (vide ***Annexure-11***)
- v) Letter of Submission (vide ***Annexure-1***)

**22. Deadline for Submission of the Bids:**

E-tenders attaching all documents shall be submitted '**online**' in the **e tender portal** strictly in accordance with the terms and conditions of tender document before ***the time and the day notified*** in Table 2 of NIT.

The (i) Original DD / Bankers Cheque / Bank Guarantee / Pay Order / Insurance Security Bond towards the cost of tender and EMD, (ii) Power of Attorney and (iii) Integrity Pact along with letter of submission in a sealed cover in original super scribed with the Tender Number, Name of Work, date notified for submission of tender and the Name of the Tenderer, should reach the office of the Chief Engineer, Cochin Port Authority, Cochin-9, on or before the time and the day notified in Table 2 of NIT.

**23. Late Bids:**

Any Bid received by the Employer after the Bid due date will be returned

unopened to the bidder.

#### **24. Bid Opening**

The Officer inviting the tender or his duly authorized assistant will open the tenders in the presence of intending tenderers who may be present at the time in person or through their authorized representative. In the case of the tenders invited under Two Cover System, the technical bids of the tenders received will be opened first.

**Technical Bid:** Technical Bid shall be opened in the office of the **Chief Engineer, Cochin Port Authority** on the time and date specified in the table of NIT. Submission of EMD and Cost of document is verified initially. In case the Earnest Money and cost of bid document is not deposited or is not in order, the Bid will not be opened further and hard copy submitted will be returned.

If all Bidders have submitted unconditional Bids together with requisite Bid security, then all Bidders will be so informed then and there. If any Bid contains any deviation from the Bids documents and /or if the same does not contain Bid security in the manner prescribed in the Bid documents, then that Bid will be rejected and the Bidder will be informed accordingly. The Price Bid submitted in e- mode will not be opened.

In the event of a tender being rejected, the Earnest Money paid with such unaccepted tender shall be refunded to the tenderer.

#### **25. Bid Opening – Price Bid:**

Price Bid of those Tenderers found responsive in the evaluation of Technical bid, will be opened later. Short listed bidders will be communicated about the date and time of opening of the price bid. The Bidder's name, the Bid prices, the total amount of each Bid, any discounts, Bid modifications and withdrawals, and such other details as the Employer may consider appropriate, will be announced by the Employer at the time of opening.

#### **26. Clarification of Bids:**

To assist in the examination and comparison of Bids, the Employer may, at his discretion, ask any Bidder for clarification of his Bid, including breakdown of unit rates. The request for clarification and the response shall be in writing, but no change in the price or substance of the Bid shall be sought, offered, or permitted.

No Bidder shall contact the Employer on any matter relating to his bid from the time of the bid opening to the time the contract is awarded. If the Bidder wishes to bring additional information to the notice of the Employer, he should do so in writing.

Any effort by the Bidder to influence the Employer's bid evaluation, bid comparison or contract award decisions, may result in the rejection of his bid.

**27. Examination of Bids and Determination of Responsiveness:**

27.1 Prior to detailed evaluation of Bids, Cochin Port Authority will determine whether each Bid

- (a) meets the minimum eligibility criteria defined in Clause 12.
- (b) has been properly signed by an authorized signatory (accredited representative) holding Power of Attorney in his favour. The Power of Attorney shall interalia include a provision to bind the Bidder to settlement of disputes clause;
- (c) is accompanied by the required Bid security and;
- (d) is responsive to the requirements of the Bidding documents.
- (e) A responsive Bid is one which conforms to all the terms, conditions and specification of the Bidding documents, without material deviation or reservation. A material deviation or reservation is one which affects in any substantial way the scope, quality or performance of the Works;
  - (i) which limits in any substantial way, the Employer's rights or the Bidder's obligations under the Contract; or
  - (ii) whose rectification would affect unfairly the competitive position of other Bidders presenting responsive Bids.
  - (iii) Undertakes in the Technical Bid that he has not incorporated any conditions in the Financial Bid.

27.2 If a Bid is not substantially responsive, it shall be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

**28. Correction of Errors:**

Bids determined to be responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows:

- (a) Where there is a discrepancy between the percentage in figures and in words, the percentage in words will govern;
- (b) The amount stated in the Bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors and, with the concurrence of the Bidder, shall be considered as binding upon the bidder. If the Bidder does not accept the corrected amount, the Bid shall be rejected and the Bid security shall be forfeited in accordance with Clause 16.2.

**29. Evaluation and Comparison of Bids:**

The Employer will evaluate and compare only the Bids determined to be

responsive in accordance with Clause 27. In evaluating the Bids, the Employer will determine for each Bid the evaluated Bid Price by adjusting the Bid Price as follows:

- (a) making any correction for errors pursuant to Clause 28;
- (b) making appropriate adjustments to reflect discounts or other price modifications offered.

**30. Alteration of tender documents:**

No alteration shall be made in any of the tender documents or in the Bill of Quantities and the tender shall comply strictly with the terms and conditions of the tender document. The Employer may however ask any tenderer for clarifications of his tender if required. Nevertheless, no tenderer will be permitted to alter his tender price after opening of the tender.

**31. Alternative conditions and Proposal:**

The Tenderer shall note that alternative or qualifying tender conditions, or alternative design proposal for whole or part of the work will not be acceptable. Tenders containing any qualifying conditions or even Tenderer's clarifications in any form will be treated as non-responsive and will run the risk of rejection. Price Bid of such Tenderer's will not be opened.

**32. Award of Contract:**

The Employer will award the Contract to the bidder whose bid has been determined to be responsive to the bidding documents and who has offered the lowest evaluated bid price, provided that such bidder has been determined to be

- (a) Eligible in accordance with the provisions of Clause 12, and
- (b) Qualified in accordance with the provisions of Clause 12.

**33. Release of Bid Security / EMD:**

The Bid Security/EMD of unsuccessful bidder other than L1 and L2 will be refunded immediately after ranking of the Bids. The bid security of L2 bidder shall be refunded immediately after entering into agreement with L1 bidder and acceptance of the Performance Security. The Bid Security of the successful bidder will be discharged after he has signed the Agreement and furnished the required Performance Security

**34. Performance Security:**

34.1 Within not later than 21 days for domestic bids and 28 days for international bids from the date of the Letter of Acceptance, the successful Bidder shall deliver to the Employer a Performance Security in the form of Bank Guarantee (BG) for an amount equivalent to 5% of the Contract price rounded off to the nearest Rs. 1,000/- in the following forms;

- (i) Banker's Cheque / Demand Draft / Pay Order of a Scheduled Bank.
- (ii) An irrevocable Bank Guarantee (BG) enforceable and encashable at Cochin, drawn from any scheduled bank operating in India as per the proforma.

34.2 If the performance security is provided by the successful Bidder in the form of a Bank Guarantee, it shall be issued by a Nationalized /Scheduled Indian bank having its branch at Cochin acceptable by **Cochin Port Authority**. The BG shall be issued in favor of **Cochin Port Authority** in the Format enclosed in **Annexure-A of GCC**.

34.3 In the event of the tenderer, after the issue of the communication of acceptance of offer by the Board, failing /refusing to execute the agreement as hereinafter provided, the tenderer shall be deemed to have abandoned the contract and such an act shall amount to and be construed as the contractor's 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 the Board shall have full right to claim damages therefore either together with or in addition to the forfeiture of Earnest Money Deposit.

### **35. Signing of Agreement**

The successful tenderer will be required to execute an Agreement at his expense within 28 (twenty eight) days from the date of work order, on proper value Kerala State Stamp Paper in the prescribed form. The agreement as finally executed will include the Employer's Bid Documents and the Bidder's offer as finally accepted by the EMPLOYER together with addendum/corrigendum, bid clarification and all correspondences exchanged between EMPLOYER and the bidder, if any. Till the formal agreement is executed, the Letter of Acceptance together with the offer as finally accepted along with correspondences shall form a binding contract between the two parties.

### **36. Fraud and Corrupt Practices:**

36.1 The bidder and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Selection Process. Notwithstanding anything to the contrary contained in this document, the Port shall reject the tender without being liable in any manner whatsoever to the bidder, if it determines that the bidder has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "Prohibited Practices") in the Selection Process. In such an event, the Port shall, without prejudice to its any other rights or remedies, forfeit and appropriate the Bid Security or Performance Security, as the case may be, as mutually agreed genuine pre-estimated compensation and damages payable to the Port for, inter alia, time, cost and effort of the Authority, in regard to the Tender, including consideration and evaluation of such Bidder's Proposal. Such Bidder shall not be eligible to participate in any tender or RFP issued by the Authority during a period of 2 (two)

years from the date such Bidder is found by the Authority to have directly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as the case may be.

36.2 For the purposes of this Clause, the following terms shall have the meaning hereinafter respectively assigned to them:

- (a) “corrupt practice” means
  - (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Selection Process (for avoidance of doubt, offering of employment to or employing or engaging in any manner whatsoever, directly or indirectly, any official of the Authority who is or has been associated in any manner, directly or indirectly with the Selection Process or the LOA or has dealt with matters concerning the Agreement or arising there from, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of the Authority, shall be deemed to constitute influencing the actions of a person connected with the Selection Process; or
  - (ii) engaging in any manner whatsoever, whether during the Selection Process or after the issue of the LOA or after the execution of the Agreement, as the case may be, any person in respect of any matter relating to the Project or the LOA or the Agreement, who at any time has been or is a legal, financial or technical consultant/ adviser of the Authority in relation to any matter concerning the Project;
- (b) “fraudulent practice” means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Selection Process;
- (c) “coercive practice” means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person’s participation or action in the Selection Process;
- (d) “undesirable practice” means
  - (i) establishing contact with any person connected with or employed or engaged by the Authority with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Selection Process; or
  - (ii) having a Conflict of Interest; and
- (e) “restrictive practice” means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of restricting or manipulating a full and fair competition in the Selection Process.

## 37. Rejection of Tender:

Any Tender not conforming to the foregoing instructions will not be considered. The Employer does not bind himself to accept the lowest or any tender and has the right to reject any tender without assigning any reason thereof. No representation whatsoever will be entertained on this account.

### **38. Conflict of Interest**

38.1 The Contractor shall not have a Conflict of Interest and any breach hereof shall constitute a breach of the Agreement.

38.2 Contractor and Affiliates not to be otherwise interested in the Project.

The Contractor agrees that, during the term of this Agreement and after its termination, the Contractor or any Associate thereof and any entity affiliated with the Contractor, shall be disqualified from providing goods, works, services, loans or equity for any project resulting from or closely related to the Services and any breach of this obligation shall amount to a Conflict of Interest; provided that the restriction herein shall not apply after a period of five years from the completion of this Assignment or to consulting assignments granted by banks/lenders at any time; provided further that this restriction shall not apply to consultancy/ advisory services provided to the Authority in continuation of this Consultancy or to any subsequent consultancy/ advisory services provided to the Authority in accordance with the rules of the Authority. For the avoidance of doubt, an entity affiliated with the Contractor shall include a partner in the Contractor's firm or a person who holds more than 5% (five percent) of the subscribed and paid up share capital of the Contractor, as the case may be, and any Associate thereof.

38.3 Prohibition of conflicting activities

Neither the Contractor nor any Associate thereof/any entity affiliated with the Contractor nor their Personnel shall engage, either directly or indirectly, in any of the following activities:

- (i) during the term of this Agreement, any business or professional activities which would conflict with the activities assigned to them under this Agreement;
- (ii) after the termination of this Agreement, such other activities as may be specified in the Agreement; or
- (iii) at any time, such other activities as have been specified in the Bid as Conflict of Interest.

38.4 Guidance Note on Conflict of Interest is given below.

- 1) This Note further explains and illustrates the provisions of the Bid Document, if any, and shall be read together therewith, in dealing with specific cases.
- 2) Contractors should be deemed to be in a Conflict of Interest situation if it can be reasonably concluded that their position in a business or their

personal interest could improperly influence their judgment in the exercise of their duties. The process for selection of Contractors should avoid both actual and perceived Conflict of Interest.

3) Conflict of Interest may arise between the Authority and a Contractor or between Contractors and present or future Concessionaries/ Contractors. Some of the situations that would involve Conflict of Interest are identified below:

- a) Authority and Contractors
  - i) Potential Contractor should not be privy to information from the Authority which is not available to others; or
  - ii) Potential Contractor should not have defined the Project when earlier working for the Authority; or
  - iii) Potential Contractor should not have recently worked for the Authority overseeing the Project.
- b) Contractors and Concessionaires/Contractors:
  - i) No Contractor should have an ownership interest or a continuing business interest or an on-going relationship with a potential Concessionaire/contractor save and except relationships restricted to project-specific and short-term assignments; or
  - ii) no Contractor should be involved in owning or operating entities resulting from the Project;

The participation of companies that may be involved as investors or consumers and officials of the Authority who have current or recent connections to the companies involved, therefore, needs to be avoided.

4) The normal way to identify Conflicts of Interest is through self-declaration by Contractors. Where a conflict exists, which has not been declared, competing companies are likely to bring this to the notice of the Authority. All conflicts must be declared as and when the Contractors become aware of them.

5) Another approach towards avoiding a Conflict of Interest is through the use of “Chinese walls” to avoid the flow of commercially sensitive information from one part of the Contractor’s company to another. This could help overcome the problem of availability of limited numbers of experts for the project. However, in reality effective operation of “Chinese walls” may be a difficult proposition. As a general rule, larger companies will be more capable of adopting Chinese walls approach than smaller companies. Although, “Chinese walls” have been relatively common for many years, they are an increasingly discredited means of avoiding Conflicts of Interest and should be considered with caution. As a rule, “Chinese walls” should be considered as unacceptable and may be accepted only in exceptional cases upon full disclosure by a Contractor coupled with provision of safeguards to the satisfaction of the Authority.

6) Another way to avoid Conflicts of Interest is through the appropriate grouping of tasks. For example, conflicts may arise if Contractors drawing up the terms of reference or the proposed Documentation are also eligible for the consequent assignment or project.

7) Another form of Conflict of Interest called “scope-creep” arises when Contractors advocate either an unnecessary broadening of the terms of reference or make recommendations which are not in the best interests of the Authority but which will generate further work for the Contractors. Some forms of contractual arrangements are more likely to lead to scope-creep. For example, lump-sum contracts provide fewer incentives for this, while time and material contracts provide built in incentives for Contractors to extend the length of their assignment.

