



**COCHIN PORT AUTHORITY
COCHIN-682009, KERALA, INDIA**

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**TENDER DOCUMENT FOR PROVIDING LANDSCAPING AND
MAINTENANCE OF LANDSCAPED AREA FOR TWO YEARS, YOGA
PLATFORM & REPAIR WORKS TO THE STRUCTURES IN
PRIYADARSHINI PARK, NORTH END WILLINGDON ISLAND**

TECHNICAL BID (e-Tendering Mode)

**Website:www.tenderwizard.com/CPT
CHIEF ENGINEER'S OFFICE
COCHIN PORT AUTHORITY
COCHIN-682009**

TENDER No.T6/T-2072/2025-C

Rs.1,180/- (Rs.1,000+18% GST)

COCHIN PORT AUTHORITY

**TENDER FOR ‘PROVIDING LANDSCAPING AND MAINTENANCE OF
LANDSCAPED AREA FOR TWO YEARS, YOGA PLATFORM & REPAIR
WORKS TO THE STRUCTURES IN PRIYADARSINI PARK, NORTH END
WILLINGDON ISLAND’.**

(Tender No.T6/T-2072/2025-C)

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SIGNATURE OF TENDERER

COCHIN PORT AUTHORITY



Chief Engineer's Office
Cochin Port Authority
W/Island , Cochin – 682009, KERALA
Tele: 91-0484-2666414/0484-258-2400
website: www.cochinport.gov.in

Tender No. T6/T-2072/2025-C

Date :24-12-2025

NOTICE INVITING TENDER

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 **“Providing landscaping and maintenance of landscaped area for two years, Yoga platform & repair works to the structures in Priyadarshini park, North end Willingdon Island”**.

1. **Minimum Eligibility Criteria:**

a) **Experience**

The tenderers should have experience of having successfully completed during the last 7 (seven) years ending **30 th November 2025**, at least either:

- i) Three Similar Works each costing not less than **Rs.13.74 lakhs**
(OR)
- ii) Two Similar Works each costing not less than **Rs.17.18 lakhs**
(OR)
- iii) One Similar Work costing not less than **Rs.27.48 lakhs**

b) **Financial Turnover**

Average Financial Turnover of the tenderer over the last three financial years ending 31st March 2025 [2022--23, 2023-ø24 & 2024--25] shall not be less than **Rs.10.31 lakhs**.

Explanatory Notes to a) & b):

- i. Similar work(s) means **“Construction of Landscaped areas/ Gardens and/ or Maintenance & upkeeping of Landscaped areas/ Gardens”**. The experience certificate of works executed in private sectors/ organizations shall be considered for qualification, only on submission of TDS certificate (**Form No.26AS**) along with work order and completion certificate.
- ii. Copy of completion certificates of each work issued by the employer/ owner/ responsible officer of the employer/owner under whom he has executed such contract shall be attached. The certificate shall contain

details of work involved specifying the nature of work, the completion cost of the work, date of commencement & date of completion of the work.

- iii. The works reckoned for the above purpose are those executed by the tenderers as prime Contractor or proportionately as member of joint venture or Sub Contractor. The Sub-Contractor shall be an authorized and approved Sub-Contractor by the Employer of the work(s) against which the tenderer has claimed his experience. The tenderer shall attach 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. The tenderer is also obliged to produce the original of the certified copy(s) on request by the department.
- iv. 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 the past years.

Table 1

Year before	Multiplying factor
One year	1.07
Two years	1.14
Three years	1.21
Four years	1.28
Five years	1.35
Six years	1.42

- v. **Financial Turnover:**
In proof of Financial Turnover Audited Annual Accounts Statements (Balance Sheet & Profit & Loss Account Statement) & Turnover Certificate signed by the Chartered Accountant or IT returns duly acknowledged by the Income Tax department along with Computation Statement signed by the Chartered Accountant, for the last three years ending on 31st March 2025 shall be produced by the tenderer.

2. Other Eligibility Considerations

2.1 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, disqualifications/ black listing/ debarring by Govt. departments etc.

2.2 The bidders having EPF/ ESI registration certificates only shall be considered for qualification in the tender, 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 I to the effect shall be furnished.