38.5 Every Project contains potential Conflicts of Interest. Contractors should not only avoid any Conflict of Interest, they should report any present/ potential Conflict of Interest to the Authority at the earliest. Officials of the Authority involved in development of a project shall be responsible for identifying and resolving any Conflicts of Interest. It should be ensured that safeguards are in place to preserve fair and open competition and measures should be taken to eliminate any Conflict of Interest arising at any stage in the process.

~~~~~

**SIGNATURE OF BIDDER**

# **COCHIN PORT AUTHORITY**

## **SECTION I**

### **3. FORM OF BID**

**To**

The Board of Major Port Authority for Cochin Port.

**Through**

The Chief Engineer  
Cochin Port Authority, Cochin -9.

Tender for the work of "**Reconstruction of Q2-Q3 berths at Mattancherry wharf of Cochin Port.**"

I/We have read and examined the Notice inviting tenders, Instructions to tenderers, Form of Agreement, Contract Data, General Conditions of Contract, General description of work, Special conditions of Contract, Technical Specifications, Drawings, Preamble, Bill of Quantities, & other documents and rules referred to in the General Conditions of Contract and all other contents in the tender document for the work.

I/We hereby tender for the execution of the work specified in the underwritten memorandum within the time specified in such memorandum at the rates specified in the schedule attached hereto and in accordance in all respects with the specifications designs, drawings and instructions in writing referred to in clause 16 of the General Conditions of Contract and with such materials as are provided for, by and in all other respects in accordance with such conditions so far as applicable.

## M E M O R A N D U M

a) General description of work : **Reconstruction of Q2-Q3 berths at Mattancherry wharf of Cochin Port.**

b) Estimated cost : **Rs.3409.00 lakhs**

c) Earnest Money : **Rs.68.18 lakhs**

d) Security Deposit : 10% of the value of the contract awarded or the value of the work done whichever is higher [Performance Guarantee @ 5% and Retention Money @5%]

e) Percentage, if any, to be deducted from the bills : The Retention Money will be recovered from the first running bill onwards at the rate of 5% of the gross amount of each bill.

f) Time allowed for commencement of work from the date of receipt of work order : **15 days**

g) Time allowed for the work from the date of commencement of work. : **12 (Twelve) months**

h) Schedule, specifications, conditions, drawings etc. as per contents sheet attached. : As per content sheet attached

I/ We agree to keep the tender open for 180 days from the due date of submission and not to make any modifications in its terms and conditions

Should this tender be accepted, I/We hereby agree to abide by and fulfill all the terms and provisions of the said conditions of contract annexed here to so far as applicable or in default thereof forfeit and pay to the Board the sum of money mentioned in the said conditions and to execute an agreement with the Board in the prescribed form or in default thereof to forfeit the earnest money deposited by me/us.

The sum of Rs..... is hereby forwarded in Port challan receipt /

Bankers cheque or demand Draft of a scheduled bank / Bank Guarantee issued by a Scheduled bank drawn in favour of Financial Adviser and Chief Accounts Officer of the Port Authority as Earnest Money (a) the full value of which is to be absolutely forfeited to the Board in office without prejudice to any other rights or remedies of the said Board in office should I/We fail to commence the work specified in the Contract data or should I/We not deposit the full amount of Performance Security specified in the above Memorandum in accordance with clause 52.2 of the said conditions of contract otherwise they said sum of Rs. .... shall be retained by the Board as on account of such security deposit as aforesaid or (b) the full value of which shall be retained by the Board on account of the security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein and to carry out such deviations as may be ordered, upto maximum of the percentage mentioned in Clause 40.1 of General Conditions of Contract and those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 40.3 of the General Conditions of Contract.

Dated the ..... day of ..... 2025.

Signature of the Tenderer

Address : .....

Witness : .....

Address : .....

Occupation : .....

## **ACCEPTANCE**

The above tender ( as modified by you as provided in the letters mentioned hereunder) is accepted by me for and on behalf of the Board of Major Port Authority for Cochin Port for a sum of Rs..... .... (Rupees  
.....) )

The letters referred to below shall form part of this contract Agreement

- a) ..
- b) ..
- c) ..

Dated.....

**Chief Engineer**

**Cochin Port Authority**

# **COCHIN PORT AUTHORITY**

## **SECTION I**

### **4. FORM OF AGREEMENT**

#### **AGREEMENT No. ... of 2025-26**

#### **AGREEMENT FOR THE WORK OF “RECONSTRUCTION OF Q2-Q3 BERTHS AT MATTANCHERRY WHARF OF COCHIN PORT”**

**THIS AGREEMENT IS MADE** on this day ..... of September, 2024  
BETWEEN THE BOARD OF MAJOR PORT AUTHORITIES FOR COCHIN PORT AUTHORITY, a body corporate under the Major Port Authority Act, 2021 having office on Willingdon Island, Cochin – 682009 represented by its Chief Engineer ..... S/o .....  
aged ..... years residing at .....  
(hereinafter referred to as the Employer which expression shall include his successors, assignees and administrators in the office) of the one part and M/s.....  
..... represented by Sri. ...., aged ..... years, S/o Sri. ....  
..... residing at ..... (hereinafter referred as  
“Contractors” which expression shall include his successors, assignees and administrators) of the other part.

**WHEREAS** the Employer invited Bids for “THE WORK OF RECONSTRUCTION OF Q2-Q3 BERTHS AT MATTANCHERRY WHARF OF COCHIN PORT” (hereinafter called “The Work”) vide Tender Notice No..... and the Contractor submitted a Bid for the same giving percentages subject to the terms and conditions etc. of the Bid Document.

**AND WHEREAS** the said Bid submitted by the Contractor has been accepted by the Employer vide Letter of Acceptance No. ...., issued to the Contractor while accepting their Bid.

**NOW THESE PRESENTS WITNESSETH** and the parties hereby agree as follows:

1. The Bid submitted by the Contractor for execution for the Board, of the Work specified in the underwritten Memorandum within the time specified in such Memorandum at the percentages specified in the Schedule attached hereto and in accordance in all respects with the specifications, designs, drawings and instructions in writing referred to in Clause 16 of the "General Conditions of Contract" and with such materials as are provided for, by and in all other respects in accordance with such conditions, is accepted.
2. It is mutually understood and agreed that, notwithstanding that the Work has been sectioned, every part of it shall be deemed to be supplementary to and complementary of every other part and shall be read with it or into it.
3. The Contractor agreed to abide by and fulfill all the terms and provisions of the said Conditions of Contract or in default thereof, forfeit and pay to the Board, the sum of money mentioned in the said conditions.
4. The sum of Rs...../- [Rupees .....only] has been deposited by the Contractor with the Financial Adviser and Chief Accounts Officer of the Port Authority or furnished as Bank Guarantee as Performance Security: (a) the full value of which is to be absolutely forfeited to the Board in office without prejudice to any other rights or remedies of the said Board in office, should the Contractors fail to commence the Work specified in the underwritten Memorandum or should the Contractors not deposit the full amount of Performance Security specified in the underwritten Memorandum otherwise the said sum of Rs...../- shall be retained by the Board as on account of such Security Deposit as aforesaid; or (b) the full value of which shall be retained by the Board on account of the Security Deposit to execute all the works referred to in the Bid Documents upon the terms and conditions contained or referred to therein and to carry out such deviations as may be ordered, upto the maximum of the percentage mentioned in Clause 40.1 of the General Conditions of Contract and those in excess of that limit at the percentages to be determined in accordance with the provisions contained in Clause 40.3 of the General Conditions of Contract.
5. It is mutually agreed that the Bid submitted in its entirety shall form part of this Agreement. Apart from the Bid, the following shall also form part of the Agreement:
  - (a) The Letter of Acceptance issued vide No. ....;
  - (b) Price Bid submitted by the Contractor;
  - (c) Bill of Quantities;

- (d) All documents submitted by the Contractor along with the Bid Document.
- (e) Replies to Pre-Bid Queries and Amendments issued;
- (f) Letters exchanged between the Employer and the Bidder upto the issue of Letter of Acceptance as annexed here to
  - (i) ..... and
  - (ii) .....

## M E M O R A N D U M

- a) General description of work : Reconstruction of Q2-Q3 berths at Mattancherry wharf of Cochin Port
- b) Estimated cost : **Rs.3409.00** lakhs
- c) Tendered cost : Rs.
- d) Earnest Money : **Rs.68.18** lakhs
- e) Security Deposit : 10% of the value of the contract awarded or the value of the work done whichever is higher [Performance Guarantee @5% and Retention Money @5%]
- f) Percentage, if any, to be deducted from the bills : The Retention Money will be recovered from the first running bill onwards at the rate of 5% of the gross amount of each bill.
- g) Time allowed for commencement of work from the date of receipt of work order : 15 days
- h) Time allowed for the work from the date of commencement of work. : **12(Twelve)** months
- i) Schedule, specifications, conditions, drawings etc. as per contents sheet attached. :

**IN WITNESS WHEREOF THE CONTRACTOR** hereunto set his hand and seal on

behalf of  
M/s.....  
..... and on behalf of THE BOARD OF MAJOR PORT AUTHORITY FOR COCHIN PORT, the CHIEF ENGINEER has set his hand and seal and common seal of Cochin Port Authority has been hereunto affixed the day and year first written above.

Signed, sealed and delivered by

Sri. ....,  
M/s. ....,  
.....,  
.....

CONTRACTOR

(COMMON SEAL OF THE FIRM)

Signed and affixed seal in the presence of

1) Signature with address : .....

2) Signature with address : .....

Signed, sealed and delivered by

THE CHIEF ENGINEER,  
Cochin Port Authority  
on behalf of The Board of Major  
Port Authority for Cochin Port

EMPLOYER

Signed and affixed the common seal of  
The Board of Major Port Authority for Cochin Port

In the presence of

1)

2)

# COCHIN PORT AUTHORITY

## SECTION I

### 3. CONTRACT DATA

*[To be filled up before issuing tender document as applicable for each tender]*

Items marked “N/A” do not apply in this Contract.

| Sl.                                                   | Description                                                           |                                                            |                                                                                       |  | Referen<br>ce<br>Clause<br>No. in<br>GCC |
|-------------------------------------------------------|-----------------------------------------------------------------------|------------------------------------------------------------|---------------------------------------------------------------------------------------|--|------------------------------------------|
|                                                       | <i>The following documents are also part of the Contract</i>          |                                                            |                                                                                       |  |                                          |
| 1.                                                    | The Schedule of other Contractors<br>(Will be informed in due course) |                                                            |                                                                                       |  | (8.2)                                    |
|                                                       | The Schedule of Key personnel                                         |                                                            |                                                                                       |  |                                          |
| Designation/<br>Qualification of<br>Staff             | No.                                                                   | Min. Experience<br>(Years)                                 | Rate of recovery in<br>case of non<br>compliance during the<br>entire contract period |  | (9)                                      |
| i) Project<br>Manager –<br>Civil Graduate<br>Engineer | 1                                                                     | 15<br>(and having<br>Experience in<br>one similar<br>work) | Rs.1,00,000/- per<br>month                                                            |  |                                          |
| ii) Deputy<br>Project                                 | 1                                                                     | 10                                                         | Rs.75,000/- per<br>month                                                              |  |                                          |

| Sl. | Description                                                                     |                                        |                                             |                       | Reference Clause No. in GCC |
|-----|---------------------------------------------------------------------------------|----------------------------------------|---------------------------------------------|-----------------------|-----------------------------|
|     | Manager - Graduate Engineer                                                     | (Civil)<br>+ 1<br>(Electrical)         | (and having Experience in one similar work) |                       |                             |
|     | iii) Project/ Site Engineer - Graduate Engineer<br>or<br>Diploma Engineer       | 2<br>(Civil)<br>+<br>1<br>(Electrical) | 5<br>10                                     | Rs.25,000/- per month |                             |
|     | iv) Quality Engineer - Civil Graduate Engineer<br>or<br>Civil Diploma Engineer  | 1                                      | 5<br>8                                      | Rs.25,000/- per month |                             |
|     | v) Project / Planning – Civil Graduate Engineer<br>or<br>Civil Diploma Engineer | 1                                      | 7<br>12                                     | Rs.25,000/- per month |                             |
|     | vi) Billing Engineer - Civil Graduate Engineer<br>or<br>Civil Diploma Engineer  | 1                                      | 4<br>6                                      | Rs.20,000/- per month |                             |
|     | vii) Surveyor -                                                                 |                                        |                                             | Rs.15,000/- per       |                             |

| Sl.              | Description                                                                                                                                                                                                                                         | Reference Clause No. in GCC |       |   |       |  |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------|---|-------|--|
|                  | <table border="1" data-bbox="314 444 1240 518"> <tr> <td data-bbox="314 444 536 518">Diploma Engineer</td> <td data-bbox="536 444 711 518">1</td> <td data-bbox="711 444 886 518">8</td> <td data-bbox="886 444 1240 518">month</td> </tr> </table> | Diploma Engineer            | 1     | 8 | month |  |
| Diploma Engineer | 1                                                                                                                                                                                                                                                   | 8                           | month |   |       |  |
| 2.               | The Employer is                                                                                                                                                                                                                                     | (1)                         |       |   |       |  |
|                  | <b>Board of Major Port Authority for Cochin Port,<br/>Cochin -9</b>                                                                                                                                                                                 |                             |       |   |       |  |
| 3.               | Name of Authorized Representative:                                                                                                                                                                                                                  |                             |       |   |       |  |
|                  | Name: <b>Sri. B. Kasiviswanathan, IRSME<br/>Chairperson,<br/>Cochin Port Authority,<br/>Cochin -9.</b>                                                                                                                                              |                             |       |   |       |  |
| 4.               | The Engineer is                                                                                                                                                                                                                                     |                             |       |   |       |  |
|                  | Name: <b>Col. Jassar S M,<br/>Chief Engineer,<br/>Cochin Port Authority,<br/>Cochin-9.</b>                                                                                                                                                          |                             |       |   |       |  |
| 5.               | Name of Nominee(s) is : <b>Will be notified in LoA/ LoI</b>                                                                                                                                                                                         |                             |       |   |       |  |
| 6.               | Name of Contract : <b>Reconstruction of Q2-Q3 berths at Mattancherry wharf of Cochin Port</b><br>Tender No : <b>T10/T-2062/2025-C</b>                                                                                                               | (1)                         |       |   |       |  |
| 7.               | <b>13</b> copies of Contract Agreement shall be furnished by the Contractor                                                                                                                                                                         | (7.1)                       |       |   |       |  |
| 8.               | Tender document and other data are available at the following web sites :<br>1) <a href="http://www.cochinport.gov.in">www.cochinport.gov.in</a><br>2) <a href="http://www.tenders.gov.in">www.tenders.gov.in</a>                                   | (7.2)                       |       |   |       |  |

| Sl. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Reference Clause No. in GCC                  |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
|     | 3) tenderwizard.com/cpt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                              |
| 9.  | The Intended completion Date for the whole of the Work is <b>12</b> (Twelve) Months with the following milestones:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | (17, 28)                                     |
|     | Physical works to be completed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Period from the date of commencement of work |
|     | The activity wise schedule needs to be submitted by the contractor within <b>21 days</b> of receipt of LoA from CoPA. This need to be strictly followed for the timely completion of the project.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                              |
| 10. | <p>The following shall form part of the Contract Document:</p> <ul style="list-style-type: none"> <li>(1) Agreement</li> <li>(2) Letter of Acceptance</li> <li>(3) Bill of Quantities</li> <li>(4) Contractor's Bid</li> <li>(5) Correspondence exchanged after the opening of the Bid and before the issue of Letter of Acceptance by which the Condition of Contract are amended, varied or modified in any way by mutual consent (to be enumerated).</li> <li>(6) Contract Data</li> <li>(7) General Conditions of Contract</li> <li>(8) General Description and Special Conditions of Contract</li> <li>(9) Technical Specifications</li> <li>(10) Drawings and</li> <li>(11) Any other documents listed in the Contract Data as forming part of the Contract.</li> </ul> | (2.3)                                        |
| 11. | The Contractor shall submit a Program for the Works within <b>21 days</b> of date of the Letter of Acceptance/LoI.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | (27)                                         |
| 12. | <p><b>The site possession date</b><br/> The site will be handed over within <b>7 days</b> after issue of LoA/LoI and the site is free from encumbrances.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | (21)                                         |
| 13. | The start date shall be <b>15 days</b> from the date of receipt of the Letter of Acceptance (LoA)/LoI by the Contractor.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | (1)                                          |
| 14. | <p>The site is located in the Mattancherry Wharf.</p> <p><b>Project Location Shown in drawing No. 9782-01-2025</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |
| 15. | The Defects Liability Period is <b>One year from the date of completion of the work.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | (36)                                         |

| Sl. | Description                                                                                                                                                                                                                                                                       | Reference Clause No. in GCC                               |                                           |  |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-------------------------------------------|--|
|     | <b>The Defect Liability period for the Fenders is 5 (Five) years</b>                                                                                                                                                                                                              |                                                           |                                           |  |
| 16. | The minimum insurance cover for physical property, injury and death is <b>Rs.15 lakhs (Rupees Fifteen Lakhs)</b> per occurrence with the number of occurrences unlimited. After each occurrence, Contractor will pay additional premium necessary to make insurance valid always. | (13)                                                      |                                           |  |
| 17. | The following events shall also be Compensation Events: (Nil)                                                                                                                                                                                                                     | (44)                                                      |                                           |  |
| 18. | The period between Programme updates shall be 45 days.                                                                                                                                                                                                                            | (27)                                                      |                                           |  |
| 19. | The amount to be withheld for late submission of an updated Programme shall be Rs.25,000/-.                                                                                                                                                                                       | (27)                                                      |                                           |  |
| 20. | The language of the Contract documents is <b>English</b> .                                                                                                                                                                                                                        | (3)                                                       |                                           |  |
| 21. | The law, which applies to the Contract, is the law of Union of India.                                                                                                                                                                                                             | (3)                                                       |                                           |  |
| 22. | The currency of the Contract is <b>Indian Rupees</b> .                                                                                                                                                                                                                            | (46)                                                      |                                           |  |
| 23. | The proportion of payments retained (retention money) shall be 5% from each bill subject to a maximum of 5% of the contract price or cost of work done whichever is higher.                                                                                                       | (48)                                                      |                                           |  |
| 24. | The maximum amount of liquidated damages for the whole of the works is <b>10%</b> of the contract price.                                                                                                                                                                          | [49]                                                      |                                           |  |
| 25. | Amounts of the advance payments-Advance payments as applicable to the contract are:                                                                                                                                                                                               | [51]                                                      |                                           |  |
|     |                                                                                                                                                                                                                                                                                   |                                                           |                                           |  |
|     | Nature of Advance                                                                                                                                                                                                                                                                 | Amount (Rs)                                               | Conditions to be fulfilled                |  |
|     | 1. Mobilization                                                                                                                                                                                                                                                                   | Upto 5 % of the Contract price in two equal installments. | On submission of Unconditional Guarantee. |  |
|     | 2. Equipment (Plant and Machinery)                                                                                                                                                                                                                                                | 90% for new and 75% of depreciated                        | After equipment is brought to site        |  |

| Sl.                                                            | Description                                                                                                           | Reference Clause No. in GCC                                                                                                                                                                                                                |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                | value for old equipment. Total amount will be subject to a maximum of 5% of the Contract price.                       |                                                                                                                                                                                                                                            |
| 3.Secured Advance for non-perishable Materials brought to site | 75% of Invoice value or Market value whichever is Lower.                                                              | a)The non perishable materials, in accordance with Tender specification such as Steel, Fenders & Bollards.                                                                                                                                 |
|                                                                |                                                                                                                       | b) Such materials have been delivered to site and are properly stored and protected against damage or deterioration to the satisfaction of the Engineer or his nominee. The contractor shall store the bulk material in measurable stacks. |
|                                                                |                                                                                                                       | c) The Contractor's records of the requirements, orders, receipt and use of materials are kept in a form approved by the Engineer or his nominee and such records shall be available for inspection by the Engineer or his nominee.        |
| 26.                                                            | (The advance payment will be paid to the Contractor not later than 15 days after fulfillment of the above conditions) |                                                                                                                                                                                                                                            |
| 27.                                                            | Repayment of advance payment for mobilization :                                                                       | [51]                                                                                                                                                                                                                                       |
|                                                                | The advance loan shall be repaid with percentage deductions from the                                                  |                                                                                                                                                                                                                                            |

| Sl. | Description                                                                                                                                                                                                                                                                                                                                                                                                                             | Reference Clause No. in GCC |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
|     | interim payments certified by the Engineer or his nominee under the Contract. Deductions shall commence in the next Interim Payment Certificate following that recovery of Mobilization advance will start when 15% of the work is executed and recovery of total advance should be completed by the time 80% of the original Contract work is executed.                                                                                |                             |
| 28. | Repayment of advance payment for Construction and equipment:                                                                                                                                                                                                                                                                                                                                                                            | [51]                        |
|     | The advance loan shall be repaid with percentage deductions from the interim payments certified by the Engineer or his nominee under the Contract. Deductions shall commence in the next Interim Payment Certificate following that recovery of Construction Equipment advance will start when 15% of the work is executed and recovery of total advance should be completed by the time 80% of the original Contract work is executed. |                             |
| 29. | Repayment of secured advance:[                                                                                                                                                                                                                                                                                                                                                                                                          |                             |
|     | The advance shall be repaid from each succeeding monthly payment to the extent materials for which advance was previously paid pursuant to Clause 51.6 of Conditions of Contract on being incorporated into the Works.                                                                                                                                                                                                                  |                             |
| 30. | The date by which “as-built” drawings are required is within 60 days of issue of certificate of completion of whole or section of the work, as the case may be.                                                                                                                                                                                                                                                                         | (58)                        |
| 31. | The amount to be withheld for failing to supply “as built” drawings and/or operating and maintenance manuals by the date required is Rs.1,00,000/-                                                                                                                                                                                                                                                                                      | (58)                        |
| 32. | Schedule of Rates Applicable: <b>DSR 2018+ 55% as Cost indices for Civil works and DSR 2022 + Cost indices for Electrical works</b>                                                                                                                                                                                                                                                                                                     |                             |
| 33. | Base Rate for materials to be considered for price variation :                                                                                                                                                                                                                                                                                                                                                                          | (47)                        |
|     | (i) Cement consumed for various items of work                                                                                                                                                                                                                                                                                                                                                                                           | N A                         |
|     | (ii) Reinforcement steel used under various items                                                                                                                                                                                                                                                                                                                                                                                       | N A                         |

| Sl. | Description                                                                                                                                                                           |     | Reference Clause No. in GCC |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----------------------------|
|     | (iii) Structural Steel used under various items:                                                                                                                                      | N A |                             |
|     | (iv) Mild steel plates for fabrication of liners:                                                                                                                                     | N A |                             |
| 34. | Permissible wastage on theoretical quantities of<br>(a) Cement : (+) 2%<br>(b) Steel Reinforcement and structural steel sections for each diameter, section and category : (+) 5.99 % |     | (47)                        |

# COCHIN PORT AUTHORITY

## SECTION I

### 6. ANNEXURES

| Sl. No. | Annexure | Description                                                                    | Page No. |
|---------|----------|--------------------------------------------------------------------------------|----------|
| 1       | 1        | Letter of Submission - Covering Letter                                         | 50-51    |
| 2       | 2        | Proforma of Power- of-Attorney/Letter of Authority                             | 52       |
| 3       | 3        | Organization Details                                                           | 53-55    |
| 4       | 4(a)     | Details of past experience of Contractors for Similar Works                    | 56       |
| 5       | 4(b)     | Eligible Assignment Details for MEC                                            | 57-58    |
| 6       | 5        | Financial Capability                                                           | 59       |
| 7       | 6        | Details of Proposed Approach & Methodology                                     | 60       |
| 8       | 7        | Plant and Equipment Proposed for the Work                                      | 61       |
| 9       | 8        | Declaration                                                                    | 62       |
| 10      | 9        | Details of the Party opting for Refund of EMD through e-payment system         | 63       |
| 11      | 10       | Format for Furnishing Bank information for e-payment                           | 64       |
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| 15      | 14       | NEFT/RTGS Mandate Form of EMPLOYER                                             | 77-78    |
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## **COCHIN PORT AUTHORITY**

**Reconstruction of Q2-Q3 berths at Mattancherry wharf of Cochin Port.**

### **LETTER OF SUBMISSION- COVERING LETTER**

**(ON THE LETTER HEAD OF THE BIDDER)**

Date:

To

The Chief Engineer,  
Cochin Port Authority.

Sir,

Sub: Tender for **Reconstruction of Q2-Q3 berths at Mattancherry wharf of Cochin Port.**

Being duly authorized to represent and act on behalf of .....  
(Hereinafter referred to as “the Bidder”) and having reviewed and fully understood all of the requirements of the bid document and information provided, the undersigned hereby apply for the project referred above.

We are submitting our Bid enclosing the following, with the details as per the requirements of the Bid Document, for your evaluation.

- (i) Power of Attorney (Annexure-2)
- (ii) Bid Security/EMD In the form of DD bearing No -----dated -----, for Rs..... Issued by .....bank / in the form of BG as per Annexure-12.

(iii) Pre Contract Integrity Pact (Annexure-11)

We have also uploaded the following documents for online submission of Technical Bid.

- (i) Tender Document along with Addendum No ----,
- (ii) Organization Details (Annexure-3)
- (iii) Details to fulfill the “Minimum Eligibility Criteria” and certificates (Annexure-4b) & Details of Past Experience of Contractor for Similar works Annexure-4a)
- (iv) Average Financial turnover over the last three financial year (Annexure-5)
- (v) Detailed method statement (Technical Note) (Annexure-6)
- (vi) List of plant and equipment (Annexure-7)
- (vii) Declaration (Annexure -8)
- (viii) Bankers Details ( Annexure-9 & 10)

Signature

(Authorized Signatory)

**PROFORMA OF POWER- OF-ATTORNEY/LETTER OF AUTHORITY**

*(To be submitted on Non-judicial Stamp Paper of appropriate value)*

To

The Chief Engineer,  
Cochin Port Authority,  
Cochin 682009.  
Kerala, India.

Dear Sir,

We \_\_\_\_\_

do hereby confirm that Mr./Ms./Messrs \_\_\_\_\_ [INSERT  
**NAME AND ADDRESS**], whose signature is given below, is /are authorized to represent us to bid, negotiate and conclude the agreement on our behalf with you against Tender for **Reconstruction of Q2-Q3 berths at Mattancherry wharf of Cochin Port.**

**(Tender No.T10/T-2062/2025- C).**

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

Signature of the authorized person:

Name & Designation :

Yours faithfully,

Signature, name and seal of the certifying authority

## **COCHIN PORT AUTHORITY**

### **Reconstruction of Q2-Q3 berths at Mattancherry wharf of Cochin Port.**

#### **ORGANIZATION DETAILS**

CONTRACT No.:

NAME OF APPLICANT:

1. Name of the Owner:

2. Address:

Telephone No. :

Fax No.

3. Description of Applicant

(For e.g. General, Civil Engineering

Contract or Joint Venture/Consortium etc.)

4. Registration and Classification  
of Contractors

5. Name and address of bankers

6. Number of years of experience  
as a general contractor :-

In own Country:

Internationally:

7. Number of years of experience  
as a sub contractor

8. Name and Address of partners or  
associated companies to be involved  
in the project and whether Parent/  
Subsidiary/other

6. Name and address of any associates  
knowledgeable in the procedures  
of customs, immigration and local

experience in various aspect of the project etc.

10. Name and address of the companies/ Sub-contractors who will be involved in the execution of works, namely:
11. Name and address of companies who will be involved in the supply of bought out items
  - a) Fenders, stainless chains and accessories
  - b) Bollards,
12. Attach organization chart showing the structure of the company including names of Directors/ Key Personnel at Head Office who would be responsible for the project and a separate chart showing proposed Site Construction Organization.

Signature

(Authorized Signatory)

## **COCHIN PORT AUTHORITY**

**Reconstruction of Q2-Q3 berths at Mattancherry wharf of Cochin Port.**

### **DETAILS OF PAST EXPERIENCE OF CONTRACTORS FOR SIMILAR WORKS**

| Sl.<br>No. | Name &<br>Location<br>of<br>Project | Owner's<br>Complete<br>address<br>including<br>TeleFax<br>No. with<br>contact<br>Person | Value<br>of<br>Contract | Duration of Contract |                                 |                              | Details of<br>work<br>including<br>major<br>items of<br>work<br>involved | Reference<br>No. & Date<br>of letter of<br>intent &<br>completion<br>certificate<br>enclosed |
|------------|-------------------------------------|-----------------------------------------------------------------------------------------|-------------------------|----------------------|---------------------------------|------------------------------|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
|            |                                     |                                                                                         |                         | Commencement<br>date | Scheduled<br>completion<br>date | Actual<br>completion<br>date |                                                                          |                                                                                              |
| 1          | 2                                   | 3                                                                                       | 4                       | 5                    | 6                               | 7                            | 8                                                                        | 9                                                                                            |
|            |                                     |                                                                                         |                         |                      |                                 |                              |                                                                          |                                                                                              |

**Note:** Bidder to enclose completion certificate issued by owner, certified by a Notary public or equivalent certifying authority.

**SIGNATURE OF TENDERER**

## **COCHIN PORT AUTHORITY**

### **Reconstruction of Q2-Q3 berths at Mattancherry wharf of Cochin Port.**

Tenderer shall furnish Details of “Eligibility Works Experience” as per Clause 12 of Minimum Eligible Criteria (MEC) of Instruction to Tenderer and certificates in the following format (Client Certificates/work completion certificates or any other documentary evidences with respect to the eligibility work)

#### **ELIGIBLE ASSIGNMENT DETAILS FOR MEC**

Assignment Number:

| <b>Description</b>                                                                                                                          | <b>Bidder to fill up the details here</b> |
|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| Name and Address of the Client                                                                                                              |                                           |
| Title of the Eligible Assignment                                                                                                            |                                           |
| Date of completion of the Eligible Assignment                                                                                               |                                           |
| Project Completion Cost                                                                                                                     |                                           |
| Reference No. of the enclosed Client Completion Certificate/ Documentary Evidence for having successfully completed the Eligible assignment |                                           |
| Name, telephone no, telefax no and email address of the client's representative                                                             |                                           |
| Description and Scope of Work                                                                                                               |                                           |

Instructions:

- i) Bidders are expected to provide information in respect of Eligible Assignments in this Section. The assignments cited must comply with the criteria specified Clause No. 12 (a) Minimum Eligibility of the Instructions to Tenderers”.

- ii) A separate sheet should be filled for each of the eligible assignments.
- iii) The details are to be supplemented by documentary proof from the respective client /owner for having carried out such assignment duly certified by clients/ owner.
- iv) The works indicated in this **Annexure- 4 (a)** will be only being considered for evaluation. Mere submission of work completion certificate will not be considered as Eligible Assignments
- v) Original or notary certified copy of completion certificates of each work issued by the owner/ the responsible officers of the owner under whom he has executed such contracts shall be attached. The certificate shall invariably contain the following among other things.
  - a) Details of work involved specifying the nature of work
  - b) The completion cost of the work and
  - c) Date of commencement ; and
  - d) Date of completion of the work.
- vi) If the experience in similar works is as a member of joint venture, notary attested copy of joint venture agreement in this respect shall be attached.
- vii) If the experience in similar works is as a subcontractor, notary attested copy(s) of approval issued by the Employer(s) authorizing as a sub-contractor; in proof of the claim of the tenderer as a sub-contractor shall be attached.
- viii) If the experience in similar work is in works executed in private sectors/organizations, the TDS certificate along with notary attested copy(s) work order and completion certificate.
- ix) The tenderer is also obliged to produce the original of the certified copy(s) on request by the department.

Signature

(Authorized Signatory)

## **COCHIN PORT AUTHORITY**

### **Reconstruction of Q2-Q3 berths at Mattancherry wharf of Cochin Port.**

#### **FINANCIAL CAPABILITY**

**(A) Average Annual Turnover of the Bidder**

| <b>Turnover (Rs.)</b> |               |               |                |
|-----------------------|---------------|---------------|----------------|
| <b>Year 1</b>         | <b>Year 2</b> | <b>Year 3</b> | <b>Average</b> |
|                       |               |               |                |

**Instructions:**

- (i). Year 1 will be the Financial Year-2024-25. Year 2 shall be the year immediately preceding Year 1 and Year 3 shall be the year immediately preceding Year 2.
- (ii). The Bidder shall provide audited Annual Reports / Audited financial statements such as balance sheets and profit & loss account statements as required under this Bid Document.
- (iii). Annual turnover of the bidder shall be submitted duly verified by Chartered Accountant or Competent Authority.

**Certified by Chartered Accountant**

Signature

(Authorized Signatory)

## **COCHIN PORT AUTHORITY**

### **Reconstruction of Q2-Q3 berths at Mattancherry Wharf of Cochin Port.**

#### **DETAILS OF PROPOSED APPROACH & METHODOLOGY**

Bidder shall furnish a detailed method statement (Technical Note) for carrying out of the works, along with a construction programme [ Preferably in MS project / Primavera] showing sequence of operation and the time frame for various segments of temporary and permanent works showing critical path of activities.

Signature

(Authorized Signatory)

## **COCHIN PORT AUTHORITY**

### **Reconstruction of Q2-Q3 berths at Mattancherry wharf of Cochin Port.**

#### **PLANT AND EQUIPMENT PROPOSED FOR THE WORK**

Please indicate the main plant and equipments considered to be necessary and proposed to be deployed for undertaking this work and whether this plant is ready in ownership or will be purchased or hired.

| Sl. No. | Description of equipment | Requirement No. / Capacity | Owned / leased / to be procured | Nos / Capacity | Age / Condition | Remarks (From whom to be purchased) | At what Stage of contract period the Equipment will be available |
|---------|--------------------------|----------------------------|---------------------------------|----------------|-----------------|-------------------------------------|------------------------------------------------------------------|
|         |                          |                            |                                 |                |                 |                                     |                                                                  |
|         |                          |                            |                                 |                |                 |                                     |                                                                  |
|         |                          |                            |                                 |                |                 |                                     |                                                                  |
|         |                          |                            |                                 |                |                 |                                     |                                                                  |

**Note:**

- (1) The bidder shall indicate details of the following equipments for piling
  - (a) Piling Gantry
  - (b) Piling rigs fitted in pontoon
  - (c) Crane mounted on Pontoon
- (2) The equipment indicated in the above statement will form part of contract agreement and as such the bidders are requested to indicate the availability of the equipment at site and at what stage of the construction period in a separate column.

Signature

(Authorized Signatory)

## **COCHIN PORT AUTHORITY**

### **Reconstruction of Q2-Q3 berths at Mattancherry wharf of Cochin Port.**

#### **DECLARATION**

We M/s (*Name & address of the bidder*) hereby declare that:-

1. All details regarding construction plant, temporary work and personnel for site organization considered necessary and sufficient for the work have been furnished in the **Annexure-7** and that such plant, temporary works and personnel for site organization will be available at the site till the completion of the respective work.
2. No conditions are incorporated in the financial bid. In case any conditions are specified in the financial bid, the tender will be rejected summarily without making any further reference to the bidder.
3. We have not made any payment or illegal gratification to any persons/ authority connected with the bid process so as to influence the bid process and have not committed any offence under PC Act in connection with the bid.
4. We disclose with that we have \* made / not made payments or propose to be made to any intermediaries (agents) etc in connection with the bid.
5. We do hereby confirm that no changes have been made in the tender document downloaded and submitted by us for the above bid. Port Tender document will be treated as authentic tender and if any discrepancy is noticed at any stage between the Port's tender document and the one submitted by the tenderer, the Port's document shall prevail.

Signature

(Authorized Signatory)

*\* Note: Delete whichever is not applicable.*

**DETAILS OF THE PARTY OPTING FOR REFUND OF EMD THROUGH  
E-PAYMENT SYSTEM**

Name of the Party :

Bank A/c No :

Account type : (Savings / Current / Overdraft)

Bank Name :

Branch :

IFSC Code Number : (11 digit code)

Centre (Location) :

FAX No. :

E-Mail ID : (For forwarding information of remittance)

Mobile No :

Signature

(Authorized Signatory)

**FORMAT FOR FURNISHING BANK INFORMATION FOR e-PAYMENT**

|  |                                                 |                                  |
|--|-------------------------------------------------|----------------------------------|
|  | Name and full address of the beneficiary        |                                  |
|  | Credit Account No.<br>(Should be full 14 digit) |                                  |
|  | Account Type<br>(SB or CA or OD)                |                                  |
|  | Name of the Bank                                |                                  |
|  | Branch<br>(Full address with telephone No.)     |                                  |
|  | MICR code<br>(Should be 9 digit)                |                                  |
|  | Telephone/Mobile/Fax No. of the beneficiary     | Telephone :<br>Mobile :<br>Fax : |
|  | Cancelled Cheque                                |                                  |

Signature with seal

(Authorized Signatory)

## **PROFORMA OF PRE CONTRACT INTEGRITY PACT**

### **General**

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on \_\_\_\_\_ day of the month of \_\_\_\_\_ 20\_\_\_\_\_, between, on one hand, the Board of Major Port Authority for Cochin Port Authority acting through Shri. \_\_\_\_\_, (Designation of the Officer), Cochin Port Authority (hereinafter called the 'BUYER/ EMPLOYER', which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns) of the First Part and M/s. \_\_\_\_\_ represented by Shri. \_\_\_\_\_, Chief Executive Officer (hereinafter called the "BIDDER/SELLER" which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

WHEREAS the 'BUYER/ EMPLOYER' has invited bids for the project of "**Reconstruction of Q2-Q3 berths at Mattancherry wharf of Cochin Port**" (hereinafter referred to as the "Project") and the BIDDER/SELLER is submitting his bid for the project and

WHEREAS the BIDDER is a Private Limited company/Public Limited company/Government undertaking/registered partnership firm/ constituted in accordance with the relevant law in the matter and the 'BUYER/ EMPLOYER' is Cochin Port Authority.

NOW, THEREFORE,

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

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

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

## **1. Commitments of the 'BUYER/ EMPLOYER'**

- 1.1 The 'BUYER/ EMPLOYER' undertakes that no official of the 'BUYER/ EMPLOYER', connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BIDDER, either for themselves or for any person, organization or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.
- 1.2 The 'BUYER/ EMPLOYER' will, during the pre-contract stage, treat all BIDDERS alike and will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to other BIDDERS
- 1.3 All the officials of the 'BUYER/ EMPLOYER' will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.
- 1.4 In case any such preceding misconduct on the part of such official(s) is reported by the BIDDER to the 'BUYER/ EMPLOYER' with full and verifiable facts and the same is prima facie found to be correct by the 'BUYER/ EMPLOYER' necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the 'BUYER/ EMPLOYER' and such a person shall be debarred from further dealings related-to the contract process. In such a case while an enquiry is being conducted by the 'BUYER/ EMPLOYER' the proceedings under the contract would not be stalled.

## **2. Commitments of BIDDERS**

- 2.1 The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following:-
- 2.2 The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the 'BUYER/ EMPLOYER' connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.
- 2.3 The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the 'BUYER/ EMPLOYER' or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the Government for showing or forbearing to show favour or disfavour to any person in relation to the contract or any other contract with the Government.
- 2.4 BIDDERS shall disclose the name and address of agents and representatives and Indian BIDDERS shall disclose their foreign principals or associates.

- 2.5 BIDDERS shall disclose the payments to be made by them to agents/brokers or any other intermediary, in connection with this bid/contract.
- 2.6 The BIDDER further confirms and declares to the 'BUYER/ EMPLOYER' that the BIDDER has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the BUYER or any of its functionaries, whether officially or unofficially to the award of the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.
- 2.7 The BIDDER, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the 'BUYER/ EMPLOYER' or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.
- 2.8 The BIDDER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.
- 2.9 The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.
- 2.10 The BIDDER shall not use improperly, for purposes of competition or personal gain, or pass on to others, any information provided by the 'BUYER/ EMPLOYER' as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.
- 2.11 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.
- 2.12 The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.
- 2.13 If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER, either directly or indirectly, is a relative of any of the officers of the 'BUYER/ EMPLOYER' or alternatively, if any relative of an officer of the 'BUYER/ EMPLOYER' has financial interest/stake in the bidder's firm, the same shall be disclosed by the BIDDER at the time of filing of tender.
- 2.14 The term 'relative' for this purpose would be as defined in Section 6 of the Companies Act 1956.
- 2.15 The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the 'BUYER/ EMPLOYER'.

### **3. Previous Transgression**

- 3.1 The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could

justify bidder's exclusion from the tender process.

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

#### **4. Earnest Money (Security Deposit)**

4.1 While submitting commercial bid, the BIDDER shall deposit an amount \_\_\_\_\_ (to be specified in Bid Document) as Earnest Money, with the 'BUYER/ EMPLOYER' through any of the following instruments:

- (i) Bank Draft or a Pay Order in favour of \_\_\_\_\_
- (ii) Any other mode or through any other instrument (to be specified in the Bid Document).

4.2 The Earnest Money shall be valid upto a period of 180 days from the Bid Due Date.

4.3 In case of the successful BIDDER, a Performance Guarantee in the form of Bank Guarantee valid till 30 days after the end of defect liability period will also be furnished to the BUYER/ EMPLOYER 'within 21 days of Letter of Acceptance of the Bid by the 'BUYER/ EMPLOYER.

4.4 In case of the successful BIDDER, a clause would also be incorporated in the Article pertaining to Performance Security in the Project Contract that the provisions of Sanctions for Violation shall be applicable for forfeiture of Performance Security in case of a decision by the BUYER/ EMPLOYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

4.5 No interest shall be payable by the 'BUYER/ EMPLOYER' to the BIDDER on Earnest Money/Security Deposit for the period of its currency.

#### **5. Sanctions for Violations**

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

- (i) To immediately call off the pre contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDER(s) would continue.
- (ii) The Earnest Money Deposit (in pre-contract stage) and/or Security Deposit/Performance Bond (after the contract is signed) shall stand forfeited either fully or partially, as decided by the 'BUYER/ EMPLOYER' and the 'BUYER/ EMPLOYER' shall not be required to assign any reason therefore.
- (iii) To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.
- (iv) To cancel all or any other Contracts with the BIDDER. The BIDDER shall, be liable to pay compensation for any loss or damage to the 'BUYER/

'EMPLOYER' resulting from such cancellation/rescission and the 'BUYER/ EMPLOYER' shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.

- (v) To debar the BIDDER from participating in future bidding processes of the Government of India for a minimum period of five years, which may be further extended at the discretion of the 'BUYER/ EMPLOYER'
- (vi) To recover all sums paid in violation of this Pact by BIDDER(s) to any middleman or agent or broker with a view to securing the contract.
- (vii) Forfeiture of Performance Guarantee in case of a decision by the 'BUYER/ EMPLOYER' to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

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

5.3 The decision of the 'BUYER/ EMPLOYER' to the effect that a breach of the provisions of this Pact has been committed by the BIDDER shall be final and conclusive on the BIDDER. However, the BIDDER can approach the Independent Monitor(s) appointed for the purposes of this Pact.

## 6. Fall Clause

The BIDDER undertakes that it has not performed/is not performing similar project at a price lower than that offered in the present bid in respect of any other Ministry/Department of the Government of India or PSU and if it is found at any stage that similar project was performed by the BIDDER to any other Ministry/Department of the Government of India or a PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the 'BUYER/ EMPLOYER', if the contract has already been concluded.

## 7. Independent Monitors

7.1 The 'BUYER/ EMPLOYER' has appointed the following Independent Monitors (hereinafter referred to as Monitors) for this Pact in consultation with the Central Vigilance Commission.

1. Shri.M.J. Joseph, ICAS (Retd)  
37, DA Costa Square, 3rd Cross, Cooke Town,  
Bangalore-560 084  
Email: [joseph.iem@cochinport.gov.in](mailto:joseph.iem@cochinport.gov.in)
2. Shri. Punati Sridhar, IFoS (Retd)  
8C,Block-4,14-C cross, MCHS Colony  
HSR 6th Sector,Bangalore-560 102  
Email: [Sridhar.iem@cochinport.gov.in](mailto:Sridhar.iem@cochinport.gov.in)

7.2 The task of the Monitors shall be to review independently and objectively, whether

and to what extent the parties comply with the obligations under this Pact.

- 7.3 The Monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.
- 7.4 Both the parties accept that the Monitors have the right to access all the documents relating to the project/bidding, including minutes of meetings.
- 7.5 As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the BUYER/ EMPLOYER,
- 7.6 The BIDDER(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the BUYER/ EMPLOYER, including that provided by the BIDDER. The BIDDER will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor shall be under contractual obligation to treat the information and documents of the BIDDER/Subcontractor(s) with confidentiality.
- 7.7 The BUYER/ EMPLOYER will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.
- 7.8 The Monitor will submit a written report to the designated Authority of BUYER/ EMPLOYER within 8 to 10 weeks from the date of reference or intimation to him by the BUYER/ EMPLOYER/ BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.

## **8. Facilitation of Investigation**

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

## **9. Law and Place of Jurisdiction**

This Pact is subject to Indian Law.' The place of performance and jurisdiction is the seat of the BUYER/ EMPLOYER

## **10. Other Legal Actions**

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

## **11. Validity**

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

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

11.3 The parties hereby sign this Integrity Pact at \_\_\_\_\_ on \_\_\_\_\_

BUYER/ EMPLOYER

BIDDER

Name of the Officer.

CHIEF EXECUTIVE OFFICER

Designation

Dept./MINISTRY/PSU

Witness

Witness

1. \_\_\_\_\_

1. \_\_\_\_\_

2. \_\_\_\_\_

2. \_\_\_\_\_,

\* Provisions of these clauses would need to be amended/ deleted in line with the policy of the BUYER/ EMPLOYER in regard to involvement of Indian agents of foreign bidders.

**PROFORMA OF IRREVOCABLE BANK GUARANTEE FOR BID  
SECURITY/ EARNEST MONEY DEPOSIT**

*(To be submitted on Non-judicial Stamp Paper of appropriate value)*

B.G. No. \_\_\_\_\_

Dated \_\_\_\_\_.

This Deed of Guarantee executed at \_\_\_\_\_ by \_\_\_\_\_ (Name of Bank) having its Head/Registered office at \_\_\_\_\_ (hereinafter referred to as "the Guarantor") which expression shall unless it be repugnant to the subject or context thereof include its executors, administrators, successors and assigns;

**In favour of**

The Board of Major Port Authority for Cochin Port (hereinafter called "the EMPLOYER"), having its office at Willingdon Island, Cochin – 682 009, which expression shall unless it be repugnant to the subject or context thereof include its executors, administrators, successors and assigns;