3. **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

Sl. No.	Particulars	Date and Time
1	Tender e- publication date	<i>24-12-2025</i>
2	Download period of Bid Documents	<i>24-12-2025 to 06-01-2026</i>
3	Date of Pre-Bid meeting	<i>Not Applicable</i>
4	Last date for seeking clarification	<i>06-01-2026</i>
5	Last date and time of submission of Bid	<i>06-01-2026 up to 14.30 hrs</i>
6	Date and time of opening the Bid	<i>06-01-2026 after 15.00hrs</i>

- ii) **Bid information :**

Table 3

i)	Estimated Amount put to Tender	Rs.34,34,450.00/- (Rs.34,34,440.46/-)
ii)	Earnest Money Deposit	Rs.68,689.00/- -Furnished through Demand Draft or Banker's Cheque drawn in favour of Financial Adviser & Chief Accounts Officer, CoPA from any Nationalised Bank/ Scheduled Bank in India or through RTGS / NEFT mode/ Insurance Surety Bond from the Insurance Company duly approved by Insurance Regulatory and Development Authority of India..
iii)	Cost of Bid document	Rs.1,180/- (Rs.1,000+18% GST) (Non refundable) furnished either through Demand Draft/ Banker's Cheque drawn in favour of the Financial Adviser & Chief Accounts Officer, CoPA from any Commercial Bank in India, or through RTGS / NEFT mode. being the cost of single copy of the tender document
iv)	Validity period of Tender	120 days from the Last Date of Submission of Bid.
v)	Time for Completion	i. 3 (Three) Months from the date of commencement for the providing of Landscaping and other constructions/ Repair works. ii. 2(Two) Years for the Maintenance of Landscaped area from the date of completion of the works mentioned under (i)

4. This work essentially comprises of the following:

- A. Providing Yoga Platform
 - i. Earth Work Excavation
 - ii. Providing Cement Concrete, Brick masonry work, plastering etc.
 - iii. Providing Kota Stone flooring & painting work
- B. Clearing the vegetation
 - i. Tree Cutting & cutting of Tree branches.
- C. Repair works to boat shed
 - i. Removing old paint
 - ii. Painting work with Synthetic Enamel paint, Acrylic smooth exterior emulsion. Oil type wood preservative, Polishing work etc.
 - iii. Providing UV stabilized FRP sheet roofing..
- D. Repairs to the masonry structure
 - i. Dismantling/ demolishing work
 - ii. Providing Coursed rubble masonry, Brick masonry, Plastering work etc.
 - iii. Painting with Acrylic Smooth Exterior paint, Synthetic enamel paint etc.
 - iv. Providing and laying factory made Kerb Stones, Eurocone tiles,
- E. Landscaping and maintenance works
 - i. Surface dressing
 - ii. Supplying and staking
 - a. Red Earth
 - b. Cocopeat Blocks
 - c. Insecticide
 - d. Compost
 - e. Mexican Grass and Pearl Grass
 - iii. Preparing Mixture of Red earth, manure etc. & placing & spreading
 - iv. Planting / fixing Grass carpets (Mexican & Pearl)
 - v. Cleaning & maintaining the whole works and facilities of the landscaped areas excluding mowing/ grass cutting at Priyadarshini Park, North End, Willingdon Island. including disposing of the rubbish within a lead of 6kms including
 - (a). Proper up keep of lawn by deweeding, manuring etc.
 - (b). Proper up keep of plants by pruning, nursing, manuring etc.
 - (c). Repotting and planting of plants
 - (d). Arranging flower pots in offices as and when required
 - (e). Watering daily except rainy days
 - (f). Any other work connected with the maintenance of landscaped areas etc.
 - (g). Supply of tools/ / materials/labour etc.
 - vi. Maintaining the landscaped areas/ lawn area/ other areas by mowing/ cutting and removing grass and overgrowth of vegetation at and removing grass and other over growth and disposing of the rubbish within a lead of 6kms including
 - (a). Proper up keep of lawn and other areas by mowing/ cutting and removing grass and overgrowth of vegetation.

(b). Any other work connected with the maintenance of landscaped areas etc.

(c). Supply of brush cutter/ Mower/labour etc.

All the above shall be completed as per detailed specifications and directions of Engineer-in-Charge. This shall be done twice a month. Works shall be carried out as and when required as directed by the Engineer-in-charge.

5. Tender documents can be downloaded from the e-Tendering portal www.tenderwizard.com/CPT on the dates specified in Table 2 given above by making online requisition. Bid document will also be available in Cochin Port website (www.cochinport.gov.in) as well as Govt. tender website, www.eprocure.gov.in, which can be downloaded for submission. The cost of bid document and EMD shall be furnished in the form of Demand Draft/ Banker's Cheque drawn in favour of FA&CAO, CoPA or through RTGS/NEFT mode. The bidder shall submit the Originals of (i) DD / Bankers Cheque towards the cost of tender document and EMD and (ii) Power of Attorney (Proforma attached as Annexure III) in favour of signatory(s) to the tender if applicable, with letter of submission in a sealed cover to the **Suptdg. Engineer-II, Cochin Port Authority, W/Island, Cochin-682009, Kerala**, on due date of Submission of bid within the prescribed time limit **Non submission of original financial document towards cost of tender document and EMD will make the tender liable for rejection, and such tenders would not be evaluated further.**
6. 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 **KSSEDCL, Bangalore**.
7. 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.080-40482000 / 9746118529 / 9605557738.
8. Tenders shall be submitted **“online”** strictly in accordance with the Instructions to Tenderers and Terms & Conditions given in the tender document.
9. 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 uploading the said Addenda/ Amendments/ Errata/ Replies to the queries of Tenderer etc. duly signed along with the downloaded documents while uploading the Tender will render the Tender incomplete and such incomplete Tender Documents may be rejected by the employer and would not be evaluated.**
10. All Bids are to be submitted **online only** on the website www.tenderwizard.com/cpt. No Bids shall be accepted off-line (Hard copy).
11. **EARNEST MONEY TO BE DEPOSITED**
 - 11.1 Each tender should be accompanied by an Earnest Money amounting to **Rs.68,689.00/-**.
 - 11.2 The Earnest Money can be deposited through Demand Draft or Banker's Cheque from a Scheduled Bank in India, drawn in favour of Financial Adviser

& Chief Accounts Officer, COCHIN PORT AUTHORITY or online payment through RTGS/NEFT/ Insurance Surety Bond from the Insurance Company duly approved by Insurance Regulatory and Development Authority of India. The original DD/ Banker's Cheque shall be submitted to the Superintending Engineer-I, Cochin Port Authority, Cochin-09, **on the due date of submission of the bid within the prescribed time limit.** Scanned copy of the DD/ Banker's Cheque shall be attached with the tender submitted online. If online payment is made, the evidence thereof shall be attached with the tender submitted online. If hard copy of the original DD/Bankers Cheque is not received within the stipulated period, or if the evidence of making online payment towards EMD is not attached with the tender submitted online, then such bids will not be further evaluated and shall be rejected summarily. The Earnest Money deposited will not carry any interest.

11.3 Bank details of Cochin Port Authority are given below.

Name of bank	:	State Bank of India
Name of Branch	:	Cochin Port Trust Branch
IFSC Code	:	SBIN0006367
Account No	:	41401802288
Account Holders Name	:	Cochin Port Authority

11.4 EMD of L1 & L2 bidder shall be refunded to the respective bidders on submission and acceptance of Performance Security and entering into agreement by the L1 Bidder. EMD of other bidders will be refunded immediately after finalization of the bid.

12. Cochin Port Authority will not be held responsible for any technical snag or net work 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.

13. **Securities:**

13.1 Security Deposit (SD) shall be 10% of the Contract value or value of the work done whichever is higher and it shall consist of the following:

a) **Performance Security** 5% of contract value payable on award of the work.

b) **Retention Money:** @ 5% of the gross amount of each bill.

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.

13.2 **Performance Security:** The Performance shall be 5% of Contract Value. So, initially 5% of the Contract value shall be furnished as Performance Security.