Whereas M/s. \_\_\_\_\_, a Company registered under the provisions of \_\_\_\_\_ having its registered office at \_\_\_\_\_ (hereinafter called "the Bidder") which expression shall unless it be repugnant to the subject or context thereof include its executors administrators, successors and assigns, has bid for the work of **Reconstruction of Q2-Q3 berths at Mattancherry wharf of Cochin Port (Tender No.T10/T-2062/2025-C)** (hereinafter referred to as "the Work").

Whereas in terms of the Tender Notice dated \_\_\_\_\_ (hereinafter referred to as "Tender Document") the Bidder is required to furnish to the Port Authority an unconditional and irrevocable Bank Guarantee for an amount of Rs. ..... (Rupees ..... only) as Earnest Money Deposit (EMD) and the Guarantor has at the request of the Bidder agreed to provide such Guarantee being these presents:

Now this deed witnesseth that in consideration of the premises, We, \_\_\_\_\_ Bank hereby declare, undertake and agree as follows:

We as primary obligor shall, without demur, pay to the Port Authority an amount not exceeding Rs. ..... (Rupees ..... only), within 5 days of receipt of a written demand from the Port Authority stating that the EMD has been forfeited in terms of Clause 16.2 of the Instruction of Bidders of Tender Document. Any such demand made on us by the Port Authority shall be

conclusive and absolute as regards the forfeiture of the EMD and the amount due and payable under this Guarantee.

- a) The above payment shall be made by us without any reference to the Bidder or any other person and irrespective of whether the claim of the Port Authority is disputed by the Bidder or not.
- b) This Guarantee shall remain in full force for a period of 225 days from (date)\*\_\_\_\_\_ or for such extended period as may be mutually agreed between the Port Authority and the Bidder and shall continue to be enforceable till all amounts which are demanded by the Port Authority under this Guarantee are paid.
- c) In order to give full effect to this Guarantee, the EMPLOYER shall be entitled to treat the Guarantor as the principal debtor and the obligations of the Guarantor shall not be affected by any variations in the terms and conditions of the Tender Document or other documents or by extension of time of performance of any obligations by the Bidder or any postponement for any time of the powers exercisable by the EMPLOYER against the Bidder or forebear or enforce any of the terms and conditions relating to non-compliance of the Tender Document by the Bidder and we shall not be relieved from our obligations by reason of any variation or extension being granted to the Bidder or forbearance or omission on the part of the EMPLOYER or any indulgence by the EMPLOYER to the Bidder to give such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving us.
- d) This Guarantee shall be irrevocable and shall remain in full force and effect until all our obligations under this Guarantee are duly discharged.
- e) The Guarantor has power to issue this Guarantee and the undersigned is duly authorized to execute this Guarantee pursuant to the power granted under —

In Witness whereof the Guarantor has set its hands hereunto on the day, month and year first hereinabove written.

Signed and Delivered by \_\_\_\_\_

Bank by the hand of Shri\_\_\_\_\_

its \_\_\_\_\_ and authorized official

\*Fill in the scheduled date of submission of bid.

**PROFORMA OF IRREVOCABLE BANK GUARANTEE FOR  
PERFORMANCE OF FENDERS & BOLLARDS**

*(To be submitted on Non-judicial Stamp Paper of appropriate value)*

Ref: \_\_\_\_\_ Bank Guarantee No\_\_\_\_\_

Date\_\_\_\_\_

To

Cochin Port Authority

W/Island,

Cochin 682009.

Dear Sirs,

In consideration of Board of Major Port Authority for Cochin Port (hereinafter referred to as the 'Port Authority' which expression unless repugnant to the context or meaning thereof includes its successors, administrators and assigns) having awarded to M/s \_\_\_\_\_ with its Registered / Head Office at \_\_\_\_\_ (hereinafter referred to as the "CONTRACTOR" which expression shall unless repugnant to the context or meaning thereof, include its successor, administrators, executors and assigns), a "CONTRACT" by issue of Port Authority's work order dated \_\_\_\_\_ the same having been unequivocally accepted by the Contractor resulting in a "CONTRACT" bearing No. \_\_\_\_\_ dated \_\_\_\_\_ value at \_\_\_\_\_ for \_\_\_\_\_ and the CONTRACTOR having agreed to provide a Contract Performance Guarantee for the faithful performance of the entire Contract equivalent to \_\_\_\_\_, to Port Authority under the terms and conditions of an agreement between Board of Major Port Authority for Cochin Port and ..... For the execution of the work (hereinafter called "the said agreement").

2. We \_\_\_\_\_ having  
its \_\_\_\_\_ Head \_\_\_\_\_ office  
at \_\_\_\_\_ (hereinafter  
referred to as the "Bank", which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay the Port Authority on demand any and all money payable by the Contractor to the extent of \_\_\_\_\_  
as aforesaid at any time  
upto \_\_\_\_\_ without any demur,

reservation, contest, recourse or protest and/or without any reference to the CONTRACTOR. Any such demand made by the Port Authority on the Bank shall be conclusive and binding notwithstanding any difference between Port Authority and CONTRACTOR.

3. We, \_\_\_\_\_ Bank Ltd., do hereby undertake to pay to the Port Authority any money without demur so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the contractor(s) shall have no claim against us for making such payment.
4. We, \_\_\_\_\_ Bank Ltd., further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the Port Authority under or by virtue of the said Agreement have been fully paid and its claim satisfied or discharged or till Engineer-in-charge on behalf of the Port Authority certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said contractor(s) and accordingly discharges this guarantee.
5. We, \_\_\_\_\_ Bank Ltd., further agrees with the Port Authority that the Port Authority shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Port Authority against the said contractor(s) and to forebear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from ours liability by reason of any such variation, or extension being granted to the said contractor(s) or by any such matter or things whatsoever which under the law relating to sureties would but for this provision, have effect of so relieving us.
6. This guarantee will not be discharged due to the change in the constitution of the Bank or the contractor(s).
7. We, \_\_\_\_\_ Bank Ltd., lastly undertake not to revoke this guarantee except with the previous consent of the Port Authority in writing and further agrees that the guarantee herein contained shall continue to be in endorseable till the Port Authority discharges its guarantee.
8. We, \_\_\_\_\_ Bank Ltd. also agrees that Port Authority at its option shall be entitled to enforce this Guarantee against the Bank as principal debtor, in the first instance without proceeding against CONTRACTOR and notwithstanding any security or other guarantee that Port Authority may have in relation to the CONTRACTOR's liabilities.
9. This guarantee shall be valid upto \_\_\_\_\_ unless extended on demand by Port Authority. Notwithstanding anything mentioned above,

our liability against this guarantee is restricted to Rs \_\_\_\_\_ (Rupees \_\_\_\_\_ only) and unless a claim in writing is lodged with us within six months of the date of expiry of or the extended date of expiry of this guarantee all our liabilities under this guarantee shall stand discharged.

Dated the \_\_\_\_\_ day of \_\_\_\_\_ 20

### **WITNESSES**

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Name)

Bank's Rubber Stamp

\_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Official address)

\_\_\_\_\_  
(Designation with Bank Stamp)

Attorney as per Power of Attorney

No. \_\_\_\_\_

Dated \_\_\_\_\_

| National Electronic Fund Transfer (NEFT/RTGS) Mandate Form                                                     |                                          |                                                    |
|----------------------------------------------------------------------------------------------------------------|------------------------------------------|----------------------------------------------------|
| (Mandate for receiving payment s through NEFT/RTGS from COCHIN PORT AUTHORITY)                                 |                                          |                                                    |
| 1                                                                                                              | Vendor Name/Beneficiary Name             | <b>COCHIN PORT AUTHORITY</b>                       |
| 2                                                                                                              | Vendor code                              |                                                    |
| 3                                                                                                              | <b>Permanent Account Number(PAN)</b>     | AAALC - 1134F                                      |
| 4                                                                                                              | <b>TAN NO</b>                            | CHNC04095A                                         |
| 5                                                                                                              | <b>GST NO:</b>                           | 32AAALC1134F1ZZ                                    |
| 6                                                                                                              | Particulars of Bank Account              | Savings Account                                    |
|                                                                                                                | A. Name of Bank                          | <b>STATE BANK OF INDIA</b>                         |
|                                                                                                                | B. Name of Branch                        | Cochin Port Authority                              |
|                                                                                                                | C. Branch Code                           | 6367                                               |
|                                                                                                                | D. Address                               | Cochin Port Authority , Willingdon Island - 682009 |
|                                                                                                                | E. City Name                             | Cochin                                             |
|                                                                                                                | F. Telephone No                          | 2582614                                            |
|                                                                                                                | G. NEFT/IFSC Code                        | <b>SBIN0006367</b>                                 |
|                                                                                                                | H. SWIFT Code:                           | <b>SBININBB</b>                                    |
|                                                                                                                | I. 9.digit MICR code on the Cheque Book. | 682002021                                          |
|                                                                                                                | J. Type of Account                       | Savings Account                                    |
|                                                                                                                | K. Account No.                           | <b>41401802288</b>                                 |
| 5                                                                                                              | Vendor Email-id                          | cash@cochinport.gov.in                             |
| <p>(Please enclose a photocopy of the Cancelled cheque to enable us to verify the details mentioned above)</p> |                                          |                                                    |

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.

**SD/-**

**FINANCIAL ADVISER &**

**CHIEF ACCOUNTS OFFICER**

**COCHIN PORT AUTHORITY**

---

**Bank Certificate**

We certify that \_\_\_\_\_ has current account No  
\_\_\_\_\_ with us and we

confirm that the details given above are correct as per our records.

Date :

Place:

Authorised Official of Bank

**Format for Insurance Surety Bond towards Performance Security**

[From the Insurance Company duly approved by Insurance Regulatory and Development Authority of India]

**(To be stamped in accordance with Stamp Act of India)**

Insurance Surety Bond No.: Date:

Amount of Insurance Security Bond: Rs.....

Security Bond cover period from.....to..... upto claim period .....

THIS INSURANCE SURETY BOND executed on.....at ..... by ....(Name and Address of the Insurer) (hereinafter called “the Insurer”, which expression shall unless it be repugnant to the subject or context thereof, include its executors, successors administrators, and assigns;

**IN FAVOUR OF**

The Board of Trustees of the Cochin Port Authority constituted under the Major Port Authorities Act, 2021 (hereinafter called “the Employer” which expression shall unless excluded by or repugnant to the context or meaning thereof be deemed to include its successors, administrators, executors and assigns;

WHEREAS ..... (Usual wordings used in case of Bank Guarantees)

WHEREAS..... – do-

WHEREAS..... -do-

In consideration of the Authority having awarded to M/s..... [Contractor's Name]..... with its Registered/Head Office at ..... (Hereinafter referred to as the ‘Contractor’, which expression shall unless repugnant to the context or meaning thereof, include its successors administrators, executors and assigns), a Contract by issue of Authority's Work Order No..... dated..... and the same having been unequivocally accepted by the Contractor, resulting into a Contract bearing No..... dated ....., valued at ..... for and the Contractor having agreed to provide a Contract Performance Guarantee for the faithful performance of the entire Contract

equivalent to .....(amount ).....% (percent) of the said value of the Contract to the Authority.

We .....[Name & Address of the Insurer] ..... having its Head Office at ..... (hereinafter referred to as the 'Insurer' do hereby guarantee and undertake to pay the Authority, on demand any and all amount payable by the Contractor to the extent of .....(\*)..... as aforesaid at any time up to ..... [days/month/year] without any condition, demur, reservation, contest, recourse or protest and/or without any reference to the Contractor. Any such demand made by the Authority on the Insurer shall be conclusive and binding notwithstanding any difference between the Authority and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. The Insurer undertakes not to revoke this Insurance Surety Bond during its currency and or any period extended under the contract, without prior consent of the Authority and further agrees that the guarantee herein contained shall be enforceable till the Employer discharges this guarantee.

The Employer shall have the fullest liberty, without affecting in any way the liability of the Insurer under this Insurance Surety Bond, from time to time to extend the performance of the Contract by the Contractor for the purpose of which, the Insurer shall be liable to extend the validity of the present Insurance Surety Bond without any demur, condition, protest and the Insurer shall at no point in time have an option of revoking the same, The Employer shall have the fullest liberty, without affecting this Insurance Surety Bond, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Contractor, and to exercise the same at any time in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract between the Employer and the Contractor or any other course or remedy or security available to the Employer. The Insurer shall not be released of its obligations under these presents by any exercise by the Employer of its liberty with reference to the aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Employer or any other indulgence shown by the Employer or by any other matter or thing whatsoever which under law would, but for this provision, have the effect of relieving the Insurer.

The Insurer also agrees and undertakes that the Employer at its option shall be entitled to enforce this Insurance Surety Bond against the Insurer as a Surety, in the first instance without proceeding against the Contractor and notwithstanding any security or other guarantee that the Employer may have in relation to the Contractor's liabilities.

This Surety Bond will not be discharged due to the change in the constitution of the

Insurer or the Contractor. It is also hereby agreed that only Courts at Kochi in Kerala shall have exclusive jurisdiction in respect of all matters, including any demands claims, under this Surety Bond.

Notwithstanding anything contained hereinabove:

- (a) Our liability under this Insurance Surety Bond shall not exceed Rs.... (Rupees..... Only)
- (b) This Insurance Security Bond shall remain in force upto and including ..... and encashable at .....(address of Insurer)....
- (c) We are liable to pay the Surety Bond amount or any part thereof under this Surety Bond only and only if you serve upon us a written claim or demand on or before .....(3 months from validity date.)

IN WITNESS WHEREOF the Insurer has set its hands hereunto on the day, month and year first hereinabove written.

Dated this ..... day of ..... 20.....  
at.....

WITNESS :

1. ....  
.....

(Signature) ..... (Signature) .....

(Name) ..... (Name) .....

(Official Address) ..... (Designation with Insurer Stamp)

Authorised Vide Power of Attorney  
No..... Date.....

2. ....

(Signature) .....

(Name) .....

(Official Address)

Notes :

1. The Insurance Surety Bond shall be from an Insurer as per guidelines issued by Insurance Regulatory and Development Authority of India (IRDAI).
2. The Insurance Surety Bond should be on Non-Judicial stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the state(s) where the Insurance Surety Bond is submitted or is to be acted upon or the rate prevailing in State where the Insurance Surety Bond is executed, whichever is higher

**COCHIN PORT AUTHORITY**

.....[Insert Title]

**UNDERTAKING REGARDING EPF AND ESI REGISTRATION**

I/We, M/s. .....(Name & address of the Tenderer) solemnly affirm and undertake that I/We do not have the required number of employees for taking registration under EPF Organisation and ESI Corporation. I/We also undertake that I/We take the full responsibility for all the consequences arising due the above and indemnify CoPA officials for any actions taken in this regard.

**SIGNATURE OF TENDERER**

## **SECTION II**

**COCHIN PORT AUTHORITY**  
**CIVIL ENGINEERING DEPARTMENT**

Tender no: **T10/T-2062/2025-C**

Tender for  
**Reconstruction of Q2-Q3 berths at Mattancherry wharf of Cochin Port**

**SECTION -II**

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**SECTION -II**  
**COCHIN PORT AUTHORITY**

**I (1). GENERAL CONDITIONS OF CONTRACT - PART A - G**

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## SECTION II

# GENERAL CONDITIONS OF CONTRACT

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## **GENERAL GUIDELINES**

1. This book of “General Conditions of Contract (GCC) “is applicable to both types of tenders i.e. “Percentage rate tenders and item rate tenders”.
2. This GCC is applicable to Civil and Electrical works.
3. All blanks are confined to Contract Data. The blanks provided therein shall be filled up carefully for each tender as applicable.
4. Authority approving the Notice Inviting Tenders (NIT) shall fill up all the blanks in Contract Data before issue of tender document.
5. Additional clauses or modifications to the clauses in the GCC, as applicable specifically to the work shall be incorporated under Special Conditions of Contract.

\*\*\*\*\*

## GENERAL CONDITIONS OF CONTRACT

### A. General

#### 1 Definitions

Terms which are defined in the Contract Data are not also defined in the Conditions of Contract but keep their defined meanings. Capital initials are used to identify defined terms.

**Bill of Quantities** means the priced and completed Bill of Quantities forming part of the Bid.

**Compensation Events** are those defined in Clause 44

The **Completion Date** is the date of completion of the Works as certified by the Engineer or his nominee in accordance with Sub Clause 56.1

The **Contract** is the contract between the Employer and the Contractor to execute, complete and maintain the Works. It consists of the documents listed in Clause 2.3 below.

The **Contract Data** defines the documents and other information which comprise the Contract

The **Contractor** is a person or corporate body whose Bid to carry out the Works has been accepted by the Employer.

The **Contractor's Bid** is the completed Bidding documents submitted by the Contractor to the Employer.

The **Contract Price** is the price stated in the letter of acceptance and thereafter as adjusted in accordance with the provisions of the Contract.

**Days** are calendar days, **months** are calendar months.

**A Defect** is any part of the Works not completed in accordance with the Contract.

The **Defects Liability Period** is the period named in the Contract Data and calculated from the Completion Date.

The **Employer** is the party who will employ the Contractor to carry out the Works.

**Equipment** is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.

The **Initial Contract Price** is the Contract Price listed in the Employer's Letter of Acceptance.

The **Intended Completion Date** is the date on which it is intended that the Contractor shall complete the works. The Intended Completion Date is specified in the Contract Data. The Intended Completion Date may be revised only by the Engineer or his nominee by issuing an extension of time.

**Market Rate** is the rate as decided by the Engineer on the basis of the cost of materials and labour at the site where the work is to be executed plus 10% to cover all overheads and profits.

**Materials** are all supplies, including consumables, used by the Contractor for incorporation in the Works.

The **Engineer or his nominee** is the person named in the Contract Data (or any other competent person appointed and notified to the Contractor to act in replacement of the Engineer or his nominee) who is responsible for supervising the Contractor, administering the Contract, certifying payments due to the Contractor, issuing and valuing Variations to the Contract, awarding extensions of time and valuing the Compensation Events.

**Plant** is any integral part of the Works which is to have mechanical, electrical, electronic or chemical or biological function.

**Ruling Percentage** is the percentage by which the tendered amount of the works actually awarded is higher or lower than the corresponding estimated amount of the works actually awarded.

The **Site** is the area defined as such in the Contract Data.

**Site Investigation Reports** are those which were included in the Bidding documents and are factual interpretative reports about the surface and sub-surface conditions at the site.

**Specification** means the Specification of the Works included in the Contract and any modification or addition made or approved by the Engineer or his nominee.

The **Start Date** is given in the Contract Data. It is the date when the Contractor shall commence execution of the works. It does not necessarily coincide with any of the Site Possession Date.

**A Sub Contractor** is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract which includes work on the Site.

**Temporary Works** are works designed, constructed, installed and removed by

the Contractor which are needed for construction or installation of the Works

A **Variation** is an instruction given by the Engineer or his nominee which varies the Original Works.

The **Works** are what the Contract requires the Contractor to construct, install and turn over to the Employer as defined in the Contract Data.

## 2 Interpretation

- 2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter and the other way around. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Engineer or his nominee will provide instructions clarifying queries about the Conditions of Contract.
- 2.2 If sectional completion is specified in the Contract Data, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion date for the whole of the Works).
- 2.3 The documents forming the Contract shall be interpreted in the following order of priority:
  - (1) Agreement
  - (2) Letter of Acceptance and notice to proceed with works
  - (3) Contractor's Bid
  - (4) Contract Data
  - (5) Conditions of Contract including Special Conditions of Contract
  - (6) Specifications
  - (7) Drawings
  - (8) Bill of quantities and
  - (9) Any other documents listed in the Contract Data as forming part of the Contract.

### **3 Language and Law**

3.1 The language of the Contract and the law governing the Contract are stated in the Contract Data.

### **4 Engineer or his nominee's Decisions**

4.1 Except where otherwise specifically stated, the Engineer or his nominee will decide contractual matters between the Employer and the Contractor in the role representing the Employer.

### **5 Delegation**

5.1 The Engineer or his nominee may delegate any of the duties and responsibilities to other people after notifying the Contractor and may cancel any delegation after notifying the Contractor.

### **6 Communications**

6.1 Communications between parties which are referred to in the conditions are effective only when in writing. A notice shall be effective only when it is delivered (in terms of Indian Contract Act 1872).

### **7 Contract Agreement**

7.1 A suitable form is annexed as "FORM OF AGREEMENT" to the Tender Document. Upon signing the Contract Agreement, the Contractor shall make copies of Contract Documents, as indicated in the Contract Data, in hardbound cover which shall cover documents used in Contract/Agreement and provide the same to the Employer at no extra cost.

7.2 Data made available by the Employer in accordance with provisions of the Condition of Contract shall be deemed to include data listed elsewhere in the Contract and open for inspection at the office of the Engineer as indicated in the Contract data of the Cochin Port Authority (by prior appointment with the Engineer).

### **8 Subcontracting**

8.1 The Contractor may subcontract with the approval of the Engineer or his nominee but may not assign the Contract without the approval of the Employer in writing. Subcontracting does not alter the Contractor's obligations.

Notwithstanding any subcontracting with such approval as required under above and notwithstanding that the Engineer shall have received copies of any subcontract, the Contractor shall be solely responsible for the quality and proper execution of the works, performance of all conditions of contract in all respects as if such subletting had not taken place and as if such work has been done directly by the Contractor.

If any Sub-Contractor engaged upon the works at the site executes any work, which in the opinion of the Engineer or his nominee is not in accordance with the Contract condition, written notice may be given to the Contractor requesting him to terminate such sub contract and the Contractor, upon receipt of such notice shall terminate such sub contract and the said Sub Contractor shall forthwith leave the works, failing which the Employer shall have right to remove such Sub

Contractors from site. No action taken by the Employer under this clause shall relieve the Contractor of any of his liabilities under the contract or give rise to any compensation, extension of time or otherwise.

## **8.2 Other Contractors**

The Contractor shall co-operate and share the site with other Contractors, public authorities, utilities and the Employer between the dates given in the Schedule of other Contractors. The Contractor shall as referred to in the Contract Data, also provide facilities and services for them as described in the Schedule. The Employer may modify the schedule of other Contractors and shall notify the Contractor of any such modification.

## **9 Personnel**

- 9.1 The Contractor shall employ the key personnel named in the Schedule of Key Personnel as referred to in the Contract Data to carry out the functions stated in the Schedule or other personnel approved by the Engineer or his nominee. The Engineer or his nominee will approve any proposed replacement of key personnel only if their qualifications, abilities, and relevant experience are substantially equal to or better than those of the personnel listed in the schedule.
- 9.2 If the Engineer or his nominee asks the Contractor to remove a person who is a member of the Contractor's staff of from his work force stating the reasons, the Contractor shall ensure that the person leaves the site within seven days and has no further connections with the work in the contract.

## **10 Employer's and Contractor's Risks**

- 10.1 The Employer carries the risks which this Contract states are Employer's risks and the Contractor carries the risks which this Contract states are Contractor's risks.

## **11 Employer's Risks**

### **11.1 The Employers risks are**

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

## **12 Contractor's Risk**

- 12.1 All risks of loss of or damage to physical property and of personal injury and death which arise during and in consequence of the performance of the Contract other than the excepted risks are the responsibility of the Contractor.
- 12.2 All risks of loss of or damage to physical property and of personal injury and death which arise during and in consequence of the performance of the Contract other than the excepted risks are the responsibility of the Contractor.
- 12.3 Excepted risks are riot (in so far as it is uninsurable) war, invasion, act of foreign enemies, hostilities (whether war be declared or not), civil war, rebellion, revolution, insurrection or military usurped power or a cause solely due to use of occupation by the Employer of any portion of the work, any operation of the forces of nature that the Contractor could not have foreseen or reasonably provided against. (All of such are herein collectively referred to as the excepted risks).

## **13 Insurance**

- 13.1 The Contractor shall provide in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts and deductibles stated in the Contract Data for the following events which are due to the Contractors risks.
  - a. loss of or damage to the Works, Plant and Materials
  - b. loss of or damage to Equipment;
  - c. loss of or damage of property (except the Works, Plant, Materials and Equipment) in connection with the Contract; and
  - d. personal injury or death.
- 13.2 Policies and certificates for insurance shall be delivered by the Contractor to the Engineer or his nominee for approval before the start date. All such insurances shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.
- 13.3 If the Contractor does not provide any of the policies and certificates required, the Employer may effect the insurance which the Contractor should have provided and recover the premiums the Employer has paid from any payments due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.
- 13.4 Alterations to the terms of insurance shall not be made without the approval of the Engineer or his nominee.
- 13.5 Both parties shall comply with all conditions of the insurance policies.

## **14 Site Investigation Reports**

- 14.1 The Contractor, in preparing the Bid, shall rely on the Site Investigation Report referred to in the Contract Data, supplemented by any information available to the

Bidder.

**15    Queries about the Contract Data**

15.1 The Engineer or his nominee will clarify queries on the Contract Data.

**16    Contractor to Construct the Works**

16.1 The Contractor shall construct and install the works in accordance with the Specification and Drawings.

16.2 The Contractor shall execute the whole and every part of the work in the most substantial and workmanlike manner both as regards materials and otherwise in every respect in strict accordance with the Specifications. The Contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work signed by the Engineer or his nominee and the Contractor shall be furnished free of charge one copy of the contract documents together with specifications, designs, drawings and instructions as are not included in the Specifications specified in Contract Data or in any Bureau of Indian Standard or any other published standard or code or, Schedule of Rates or any other printed publication referred to elsewhere in the Contract.

16.3 The Contractor shall comply with the provisions of the contract and with the care and diligence execute and maintain the works and provide all labour and materials, tools and plants including for measurements and supervision of all works, structural plans and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these, is specified or is reasonably inferred from the contract. The Contractor shall take full responsibility for adequacy, suitability and safety of all the works and methods of construction.

**17    The Works to be Completed by the Intended Completion Date**

17.1 The Contractor may commence execution of the works on the Start Date and shall carry out the works in accordance with the program submitted by the Contractor as updated with the approval of the Engineer or his nominee, and complete them by the Intended Completion Date.

**18    Approval by the Engineer or his nominee**

18.1 The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works or Permanent Works, in the case of Contractor's design to the Engineer or his nominee, who is to approve them if they comply with the specifications and Drawings.

18.2 The Contractor shall be responsible for design of Temporary Works.

18.3 The Engineer or his nominee's Approval shall not alter the Contractor's responsibility for design of the Temporary Works.

18.4 All Drawings prepared by the Contractor for the execution of the temporary works, are subject to prior approval by the Engineer or his nominee before their use.

**19    Safety**

19.1 The Contractor shall be responsible for the safety of all activities on the Site.

**20 Discoveries**

20.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site is the property of the Employer. The Contractor is to notify the Engineer or his nominee of such discoveries and carry out the Engineer or his nominee's instructions for dealing with them.

**21 Possession of the Site**

21.1 The Employer shall give possession of all parts of the Site to the Contractor, free from encumbrances. If possession of a part is not given by the date stated in the Contract Data the Employer is deemed to have delayed the start of the relevant activities and this will be a Compensation Event.

**22 Access to the Site**

22.1 The Contractor shall allow the Engineer or his nominee and any person authorized by the Engineer or his nominee access to the Site or to any place where work in connection with the Contract is being carried out or is intended to be carried out and to any place where materials or plant are being manufactured, fabricated and /or assembled for the works.

**23 Instructions**

23.1 The Contractor shall carry out all instructions of the Engineer or his nominee which comply with the applicable laws where the Site is located.

**24 Disputes**

24.1 If the Contractor believes that a decision taken by the Engineer or his nominee was either outside the authority given to the Engineer or his nominee by the Contract or that the decision was wrongly taken, the decision shall be referred to the Employer within 28 days of the notification of the Engineer or his nominee's decision.

**25 Settlement of Disputes & Arbitration**

Except where otherwise provided in the contract all questions and disputes relating to the meaning of the specifications, design, drawings and instructions here-in before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the works or the execution or failure to execute the same whether arising during the progress of the work or after the cancellation, termination, completion or abandonment thereof shall be dealt with as mentioned hereinafter:-

i) If the Contractor considers any work demanded of him to be outside the requirements of the contract, or disputes any drawings, record or decision given in writing by the Engineer-in-charge on any matter in connection with or arising out of the contract or carrying out of the work, to be unacceptable, he shall promptly within 15 days request the Engineer in writing for written instruction or decision. Thereupon, the Engineer shall give his written instructions or decision within a period of one month from the receipt of the Contractor's letter.

If the Engineer fails to give his instructions or decision in writing within the aforesaid period or if the Contractor is dissatisfied with the instructions or decision of the Engineer, the Contractor may, within 15 days of the receipt of Engineer's decision, appeal to the Chairman who shall afford an opportunity to the Contractor to be heard, if the latter so desires, and to offer evidence in support of his appeal. The Chairman shall give his decision within 30 days of receipt of Contractor's appeal. If the Contractor is dissatisfied with this decision, the Contractor shall within a period of 30 days from receipt of the decision, give notice to the Chairman for appointment of arbitrator failing which the said decision shall be final, binding and conclusive and not referable to adjudication by the arbitrator.

- ii) Except where the decision has become final, binding and conclusive in terms of Sub-Para (i) above disputes or difference shall be referred for adjudication through arbitration by a sole arbitrator appointed by the Employer or his authorized representative. If the arbitrator so appointed is unable or unwilling to act or resigns his appointment or vacates his office due to any reason whatsoever another sole arbitrator shall be appointed in the manner aforesaid. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor.

It is a term of this contract that the party invoking arbitration shall give a list of disputes with amounts claimed in respect of each such dispute along with the notice for appointment of arbitrator and giving reference to the rejection by the Chairman of the appeal.

It is also a term of this contract that no person other than a person appointed by the Employer or his authorized representative as aforesaid should act as arbitrator and if for any reason that is not possible, the matter shall not be referred to arbitration at all.

It is also a term of this contract that if the Contractor does not make any demand for appointment of arbitrator in respect of any claims in writing as aforesaid within 120 days of receiving the intimation from the Engineer that the final bill is ready for payment, the claim of the Contractor shall be deemed to have been waived and absolutely barred and the Employer or his authorized representative shall be discharged and released of all liabilities under the contract in respect of these claims.

The arbitration shall be conducted in accordance with the provisions of the Arbitration and Conciliation Act, 1996 (26 of 1996) or any statutory modifications or reenactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceeding under this clause.

It is also a term of this contract that the arbitrator shall adjudicate on only such disputes as are referred to him by the appointing authority and give separate award against each dispute and claim referred to him and in all cases where the total amount of the claims by any party exceeds Rs.1,00,000/- the arbitrator shall give reasons for the award.

It is also a term of the contract that if any fees are payable to the arbitrator these shall be paid equally by both the parties.

It is also a term of the contract that the arbitrator shall be deemed to have entered on

the reference on the date he issues notice to both the parties calling them to submit their statement of claims and counter statement of claims. The venue of the arbitration shall be at Cochin. The fees, if any, of the arbitrator shall, if required to be paid before the award is made and published, be paid half and half by each of the parties. The cost of the reference and of the award (including the fees, if any, of the arbitrator) shall be in the discretion of the arbitrator who may direct to any party by whom and in what manner, such costs or any part thereof shall be paid and fix or settle the amount of costs to be so paid.

## **26 Computerized Measurement Book**

Engineer or his nominee shall, except as otherwise provided, ascertain and determine by measurement, the value of work done in accordance with the contract.

All measurement of all items having financial value shall be entered by the Contractor and compiled in the shape of the Computerized Measurement Book having pages of A-4size as per the format of the department so that a complete record is obtained of all the items of works performed under the Contract.

All such measurements and levels recorded by the Contractor or his authorized representative from time to time, during the progress of the work, shall be got checked by the Contractor from the Engineer or his authorized representative as per interval or program fixed in consultation with Engineer or his authorized representative. After the necessary corrections made by the Engineer or his nominee, the measurement sheets shall be returned to the Contractor for incorporating the corrections and for resubmission to the Engineer for the dated signatures by the Engineer or his nominee and the Contractor or their representatives in token of their acceptance.

Whenever bill is due for payment, the Contractor would initially submit draft computerized measurement sheets and these measurements would be got checked/test checked from the Engineer- and/or his authorized representative. The Contractor will, thereafter, incorporate such changes as may be done during these checks/test checks in his draft computerized measurements, and submit to the department a computerized measurement book, duly bound, and with its pages machine numbered. The Engineer and/or his authorized representative would thereafter check this MB, and record the necessary certificates for their checks/test checks.

The final, fair, computerized measurement book given by the Contractor, duly bound, with its pages machine numbered, should be 100% correct, and no cutting or over-writing in the measurements would thereafter be allowed. If at all any error is noticed, the Contractor shall have to submit a fresh computerized MB with its pages duly machine numbered and bound, after getting the earlier MB cancelled by the department. Thereafter, the MB shall be taken in the Divisional Office records, and allotted a number as per the Register of Computerized MBs. This should be done before the corresponding bill is submitted to the Division Office for payment. The Contractor shall submit two spare copies of such computerized MB's for the purpose of reference and record by the various officers

of the department.

The Contractor shall also submit to the department separately his computerized Abstract of Cost and the bill based on these measurements, duly bound, and its pages machine numbered along with two spare copies of the bill. Thereafter, this bill will be processed by the Division Office and allotted a number as per the computerized record in the same way as done for the measurement book meant for measurements.

The Contractor shall, without extra charge, provide all assistance with every appliance, labour and other things necessary for measurements and recording levels.

Except where any general or detailed description of the work expressly shows to the contrary, measurements shall be taken in accordance with the procedure set forth in the Specifications notwithstanding any provision in the relevant Standard Method of measurement or any general or local custom. In the case of items which are not covered by specifications, measurements shall be taken in accordance with the relevant standard method of measurement issued by the Bureau of Indian Standards and if for any item no such standard is available then a mutually agreed method shall be followed.

The Contractor shall give not less than seven days' notice to the Engineer or his authorized representative in charge of the work before covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured and correct dimensions thereof be taken before the same is covered up or placed beyond the reach of measurement and shall not cover up and place beyond reach of measurement any work without consent in writing of the Engineer or his authorized representative in charge of the work who shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of measurements without such notice having been given or the Engineer's consent being obtained in writing the same shall be uncovered at the Contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.

Engineer or his authorized representative may cause either themselves or through another officer of the department to check the measurements recorded jointly or otherwise as aforesaid and all provisions stipulated herein above shall be applicable to such checking of measurements or levels.

It is also a term of this Contract that recording of measurements of any item of work in the measurement book and/or its payment in the interim, on account or final bill shall not be considered as conclusive evidence as to the sufficiency of any work or material to which it relates nor shall it relieve the Contractor from liabilities from any over measurement or defects noticed till completion of the Defects Liability Period.

## **B. Time Control**

### **27. Program**

- 27.1 Within the time stated in the Contract Data the Contractor shall submit to the Engineer or his nominee for approval a Program showing the general methods, arrangements, order, and timing for all the activities in the works along with monthly cash flow forecast.
- 27.2 An update of the Program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work including any changes to the sequence of the activities.
- 27.3 The Contractor shall submit to the Engineer on the first day of each week or such longer period as the Engineer may from time to time direct, a progress report in an approved form showing up-to-date total progress, progress achieved against planned progress, during the previous week and progress forecast for the following week for all important items in each section or portion of the Works, in relation with the approved Program.
- 27.4 The Contractor shall submit to the Engineer or his nominee, for approval an updated Program at intervals no longer than the period stated in the Contract Data. If the Contractor does not submit an updated Program within this period, the Engineer or his nominee may withhold the amount stated in the Contract Data from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program has been submitted.

### **28 Revised Program**

- 28.1 The Engineer or his nominee's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Engineer or his nominee again at any time for approval. A revised Program is to show the effect of Variations and Compensation Events.

### **29 Extension of the Intended Completion Date**

- 29.1 The Engineer or his nominee shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work and which would cause the Contractor to incur additional cost.
- 29.2 The Engineer or his nominee shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Engineer or his nominee for a decision upon the effect of a Compensation Event or Variation or any other events causing delay, beyond the control of the Contractor and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.
- 29.3 Such Request for extension of time, to be eligible for consideration, shall be made by Contractor in writing within fourteen days of the happening of the event

causing delay on the prescribed form. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired.

### **30 Delays Ordered by the Engineer or his nominee**

30.1 The Engineer or his nominee may instruct the Contractor to delay the start or progress of any activity within the Works.

### **31 Management Meetings**

31.1 Either the Engineer or his nominee or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.

31.2 The Engineer or his nominee shall record the business of management meetings and is to provide copies of his record to those attending the meeting and to the Employer. The responsibility of the parties for actions to be taken is to be decided by the Engineer or his nominee either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

### **32 Early Warning**

32.1 The Contractor is to warn the Engineer or his nominee at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price or delay the execution of works. The Engineer or his nominee may require the Contractor to provide an estimate of the expected effect of the event or circumstance on the Contract Price and Completion Date. The estimate is to be provided by the Contractor as soon as reasonably possible.

32.2 The Contractor shall cooperate with the Engineer or his nominee in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Engineer or his nominee.

32.3 The Contractor shall immediately give notice in writing to the Engineer or his nominee upon happening of any event as detailed below if the work is delayed by:

- i) Force majeure, or
- ii) Abnormally bad weather, or
- iii) Serious loss or damage by fire, or
- iv) Civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or
- v) Delay on the part of other Contractors or tradesmen engaged by Engineer in executing work not forming part of the Contract, or
- vi) Any other cause which, in the absolute discretion of Engineer, is beyond the Contractor's control.

### **33 Force Majeure**

"Force Majeure" means an exceptional event or circumstance:

- a) Which is beyond a Party's control,
- b) Which such Party could not reasonably have provided against before entering into the Contract,
- c) Which, having arisen, such Party could not reasonably have avoided or overcome, and
- d) Which is not substantially attributable to the other Party.

Force Majeure may include, but is not limited to, exceptional events or circumstances of the kind listed below, so long as conditions (a) to (d) above are satisfied:

- i) War and hostilities (whether war be declared or not), invasion, act of foreign enemies;
- ii) Rebellion, revolution, insurrection, or military or usurped power, or civil war;
- iii) Ionizing radiations, or contamination by radioactivity from any nuclear fuel, or from any nuclear waste, from the combustion of nuclear fuel, radioactive toxic explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof;
- iv) Pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds; and
- v) Riot, commotion or disorder, unless solely restricted to the employees of the Contractor or of his Sub Contractors and arising from the conduct of the Works;
- vi) Floods, tornadoes, earthquakes and landslides.

## **C. Quality Control**

### **34 Identify Defects**

34.1 The Engineer or his nominee shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Engineer or his nominee may instruct the Contractor to search for a Defect and to uncover and test any work that the Engineer or his nominee considers may have a Defect.

### **35 Tests**

35.1 If the Engineer or his nominee instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and if the test shows that it has defect, the Contractor shall pay for the test and any samples.

If there is no Defect the test shall be a Compensation Event.

### **36 Defect Liability**

36.1 The Engineer or his nominee shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion and is defined in the Contract Data. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.

36.2 Every time notice of a Defect is given, the Contractor shall correct the notified defect within the length of time specified by the Engineer or his nominee's notice. To the intent that the works shall, at or as soon as practicable after the expiration of the Defects Liability Period, be delivered to the Employer in the condition required by the Contract, fair wear and tear excepted, to the satisfaction of the Engineer, the Contractor shall :

- (a) Complete the work, if any, outstanding on the date stated in the Taking-Over Certificate within the date to be intimated by the Engineer and
- (b) Execute all such work of amendment, reconstruction, and remedying defects, shrinkages or other faults as the Engineer may, during the Defects Liability Period or within 14 days after its expiration, as a result of an inspection made by or on behalf of the Engineer prior to its expiration, instruct the Contractor to execute.

### **36.3 Cost of Remedyng Defects**

All work referred to in Sub Clause 36.2 shall be executed by the Contractor at his own cost if the necessity thereof is, in the opinion of the Engineer, due to:

- (a) The use of materials, Plant or workmanship not in accordance with the Contract, or
- (b) Where the Contractor is responsible for the design of part of the Permanent Works, any fault in such design, or the neglect or failure on the part of the Contractor to comply with any obligation, expressed or implied, on the Contractor's part under the Contract.

### **36.4 Defects Liability Certificate**

The Contract shall not be considered as completed until a Defects Liability Certificate shall have been signed by the Engineer and delivered to the Employer, with a copy to the Contractor, stating the date on which the Contractor shall have completed his obligations to execute and complete the Works and remedy any defects therein to the Engineer's satisfaction. The Defects Liability Certificate shall be given by the Engineer within 28 days after the expiration of the Defects Liability Period, or, if different defects liability periods shall become applicable to different Sections or parts of the Permanent Works, the expiration of the latest such period, or as soon thereafter as any works instructed, pursuant to Clauses 36, have been completed to the satisfaction of the Engineer.

### **36.5 Unfulfilled Obligations**

Notwithstanding the issue of the Defects Liability Certificate the Contractor and the Employer shall remain liable for the fulfillment of any obligation incurred under the provisions of the Contract prior to the issue of the Defects Liability Certificate which remains unperformed at the time such Defects Liability Certificate is issued and, for the purposes of determining the nature and extent of any such obligation, the Contract shall be deemed to remain in force between the parties to the Contract.

### **36.6 Uncorrected Defects.**

If the Contractor has not corrected a Defect within the time specified in the Engineer's or his nominee's notice the Engineer or his nominee will assess the cost of having the Defect corrected, and the Contractor will pay this amount.

## **D. Cost Control**

### **37 Bill of Quantities**

- 37.1 The Bill of Quantities shall contain items for the construction, supply, installation, testing and commissioning work to be done by the Contractor.
- 37.2 The Bill of Quantities is used to calculate the Contract Price. The Contractor is paid for the quantity of the work done at the rate in the Bill of Quantities for each item.

### **38 Changes in the Quantities**

- 38.1 If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 % provided the change exceeds (+) 10% of initial Contract Price, the Engineer or his nominee shall adjust the rate(s), to allow for the change.
- 38.2 The Engineer or his nominee shall not adjust rates for changes in quantities if thereby the Initial Contract Price is exceeded by more than 10% except with the prior approval of the Employer.
- 38.3 If requested by the Engineer or his nominee where the quoted rate (s) of any item(s) is abnormally high, the Contractor shall provide the Engineer or his nominee with a detailed cost breakdown of such rate in the Bill of Quantities.

### **39 Variations**

- 39.1 The Engineer shall make any Variation of the form, quality or quantity of the Works or any part thereof that may, in his opinion, be necessary and for that purpose, or if for any other reason it shall, in his opinion, be appropriate, he shall have the authority to instruct the Contractor to do and the Contractor shall do any of the following:
  - (a)increase or decrease the quantity of any work included in the Contract,
  - (b)omit any such work,
  - (c)change the character or quality or kind of any such work,
  - (d)change the levels, lines, position and dimension of any part of the Works,

- (e) execute additional work of any kind necessary for the completion of the Works,
- (f) change any specified sequence or timing of construction of any part of the Works.

No such Variation shall in any way vitiate or invalidate the Contract, by the effect, if any, of all such Variations shall be valued in accordance with Clause 40. Provided that where the issue of an instruction to vary the works is necessitated by some default of or breach of contract by the Contractor or for which he is responsible, any additional cost attributable to such default shall be borne by the Contractor. All Variations shall be included in updated Programs produced by the Contractor.

### **39.2 Instructions for Variations**

The Contractor shall not make any such Variation without an instruction of the Engineer. Provided that no instruction shall be required for increase or decrease in the quantity of any work where such increase or decrease is not the result of an instruction given under this clause, but is the result of the quantities exceeding or being less than those stated in the Bill of Quantities.

### **40 Payment for Variations**

- 40.1 Variation permitted shall not exceed (+) 25% in quantity of each individual item, and (+) 10% of the total contract price. Within 14 days of the date of instruction for executing varied work, extra work or substitution, and before the commencement of such work, notice shall be given either (a) by the Contractor to the Employer of his intention to claim extra payment or a varied rate or price, or (b) by the Employer to the Contractor of his intention to vary rate or price.
- 40.2 For items not existing in the Bill of Quantities or substitution to items in the Bill of Quantities, rate payable should be determined by methods given below and in the order given below:
  - i) Rates and prices derived from the rate of similar items in Contract.
  - ii) Rates and prices in the Schedule of Rates applicable to the Contract plus Ruling percentage.
  - iii) Market rates of materials and labor, hire charges of plant and machinery used, plus 10% for overheads and profits of Contractor.
- 40.3 For items in the Bill of Quantities but where quantities have increased beyond the variation limits, the rate payable for quantity in excess of the quantity in the Bill of Quantity plus the permissible variation shall be as determined by methods given below:
  - i) Rates and prices in the Schedule of Rates applicable to the Contract plus Ruling percentage.
  - ii) Market rates of material and labor, hire charges of plant and machinery used plus 10% for overheads and profits of Contractor.

***whichever is lower, but not less than the rate in the Bill of***

## ***Quantities.***

- 40.4 If there is delay in the Employer and the Contractor coming to an agreement on the rate of an extra item, rates as proposed by the Employer shall be payable provisionally till such time as the rates are finally determined or till date mutually agreed.
- 40.5 If the Engineer or his nominee decides that the urgency of varying the work prevent a quotation being given and considers not delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event.

## **41 Cash flow forecasts**

- 41.1 When the Program is updated, the Contractor is to provide the Engineer or his nominee with an updated cash flow forecast.

## **42 Payment Certificates**

- 42.1 The Contractor shall submit to the Engineer or his nominee monthly statements of the estimated value of the work completed less the cumulative amount certified previously.
- 42.2 The Engineer or his nominee shall check the Contractors' monthly statement within 14 days and certify the amount to be paid to the Contractor after taking into account any credit or debit for the month in question in respect of materials for the works in the relevant amounts and under conditions set forth in sub-clause 51.6 of the Contract Data (Secured Advance).
- 42.3 The value of work executed shall be determined by the Engineer or his nominee.
- 42.4 The value of work executed shall comprise the value of the quantities of the items in the Bill of quantities completed.
- 42.5 The value of work executed shall include the valuation of variations and Compensation Events.
- 42.6 The Engineer or his nominee may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

## **43 Payments**

- 43.1 Bills shall be prepared and submitted by the Contractor. Joint measurements shall be taken continuously and need not be connected with billing stage. System of 4 copies of measurements, one each for Contractor, Employer and Engineer or his nominee, and signed by both Contractor and Engineer or his nominee shall be followed.
- 43.2 Payment of Bills for civil works shall be regulated as detailed hereunder:
  - 43.2.1 Interim Bills shall be paid within 21 days of date of submission of bills in full shape by the Contractor. 75% of the bill amount shall be paid within 7 days of submission of the bill, if on request by the Contractor. Balance amount of the verified bill shall be paid within 21 days of the submission of the bill.
  - 43.2.2 Final Bill shall be paid within 3 months as detailed below on issue of Taking over Certificate by the Engineer or his nominee. The Contractor shall submit final Bill within 30 days of issue of Taking over Certificate. Engineer or his nominee shall check the bill within 30 days after its receipt and return the bill to Contractor for corrections, if any. The Contractor should re-submit the bill with corrections

within 15 days of its return by the Engineer or his nominee. The re-submitted bill shall be checked and paid within 30 days of its receipt.

43.3 Payment for Electrical works shall be regulated as detailed below:

43.3.1 The Contractor shall be entitled upon certificates of the Engineer or his nominee to payments in accordance with the following provisions:

1) **For supply portion:** 75% of the value, as certified by the Engineer or his nominee, of the materials from time to time delivered on the site.

Balance 25% after completing the work in all respects, commissioning and handing over the installation to the Employer to the satisfaction of the Engineer and his nominee and his certification.

2) **For erection portion :**

i) 85% of the value as certified by the Engineer or his nominee, of the installation portion on completion of the erection work under contract, for which payments are claimed.

ii) Balance 15% along with other payments if any, after completing the work in all respects, commissioning and taking over the installation by the Employer to the satisfaction of the Engineer and his nominee and his certification.

43.3.2 For HT works, the work shall not be considered as completed until the installation is energized after obtaining approval certificate from Central Electrical Authority (CEA) and upon the issuance of taking over certificate by Engineer or his nominee. The final payment shall be made only after taking over the installation by the Employer.

43.4 All the interim payments shall be regarded as payment by way of advances against final payment only and shall not preclude the requiring of bad, unsound and imperfect or unskilled work to be rejected, removed, taken away and reconstructed or re-erected. Any certificate given by the Engineer or his nominee relating to the work done or materials delivered forming part of such payment, may be modified or corrected by any subsequent such certificate(s) or by the final certificate and shall not by itself be conclusive evidence that any work or materials to which it relates is/are in accordance with the contract and specifications. Any such interim payment, or any part thereof shall not in any respect conclude, determine or affect in any way powers of the Engineer- or his nominee-charge under the contract or any of such payments be treated as final settlement and adjustment of accounts or in any way vary or affect the contract.

43.5 Pending consideration of extension of date of completion interim payments shall continue to be made as herein provided, without prejudice to the right of the department to take action under the terms of this contract for delay in the completion of work, if the extension of date of completion is not granted by the competent authority.

43.6 No further claims shall be made by the Contractor after submission of the final bill

and these shall be deemed to have been waived and extinguished.

- 43.7 If an amount certified is increased in a later certificate as a result of an award by the Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in the award. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.
- 43.8 Items of the Works for which no rate or price has been entered in will not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.
- 43.9 All payments to the Contractor under the contract shall unless otherwise stated elsewhere be made to the Contractor in Indian currency through e- payments through designated Bank.

#### **44 Compensation Events**

- 44.1 The following mutually agreed Compensation Events unless they are caused by the Contractor would be applicable:
  - (a) The Employer does not give access to a part of the Site by the Site Possession Date stated in the Contract Data.
  - (b) The Employer modifies the schedule of other Contractors in a way which affects the work of the Contractor under the contract.
  - (c) The Engineer or his nominee orders a delay or does not issue drawings, specifications or instructions required for execution of works on time.
  - (d) The Engineer or his nominee instructs the Contractor to uncover or to carry out additional tests upon work which is then found to have no Defects.
  - (e) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of Letter of Acceptance from the information issued to Bidders (including the Site Investigation Reports), from information available publicly and from a visual inspection of the site.
  - (f) The Engineer or his nominee gives an instruction for dealing with an unforeseen condition, caused by the Employer, or additional work required for safety.
  - (g) Other Contractors, public authorities, utilities or the Employer does not work within the dates and other constraints stated in the Contract that cause delay or extra cost to the Contractor.
  - (h) The effect on the Contractor of any of the Employer's Risks.
  - (i) Any other Compensation Events listed in the Contract Data or mentioned in the contract.

Whenever any compensation event occurs, the Contractor will notify the Employer, within 14 days and provide a forecast cost of the compensation event.

- 44.2 If a Compensation Event would cause additional cost or would prevent the work

being completed in the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date shall be extended. The Engineer or his nominee shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.

44.3 As soon as information demonstrating the effect of each Compensation Event upon the Contractor's forecast has been provided by the Contractor, it is to be assessed by the Engineer or his nominee and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable the Engineer or his nominee shall adjust the Contract Price based on Engineer or his nominee's own forecast. The Engineer or his nominee will assume that the Contractor will react competently and promptly to the event.

**45 Rates for items to be inclusive of Taxes**

45.1 The rates quoted by the Contractor shall be deemed to be inclusive of the sales tax and other taxes, but excluding service tax that the Contractor will have to pay for the performance of this Contract. The Employer will perform such duties in regard to the deduction of such taxes at sources as per applicable law. Any new Taxes, levies, duties imposed after signing the Contract shall be reimbursed by the Employer on production of documentary evidence.