13.3 The Performance Security @ 5% of the value of the contract awarded (Rounded off to the nearest Rs.1000/-), shall be furnished by the Contractor to the Employer, not later than **14 days** from the date of receipt of letter of acceptance

or such extension of that period as may be permitted by the official of Cochin Port writing, and shall be furnished in one of the following forms:

- i) Banker's Cheque / Demand Draft of a Scheduled Bank/ online payment through RTGS/NEFT. If online payment is made, the evidence thereof shall be submitted to the office.
- ii) An irrevocable Bank Guarantee(BG) enforceable and encashable at Cochin, drawn from any Scheduled Bank operating in India as per the prescribed proforma attached as Annexure V
- iii) Insurance Surety Bond from the Insurance Company duly approved by Insurance Regulatory and Development Authority of India.

13.4 The BG furnished towards the Performance Security shall be valid for a period covering the contract period stipulated as per the terms of the contract plus Two month.

13.5 If Performance Security is not furnished within the period as specified above or such extension of that period as may be permitted by the official of Cochin Port Authority in writing, Cochin Port Authority at its discretion may cancel the Letter of Acceptance without paying any compensation to such bidder, and in addition to forfeiture of EMD.

If an MSME registered contractor failed to comply with the conditions 13.5 an amount equal to 2% of the Estimated amount shall be recovered from any amount due to the contractor. In addition, such bidder shall not be eligible to participate in the tenders invited by COCHIN PORT AUTHORITY for a period of **Two Years from the date of such cancellation of Letter of Acceptance.**

13.6 Performance Security will be released/ refunded to the contractor not later than 14 days from the date of payment of final bill.

13.7 **Retention Money:** Retention Money @ 5% shall be retained from each payment due to the Contractor.

13.8 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 along with Performance Security amounts to 10% of the Contract value or the value of the work done whichever is higher at all times. **Retention Money shall be refunded to the Contractor within 14 days from the date of payment of final bill.**

13.9 If the Cost of Work done exceeds the Contract Value, the total amount retained as Security Deposit considering the Performance Security initially submitted together with the Retention Money recovered from the running account bills, shall amount to 10% of the Cost of Work done.

13.10 In cases where cost of Work done exceeds the Contract Value while releasing the Retention Money after payment of Final Bill, only 5% 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 Security, upto the completion of Defects Liability Period.

14 In the event of the tenderer, after the issue of the communication of acceptance of offer by Cochin Port Authority, 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 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, Cochin Port Authority shall have full right to claim damages therefore either together with or in addition to the forfeiture of Earnest Money Deposit.

If an MSME registered contractor failed to comply with the conditions 14 an amount equal to 2% of the Estimated amount shall be recovered from any amount due to the contractor. In addition, such bidder shall not be eligible to participate in the tenders invited by Cochin Port Authority for a period of **Two Years from the date of such cancellation of Letter of Acceptance.**

15 Signing of Agreement:

15.1 The successful tenderer will be required to execute within **21 days** from the date of receipt of Letter of Acceptance and after submission of Performance Security, an agreement at his expense on proper value Kerala State Stamp Paper in the prescribed departmental form, consisting of:

- a) The Tender Notice, all the documents including additional conditions/specifications and drawings, if any, forming the tender as issued at the time of invitation of tender and acceptance thereof together with any correspondence leading there to, and
- b) General Conditions of Contract-2016 (GCC), for the due and proper fulfillment of the Contract.

If Agreement is not executed within the period as specified above or such extension of that period as may be permitted by the official of Cochin Port Authority in writing, Cochin Port Authority at its discretion may cancel the Letter of Acceptance without paying any compensation to such bidder, in addition to forfeiture of Performance Security.

15.2 The Contractor shall make 10 copies of the Agreement and submit to CoPA within 7 days following the date of signing of Agreement.

16 Till signing of agreement the tender together with the acceptance letter shall constitute a binding Contract between the Contractor and Cochin Port.