Service Tax shall be claimed by the Contractor in the invoice except for those services which are covered under Negative list of Services under section 66D of the Finance Act and Mega Exemption Notification No 25/2012-ST dated 20.06.2012. The rate of Service Tax shall be as per the provisions of Point of Taxation Rules, 2011 and value on which service tax to be applied shall be as per the provisions of Service Tax (Determination of Valuation Rules), 2006. Where the contractor is an individual, HUF, Partnership firm or Association of Person, Service Tax shall be claimed under Reverse Charge Mechanism.

**46 Currencies**

46.1 All payments shall be made in Indian Rupees unless specifically mentioned.

**47 Price Adjustment.**

47.1 No price adjustment shall be made for works except for the provisions under clause 47.1.A herein under and clause 47.2 for any subsequent change in legislation.

47.1.A For Civil contract works, with intended completion period of the contract more than 12 months, Price adjustment shall be made for the variation in price of materials such as cement, reinforcement steel and structural steel, bitumen and bitumen emulsion. Compensation for variation in cost of the materials shall be regulated as described below subject to the condition that such compensation for variation in prices shall be only for the work done during the stipulated period of the contract including such period for which the validity of the contract is extended.

The rates quoted for the items in the Schedule of Quantities shall be based on the Base rates of the materials provided in the Contract Data and these base rates are

applicable at the Supplier's local delivery point and shall not include cost of loading to Contractor's vehicle, transporting to work site and unloading and stacking at work site.

During execution and actual procurement by the Contractor, increase or decrease in the cost of materials over the Base rate (which results in an increase or decrease of cost to the Contractor in carrying out the works) shall form an addition or reduction as the case may be to or from the contract price and shall be paid to or allowed by the Contractor accordingly, provided that such increase or decrease shall relate only to the quantities of material which the Engineer is satisfied as reasonably required for the works. While considering the reasonable requirement of the materials for the work, allowance towards wastage/unusable cutting bits shall be permitted as provided in the Contract Data. The prices of materials considered for regulating the payment as aforesaid shall be the price charged by the suppliers approved by the Engineer at the supplier's local delivery point and this shall not include the cost of loading to the Contractor's vehicle, transporting to the work site and unloading and stacking at work site

#### **47.2 Subsequent Legislation**

If, after 28 (Twenty eight) days prior to the last date for submission of tenders for the contract, there occur changes to any National or State Statute, Ordinance or Decree or other Law or any regulation or bye law of any local or other duly constituted authority or introduction of any such state statute, Ordinance, Decree, Law, regulation or bye law which causes additional or reduced cost to the Contractor in execution of the contract, such additional or reduced cost shall, after due consultation with the Employer and the Contractor be determined by the Engineer or his nominee and shall be added to or deducted from the contract price and the Engineer or his nominee shall notify the Contractor accordingly with a copy to the Employer.

#### **48 Retention**

- 48.1 The Employer shall retain from each payment due to the Contractor the proportion stated in the Contract Data until Completion of the whole of the Works.
- 48.2 For civil works, Retention Money shall be deducted at 5% of the gross amount of the bill from the first Running Account bill onwards till the recovered sum amounts to 5% of the contract value or the value of the work done whichever is higher. Retention money shall be refunded to the Contractor within 14days from the date of payment of final bill.
- 48.3 No retention money shall be deducted for Electrical works.

#### **49 Liquidated Damages**

- 49A In case of delay in completion of the contract, liquidated damages (L.D) may be levied at the rate of half per cent (½%) of the contract price per week of delay, subject to a maximum of 10 per cent of the contract price. The amount of Liquidated damages can be adjusted or set-off against any sum payable to the Contractor.

49A(i) The Employer, if satisfied, that the works can be completed by the Contractor within a reasonable time after the specified time for completion, may allow further extension of time at its discretion with or without the levy of L.D. In the event of extension granted being with L.D, the Employer will be entitled without prejudice to any other right or remedy available in that behalf, to recover from the Contractor as agreed damages equivalent to half per cent (½%) of the contract value of the works for each week or part of the week subject to the ceiling defined in sub-Clause 49 A.

49A(ii) The Employer, if not satisfied that the works can be completed by the Contractor, and in the event of failure on the part of the Contractor to complete work within further extension of time allowed as aforesaid, shall be entitled, without prejudice to any other right, or remedy available in that behalf, to rescind the contract.

49A(iii) The Employer, if not satisfied with the progress of the contract and in the event of failure of the Contractor to recoup the delays in the mutually agreed time frame, shall be entitled to terminate the contract.

49A (iv) In the event of such termination of the contract as described in clauses 49A (ii) or 49A (iii) or both the Employer shall be entitled to recover L.D. upto ten per cent (10%) of the contract value and forfeit the security deposit made by the Contractor besides getting the work completed by other means at the risk and cost of the Contractor.

## **49B Reduction of Liquidated Damages**

If, before the Time for Completion of the whole of the Works or, if applicable, any Section, Taking Over Certificate has been issued for any part of the Works or of a Section, the liquidated damages for delay in completion of the remainder of the Works or of that section shall, for any period of delay after the date stated in such Taking Over Certificate, and in the absence of alternative provisions in the Contract, be reduced in the proportion which the value of the part so certified bears to the value of the whole of the Works or Section, as applicable. The provisions of this Sub-Clause shall only apply to the rate of liquidated damages and shall not affect the limit thereof.

## **50 Nominated Sub Contractors**

50.1 All specialists, merchants, tradesmen and others executing any work or supplying any good, materials, Plant or services for which provisional Sums are included in the Contract, who may have been or be nominated or selected or approved by the Employer or the Engineer, and all persons to whom by virtue of the provisions of the Contract, the Contractor is required to subcontract shall, in the execution of such work or the supply of such goods, materials, Plant or services, be deemed to be Sub Contractors to the Contractor and are referred to in this Contract as "Nominated Sub Contractors".

## **51 Advance payment**

The Employer shall make the following advance payments (as admissible in the contract data) if requested by the Contractor in writing:

- 51.1 Mobilization Advance shall be paid upto 5% of Contract price, payable in two equal installments. The first installment shall be paid after mobilization has started and next installment shall be paid after satisfactory utilization of earlier advance for which, the Contractor shall furnish proof of the satisfactory utilization of the amount.
- 51.2 Construction/ installation equipment Advance shall be paid upto 5% of Contract price, limited to 90% of assessed cost of machinery. Equipment advance will be paid in two or more installments. First installment shall be paid after Construction Equipment has arrived at the site and next installment shall be paid after satisfactory utilization of earlier advance (s).
- 51.3 Mobilization Advance and Construction Equipment Advance shall be paid at 14% interest rate and against Bank Guarantee for Mobilization Advance and against hypothecation of Construction Equipment to the Employer.
- 51.4 Recovery of Mobilization and Construction Equipment advance will start when 15% of the work is executed and recovery of total advance should be completed by the time 80% of the original Contract work is executed.
- 51.5 The above advance payments shall be admissible only for the works where estimated cost put to tender is more than Rs. 5.0 crores.

#### **51.6 Secured Advance**

The Engineer or his nominee shall make advance payment in respect of materials and plant brought to site but not yet incorporated and installed in the Works in accordance with conditions stipulated in the Contract Data.

75% of cost of materials and plant brought to site for incorporation into the works only shall be paid as Secured Advance. Materials which are of perishable nature should be adequately insured.

The Contractor, on signing an indenture in the form to be specified by the Engineer, shall be entitled to be paid during the progress of the execution of the work upto 75% of the assessed value of any materials which are in the opinion of the Engineer nonperishable, non-fragile and noncombustible and are in accordance with the contract and which have been brought on the site in connection therewith and are adequately stored and/or protected against damage by weather or other causes but which have not at the time of advance been incorporated in the works. When materials on account of which an advance has been made under this sub-clause are incorporated in the work the amount of such advance shall be recovered/deducted from the next payment made under any of the clause or clauses of this contract.

Such secured advance shall also be payable on other items of perishable nature, fragile and combustible with the approval of the Engineer provided the Contractor provides a comprehensive insurance cover for the full cost of such materials. The decision of the Engineer shall be final and binding on the Contractor in this matter. No secured advance, shall however, be paid on high-risk materials such as ordinary glass, sand, petrol, diesel etc.

## **52      Securities**

52.1 Security Deposit (SD) shall be at 10% of the contract value or value of the work done whichever is higher and it shall consist of two parts:

- a) Performance Security to be submitted at award of the work
- b) Retention Money to be recovered from Running Bills as detailed in Clause 48 above.

The total amount thus deposited towards SD will be retained as security for the due and proper fulfillment of the contract and will not carry any interest. Such deposit shall be forfeited on failure to perform or non-fulfillment by the Contractor of the terms and conditions of the contract.

52.2 **Performance Security** shall be as below:

- a) For civil works : 5% of the Contract value
- b) For all Electrical and Mechanical works: 10% of the Contract value

52.3 The Performance Security shall be provided by the Contractor to the Employer not later than 21 days for domestic bids and 28 days for international bids from the date of letter of acceptance and shall be furnished in one of the following forms:

- i) Banker's Cheque/Demand Draft/Pay Order of a Scheduled Bank.
- ii) An irrevocable Bank Guarantee (BG) enforceable and encashable at Cochin, drawn from any scheduled bank operating in India as per the proforma.

52.4 The BG furnished towards the Performance Security shall be valid for a period until a date 30days from the day of expiry of the defect liability period stipulated as per the terms of the contract.

52.5 Unless performance Security is furnished within the period as specified in clause 52.3 above or such extension of that period as may be permitted by the Engineer in writing, the Earnest Money will be liable to forfeiture and the contract to cancellation.

52.6 Performance Security will be released / refunded to the Contractor not later than 30 days from the date of completion of Defect Liability / warranty period of the work.

## **53      Removal of Craft or Plant which has sunk**

The Contractor shall forthwith and with dispatch at his own cost raise and remove any craft or plant (floating or otherwise) belonging to him or to any sub-Contractor employed by him (including also any plant which is held by the Contractor or any sub-Contractor under agreement for hire or hire-purchase) which may be sunk in the course of the construction completion or maintenance of the Works or otherwise deal with the same as the Engineer may direct or until the same shall be raised and removed, the Contractor shall set all such buoys and display at night such lights and do all such things for the safety of navigation as may be required by the Engineer or by Employer. In the event of the Contractor

not carrying out his obligation imposed upon him by this clause the Employer may provide buoy and light such sunken craft or plant and raise and remove the same (without prejudice to the right of the Employer to hold the Contractor liable under General Conditions) and the Contractor shall refund to the Employer all costs incurred in connection therewith.

#### **54 Contractor's Temporary Moorings**

Should the Contractor need, in connection with implementing the Works, to provide temporary moorings for his craft he may be allowed to do so in location and manner approved by the Engineer subject to all necessary permissions being first obtained by the Contractor from the authorities concerned. The Contractor shall not lay his temporary moorings such as to interfere with the port traffic and such moorings shall be removed if and when required by the Employer.

#### **55 Cost of Repairs**

55.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Liability period shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

### **E. Finishing the Contract**

#### **56 Completion**

56.1 After completion of the work, the Contractor will serve a written notice to the Engineer or his nominee/Employer to this effect. The Engineer or his nominee/Employer upon receipt of this notice shall conduct a complete joint survey of the work within 7 days and prepare a defects list jointly. The defects pointed out by the Engineer or his nominee/ Employer would be rectified by the Contractor within 14 days and thereafter acceptance report be signed jointly by the Contractor and the Employer. This joint acceptance report shall be treated as 'Completion Certificate'.

#### **56.2 Substantial Completion of Parts**

If any part of the Permanent Works has been substantially completed and satisfactorily passed any Tests on Completion prescribed by the Contract, the Engineer may issue a Taking-Over Certificate in respect of that part of the Permanent works before completion of the whole of the Works and, upon the issue of such Certificate, the Contractor shall be deemed to have undertaken to complete with due expedition any outstanding work in that part of the Permanent Works during the Defects Liability Period.

#### **56.3 Surfaces Requiring Reinstatement**

Provided that a Taking Over Certificate given in respect of any Section or part of the Permanent Works before completion of the whole of the Works shall not be deemed to certify completion of any ground or surfaces requiring reinstatement, unless such Taking Over Certificate shall expressly so state.

#### **57 Taking Over**

57.1 The Engineer or his nominee shall take over the Site and the Works within seven

days of the Engineer or his nominee issuing a certificate of Completion.

### **57.2 Taking Over Certificate**

When the whole of the Works have been substantially completed and have satisfactorily passed any Tests on Completion prescribed by the Contract, the Contractor may give a notice to that effect to the Engineer, with a copy to the Employer, accompanied by a written undertaking to finish with due expedition any outstanding work during the Defects Liability Period. Such notice and undertaking shall be deemed to be a request by the Contractor for the Engineer or his nominee to issue a Taking- over Certificate in respect of the Works. The Engineer or his nominee shall, within 21 days of the date of delivery of such notice, either issue to the Contractor, with a copy to the Employer, a Taking- Over Certificate, stating the date on which, in his opinion, the Works were substantially completed in accordance with the Contract, or give instruction in writing to the Contractor specifying all the work which in the Engineer's opinion, is required to be done by the Contractor before the issue of such Certificate. The Engineer or his nominee shall also notify the Contractor of any defects in the Works affecting substantial completion that may appear after such instructions and before completion of the Works specified therein. The Contractor shall be entitled to receive such Taking over Certificate within 21 days of completion, to the satisfaction of the Engineer or his nominee, of the Works so specified and remedying any defects so notified.

### **57.3 Taking Over of Sections or Parts**

Similarly, in accordance with the procedure set out in above Clause 55, the Contractor may request and the Engineer or his nominee shall issue a Taking over Certificate in respect of:

- (a) Any Section in respect of which a separate Time for Completion is provided in the Contract Data, or
- (b) Any substantial part of the Permanent Works which has been both completed to the satisfaction of the Engineer and, otherwise than as provided for in the Contract, occupied or used by the Employer, or
- (c) Any part of the Permanent Works which the Employer has elected to occupy or use prior to completion (where such prior occupation or use is not provided for in the Contract or has not been agreed by the Contractor as a temporary measure).

## **58 Final Account**

58.1 The Contractor shall supply to the Engineer or his nominee a detailed account of the total amount that the Contractor considers payable under the Contract within 30 days of issue of Taking Over Certificate and the Engineer or his nominee shall certify any final payment that is due to the Contractor within 60 days of receiving the Contractor's account if it is correct and complete. If it is not, the Engineer or his nominee shall issue within 30 days a schedule that states the scope of the corrections or additions that are necessary for the correction. If the Final Account is still unsatisfactory after it has been resubmitted the Engineer or his nominee shall decide on the amount payable to the Contractor and issue a payment

certificate, within 60 days of receiving the Contractor's revised account.

**59 Submission of 'As built Drawings'**

59.1 "As built" Drawings are required to be submitted by the Contractor by the dates stated in the Contract Data. If the Contractor does not supply the Drawings and/or manuals by the dates stated in the Contract Data, or they do not receive the Engineer or his nominee's approval, the Engineer or his nominee shall withhold the amount stated in the Contract Data from payments due to the Contractor.

**60 Termination**

60.1 The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.

60.2 Fundamental breaches of Contract include, but shall not be limited to the following:

(a) The Contractor stops work for 28 days when no stoppage of work is shown on the current Program and the stoppage has not been authorized by the Engineer or his nominee:

(b) The Engineer or his nominee instructs the Contractor to delay the progress of the Works and the instruction is not withdrawn within 28 days.

(c) The Employer or the Contractor becomes bankrupt or goes into liquidation other than for a reconstruction restructure or amalgamation.

(d) A payment certified by the Engineer or his nominee is not paid by the Employer to the Contractor within 50 days of the date of the Engineer or his nominee's certificate:

(e) The Engineer or his nominee gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer or his nominee.

(f) The Contractor does not maintain a security which is required.

(g) The Contractor has delayed the completion of works by the number of days for which the maximum amount of liquidated damages can be paid as defined in the Contract data and

(h) If the Contractor, in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in the executing the Contract.

(i) The Contractor threatens or misbehaves with or physical attack on any of the employee / officer of the Port

For the purpose of this paragraph: " corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution. "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or

the execution of a contract to the detriment of the Employer, and includes collusive practice. Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition.”

- 60.3 When either party to the Contract gives notice of a breach of contract to the Employer for a cause other than those listed under Sub Clause 59.2 above, the Employer shall decide whether the breach is fundamental or not.
- 60.4 Notwithstanding the above, the Employer may terminate the Contract for convenience subject to payment of compensation to the Contractor including loss of profit on uncompleted works. Loss of profit shall be calculated on the same basis as adopted for calculation of extra/additional items.
- 60.5 If the Contract is terminated the Contractor shall stop work immediately, make the Site safe and secure and leave the Site as soon as reasonably possible.

## **61 Payment upon Termination**

- 61.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Engineer or his nominee shall issue a certificate for the value of the work done less advance payments received upto the date of the issue of the certificate, less other recoveries due in terms of the contract, less taxes due to be deducted at source as per applicable law and less any extra cost of completing the Works through other means which may be incurred by the Employer. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be a debt payable to the Employer.
- 61.2 If the Contract is terminated at the Employer’s convenience or because of a fundamental breach of Contract by the Employer, the Engineer or his nominee shall issue a certificate for the value of the work done, the reasonable cost of removal of Equipment repatriation of the Contractor’s personnel employed solely on the Works, and the Contractor’s costs of protecting and securing the Works and loss of profit on uncompleted works less advance payments received up to the date of the certificate, less other recoveries due in terms of the contract and less taxes due to be deducted at source as per applicable law.

## **62 Property**

- 62.1 All materials on the Site, Plant, Equipment, Temporary Works and Works for which payment has been made to the Contractor by the Employer, are deemed to be the property of the Employer, if the Contract is terminated because of a Contractor’s default.

## **63 Release from Performance**

- 63.1 If the Contract is frustrated by the outbreak of war or by other event entirely outside the control of either the Employer or the Contractor, the Engineer or his nominee shall certify that the Contract has been frustrated. The Contractor shall leave the Site and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which commitment was made.

## **F. Labour Laws And Miscellaneous Clauses**

### **64 Labour**

64.1 The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport.

64.2 The Contractor shall, if required by the Engineer or his nominee, deliver to the Engineer or his nominee a return in detail, in such form and at such intervals as the Engineer or his nominee may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the Site and such other information as the Engineer or his nominee may require.

### **65 Compliance with labour regulations.**

65.1 During continuance of the contract, the Contractor and his sub Contractors shall abide at all times by all existing labour enactment and rules made there under, regulations, notifications and bye laws of the State or Central Government or local authority and any other labour law (including rules) regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or Central Government or the local authority. Salient features of some of the major labour laws that are applicable to construction industry are given below. The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made there under, regulations or notifications including amendments. If the Employer is caused to pay or reimburse such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications/ bye laws/ Acts/ Rules/ regulations including amendments, if any, on the part of the Contractor the Engineer or his nominee/Employer shall have the right to deduct any money due to the Contractor including his amount of performance security. The Employer/Engineer or his nominee shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer.

65.2 The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of the Employer at any point of time.

### **66 Safety, Security and Protection of the Environment.**

66.1 Subject and without prejudice to any other provision of the Contract, the Contractor shall take all reasonable precautions:

a) In connection with the sea or any harbours, docks, rivers, streams waterways drains, watercourses, lakes, reservoirs and the like to prevent:

- (i) Silting
- (ii) Erosion of their beds or banks
- (iii) Pollution of the water so as to affect adversely the quality or appearance thereof or cause injury or death to animal and plant life.

- b) In connection with underground water resources (including percolating water) to prevent
  - (i) Any interference with the supply to or abstraction from such sources
  - (ii) Pollution of the water so as to affect adversely the quality thereof.
- c) All works shall be carried out without unreasonable noise and disturbance. The Contractor shall indemnify the Employer from and against any liability for damages on account of noise or other disturbance created while or in carrying out the work and from and against all claims, demands, proceedings, damages, costs, charges and expenses whatsoever in regard or in relation to such liability.
- d) The Contractor at his own cost shall make such provisions for lighting of Works, Temporary Works, Materials and Plant and shall provide all such marks and lights as may be required by the Employer or the Engineer or any other authority having jurisdiction over the Site together with all labour stores and services required for their efficient working and use at any time, day or night.
- e) The Contractor shall also provide at his own cost every description of watching and maintenance required in connection with the foregoing, and all other services for protecting and securing all places dangerous whether to Contractor's workmen or to other persons until the Works are handed over to the Employer, or till such time when the Engineer decides that such services are no longer required.
- f) All lights provided by the Contractor shall be placed or screened such as not to interfere with any navigation lights or with any traffic or signal lights of any local or other authority.

#### **67 Insurance of Works and Contractor's Equipment**

- 67.1 The Insurance shall be issued by any Insurance Company from its Branch at Cochin which has been determined by the Contractor to be acceptable to the Employer.

#### **68 War Risks Insurance**

- 68.1 If the Contractor receives instructions from the Employer to insure against war risks, such insurance if normally available shall be effected, at the cost of the Employer, with the Insurance Company acceptable to the Employer and shall be in the joint names of the Employer and the Contractor.

#### **69 Royalties**

Except where otherwise stated, the Contractor shall pay all tonnage and other royalties, rent and other payments or compensation. If any, for getting stone, sand, gravel, clay or other materials by him and his subordinates and his subcontractors and required for the works, at the rates and such conditions as notified by the State Government and shall be realized from the Contractor by way of deductions from

the interim certificates and/or final certificate for payments to the Contractor for the gross quantity of material used for or in connection with the work. The royalty will not be deducted if the Contractor submits the Mineral Dispatch Permit (MDP) for the quantity executed by the Contractor for the requisite quantity of material incorporated in works for which MDPB issued.

**70 Transport of Contractor's Equipment or Temporary Works**

70.1 If it is found necessary for the Contractor to move one or more loads of heavy constructional plant or equipment materials or pre-constructed units or parts of units of work over roads, highways or bridges on which such oversized and overweight items are not normally allowed to be moved, the Contractor shall obtain prior permission from the concerned authorities. Payments for complying with the requirements, if any, for protection of or strengthening of the roads, highways or bridges shall be deemed to be included in his contract price.

**71 Transport of Materials or Plant**

71.1 The Contractor shall save harmless and indemnify the Employer in respect of all claims, proceedings, damages, costs, charges and expenses whatsoever arising out of or in relation to any claim made by the concerned authorities in respect of damage or injury to roads, highways or bridges. In case of failure of the Contractor to settle such claims and in case the Employer is held responsible for payment to the authorities, then the Employer shall settle the claim and the Employer's expenses in this regard, as certified by the Engineer, may be deducted by the Employer from any money due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly with a copy to the Employer.

**72 Labour Laws & Regulations**

The Contractor shall at all times during the continuance of the Contract comply fully with all existing Acts, regulations and bye-laws including all statutory amendments and re-enactment of State or Central Govt. and other local authorities and any other enactments and act that may be passed in future either by the State or the Central Govt. or local authority, including Indian Workmen's Compensation Act, Contract Labour (Regulation And Abolition) Act 1970 and Equal Remuneration Act 1976, Employees' State Insurance Act, 1948, Factories Act, Minimum Wages Act, Provident Fund Regulations. Employees' Provident Fund Act and schemes made under the same Act, Health and Sanitary Arrangements for Workmen, Insurance and other benefits and shall keep the Employer indemnified in case any action is commenced for contravention by the Contractor. If the Employer is caused to pay or reimburse any amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated here-forth on the part of the Contractor, the Engineer shall have the right to recover from the Contractor any sum required estimated to be required for making good the loss or damage suffered by the Employer. The Contract shall maintain the records prescribed under ESI Regulations & EPF scheme and make the contribution towards ESI and EPF in respect of persons employed by Contractor. The Contractor shall also make available such records for inspection by ESI Inspector and EPF organization during the inspection and furnish copies of all such records to the Employer regularly.

## **72.1 Accident Prevention Officer**

The Contractor shall have on his staff on site an officer dealing with all matters regarding safety and protection against, accidents of all staff and labour. This officer shall be qualified for this work and shall have the authority to issue instructions and shall take protective measures to prevent accidents.

## **72.2 Disorderly Conduct**

The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst his staff and labour and for the preservation of peace and protection of Persons and property in the neighborhood of the Works from the same.

## **72.3 Health and Safety**

Due precautions shall be taken by the Contractor, and at his own cost, to ensure the safety of his staff and labour and, in collaboration with and to the requirements of the local health authorities, to ensure that medical staff, first aid equipment and stores, sick bay and suitable ambulance services are available at the camps, housing and on the site at all times throughout the period of the Contract and that suitable arrangements are made for the prevention of epidemics and for all necessary welfare and hygiene requirements.

## **72.4 Supply of Water**

The Contractor shall, so far as is reasonably practicable, having regard to local conditions provide on the Site, to the satisfaction of the Engineer's Representative, an adequate supply of drinking and other water for the use of the Contractor's staff and work people.

## **72.5 Alcoholic Liquor or Drugs**

The Contractor shall not import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs or permit or suffer any such importation, sale, gift, barter disposal by his sub-contract agents or employees.

## **72.6 Arms and Ammunition**

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

## **72.7 Festivals and Religious Customs**

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

## **72.8 Epidemics**

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

## **72.9 Employment of Person in the Service of Others**

The Contractor shall not recruit or attempt to recruit his staff and labour from amongst persons in the service of the Employer or other agencies engaged for any works of the Employer.

## **72.10 Housing for Labour**

Save in so far as the Contract otherwise provides, the Contractor shall provide and maintain such accommodation and amenities as he may consider necessary for all his staff and labour employed for the purposes of or in connection with the Contract, including all fencing water supply (both for drinking and other purposes), electricity supply, sanitation, cook houses fire prevention and fire-fighting equipment, furniture other requirements in connection with such accommodation or amenities. On completion of the Contract, unless otherwise agreed with the Employer, the temporary camps/housing provided by the Contractor, shall be removed and the site reinstated to its original condition, all to the approval of the Engineer. The land for construction of labour camps shall be allotted only outside the security area to the extent available and such areas allotted as per the prevailing lease rent.

## **72.11 Fair Wages, Records, Inspection**

The Contractor shall pay the labourers engaged by him on the work not less than a fair wage which expression shall mean whether for time or piecework the respective rates of wages as notified under the provisions of the Minimum Wages Act from time to time.

The Contractor shall maintain records of Wages and other remuneration paid to his employee in such form as may be convenient and to the requirements of the Employer/Engineer and the Labour Enforcement Officer (Central), Ministry of Labour, Govt. of India, or such other authorized person appointed by the Central Govt. The Contractor shall allow inspection of the aforesaid Wage Records and Wage Slips to the Engineer and to any of his workers or to his agent at a convenient time and place after due notice is received, or to any other person authorized by him on his behalf.

## **72.12 Reporting of Accidents**

The Contractor shall report to the Engineer details of any accident as soon as possible after its occurrence. In the case of any fatality or serious accident, the Contractor shall, in addition, notify the local police authorities immediately by the available means.

## **72.13 Observance by Sub-Contractors**

The Contractor shall be responsible for observance by his sub-Contractors of the foregoing provisions.

## **72.14 Port Entry Permission**

The Contractor shall submit prior application for Port entry passes to the

concerned Port authority for his labours and the staffs engaged in the works.

The Contractor shall retain the original passes obtained by them in respect of their labour and staff engaged in the Works and produce the same to the Engineer as and when called for. It should not be either destroyed or allowed to be taken by the labour/staff after its use.

#### **72.15 Site - Protected Area**

The Site of Work is a protected area. Entry to the Port premises is regulated by entry passes. These passes will be issued by the Central Industrial Security Force or any other authority authorized by the Employer. The Contractor should furnish a list of person for whom the passes are to be issued to the Engineer and arrange to obtain the passes from the appropriate authority, based on the recommendation of the Engineer and abide by the Rules of the Cochin Port Authority with regard to entry etc. For the entry of trucks and other vehicles also, the Contractor should obtain necessary permits at his own cost.

The Contractor shall retain the original passes obtained by them in respect of their labour and staffs engaged in the Works and produce the same to the Engineer as and when called for. It should not be either destroyed or allowed to be taken by the labour/staff after its use.

#### **73 Life Saving Appliances and First Aid**

73.1 The Contractor shall provide and maintain upon the Works sufficient proper and efficient life saving appliances and first aid equipment to the approval of the Engineer. The appliances and equipment shall be available for use at all times.

#### **74 Action in case Work not done as per Specifications**

All works under or in course of execution or executed in pursuance of the contract shall at all times be open and accessible to the inspection and supervision of the Engineer or his authorized subordinates in charge of the work and all the superior officers, officer of the Quality Control Organization of the Department, Vigilance Commissions, and the Contractor shall, at all times, during the usual working hours and at all other times at which reasonable notice of the visit of such officers has been given to the Contractor, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing, present for that purpose. Orders given to the Contractor's agent shall be considered to have the same force as if they had been given to the Contractor himself.

If it shall appear to the Engineer or his nominee or his authorized subordinates in charge of the work or to the Chief Vigilance Commissioner or his subordinate officers, that any work has been executed with unsound, imperfect, or unskillful workmanship, or with materials or articles provided by him for the execution of the work which are unsound or of a quality inferior to that contracted or otherwise not in accordance with the contract the Contractor shall, on demand in writing which shall be made within twelve months of the completion of the work from the Engineer or his nominee specifying the work, materials or articles complained of notwithstanding that the same may have been passed, certified and

paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost. In the event of the failing to do so within a period specified by the Engineer or his nominee in his demand aforesaid, then the Contractor shall be liable to pay compensation at the same rate as under Clause 49 of the contract (for non-completion of the work in time) for this default.

In such case the Engineer or his nominee may not accept the item of work at the rates applicable under the contract but may accept such items at reduced rates as the competent authority may consider reasonable during the preparation of on account bills or final bill if the item is so acceptable without detriment to the safety and utility of the item and the structure or he may reject the work outright without any payment and/or get it and other connected and incidental items rectified, or removed and re-executed at the risk and cost of the Contractor. Decision of the Engineer or his nominee to be conveyed in writing in respect of the same will be final and binding on the Contractor.

## **75 Action where no Specifications are specified**

In the case of any class of work for which there are no such specifications as referred to in Clause 16, such work shall be carried out in accordance with the Bureau of Indian Standards Specifications. In case there are no such specifications in Bureau of Indian Standards, the work shall be carried out as per manufacturers specifications. In case there are no such specifications as required above, the work shall be carried out in all respects in accordance with the instructions and requirements of the Engineer or his nominee.

## **76 Bribes**

76.1 If the Contractor, or any of his Sub Contractors, agents or servants gives or offers to give to any person any bribe, gift, gratification or commission as an inducement or reward for doing or forbearing to do any action in relation to the Contract or any other contract with the Employer, or for showing or forbearing to show favour or disfavor to any person in relation to the Contract or to any other contract with the Employer, then the Employer may enter upon the Site and the works and terminate the employment of the Contractor and the provisions of Clause 59 hereof shall apply as if such entry and termination had been made pursuant to that Clause.

- (i) The bidders shall give an undertaking that they 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 Prevention of Corruption Act in connection with the bid.
- (ii) The bidders shall disclose any payments made or proposed to be made to any intermediaries (agents etc) in connection with the bid.

## **77 Details to be Confidential**

77.1 The Contractor shall treat the details of the contract as private and confidential, save insofar as may be necessary for the purposes thereof, and shall not publish or

disclose the same or any particulars thereof in any trade or technical paper of elsewhere without the previous consent in writing of the Employer. If any dispute arises as to the necessity of any publication or disclosure for the purpose of the Contract the same shall be referred to the decision of the Employer whose award shall be final.

**78 Contractor's Temporary works, office etc**

78.1 The Contractor shall submit to the Engineer for his approval not less than 15 days before commencement of erection of any part of Temporary Works, drawings and detailed proposals for the method of construction of Temporary works such as office, store, false work and temporary platforms, pre-casting yard, workshop, etc. which he intends to construct for the execution of the contract and no such work shall be constructed before obtaining the written approval of Engineer or his nominee. These temporary works, office, store etc. shall be erected at or near the work area subject to approval of the Employer and the land space for the same will be allotted free of ground rent to the extent available. The Contractor shall obtain permission for any Temporary Works and would ensure that during execution of works the statutory requirements of the concerned authorities such as Cochin Port Authority, Police, Customs, etc. would be complied with.

**79 Submission of Reports, Returns etc**

All reports, statements, returns, drawings, diagrams etc. which the Contractor is required to submit to the Engineer during the progress of the Works, shall be furnished in triplicate without any additional cost.

**80 Water Supply**

80.1 Water required for the construction works including curing work shall be arranged by the Contractor on his own at his cost.

**81 Power Supply**

81.1 The Electricity connection for lighting, welding and other mechanical works to the extent available will be made available by the Employer within the Port area. Drawing of power lines/cables etc. from the available source of supply of power to the actual work site, providing switches and making connections etc. shall be arranged by the Contractor at his cost. The temporary lines and connections by the Contractor shall be approved by the Engineer's representative before availing power. The Contractor shall provide Energy Meter to read consumption in units.

81.2 The Contractor shall indicate his requirement of power to the Engineer within 15 days from the date of the letter of acceptance of the tender. The Contractor shall pay to the Employer, the power charges as per the prevailing Tariff schedule of Cochin Port Authority in force during the work of the Contractor. The Contractor shall also pay the connection and disconnection charges as applicable.

81.3 The Contractor shall submit a complete drawing of the power points, wiring, diagram indicating all electrical loads, earthing etc. in complete shape along with the completion report. The Energy Meter provided is calibrated by Kerala State Electrical Inspectorate /TMR division, KSEB and such a Certificate to be produced. For non supply of power at any stage port will not be responsible and the Contractor shall not have any claim whatever for loss or damage.

81.4 If there is any disruption in the power supply due to supply failure/restrictions

imposed by the Kerala State Electricity Board, the department shall not be held responsible and the Contractor has to make suitable alternative arrangements like generator, welding set etc. at their cost.

## **82 Taxes and Duties**

82.1 The Contractor shall pay Sales Tax, Excise Duty and other levies as applicable from time to time in respect of all materials, equipment and other items purchased for the work.

### **82.2 Sales / Turnover Tax on Works Contract**

Deduction of Sales/Turnover tax on works Contract shall be made by the Employer from each certificate of payment to the Contractor at the rate applicable for such Contractors, as TDS or such other rates as may be specified by the State Government from time to time. TDS certificates will be issued to the Contractor which he may produce before the Tax Authority for adjustment against his tax liability as per assessment.

### **82.3 Income Tax**

The Contractor and his staff shall be responsible for payment of all personal income taxes to the concerned authorities as per the law in force from time to time. Deduction of Income Tax shall be made by the Employer from each certificate of payment to the Contractor at the rate of 2% plus surcharge or such other rates as may be specified by the Central Government from time to time, on the gross amount of the Contractor's bill for payment.

## **83 Noise and Disturbance**

83.1 All works shall be carried out without unreasonable noise and disturbance. The Contractor shall indemnify the Employer from and against any liability for damages on account of noise or other disturbance created while or in carrying out the work and from and against all claims demands proceedings damages costs charges and expenses whatsoever in regard or in relation to such liability.

## **84 Safety Code**

84.1 Necessary Indian Dock Safety regulations for the safety purpose shall be adhered to by the Contractor and he will be held responsible for any violations of the same. The set of such conditions (regulation) is available with Cochin Port Authority and the Contractor is required to go through it before tendering.

84.2 Besides the above, the Contractor shall also scrupulously adhere to and observe the following safety codes:

- (i) The Contractor has to provide sufficient barricades to site of work so that traffic plying nearby should not damage the recently concreted work. In case of any damage on account of above, the entire responsibility will remain with Contractor and nothing extra will be paid on this account.
- (ii) Suitable and strong scaffolds should be provided for the workmen for all work that cannot be safely done from ground.

- (iii) No portable single ladder shall be over 8 meters in length. The width between the side rails shall not be less than 30 cm (clear) and the distance between the two adjacent rungs shall not be more than 30 cm.
- (iv) Hoisting machines and tackles used in the works including their attachments, anchorage and supports shall be in perfect condition as per stipulations of the relevant Rules. The ropes used and hoisting or lowering materials or as means or suspension shall be of durable quality and adequate strength and free from defects.
- (v) The excavated material shall not be placed within 1.5 meters of the edge of the trench or half of the depth of the trench, whichever is more. All trenches and excavation shall be provided with necessary fencing to lighting. Every opening in the floor of a building or in a working platform be provided with suitable fence to prevent the fall of persons or materials. No floor, roof or other parts of the structure shall be so overloaded with debris or materials as to render it unsafe.
- (vi) Workers employed on mixing and handling materials such cement, cement mortars concrete, lime mortar and asphalt shall be provided with protective footwear and rubber hand gloves and thin cloth for covering face and head.
- (vii) Those engaged in welding work shall be provided with welder protective eye shield and glove.
- (viii) All safety rules shall be strictly followed while working on live electrical systems or installations as stipulated in the relevant Rules.

## **85 Port Authority Rules**

- 85.1 The Contractor shall observe the Conservancy Rules relating to the harbour and shall always take such necessary additional steps to keep the harbour waters free of noxious or unhygienic matters coming from his works as are required by the Employer. Under no circumstances shall inflammable materials be allowed to spill into the harbour waters.
- 85.2 The Contractor shall always observe and comply with the working rules and regulations of the Port Authority in force or as issued from time to time.
- 85.3 The Contractor's plants, equipments, floating crafts, dredgers, materials etc. which are brought to site for facilitating the proper execution of the contract work within the port area are not liable to port dues and charges like wharfage, berth hire and other charges during the period of contract and until expiry of defect liability period.

## **86 Execution of work**

- 86.1 The Contractor shall be required to execute the work in such a way so as not to cause any damage, hindrance or interference with port activities going on in the area or nearby. He should not also deposit the materials at such places which may cause inconvenience to the public and the work going on in the nearby area. The Contractor shall have to make good all damages done by him to the structures nearby while executing the work and no extra payment shall be made to him on

that account.

- 86.2 All the materials required to be used in the work shall have to be got approved from the Engineer-in-Charge before stacking at the site of work.
- 86.3 Barricading, including proper lighting arrangement in the night at the required places shall have to be provided by the Contractor at his own cost, including necessary arrangements for proper movement of traffic by carefully maintained approaches and road diversions with suitable sign boards for indications of road signs etc. as directed by the Engineer-in-Charge.

## **87 Drawings & Designs**

- (a) General details of the works are shown on the drawings accompanying the tender document. The Engineer will supply to the Contractor from time to time during the progress of the works such further working drawings as will be necessary in his opinion for the proper and adequate execution and maintenance of the Works in accordance with the Engineer's designs and/or any modification thereof as decided by the Engineer and the Contractor shall carry out the work in accordance with the said working drawings. Two sets of such working drawings will be issued. If the Contractor requires more sets he will have to make his own arrangement at his cost.

**Residual Design, Detailing & Engineering:** - Generally, detailed design and engineering of the work shall be provided by the Engineer. During execution of the work the residual design, detailing and engineering, if needed, is to be carried out by the Contractor at no extra cost to the Employer. Such design, detailing & engineering shall be got approved by the Contractor from the Engineer. For equipments/ Installations detailed drawings need to be produced by the Contractor at no extra cost to the Employer. Such detailing & engineering shall be got approved by the Contractor from the Engineer.

- (b) In the event of the Contractor proposing any alteration/ modification to the Engineer's design, detail, method of construction, he shall at his own expenses prepare and submit for approval of the Engineer copies in duplicate (in the first instance) of detailed working drawings which may be required for such alteration/ modification and at the same time call the attention of the Engineer to any alternative detail or modification of the contract drawings which the Contractor may wish to make at least 30 days prior to the commencement of the work or part of the work to which such drawings relate. The Contractor shall at the same time, if so required by the Engineer, furnish calculation sheets in duplicate relating to the strength and anticipated deflections in respect of such altered/ modified works. The Engineer will, after any such alteration which he may approve, record on the copies as amended his approval and will return one copy of the drawings and calculation sheets to the Contractor, who shall carryout the work in accordance therewith. The Contractor shall forward to the Engineer three additional copies of the working drawings and calculation sheets as approved in additions to these working drawings and calculation sheets as approved. In addition to these, working drawings are also to be submitted (the same procedure as in the case of the Contractor) in respect of any work proposed to be executed by sub-

Contractors. The approval of the Engineer of all or any of the calculation sheets, drawings shall not relieve the Contractor of responsibility in connection with the execution of the altered/ modified or Sub Contractor's work.

(c) Three complete sets of tracing film of all drawings showing every and all works 'As Made' under the Contract shall be made by the Contractor at his own expense and delivered to the Engineer within one month of the completion of the various sections of the work or at such times as directed by the Engineer. All departure /alteration /modifications from the Contract Drawings and supplementary working drawings issued by the Engineer also shall be incorporated in the "As Built" drawings. The drawings shall be fully dimensioned, of an approved size and as approved by the Engineer.

**88 Monsoon Period**

88.1 Normally Monsoon period will be reckoned from 1st June to 30th September.

**89 Reports**

The following reports shall be submitted for review as an input to the Management meeting to be held as per Clause No 31 of Conditions of Contract

**89.1 Daily reports**

The Contractor shall submit daily report indicating daily activities, weather condition, actual manpower, equipment and the materials arriving on site.

**89.2 Monthly Reports**

Monthly progress reports shall be prepared by the Contractor and submitted to the Engineer in triplicate. The first report shall cover the period up to the end of the first calendar month following the Commencement Date. Reports shall be submitted monthly thereafter, each within 7days after the last day of the period to which it relates. Reporting shall continue until the Contractor has completed all work, which is known to be outstanding at the completion date, stated in the Taking-Over Certificate for the Works.

Each report shall include:

- a) Charts and detailed descriptions of progress, including each stage of design (if any), Contractor's Documents, procurement, manufacture, delivery to Site, construction, erection and testing; and including these stages for work by each Sub-Contractor,
- b) Photographs in hardcopy & digital copy and videography in two sets showing the various stages of progress on the Site monthly;
- c) For the supply of manufactured items, the name of the manufacturer, manufacture location, percentage progress, and the actual or expected dates of:
  - (i) Commencement of manufacture,
  - (ii) Contractor's/ Engineer's inspections,

- (iii) Tests,
- (iv) Shipment and arrival at the Site;
- d) Copies of quality assurance documents, test results and certificates of Materials;
- e) Safety statistics, including details of any hazardous incidents and activities relating to environmental aspects and public relations; and
- f) Comparisons of actual and planned progress, with details of any events or circumstances which may jeopardise the completion In accordance with the Contract, and the measures being (or to be) adopted to overcome delays.

## **90 Completion Documents**

90.1 To treat that the work has been completed and issue a final payment certificate, the following documents will be deemed to form the completion documents:

- i) The Technical documents according to which the work was carried out.
- ii) The set of construction drawings showing therein the modifications and corrections made during the course of execution signed by the Engineer.
- iii) Certificates of final levels and dimensions as set out for various works.
- iv) Certificates of tests performed for various works.
- v) “As Built” Drawings.

## **91 Changes in firm's Constitution to be intimated**

The Contractor shall intimate the Engineer in writing of any change made in the constitution of the firm

## **92 Indemnities**

The Contractor shall indemnify and hold harmless the Employer, the Employer's Personnel, and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of:

- (a) Bodily injury, sickness, disease or death, of any person whatsoever arising out of or in the course of or by reason of the Contractor's design (if any), the execution and completion of the Works and the remedying of any defects, unless attributable to any negligence, willful act or breach of the Contract by the Employer, the Employer's Personnel, or any of their respective agents, and
- (b) Damage to or loss of any property, real or personal (other than the Works), to the extent that such damage or loss:
  - (i) Arises out of or in the course of or by reason of the Contractor's design (if any), the execution and completion of the Works and the remedying of any defects, and

(ii) Is attributable to any negligence, willful act or breach of the Contract by the Contractor, the Contractor's Personnel, their respective agents, or anyone directly or indirectly employed by any of them.

## **G. Salient Features of Some Major Laws Applicable To Establishments Engaged In Construction Work.**

- (a) Workmen Compensation Act 1923:- The Act provides for compensation in case of injury by accident arising out of and during the course of employment.
- (b) Payment of Gratuity Act 1972: Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years service or more on death at the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees.
- (c) Employees P.F and Miscellaneous Provision Act 1952: The Act Provides for monthly contributions by the Employer plus workers @ 12% / 8.33%. The benefits payable under the Act are:
  - (i) Pension or family pension on retirement or death, as the case may be.
  - (ii) Deposit linked insurance on the death in harness of the worker.
  - (iii) Payment of P.F accumulation on retirement/death etc.

The employees employed by the Contractor for the work of Port Authority have to be enrolled under the relevant scheme of the EPF & MP Act 1952. The Contractor shall produce documents pertaining to the same for verification to the Engineer/ his nominee. Further the Contractor has to pay the necessary monthly contributions to the said scheme in respect of the employees employed by him for the work of CoPT and shall produce necessary document to show that the monthly contribution in respect of these employees due to the said scheme are paid.

In case the contractor has not paid the EPF contribution same will be recovered in the running bill and paid to the EPF Organization. Any delay in payment of contribution payable under the Act may be recovered as an arrear of Land Revenue

- (d) Maternity Benefit Act 1951:-The Act provides for leave and some other benefits to workmen/ employees in case of confinement or miscarriage etc.
- (e) Contract Labour (Regulation & Abolition) Act 1970:-The Act provides for certain welfare measures to be provided by the Contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided, by the Principal Employer by Law. The Principal Employer is required to take Certificate of Registration and the Contractor is required to take license from the designated Officer. The Act is applicable to the establishments or Contractor of Principal Employer if they employ 20 or more contract labor.

(f) Minimum Wages Act 1948: The Employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act if the employment is a scheduled employment Construction of Buildings, Roads, Runways are scheduled employment.

(g) Payment of Wages Act 1936:-It lays down as to by what date the wages are to be paid when it will be paid and what deductions can be made from the wages of the workers.

(h) Equal Remuneration Act 1979:-The Act provides for payment of equal wages for work of equal nature to Male and Female workers and for not making discrimination against Female employees in the matters of transfers, training and promotions etc.

(i) Payment of Bonus Act 1965: The Act is applicable to all establishments employing 20 or more employees. The Act provides for payments of annual bonus subject to a minimum of as per the provision of the Act and amendment issued from time to time. The Act does not apply to certain establishments. The newly set-up establishments are exempted for five years in certain circumstances. Some of the State Governments have reduced the employment size from 20 to 10 for the purpose of applicability of this Act.

(j) Inter-State Migrant workmen's (Regulation of Employment & Conditions of Service) Act 1979: The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The Inter-State migrant workmen, in establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, travelling expenses from home upon the establishment and back,

(k) The Building and Other Construction workers (Regulation of Employment and Conditions of Service) Act 1996 and the Cess Act of 1996:-All the establishments who carry on any building or other construction work and employs 10 or more workers are covered under this Act. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be modified by the Government. The Employer of the establishment is required to provide safety measures at the Building or Construction work and other welfare measures, such as Canteens, First-Aid facilities. Ambulance, Housing accommodations for workers near the work place etc. The Employer to whom the Act applies has to obtain a registration certificate from the Registering Officer appointed by the Government.

(l) ESI Act, 1948:-

(i). As per the Govt. Notification dt. 20.7.09, Cochin Port Authority has registered under the ESI Act with ESI Corporation and provision of ESI Act, 1948 are applicable to contract/casual employees drawing wages/Salary upto Rs.15,000/- per month and working in Cochin Port Authority. Workers covered under ESI Act, are entitled for full medical

care for self and family. Besides, cash benefit in the event of sickness, maternity and employment injury. Accordingly, the contractual/casual employees drawing wages upto Rs. 15,000/-per month employed either directly by Port Authority or through contractor are covered under ESI Act, 1948. It is obligatory on the part of the employer to calculate and remit ESI contribution comprising of employers' share of 4.75% plus employees' share of 1.75% which is payable on or before 21st of the following month, to which the salary relates.

- (ii). In case the Contractor employs more than 20 employees, they should register their name with ESI scheme as per ESI Act, 1948 and obtain ESI Code. Both Employers share of 4.75% and Employees contribution of 1.75 % (recovered from employees), totally 6.5% to be paid as contribution to ESI in their Code on or before 21st of following month to which the salary relates and acknowledgment for the same shall be submitted to the Port while claiming the bill. The bill without the acknowledgement of ESI contribution will not be entertained. In case the contractor has not paid the ESI contribution same will be recovered in the running bill and paid to the ESI Corporation in contractor's code. Any delay in payment of contribution payable under the Act may be recovered as an arrear of Land Revenue.
- (iii). In case the contractor employs less than 20 employees, the list of employees' name, their father's name, identification proof, one passport photo shall be submitted to the Port Authority. The contribution of ESI amount, both Employers share of 4.75% and Employees of 1.75% (recovered from Employees salary), totally 6.5% shall be paid by the contractor in the Cochin Port Authority Code on or before 21st of the following month to which the salary relates or otherwise payment to the contractor will be withheld. If the contractor fails to comply with the above instruction, then the Principal Employer (Cochin Port Authority) will make payment to the ESI Corporation. Such amount will be deducted from any amount due to the contractor. Any delay in payment of contribution payable under the Act may be recovered as an arrear of Land Revenue.
- (iv). As per the above Government Notification
  - i) All intending tenderer at the time of tender shall disclose all necessary documents as to whether they are covered under ESI Act or not.
  - ii) in case they are covered under ESI Act, they have to furnish the details of registration.

**SECTION -II**  
**COCHIN PORT AUTHORITY**

**2. FORM OF SECURITIES (ANNEXURE A & B)**

| <b>Sl. No.</b> | <b>Annexure</b> | <b>Description</b>                                                        | <b>Page No.</b> |
|----------------|-----------------|---------------------------------------------------------------------------|-----------------|
| 1              | A               | Proforma of Bank Guarantee for Performance<br>Guarantee/ Security Deposit | 138-140         |
| 2              | B               | Proforma of Bank Guarantee for Advance                                    | 141-142         |

**PROFORMA OF BANK GUARANTEE FOR PERFORMANCE  
GUARANTEE/ SECURITY DEPOSIT**

***(To be executed on non-judicial Stamp Paper of appropriate value)***

*[The bank, as requested by the successful Tenderer, shall fill in this form in accordance with the instructions indicated]*

In consideration of the THE BOARD OF MAJOR PORT AUTHORITIES FOR COCHIN PORT AUTHORITY, a body corporate under the Major Port Authority Act, 2021 having office on Willingdon Island, Cochin - 682009 (hereinafter called "The Board" which expression shall unless excluded by or repugnant to the context or meaning thereof be deemed to include the Board of Major Port Authorities for Cochin Port, its successors and assigns) having agreed to exempt \_\_\_\_\_ (hereinafter called the "Contractor")

(Name of the Contractor/s)

from the demand under the terms and conditions of the Contract, vide \_\_\_\_\_ 's letter No. \_\_\_\_\_

(Name of the Department)

date \_\_\_\_\_ made between the Contractors and the Board for execution of \_\_\_\_\_ covered under Tender No. \_\_\_\_\_ dated \_\_\_\_\_ (hereinafter called "the said contract") for the payment of Security Deposit in cash or Lodgement of Government Promissory Loan Notes for the due fulfilment by the said Contractors of the terms and conditions of the said Contract, on production of a Bank Guarantee for Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_) only we, the (Name of the Bank and Address) \_\_\_\_\_

(hereinafter referred to as "the Bank") at the request of the Contractors do hereby undertake to pay to the Board an amount not exceeding Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_) only against any loss or damage caused to or suffered or which would be caused to or suffered by the Board by reason of any breach by the Contractors of any of the terms and conditions of the said contract.

2. We, \_\_\_\_\_, \_\_\_\_\_, do hereby

(Name of Bank)

(Name of Branch)

undertake to pay the amounts due and payable under this guarantee without any demur merely on a demand from the Board stating that the amount claimed is due by way of loss or damage caused to or which would be caused to or suffered by the Board by reason of any breach by the Contractors of any of the terms and conditions of the said contract or by reason of the Contractors failure to perform the said contract. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this guarantee shall be restricted to any amount not exceeding Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_) only.

3. We, \_\_\_\_\_ (Name of Bank and Branch) \_\_\_\_\_, undertake to pay to the

Board any money so demanded notwithstanding any dispute or disputes raised by the Contractor(s) in any suit or proceeding pending before any Court or Tribunal relating thereto our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the Contractor(s) shall have no claim against us for making such payment.

4. We, \_\_\_\_\_ (Name of Bank and Branch) further agree with the Board that the guarantee herein contained shall remain in full force and effect during the period that would be taken for performance of the said contract and that it shall continue to be enforceable till all the dues of the Board under or by virtue of the said contract have been fully paid and its claims satisfied or discharged or till the

---

(Name of the user department)

of the said certifies that the terms and conditions of the said contract have been fully and properly carried out by the said Contractors and accordingly discharge this guarantee. PROVIDED HOWEVER that the Bank shall be the request of the Board but at the cost of the Contractors, renew or extend this guarantee for such further period or periods as the Board may require from time to time.

5. We, \_\_\_\_\_ further agree with the Board

(Name of Bank and Branch)

that the Board shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said contract or to extend the time of performance by the said contract or to extend the time of performance by the said Contractors from time to time or to postpone for any time or from time to time any of the powers exercisable by the Board against the said Contractors and to forbear 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 extensions being granted to be Contractors or for any forbearance, act or omission on the part of the Board or any indulgence shown by the Board to the Contractors or by any such matter or thing

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

6. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor(s).
7. It is also hereby agreed that the Courts in *[insert city]* would have exclusive jurisdiction in respect of claims, if any, under this Guarantee.
8. We, \_\_\_\_\_ Bank lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Board in writing.
9. Notwithstanding anything contained herein :
  - a) Our liability under this Bank Guarantee shall not exceed Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only);
  - b) this Bank Guarantee shall be valid upto \_\_\_\_ \* \_\_\_\_\_; and
  - c) we are liable to pay the guarantee 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 \_\_\_\_\_ (date of expiry of Guarantee)."

Date \_\_\_\_\_ day of \_\_\_\_\_ 20

For (Name of Bank)

(Name)

Signature

\* The date will be thirty (30) days after the end of the period of Defect Liability as specified in the Contract.

**PROFORMA OF BANK GUARANTEE FOR ADVANCE**

*(To be submitted on Non-Judicial Stamp Paper of appropriate value)*

Bank Guarantee No \_\_\_\_\_ dated \_\_\_\_\_

Amount of Guarantee Rs. \_\_\_\_\_

Guarantee cover from \_\_\_\_\_ to \_\_\_\_\_

Last date of lodgment of claim

In consideration of Board of Major Port Authority for Cochin Port (hereinafter called "Port Authority") which expression shall include all their successors and assignees having agreed to pay advance of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) repayable with interest @ \_\_\_\_\_ % per annum to \_\_\_\_\_ (Name & Address of contractor) (hereinafter called the "CONTRACTOR") which expression shall include their successors and assignees for the contract for the work of \_\_\_\_\_ (Name of work) evidenced by the offer of the Contractor dated..... and accepted by the Port Authority forming the contract and the work order No..... dated,..... for the work of (name of work) issued by the Port Authority and the formal stamped agreement to be entered into between parties in the above, the said amount and interest being recoverable from the running bills of the contractor on pro-rata basis as per terms of agreement, we (Name of Bank) having our Head office at ..... (hereinafter referred to as "the Bank") do hereby undertake to pay The Cochin Port Authority an amount of Rs.....(Rupees.....only) with interest against any loss or damage caused to or would be caused to or suffered by the Port Authority by reason of any breach by the said contractor of any of the terms or conditions contained in the said agreement, making it impossible or difficult to recover the said mobilization advance of Rs.....(Rupees.....only) or part thereof or interest thereon we (Name of the Bank) do hereby undertake to pay the amounts due and payable under the guarantee without any demur, merely on demand of The Cochin Port Authority by reason of any breach by the said contractor of any of the terms and conditions contained in the said agreement or by the reason of contractor's failure to perform the said agreement. Any such demand made on the Bank shall be conclusive not only as regards to contractor's failure but also as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee will be restricted to an amount of Rs.....(Rupees..... only) with interest as per the agreement.

We, (Name of the Bank) further agree the guarantee herein contained will remain in full force and affect during the period that would be taken for the recovery of the loan and that it shall continue to be live and enforceable till all the amounts due with

interest thereon have been fully recovered and its claims satisfied or discharged or till The Cochin Port Authority certifies that the amount outstanding under the advance has been fully recovered from the contractor and accordingly discharged the guarantees. Unless a demand or claim under this guarantee is made on us in writing on or before (date of the expiry) we shall be discharged from all liability under this guarantee thereafter.

We, (Name of the Bank) further agree with the Port Authority that the Port Authority shall have the fullest liberty without or consent and without affecting in any manner or obligation hereunder to vary any of the terms and conditions regarding the recovery or repayment and we shall not relieved from our liability by reason of any such variation or extension being granted to the said contractor or any forbearance, act or omission on the part of Cochin Port Authority or any indulgence by the Port Authority to the contractor or in such matter or things whatsoever which under the law relating to sureties would but for this provision have the effect of so relieving us.

Notwithstanding anything contained herein:

- (i) Our liability under this bank guarantee shall not exceed Rs.....(Rupees.....)
- (ii) This bank guarantee shall be valid upto.....
- (iii) Our liability to make payment shall arise and we are liable to pay the guaranteed amount or any part thereof under this guarantee, only if you serve upon us a written claim or demand in terms of this guarantee on or before.....

We, (Name of the Bank) lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Port Authority in writing.

Dated this the.....day of.....(year)

For (Name of Bank)

(Signature)

## **SECTION III**

**COCHIN PORT AUTHORITY**  
**CIVIL ENGINEERING DEPARTMENT**

Tender no: **T10/T-2062/2025-C**

Tender for

**Reconstruction of Q2-Q3 berths at Mattancherry wharf of Cochin Port**

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**SECTION -III**  
**COCHIN PORT AUTHORITY**

**1. GENERAL DESCRIPTION OF WORK**

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## **SECTION -III**

### **COCHIN PORT AUTHORITY**

#### **1. GENERAL DESCRIPTION OF WORK**

##### **1. General**

Where it is mentioned in the Specifications that the Contractor shall perform certain Work or provide certain facilities, it is understood that the Contractor shall do so at his own Cost.

The materials, design and workmanship shall satisfy the relevant Indian Standard, Specification and conditions herein referred to. Where the Specifications stipulate requirement in addition to those contained in the Standard codes and Specifications, these additional requirements shall also be satisfied.

##### **2. Scope of work**

2.1 Cochin Port proposes to reconstruct Q2-Q3 berth of Mattancherry Wharf for a length of 111.0 m and 12.7 m width from southern end of Q4 berth. The work broadly consists of the following:

- (a) Dismantling a portion of existing Q2 berth
- (b) Construction of Main berth.
- (c) Construction of Approach bridge.
- (d) Providing Electrical facilities.

2.2 The Main berth is of 111 m length and 12.7 m width supported on 1200 mm dia. bored cast-in-situ piles founded at about (-) 55m CD including fixing of Rubber fenders, Cast steel bollards etc. The deck is of RCC beam and slab construction and the beams are of combination of pre-cast and cast-in-situ.

2.3 The Approach bridge is of about 29.5 m long with 12.7 m wide carriage way supported on 1000 mm dia. bored cast-in-situ piles founded at about (-)55m CD in the backwaters. The deck is of RCC beam and slab construction and the beams are of combination of pre-cast and cast-in-situ.

2.4 Dismantling a portion of Q2 berth for about 11m length including beams, slabs, piles etc.

2.5 Electrical works consists of the following

- a. SITC of 11 Mtr long GI octagonal pole made of MS steel having having necessary sections if required as per manufacturers design with suitable base plate and necessary single arm each ,min sheet steel thickness 3mm , foundation bolts, suitable for providing 200 W Flame proof light fittings - 2 Nos, as required and all related works as directed by the EIC.

- b. Supply, laying testing and commissioning of 3.5C X 50sqmm LT FR cable through cable tray, clamping along walls etc. from existing MV panel including Supply and providing End termination /Straight joint for LT cables, at substation as required.
- c. Supply, Installation, Testing and Commissioning of Street Light Panel with timer control.
- d. Earthing of the installations with pipe earthing such as light poles etc.

### **3. Site conditions**

#### **3.1 Location**

The site for the proposed work is at Mattanchery wharf of Cochin Port. General layout drawing is enclosed as drawing No.9782/01/2025. The entire work including the loading/erection works of construction equipments should be limited within the length of Q2-Q3 berth made available for reconstruction, unless otherwise approved by Engineer in charge.

#### **3.2 Reference Level**

All the levels indicated in the drawings and/or specifications are with reference to Port Chart Datum, which is at 0.582 m below Mean Sea Level. The contractor shall establish reference benchmarks at suitable spots. The maintenance of these reference benchmarks will be the responsibility of the contractor for which no payment will be made.

The tenderers shall make their own arrangements for inspecting the area and satisfying themselves regarding the water depth available in this area. However, the sounding chart in the location of the berth is enclosed for reference.

#### **3.3 Tide and Flood Levels**

The tides at Cochin are semi-diurnal with a marked daily inequality. The contractor shall carefully investigate the records of all past states of tides and flood and shall be held to have satisfied himself on all the tide and flood levels likely to prevail during the period of contract so far as it may affect the work.

The various tidal levels in the area are as indicated below for the general guidance to the tenderer.

| <u>Tide</u>                     | <u>Levels with reference to Port Chart datum (in metres)</u> |
|---------------------------------|--------------------------------------------------------------|
| Highest High Water Level        | +1.20m                                                       |
| Mean High Water Spring (MHWS) : | +0.92m                                                       |
| Mean Low Water Spring (MLWS) :  | +0.80m                                                       |

|                             |   |         |
|-----------------------------|---|---------|
| Mean Sea Level (MSL)        | : | +0.582m |
| Mean High Water Neap (MHWN) | : | +0.60m  |
| Mean Low Water Neap (MLWN)  | : | +0.30m  |
| Lowest Low Water Level      | : | +0.20m  |

### 3.4 **Current**

The maximum current expected in the inner harbour is about 0.5 metre/sec.

### 3.5 **Waves**

The work site is in the inner harbour area where generally calm conditions prevail throughout the year

### 3.6 **Wind**

Wind at Cochin is highly influenced by the land and sea breezes. Wind direction changes from North-East during morning hours to west during evening for the period of October to May. During peak of South-West monsoon, especially from June to September, predominant wind direction remains South-West both during morning and evening hours. Due to strong monsoon winds, effect of land winds is not dominant during South-West monsoon. During the non-monsoon periods, the predominant wind direction is from North East during the morning and West during the evening which shows influence of land breeze.

### 3.7 **Rainfall**

The climate is characterized by dry and wet seasons. The wet seasons starts in late May and ends in November. During this period, two monsoons pass by one after another. The major monsoon is South-West monsoon which lasts from June to September. This is followed by north-east monsoon during October and November. The average annual rainfall is about 3000mm; and the major portion is during South-West monsoon.

### 3.8 **Temperature**

Cochin experiences moderate temperatures throughout the year. The temperature varies from 22°C to 34°C. The low temperature occurs during the South West monsoon, December and January. Daytime temperature goes upto 30°C even during this period. The hot months are from March to May.

### 3.9 **Sub soil data**

Soil borings have already been carried out in the Area. The nature of subsoil is indicated in drawing No. 9782-02-2025 Dated 26/08/2025 which is for guidance only.

#### **4. Drawings**

The drawings enclosed with the tender document are to provide some idea of the job only and are preliminary and for tender purpose and are by no means complete and final and do not show the full range of the work under the scope of the contract. Work shall be carried out only on the basis of drawings marked "Issued for Construction" with addition, alteration, modifications, if any made to aforesaid drawings as required from time to time and also according to other drawings that would be supplied to the contractor from time to time

#### **5. Time Schedule and monitoring of progress**

- 5.1 Tenderer shall prepare and attach with the tender a detailed work schedule indicating key activities and critical items showing critical path of activities for completing the work within the stipulated contract period. This time schedule forms the basis for monitoring the progress of work. Issue of working drawings by the department will be regulated as per the time schedule approved by the department.
- 5.2 The contractor shall furnish to the Engineer-in-Charge weekly progress reports of the work during execution in the approved proforma indicating delay, if any, its reason and proposal to cover up the delay.

#### **6. Facilities to be provided by the Port**

##### **6.1 Contractor's work area:**

- 6.1.1 The land of about 3060 m<sup>2</sup> near to the construction location, will be made available to the contractor, free of rent for setting up site office, store, casting yard, batching plant etc., as shown in the drawing No. 9781-06-2025. The work area shall be fenced with GI / Aluminium/ Galvalume sheet for a height of 3 / 5 m as per the directions of Engineer-in-Charge without any additional payment.
- 6.1.2 Extra land if any required by the contractor may be allocated on availability of land as per license / lease norms of Cochin Port.

##### **6.2 Power**

Electric power required for the work will be supplied by the department from the nearest existing line of the Port at prevailing rates. The cost of drawing temporary lines/ cables/ providing switches and making connection and metering arrangements etc, shall be borne by the Contractor. If there is any disruption in the power supply due to supply failure/ restrictions imposed by the Kerala State Electricity Board, the department shall not be held responsible and the Contractor has to make suitable alternative arrangements at their cost

## **7. Contractor's responsibility**

- 7.1 All materials for use on the works shall be supplied and provided by the contractor at his own cost and shall conform to relevant BIS Specification unless otherwise specified.
- 7.2 Samples of all materials including fixtures, if any, to be incorporated in the work shall be got approved by the Engineer-in-Charge before procurement.
- 7.3 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.
- 7.4 All labour, skilled or unskilled shall be provided by the contractor. Settling any dispute with the labour will be contractor's responsibility.
- 7.5 The contractor shall be solely responsible for any damage or injury to the persons or things caused or suffered during the execution of the work and these shall be made good or compensated at his risk & cost.
- 7.6 The contractor shall take all care and precautionary measures for avoiding any kind of damage/accident in the work site on any account. The department shall not entertain any claim from the contractor whatsoever towards compensation for any damage/accidents at the site due to negligence from his part, during the execution of work.
- 7.7 The contractor shall prior to commencement of the work insure in the joint names of the Employer and the contractor against all loss or damage from whatever cause arising for which he is responsible under the terms of contract.
- 7.8 The work shall be arranged by the contractor without causing any damage to Port's/ any other structures. Any damage caused by the contractor's operation 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 any sum due to him from the Port.
- 7.9 All plants and equipments and consumables required for the whole work shall be provided by the contractor at his own cost.
- 7.10 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.
- 7.11 The Contractor shall be responsible for the true and proper setting out of the works in relation to original points, lines and levels of reference given by the

Engineer-in-charge 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 work any error shall appear or arrive in the position, levels, dimensions or alignment of any part of the works, the contractor on being required to do so by the Engineer-in-Charge shall, at his own cost, rectify such error to the satisfaction of the Engineer-in-Charge, unless such error is based on incorrect data supplied by the Engineer-in-Charge, in which case the expense of rectifying the same shall be borne by the department. The checking of any setting out or 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 and the contractor shall carefully protect and preserve all bench marks, pegs, other things used in setting out the work and measurement purpose.

- 7.12 The muck removed from the bore holes of piles and other debris and waste materials shall be conveyed and deposited at suitable locations by the contractor without causing environmental hazards/ problems. If required, land for dumping these material will be provided in South End Reclamation (SER) area at W/Island in between New Mattancherry bridge & W/Island-Thevara bridge and the deposited materials shall be handled properly as per the directions by the Engineer-in-Charge.
- 7.13 Qualified Engineers with sufficient experience in works of similar nature as indicated in “Contract Data” shall be available at site throughout the contract period during working hours in order to receive instructions from department and to implement them properly and in time.
- 7.14 The contractor shall take all care and precautionary measures for avoiding damage or accidents to the work from ship or other water crafts movements or other operations in the area. The department will not entertain any claim from the contractor whatsoever, towards compensation for any such damage or accident occurring during the execution of the contract.
- 7.15 The contractor shall observe all safety regulations during the execution of the work. Safety measures, precautions, warning signals etc. shall be done at the contractor's cost as directed by the Engineer-in-charge of the work. The contractor shall provide all necessary personnel protection equipments such as helmet, lifeguard, goggles, boots etc. to the workmen at his own risk and cost.
- 7.16 The work site is adjacent to the operating berth i.e.Q4 berth. The work shall be arranged by the contractor without causing any hindrance to the ship and other water craft operating in the area. No damage shall be caused to the structures in the area, water crafts operating in the area or otherwise by the contractor's operations. Any damage or accident caused by the contractor's operations shall be compensated / made good at the contractor's risk and cost.
- 7.17 The Contractor shall arrange to take colour photographs throughout the works for the purposes of recording the overall progress of the works and recording details of each aspect of the Works or as otherwise directed by the Employer. The

photographs shall be of acceptable quality and shall be taken by a professionally competent person with a digital camera having resolution in excess of 10 Megapixels and able to record the date of photographs taken in the prints. Salient activities and corresponding photography pertaining to work progress are to be attached to the corresponding monthly progress reports. Further, the Contractor shall arrange for videography (HD quality) of important events of the Works or as otherwise directed by the Employer.

- 7.18 The Contractor shall submit at his own cost monthly or at intervals as directed by the Engineer-in-Charge well executed photographs / videos at standard size (Appro. 24 x 18 cm) showing the progress of the work and also such other particular item of work. The contractor shall provide two hard copy prints of selected photographs in albums of acceptable quality. Electronic files suitable for attachment to e mails shall also be submitted. Each photograph in the album shall be suitably captioned and the electronic files appropriately named.
- 7.19 No information or photograph concerning the works shall be published without the prior permission of the Chief Engineer and drafts of all such proposal/publication shall be submitted for approval.
- 7.20 The information and data shown in the drawing and detailed elsewhere in the tender document are furnished for general information and guidance only and the Port Authority in no case will be held responsible for the strict accuracy thereof or any deduction, interpretation or conclusion drawn by the tenderer.
- 7.21 The contractor shall observe the conservancy rules relating to the Port and shall always take necessary steps to keep the Port water free of noxious or unhygienic matter due to the work, as are required by the Engineer-in-Charge. Under no circumstances, inflammable materials are allowed to spill into Port waters.
- 7.22 The Cochin Port is an International Ship & Port Facility Security (ISPS) code compliant Port and the contractor is obliged to comply with the provisions of the code in force and as amended from time to time. The site for the proposed work is a protected area and hence security rules and regulations including obtaining entry / exit passes including photo passes if any for vehicles, men and materials etc. for entering the wharf shall be observed by the contractor at his cost.
- 7.23 The contractor will have to provide an air conditioned site office accommodation measuring a minimum of **60 m<sup>2</sup>** with toilet facilities, near the contractor's work area or other location as approved by the Engineer-in-charge, for the use of departmental staff within 15 days of the work order which shall be maintained till completion of work. Arrangements for fresh water supply and power supply to the office building shall be made by the contractor. Necessary fans and lights shall be provided. .

The following minimum facilities shall be provided in the site office accommodation.

|        |                                                                        |             |
|--------|------------------------------------------------------------------------|-------------|
| (i)    | Executive Table                                                        | 1 Nos.      |
| (ii)   | Executive Chair                                                        | 2 Nos.      |
| (iii)  | Office Tables                                                          | 4 Nos.      |
| (iv)   | Office chair                                                           | 4 Nos.      |
| (v)    | Visitors chair                                                         | 8 Nos.      |
| (vi)   | Steel Almirah<br>[1980mm x 915mm x 485mm or<br>nearest available size] | 2 Nos.      |
| (vii)  | Steel Almirah<br>[1270mm x 765mm x 440mm or<br>nearest available size] | 2 Nos.      |
| (viii) | Racks – 5 Tier [1800mm x 900mm x 375mm or<br>nearest available size]   | 2 Nos.      |
| (ix)   | Ceiling Fans 1400mm size                                               | As required |
| (x)    | Personal Computer with Printer                                         | 2Nos.       |
| (xi)   | Personal Laptops                                                       | 1 No.       |

No separate payment shall be made for providing the office as said above and it shall be included in the rate quoted for the work. In case the contractor fails to hand over the furnished office within the above period and / or fails to maintain the office for the stipulated period, an amount of Rs.50,000/- per month or part thereof shall be deducted from the contractor's running bills, for the period of delay/ lapse. In case the contractor is proposed to provide Porta cabins for site office accommodation it shall be air-conditioned. On completion of the work, the office accommodation provided by the contractor shall be disposed off by the contractor.

7.24 The contractor shall provide at his own cost **1 (One)** AC Car with minimum 5 persons capacity, in excellent running condition, well maintained, not more than 2 years old, at his own cost, with driver, exclusively for the departmental staff for supervision works, throughout the contract period including extended period of contract, limiting to a maximum distance of 1500 km per month. The supply shall commence not later than 15 days from the date of commencement of work. The vehicle shall be available round the clock on all days including Sundays and holidays. In Sundays and holidays the vehicle shall be made available, only if work is arranged at site. The vehicle shall have valid registration and insurance. All consumables and stores for the safe working of the vehicle and its drivers as necessary should be provided by the contractor and nothing will be given by the Port for the running of the vehicle under this contract. The contractor shall be solely responsible for the consequences arising out of any loss or damage/accident

etc. caused to the vehicle on duty. If the contractor fails to provide vehicle as above, the department will hire the same, the actual cost of which will be deducted from the contractor's bills or an amount of Rs.5,000/- per day or part thereof shall be deducted from the contractor's running bills.

- 7.25 The contractor shall provide boat /dinghy/machuva(s) etc., at his own cost, as and when required by the departmental personnel for survey and supervision works , throughout the contract period.
- 7.26 The Contractor shall provide **5 Nos.** smart mobile phone sets (Compactable to 5G SIM) for the official use. The Contractor shall provide the smart mobile phones within 15 days from the date of commencement of work. He shall submit a guarantee for replacement of any defective set during the currency of the contract. The cost of supply of mobile phones and all its charges (voice & data charges) is included in the quoted price. If the Contractor fails to hand over the smart mobile phone in the stipulated time, an amount of Rs.2,000/- per set per month or part thereof shall be debited to the Contractor's account. If the Contractor fails to maintain the facility of smart mobile phones directed by the Engineer-in- charge at any stage of work, an amount of Rs.1,500/- per set per month or part thereof shall be debited to the Contractor. If the Contract Works are not completed within the stipulated period or within the granted extended time of completion, the smart mobile phone facility shall be maintained by the Contractor at his own cost till the completion of the work. In case of any failure by the Contractor to do so, an amount of Rs.2,000/- per month or part thereof per set shall be debited to the Contractor's account.
- 7.27 The contractor shall provide necessary arrangements as desired by the Engineer-in-Charge for inspection of work without any extra cost from commencement till completion of work.
- 7.28 The Contractor shall ensure that no labourers with criminal background are engaged for the work.
- 7.29 All fossils, coins, articles of value or antiques and structures and other remains or things of geological or archaeological interest discovered in the site of work shall be deemed to be the absolute property of the Cochin Port Authority and the contractor shall take responsible precautions to prevent his workmen or any other persons from removing or damaging any such article or thing and shall immediately upon discovery thereof and before removal, acquaint the departmental officers of such recovery and carry out at the expense of the department, the Engineer-in-Charge's orders as to the disposal of the same.
- 7.30 The contractor shall remove any plant (floating or otherwise) belonging to him or to any person employed by him which might have sunk in the course of work or otherwise deal with the same as directed by the Engineer-in-Charge and until the same is raised and removed, the contractor shall set on such buoys and display at night such lights for avoiding any mishaps.
- 7.31 ***Water required for the construction works including curing work shall be arranged by the contractor at his own cost.***

7.32 The contractor shall take all precautions for not to damage any cables/pipes etc. passing through the area of work. Damages, if any, caused to electrical cables/ water lines/ telephone lines shall be rectified by the Contractor at his cost and risk.

7.33 While carrying out hot works such as welding, cutting, chipping the concrete etc. at W/Island, the following conditions shall be strictly observed by the contractor:

- (i) Hot work shall be carried out with the approval of the Dy. Conservator, Marine Department and the work shall be done as per the instruction of the fire service personnel.
- (ii) Welding /gas cutting work shall be carried out only with the prior permission of the Marine Dept. and based on the berthing of ships.
- (iii) Suitable spark arresters shall be provided on the exhaust of the engine connected to the pile driving mechanism.
- (iv) Chipping and drilling the RCC etc. when vessel carrying inflammable material is at berth shall be done with soft metal tools only and under the directions of the Fire Personnel.

7.34 The contractor shall remove all materials brought to work site / stacked at the work site or anywhere else within the Port area and clear the site at his cost to the full satisfaction of the Engineer-in-Charge before the site is returned to the Port Authority. All such materials including debris, tools & plants etc. shall be disposed off to any place as pointed out by the Engineer-in-Charge or be taken away from the location and shall be cleared in every respect and to reinstate to its original condition at no extra cost to the Port Authority immediately after completion of the work. In case, any such material is found left in the work site or anywhere in the Port area, rent for the storage space occupied by the contractor, either for stacking the materials /debris or for areas used for such purpose but not cleared thereafter, will be recovered as per the prevailing Scale of Rate of Cochin Port Authority, for the rent applicable for open storage space for commercial purpose, for the period for which the area had been occupied by the contractor. In addition to the above, in case the Port requires the area immediately for its use, Port will repossess the land after restoring it to its original condition, material will be confiscated and disposed off at the risk and cost of the contractor, after issuing two notices giving 15 days' time each for removing the material. All expenses incurred on this shall be recovered by disposing off the material if any confiscated. If any balance amount still remains to be realized that will be recovered from the contractor by appropriate means.

7.35 **The contractor shall extend all the facilitations and cooperation for other contractors for simultaneous execution of other works in the area entrusted by Cochin Port Authority.**

7.36 The contractor shall comply with all the provisions of the Indian Workmen's Compensations Act, Provident Fund Regulations, Employees Provident Fund and ESI Act etc. amended from time to time and rules framed there under and other

laws affecting the contract labour that may be brought in to force from time to time."

- 7.37 The contractor shall be registered under EPF and ESI Act and the employees employed under them shall be covered in the EPF and ESI scheme. Work Order shall be issued only to the contractors who are registered under EPF organization and ESI Corporation. The contractors shall regularly remit the employer and employee contribution to the authorities. If not, the Department would remit the same and the amount so remitted shall be deducted from the part/final bill of contractors.
- 7.38 The contractor shall provide, at every work place, at which 20 or more women workers are ordinarily employed, crèches of reasonable size and with adequate facility for the use of their children under at the age of six years at his risk and cost.

## **8. Workmanship**

- 8.1 All the works shall be done strictly according to relevant B.I.S. specifications unless otherwise specified.
- 8.2 The whole work shall be completed in a diligent manner within the contract period and defect or imperfection if any, observed during the defect liability period/ guarantee period, shall be rectified at contractor's cost to the full satisfaction of the Engineer-in-Charge within the time allowed.
- 8.3 **The work shall be arranged in the order of preference as directed by the Engineer-in-Charge of work. In addition to above, contractor shall submit a Quality Assurance Plan ( QAP) for the entire works under this contract and it shall be approved by the Engineer-in-Charge before commencing the work and shall be ensured strict compliance of the same. The QAP shall contain the details of tests to be conducted for each material to be used in the work and work.**

## **9. Temporary works**

- 9.1 All scaffolding, staging, bracing and other temporary works required for proper execution of the works, shall be provided by the contractor at his own cost, unless stated otherwise and that should be inclusive of all materials, labour, supervision and other facilities. The layout and details of such temporary works shall have prior approval of the Engineer-in-Charge, but the contractor shall be responsible for proper strength and safety of the same. All temporary works shall be so constructed as not to interfere with any permanent work or with the work of other agencies. If it is necessary to remove any of the temporary works at any time to facilitate execution of works or work by other agencies, such removal and reerection, if required, shall be carried out by the Contractor at the direction of Engineer-in-Charge without any delay and any extra cost on this account shall be borne by the contractor.

9.2 On completion of the works, temporary works if any provided by the contractor shall be removed from the site and the area shall be reinstated to the original condition at his own risk and cost.

## **10. Time For Completion**

10.1 The time allowed for carrying out the work as mentioned in the Memorandum shall be strictly observed by the contractor. The work shall throughout the time period be proceeded with diligence, time being deemed to be the essence of the contract.

10.2 The completion of work may entail working in monsoon period/rainy season without any extra cost. The contractor shall take such an eventuality into consideration while quoting for the work. Normally, no extension of time will be admissible for work in monsoon.

10.3 The whole work shall be completed in the stipulated time, accordance with the provisions under Memorandum included under "Form of Tender" or such extended time as may be allowed under clause 29 of Conditions of Contract included in the GCC.

## **11. Working time**

The normal working time of the Port is from 8 a.m. to 4.00 p.m. on all working days. 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 and the expenditure to be incurred in this connection will be borne by the department.

## **12. Method of Execution**

The contractor shall clearly indicate in their tender as per **Annexure-6**, the method proposed by them for executing the various items of works. During the actual execution of the works if modifications or changes in the method of execution of work are found necessary the contractor shall obtain approval from the Engineer-in-charge of work for such modifications or changes in the method. No claim from the contractor for additional payment shall be entertained by the department on the above account.

The detailed list of equipment/machineries/tools & plants proposed to be mobilized for the deployment in the work as furnished as per **Annexure-7** of **Section- I** and method of execution furnished under clause above, are considered only for the technical appreciation of the proposal of the contractors and it shall not relieve the contractor of his responsibility of executing the work with the quality specified in the tender and any discrepancy occurs, the construction procedures detailed/specified in the tender will prevail. In case, any additional equipment are required to be mobilized than those listed in the tender for deployment in the work, it shall be arranged and the work executed as per the tender specifications without any extra cost to the Department

### **13. Alterations and Additions**

The Employer shall have power and authority from time to time and at all times to make amendments or additions or alterations or changes in the scope of the work, and specifications, drawings and bill of quantities and give such further instructions and directions as may appear to the Employer necessary and proper for the guidance of the Contractor and the good and efficient execution of the works and the contractor shall receive, obey and be bound by the same according to the true intent and meaning thereof as if the same had been mentioned or referred to in the scope of the work, specifications, Bill of Quantities and Schedules and drawings. The Employer may also vary or alter the lines, levels or positions of any of the works contemplated or may order any of the works contemplated thereby to be omitted, with or without the substitution of any other works in lieu thereof, or may order any work or any portion of works executed or partially executed to be removed, changed or altered, if required, and may order that other work shall be substituted in lieu thereof and any difference in the cost occasioned by any such diminution or alteration so ordered and directed shall be added to or deducted from the Contract Price based on rates available in the contract or where the rates are not specified a suitable rate backed up by rate analysis shall be submitted by the contractor and agreed upon between the contractor and the Employer. In the event of disagreement, the Employer shall fix such rates or prices as shall in their opinion, be reasonable and proper having regard to the circumstances. The contractor shall give to the Employer before the tenth day of every month, a statement in writing of any extra work which he may have performed during the preceding month, failing which any claim for which he may afterwards make for payment on account of any such extra work will not be allowed.

**SECTION -III**  
**COCHIN PORT AUTHORITY**

**2. SPECIAL CONDITIONS OF CONTRACT**

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## **SECTION -III**

### **COCHIN PORT AUTHORITY**

#### **2. SPECIAL CONDITIONS OF CONTRACT**

##### **1. GENERAL**

Special Conditions shall be read in conjunction with the General Conditions of Contract, Specifications, Drawings and any other document forming part of this Contract wherever the context so requires.

Notwithstanding the Sub-division of the documents into these separate section and volume every part of each shall be deemed to be supplementary to and complementary of every other part and shall be read with and into the Contract so far as it may be practicable to do so.

Where any portion of the General Conditions of Contract is repugnant to or at variance with any provision of the Special Conditions, the provisions of the Special Conditions shall be deemed to over-ride the provisions of the General Conditions of Contract and shall to the extent of such repugnancy of variations, prevail.

##### **2. RATES FOR VARIOUS ITEMS**

- 2.1 The percentage as applicable shall except in so far as the contract otherwise provides, cover all obligations of the contractor under this contract and all matters and things necessary for the proper completion and maintenance of the works. The percentage quoted for the work shall be all inclusive value of the finished work as per drawings and specifications and shall cover the cost of all constructional plants, temporary works, appliances, materials, both for the works and temporary works, labour and all other matter in connection with each item quoted for and shall be in multiples of ten paise.
- 2.2 The contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and of the rates and prices stated in the Schedule of Quantities.
- 2.3 The contractor's rates and prices shall include all taxes, duties and fees including Port charges like wharfage, Port dues, berth hire, pilotage etc. if any applicable, all charges and taxes whatsoever excluding Goods and Service Tax (GST) in respect of materials, labour and plant and all other things obtained or used by the contractor for the execution and maintenance of the works or any temporary works.

### **3. WORKS EXECUTED THROUGH SUBLETTING**

- 3.1 The contractor may sublet any portion of the contract, as per clause 8 of Conditions of Contract of GCC.
- 3.2 Notwithstanding any subletting with such approval as required under above and notwithstanding that the Engineer-in-Charge shall have received copies of any sub-contract, the contractor shall be solely responsible for the quality and proper execution of the works, performance of all conditions of contract in all respects as if such subletting had not taken place and as if such work has been done directly by the contractor.
- 3.3 If any sub-contractor engaged upon the works at the site executes, any work which, in the opinion of the Engineer-in-Charge, is not in accordance with the contract condition, written notice may be given to the contractor requesting him to terminate such sub contract and the contractor upon receipt of such notice shall terminate such sub contract and the said sub contractor shall forthwith leave the works, failing which the department shall have right to remove such sub contractors from site. No action taken by the department under this clause shall relieve the contractor of any of his liabilities under the contract or give rise to any compensation, extension of time or otherwise.

### **4. MEASUREMENTS OF WORK DONE**

- 4.1 In addition to the Clause-26 of GCC- 'Computerized Measurement Book', measurement of the work can also be done as detailed below
- 4.2 Executive Engineer (hereinafter called the Engineer's Nominee) shall, except as otherwise provided, ascertain and determine by measurement the value in accordance with the Contract of work done.
- 4.3 All measurement of all items having financial value shall be entered in Measurement Book and/or level field book so that a complete record is obtained of all works performed under the Contract.
- 4.4 All measurements and levels shall be taken jointly by the Engineer's Nominee or his authorized representative and by the Contractor or his authorized representative from time to time during the progress of the work and such measurements shall be signed and dated by the Engineer's Nominee and the Contractor or their representatives in token of their acceptance. If the Contractor objects to any of the measurements recorded, a note shall be made to that effect with reason and signed by both the parties.
- 4.5 Department shall not entertain any claim from Contractor for any loss or damages on this account. If the Contractor or his authorized representative does not remain present at the time of such measurements after the Contractor or his authorized representative has been given a notice in writing three (3) days in advance or fails to countersign or to record objection within a week from the date of the measurement, then such measurements recorded in his absence by the Engineer's Nominee or his representative shall be deemed to be accepted by the Contractor.

- 4.6 The Contractor shall, without extra charge, provide all assistance with every appliance, labour and other things necessary for measurements and recording levels.
- 4.7 Except where any general or detailed description of the work expressly shows to the contrary, measurements shall be taken in accordance with the procedure set forth in the specifications notwithstanding any provision in the relevant Standard Method of measurement or any general or local custom. In the case of items which are not covered by specifications, measurements shall be taken in accordance with the relevant standard method of measurement issued by the Bureau of Indian Standards and if for any item no such standard is available then a mutually agreed method shall be followed.
- 4.8 The Contractor shall give not less than seven days' notice to the Engineer's Nominee or his authorized representative in charge of the work before covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured and correct dimensions thereof be taken before the same is covered up or placed beyond the reach of measurement and shall not cover up and place beyond reach of measurement any work without consent in writing of the Engineer's Nominee or his authorized representative in charge of the work who shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of measurements without such notice having been given or the Engineer's Nominee's consent being obtained in writing the same shall be uncovered at the Contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.
- 4.9 Engineer's Nominee or his authorized representative may cause either themselves or through another officer of the department to check the measurements recorded jointly or otherwise as aforesaid and all provisions stipulated herein above shall be applicable to such checking of measurements or levels.
- 4.10 It is also a term of this Contract that recording of measurements of any item of work in the measurement book and/or its payment in the interim, on account or final bill shall not be considered as conclusive evidence as to the sufficiency of any work or material to which it relates nor shall it relieve the Contractor from liabilities from any over measurement or defects noticed till completion of the defects liability period.

## **5. LIQUIDATED DAMAGES**

For levying compensation as per Clause-49 of General Conditions of Contract, the employer is not required to have documentary evidence to quantify or prove the losses suffered by the Employer due to delay in completion of work by the contractor, as per agreement conditions.

## **6. ADVANCE**

The Mobilization Advance and Construction/Installation equipment Advance shall be as per clause 51 of General Conditions of Contract. Secured Advance shall be

given for non - perishable materials as provided in clause 51.6 of General Conditions of Contract. Cement is not considered as a non - perishable item. However, sand will be considered for payment of secured advance.

## **7. CARE OF WORKS**

From the commencement to the completion of the work the contractor shall take full responsibility for the care of the work and his employees in connection with the work thereof and in case any damage, loss or injury shall happen to the works or any part thereof or to any temporary work from any cause whatsoever (save and except the excepted risks as defined in clause 8 given below shall at his own cost repair and make good the same so that the work shall be completed in good order and in conformity in every respect with requirement of the contract. In the event of any such damage, loss or injury happening from any of the excepted risks, the Contractor shall if and to the extent required by the Engineer-in-Charge, make good the same as aforesaid and it will be to the account of the Board.

## **8. EXCEPTED RISKS**

The excepted risks are riot (in so far as it is uninsurable) war, invasion, act of foreign enemies, hostilities (whether war be declared or not), civil war, rebellion, revolution, insurrection or military usurped power or a cause solely due to use of occupation by the Board of any portion of the work, any operation of the forces of nature that the contractor could not have foreseen or reasonably provided against. (All of such are herein collectively referred to as the excepted risks).

## **9. PAYMENTS OF SALARY / WAGES AND OTHER BENEFITS etc. TO CONTRACT / CASUAL WORKERS**

- 9.1 **The Contractors shall make all payments of salary/wages and other benefits etc. to the contract / casual workers deployed for the work through Bank / Cheque only.**
- 9.2 **All the payments to the contractors would be released only on submission of undertaking to comply with the clause 9.1 above.**

## **10. MODIFICATIONS TO GCC**

**The following clauses of General Conditions of Contract (GCC) shall be replaced and modified as below.**

### **1. DEFINITIONS**

(Following Definitions shall be replaced as)

The **Completion Date** is the date of completion of the Works as certified by the Engineer or his nominee in accordance with Sub Clause **56.1** of GCC.

**Market Rate** is the rate as decided by the Engineer on the basis of the cost of materials and labour at the site where the work is to be executed plus **15%** to cover

all overheads and profits.

## **25. SETTLEMENT OF DISPUTES AND ARBITRATION**

(Clauses 25 shall be replaced as)

### **DISPUTE RESOLUTION**

25.1. The Parties agree to use their best efforts for amicably resolving all Disputes arising under or in respect of this Agreement by mutual discussions.

25.2. Except where otherwise provided in the contract all questions and disputes relating to the meaning of the specifications, design, drawings and instructions here-in before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the works or the execution or failure to execute the same whether arising during the progress of the work or after the cancellation, termination, completion or abandonment thereof shall be dealt with as mentioned hereinafter:-

- (i) If the Contractor considers any work demanded of him to be outside the requirements of the contract, or disputes any drawings, record or decision given in writing by the Engineer-in-charge on any matter in connection with or arising out of the contract or carrying out of the work, to be unacceptable, he shall promptly within 15 days request the Engineer in writing for written instruction or decision. Thereupon, the Engineer shall give his written instructions or decision within 30 days of receipt of the Contractor's letter.
- (ii) If the Engineer fails to give his instructions or decision in writing within the aforesaid period or if the Contractor is dissatisfied with the instructions or decision of the Engineer, the Contractor may, within 15 days of the receipt of Engineer's decision, appeal to the Chairperson who shall afford an opportunity to the Contractor to be heard, if the latter so desires, and to offer evidence in support of his appeal. The Chairperson shall give his decision within 30 days of receipt of Contractor's appeal.
- (iii) If the Contractor is dissatisfied with this decision, the Contractor shall within a period of 30 days from receipt of the said decision, shall take further action in accordance with the conciliation procedure set forth in Clause 25.3.

#### **25.3. Conciliation**

In the event of any dispute or differences between the parties which could not be resolved amicably, the Chairperson of Cochin Port Authority may refer such unresolved disputes or differences to a Conciliation Committee comprising of independent subject experts, set up by the Port Authority to enable speedy disposal of pending / new cases. The conciliation proceedings shall be subject to guidelines in this regard, issued by the Port Authority from time to time. Recourse to such Conciliation shall also be open before, during or after the arbitration or litigation

proceedings. The award of the Conciliation Committee, if agreed by both the Parties, shall then be placed for consideration of the Board of the Port Authority subject to the Delegation of Powers.

#### 25.4. Arbitration

- (i) Any disputes of a total value less than Rs. 10 crores shall be resolved through arbitration by a Sole Arbitrator appointed by mutual consent of the parties.
- (ii) Either party shall within a period of 30 days from the date of termination of conciliation proceedings, give notice to other party for appointment of arbitrator.
- (iii) If the arbitrator so appointed is unable or unwilling to act or resigns his appointment or vacates his office due to any reason whatsoever another sole arbitrator shall be appointed jointly by both parties. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor.
- (iv) It is a term of this contract that the party invoking arbitration shall give a list of disputes with amounts claimed in respect of each such dispute along with the notice for appointment of arbitrator and giving reference to the rejection by the Chairperson of the appeal.
- (v) It is also a term of this contract that if the Contractor does not make any demand for appointment of arbitrator in respect of any claims in writing as aforesaid within 120 days of receiving the intimation from the Engineer that the final bill is ready for payment, any claim of the Contractor shall be deemed to have been abandoned and absolutely barred and the Employer or his authorized representative shall be discharged and released of all liabilities under the contract in respect of these claims.
- (vi) The arbitration shall be conducted in accordance with the provisions of the Arbitration and Conciliation Act, 1996 (26 of 1996) or any statutory modifications or reenactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceeding under this clause.
- (vii) It is also a term of this contract that the Arbitrator / Arbitral Tribunal shall adjudicate only on such disputes as are referred to him and give separate award against each dispute and claim referred to.
- (viii) It is also a term of the contract that if any fees are payable to the arbitrator the same shall be paid equally by both the parties.
- (ix) It is also a term of the contract that the arbitrator shall be deemed to have entered on the reference on the date he / they issues notice to both the parties calling them to submit their statement of claims and counter statement of claims.
- (x) The seat and venue of the arbitration shall be at Cochin.
- (xi) The fees, if any, of the arbitrator shall, if required to be paid before the award is made and published, be paid half and half by each of the parties. The cost of the reference and of the award (including the fees, if any, of the arbitrator) shall be in the discretion of the arbitrator who may direct to any party by whom and in what manner, such costs or any part thereof shall be paid.

## 25.5. Litigation

- (i) Any disputes of total value above Rs. 10 crores not covered in the aforesaid arbitration clause shall be adjudicated by the courts.
- (ii) Only Courts in Cochin alone shall have jurisdiction to adjudicate any disputes between the parties.

## 25.6. Administrative Mechanism for Resolution of CPSEs Disputes (AMRCD)

Notwithstanding anything contained above, in the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contracts between Central Public Sector Enterprises (CPSEs/ Port Authorities inter se and also between CPSEs and Government Departments/ Organizations, such dispute or difference shall be taken up by either party for resolution through AMRCD as mentioned in DPE OM No. 4(1)/2013-DPE(GM)/FTS-1835 dated 22/05/2018.

## 26. COMPUTERIZED MEASUREMENT BOOK

(6<sup>th</sup> para shall be replaced as)

The Contractor shall also submit to the department separately his computerized Abstract of Cost and the bill based on these measurements, duly bound, and its pages machine numbered along with **three** spare copies of the bill. Thereafter, this bill will be processed by the Division Office and allotted a number as per the computerized record in the same way as done for the measurement book meant for measurements

## 40. PAYMENTS FOR VARIATIONS

(Clauses 40.2 and 40.3 shall be replaced as)

40.2 For items not existing in the Bill of Quantities or substitution to items in the Bill of Quantities, rate payable should be determined by methods given below and in the order given below:

- i) Rates and prices derived from the rate of similar items in Contract.
- ii) Rates and prices in the Schedule of Rates applicable to the Contract plus Ruling percentage.
- iii) Market rates of materials and labor, hire charges of plant and machinery used, plus **15%** for overheads and profits of Contractor.

40.3 For items in the Bill of Quantities but where quantities have increased beyond the variation limits, the rate payable for quantity in excess of the quantity in the Bill of Quantity plus the permissible variation shall be as determined by methods given below:

- i) Rates and prices in the Schedule of Rates applicable to the Contract plus

Ruling percentage.

ii) Market rates of mater **15%** for overheads and profits of Contractor.

whichever is lower, but not less than the rate in the Bill of Quantities

### **43. PAYMENTS**

(Clause 43.1 shall be replaced as)

43.1 Bills shall be prepared and submitted by the Contractor. Joint measurements shall be taken continuously and need not be connected with billing stage. System of 4 copies of measurements, one each for Contractor, Employer and Engineer or his nominee, and signed by both Contractor and Engineer or his nominee shall be followed. ***Payment for Electrical/ Mechanical works shall be certified by the respective nominees from the concerned departments.***

### **44. COMPENSATION EVENTS**

**44.1 (c) to (e) - Deleted.**

### **45. RATES FOR ITEMS TO BE INCLUSIVE OF TAXES**

45.1 The rate quoted by the Contractor shall be inclusive of the cost of provision of plant and equipment, materials, labour, execution, supervision, maintenance, overheads and profits and every incidental and contingent cost and charges whatsoever excluding Goods and Service Tax (GST). GST as may be applicable from time to time shall be shown separately in the invoice. The Employer will perform such duties in regard to the deduction of such taxes at sources as per applicable law. Any new Taxes, levies, duties imposed after signing the Contract shall be reimbursed by the Employer on production of documentary evidence.

45.2 The invoice to be submitted by the Contractor should include the GST Registration Number of the Contractor as well as the Employer.

### **48. RETENTION**

(Clause **48.2** shall be replaced as).

48.2 Retention Money shall be deducted at 5% of the gross amount of the bill from the first Running Account bill onwards till the recovered sum amounts to 5% of the contract value or the value of the work done whichever is higher. Retention money shall be refunded to the Contractor within 14 days from the date of payment of final bill.

### **48 & 52 RETENTION MONEY AND SECURITY DEPOSIT**

The Clauses 48 and 52 of the General Conditions of Contract related to the Retention Money and Security Deposit, stands modified to the extent detailed below:

- (i) In all cases, the Performance Guarantee retained till end of Defect Liability Period shall be 5 % of the Contract Value or Cost of Work Done, whichever is higher.
- (ii) Wherever the cost of work done exceeds the contract value, the total amount retained as Security deposit, considering the Performance Guarantee initially submitted together with the Retention Money recovered from the running accounts bills, shall amount to 10 % of the Cost of Work Done, at all times.
- (iii) In such cases, while releasing the retention money after payment of Final Bill as per the contract conditions, care shall be taken that only 5 % of the Cost of Work Done is released, instead of the entire retention money recovered from the bills. The balance amount shall be retained to make up for the shortage in the Performance Guarantee and shall be released along with the Performance Guarantee, upon completion of the Defects Liability Period.

## **51. ADVANCE PAYMENT**

(Clauses 51.3 shall be replaced as)

51.3 Mobilization Advance and Construction Equipment Advance shall be paid at **SBI PLR + 2%** interest rate and against Bank Guarantee for Mobilization Advance and against hypothecation of Construction Equipment to the Employer.

## **52. SECURITIES**

(Clauses 52.2 shall be replaced as)

52.2 Performance Security shall 5% of the Contract value.

## **67. INSURANCE OF WORKS**

67.1 Without limiting his obligations and responsibilities, under Clause 67 hereof, the Contractor shall prior to commencement of the works insure in the joint names of the Employer and the Contractor against all loss or damage from whatever cause arising, other than the expected risks for which he is responsible under the terms of the Contract and in such manner that the Employer and Contractor are covered for the period stipulated in Clause 10 Hereof and are also covered during the period of maintenance and for any loss or damage occasioned by the contractor in the clause of any operations carried out by him for the purpose of complying with his obligations under Clause 36 of Conditions of Contract of GCC.

67.2 The insurance cover shall be for;

- a) The works for the time being executed to the estimated current contract value thereof plus 10 (ten) percent thereon to allow for any additional costs and professional fee resulting from the loss or damage.
- b) The constructional plant and other things brought on to the site by the Contractor to the replacement value of such constructional plant and other things.

- c) Compensation to be payable to currencies needed to cover the loss or damage incurred.

67.3 It shall be the responsibility of the Contractor to notify the insurer of any change in the nature and extent of the works and to ensure the adequacy of the insurance cover at all times in accordance with the provisions of this clause.

## **82. TAXES AND DUTIES**

**82.1 - Deleted**

**82.2 - Deleted**

**82.3 - Income Tax**

The Contractor and his staff shall be responsible for payment of all personal income taxes to the concerned authorities as per the law in force from time to time. Deduction of Income Tax shall be made by the Employer from each certificate of payment to the Contractor made as per prevailing rates. TDS under GST law shall also be deducted as per prevailing rates.

82.4 The Contractor shall comply all the GST Regulations viz. timely uploading of bills, issue of debit/ credit notes etc.

## **G. Salient Features of Some Major Laws Applicable To Establishments Engaged In Construction Work.**

(Clauses [d] & [l(i)] shall be replaced as)

(d) Maternity Benefit Act 1961 or Maternity Benefit Amendment Act 2017:- The Acts provides for leave and some other benefits to workmen/ employees in case of confinement or miscarriage etc.

(l) ESI Act, 1948:-

(i) As per the Govt. Notification dt. 20/07/2009, Cochin Port Authority has registered under the ESI Act with ESI Corporation and provision of ESI Act, 1948 are applicable to contract/casual employees drawing wages/Salary upto **Rs.20,000/-** per month and working in Cochin Port Authority. Workers covered under ESI Act, are entitled for full medical care for self and family. Besides, cash benefit in the event of sickness, maternity and employment injury. Accordingly, the contractual/casual employees drawing wages upto **Rs.20,000/-** per month employed either directly by Port Authority or through contractor are covered under ESI Act, 1948. It is obligatory on the part of the employer to calculate and remit ESI contribution comprising of employers' share of 4.75% plus employees' share of 1.75% which is payable on or before 21st of the following month, to which the salary relates.

## **11 SPECIAL CONDITIONS FOR ELECTRICAL WORKS**

- 11.1 All current carrying components in all installation shall be of appropriate rating of voltage and frequency as required at respective areas.
- 11.2 All equipments to be supplied and works to be executed shall conform to the CEA standards including protection and metering accessories. No extra amount will be paid in this regard.
- 11.3 All testing and calibration etc are to be carried out as per requirement of statutory authority concerned.
- 11.4 On completion of work the contractor has to obtain necessary safety/energisation certificate from statutory agency concerned, by submitting necessary completion statement/ drawing, equipment details etc. before energisation.
- 11.5 All costs incurred in obtaining such approval/certificate are to be borne by the contractor. Statutory fees paid shall be reimbursed on presentation of document.

## **11.6 PROJECT MANAGEMENT & SITE SUPERVISION**

In case the contractor intends to subcontract the electrical works, the subcontractor who will be employed shall be a class A contractor / EHT contractor issued by state electrical inspectorate/ central electricity authority. The contractor shall submit all the required credentials of the subcontractor to the employer for approval of the appointment of subcontractor.

### **11.6.1 Testing and commissioning**

The scope includes testing and commissioning of all equipment, sub-systems and systems of the project and putting them into successful commercial operation. The scope shall include but not limited to the requirements given elsewhere in the specification. The Contractor shall be responsible to provide all necessary testing and commissioning personal, tools and plant, test equipment, etc.

The Contractor shall identify all interface issues with Employer and other agencies, and shall be responsible for each interfacing, coordination and exchange of all necessary information.

The Contractor shall submit to the Employer all drawings for review. He shall list out the detailed requirements of interface between Contractor's work and the material and services to be supplied by Employer.

The interpretation of the Employer in respect of the scope, details and services to be performed by the Contractor shall be binding, unless specifically clarified otherwise by the Employer in writing before the award of the contract.

The drawings (enclosed), forming a part of the specification shall supplement the requirements specified herein. These are preliminary/ tentative drawings for bidding purpose only and are subject to changes that may be necessary during detailed engineering after award keeping the basic parameters as specified.

Failure of any equipment to meet the specified requirements of tests carried out at works or at site shall be sufficient cause for rejection of the equipment. Rejection of any equipment will not be held as a valid reason for delay in the completion of the works as per schedule. Contractor shall be responsible for removing all deficiencies and supplying the equipment that meet the requirement after furnishing

of necessary fresh type test report, as per relevant ISS Standard from NABL Accredited Laboratory.

### **11.7 COMPLIANCE OF ELECTRICITY ACT, REGULATIONS, ETC.**

Contractor is required to follow statutory regulations stipulated in Electricity Act 2003, Indian telegraph act 1889, Electricity (Supply) Act 1948, Indian Electricity Rules 1956, CEA (Regulation relating to safety of electrical installation ) regulation 2010, with all amendments till date and other local rules and regulation referred in this specifications.

The Contractor shall comply with all the statutory rules and regulations prevailing in the state of Kerala including those related to safety of equipment and human beings.

The successful Contractor (individual) or any of the partner of joint venture who has qualified, should obtain "A" class electrical license from Electrical inspectorate of Govt. of Kerala/GoI/ any other state/ Union territory etc, before award of contract and to be kept valid till such time all the erected work as per scope of the award is taken over by the Employer.

The Contractor shall do complete coordination with all local and statutory agencies for execution of complete works including obtaining clearance for energizing of the HT system upon completion of entire works.

The Contractor shall obtain approvals & clearances and right of way from all agencies involved. All cable routes shall generally be routed through public land/ along the road.

The Contractor shall be responsible for transportation to site all the materials to be provided by the Contractor as well as proper storage and preservation of the same at his own cost, till such time the erected installation is taken over by the Employer.

### **11.8 METHODOLOGY OF PROCUREMENT**

All equipments/material shall be sourced from reputed manufacturers only. All equipment/ material offered shall be of reputed manufacturers only as per the list of approved make mentioned in the tender document and who have designed, manufactured, completely tested for relevant Indian Standards and supplied the equipment/ material to various State Electricity Boards or other reputed utilities which are in trouble free services at least two different locations for a period of more than two (2) years as on the date of bid opening.

### **11.9 QUALITY ASSURANCE, INSPECTION AND TESTS**

The Contractor shall offer proven and type tested equipment for the project. The type test Certificates shall be complete as per the relevant I.S., carried out by NABL, CPRI or any other statutory bodies responsible for testing of equipment and it shall not be older than 5 years.

If required, Sub-vender's credentials, copies of valid BIS license, past supply & performance certificates as per requirement will also be required for sub-vender's approval, if not already approved for a specific item.

In case during post award detail engineering stage, if any equipment is found to be not type tested or partially type tested, as per I.S., the Contractor shall carry out

complete type test for the items at his own cost.

The Contractor shall arrange all type, routine and acceptance tests at manufacturer's works as per approved Material Quality Programme with CoPA's officer. Any expenditure in connection with deputing the representative to the manufacturer's work site will be borne by CPT. The Contractor shall arrange the inspection program in consultation with engineer-in-charge to give sufficient advance intimation of the manufacturing and testing schedules to facilitate timely inspection of the equipments by CoPA. Fake inspection call will attract penalty as per the discretion of the employer.

The Contractor shall provide one set of tests reports to Employer on successful completion of the tests.

**SIGNATURE OF TENDERER**

## **SECTION IV**

**COCHIN PORT AUTHORITY**  
**CIVIL ENGINEERING DEPARTMENT**

Tender no: T10/T2062/2025-C

Tender for

**Reconstruction of Q2-Q3 berths at Mattancherry wharf of Cochin Port.**

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**SECTION - IV**  
**COCHIN PORT AUTHORITY**

**1. TECHNICAL SPECIFICATIONS**

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**SECTION -IV**  
**COCHIN PORT AUTHORITY**

**1. TECHNICAL SPECIFICATIONS**

**1. TECHNICAL SPECIFICATIONS FOR CIVIL WORKS**

**1.1. DETAILED SPECIFICATIONS FOR MATERIALS TO BE USED  
CIVIL WORKS**

**1.1.1. GENERAL**

- 1.1.1.1. Except where otherwise specified or authorized by the Engineer-in-Charge, materials supplied by the contractor shall conform to the latest edition of code of practices published by the Bureau of Indian Standard. Samples of materials to be supplied by the contractor shall be shown to the Engineer-in-Charge sufficiently in advance for approval of its quality for use on the work.
- 1.1.1.2. All the materials to be used on the works shall have BIS certification mark if so available, unless otherwise specified elsewhere or shall be of approved brand with equivalent material as approved by the Engineer-in-Charge.
- 1.1.1.3. All materials supplied shall be stored appropriately to prevent deterioration/ damage from any cause what so ever and to the entire satisfaction of the Engineer-in Charge.
- 1.1.1.4. The materials required for the work shall be brought to the site and stacked at places shown by the Engineer-in-Charge and the same shall be got approved for use in work sufficiently in advance so that the progress of the work is not affected by the supply of materials.
- 1.1.1.5. Tolls are payable by the contractor as per rules for vehicles using the Port's road for supplying the materials.

**1.1.2. AGGREGATES FOR CONCRETE**

- 1.1.2.1. Aggregates (fine and coarse) for concrete shall comply with the requirements of IS: 383 – 'Specifications for coarse and fine aggregate from natural sources for concrete'. Aggregate shall be obtained from sources approved by the Engineer-in-Charge. Aggregates, which are not perfectly clean, shall be washed in clean water to the entire satisfaction of the Engineer-in-Charge.
- 1.1.2.2. The fine aggregate shall be clean, hard, durable, uncoated, dry and free from injurious, soft or flaky pieces and organic or other deleterious substances.

1.1.2.3. Each type of aggregate shall be stored separately for the approval of Engineer-in-Charge. Wet aggregate delivered at the site shall be kept in storage for at least 24 hours to ensure adequate drainage before being used for concreting.

1.1.2.4. Contractor shall maintain at site at all times such quantities of each type of aggregate as are considered by the Engineer-in-Charge to be sufficient to ensure continuity of work.

### **1.1.3. CEMENT**

1.1.3.1. Quality of cement used for the work shall be 43 grade ordinary Portland cement conforming to IS:8112 or 53 grade ordinary Portland cement conforming to IS:12269 or Pozzolana cement conforming to I.S. 1489 unless otherwise approved by the Engineer-in-Charge.

1.1.3.2. The cement required for the work will have to be procured by the contractor and shall comply with the relevant IS. As far as possible, the cement required for the work will have to be procured from the government agencies. The cement shall, if required by the Chief Engineer / Engineer-in-Charge, be tested and analyzed by an independent analyst at the Contractor's cost and result produced to the Engineer-in-Charge.

1.1.3.3. Supply of cement shall be taken in 50kg bags bearing manufacture's name and BIS marking. Samples of cement arranged by the contractor shall be taken by the Engineer-in-Charge and got tested in accordance with provisions of relevant BIS codes. In case, test results indicate that the cement arranged by the Contractor does not conform to the relevant BIS codes, the same shall stand rejected and shall be removed from the site by the contractor at his own cost within a week's time of written order from the Engineer-in-Charge to do so.

1.1.3.4. A cement godown of adequate capacity as directed by the Engineer-in-Charge shall be constructed by the contractors at the site of the work for which no extra payment shall be made. Double lock provision shall be made to the door of the cement godown. The key of one lock shall remain with the Engineer-in-Charge or his authorized representative and the key of the other lock shall remain with the contractor. The contractor shall be responsible for the watch and ward and safety of the cement godown. The contractor shall facilitate the inspection of the cement godown by the Engineer-in-Charge.

1.1.3.5. The cement brought to the site and cement remaining unused after completion of work shall not be removed from the site without written permission from /of the Engineer-in-Charge.

1.1.3.6. The cement shall be stored in a weather proof building with facilities for inspection.

1.1.3.7. The contractor shall maintain a cement register showing dates of receipt and issue, quantities used daily and balance which shall be accessible to the Engineer-in-Charge.

1.1.3.8. For cement stored in silo, clauses 1.1.3.3 and 1.1.3.4 are not applicable.

#### **1.1.4. STEEL REINFORCEMENT**

1.1.4.1. Reinforcement bars for concrete shall be CRS round steel bars of the following types:

- High strength deformed steel TMT bars (Fe500D) conforming to IS: 1786-2008 for Concrete Reinforcement.
- For steel less than 10mm dia. High yield strength deformed steel TMT bars (Fe415D) conforming to IS: 1786-2008 for Concrete Reinforcement.
- Reinforcement fabrics conforming to IS: 1566-1982 "Hard Drawn Steel Wire Fabric for Concrete Reinforcement"

1.1.4.2. All reinforcement bars shall be of uniform cross sectional area and be free from loose mill scales, dust, loose rust, coats of paint, oil or other coatings which may destroy or reduce the bond. The reinforcement bars shall be product of reputed companies. Steel shall be procured only from primary steel producers / Integrated Steel Plants from TATA/SAIL/RINL/JSW/ JSPL or SHYAM STEEL using iron ore as the basic raw material and having in-house iron making facilities followed by production of liquid steel and crude steel with in-house rolling, adopting BF-BOF route or DRI-EAF technology as per Ministry of Steel guidelines.

1.1.4.3. No Re-rolled material/secondary steel will be accepted or allowed for any structural works. Every lot of supply shall require to be accompanied by manufacturer's test certificate for establishing correlation with TMT/CRS bars supplied. Every lot shall be tested in the independent laboratory to assess whether the properties are conforming to IS: 1786-2008 as directed by the Engineer-in-charge.

1.1.4.4. a) Testing

The Contractor shall furnish a copy of the manufacturer's test certificate for each consignment of reinforcement bars brought to site and conduct necessary tests as per IS Codes and the results furnished to the Engineer/ Engineer's Representative. In case the strength requirements are not met with, the Engineer / Engineer's Representative shall take appropriate action. All tests shall be done as per relevant clauses of IS: 1786-2008, IS: 1566-1982, IS: 280-2006, IS: 2062-2011, IS: 1161-2014, IS: 1367, IS: 3063-1994, IS: 1239 (Part 1 and 2)- 2004 and 1992 and IS: 1367-1980.

b) Tests after Delivery

The Engineer / Engineer's Representative may order any additional tests on the structural / reinforcement steel brought by the contractor. The cost of such tests shall be included in the rates and prices. The Engineer / Engineer's Representative may accept / reject the same based on test results.

1.1.4.5. The steel reinforcement shall be brought to the site in bulk supply of 10 tonnes or more or as decided by the Engineer-in-Charge.

- 1.1.4.6. 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. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.
- 1.1.4.7. The contractor shall supply free of charge the steel required for testing. The cost of tests shall be borne by the Contractor.
- 1.1.4.8. Steel brought to site and steel remaining unused shall not be removed from site without the written permission of the Engineer-in-Charge.

### **1.1.5. BINDING WIRE**

Binding wire for reinforcement shall be annealed steel wires 20 BWG conforming to IS: 280 - 2006 "Specification for Mild Steel Wire".

### **1.1.6. WATER**

- 1.1.6.1. Clean fresh water free from oils, acids, alkalies, salt, sugar, organic materials or other harmful materials shall be used for washing aggregates, mixing and curing of concrete. The water used shall comply with clause 5.4 of IS:456-2000. Potable water is generally considered good for mixing concrete.
- 1.1.6.2. **Cochin Port Authority will not provide/ supply water for the work.** Water has to be arranged by the contractor himself for the construction works including curing work at his own risk and cost.
- 1.1.6.3. Samples of water arranged by the contractor shall be taken by the Engineer in Charge and got tested in accordance with the provisions of relevant BIS codes. In case test results indicate that the water arranged by the contractor does not conform to the relevant BIS codes, the same shall not be used for any works. The cost of tests shall be borne by the contractor.

### **1.1.7. ADMIXTURES IN CONCRETE**

- 1.1.7.1. Admixture in concrete will be allowed only with prior approval of the Engineer-in-Charge. The contractor shall produce test certificates from recognized laboratories before use, if so desired by the Engineer-in-Charge.
- 1.1.7.2. Secondary reinforcement material to be used in wearing course of the jetty shall be Poly Propylene Fibres of "Recron 3S fibre" or its equivalent product as approved by the Engineer-in-Charge and its quantity used and mixing procedures shall be as per the manufacturer's recommendations.
- 1.1.7.3. Admixture for corrosion protection- Wherever specified in BoQ, concrete used shall be mixed with "Bipolar Concrete Penetrating Corrosion inhibiting Admixture " approved by RDSO (RDSO specification No.M&C /PCN/126-2008) or any fourth generation polydentate bipolar concrete penetrating corrosion inhibiting admixture approved by IRC, to protect the reinforcement bars against corrosion.

### **1.1.8. STRUCTURAL STEEL**

- 1.1.8.1. The mild steel flats / plates/ angles/ channels/ I-sections used for the work shall conform to IS:2062. The material shall be free from visible as well as hidden defects such as pitting cracks, laminations, twists etc. and excessive rusting.
- 1.1.8.2. It is not necessary for the Contractor to obtain separate approval in case mild steel plate is purchased from Steel Authority of India Ltd or TATA Iron & Steel or Jindal Steel & Power Ltd. (JSPL) In case of purchase from Tata Iron & Steel & JSPL, valid license certificate from BIS shall be produced. For purchase from other sources, the contractor shall apply sufficiently in advance and obtain written permission of the Engineer-in-Charge for making purchase from such sources.

### **1.1.9. BENTONITE SLURRY**

- 1.1.9.1. The bentonite slurry used as a drilling mud during boring and casting of piles shall conform to the specifications given in Appendix-A of IS:2911 (Part I/Sec.2). Polymer solutions may also be used to stabilize sides of bore holes in conjunction with bentonite or used as standalone support fluid as per EN 1536.
- 1.1.9.2. Periodical inspection and testing of the bentonite slurry shall be carried out to ensure the quality of the slurry.

### **1.1.10. 6mm SIZE AGGREGATE**

6mm size graded aggregate conforming to IS 383 shall be used. Aggregates which are not perfectly clean shall be washed in clean water to the entire satisfaction of the Engineer-in-Charge.

### **1.1.11. STAINLESS SECTIONS FOR VARIOUS WORKS**

The stainless sections to be used for various works specified in BOQ shall be of grade 316. The size and pattern shall be as specified in the Schedule of quantities and drawings. The stainless steel sections shall be of brush finish.

### **1.1.12. GI PIPE FOR RAIN WATER DRAINAGE PURPOSE ON BERTH**

GI pipes shall conform to IS:1239 and of medium class and size as specified in the schedule of quantities. Galvanizing of pipes shall conform to IS:4736. The zinc coating shall be uniform adherent, reasonably smooth and free from all imperfections.

### **1.1.13. MATERIALS NOT SPECIFIED**

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

### **1.1.14. SAMPLING AND TESTING OF MATERIALS**

- 1.1.14.1. 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.
- 1.1.14.2. All the sampling and testing shall be done at the contractor's cost.

## **1.2. DETAILED SPECIFICATIONS OF ITEMS FOR CIVIL WORKS**

### **1.2.1. GENERAL**

- 1.2.1.1. Except where otherwise specified or authorised by the Engineer-in-Charge all items of works executed by the Contractor must conform to the latest edition of the Bureau of Indian Standard (BIS) Specifications, I.R.C., MORT&H's specifications and Code of practices published by BIS where no such specifications or code of adoption. In absence of any specification the department reserves the right to adopt trade specifications and /or sound engineering practices for the specialised work as may be decided by the Engineer-in-Charge which shall be final, conclusive and binding on the contractor.
- 1.2.1.2. Detailed specifications of items of works are described below:

### **1.2.2. DISMANTLING WORKS**

The contractor shall inspect the site and carry out the required investigation by himself about the present position and condition of the existing structures and assess the difficulties and the work involved in its dismantling and removal. The dismantling shall be done carefully without causing any damage to the remaining portions / structure.

- 1.2.2.1. Following dismantling works are to be carried out:
  - 1) Deck slab (10.70 x 11.0 m size) including, beams of about 1.3m x 0.60m size shall be cut and removed.
  - 2) 4 Nos. RCC screwcrete piles of size 1200 mm dia. to be cut up to (-) 2.0 m or as directed by the Engineer - in - charge.
- 1.2.2.2. Usable materials after dismantling the structures, if any, shall be the property of the Port and serviceable materials shall be suitably stacked as directed by Engineer-in-Charge and the unusable dismantled materials/debris shall be suitably disposed off as directed by the Engineer-in-Charge. No debris shall be deposited at the Project Site or in Backwaters.

- 1.2.2.3. The retrieved steel reinforcement bars of piles, beams and slabs obtained from dismantling shall become the property of the property of the Port and shall be suitability stacked as directed by Engineer-in-Charge without any extra payment.
- 1.2.2.4. All protective measure and care shall be taken to avoid falling of concrete pieces in the back waters during the course of dismantling and fallen materials if any, shall be removed from the back waters by the contractor.
- 1.2.2.5. The debris shall be cleared on completing each day's work as directed by the Engineer-in-Charge.
- 1.2.2.6. The cut face shall be kept clean and exposed faces shall be plastered with C M 1:3.

### **1.2.3. PLAIN AND REINFORCED CEMENT CONCRETE**

#### **1.2.3.1. General**

The concrete used for all works, concreting procedure etc. shall be in accordance with IS:456-2000.

#### **1.2.3.2. Concrete Mix**

Mix used for R.C.C. shall be of minimum M20 grade unless otherwise specified. Design mix shall be used for M25 and higher grade of concrete unless otherwise specified in the schedule.

#### **1.2.3.3. Nominal Mix**

For nominal mix concrete, proportion of fine aggregate to coarse aggregate shall be 1:2 by volume. The minimum cement content per cubic meter of nominal mix concrete shall be as given below.

| Sl. | Type of concrete                                                     | Cement content |
|-----|----------------------------------------------------------------------|----------------|
| 1   | Cement concrete 1:4:8 (1 cement: 4 sand: 8, 40 mm size graded metal) | 170 Kg.        |
| 2   | M-10 grade with 40 mm size graded metal                              | 220 Kg.        |
| 3   | M-15 grade with 20 mm size graded metal                              | 320 Kg.        |

#### **1.2.3.4. Design Mix**

- 1.2.3.4.1. For design mix concrete of following grades of concrete the minimum cement content per cubic metre and maximum water cement ratio are as given below.

| Sl. No | Grade of Concrete | Minimum cement content in Kg / m <sup>3</sup> | Maximum free Water cement ratio |
|--------|-------------------|-----------------------------------------------|---------------------------------|
|--------|-------------------|-----------------------------------------------|---------------------------------|

|    |     |     |      |
|----|-----|-----|------|
| 1  | M40 | 400 | 0.40 |
| 2. | M30 | 375 | 0.50 |
| 3. | M25 | 350 | 0.50 |

1.2.3.4.2. For design mix concrete, the contractor shall make calculations jointly with Engineer-in-Charge and carryout all necessary tests at contractor's cost to determine the proportion by weight of cement, aggregates (coarse and fine), admixture if required and water necessary to produce concrete of required grade having the desired workability and, water cement ratio not exceeding the allowable limit, prior to commencement of work. The contractor shall submit the following for the approval of Engineer-in-Charge.

- (i) The proportion of cement, coarse aggregate, fine aggregate and water so determined.
- (ii) The sieve analysis of aggregates which he proposes to use in the works.
- (iii) Full details of the tests conducted.
- (iv) All calculations relevant to mix design.

1.2.3.4.3. When the proportions are submitted to the Engineer-in-Charge which he considers will produce concrete having the required properties, it shall become the declared proportions to be used for the work. The agreement by the Engineer-in-Charge to such declared proportions shall not relieve the contractor of any of his responsibilities to use in the work at all times concrete having the required properties. No deviation from the declared proportions shall be allowed unless and until the Engineer-in-Charge shall have given his written authorization for the adoption of revised proportions for the concrete.

1.2.3.4.4. Sampling, testing and acceptance criteria for designed mix concrete shall be as per clause 15, 16 & 17 of IS:456-2000 unless otherwise specified. Sampling and testing shall be done at contractor's own cost. Testing shall be done in a laboratory approved by the Engineer-in-Charge.

#### 1.2.3.5. **Size of Coarse Aggregate**

For all concrete, plain or reinforced of M20 and higher grades, 20 mm size graded aggregate conforming to IS:383 shall be used unless otherwise specified. If 20 mm graded aggregates as per IS:383 are not readily available, graded 20 mm aggregate shall be obtained by blending 20 mm and 12.5/ 10 mm aggregates in the proportion arrived based on the combined sieving of aggregates.

#### 1.2.3.6. **Batching and Mixing**

1.2.3.6.1. For production of concrete, concrete batching and mixing plant, with type and minimum capacity of 15 m<sup>3</sup>/hr approved by the Engineer-in-Charge shall be installed at site by the contractor. The plant shall be approved by the Engineer-in-Charge and shall be installed at an approved location. All measuring

equipments should be maintained in a clean serviceable condition, and their accuracy shall be periodically checked as directed by the Engineer-in-Charge.

- 1.2.3.6.2. In proportioning concrete, the quantity of both cement and aggregate should be determined by weight. Where the weight of cement is determined on the basis of weight of cement per bag, a reasonable number of bags should be weighed periodically to check the net weight. Where the cement is weighed on the site and not in bags, it should be weighed separately from the aggregates. Water should be either measured by volume in calibrated tanks or weighed. Any solid admixture that may be added may be measured by weight; liquid and paste admixture by volume or weight.
- 1.2.3.6.3. Except where it can be shown to the satisfaction of the Engineer that supply of properly graded aggregate of uniform quality can be maintained over the period of work, the grading of aggregate should be controlled by obtaining the coarse aggregate in different sizes and blending them in the right proportion when required, different sizes being stacked in separate stock piles. The grading of coarse and fine aggregate should be checked frequently for a given job being determined by the Engineer-in-Charge to ensure that the specified grading is maintained.
- 1.2.3.6.4. Under unavoidable circumstances, change from weigh batching to volume batching may be permitted by Engineer-in-Charge, on specific request from the contractor.
- 1.2.3.6.5. Ready mix concrete from out side source shall be allowed for use on the work subject to the conditions that: (i) 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) all design mix calculations as per Clause 1.2.3.4.4 of tender document shall be submitted by the contractor for approval of the Engineer-in-Charge & approval obtained; and (iv) all expenses towards conveyance and incidentals of providing departmental supervision at the mixing plant shall be borne by the contractor.

## **1.2.4. PROVIDING REINFORCED CEMENT CONCRETE FOR PILE CAPS, SLABS, BEAMS, KERB, HANDRAIL ETC.**

### **1.2.4.1. General**

- 1.2.4.1.1. The concrete used for all works, concreting procedure etc. shall be in accordance with IS:456-2000. The concrete mix shall be of grade as specified using 20 mm size graded aggregate metal with a cement content not less than  $360 \text{ kg/m}^3$  and water cement ratio not exceeding 0.40.
- 1.2.4.1.2. Designed concrete mix shall be used for the work. For this purpose, the contractor shall make calculations and carry out all the tests at his cost to determine the proportion by weight of cement, aggregates, admixtures and water necessary to produce concrete having required strength, prior to commencement of works. The contractor shall submit all the particulars of the design mix to be used for the work to the Engineer-in-Charge for approval as

per clause 1.2.3.4 above. The quality of concrete shall be assured by conducting the required tests so as to meet the requirements as per BIS.

1.2.4.1.3. The concrete for beams shall be of combination of pre-cast and cast-in-situ. Slabs shall be of cast-in-situ construction. Shuttering for deck slab shall be preferably with sacrificial GI troughed shuttering sheets. In case, the contractor requires to use pre cast slab planks as shuttering, it shall be permitted subject to the condition that the pre cast slab planks shall not form the part of the structural slab and its cost shall be borne by the contractor.

#### **1.2.4.2. Assembly of Reinforcement for Reinforced Cement Concrete.**

1.2.4.2.1. The contractor shall, when ordered, submit to the Engineer-in-Charge the detailed bar bending schedule for his scrutiny and approval sufficiently in advance (about four weeks) of the due date of commencement of the relevant items of works. While working out the bar bending schedule, the contractor shall ascertain the length of bars likely to be made available to him and the schedule shall be so made, keeping the wastage/ cut bits of bars to bare minimum without hampering technical requirements. If the size of the steel bars specified in the drawing or schedule is not available, the nearest size available shall be used. Revised drawing shall be issued to the contractor substituting the new size of reinforcement and bar bending schedule shall be prepared by the contractor accordingly. No extra payment shall be made to the contractor for making this substitution. The fabrication of reinforcement shall commence only after the bar bending schedule is approved by the Engineer-in-Charge.

1.2.4.2.2. Reinforcement shall be cut to the exact length and made truly straight and then bent to the exact shape and dimensions as indicated in the drawings. The bending and fixing of bars shall be done in accordance with IS:2502 unless otherwise specified.

1.2.4.2.3. All cut bits of steel are the property of the contractor. However, the contractor can dispose them off only with the permission in writing of the Engineer-in-Charge. If the department requires the cut lengths, they are to be handed over to the department and will be paid for at the rates at which they were purchased by the contractor.

1.2.4.2.4. The reinforcement shall be cleaned by wire brush etc. to remove oil, grease, loose mill scale, loose rust or other deleterious matter that may reduce or destroy bond etc. before tying in position and also immediately before placing the concrete.

1.2.4.2.5. All reinforcement shall be placed and maintained in accordance with the drawings. Tolerance on placing of reinforcement shall be in accordance with clause 12.3 of IS:456-2000. Bolts, nuts, washers and rivets etc. required for complete erection of reinforcement and keeping in position shall be supplied by the contractor at his own cost.

#### **1.2.4.3. Form work**

The steel/ marine plywood formwork shall be used for concrete work. However, for precast units, steel form work shall only be used. The form work shall be designed and constructed to the shape, lines and dimensions shown in the

drawings within the tolerance limit and specified in clause 11.1 of IS:456-2000. Joints of the form works shall be made water tight by providing suitable beadings /gasket as approved by the Engineer-in-Charge. All rubbish, particularly chippings, shall be removed from the interior of the forms before the concrete is placed and the form work in contact with the concrete shall be cleaned and thoroughly wetted or treated with an approved composition. Care shall be taken that such approved composition is kept out of contact with the reinforcement. Before re-used, all forms shall be thoroughly scraped, cleaned, nails removed, holes that may be suitably plugged and joints examined and when necessary repaired and the inside retreated to prevent adhesion, to the satisfaction of Engineer-in-Charge. Contractor shall equip with himself with enough shuttering material to complete the job in the stipulated time. GI troughed shuttering (sacrificial) may also be used for deck slab at contractors own cost as per the directions of Engineer-in-Charge.

#### **1.2.4.4. Cover to Reinforcement**

Cover as specified in drawing shall be provided by using precast cement concrete block made from concrete of same grade as that of main work unless otherwise directed by the Engineer-in-Charge.

#### **1.2.4.5. Transporting, placing, compacting and curing of concrete**

- 1.2.4.5.1. Transporting placing, compacting and curing of concrete shall be as per clause 13 of IS:456-2000. Placement of concrete shall be done with concrete pumps and pipelines unless otherwise approved by the Engineer-in-Charge in special cases.
- 1.2.4.5.2. Concrete shall be transported from the mixer to the worksite as rapidly as possible which will prevent the segregation or loss of any ingredient, and for maintaining the workability.
- 1.2.4.5.3. The concrete shall be placed and compacted before setting commences and should not be subsequently disturbed. Care should be taken to avoid displacement of reinforcement or movement of formwork.
- 1.2.4.5.4. All concrete shall be vibrated unless otherwise specified or approved by the Engineer-in-Charge and such vibrating shall be as required by the Engineer-in-Charge. The mechanical vibrators complying with IS:2505, IS:2506 or IS:4656 shall be used for compacting concrete. All vibrations shall be carried out to a plan approved by the Engineer-in-Charge. No workman shall be allowed to operate the vibrator without having received instructions and training in its use. Care must be taken to avoid segregation and excessive vibration.
- 1.2.4.5.5. Concreting shall be carried out continuously upto construction joints, the positions and arrangement of which shall be as directed by the Engineer-in-Charge. When the work has to be resumed the construction joints shall be prepared in accordance with clause 13.4 of IS:456-2000.
- 1.2.4.5.6. Unless otherwise specified, all concrete shall be kept continuously in a damp condition by ponding or by covering with a layer of sacking, canvas, hessian or similar materials with fresh water for not less than 7 days after laying the concrete. If curing is not done properly the department will be at liberty to

engage labour for curing and the expenditure incurred will be recovered from the contractor's bill. The decision of the Engineer-in-Charge will be final on this.

- 1.2.4.5.7. Stripping time for the form work shall be as stipulated in clause 11.3 of IS:456-2000. Any impression, fins etc. that may occur from the form work shall be removed and treated with cement mortar 1:1.5 (1 cement: 1.5 sand).
- 1.2.4.5.8. Contractor shall arrange to fix any fixtures wherever necessary while doing concreting work without any extra cost. Cost of fixtures will be paid separately, if it is provided by the contractor.
- 1.2.4.5.9. The unit rate quoted by the tenderer shall be for the finished work and deemed to include cost of all materials and labour, form work, provision of holes, recess, other contingent items etc. required for the completion of work as specified etc.

## **1.2.5. PRECAST CONCRETE**

- 1.2.5.1. Specification contained in clauses above regarding concrete, formwork and reinforcement shall apply in addition to the clauses laid as under. Contractor shall get the precasting bed approved by the Engineer-in-Charge.
- 1.2.5.2. Necessary lifting hooks shall be provided for handling as indicated in drawings or as directed by Engineer-in-Charge. Lifting Hooks shall be as in the drawings but not less than 12mm dia. M.S. rounds. Care shall be taken to prevent damage to the edges of the precast member during handling.
- 1.2.5.3. Unless otherwise specified, the visible surfaces of precast members shall be finished smooth. The exposed edges and corners should be rounded to a radius of 20mm, if it is not directly butting against any structure. Where required, specified coloured finish shall be given by adding approved pigments to the finishing mortar.
- 1.2.5.4. The precast concrete units shall be marked clearly on top and shall be stored clear of ground until required for erection. The precast units shall be handled and erected by methods approved by the Engineer-in-Charge to protect them from damage.
- 1.2.5.5. The designed loads on the units shall not be exceeded in any way during the course of erection, eg. temporary loads of materials or equipment. The contractor shall replace at his own expense all such units, which are damaged on account of the above if he is responsible for such loadings. Cement used for a damaged/ rejected pre-cast elements shall not be taken into account for material reconciliation.
- 1.2.5.6. Upon completion of casting of the precast members, 75% of the payment for the item of providing RCC for precast members shall be made, if requested by the contractor in writing. The balance 25% payment shall be made after transporting the precast members and placing them in position to lines and levels. It is clarified that payment for providing reinforcement in precast members will be made separately as per Bill of Quantities.

## **1.2.6. INSTALLATION OF BORED CAST-IN-SITU PILES**

### **1.2.6.1. GENERAL**

- 1.2.6.1.1. These specification shall be read in conjunction with the detailed specifications for materials to be used on the works and detailed specifications of items of work and if these specifications contradict with the provisions under detailed specification for materials and detailed specifications of items of works, the former shall prevail.
- 1.2.6.1.2. The bored cast-in-situ piles shall be installed in accordance with the specifications under IS:2911 (Part I/Sec.2) and the specifications given under shall supplement to the above said BIS. In case the specifications given hereunder are found contradictory with BIS, the former shall prevail. The founding levels of the piles as shown in the drawing are only approximate and may vary based on the actual soil conditions.
- 1.2.6.1.3. The contractor shall make all necessary arrangements for providing and erecting the equipments in position for facilitating the installation work of RCC bored cast-in-situ piles. No separate payment shall be made for mobilization/ demobilization of equipments brought at site.

### **1.2.6.2. LINER**

- 1.2.6.2.1. The liner which is required temporarily for keeping the drilling mud level and retaining the concrete shall be provided upto a minimum of 100cm above cut off level and removed by the contractors at their own cost. The cost of providing this portion of liner temporarily and removing the same shall be covered in the rate quoted for boring.
- 1.2.6.2.2. The liner which is required for keeping the drilling mud level and retaining concrete shall be provided upto a minimum of **5 metres** below the bed level. The liner shall be of 6mm thick mild steel plate with stiffening at the ends.
- 1.2.6.2.3. The liner shall be installed in position by driving with a hammer. For lowering the liner boring with bailers shall not be permitted.

### **1.2.6.3. BORING**

- 1.2.6.3.1. Boring shall be done using direct mud circulation or reverse mud circulation methods. Drilling mud liquid shall be used for stabilizing sides of bore hole and the level of the liquid shall be maintained upto the top of temporary liner. Polymer solutions may also be used to stabilize the bore holes in conjunction with bentonite or used as standalone support fluid mud as per EN 1536. The concreting operations should not be taken up when the specific gravity of the of the bottom slurry is more than 1.12 and the slurry should be maintained at 1.5m above the ground water level.
- 1.2.6.3.2. Settling tanks of adequate capacity shall be provided for the collection of discharge from the piles and the recovery and re-use of the liquid after allowing settlement of soil particles. The contractor shall furnish his detailed scheme for the mud circulations for approval by Engineer-in-Charge.

1.2.6.3.3. Pumps used for boring by direct mud circulation shall have adequate capacity to maintain vertical flow velocity of 2cm/sec. inside the pile while boring is carried out.

1.2.6.3.4. Immediately after the completion of boring, flushing of the borehole shall be done with the chisel in position for a period not less than one hour. After removing the chisel, the bore hole shall be further cleaned with a suitable bailer having adequate weight. After lowering and placing in position the reinforcement, final cleaning of the bore hole shall be done with fresh drilling mud liquid for a period not less than 2 hours. In case, the recovered liquid is less contaminated, it can be used for continuing the flushing with the approval of the Engineer-in-Charge. Finally the full depth shall be filled with fresh drilling mud liquid. The pump system used for final cleaning shall have sufficient capacity for ensuring complete removal of loose materials. Characteristics of bentonite suspension for 're-use' shall be as per IS:2911 (Part1/ Section 2)

1.2.6.3.5. After the drilling mud liquid circulation for a minimum period of 2 hours as aforesaid, air lift system shall be employed for removing the lumps etc. likely to be deposited at the bottom of pile bore and clean pile bore bottom shall be ensured before commencement of concreting. Following procedure shall be followed with suitable modifications as per site requirements for the air lift system of pile bore bottom cleaning.

- (i) On completion of satisfactory flushing of bore hole with fresh drilling mud as per specifications and filling of bore hole with fresh drilling mud liquid, suitable bend shall be connected to the top of tremie and the tremie bottom has to be kept initially approximately 1m above the pile bore bottom. 25 mm dia pneumatic air pipe fitted with 25 mm dia perforated G.I. pipe of 1-1.50 m length at the bottom shall be inserted through a separate opening on the top of the bend. The bottom level of the air pipe has to be suitably adjusted so as to ensure continuous suction from the bottom of bore hole. An air compressor having a capacity not less than 250 cfm shall be deployed for compressed air supply.
- (ii) As the flushing progresses the tremie has to be gradually lowered so as to remove the lumps, settled muck etc. and to ensure clean pile bore bottom. Fresh drilling mud shall be pumped to bore hole from top of liner, so as to maintain the required head of drilling mud in the pile bore at all times.

1.2.6.3.6. The bored materials shall be disposed off as indicated in the schedule of items or as directed by the Engineer-in-Charge of the work.

1.2.6.3.7. The rate quoted for boring shall cover the cost of all operations including cleaning the bore hole, providing and removing temporary liner etc. complete.

1.2.6.4. **REINFORCEMENT WORK**

1.2.6.4.1. The plant and equipment mobilized by the contractors shall have adequate capacity to provide cages made from bars upto 11.50 m length.

- 1.2.6.4.2. Reinforcement shall be fabricated in cages and splicing of bars shall be done by laps. The rings and helicals shall be tack welded to the main reinforcement. The joint of the cages shall be made by lap welding sufficient for carrying the weight of successive cages and for keeping the main bars in position.
- 1.2.6.4.3. Roller type cover blocks shall be provided for ensuring a clear cover as per drawing for the main reinforcement. The cover block shall have minimum 50mm thickness and shall be made from the same concrete mix approved for the pile concrete. The cover block shall be attached to the cages in between main reinforcement with 16 mm dia bars welded to the main bars. The bars used for attaching the cover blocks shall be measured and paid for as a part of reinforcement. The blocks shall be provided at 3 metre intervals in sets of 3 numbers placed at equal intervals along the periphery.

#### 1.2.6.5. **CONCRETE**

- 1.2.6.5.1. Concrete mix used for the work shall generally conform to IS:456-2000.
- 1.2.6.5.2. Concrete mix shall be of M40 grade using 20mm size graded granite metal with a cement content not less than 450 kg/ cubic metre and water cement ratio not exceeding 0.40. The slump of concrete shall neither be less than 150 mm nor greater than 180 mm.
- 1.2.6.5.3. Designed concrete mix shall be used for the work. For this purpose the contractor shall make calculations and carry out all the tests at his cost to determine the proportion by weight of cement, aggregates, admixtures and water necessary to produce concrete having required strength, prior to commencement of works. The contractor shall submit all the particulars of the design mix to be used for the work to the Engineer-in-Charge for approval as per clause above. The quality of concrete shall be assured by conducting the required tests so as to meet the requirements as per BIS.
- 1.2.6.5.4. The cement procured by the contractor for the work shall be 43 grade ordinary Portland cement conforming to IS:8112 or 53 grade ordinary Portland cement confirming to IS:12269 or Pozzolona cement conforming to IS:1489 unless otherwise approved by the Engineer-in-Charge. If any admixtures are found necessary for retarding the setting time / improving the strength and workability of concrete using the above cement and keeping the water cement ratio within 0.40, it shall be provided by the contractor at his own cost. The admixtures used shall conform to relevant Bureau of Indian Standards Specifications.
- 1.2.6.5.5. Concrete shall be placed in the pile using tremie method and tremie pipe shall be of diameter not less than 200mm. The concrete placing shall not proceed if specific gravity of fluid near about the bottom of bore hole exceeds 1.12. The penetration of the tremie into the concrete shall not be less than 2 metres nor greater than 5 metres at any time. For ascertaining proper formation of the pile, contractor shall device a system for measuring the volume of concrete poured into the pile. A concreting record in the approved performa giving all the details shall be submitted to the Engineer-in-Charge immediately on completion of concreting in each pile. Pouring of concrete through the tremie

shall be continued till the concrete mixed with bottom material is completely over flown and good concrete is reached on the top of the liner. The concrete formed above the cut off level shall be removed only after 7 days of completion of concreting as specified in clause 8.5.3 of IS 2911. The payment for removing the concrete above cut off level will be made under separate item. Measurement for the concrete in pile shall be made only from 0.90 m above cut off level to the bottom level as shown in the approved drawing.

- 1.2.6.5.6. As the concreting work progresses, not less than 2 samples shall be collected from the concrete of each pile at representative locations as directed by the Engineer-in-Charge. Three test cubes shall be made from each sample and arranged for testing for crushing strength at 28 days in a laboratory approved by the Engineer-in-Charge and test certificate shall be made available. The cost of sampling, making cubes, transporting, testing and making available the certificate whatsoever shall be borne by the contractor.
- 1.2.6.5.7. In case the above certificates reveals that the samples tested fails to give the minimum specified crushing strength laid down in IS:456-2000 for the specified grade of concrete, the Chief Engineer may take one of the following decisions.
  - (i) Instruct contractor to carry out additional test at his own cost.
  - (ii) Accept the work at his discretion and such a case may make a reduction in the rate of appropriate item
  - (iii) Reject the pile in which case the contractor shall install alternative pile at no extra cost.
- 1.2.6.5.8. The pile shall be terminated in dense sandy layer. To ensure that the bearing stratum is not weaker than considered in design for pile termination, SPT test at termination depth shall be conducted. Contractor shall get the termination level verified by Engineer-in-Charge based on the above.
- 1.2.6.5.9. A competent supervisor shall be present to record the necessary information when the pile is being installed. The contractor shall supply in triplicate complete records of all pile works in the form and manner approved by the Engineer-in-Charge. The record shall invariably contain:
  - (i) Dimensions of the piles, including reinforcement details and the mark of the pile.
  - (ii) Type of boring employed.
  - (iii) Depth of boring.
  - (iv) Type of strata in which pile is terminated with SPT value.
  - (v) Sequence of construction.
  - (vi) Depth of water table in vicinity.

- (vii) Time taken for concreting.
- (viii) Quantity of concrete poured etc
- (ix) Consumption of cement.
- (x) Any other important observations
- (xi) Typical data sheet of recording piling data shall be as given in Appendix - D of IS:2911 (Part 1/ Section -2)

### **1.2.7. VERTICAL LOAD TEST ON PILE**

#### **1.2.7.1. General**

- 1.2.7.1.1. The load test shall be conducted to provide data regarding the load settlement characteristics of the piles upto failure or otherwise as specified and to safe design capacity.
- 1.2.7.1.2. Initial load test shall be conducted on a separate test pile at the location near to Jetty as directed by the Engineer-in-Charge. While conducting initial load test / routine load test, ground improvement at support, if required, shall be done by the contractor at his own cost and no extra payment on this account will be entertained by the department. The rate quoted for the test shall include the cost of the pile. The test set up and test procedure shall be in accordance with the provisions of IS: 2911 (Part IV), "Code of practice for Design and Construction of Pile Foundations, Part IV - Load Test on Piles".
- 1.2.7.1.3. The setting up of pile testing equipment shall be carried out under competent supervision and the equipment shall be checked to ensure that the setting up is satisfactory before the commencement of load application. All tests shall be carried out under the direction of experienced and competent Engineer conversant with the test equipment and the test procedure. All personnel operating the test equipment shall have been trained in its use.

#### **I. INITIAL LOAD TEST**

- (i) Settlement of the pile reaches a value of one tenth of the pile diameter.
- (ii) Maximum test load on the pile which is equal to twice the estimated safe load.

#### **II. ROUTINE LOAD TEST**

- (i) Settlement of the pile top is 12 mm.
- (ii) Maximum test load on the pile which is equal to 1.50 times the estimated safe load is reached.

- 1.2.7.1.4. Where yielding of the soil pile system does not occur the maximum test load shall be maintained on the pile head for 24 hours and settlement readings shall be taken at 2,4,8,15,30 and 60 minutes and at one hour interval thereafter.
- 1.2.7.1.5. Unloading shall be carried out in the same steps as loading. A minimum period of 30 minutes shall be allowed to elapse between two successive stages

of load decrement. The rebound observations shall be continued upto 6 hours after the entire test load has been removed.

#### 1.2.7.2. **Test loads**

- 1.2.7.2.1. Initial Load and Routine load tests shall be conducted for safe loads as specified in the Schedule of Quantities. The maximum loads for which the tests to be conducted shall be as per IS:2911 (Part - IV). The safe load shall be taken as per IS 2911 (Part 4): 2013, clause 8.4.
- 1.2.7.2.2. Full details of the equipments proposed to be used and test set-up shall be submitted to the Engineer-in-Charge with detailed sketches for approval. Approval of the Engineer-in-Charge shall also be obtained after test set-up is complete prior to commencement of loading.
- 1.2.7.2.3. All measuring devices shall be tested for satisfactory performance and accuracy at an approved institution and a certificate to that effect obtained and submitted to the Engineer-in-Charge prior to use.
- 1.2.7.2.4. The test pile for routine load test shall be one of the working piles as decided by the Engineer-in-Charge. The test piles shall be constructed using the same equipment and techniques for working piles. A minimum time period of not less than 28 days shall be allowed between the installation and commencement of testing.
- 1.2.7.2.5. A full record of pile load test in approved proforma shall be submitted to the Engineer-in-Charge immediately on completion of test. The record shall also include the plot of load settlement and time settlement (for various stages of loads) characteristics of the pile and also the interpretation of pile load test curve. Any special observation shall be duly explained by the contractor.
- 1.2.7.2.6. **Regular piling can be commenced only on successful completion of Initial Pile Load test.**

#### 1.2.8. **LOW STRAIN INTEGRITY TESTING ON PILE**

- 1.2.8.1. Non-destructive integrity testing on bored piles, as decided by the Engineer-in-Charge, as per testing procedure given in ASTM D5882 shall be conducted using the low strain sonic diagnostic system consisting of hammer, low 'g' accelerometer with amplifier, pile integrity tester, portable computer system, graphics printer, etc. all complete. Qualified and experienced specialists in this field shall conduct the test. Engineer-in-Charge's decision shall be final regarding acceptance of piles passing integrity test. The test report shall indicate quality of pile in respect of soundness, honeycomb, necking etc. indicating depth of defect in shaft.

#### 1.2.9. **HIGH STRAIN DYNAMIC TEST ON PILES**

- 1.2.9.1. This test shall be carried out on working piles for ascertaining pile capacity in vertical compression as per testing procedures outlined in ASTM D 4945 latest edition. The piles to be tested shall be selected by Engineer-in-Charge. The test procedures shall be submitted to Engineer-in-Charge for its approval

from Employer. The test report shall indicate the PDA results and pile capacity. A minimum time period of four weeks from the time of casting shall be allowed for testing. The test set up comprises of :

- Apparatus for applying impact force
- Apparatus for obtaining dynamic measurements,
- Apparatus for Recording, Reducing & Displaying data.

1.2.9.2. Qualified and experienced specialists in this field shall conduct the test. Engineer-in-Charge's decision shall be final regarding acceptance of piles passing test but of questionable workmanship.

#### **1.2.10. WEATHERING COURSE**

- 1.2.10.1. Weathering course over the deck slab shall be cement concrete M25 grade using graded course and fine aggregates of 75mm average thickness, mixed with secondary reinforcement of 'poly propylene fibre' of approved quality as per manufacturer's recommendations and finishing the surface with floor hardener of approved quality @ 5kg/m<sup>2</sup> monolithically to the base of concrete.
- 1.2.10.2. The surface shall be scrubbed with wire brush and all loose particles, foreign matters etc. shall be removed and the surface shall be made clean. Any undulations in the concrete shall be chipped off or made good with additional concrete of the same grade used for the under layer. The surface thus prepared shall be wetted and smeared with a coat of cement slurry using cement at the rate of 2kg /m<sup>2</sup> of area just before the application of the mortar, so as to get good bond between base course concrete and plastering.
- 1.2.10.3. For ensuring even thickness and true surface, gauges of M25 concrete mix of 15cm x 15cm shall be laid at intervals not more than 1.5 m in both directions to serve as guide area for floor weathering concrete. Surface of these guide area shall be truly in plane of the base surface. The concrete mix shall then be spread uniformly to a thickness slightly more than the specified thickness and shall then be brought to true and even surface by working a wooden straight edge reaching across the gauges. Finally the surface shall be finished spreading with floor hardener of approved quality @ 5kg/m<sup>2</sup> by working a trowel or a wooden float directed by the Engineer-in-Charge. Excessive trowelling shall be avoided. Sprinkling of dry cement or sand mixture on the surface to stiffen the mortar or to absorb excessive moisture shall not be permitted.
- 1.2.10.4. Final finishing shall follow immediately after trowelling. For this a thick cement slurry using cement at the rate of 2 kg /m<sup>2</sup> of area shall be spread over the flooring while the surface is still wet. The cement slurry shall then be properly pressed with a trowel and finished smooth.
- 1.2.10.5. The junctions of floor with walls shall be rounded off as per directions of the Engineer-in-Charge. While plastering the flooring, care shall be taken to see that the edge of the previously laid panels is not damaged and fresh mortar is

not splashed over them. The joints between panels shall be truly finished. The finished plastered surface shall be thread lined to the pattern, if so directed by the Engineer-in-Charge.

- 1.2.10.6. Curing shall be done for a minimum of 7 days after the floor surface is hardened. Covering with gunny bags shall be avoided as the colour is likely to be bleached with the remnants of the cement matter from the bags.
- 1.2.10.7. Measurement of the work under this head shall be made on the basis of the area of work done and rate quoted shall include the cost of labour, materials, scaffolding etc required for completion of work.

## **1.2.11. PROVIDING AND APPLYING EPOXY BASED PROTECTIVE PAINT**

### **1.2.11.1. Surface Preparation**

The surface should be clean, dry and free from oil, grease, loose particles and laitance and other contaminants and curing compounds which adversely affect the adhesion of paint/ coating. The new concrete shall be cured for at least for 28 days at ambient temperature of 30 deg. C and after attaining the required compressive strength of concrete before coating application. Light sand/ abrasive blasting of the surface will remove all loosely bound material and roughen the surface. Ensure all dust/ other particles are fully removed by suction or air blast before application of the paint/ coating.

The concrete surfaces shall be cleaned by chipping/ wire brushing to remove all loose particles, dust, oil stains, etc. completely. It shall be further cleaned by clean water/ compressed air and all cracks, joints etc. shall be sealed with epoxy putty prior to application of epoxy paint.

### **1.2.11.2. Specification for Epoxy Based Paint**

The Interpenetrating Polymer Network (IPN) anticorrosive polymer system or its equivalent shall be used, One coat of Epoxy Phenolic Jpnet primer coating of DFT 50 microns and two coats of Epoxy Phenolic Ipnet coating of DFT 100 microns each shall be sides and soffits of cantilever deck slab, cantilever slab, service lines excepting top surfaces and shall conform to the following specifications:

### **1.2.11.3. Primer**

|             |                                                |
|-------------|------------------------------------------------|
| a) System   | :Twin pack consisting of base and curing agent |
| b) Base     | :Interpenetrating polymer (Epoxy Phenolic)     |
| c) Pot Life | :1 hour for 2 Lt. Mix                          |
| d) Curing   | :Air curing                                    |
| e) Colour   | :Clear                                         |

|                             |                                                           |
|-----------------------------|-----------------------------------------------------------|
| f) Shelf Life               | :One year in tightly sealed containers                    |
| g) Dry Film Thickness       | :50 microns                                               |
| h) Coverage                 | :5-6 Sq m/ lit. (on smooth concrete surface)              |
| i) Recommended No. of coats | One                                                       |
| j) Recoatability            | :Subsequent coat shall be applied after 6 hours to 7 days |
| k) Mix Proportion           | :Base : 1 PBV/ Curing Agent: 1PBV                         |
| l) Mixing Procedure         | :As per manufacturers recommendation                      |

### **Middle and Top Coat**

|                             |                                                           |
|-----------------------------|-----------------------------------------------------------|
| a) System                   | :Twin pack consisting of base and curing agent            |
| b) Base                     | :Interpenetrating polymer (Epoxy Phenolic)                |
| c) Pot Life                 | :1 hour for 2 Lt. Mix                                     |
| d) Curing                   | :Air curing                                               |
| e) Colour                   | :Approved by the Engineer-in- charge.                     |
| f) Shelf Life               | :One year in tightly sealed containers                    |
| g) Dry Film Thickness       | :100 microns per coat                                     |
| h) Coverage                 | :4-5 Sq m/It (on smooth concrete surface)                 |
| i) Recommended No. of coats | :Two                                                      |
| j) Recoatability            | :Subsequent coat shall be applied after 6 hours to 7 days |
| k) Mix Proportion           | :Base: 1 PBV/ Curing Agent: 1PBV                          |
| l) Mixing Procedure         | :As per manufacturers recommendation                      |

#### **1.2.11.4. Process of Application of Paint**

The surface shall be thoroughly cleaned as per clause 1.2.41.1 above. The primer coat and protective two coats shall be applied with the materials and specifications described as per clause 1.2.41.2 above or as per manufacturer's specifications with prior approval of the Engineer -in -charge.

#### **1.2.11.5. Measurement for Payment**

The superficial area as final finished surface shall be measured in sq. metres.

#### **1.2.11.6. Rate**

The rate for this item will include the cost of all material, labour, tools, plants, equipment, staging etc. including testing of work as per requirement.

### **1.2.12. FENDERS**

#### **1.2.12.1. General**

- 1.2.12.1.1. The layout of the facilities and the proposed fender points are shown in the drawings. The arrangement and the shape of fenders shown in the drawings are only tentative and shall be altered /changed, based on detailed designs.
- 1.2.12.1.2. The fenders may be indigenous or imported. The contractor shall procure the rubber dock fenders only from reputed manufactures, approved by the department. The department shall approve only those manufactures who shall produce certificate for the satisfactory performance of the fenders not less than 5 years from the **owner**.
- 1.2.12.1.3. The successful tenderer will be required to furnish Performance Guarantee in the form of irrevocable bank guarantees as security for due performance of the contract in the proforma at **Annexure-15** of Instructions to Tenderers. The above performance guarantee shall be produced in bank guarantee, issued by Nationalised Bank/ Scheduled Bank in India of value equal to 25% of the total amount quoted for the items of supplying and fixing fenders. The bank guarantee thus furnished shall be valid for 5 years from the date of completion of the installation of the fenders and completion of the same certified by the Engineer in charge. Any payment on the items of supplying and fixing Flat Top Arch fenders & Arch fenders will be made only after producing the Performance guarantee of the fenders in the form of irrevocable bank guarantees. The BG thus furnished will be retained as a security for the due and proper fulfillment of performance of the fenders for 5 years from the date of completion of the installation of the fenders and completion of the same certified by the Engineer in charge. Such BGs shall be encashed in full or part as decided by the Chief Engineer, whose decision will be final and binding on the contractor on failure of contractor to perform or non fulfillment by the contractor of the terms and conditions of the work of providing and fixing of the fenders or on performance failure of fenders supplied and installed as per the requirement in the contract.
- 1.2.12.1.4. If the fenders are imported ones, all formalities in connection with the import such as DGTD clearance, import license etc., applicable, foreign exchange payment, customs clearance and payment of Customs clearance and payment of customs duties etc shall be observed by the tenderers.

#### **1.2.12.2. Technical Specifications**

#### 1.2.12.2.1. Type and Size of Fenders.

The fenders and frontal frames with frontal pad required as given below.

| Sl No. | Description                                                                                                                                                                                                                           | Nos  |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 1      | Cell Type rubber Fenders 1150H with the following:<br><br>(i) Frontal frames with Frontal Pad of size 1700x3000 mm.<br><br>(ii) Rubber Flex weight chains and its fixtures.<br><br>(iii) Rubber Flex tension chains and its fixtures. | 5    |
| 2      | 2000 mm long 150x150mm size D- type Rubber Fenders                                                                                                                                                                                    | 10 m |

#### 1.2.12.2.2. 'D' Type Rubber Fender

'D' type rubber fender to be used on work shall be of sizes 150mm H x 150mm W (overall) as per drawings and schedule of quantities, manufactured by approved manufacturer. The rubber used for manufacturing rubber fender shall be as per ASTM-D-2000-98c. Necessary test certificates, chemical composition of rubber tested in a NABL approved laboratory shall be produced by the contractor.

#### 1.2.12.2.3. Performance Details of Fenders

Performance requirements of the fenders are as given in Table below.

| Description of the fendering system | Max. Permissible Deflection (%) | Min. Energy Absorption (kNne metre) | Max. Permissible Reaction Force (t) | Max. Permissible Hull Pressure (t/m <sup>2</sup> ) |
|-------------------------------------|---------------------------------|-------------------------------------|-------------------------------------|----------------------------------------------------|
| Cell type Fender 1150H              | 52.5                            | 22/m                                | 66.30/m                             | 35 t/sq. m                                         |
| 'D' type fender 150mm x150mm        | 45%                             | 0.25 /m                             | 9.60/m                              | ....                                               |

#### 1.2.12.2.4. Rubber Compound for Fender Body

The material used for the fender body shall be natural or synthetic rubber of high quality having sufficient resilience, anti-aging weather and wear resistance properties to meet all normal service conditions. Natural rubber /Synthetic rubber content shall not be less than 40%. The material shall be homogeneous, and shall not have any defective impurities, pores or cracks etc. and shall satisfy the physical test requirements as given in the following table based on the standards set by ASTM 2000-77a or its equivalent.

The tables below give the requirements of physical properties of rubber compounds which are to be used for making fenders and these properties shall be confirmed during quality assurance testing prior to fender manufacturing.

| Property            | Testing Standard                |                                                                    | Condition                 | Requirement                |
|---------------------|---------------------------------|--------------------------------------------------------------------|---------------------------|----------------------------|
|                     | ASTM                            | Others                                                             |                           |                            |
| Tensile Strength    | ASTM Others<br>ASTM D 412 Die C | DIN 53504;<br>AS1683.11; BS ISO 37;<br>JIS K 6251                  | Original                  | 16.0 MPa (min)             |
|                     |                                 |                                                                    | Aged for 96 hours at 70°C | 12.8 MPa (min)             |
| Elongation at Break | A<br>ASTM D 412 Die C           | DIN 53504; AS 1683.11;<br>BS ISO 37; JIS K 6251                    | Original                  | 350%                       |
|                     |                                 |                                                                    | Aged for 96 hours at 70°C | 280%                       |
| Hardness            | ASTM D 2240                     | BS ISO 7619-1;<br>DIN ISO 7619-1;<br>AS 1683.15.2;<br>JIS K 6253-3 | Original                  | Shore A (max)              |
|                     |                                 |                                                                    | Aged for 96 hours at 70°C | Original +8° Shore A (max) |
| Compression Set     | ASTM D 395<br>Method B          | AS 1683.13 Type 1;<br>ISO 815-1;<br>JIS K 6262                     | 22 hours<br>at 70°C       | 30% (max)                  |

|                        |                             |                                                                       |                                             |                                                                   |
|------------------------|-----------------------------|-----------------------------------------------------------------------|---------------------------------------------|-------------------------------------------------------------------|
| Tear<br>Resistance     | ASTM D 624<br>Die B         | AS 1683.12; BS<br>ISO;<br>JIS K 6252-1                                | Original                                    | 70kN/m (min)                                                      |
| Ozone<br>Resistance    | ASTM D 1149                 | DIN ISO<br>1431-1;<br>AS 1683-24;<br>BS ISO 1431-<br>1;<br>JIS K 6259 | 50pphm at<br>20% strain,<br>40°C, 100 hours | No cracks                                                         |
| Seawater<br>Resistance | ASTM D 471                  | BS ISO 1817                                                           | 28 days<br>at 95°C                          | Hardness:<br>• }10° Shore<br>A (max) Volume:<br>+10/-<br>5% (max) |
| Abrasion<br>Loss       | —                           | BS 903 A9<br>Method B                                                 | 3000 revolution                             | 1.5cc (max)                                                       |
| Bond<br>Strength       | ASTM D429...<br>Method B    | BS ISO 813                                                            | Rubber to steel                             | 7N/mm (min)                                                       |
| Dynamic<br>Fatigue     | ASTM D430-95...<br>Method B | —                                                                     | 15,000 cycles                               | #Grade 0—1                                                        |

#Grade 0 = No cracking has occurred

Grade 1 = Cracks at this stage appear as pin pricks to the naked eye. Grade as 1 if the pin pricks are less than 10 in number and less than 0.5 mm in length

The above properties are to be confirmed during quality assurance testing conducted at 3<sup>rd</sup> party laboratory in the presence of certifying agency prior to the fender manufacturing.

#### 1.2.12.2.5. **Frontal Frame**

Frontal frame shall be of fabricated steel construction and painted with sufficient area to limit the hull pressure at 35.00 tonnes per square metre

These steel work for the frontal frame shall be cleaned by sand blasting etc. and applied with first coat of Zinc anode primer of thickness not less than 75 microns and second coat of bitumen epoxy paint, of thickness not less than 150 microns and third coat of bitumen epoxy paint of thickness not less than 150 microns.

#### 1.2.12.2.6. **Frontal Pad**

Frontal pads having proper and integrated arrangements with the fender body and frontal frame shall be provided. The pads shall be made of high molecular polyethylene, having low friction coefficient to avoid spark during berthing. It shall have the following physical properties.

|       |                      |                              |
|-------|----------------------|------------------------------|
| (i)   | Density              | 0.95 to 1.05 gm/cc           |
| (ii)  | Tensile Strength     | Not less than 250 kg/sq. cm  |
| (iii) | Elongation           | Not less than 20%            |
| (iv)  | Compressive strength | Not less than 200 kg /sq. cm |
| (v)   | Friction Coefficient | Not greater than 0.2         |

#### 1.2.12.2.7. **Weight/ Tension Rubber flex chain**

Suitably designed anchor chain has to be provided to the fenders to prevent any sagging. The chain provided shall have units of not less than 20 mm dia. Rubber cushion arrangement is not provided for those chains. The chain and other accessories provided shall be rolled / carbon steel and hot dipped galvanized as per ASTM A 575 Gr.1075 or equivalent. A typical arrangement of rubber flex chain is attached. U-anchor where required shall be of MS grade 8.8 Galvanized or equivalent .

#### 1.2.12.2.8. **Fixtures**

All bolts, nuts, washers, sleeves etc. shall be of Stainless steel of 316 Grade of approved quality. The material for resin anchor sleeve, if required shall be made of synthetic resin and proved satisfactory to the following requirements.

#### 1.2.12.2.9. **Performance Test.**

Representative samples of the fenders, minimum of one sample from each lot approved for despatch from factory to the site, shall be tested for performance in the presence of the Surveyor or the duly authorized officials of the classification society appointed with the approval of the department and an Engineer from the Port Authority deputed by the Chief Engineer and

performance curves viz, load –deflection and energy deflection curves shall be submitted along with the supply of the fenders.

Performance testing to establish design data may use either of two methods as mentioned in PIANC Guidelines for design of fender systems-2002.

The traditional and widely used Constant Velocity (CV) Method or Decreasing Velocity (DV) Method.

#### **1.2.12.2.10. Test Apparatus**

The test apparatus shall be equipped with a calibrated load measuring device such as load cell(s) or pressure transducer and linear transducer(s) for measuring displacement capable of providing continuous monitoring of fender performance.

The test apparatus shall be capable of recording and storing load-cell and transducer data at intervals of  $0.01H-0.05 H$ , where  $H$  is a fender's nominal height, and storing manually entered inputs. Also information related to serial nos., date, time at start, test ambient temperature etc. shall be furnished.

For fender tests, all equipment used to measure and record force and deflection shall be calibrated, and certified accurate to within  $\pm 1$ (one) percent in accordance with ISO or equivalent JIS or ASTM requirements. Calibration shall be performed within one year of the use of the equipment, or less, if the normal calibration interval is shorter than one year. Calibration of Test Apparatus shall be checked annually by a qualified third-party organization, using instrumentation, which is traceable to a certified, national standard.

#### **1.2.12.2.11. Test Protocol**

The performance test shall deflect specimens according to either of the two methods, Method CV or Method DV. Clear and unambiguous calculations must be provided for any adjustments made to the test results.

#### **1.2.12.2.12. Supporting Protocols**

Supporting Protocols shall cover temperature stabilization, Velocity Factor (VF) and Temperature Factor (TF) as mentioned in PIANC Guidelines for the Design of Fenders Systems – 2002.

#### **1.2.12.2.13. Verification/Quality Assurance Testing**

##### ***a) Energy/Reaction Compliance Testing***

Samples for verification testing shall be actual fender elements fabricated for the project following the PIANC Guidelines for the Design of Fenders System – 2002.

##### ***b) Break in Deflection***

Break-in deflection of actual elements should be at least manufacturer rated deflection. At least one cycle should be performed.

**c) Other Testing**

Effect of contact angle and durability tests should be carried out as per PIANC Guidelines for the Design of Fenders Systems – 2002 recommendations.

**d) Dimensions**

Fenders shall meet manufacturer's specified dimensional tolerance.

**e) Steel frame, Frontal Frame, Hardware, Chains and Related Accessories**

All steel hardware for securing of fenders shall be stainless steel grade AISI 316 or equivalent.

**1.2.12.2.14. Physical Properties**

|                                       |                                      |
|---------------------------------------|--------------------------------------|
| Tensile strength (230 <sup>0</sup> C) | :Min. 300 Kg/m <sup>2</sup> ASTM 638 |
| Water Absorption                      | :Max 3% (Weight Change)              |
| Chemical Resistance                   | :Max 1%, 10% NaCl (Weight Change)    |
| Elongation                            | :20% ASTM 638                        |

**1.2.12.2.15. Certificate from Approved Classification Society**

1.2.12.2.15.1. The fenders shall be certified by independent testing agency such as IRS or Loyds or BV or other approved classification society

1.2.12.2.15.2. The design of the fender unit shall be as approved by the Classification Society appointed with the concurrence of Chief Engineer and the fender unit shall be built under their supervision. Such approval approved by the Classification society along with the copy of the design calculations and detailed drawing shall be furnished to the Chief Engineer and the consent obtained before commencement of the casting of fenders. The performance test shall also be conducted under the supervision of the classification society in the presence of an Engineer from the Port Authority deputed by the Chief Engineer. A certificate to the above effect as well as the fender units conform to the technical requirements stipulated in the contract, issued by the Classification Society shall be furnished along with fenders supplied. Chemical composition of the rubber shall be tested in an approved laboratory as per ASTM D297/D6370 and the test shall be witnessed by the above Classification Society.

1.2.12.2.15.3. All cost and fee payable to the classification society for rendering the above services shall be borne by the supplier and shall be included in the rate quoted.

**1.2.12.2.16. Installation**

While submitting the tender, each tenderer shall specify the method by which the fender is installed. The installation work shall be carried out in accordance with the requirements of the Engineer-in-charge, employing sound engineering techniques and modern methods with the approval of the Engineer-in-charge.

#### 1.2.12.2.17. **Rate**

The rates quoted for the item of providing and fixing fenders shall be inclusive of all charges such as packing and forwarding charges, freight, transit/risk insurance charges, taxes, duties including customs duty if applicable, all fixtures and accessories such as frontal frame, frontal pad etc., making necessary holes in the concrete structure for providing anchor bolts etc. complete. The fixtures shall include all materials required for the installation of the fenders to the RCC frontage and bolts, nuts, washers etc. required for fixing frontal frame to fender body and for fixing frontal pad to frontal frame etc. Any fittings or accessories which may not be specifically mentioned in the specification but which are used or necessary are to be provided by the contractor without extra charge and the fender fixed must be complete in all respects.

### **1.2.13. CAST STEEL BOLLARDS**

#### **1.2.13.1. General**

Cast steel bollards of line pull capacity 100T Double horn type is proposed for the work. The arrangement of bollards shown in the drawings is only tentative and shall be altered/changed, based on detailed designs.

#### **1.2.13.2. Specifications for Bollards**

The bollards have to withstand sudden jerking effect from ropes connected to vessels and to resist rubbing effect of ropes on its sides.

#### **1.2.13.2.1. Standards and Codes**

The following latest edition of standards and codes or approved equivalent international codes shall be followed for the manufacturing and testing of cast steel bollards.

IS1030- Specifications for carbon steel casting for general Engineering purposes.

IS 1387 - General requirements for supply of metallurgical materials.

IS 1599 - Method for bend test for steel products other than sheet, strip, wire and tube.

IS 1608 - Method of tensile testing of steel products

IS 3664 - Code of practice for ultrasonic Pulse Echo Testing by contact and Immersion methods.

IS 3381 - Specification for cast vertical bollards with and without lugs.

IS 1600 - Tensile testing of steel products other than sheet, strip, wire and rope.

### 1.2.13.2.2. Properties

- Bollards shall be of Cast Steel.
- The casting shall conform to IS.1030. The mechanical properties of it shall be:

|                  |                                |
|------------------|--------------------------------|
| Tensile strength | : 540 MPa (min).               |
| Elongation       | : 15% (Gauge length 4JA)       |
| Yield strength   | : 50% of min. tensile strength |
| Angle of bend    | : 60% (min).                   |

- Chemical composition:

The limit for sulphur and phosphorous in the steel when analysed shall be:

|             |              |
|-------------|--------------|
| Sulphur     | : 0.05% max. |
| Phosphorous | : 0.5 % max. |

### 1.2.13.2.3. Specification for Casting

#### 1.2.13.2.3.1. Method of Casting

The steel for the casting can be made from open hearth, electric, duplex, acid Bessemer, basic oxygen (L.D) or a combination of these processes.

Casting manufactured from steel made by Bessemer processes will not be accepted. The steel shall conform in quality, strength, hardness etc. to IS 1030.

The casting shall be made under strictly controlled condition to ensure chemical composition, soundness, uniformity, correct grain size to develop shock resistance properties and to avoid blow-holes.

#### 1.2.13.2.3.2. Moulding and Moulding Tolerances

The casting shall be accurately moulded in accordance with the drawing. The dimensional tolerance that can be allowed for all important dimensions shall be  $\pm 1.6$  mm.

The castings shall be sound, clean and free from sand. They shall be free from distortion, blowholes, twists and other injurious defects. They shall be properly flattened and dressed.

#### 1.2.13.2.3.3. Heat Treatment

All casting shall be supplied in the heat-treated condition, which shall be carried out at suitable temperature to give the mechanical properties as specified. The casting shall thoroughly be annealed to refine the crystalline structure throughout the casting by heating to uniform temperature no less than the normalising temperature and allowing to cool slowly from maximum temperature in a uniform manner or alternatively normalizing by heating in a similar manner and allowing it to cool in air away from draughts.

In no case it shall be allowed to conduct heat treatment process for more than two times on the same casting.

The method of heat treatment and all relevant records shall be furnished.

#### 1.2.13.2.3.4. **Marking Procedure**

Each casting shall be legibly marked with

- Number or identification mark by which it can be traced to the melt from which it was made, and
- The manufacture's initial and trade mark
- The capacity of the bollard in bold letters. (**100T**)

#### 1.2.13.2.3.5. **Defects and Rectification**

If the casting is found defective during the course of any subsequent preparation or machining, it shall be rejected even if it has been found satisfactory during earlier testing, if any.

No casting shall be repaired or welded without the prior permission of the Employer or his representative. When repairs that might have been so sanctioned are completed, the concerned casting shall be again presented for inspection. When welding is carried out, the welding technique and the preparation of the casting for repairs shall be in accordance with IS 5530.

#### 1.2.13.2.4. **Testing**

##### 1.2.13.2.4.1. **Test Sample**

The test samples shall be cast separately from the casting. The test sampling shall be cast from moulds of the same material, which is used for casting and shall be poured at the same time and from the same melt as the casting they represent. The samples shall be treated along with casting they represent.

The test samples shall be provided to the extent of 2% of the number of casting from each melt but in no case less than two samples per melt. When a casting is made from more than one melt, at least four tensile tests and four bend tests shall be made from samples situated as far apart as possible in the casting. Some of the test samples shall be taken as near the tip and others from as near the bottom of the casting as is practicable.

Samples shall be tested in approved laboratory.

##### 1.2.13.2.4.2. **Type of Test**

###### *a) **Tensile Test***

The tensile test shall be carried out in accordance with IS 1608. The minimum tensile strength and elongation shall be as given earlier in this specification.

###### *b) **Bend Test***

The bend test shall be carried out in accordance with IS 1599. This test piece

shall be capable of being bent without fracture to the angle specified earlier in this specification. It should be bent round a former having a radius of 25 mm.

**c) Non-destructive Tests**

The following non-destructive tests at Cross-sections decided by the Employer shall be carried out.

Ultrasonic flaw detector test as per IS 3664 for checking the thickness of the castings and to detect the defects in the casting.

- Magnetic particle test
- Ringing test

The Engineer-in-charge shall indicate the location to be examined on the casting and the stage of manufacture at which such examinations are to be made.

The technique, inspection and interpretation of results shall be laid down and agreed before the manufacture is commenced.

**d) Test by Chemical Analysis**

Chemical analysis test shall be conducted to ascertain the percentages of sulphur and phosphorous content in the material of which the casting is going to be made. A certificate of chemical analysis of such cast shall be supplied when required to do so by the Employer.

**e) Testing Facilities**

The manufacturer shall supply the casting required for testing free of charge and shall at his own cost furnish and prepare the necessary test pieces and supply labour and appliances for conducting all tests at his own premises in accordance with this specification.

If such facilities are not available at the place of manufacture for conducting the prescribed tests, the manufacturer shall bear the cost of transportation for the test pieces or casting and for carrying out the tests at a place approved by the Employer.

**f) Re-test**

If any of the test piece fails to pass any of the mechanical tests specified under tensile test and bend test, two further samples which represent that particular casting or castings shall be selected and tested in the same manner. The manufacturer shall have the option, if he so desires, to re-heat-treat (not more than twice) the casting before the two further samples are accepted. Should either of these tests fails, the casting represented shall be liable for rejection.

**1.2.13.2.5. Bolts, Nuts and Washers**

#### **1.2.13.2.5.1. Bolts and Nuts**

All anchor bolts shall be of mild steel conforming to IS:432 Grade I and nuts shall be made from steel conforming to IS 2062 and shall conform to IS:3138.

#### **1.2.13.2.5.2. Washers**

All plain washers shall conform to the requirements of IS:2016.

All bolts, Nuts and Washers shall be galvanised conforming to IS:1367.

#### **1.2.13.2.5.3. Fixing Details**

The manufacturer shall submit the detailed fixing arrangements of the bollard to the deck with full details of the bolts etc. to the Engineer-in-charge for his approval.

The manufacturer shall submit the following documents and certificates at suitable time for the approval of Engineer-in-charge.

- Drawing showing the complete details of cast steel bollard.
- Drawing showing the fixing arrangements of bollard in the deck of the berth.
- All relevant test certificates.

#### **1.2.13.2.6. Certificate From Approved Classification Society**

##### **1.2.13.2.6.1. Test Certificate & Acceptance Criteria**

**All bollards and accessories shall be certified by competent testing agency such as IRS, Lloyds, BV or other approved classification society.**

1.2.13.2.6.2. The design of the bollard shall be as approved by the Classification Society appointed by the contractor with the approval of Chief Engineer and the bollard shall be built under their supervision. Such approval issued by the Classification Society along with a copy of the design calculations of each component of bollard and fixing bolt and a copy of the detailed drawing shall be furnished to the Chief Engineer and consent obtained before the commencement of the casting of the bollard. The required tests shall be conducted under the supervision of the classification society. A certificate to the above effect as well as the bollards conform to the technical requirements stipulated in the contract, issued by the classification society shall be furnished along with bollards supplied. All cost and fee payable to the classification society for rendering the above services and costs for any rectification works carried out as required by the classification society shall be borne by the contractor and shall be included in the rate quoted.

#### **1.2.13.2.7. Installation**

1.2.13.2.7.1. If required, resin anchor system of “HILTI” /equivalent approved system shall have to be used for fixing the bolt to the connecting structure.

1.2.13.2.7.2. The installation work shall be carried out in accordance with the requirements of the Engineer-in-charge, employing sound engineering techniques and modern methods with the approval of the Engineer-in-charge.

#### 1.2.13.2.8. **Rate**

1.2.13.2.8.1. The rates quoted for the item of providing and fixing bollards shall be inclusive of all charges such as packing and forwarding charges, freight, transit/risk insurance charges, taxes, duties including customs duty if applicable, all fixtures and accessories, making necessary holes in the concrete structure for providing anchor bolts etc. complete. The fixtures shall include all materials, bolts, nuts, washers etc. required for fixing the bollards to the RCC deck. Any fittings or accessories which may not be specifically mentioned in the specification but which are used or necessary are to be provided by the contractor without extra charge and the bollard fixed must be complete in all respects.

### **1.2.14. MISCELLANEOUS STEEL WORK.**

#### 1.2.14.1. **Providing Stainless Steel Ladders**

Ladders shall be fixed at location indicated or in such position as directed and in such a way that it is not damaged due to berthed vessels. The ladder shall be formed with 316 grade Stainless steel angles or flat sides with rungs of stainless steel rods of dimensions shown in the drawing. The ladders shall be fixed by suitable brackets as directed by the engineer in charge. Necessary 316 grade stainless steel bolts etc. shall be placed for the purpose, while constructing the superstructure.

#### 1.2.14.2. **Providing Stainless Steel Mooring rings**

Mooring rings shall be made from 25mm dia. 316 grade stainless steel bars with an outer diameter of 200mm. Suitable eyebolts shall be supplied with the mooring rings for fixing to the berth face in accordance with the drawings.

#### 1.2.14.3. **Anchor bolts**

Whenever possible, anchor bolts for miscellaneous metal fixing and fenders shall be set in the forms with appropriate templates before concrete is poured. All anchor bolts shall be provided with suitable nuts and washers, whether it has been expressly specified in the Quantities/Drawings or not. The location of anchor bolts and miscellaneous steel shall be checked immediately before and after pouring of concrete by the contractor. Pouring of concrete shall not be done unless the locations have been approved by the Engineer-in-Charge. The projecting threaded parts of the anchor bolts shall be protected by means of grease wrapped with clean rag.

## 2. TECHNICAL SPECIFICATIONS OF ELECTRICAL WORKS

### 2.1 SCOPE OF WORK

The subject work is for “Providing Electrical facilities to the Q2, Q3 Berth  
The brief scope of work is as shown below.

- e. SITC of 11 m long GI octagonal pole made of MS steel having necessary sections if required as per manufacturers design with suitable base plate and necessary single arm each ,min sheet steel thickness 3mm , foundation bolts, suitable for providing 200 W Flame proof light fittings - 2 NOS, as required and all related works as directed by the EIC.
- f. Supply and Laying of 3.5C X 50 sq. mm LT FR cable through cable tray, clamping along walls etc. from existing MV panel at substation as required.
- g. Supply and laying of 300 mm width GI cable tray with GI angles.
- h. SITC of HDPE/GI pipes for laying HT and LT cables.
- i. SITC of LT cables for taking supply to street light poles, berth lights etc. through open trench etc including its termination with junction boxes, MV panels etc.
- j. Supply, Installation, Testing and Commissioning of 200W LED Flame proof Lights.
- k. Supply, Installation, Testing and Commissioning of Street Light Panel with timer control.
- l. Supply and providing End termination /Straight joint for LT cables.
- m. Earthing of the installations with pipe/rod earthing such as light poles etc.
- n. Testing and commissioning of the entire system.

The bidder shall visit the site, ascertain the site conditions and scope before bidding

### 2.2. ELECTRICAL DISTRIBUTION SYSTEM

#### 2.2.1. GENERAL TECHNICAL PARTICULARS

|                                                                      |                        |
|----------------------------------------------------------------------|------------------------|
| Fault level at W/Island at 11 KV                                     | : 25 KA                |
| Anticipated Max. fault level                                         | : 50 KA                |
| Rated system voltage                                                 | : 11 KV                |
| Rated frequency                                                      | : 50 Hz                |
| Neutral earthing                                                     | : effectively earthed. |
| Installation of cable                                                | : Underground burial.  |
| Rated short circuit current at 11 KV side                            | :25 KA                 |
| Proximity of extraneous heat source                                  | : Nil                  |
| Max. Permissible operating temp. of conductor under normal Operation | : $90^0\text{C}$       |
| Under short circuit                                                  | : $250^0\text{C}$      |
| Ground temperature                                                   | : $40^0\text{C}$       |

|                                        |               |
|----------------------------------------|---------------|
| Type of installation                   | : Earthed     |
| Maximum temperature of air             | : 40 degree C |
| Minimum temperature of air             | : 22 degree C |
| Maximum relative humidity              | : 95%         |
| Minimum relative humidity              | : 10%         |
| Average No. Of thunderstorm days       | : 40 days     |
| Average number of rainy days per annum | : 90 days     |

### 2.2.2. Type of Soil along the Cable Route

General condition of the earth is soft marshy. Some portions are tarred with rubble soling. However Contractor shall conduct route survey before submitting their quotes.

### 2.2.3. General Conditions

In addition to the above, the scope intends to cover but not restrict to the following activities, services and works.

- (i) Complete design and engineering of all the systems, sub-systems, equipment, material and services.
- (ii) Providing engineering data, drawing and O&M manuals for Employer's review, approval and records.
- (iii) Supply, testing, packing transportation and insurance the equipments from the manufacturer's work to the site.
- (iv) Receipt, storage, insurance, preservation and conservation of equipment at the site.
- (v) Fabrication, pre-assembly (if any), erection, testing and putting into satisfactory operation of all the equipment/ material including statutory clearances & successful commissioning.
- (vi) In addition to the requirements indicated in Technical Specifications, all the requirements as stated in relevant regulations stipulated for successful commissioning of the installation also be considered as a part of this specification and Contractor is bound for compliance the same.
- (vii) The Contractor shall be responsible for providing all material, equipment and services specified or otherwise which are required to fulfill the intent of ensuring operability, maintainability and the reliability of the complete work covered under this specification.
- (viii) For individual equipment specifications reference shall be made to the relevant Technical Specification of the equipment as per contract condition.
- (ix) The Contractor shall be responsible for the overall management and supervision of works. He shall provide experienced, skilled, knowledgeable and competent personnel for all phases of the project, so as to provide the Employer with a high quality system.
- (x) A project execution schedule called Master Network (MNW) in the form of PERT / Gant chart/ network and based on 'Work break down structure' shall be prepared by the Contractor for Employer's approval. The MNW shall identify milestones of key events for each work/ component in the

areas of engineering, procurement, manufacture, dispatch, erection and commissioning.

### **2.3. PROJECT MANAGEMENT & SITE SUPERVISION**

In case the contractor intends to subcontract the electrical works, the subcontractor who will be employed shall be a class A contractor / EHT contractor issued by state electrical inspectorate/ central electricity authority. The contractor shall submit all the required credentials of the subcontractor to the employer for approval of the appointment of subcontractor.

#### **2.3.1 TESTING AND COMMISSIONING**

The scope includes testing and commissioning of all equipment, sub-systems and systems of the project and putting them into successful commercial operation. The scope shall include but not limited to the requirements given elsewhere in the specification. The Contractor shall be responsible to provide all necessary testing and commissioning personal, tools and plant, test equipment, etc.

The Contractor shall identify all interface issues with Employer and other agencies, and shall be responsible for each interfacing, coordination and exchange of all necessary information.

The Contractor shall submit to the Employer all drawings for review. He shall list out the detailed requirements of interface between Contractor's work and the material and services to be supplied by Employer.

The interpretation of the Employer in respect of the scope, details and services to be performed by the Contractor shall be binding, unless specifically clarified otherwise by the Employer in writing before the award of the contract.

The drawings (enclosed), forming a part of the specification shall supplement the requirements specified herein. These are preliminary/ tentative drawings for bidding purpose only and are subject to changes that may be necessary during detailed engineering after award keeping the basic parameters as specified.

Failure of any equipment to meet the specified requirements of tests carried out at works or at site shall be sufficient cause for rejection of the equipment. Rejection of any equipment will not be held as a valid reason for delay in the completion of the works as per schedule. Contractor shall be responsible for removing all deficiencies and supplying the equipment that meet the requirement after furnishing of necessary fresh type test report, as per relevant ISS Standard from NABL Accredited Laboratory.

### **2.4. COMPLIANCE OF ELECTRICITY ACT, REGULATIONS, ETC.**

Contractor is required to follow statutory regulations stipulated in Electricity Act 2003, Indian telegraph act 1889, Electricity (Supply) Act 1948, Indian Electricity Rules 1956, CEA (Regulation relating to safety of electrical installation ) regulation 2010, with all amendments till date and other local rules and regulation referred in this specifications.

The Contractor shall comply with all the statutory rules and regulations prevailing in the state of Kerala including those related to safety of equipment and human beings.

The successful Contractor (individual) or any of the partner of joint venture

who has qualified, should obtain "A" class electrical license from Electrical inspectorate of Govt. of Kerala/GoI/ any other state/ Union territory etc, before award of contract and to be kept valid till such time all the erected work as per scope of the award is taken over by the Employer.

The Contractor shall do complete coordination with all local and statutory agencies for execution of complete works including obtaining clearance for energizing of the HT system upon completion of entire works.

The Contractor shall obtain approvals & clearances and right of way from all agencies involved. All cable routes shall generally be routed through public land/ along the road.

The Contractor shall be responsible for transportation to site all the materials to be provided by the Contractor as well as proper storage and preservation of the same at his own cost, till such time the erected installation is taken over by the Employer.

## **2.5. METHODOLOGY OF PROCUREMENT**

All equipments/material shall be sourced from reputed manufacturers only. All equipment/ material offered shall be of reputed manufacturers only as per the list of approved make mentioned in the tender document and who have designed, manufactured, completely tested for relevant Indian Standards and supplied the equipment/ material to various State Electricity Boards or other reputed utilities which are in trouble free services at least two different locations for a period of more than two (2) years as on the date of bid opening.

## **2.6. QUALITY ASSURANCE, INSPECTION AND TESTS**

The Contractor shall offer proven and type tested equipment for the project. The type test Certificates shall be complete as per the relevant I.S., carried out by NABL, CPRI or any other statutory bodies responsible for testing of equipment and it shall not be older than 5 years.

If required, Sub-vender's credentials, copies of valid BIS license, past supply & performance certificates as per requirement will also be required for sub-vender's approval, if not already approved for a specific item.

In case during post award detail engineering stage, if any equipment is found to be not type tested or partially type tested, as per I.S., the Contractor shall carry out complete type test for the items at his own cost.

The Contractor shall arrange all type, routine and acceptance tests at manufacturer's works as per approved Material Quality Programme with CoPA's officer. Any expenditure in connection with deputing the representative to the manufacturer's work site will be borne by CPT. The Contractor shall arrange the inspection program in consultation with engineer-in-charge to give sufficient advance intimation of the manufacturing and testing schedules to facilitate timely inspection of the equipments by CoPA. Fake inspection call will attract penalty as per the discretion of the employer.

The Contractor shall provide one set of tests reports to Employer on successful completion of the tests.

## **2.7. GENERAL TECHNICAL SPECIFICATIONS**

### **2.7.1. SUPPLY OF MATERIALS -GENERAL**

All materials required to complete the work as per given specifications & drawings etc, must be manufactured and supplied using fresh raw materials. Re-moulded, re-circulated materials are not acceptable. The procurement of materials must be made directly from manufacturer or through authorized dealer / distributors. Documentary evidences to this effect are to be made available to the engineer-in-charge for necessary checks / verification of source of supply of materials. Second hand materials / partial used materials / used materials would not be acceptable. The offer should be as per Technical Specification without any deviation. But any deviation felt necessary to improve performance, efficiency and utility of equipment must be mentioned in the Deviation Schedule with reasons duly supported by documentary evidences during pre bid meeting. Such deviations suggested may or may not be accepted by the employer. Any deviations projected after the pre bid meeting shall not be entertained at any cost.

### **2.7.2. INSTALLATION OF EQUIPMENTS – GENERAL**

#### **2.7.2.1 Standards**

Erection, testing and commissioning of the equipments covered shall be done as per standard codes of practice and shall comply with requirements of following Indian Standards and other relevant standards, Indian Electricity Rules and acts and also to the regulations that are in force at the place of installation.

IS: 1255 Code of practice for installation and maintenance of power cables upto and including 33 kV rating.

IS : 5216 Guide for safety procedures and practices in Electrical work.

IS :100118 Code of practice for selection, installation and maintenance for Switchgear and control gear-Part-III Installation.

IS : 13408 Code of practice for the selection, installation and maintenance of electrical apparatus for use in potentially explosive atmospheres (other than mining application of explosives processing and manufacture).

IS: 3043/87 Code of practice for installation and maintenance of earthing of installation.

#### **2.7.2.2 Reference**

Following documents shall be read in conjunction with this specification

- (i) Scope of work and special requirements
- (ii) Schedule of items of work

(iii) Engineering Specification and Data sheet of General requirements of Electrical system.

### **2.7.2.3 General Conditions For Installation Of Equipments**

- a) The erection/installation, testing and commissioning shall be carried out in accordance with specification, data sheets, drawings, manufacturer's recommendations, and relevant standards or as directed by owner/Engineer-In-Charge. Requirements regarding erection/installation, testing and commissioning of switchboards, cables, etc, are generally explained here in. It is the responsibility of the contractor to supply all equipment, items, accessories, materials, tools, tackles, transporting, and lifting vehicles, consumables etc. required for unpacking, checking, transportation, storage, safe custody, installation, erection, testing, commissioning, return of unused equipment/items which are supplied from owner's stores and handing over of the installation to the entire satisfaction of owner.
- b) The erection scope shall include supply of all hardwares and accessories such as bolts, nuts, washers, gaskets, cable termination accessories, lugs, paint, primer, sand etc. required for completeness of the work. All consumable materials such as insulation, tape, cleaning and paint brushes, welding electrodes, rust preventive materials, jute, cotton waste, hack saw blades, bolts, nuts, inhibitive grease, fuel, lubricants, etc, and any other material required in carrying out the work but not for incorporation in to the permanent work, shall also be included in the scope of contractor.
- c) The equipment/items to be erected shall be handled with care by experienced workers under the guidance of the competent supervisor. Proper handling and transporting equipments are to be used and dragging is to be avoided.
- d) The equipment/items supplied by the owner, shall normally be kept at their stores. The contractor shall inspect these items at the stores by unpacking the containers, if necessary. Responsibility of safe custody of materials after delivery and till handing over shall rest with the contractor. Unused materials and containers shall be returned to the stores. The items supplied by the owner shall be transported from the point of storage to the point of erection / installation using proper capacity transporting vehicles. The scope shall include unpacking the containers, assembling parts, fixing loose items, components, etc. Materials supplied by the contractor or issued by the owner shall be given suitable protection against weather, dust and vermin. In storage places, equipments shall be placed over wooden sleepers to keep them above ground. Before carrying out erection/installation works of any item, proper care regarding leveling, alignment, access to working parts, facilities for removing the items for repair, statutory clearance, etc. shall be taken.
- e) Foundation bolts, nuts, lock nuts, washers, etc. will normally be supplied by the equipment supplier. Any further requirement of these items shall be under the scope of contractor. The equipment shall be installed on the foundation bolts firmly such that there will not be any vibration during operations. For

mounting of equipment/items on the walls/ columns / supports, suitable MS/GI brackets shall be fixed / grouted.

- f) Electrical connections shall be done with great care using spring washers, bimetallic strips, conducting grease, etc. wherever required to ensure good contact without creating undue stresses. Copper bus bar joints shall be made after tinning the contact area. Supply of all required accessories or electrical connections shall be included in the contractor's scope. Discrepancies if any found between drawings/statutory requirements and actual conditions at the site, shall be immediately brought to the attention of owners representative. If any modification is found required in the writing or to suit site condition the same shall be carried out as per the instruction of the Engineer-In-Charge without any extra cost.
- g) All equipments under erection shall be kept properly cleaned and free of dust, vermin, moisture, etc. After erection, it shall be ensure that non-foreign materials, tools or tackles are left in the equipment. All unused cable entries, cutouts, etc. shall be sealed properly. For hazardous area, blanking plugs suitable for the area classification applicable shall be used.
- h) All tests shall be carried out in the presence of owner's representative and test shall be recorded on an approved proforma duly certified. The records of all tests shall be submitted to the purchaser's representatives. All interconnected wiring shall be checked thoroughly for correct connection with the wiring and schematic drawings of the manufacturer and the drawings supplied by owner before energizing.
- i) All power and bus bar connection shall also be thoroughly inspected and checked for connections, foreign materials, tightness, etc. before energizing the equipment. All components within the main equipment shall be tested for proper performance and correct operation before commissioning the equipment.
- j) All labeling shall be checked for correctness. All nuts, bolts, clamps, joints, connections, etc. shall be checked for tightness and tightened wherever required. All moving parts shall be checked for its correct movement and proper lubrication. Apply lubrication wherever required. All equipment containing liquid shall be checked for correct quantity filling and all gaskets, walls, etc, shall be checked for leak proof. Oil filling, if found required, shall be done with dry and clean oil. Gaskets shall be replaced if found required. It shall be ensured that all CT leads are loaded or shorted prior to testing and commissioning. Insulation tests shall be carried on all electrical devices, whether specifically mentioned or not, as per this work after properly cleaning these devices.
- k) All the relays and its settings after commissioning shall be furnished to owner detailing relay type number, panel number etc. In case of any component of an equipment supplied by the owner is found to faulty/ unsuitable, the same shall be replaced by the new one issued by owner. All relays, before

installation, the rating, range and auxiliary supply voltages for the relay should be checked against drawings/ schematic/ schedule.

#### **2.7.2.4 Civil and structural works**

- a) Miscellaneous civil works associated with the erection/installation such as excavation, dewatering and refilling of earth work for earth pits and cable trench, chipping, grouting, small cutting, etc. on floors/ walls/ columns / structures and bringing back the same to original finish, grouting of supports, providing suitable fixing arrangements for cables, push button stations, DBs etc. shall be included in the rates quoted for erection of the respective items, unless specifically excluded in the “Schedule of Items of Work”. All structural works associated with cabling, earthing, equipment erection and supporting arrangements shall be included in the scope of the contractor. All the welding and cutting works shall be carried out by certified welders. Painting shall be done on all MS materials provided, by the contractor such as base channels, frames, supports, pedestals, cable trays/racks/risers, enclosures, boxes, conduits, chequered plates etc. Before painting, the surface should be thoroughly scraped and cleaned to remove dust, grease, plaster or any other foreign materials. It is the responsibility of the contractor to supply and install all the required materials for painting including paint. Cement concrete footing shall be provided for, cable trays/racks/risers, pedestals, supports, etc. Footing shall be provided using 1:2:4 PCC with 20mm broken stone. It is responsibility of the contractor to supply and install all materials such as river sand, reinforcement rods, 20mm broken stone, etc. without any extra cost to owner. All concrete works and grouting shall be cured for a minimum period of 48 hours.
- b) Chipping, grouting, etc as recommended shall be done for completion and installation work on the finished floor, wall, roof, etc. It is the responsibility of the contractor to supply all necessary materials and to bring the disturbed surface to the original finish. Touch painting of scratches found on equipment, other painted metallic surfaces, galvanized etc. associated with this work is also included in the scope of contractor without any extra cost. Base steel structures shall be painted with 2 coats of epoxy primer and 2 coats of epoxy paint.

#### **2.7.2.5 Standard requirements for testing and commissioning**

- a) The standard requirements for testing and commissioning are furnished below.
- b) All tests shall be carried out in the presence of Owner's representative and tests shall be recorded on an approved format duly certified. The records of all tests shall be submitted to the purchaser's representative.
- c) All interconnected wiring shall be checked thoroughly for correct connections with the wiring and schematic drawings of the manufacturer

before energizing. All Power and bus bar connections shall also be thoroughly inspected and checked for correctness, foreign materials, tightness, etc. before energising the equipment.

d) All components within the main equipment shall be tested for proper performance and correct operation before commissioning the equipment. All labeling and nameplates shall be checked for correctness. All nuts, bolts, clamps, joints, connections, etc shall be checked for tightness and tightened wherever required. All moving parts shall be checked for its correct movement and proper lubrication. Apply lubrication wherever required. All equipment containing liquid shall be checked for correct quantity filling and all gaskets, valves, etc. shall be checked for leak proofness. Oil filling if found required shall be done with dry & clean oil. Gaskets shall be replaced if found required. The condition of oil shall be tested in accordance with IS-335.

## **2.8. DETAILED TECHNICAL SPECIFICATION-SUPPLY OF MATERIALS**

### **2.8.1. LIGHTING POLES**

#### **2.8.1.1 General**

11-meter height lighting poles to be provided in the reclamation area road lighting. Lighting pole shall be octagonal type, galvanized steel, supplied with base plate, foundation bolts, and necessary fixing-bracket for fixing the luminaries. Street lighting pole shall have integral junction box. All poles shall be provided with heavy square nuts on the anchor bolts under the pole base plate and hex nuts on the top. GI conduits shall be embedded in muff for incoming and outgoing cables. Height of poles shall be as per design calculation. Height of poles shall be as per design calculation. MCB and neutral link for fixing in JB. Suitable CU UR armoured FR cables for giving interconnection between poles for giving supply to pole and lights shall be in the scope of supply. Minimum 30 M CU cable / pole. Junction box shall be with with MCB , Terminal connector and neutral link. The Foundation shall be casted in the berth slab or Kerb as per instruction of EIC.

#### **1. Design:**

The Octagonal Poles shall be designed to withstand the maximum wind speed as per IS 875. The top loading i.e. area and the weight of fixtures are to be considered to calculate maximum deflection of the pole and the same shall meet the requirement of BSEN 40-3:2000, EN-40-3-3 or equivalent.

#### **2. Pole Shaft:**

The pole shaft shall have octagonal cross section and shall be continuously tapered with single longitudinal welding. There shall not be any circumferential welding.. All octagonal pole shafts shall be provided with the rigid flange plate of suitable thickness with provision for fixing foundation bolts. This base plate shall be fillet welded to the pole shaft at two locations i.e. from inside and outside.

### **3. Material:**

Octagonal Poles HT Steel Conforming to grade S355JO or equivalent. Base Plate Fe 410 conforming to IS 226 / IS 2062, Foundation Bolts EN.8 grade or equivalent.

### **4. Welding:**

The welding shall be carried out confirming to approved procedures duly qualified by third party inspection agency. The welders shall also be qualified for welding the octagonal shafts.

### **5. Pole sections:**

The Octagonal Poles shall be in single section. There shall not be any circumferential weld joint.

### **6. Galvanization:**

The poles shall be hot dip galvanised as per IS 2629 / IS 2633 / IS 4759 standards with average coating thickness of 70 micron.

### **7. Fixing Type:**

The Octagonal Poles shall be bolted on a pre-cast foundation with a set of foundation bolts for greater rigidity.

#### **2.8.1.10 Manufacturing:**

The pole manufacturing & galvanizing unit shall be ISO 9001: 2000 & ISO 14001 or equivalent certified to ensure consistent quality & environmental protection.

#### **1. Base Plate:**

Suitable size base plate and foundation bolts to be supplied along with the lighting pole.

#### **2. Tests:**

Equipment offered shall be of type tested and proven type. Type test certificates for test conducted earlier on similar rating shall be furnished. For the various bought out item test certificates from equipment Manufacturer shall be furnished. Routine tests shall be carried out for all the equipment as per applicable standards.

#### **2.8.2. FLAME PROOF LED STREET LIGHT – 200 W**

200 W led flame proof street light with pressure die-cast housing, high performance polycarbonate optics and ip66 ingress protection. 4kv inbuilt surge protection with top opening driver cover for easy maintenance, suitable for ZONE - 1 & ZONE- 2, GAS/VAPOUR GROUP II A,II B, II C, CIFMR - BIS - PESO CERTIFIED, efficiency 120 lm/w for lights at Q2 & Q3 berths . The

guarantee for Fittings shall be 5 years and certificate shall be provided. The Driver shall be of OEM make.

#### **2.8.3. FLAME PROOF JUNCTION BOX**

FLAMEPROOF Junction Boxes 16 A , Size 200mmx 150MM X 120 MM SUITABLE FOR ZONE- 1 & ZONE - 2, GAS/VAPOUR GROUP II A, II B, & II C , CIMFR - BIS - PESO CERTIFIED supply detail:

1. Cable size 4C X 4 sqmm CU / 3.5CX50 SQ MM, UG Armoured cable.
2. Holes Qty- 4 nos. , preferably side holes suitable for cable sizes .
3. 16 A terminal 4 P. 2 P MCB,

#### **2.8.4. HDPE (HIGH DENSITY POLYETHYLENE) PIPE**

HDPE pipe shall be provided for laying the HT cable at road crossing/hard surfaces. The HDPE pipes shall be 110 mm. dia: with thickness of not less than 5 mm. The HDPE pipe shall be made from high-density polyethylene (HDPE) resins meeting the following requirements:

The HDPE material supplied under this specification shall be high density, high molecular weight conforming to relevant IEC/BIS. The HDPE material shall conform to IS 14930/IS 4984/ASTM D 3350. Suitable size PVC flexible pipe with collar shall be provided for the end portion of HDPE pipe. In case for laying in cable tray, berths etc shall be clamped with 3 MM X 20MM GI clamp with SS Nut and bolts.

#### **2.8.5. 1.1 KV LT POWER CABLE**

The cable shall be 1.1 KV grade(E), XLPE Aluminium conductor cable of size 3.5C x 50 sq.mm. The cable shall be of best quality and as per the approved makes. The cables shall confirm to relevant Latest Indian Standards as applicable. The length of the cables mentioned in the schedule is only approximate and is likely to change. The payment for the cable work will be made on the actual length of the cable used for the work. All routine tests shall be conducted as specified in the relevant standards and test certificate shall be furnished.

##### **1. Scope**

This specification provides for manufacture, testing at works before dispatch and delivery of 1.1 KV grade XLPE insulated, PVC FR cables as required.

##### **2. Application**

The 1.1 KV cable is intended for use on Distribution net work, lightings purpose etc. for outdoor application as per latest IS / IEC/ CEA rules

### **2.8.5.3 Codes & standards as applicable .**

All standards, specifications and codes of practice referred to herein shall be the latest editions including all applicable official amendments and revisions as on date of opening of bid. In case of conflict between this specification and those (IS: codes, standards, etc.) referred to herein, the former shall prevail. All the cables shall conform to the requirements of the following standards and codes for 1.1KV grades if any applicable .

The cables shall comply with the latest edition of the following standards: The cables shall comply with the latest edition of the following standards:

- a) IS:1554 - PVC insulated heavy duty cables
- b) IS:7098 (Part -I) - XLPE Cables – LT
- c) IS:7098 (Part -II) - Cross-linked polyethylene insulated PVC sheathed cables for working voltages from 3.3 kV up to and including 33 kV.
- d) IS:1255 – 1983 - Code of practice for installation and maintenance of power cables.
- e) IS:8130 - Conductors for insulated electric cables and flexible cords.
- f) IS:5831 - PVC insulation and sheath of electric cables
- g) IS:5819-1970 - Recommended short circuit rating of high voltage PVC cables
- h) IS:3961-1987 - Recommended current rating
- i) IS:3975 - Mild steel wires, strips and tapes for armouring of cables.
- j) IS:2633 - Methods of testing weight, thickness and uniformity of coating on hot dipped galvanized articles.
- k) IS:209 - Specification of zinc.
- l) IS:3961 (Part-II) - Recommended current ratings for PVC insulated and PVC sheathed heavy duty cables
- m) IS:10418 - Wooden drums for electric cables.
- n) IEC:540 & 540A - Test methods for insulation and sheaths of electric cables and cords

### **2.8.5.4 Technical particulars of LT cables (As per Latest IS )**

|                        |                                                                     |
|------------------------|---------------------------------------------------------------------|
| Size of Cable          | :3.5 C X 50 Sqmm                                                    |
| Voltage Rating         | :1100 V                                                             |
| Conductor Material     | :Plain Aluminium                                                    |
| Insulation Type        | :Type A PVC Compound                                                |
| Tolerance insulation   | :0.1 mm + 0.1 nominal thickness of                                  |
| Inner sheath thickness | :As per IS                                                          |
| Outer sheath           | :Process of application : Extrusion<br>Thickness : As per latest IS |

### **2.8.6. PERFORATED GI CABLE AND SUPPORTS**

This document covers the detailed technical specification for supply, inspection and erection of new GI perforated ladder type cable trays along with accessories.

#### **2.8.6.1 SCOPE OF WORK:**

**Scope of work includes**

- (i) Supply of perforated GI cable tray of 300mm width, 50mm depth and 1.6mm thickness nut and bolts of suitable size etc. For measurement RUNNING METER will be considered including all accessories
- (ii) Erection of perforated GI cable tray along the wall etc. with clamping, jointing and fixing with GI angle supports, SS fastens/ SS cable tie etc.
- (iii) Fabrication and Erection of GI Cable tray GI Supports with all consumables.

#### **2.8.6.2 SCOPE OF SUPPLY:**

The scope of supply through this specification includes GI perforated cable trays, GI accessories such as bends, tees, crosses, reducers, Connector Coupler Plate and SS 316 hardware, cable tray supports and accessories like bolts, nuts, etc. **Running length will be taken for measurement.**

#### **2.8.6.3 GENERAL REQUIREMENT:**

- (i) The bidder shall quote indicating cost towards:
  - (a) **Supply** (GI cable trays - ladder, supports, fittings, SS hardware)
  - (b) **Erection** (Erection of GI Cable Trays along the walls etc. with GI angle supports )
- (ii) GI cable trays shall be manufactured in accordance with NEMA and ASTM standards.
- (iii) All Cable should be corrosion resistant and Fire retardant in accordance with the latest ASTM Each section of tray shall be complete with necessary GI coupler plates and associated stainless steel hardware for joining of trays bends etc.
- (iv) The coupling plate shall also be manufactured of the GI Tolerance on width and length shall be +/- 6mm and height +/- 2mm for cable trays of 150mm and above.
- (v) All rung to side member connection shall have both a mechanical and chemical (adhesive).
- (vi) Trays shall be assembled by use of locking pin. Required horizontal, vertical bends, tees, crosses, reducers shall be fabricated out of pultruded sections.

#### **2.8.6.4 FACTORY ACCEPTANCE TEST**

- (i) All cable trays and accessories shall be offered for inspection ( OFF line/ONLINE if required ) . A notice of readiness for inspection shall be given minimum 15 days in advance.
- (ii) The following tests shall be carried out in presence of representative.
  - (a) Dimensional Check
  - (b) Deflection Load Test

#### **2.8.6.5 STANDARDS – AS per Latest IS standards applicable.**

### 2.8.7. POLYCARBONATE LIGHTS CONTROL PANEL

Polycarbonate Lights control panel with timer , Contactor, Auto/Manual switch, MCB etc. as required .

#### **Incomings**

40A FP MCB - 1 NO.

32A 4P CONTACTOR - 1 NO.

24 Hr DIGITAL TIME SWITCH - 1 NO.

2A SP control MCB – 1No

#### **Outgoings**

10A SP MCB – 2Nos

Hensel make floor Mounting type high quality Glass fiber reinforced Polycarbonate insulated Panel board IP 65 according to IEC 60 529, protection class II made with modular type polycarbonate enclosures having internally embedded gasket made of polyurethane, these enclosures shall be flame retardant, self-extinguishing and glow wire tested at 960degC in accordance with IEC 60 695-2-11 UL subject 94; Impact strength IK 08(5 Joule) in accordance with DIN EN 50102. The Panel is in accordance with IEC 61439-1 & 2. The material should conform to RoHS directive 2002/95/EC, UV resistant according to IEC 61439-1. Panel board shall be with TYPE TEST Report (in accordance with IEC 61439-2 - ASTA certification' by CPRI) in accordance with IEC 60439-1. The CPRI report have mentioned of following tests performed and passed out satisfactorily with: Temperature Rise. Dielectric Properties. Short circuit withstand current – Rated peak & short time withstand current and Rated Conditional Short Circuit Current. Degree of Protection Clearance & Creepage Distance. Mechanical Operation Effectiveness of Protective Circuits The manufacturer / OEM of the Polycarbonate Enclosure and Panel board should be same. With supplied Panel, manufacturer Routine test certificate should be submitted and all mentioned type test certificate of the Panel should be for polycarbonate - as mentioned in specification.

### 2.8.8. EARTHING

#### **APPLICABLE STANDARDS**

Earthing Materials shall conform to latest applicable standards

IS: 2062 Grade A Quality Specification for MS angles, MS channel & MS Flat

IS: 2062 Chemical & Physical composition of materials.

IS: 1852 Rolling & Cutting tolerances for Hot Rolled Steel products

#### **PIPE EARTHING**

Providing pipe earthing for lighting poles wth 1 M Cu bonded Rod 100 Micron with 4mm Dia/10 SWG along with required length of CU wire and giving connections to poles etc. as required.

Length: 1 meter (1000mm).

Diameter as per standard

Copper Bonding Thickness: 100 microns ( $\mu\text{m}$ ).

Base Material: A core of high tensile, low-carbon steel (SAE 1018, BS 970). The steel provides the mechanical strength to be driven into the ground without bending or breaking.

Copper Purity: The copper layer is typically 99.9% pure electrolytic grade copper.

Application: Used for grounding systems in various applications, including residential, commercial, and industrial electrical systems, as well as for lightning protection

## **GI FLAT FOR EARTHING**

The steel sections shall be re-rolled from the BILLETS/INGOTS of tested quality as per latest version of IS 2830 .The GI Flat shall be of size 25 mm X 5 mm. The GI Flats shall be free from any defects. The Zinc for galvanizing shall conform to grade Zen 98 specified in IS 209-1966 & IS : 4826-1979 with up to date amendments.

## **2.9. TECHNICAL SPECIFICATION-INSTALLATION OF EQUIPMENTS**

### **2.9.1. ERECTION OF LIGHTING POLES**

Light poles shall be erected on the foundation provided for light poles as per specification. Supply to the light poles shall be taken from the RYB connectors provided in the pole terminal box. The termination of interconnecting cable shall be done with necessary sockets to the terminal point. 16 A RYB connector, Junction boxes etc. and shall be provided inside terminal box for terminating the Cable. MCB shall be supplied and fixed for protection of light fittings in each poles. Internal FR sheathed cables from JB to light poles shall also to be supplied including all items for commissioning the light poles. Suitable anchoring bolt/Reinforcement shall be made for building up the pedestal from berth slab /kerb.

### **2.9.2. FOUNDATION FOR 11 M HIGH LIGHTING POLE**

The pedestal for foundation shall be size of 45 CM x 45CM with 45 CM above ground level and also as per OEM Specs. The type of RCC, 12 MM size of tor steel, stirrup, anchor plate etc shall be finalized as per the approval of Engineer in charge and as per the pole manufacturers design. Suitable PVC pipe for cable entry shall be provided.

The information given above is only indicative. The drawings of foundation may be got approved from the engineer in charge before carrying out the foundation work and as per OEM recommendation .

### **2.9.3. LAYING OF CABLE.**

#### **2.9.3.1 LAYING OF CABLES**

Cable drums shall be checked for any damage in transit. Insulation test of the cable shall be carried out between phases and phase to earth before unwinding the drum.

Cables shall be clamped to the wall surface using suitable SS clamps as required according to the site conditions requirement. When the cable has been properly straightened, the cores are tested for continuity and insulation resistance and the cable is then measured. In case of PVC cables, suitable moisture seal tape shall be used for this purpose.

#### **2.9.3.2 CABLE TAGS AND MARKER**

Each cable and conduit run shall be tagged with numbers that appear in the cable and conduit schedule. The tag shall be of aluminum with the number punched on it and securely attached to the cable conduit by not less than two turns of 20 SWG GI wire conforming to IS: 280. Cable tags shall be of rectangular shape for power cables and of circular shape for control cables. Alternately, the contractor may provide cable tags made up of nylon, cable marking ties of 'TY-CAB' or equivalent type with cable number heat stamped on the cable tags. Location of cables laid directly underground shall be clearly indicated with cable marker made of galvanized iron plate. Location of underground cable joints shall be indicated with cable marker with an additional inscription "Cable joint". The marker shall project 150mm above ground and shall be spaced at an interval 100 meters and at every change in direction. They shall be located on both sides of road and drain crossings. Cable tags shall be provided on all cables at each end (just before entering the equipment enclosure), on both sides of a wall or floor crossing, on each duct/conduit entry. Cable tags shall be provided inside the switchgear, motor control centers, control and relay panels etc., wherever required for cable identification, such as where a number of cables enter together through a gland plate. The price of cable tags and markers shall be included in the installation rates for cables /conduits quoted by the Contractor. Specific requirements for cabling, wiring ferrules as covered in respective equipment section shall also be complied with.

### **2.9.4.**

#### **PROVIDING END TERMINATION OF LT CABLES**

Supply and making of end terminations with brass/ pvc glands, lugs etc complete suitable for cables as per schedule of work. the item shall be single compression type tinned/nickel plated (coating thickness not less than 20 microns in case of tin and 10 to 15 microns in case of nickel) brass cable/pvc glands shall be provided by the contractor for all power and control cables to provide dust and weather proof terminations. they shall comprise of heavy duty brass casting, machine finished and tinned to avoid corrosion and oxidation. rubber components used in cable gland shall be neoprene and of tested quality. required number of packing glands to close unused openings in gland plates shall also be provided. for copper cable the termination materials shall be copper materials.

#### **2.9.5. FIXING GI CABLE TRAYS , GI SUPPORTS AND LAYING OF CABLE ALONG THE TRAY :**

- (i) All cable Trays shall be fixed with suitable GI angle supports along the wall with suitable fasters etc. GI supports of suitable size to be used in areas as per suggestion from engineer in charge .
- (ii) Proper alignment and fixing/clamping (SS nuts/bolts/washer/SS tie) shall be carried out for all trays.
- (iii) Supply, fabrication and painting of all structural supports for the cable tray is in the scope of supplier.
- (iv) Cables shall properly be laid in ladder /perforated trays of suitable size GI tray. There shall be no multi tier laying in any of the cable trays. All cables shall be laid in parallel in side-by-side in single layer/tier only.
- (v) The cable laid on the cable tray shall be properly dressed in such a manner that the crossing of cables shall be minimized. The cable in the cable tray shall be clamped with suitable pre-fabricated SS cable tie/clamps/ PVC straps/GI clamps at every 0.5 m in vertical trays and 1 m in horizontal cable tray.
- (vi) Necessary permission will be given for drilling walls for the purpose of bolting the supports or welding to MS Pillars or MS Beams to GI Cable Trays. A combination of mechanical fasteners and adhesive make the strongest most reliable connection
- (vii) Specifications and drawings are for assistance and guidance, but exact routing, locations, distances and levels will be governed by actual field conditions. Contractor is directed to make field surveys as part of his work prior to submitting offer & system layout drawings.

#### **2.10. SPECIAL CONDITIONS FOR ELECTRICAL WORKS**

- a) All current carrying components in all installation shall be of appropriate rating of voltage and frequency as required at respective areas.
- b) All equipments to be supplied and works to be executed shall conform to the CEA standards including protection and metering accessories. No extra amount will be paid in this regard.
- c) All testing and calibration etc are to be carried out as per requirement of statutory authority concerned.
- d) On completion of work the contractor has to obtain necessary safety/energisation certificate from statutory agency concerned, by submitting necessary completion statement/ drawing, equipment details etc. before energisation.
- e) All costs incurred in obtaining such approval/certificate are to be borne by the contractor. Statutory fees paid shall be reimbursed on presentation of document.
- f) All the Electrical work has to be certified by proper Electrical licensee.

## **2.11. PREPARING SCHEME OF INSTALLATION AND SUBMITTING THE SAME TO CEA FOR GETTING APPROVAL**

The contractor shall measure the soil resistivity and prepare the scheme and get the approval from engineer in charge or authorized officer before the commencement of work. The schemes, drawings and other technical data shall be submitted to statutory bodies for approvals for the installation. The defects if any noticed shall be rectified by the contractor. Approval has to be taken as per standards in connection with the work.

## **3. LIST OF APPROVED MATERIALS/ MAKES**

Specification/brand names of materials (Refer materials, whichever are applicable for the scope of work) and finishes approved are listed below. However, approved equivalent material and finishes of any other specialized firms may be used with the approval of the alternate brand by the Engineer-in-Charge.

| <b>Sl No</b>                 | <b>Materials</b>                                                    | <b>Approved Make</b>                                                                      |
|------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| <b>1. Marine Civil Works</b> |                                                                     |                                                                                           |
| 1-1.                         | Cement                                                              | Ultratech, Birla, Coromandal, Malabar Cement, Ambuja, Zuari, Penna, Bharath or equivalent |
| 1-2.                         | Reinforcement Bars                                                  | TATA, SAIL, RINL, JSW, JSPL, Shyam Steel or equivalent                                    |
| 1-3.                         | Structural Steel                                                    | TATA, SAIL, RINL, JSW, JSPL or equivalent                                                 |
| 1-4.                         | Mechanical Splicing – Couplers                                      | Dextra, Bartec or equivalent                                                              |
| 1-5.                         | Admixtures for Concrete                                             | BASF, FOSROC, SUNANDA, CEARA, SIKA or its equivalent                                      |
| 1-6.                         | Concrete Penetrating Corrosion Inhibiting Admixture                 | POLYALK CP-293, PCO KP-200 or equivalent                                                  |
| 1-7.                         | Protective coat for Concrete Surface - Exposed to UV                | Licensed suppliers of Interpenetrating Polymer Network Coating System (IPNet)             |
| 1-8.                         | Polypropylene fibres for secondary reinforcement in Screed Concrete | Recron 3s or its equivalent                                                               |

|      |                                             |                                                                                                                                           |
|------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| 1-9. | Fender System                               | Bridgestone, Trelleborg, Sumitomo, Shibata, IRM, Hitech , Brijans or equivalent                                                           |
| 1-10 | Bollards                                    | Trelleborg, Richard marine, E J Bean, Harbour marine , Marine International, IRM, Hitech or equivalent                                    |
| 2.   | <b>ELECTRICAL</b>                           |                                                                                                                                           |
| 1    | 200 W LED Flame proof LED street light      | BAJAJ/JSR SHAKTHI/ SURYA/Crompton/Havells/ Pyrotech/Philips.                                                                              |
| 2    | POLYCARBONATE LIGHT CONTROL PANELS          | HENSEL/CAPE/Menekkes                                                                                                                      |
| 3    | THERMOPLASTIC OUTDOOR CIRCUIT BREAKER BOXES | HENSEL/CAPE/Menekkes                                                                                                                      |
| 4    | 1.1 KV XLPE CABLE                           | CCI / INCAB/ UNIVERSAL/ RPG/ NICCO/ TORRENT / POLYCAP / PARAMOUNT/ KEI / HAVELLS / FINOLEX / V-GUARD/ L&T / PRIMECAB / RR KABEL / GLOSTER |
| 5    | CABLE TERMINATION KIT                       | RAYCHEM /MAHINDRA / DENSON/3M/CCI / CABSEAL                                                                                               |
| 6    | MCB / CONTACTOR / TIMER                     | LEGRAND / MK / ABB/ INDOASIAN / L &T / SIEMENS /SCHNEIDER / HPL                                                                           |
| 7    | LT ACB                                      | LEGRAND / ABB/ L &T /SIEMENS /SCHNEIDER                                                                                                   |
| 8    | INDUSTRIAL PLUG WITH MCB                    | ABB / HAGER / HAVELLS / INDOASIAN / CROMPTON / LEGRAND / SCHNEIDER / L& T / HPL                                                           |
| 9    | STREET LIGHT POLE                           | BAJAJ/ CROMPTONGREAVES/ PHILIPS/ RR-ISPAT/WIPRO                                                                                           |
| 10   | HDPE PIPE                                   | KONDOOR or any other make with BIS                                                                                                        |

|    |                          |                                                                    |
|----|--------------------------|--------------------------------------------------------------------|
| 11 | GI CABLE TRAY            | PUSTRON/ SUMIP/ ERCON/L&T OR REPUTED MAKE WITH ISO CERTIFICATION.  |
| 12 | FLAME PROOF JUNCTION BOX | BHARAT/RITTAL OR EQUIVALENT MAKE WITH CIMFR - BIS - PESO CERTIFIED |

**Note:**

1. For all other materials where the make is not specified, the samples shall be got approved by the Engineer-in-charge before procurement.
2. In the cases where products of specified manufacturers are approved, their standard accessories are also acceptable, subject to obtaining prior sanction from the Engineer-in-charge.

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## **SECTION V**

**SECTION -V**  
**COCHIN PORT AUTHORITY**

| <b>Sl. No.</b> | <b>Description</b> | <b>Page No.</b> |
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**SECTION -V**  
**COCHIN PORT AUTHORITY**

**1. PREAMBLE TO BILL OF QUANTITES**

| <b>Sl. No.</b> | <b>Clause / Section</b> | <b>Description.</b>               | <b>Page No.</b> |
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## SECTION V

### COCHIN PORT AUTHORITY

#### **1.PREAMBLE TO BILL OF QUANTITIES**

##### **1 General Instructions**

###### **1.1 General**

- 1.1.1 This Bill of Quantities must be read within the Drawings, Conditions of Contract and the Specifications, and the Contractor shall be deemed to have examined the Drawings, Specifications, General Conditions of Contract and to have acquainted himself within the detailed descriptions of the Works to be done , and the way in which they are to be carried out.
- 1.1.2 Notwithstanding that the work has been sectionalized every part of it shall be deemed to be supplementary to and complementary of every other part and shall be read with it or into it so as it may practicable to do so.
- 1.1.3 The detailed descriptions of work and materials given in the Specifications are not necessarily be repeated in the Bill of Quantities.
- 1.1.4 The Contractor shall be deemed to have visited the Site before preparing his tender and to have examined for himself the conditions under which the work will proceed and all other matters affecting the carrying out of the works and cost thereof.
- 1.1.5 The Tenderer will be held to have familiarized himself with all local conditions , in so far as they affect the work, means of access and the locality of existing services, in order to execute the Works measured and described hereinafter. No claims for want of knowledge in this respect will be reimbursed.

###### **1.2 Rates and Prices to be Inclusive**

- 1.2.1 Rates and Prices set against items are to be all inclusive value of the finished work shown on the Drawings and/or described in the Specification or which can reasonably be inferred there from and are to cover the cost of provision of plant, labour, supervision , materials, test charges, freight, transportation, erection, installation, performance of work, care of works ,insurance, maintenance, overheads and profits and every incidental, and contingent cost and charges whatsoever including all taxes and duties such as sales tax, excise duty turnover tax and every kind of temporary work executed or used in connection therewith (except those items in respect of which provision has been separately made in the Bill of Quantities ) and all the Contractor's

obligations under the Contract and all matters and things necessary for the proper completion and maintenance of the Works.

- 1.2.2 The Specifications are intended to cover the supply of material and the execution of all work necessary to complete the works. Should there be any details of construction or material which have not been referred to in the Specifications or in the Bill of Quantities and Drawings, but the necessity for which may reasonably be implied or inferred there from, or which are usual or essential to the completion of all works in all trades, the same shall be deemed to be included in the rates and prices entered in the Bill of Quantities. The rates and prices are to cover the item as described in the Bill of Quantities and if there is inconsistency in the description between the Bill of Quantities, Specifications or Drawings, the interpretation will be done according to General Conditions of Contract.
- 1.2.3 The Quantities given in the Bill are approximate and are given to provide a common basis for tendering. They are not to be taken as a guarantee that the quantities scheduled will be carried out or required or that they will not be exceeded. The employer/engineer reserves the right to delete any item and /or increase/reduce quantities indicated in the Bill of Quantities at any time. Payment will be made according to the actual quantities of work ordered and carried out in the contract. However, rates quoted shall be valid for any extent of variation in quantity of each individual item provided that the total contract value does not get altered by more than indicated in conditions of contract. No claim whatsoever for extra payment due to variation of quantities within the above said limit would be entertained.
- 1.2.4 The drawings for tender purposes are indicative only of the work to be carried out. However, the Tenderer must allow within his price for the items of work included in the Tender Documents for the details which will appear on subsequent drawings developed for construction purposes. Rates and price shall include any additional design/detailing to be carried out by the contractor.
- 1.2.5 The rates and prices shall include (except where separate items are given) for the provision and operation of the following items, for compliance with the Condition of Contracts, Special Conditions, the specifications and Tender Drawings.
  - (i) Supervision and labour for the Works.
  - (ii) All materials , installation /erection, handling and transportation.
  - (iii) All Contractor's equipment
  - (iv) All testing and commissioning , insurance , maintenance, security, welfare facilities, overheads and profit and every incidental and contingent costs and charges whatsoever including.
  - (v) Provision and maintenance of Contractor's Site offices, cabins, huts, maintenance and storage areas.

- (vi) All taxes and duties including Sales Tax, General tax, Turn- Over Tax, Octroi, Kerala Sales Tax on the transfer of property in goods in the execution of works, Excise Duty Duties etc., ( other than Customs Duty for Materials to be permanently incorporated into the Works)
- (vii) All necessary temporary services including fresh water, compressed air lines, electrical cabling and switchgear, telephone, walkie-talkie and facsimile facilities.
- (viii) The maintenance of all Contractor's services.
- (ix) All insurances for the Works.
- (x) Allow for complying with all environmental aspects as specified.
- (xi) For carrying out hot work of any kind contractor should consider safely for vessel in adjoining berth.
- (xii) Detail design of components of temporary works, wherever necessary as directed by Engineer.

### **1.3 Tidal Works and Weather Conditions**

1.3.1 The Contractor shall be deemed to have ascertained for himself the extent to which the work has to be carried out in tidal conditions and his rates and prices shall include for all cost and charge whatsoever arising out of such working.

1.3.2 It is the Tenderer's responsibility to ascertain for himself the probable states of tides, their levels, times and durations. Any water levels stated in technical specifications and marked on the Drawings are intended to give an indication only of those likely to be encountered.

1.3.3 All rates are to be inclusive of work at the levels required taking into account the underwater work, tides and weather conditions. They are to include for any stopping of work by the Engineer under conditions stated in the specification.

### **1.4 Method of Measurement**

Standard Method : The work included in the Bill of Quantities once completed will be presented to the Engineer 's representative for checking quality and quantity of work. The Engineer 's representative after satisfying himself issue a certificate to that effect . unless stated or billed otherwise quantities shall be measured in accordance with Indian Standard Code No. 1200 for civil work and shall be not as they are provide in the works. The rates and prices shall include whatsoever allowance is considered to be necessary for wastage, working spaces, construction slopes, batters.

The mode of measurement and payment described in the relevant technical specifications shall apply for the relevant items.

## **1.5 Currency**

1.5.1 All monetary reference therein and the Bill of Quantities shall be priced in Indian Rupee Currency.

**SECTION -V**  
**COCHIN PORT AUTHORITY**  
**2. BILL OF QUANTITES**

| <b>Sl. No.</b> | <b>Clause / Section</b> | <b>Description.</b> | <b>Page No.</b> |
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| 1              | 1                       | Bill of Quantities  | 248-265         |

COCHIN PORT AUTHORITY

[www.tenderwizard.com/COPT](http://www.tenderwizard.com/COPT)

Tender No: T10/T-2062/2025-C



कोचिन पत्तन प्राधिकरण  
Cochin Port Authority

Name of Work: RECONSTRUCTION OF Q2-Q3 BERTHS AT COCHIN PORT

PRICE BID-SCHEDULE – “II”- SCHEDULE OF QUANTITIES OF WORK TO BE DONE ON CONTRACT

|          | Name and Address of the Vendor:                                                                                                                                                                                                                                                                              |                      |      |                        |                                                                           |                            |                                                                                       |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------|------------------------|---------------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------------|
| Sl. No.  | Sub- heads and items of work                                                                                                                                                                                                                                                                                 | Approximate Quantity | Unit | Departmental Rate (Rs) | Departmental Rate in Words                                                | Departmental Amount in Rs. | Departmental Amount in Words                                                          |
| <b>A</b> | <b>Part:A - Dismantling of Existing Q2 Berth</b>                                                                                                                                                                                                                                                             |                      |      |                        |                                                                           |                            |                                                                                       |
| 1        | Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer - in-charge.                                                                                                                | 63.00                | m3   | 3444.76                | Rupees Three Thousand Four Hundred Forty Four and Seventy Six Paise Only  | 217,019.88                 | Rupees Two Lakh Seventeen Thousand Nineteen and Eighty Eight Paise Only               |
| 2        | Extra for cutting reinforcement bars manually/ by mechanical means in R.C.C. or R.B. work (Payment shall be made on the cross sectional area of R.C.C. or R.B. work) as per direction of Engineer-in-charge.                                                                                                 | 10.50                | m2   | 1173.33                | Rupees One Thousand One Hundred Seventy Three and Thirty Three Paise Only | 12,319.97                  | Rupees Twelve Thousand Three Hundred Nineteen and Ninety Six Paise Only               |
| 3        | Disposal of building rubbish / malba / similar unserviceable, dismantled or waste materials by mechanical means, including loading, transporting, unloading to approved municipal dumping ground or as approved by Engineer-in-charge, beyond 50 m initial lead, for all leads including all lifts involved. | 72.00                | m3   | 188.70                 | Rupees One Hundred Eighty Eight and Seventy Paise Only                    | 13,586.40                  | Rupees Thirteen Thousand Five Hundred Eighty Six and Forty Paise Only                 |
|          | <b>Total for Part: A</b>                                                                                                                                                                                                                                                                                     |                      |      |                        |                                                                           | 242,926.25                 | Rupees Two Lakh Forty Two Thousand Nine Hundred Twenty Six and Twenty Four Paise Only |
| <b>B</b> | <b>Part:B - Construction of Berth</b>                                                                                                                                                                                                                                                                        |                      |      |                        |                                                                           |                            |                                                                                       |

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |          |      |           |                                                      |               |                                                                                |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|-----------|------------------------------------------------------|---------------|--------------------------------------------------------------------------------|
| 1 | Fabricating and supplying Mild Steel (MS) Liners at a suitable fabrication yard for bored cast-in-situ piles of 1,200mm dia. piles in backwater to the required length, using 6mm thick plate, including cost of all materials, labour, cutting, rolling, welding etc. complete as per drawings, detailed specifications and directions of the Engineer-in-charge.                                                                                                                                                                                                                                                                                                                                                                                  | 155.00   | T    | 142,025.0 | Rupees One Lakh Forty Two Thousand Twenty Five Only  | 22,013,875.00 | Rupees Two Crore Twenty Lakh Thirteen Thousand Eight Hundred Seventy Five Only |
| 2 | Transporting the fabricated MS liners fabricated as per item No. 1 above from the fabrication yard to pile location, handling, pitching and driving the MS liners to required level and verticality including setting piling rigs/ gantry in position, temporary works for driving piles etc. complete all as per detailed specifications and directions of Engineer-in-charge.                                                                                                                                                                                                                                                                                                                                                                     | 56.00    | Nos. | 36,501.0  | Rupees Thirty Six Thousand Five Hundred One Only     | 2,044,056.00  | Rupees Twenty Lakh Forty Four Thousand Fifty Six Only                          |
| 3 | Marine boring through all types of soils, viz. gravel, clay, stiff clay, cemented clay, sand, weathered soft rock, lean mix concrete and boulders / rubble layer etc. (except soft and hard rock) for 1,200mm dia. vertical piles at about (-)55m depth including mobilization / demobilisation of all plants and equipments, retaining of sides with bentonite slurry or polymer solutions and cleaning the bore holes, cost of all materials, labour, plants, equipments etc., including disposing of bored muck at suitable dumping area, taking SPT values at founding level etc. complete as per drawings, detailed specifications and directions of Engineer-in-charge. (only length below existing bed level will be measured and paid for.) | 2,570.00 | m    | 23,230.0  | Rupees Twenty Three Thousand Two Hundred Thirty Only | 59,701,100.00 | Rupees Five Crore Ninety Seven Lakh One Thousand One Hundred Only              |
| 4 | Providing and laying Reinforced cement concrete of M40 grade in-situ by standard method of placing by tremie pipe inside the <b>Pile bore</b> including cost of all materials, labour, all                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 3,685.00 | m3   | 17,250.0  | Rupees Seventeen Thousand Two Hundred Fifty Only     | 63,566,250.00 | Rupees Six Crore Thirty Five Lakh Sixty Six Thousand Two Hundred Fifty Only    |

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |        |    |           |                                                                                        |                                                                                             |
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|   | sampling and testing / recording, mixing with Bipolar concrete penetrating corrosion inhibiting admixtures, if required etc. complete but excluding reinforcement work as per drawings, detailed specifications and directions of Engineer-in-charge. [Only concrete quantity between founding level and 100cm above specified Pile cut off level will be measured & paid for].                                                                                                                                                                                                                                                                                                     |        |    |           |                                                                                        |                                                                                             |
| 5 | Providing and placing in position reinforcement in cages inside the marine pile bore using CRS High strength deformed TMT steel bars bars of Fe550D / Fe415D grade including cost of all materials, labour, transporting to site, cutting, bending, welding, lapping, tying, binding, fabricating into cages, installing in position, providing cover blocks, hire charges of all equipment, machinery etc. complete as per drawings, detailed specifications and directions of Engineer-in-charge. (The reinforcement bars, authorised laps, lifting hooks, development lengths, dowels for superstructure etc. as per approved bar bending schedule, will be measured & paid for) | 610.00 | T  | 113,479.8 | Rupees One Lakh Thirteen Thousand Four Hundred Seventy Nine and Eighty Four Paise Only | Rupees Six Crore Ninety Two Lakh Twenty Two Thousand Seven Hundred Two and Forty Paise Only |
| 6 | Chipping the concrete from the top of marine piles of 1,200mm dia. up to cutoff level, exposing the reinforcement, dressing pile head and disposing off the dismantled materials at suitable locations as per the directions of the Engineer-in-charge and leveling including hire charges of all equipment, labour, consumables etc. complete.                                                                                                                                                                                                                                                                                                                                     | 65.00  | m3 | 11,212.5  | Rupees Eleven Thousand Two Hundred Twelve and Fifty Paise Only                         | Rupees Seven Lakh Twenty Eight Thousand Eight Hundred Twelve and Fifty Paise Only           |

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| 7 | Conducting initial vertical load test (by direct loading method) on 1,200mm dia. pile, with a safe load of 325 tonnes, as per IS 2911 (Part 4) : 2013, clause 8.4, including cost for finishing pile head, supply and erection of kentledge (or reaction loading) of suitable magnitude as specified, labour, excavation, back filling, compaction etc. complete all as per detailed specifications and directions of Engineer-in-charge. Test shall be done in the backup area on land using annular pile and soil upto -12.5m CD shall be removed in the annular pile. The rate is inclusive of casting of 1,200mm dia. Bored cast-in-situ concrete pile with liners, reinforcement, M40 concrete etc., up to founding level as indicated in drawings (with annular casing) as per detailed specifications, other relevant drawing and as per the directions of Engineer-in-charge including all labour material, tools, equipments, fuels, etc. complete. | 1.00  | Nos. | 2,321,562.5 | Rupees Twenty Three Lakh Twenty One Thousand Five Hundred Sixty Two and Fifty Paise Only | 2,321,562.50 | Rupees Twenty Three Lakh Twenty One Thousand Five Hundred Sixty Two and Fifty Paise Only |
| 8 | Conducting routine vertical load test (by direct loading method) on 1,200mm dia. pile, for a safe load of 325 tonnes including cost for finishing pile head, supply and erection of kentledge (or reaction loading) of suitable magnitude as specified, labour, excavation, back filling, compaction etc. complete all as per detailed specifications and directions of Engineer-in-charge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1.00  | No.  | 1,667,500.0 | Rupees Sixteen Lakh Sixty Seven Thousand Five Hundred Only                               | 1,667,500.00 | Rupees Sixteen Lakh Sixty Seven Thousand Five Hundred Only                               |
| 9 | Mobilizing, arranging and carrying out low strain pile integrity test for 1200mm dia. bored cast in situ pile in accordance with ASTM D5882, surface impact method or by suitable method as approved by Engineer-in-charge and providing interpretation report from cut off level to founding level as per detailed directions of Engineer-in-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 56.00 | Nos. | 9,200.0     | Rupees Nine Thousand Two Hundred Only                                                    | 515,200.00   | Rupees Five Lakh Fifteen Thousand Two Hundred Only                                       |

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|    | charge.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |        |      |           |                                                                                     |               |                                                                                           |
| 10 | Conducting routine dynamic high strain testing using pile Driving analyser as per ASTM D 4945 on 1,200 mm dia. bored cast in situ pile by applying impact of 1.5 percent weight of capacity of pile with a fall varying from 1m to 3m including preparing head, providing ply and steel plates, fixing strain gauges etc. as per drawings, detailed specifications and directions of Engineer-in-charge.                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2.00   | Nos. | 175,547.5 | Rupees One Lakh Seventy Five Thousand Five Hundred Forty Seven and Fifty Paise Only | 351,095.00    | Rupees Three Lakh Fifty One Thousand Ninety Five Only                                     |
| 11 | Providing and laying in-situ Reinforced cement concrete of M40 grade for various components such as Pile caps, Pile Muff, Beams, facia, Slabs etc. using graded course & fine aggregates excluding reinforcement work but including cost of materials, labour, shuttering, leveling, compacting, curing, mixing with Bipolar concrete penetrating corrosion inhibiting admixtures, providing necessary arrangements on slab and beam for fixing bollards, fenders, brackets, installing all pipe support and mechanical/ electrical fittings, fixtures, steel work with necessary welding to reinforcement, anchoring into concrete, pipes for electrical cables etc. complete as per drawings, detailed specifications and directions of Engineer-in-charge. (Structural work fittings, fenders, mechanical equipment will be paid under separate items) | 870.00 | m3   | 24,955.0  | Rupees Twenty Four Thousand Nine Hundred Fifty Five Only                            | 21,710,850.00 | Rupees Two Crore Seventeen Lakh Ten Thousand Eight Hundred Fifty Only                     |
| 12 | Providing and laying reinforced cement concrete of M40 grade for various precast components such as beams, fender block, etc. using graded course & fine aggregates excluding reinforcement work but including cost of materials, labour, mixing with Bipolar concrete penetrating corrosion inhibiting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 325.00 | m3   | 29,152.5  | Rupees Twenty Nine Thousand One Hundred Fifty Two and Fifty Paise Only              | 9,474,562.50  | Rupees Ninety Four Lakh Seventy Four Thousand Five Hundred Sixty Two and Fifty Paise Only |

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|    | admixtures, shuttering, leveling, compacting, curing, installing all pipe support and mechanical/ electrical fittings, fixtures, steel work with necessary welding to reinforcement, anchoring into concrete, sleeves for fenders, pipes for electrical cables etc. complete and transporting the beams from casing yard to jetty and placing in position to lines and levels including necessary bedding in cement mortar 1:2 etc. complete, as per drawings, detailed specifications and directions of Engineer-in-Charge. (Structural work fittings, fenders, mechanical equipment will be paid under separate items) |        |    |           |                                                                                        |               |
| 13 | Providing and laying in situ Reinforced cement concrete of M40 grade for kerb by using graded course & fine aggregates, excluding reinforcement work but including shuttering, leveling, compacting, curing, mixing with Bipolar concrete penetrating corrosion inhibiting admixtures etc. complete all as per drawings, detailed specifications and directions of Engineer-in-charge.                                                                                                                                                                                                                                   | 17.00  | m3 | 25,300.0  | Rupees Twenty Five Thousand Three Hundred Only                                         | 430,100.00    |
| 14 | Providing and laying in situ Reinforced cement concrete of M40 grade for Handrails and Posts using graded course & fine aggregates, excluding reinforcement work but including shuttering, leveling, compacting, curing, mixing with Bipolar concrete penetrating corrosion inhibiting admixtures etc. complete all as per drawings, detailed specifications and directions of Engineer-in-charge..                                                                                                                                                                                                                      | 11.00  | m3 | 25,300.0  | Rupees Twenty Five Thousand Three Hundred Only                                         | 278,300.00    |
| 15 | Providing and fixing reinforcement using CRS High strength deformed TMT steel bars of Fe550D / Fe415D grade for the RCC works under items 11 to 14 above, including conveying, straightening, cutting,                                                                                                                                                                                                                                                                                                                                                                                                                   | 240.00 | T  | 113,479.8 | Rupees One Lakh Thirteen Thousand Four Hundred Seventy Nine and Eighty Four Paise Only | 27,235,161.60 |

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|    | bending, welding, lapping and tying in position, fabrication and fixing dowels, shear ties and placing with adequate lapping lengths etc. complete as per drawings, detailed specifications and directions of the Engineer-in-charge.                                                                                                                                                                                                                                                                                                                                                                                   |        |                |           |                                                   |              |                                                               |
| 16 | Providing and laying in situ cement concrete of M25 grade using graded coarse & fine aggregates, mixed with secondary reinforcement of "poly propylene fiber" make for wearing course of approximate average thickness of 75 mm over deck slab and finishing the surface with floor hardener of approved quality @ 5kg/m <sup>2</sup> monolithically to the base concrete to provide highly abrasion resistant surface, including casting in panels, providing slopes on surfaces as specified, vibrating, tamping, curing etc. complete as per drawings, detailed specifications and directions of Engineer-in-Charge. | 105.00 | m <sup>3</sup> | 21,505.0  | Rupees Twenty One Thousand Five Hundred Five Only | 2,258,025.00 | Rupees Twenty Two Lakh Fifty Eight Thousand Twenty Five Only  |
| 17 | Providing, cutting to required length and placing in position before concreting, 80mm dia. GI pipe (Medium Class) for drainage of rain water in deck, all as per drawings, detailed specifications and directions of Engineer-in-charge.                                                                                                                                                                                                                                                                                                                                                                                | 61.00  | m              | 2,530.0   | Rupees Two Thousand Five Hundred Thirty Only      | 154,330.00   | Rupees One Lakh Fifty Four Thousand Three Hundred Thirty Only |
| 18 | Providing and fixing in position to lines and levels 100 T capacity double horn cast steel bollard as shown in the drawing including supplying and fixing in position anchor bolts, nuts, grouting inside with cement concrete of M40 grade excluding reinforcement and also including painting the bollard, the exposed surface shall be shot blasted and all steel works with zinc rich primer of 50 microns and two coats of high build epoxy solid paint (150 microns each) etc. complete as per drawing, detailed specifications and directions                                                                    | 5.00   | Nos.           | 300,000.0 | Rupees Three Lakh Only                            | 1,500,000.00 | Rupees Fifteen Lakh Only                                      |

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|    | of Engineer in-charge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |      |           |                                                              |              |                                                          |
| 19 | Providing and fixing in position Cell Type rubber fender of size 1150 H with frontal frame of size 1700mm x 3000mm of approved quality with all fixtures and accessories, facia pad, necessary chains, anchor bolts etc. complete all as per detailed specifications and directions of Engineer in Charge                                                                                                                                                                                                                                       | 5.00  | Nos. | 990,000.0 | Rupees Nine Lakh Ninety Thousand Only                        | 4,950,000.00 | Rupees Forty Nine Lakh Fifty Thousand Only               |
| 20 | Providing and fixing in position D-type rubber fenders 150mm H x 150mm D having energy absorption of 0.25 Ton-m per metre at max 52.5% deflection and max reaction force 9.6T per metre including bolts, nuts and washers of stainless steel SUS 316 grade, all fixtures, rigidly in correct alignment and position all as per drawings, handling, transportation, third party inspection, materials, labour, staging, tools, equipment, plants, machineries etc. complete as per detailed specifications and directions of Engineer-in-charge. | 22.00 | m    | 41,400.0  | Rupees Forty One Thousand Four Hundred Only                  | 910,800.00   | Rupees Nine Lakh Ten Thousand Eight Hundred Only         |
| 21 | Providing and fixing Stainless steel (SS 316 grade) ladder R.C brackets with stainless steel sections including anchor bolts, of width 0.45 m and 3.0 m long using rods, S S flats and handrails using 20mm dia. Stainless steel round bars etc. complete all as per drawings, detailed specifications and directions of Engineer-in-charge.                                                                                                                                                                                                    | 2.00  | Nos. | 106,375.0 | Rupees One Lakh Six Thousand Three Hundred Seventy Five Only | 212,750.00   | Rupees Two Lakh Twelve Thousand Seven Hundred Fifty Only |
| 22 | Providing and fixing stainless steel (SS-316) mooring ring of outer dia. 200mm, using 25mm dia. rod including welding with suitable electrodes, fixing the same to the stainless steel 400mm long eye hook cut out off 32mm dia. bar fixed at the face of the jetty etc. complete as per drawings, detailed specifications and directions of Engineer-in-charge.                                                                                                                                                                                | 4.00  | Nos. | 17,250.0  | Rupees Seventeen Thousand Two Hundred Fifty Only             | 69,000.00    | Rupees Sixty Nine Thousand Only                          |

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| 23       | Providing Interpenetrating Polymer Net work(IPN) anti corrosive polymer system (Cera Cote EP CR PE IP-Net) or its equivalent with two coats of epoxy phenolic ipnet coating of DFT 100 microns over one coat of epoxy phenolic ipnet primer coating of DFT 50 microns to entire external surface of super structure/sub structure of the Approach Trestle except top surface including cleaning the concrete surface with sand blasting or equivalent methods, cost of scaffolding, chipping removing dirt particles etc. complete as per detailed specifications and directions of Engineer-in-charge. | 3,800.00 | m2   | 1,978.0   | Rupees One Thousand Nine Hundred Seventy Eight Only | 7,516,400.00 | Rupees Seventy Five Lakh Sixteen Thousand Four Hundred Only                         |
| 24       | Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete. On concrete work for handrails and posts                                                                                                                                                                                                                                                                                                                                                           | 410.00   | m2   | 257.40    | Rupees Two Hundred Fifty Seven and Forty Paise Only | 105,534.00   | Rupees One Lakh Five Thousand Five Hundred Thirty Four Only                         |
|          | <b>Total for Part: B</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |      |           |                                                     |              | <b>298,937,966.50</b>                                                               |
| <b>C</b> | <b>Part : C - Construction of Approach Bridge</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |          |      |           |                                                     |              |                                                                                     |
| 1        | Fabricating and supplying Mild Steel (MS) Liners at a suitable fabrication yard for bored cast-in-situ piles of 1,000mm dia. piles in backwater to the required length using 6mm thick plate, including cost of all materials, labour, cutting, rolling, welding etc. complete as per drawings, detailed specifications and directions of the Engineer-in-charge.                                                                                                                                                                                                                                       | 15.50    | T    | 142,025.0 | Rupees One Lakh Forty Two Thousand Twenty Five Only | 2,201,387.50 | Rupees Twenty Two Lakh One Thousand Three Hundred Eighty Seven and Fifty Paise Only |
| 2        | Transporting the fabricated MS liners fabricated as per item No. 1 above from the fabrication yard to pile                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 8.00     | Nos. | 36,501.0  | Rupees Thirty Six Thousand Five Hundred One Only    | 292,008.00   | Rupees Two Lakh Ninety Two Thousand Eight Only                                      |

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|   | location, handling, pitching and driving the MS liners to required level and verticality including setting piling rigs/ gantry in position, temporary works for driving piles etc. complete all as per detailed specifications and directions of Engineer-in-charge.                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |        |    |          |                                                      |              |                                                            |
| 3 | Marine boring through all types of soils, viz. gravel, clay, stiff clay, cemented clay, sand, weathered soft rock, lean mix concrete and boulders / rubble layer etc. (except soft and hard rock) for 1,000mm dia. vertical piles up to (-)55m depth including mobilization / demobilisation of all plants and equipments, retaining of sides with bentonite slurry or polymer solutions and cleaning the holes, cost of all materials, labour, plants, equipments etc., including disposing of bored muck at suitable dumping area, taking SPT values at founding level etc. complete as per drawings, detailed specifications and directions of the Engineer-in-charge. (only length below existing bed level will be measured and paid for.) | 392.00 | m  | 23,230.0 | Rupees Twenty Three Thousand Two Hundred Thirty Only | 9,106,160.00 | Rupees Ninety One Lakh Six Thousand One Hundred Sixty Only |
| 4 | Providing and laying reinforced cement concrete of M40 grade in-situ by standard method of placing by tremie pipe inside the Pile bore including cost of all materials, labour, all sampling and testing / recording, mixing with Bipolar concrete penetrating corrosion inhibiting admixtures, if required etc. complete but excluding reinforcement work as per drawings, detailed specifications and directions of Engineer-in-charge. [Only concrete quantity between founding level and 100cm above specified Pile cut off level will be measured & paid for].                                                                                                                                                                             | 364.00 | m3 | 17,250.0 | Rupees Seventeen Thousand Two Hundred Fifty Only     | 6,279,000.00 | Rupees Sixty Two Lakh Seventy Nine Thousand Only           |

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| 5 | Providing and placing in position reinforcement in cages inside the marine pile bore using CRS High strength deformed TMT steel bars bars of Fe550D / Fe415D grade including cost of all materials, labour, transporting to site, cutting, bending, welding, lapping, tying, binding, fabricating into cages, installing in position, providing cover blocks, hire charges of all equipment, machinery etc. complete as per drawings, detailed specifications and directions of Engineer-in-charge. (The reinforcement bars, authorised laps, lifting hooks, development lengths, dowels for superstructure etc. as per approved bar bending schedule, will be measured & paid for) | 55.00 | T   | 113,479.8   | Rupees One Lakh Thirteen Thousand Four Hundred Seventy Nine and Eighty Four Paise Only | 6,241,391.20 | Rupees Sixty Two Lakh Forty One Thousand Three Hundred Ninety One and Twenty Paise Only |
| 6 | Chipping the concrete from the top of marine piles of 1,000mm dia. up to cutoff level, exposing the reinforcement, dressing pile head and disposing off the dismantled materials at suitable locations as per the directions of the Engineer-in-charge and leveling including hire charges of all equipment, labour, consumables etc. complete.                                                                                                                                                                                                                                                                                                                                     | 6.50  | m3  | 11,212.5    | Rupees Eleven Thousand Two Hundred Twelve and Fifty Paise Only                         | 72,881.25    | Rupees Seventy Two Thousand Eight Hundred Eighty One and Twenty Five Paise Only         |
| 7 | Conducting routine vertical load test (by direct loading method) on 1,000mm dia. pile, for the safe load including cost for finishing pile head, supply and erection of kentledge (or reaction loading) of suitable magnitude as specified, labour, excavation, back filling, compaction etc. complete all as per detailed specifications and directions of Engineer-in-charge                                                                                                                                                                                                                                                                                                      | 1.00  | Nos | 1,667,500.0 | Rupees Sixteen Lakh Sixty Seven Thousand Five Hundred Only                             | 1,667,500.00 | Rupees Sixteen Lakh Sixty Seven Thousand Five Hundred Only                              |
| 8 | Mobilizing, arranging and carrying out low strain pile integrity test for 1000mm dia. bored cast in situ pile in accordance with ASTM D5882, surface impact method or by suitable method as approved by                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 8.00  | Nos | 9,200.0     | Rupees Nine Thousand Two Hundred Only                                                  | 73,600.00    | Rupees Seventy Three Thousand Six Hundred Only                                          |

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|    | Engineer-in-charge and providing interpretation report from cut off level to founding level as per detailed directions of Engineer-in-charge.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |        |    |          |                                                                        |              |
| 9  | Providing and laying reinforced cement concrete of M40 grade for various precast components for beams using graded course & fine aggregates excluding reinforcement work but including cost of materials, labour, mixing with Bipolar concrete penetrating corrosion inhibiting admixtures, shuttering, leveling, compacting, curing, installing all pipe support and mechanical/ electrical fittings, fixtures, steel work with necessary welding to reinforcement, anchoring into concrete, sleeves for fenders, pipes for electrical cables etc. complete and transporting the beams from casing yard to jetty and placing in position to lines and levels including necessary bedding in cement mortar 1:2 etc. complete, as per drawings, detailed specifications and directions of Engineer-in-Charge. (Structural work fittings, fenders, mechanical equipment will be paid under separate items) | 101.00 | m3 | 29,152.5 | Rupees Twenty Nine Thousand One Hundred Fifty Two and Fifty Paise Only | 2,944,402.50 |
| 10 | Providing and laying in-situ Reinforced cement concrete of M40 grade for Pile caps, Pile Muff, beams and Slabs using graded course & fine aggregates excluding reinforcement work but including cost of materials, labour, shuttering, leveling, compacting, curing, mixing with Bipolar concrete penetrating corrosion inhibiting admixtures, providing necessary arrangements on slab and beam for fixing bollards, fenders, brackets, installing all pipe support and mechanical/ electrical fittings, fixtures, steel work with necessary welding to reinforcement, anchoring into                                                                                                                                                                                                                                                                                                                   | 145.00 | m3 | 24,955.0 | Rupees Twenty Four Thousand Nine Hundred Fifty Five Only               | 3,618,475.00 |

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|    | concrete, pipes for electrical cables etc. complete as per drawings, detailed specifications and directions of Engineer-in-charge. (Structural work fittings, fenders, mechanical equipment will be paid under separate items)                                                                                                                                                                                                                      |       |                |           |                                                                                        |              |
| 11 | Providing and laying in situ Reinforced cement concrete of M40 grade for Kerb by using graded course & fine aggregates, excluding reinforcement work but including shuttering, leveling, compacting, curing, mixing with Bipolar concrete penetrating corrosion inhibiting admixtures etc. complete all as per drawings, detailed specifications and directions of Engineer-in-charge.                                                              | 4.50  | m <sup>3</sup> | 25,300.0  | Rupees Twenty Five Thousand Three Hundred Only                                         | 113,850.00   |
| 12 | Providing and laying in situ Reinforced cement concrete of M40 grade for Handrails and Posts using graded course & fine aggregates, excluding reinforcement work but including shuttering, leveling, compacting, curing, mixing with Bipolar concrete penetrating corrosion inhibiting admixtures etc. complete all as per drawings, detailed specifications and directions of Engineer-in-charge.                                                  | 7.00  | m <sup>3</sup> | 25,300.0  | Rupees Twenty Five Thousand Three Hundred Only                                         | 177,100.00   |
| 13 | Providing and fixing reinforcement using CRS High strength deformed TMT steel bars of Fe550D / Fe415D grade for the RCC works under item Nos.9, 10, 11 &12 above including conveying, straightening, cutting, bending, welding, lapping and tying in position, fabrication and fixing dowels, shear ties and placing with adequate lapping lengths etc. complete as per drawings, detailed specifications and directions of the Engineer-in-charge. | 45.50 | T              | 113,479.8 | Rupees One Lakh Thirteen Thousand Four Hundred Seventy Nine and Eighty Four Paise Only | 5,163,332.72 |

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| 14 | Providing and laying in situ cement concrete of M25 grade using graded course & fine aggregates, mixed with secondary reinforcement of "poly propylene fiber" make for wearing course of approximate average thickness of 75 mm over deck slab and finishing the surface with floor hardener of approved quality @ 5kg/m <sup>2</sup> monolithically to the base concrete to provide highly abrasion resistant surface, including casting in panels, providing slopes on surfaces as specified, vibrating, tamping, curing etc. complete as per drawings, detailed specifications and directions of Engineer-in-Charge. | 23.50    | m <sup>2</sup> | 21,505.0 | Rupees Twenty One Thousand Five Hundred Five Only   | 505,367.50           | Rupees Five Lakh Five Thousand Three Hundred Sixty Seven and Fifty Paise Only            |
| 15 | Providing Interpenetrating Polymer Net work(IPN) anti corrosive polymer system (Cera Cote EP CR PE IP-Net)or its equivalent with two coats of epoxy phenolic ipnet coating of DFT 100 microns over one coat of epoxy phenolic ipnet primer coating of DFT 50 microns to entire external surface of super structure/sub structure of the Approach Trestle except top surface including cleaning the concrete surface with sand blasting or equivalent methods, cost of scaffolding, chipping removing dirt particles etc. complete as per detailed specifications and directions of Engineer-in-charge.                  | 1,080.00 | m <sup>2</sup> | 1,978.0  | Rupees One Thousand Nine Hundred Seventy Eight Only | 2,136,240.00         | Rupees Twenty One Lakh Thirty Six Thousand Two Hundred Forty Only                        |
| 16 | Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete. On concrete work for handrails and posts                                                                                                                                                                                                                                                                                                                                                                           | 200.00   | m <sup>2</sup> | 257.4    | Rupees Two Hundred Fifty Seven and Forty Paise Only | 51,480.00            | Rupees Fifty One Thousand Four Hundred Eighty Only                                       |
|    | <b>Total for Part: C</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |                |          |                                                     | <b>40,644,175.67</b> | <b>Rupees Four Crore Six Lakh Forty Four Thousand One Hundred Seventy Five and Sixty</b> |

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|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |      |      |          |                                                                             | Seven Paise Only |                                                                           |
| <b>D</b> | <b>Part:D - Providing Electrical facilities</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |      |      |          |                                                                             |                  |                                                                           |
| 1        | Supply, of 11 Mtr long GI octagonal pole made of MS steel having necessary sections if required as per manufactures design with suitable base plate and necessary single arm each ,min sheet steel thickness 3mm , foundation bolts, suitable for providing 200 W Flame proof light fittings - 2 NOS, Interconnecting UG FR armoured Cu cables for taking supply to poles as required and all related works as directed by the EIC.                                                                                                                                                                                                                                                                                     | 5.00 | Nos  | 22,288.1 | Rupees Twenty Two Thousand Two Hundred Eighty Eight and Fourteen Paise Only | 111,440.70       | Rupees One Lakh Eleven Thousand Four Hundred Forty and Seventy Paise Only |
| 2        | Installation, testing and commissioning of 11 Mtr long GI octagonal pole made of MS steel having necessary sections if required as per manufactures design with suitable base plate and necessary single arm each ,min sheet steel thickness 3mm ,suitable for providing 200 W Flame proof light fittings - 2 NOS, and all materials required for installation like interconnecting cable with 1 Runs of 3C x2.5 sq.mm FR PVC insulated stranded copper conductor flexible cable , bolts, nuts, DIN rail, 16A SP MCB-1 Nos., 32A connectors heavy duty 4way, N.L-2Nos, 3mm thick laminated hylem sheet, Pole earthing, glanding including connection complete as required and all related works as directed by the EIC. | 5.00 | Nos  | 7,556.0  | Rupees Seven Thousand Five Hundred Fifty Six Only                           | 37,780.00        | Rupees Thirty Seven Thousand Seven Hundred Eighty Only                    |
| 3        | Building of RCC foundation from the existing berth slab/curb with anchoring stud, foundation Bolts etc. for as per manufacturer recommendation including all materials for foundation as per the manufacturer drawing for 11 metre pole by providing necessary template and all related works as directed by the EIC.                                                                                                                                                                                                                                                                                                                                                                                                   | 5.00 | Nos. | 2,093.6  | Rupees Two Thousand Ninety Three and Sixty Paise Only                       | 10,468.00        | Rupees Ten Thousand Four Hundred Sixty Eight Only                         |

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |      |          |                                                                      |            |                                                                         |
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| 4 | Supply , installation , testing and commissioning of 200 W LED Flame proof LED street light with pressure die-cast housing, high performance polycarbonate optics and IP66 ingress protection. 4kV inbuilt surge protection with Top opening driver cover for easy maintenance, suitable for zone - 1 & zone- 2, gas / vapour Group II A,II B, II C, CIFMR - BIS - PESO CERTIFIED, Efficiency 120 Lm/W for street lights at Q2 & Q3 berths . | 24.00  | Nos. | 13,460.2 | Rupees Thirteen Thousand Four Hundred Sixty and Seventeen Paise Only | 323,044.08 | Rupees Three Lakh Twenty Three Thousand Forty Four and Eight Paise Only |
| 5 | Supply , installation , testing and commissioning of FLAMEPROOF Junction Boxes 16 A , Size 200mmX 150MM X 120 MM SUITABLE FOR ZONE- 1 & ZONE - 2, GAS/VAPOUR GROUP II A, II B, & II C , CIMFR - BIS - PESO CERTIFIED supply detail: 1. Cable size 4C X 4 sq mm CU, UG Armoured cable. 2. Holes Qty- 4 nos. , preferably side holes. 3. 16 A terminal 4 P.                                                                                    | 5.00   | Nos. | 8,608.5  | Rupees Eight Thousand Six Hundred Eight and Forty Seven Paise Only   | 43,042.35  | Rupees Forty Three Thousand Forty Two and Thirty Five Paise Only        |
| 6 | Supply of 3.5 C x 50 SQ MM Aluminium Power Cables XLPE Insulated, FR, cores laid up, PVC tape/Extruded Inner sheathed for Multi-core Cables , Armour extruded PVC Type ST2 sheathed, 650/1100V grade as per IS 7098(Part 1) 1988                                                                                                                                                                                                             | 325.00 | m    | 239.0    | Rupees Two Hundred Thirty Nine and Four Paise Only                   | 77,688.00  | Rupees Seventy Seven Thousand Six Hundred Eighty Eight Only             |
| 7 | Laying and fixing of number 3.5C x 50 sq. mm PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade on wall surface (clamping with SS clamp) as required.                                                                                                                                                                                                                                                                         | 325.00 | m    | 218.9    | Rupees Two Hundred Eighteen and Ninety Two Paise Only                | 71,149.00  | Rupees Seventy One Thousand One Hundred Forty Nine Only                 |
| 8 | Supplying and making end termination with brass compression gland and Aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE Aluminium conductor cable of 1.1 KV grade as required.                                                                                                                                                                                                                                      |        |      |          |                                                                      |            |                                                                         |
|   | Up to 4C x4 sq mm                                                                                                                                                                                                                                                                                                                                                                                                                            | 35.00  | Nos. | 284.0    | Rupees Two Hundred Eighty Four Only                                  | 9,940.00   | Rupees Nine Thousand Nine Hundred Forty Only                            |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                  |        |      |         |                                                                       |            |                                                                      |
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|    | 3½ X 50 sq. mm (35mm)                                                                                                                                                                                                                                                                                                                                                                                            | 2.00   | Nos. | 488.7   | Rupees Four Hundred Eighty Eight and Seventy One Paise Only           | 977.42     | Rupees Nine Hundred Seventy Seven and Forty Two Paise Only           |
| 9  | Supplying and laying of following size DWC HDPE pipe ISI marked along with all accessories like socket, bend, couplers etc. conforming to IS 14930, Part II complete with fitting and cutting, jointing etc. direct in ground (75 cm below ground level) including excavation and refilling the trench but excluding sand cushioning and protective covering etc., complete as required. 110 mm dia (OD-110 mm ) | 50.00  | m    | 435.5   | Rupees Four Hundred Thirty Five and Forty Six Paise Only              | 21,773.00  | Rupees Twenty One Thousand Seven Hundred Seventy Three Only          |
| 10 | Providing pipe earthing for poles wth 1 M Cu bonded Rod 100 Micron with 4mm Dia. CU wire and giving connections to poles etc. as required                                                                                                                                                                                                                                                                        | 2.00   | Nos. | 1,200.0 | Rupees One Thousand Two Hundred Only                                  | 2,400.00   | Rupees Two Thousand Four Hundred Only                                |
| 11 | Providing and fixing 25 mm X 5 mm G.I. strip on ground by excavation for connections etc. as required.                                                                                                                                                                                                                                                                                                           | 100.00 | m    | 288.7   | Rupees Two Hundred Eighty Eight and Seventy One Paise Only            | 28,871.00  | Rupees Twenty Eight Thousand Eight Hundred Seventy One Only          |
| 12 | SITC of KV Thermoplastic outdoor Circuit Breaker Boxes IP 65 (with metric knockouts for cable entry, 1 row 4 modules, 126 x 228 x 111 mm, with suitable glands (HENSEL) including MCB - 4 NOS.                                                                                                                                                                                                                   | 1.00   | Nos. | 2,229.5 | Rupees Two Thousand Two Hundred Twenty Nine and Fifty Paise Only      | 2,229.50   | Rupees Two Thousand Two Hundred Twenty Nine and Fifty Paise Only     |
| 13 | Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray (Galvanisation thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders/angle including G.I. bolts & nuts, etc. as required. (300 mm width X 62.5 mm depth X 2.0 mm thickness)                      | 200.00 | m    | 1,418.9 | Rupees One Thousand Four Hundred Eighteen and Eighty Eight Paise Only | 283,776.00 | Rupees Two Lakh Eighty Three Thousand Seven Hundred Seventy Six Only |

|    |                                                                                                                                                                                                                                                                         |      |      |           |                                                                              |                |                                                                                                        |
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| 14 | SITC of Polycarbonate Lights control panel with timer , Contactor, Auto /M switch MCB etc as required<br>Incomings<br>40A FP MCB - 1 No.<br>32A 4P CONTACTOR - 1 No.<br>24 Hr DIGITAL TIME SWITCH - 1 No.<br>2A SP control MCB – 1 No<br>Outgoings- 10A SP MCB – 6 Nos. | 1.00 | Nos. | 45,926.59 | Rupees Forty Five Thousand Nine Hundred Twenty Six and Fifty Nine Paise Only | 45,926.59      | Rupees Forty Five Thousand Nine Hundred Twenty Six and Fifty Nine Paise Only                           |
|    | <b>Total for Part: D</b>                                                                                                                                                                                                                                                |      |      |           |                                                                              | 1,070,505.64   | Rupees Ten Lakh Seventy Thousand Five Hundred Five and Sixty Four Paise Only                           |
|    | <b>TOTAL FOR PART : A + B + C + D</b>                                                                                                                                                                                                                                   |      |      |           |                                                                              | 340,895,574.06 | Rupees Thirty Four Crore Eight Lakh Ninety Five Thousand Five Hundred Seventy Four and Five Paise Only |

#### BIDDER'S QUOTING AREA

| Sl. No. | Description of Work                                                                                                                                                       | Departmental Estimated Cost (Rs) | Percentage Quoted above/ below the Departmental Amount by the Bidder |           | Above/Below |  |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------------|-----------|-------------|--|
|         |                                                                                                                                                                           |                                  | * In Figures                                                         | ^In Words |             |  |
|         | Percentage quoted above/below the departmental amount shown in the above schedule                                                                                         | 340,895,574.06                   |                                                                      |           |             |  |
|         | 1.Bidders shall quote both figures and words<br>2.Bidders shall also quote above/below in words themselves in last column.<br>3. Only two decimal digits will be accepted |                                  |                                                                      |           |             |  |

"This is an Electronic Submission No Need of Signature"