17 Failure to comply with conditions **3ii(iv), 13.3 and 15.1** above will entail forfeiture of the Earnest Money. **If an MSME registered contractor failed to comply with the conditions 13.3 & 15.1 above an amount equal to 2% of the Estimated amount shall be recovered from any amount due to the contractor.**

18. **Micro & Small Enterprises (MSE's) Bidders who are registered with District Industries Centre (DIC) or Khadi and Village Industries Commission (KVIC) or Khadi and Village Industries Board (KVIB) or Coir Board or National Small Industries Corporation (NSIC) or directorate of Handicrafts and Handlooms or Udyog Aadhaar Memorandum or any other body specified by Ministry of MSME for similar nature of Works shall be eligible for issue of Bid Document free of cost and exemption from payment for issue of tender document & payment of EMD. They are required to submit documentary proof of such registration along with the offer, as detailed in Instructions to Bidders, for**

claiming the available exemptions and a scanned copy of Exemption Certificate duly notarized shall be uploaded in the e-Tender Portal. If the Registration Certificate does not pertain to the Category of ‘Similar Works’ mentioned above, the Tender will be rejected.

19. 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. It is not mandatory for Cochin Port to accept the bid of the Lowest Bidder, and Cochin Port at its discretion may accept the bid of any bidder, without mentioning any reason.
20. CoPA will determine whether the Tender is substantially responsive to the requirements of the Tender documents. For the purpose of this clause a substantially responsive Tender is one which inter alia conforms to all the terms, general conditions and specifications of the Tender documents and technically suitable. The Tenderer shall carefully submit all the documents as required under the Tender failing which the offer is liable to be treated as non-responsive. A Tender which, in relation to the cost estimates of CoPA, is seriously unbalanced may be rejected as non-responsive. The Tender which does not satisfy the pre-qualification criteria shall summarily be rejected and shall not be considered for further evaluation Tenders which do not fulfill all or any of the above conditions or which contain any other condition of any sort including conditional rebates or are incomplete in any respect is liable for rejection. Such tenders shall be entered in the tender opening register but their rates shall neither be read out nor entered in the register. Only remark mentioning the reason of rejection in brief shall be appended against such entry.
21. The Tenderer shall quote realistic rates in respect of the services to be provided. The rates shall be firm and no other increase or decrease in prices will be allowed during the currency of the contract. Canvassing in connection with tender is strictly prohibited and tenders submitted by the Contractors who resort to canvassing will be liable to rejection.
22. **Taxes and Duties:**
 - 22.1 TDS as per Income Tax Law & GST law shall also be deducted at prevailing rates.
 - 22.2 Deductions towards statutory taxes as per the rules, prevailing in force at the time of payment of bills shall be made while releasing the bill amount.
 - 21.2. GST for the work will be paid extra by the Port. The GST applicable as per law can be billed on the Port Authority, which will be paid to the Contractor by the Board along with the bills, for which the Contractor holds valid GST Registration number and the GST is being collected. The following are also to be considered while claiming payment towards GST:
 - i. Invoice in specific format should be provided by the Contractor for every payment.
 - ii. GST Registration Number of Cochin Port Authority and the Contractor is to be clearly mentioned with all the bills.
 - iii. Invoice should be attached along with the running bills.
 - iv. The Contractor shall comply all the GST regulations, viz.; timely uploading of invoices and issue of debit/ credit notes.

- 21.3. Any stipulation by a tenderer that taxes and duties deductible from these bills should be borne by the Port Authority will result in the summary rejection of his /their tender.
- 22 Cess as per Building and other Construction Workers Welfare Cess Act (Act 28 of 1996) at the rate of one percent or at the rates prevailing in force at the time of payment of bills, of the cost of construction should be borne by the Contractor and the same will be deducted from Contractor's bills while making payment or when crediting amount to Contractor's account.
- 24 The Tender Document shall form part of the Contract.

Suptdg. Engineer-II
COCHIN PORT AUTHORITY
FOR AND ON BEHALF OF THE BOARD OF MAJOR PORT
AUTHORITY FOR COCHIN PORT

2. TENDER FOR WORKS

To

**The Board of
Major Port Authority
for Cochin Port
Through
The Chief Engineer
Cochin Port Authority, Cochin-9**

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.

MEMORANDUM

- a) General description of work : **Providing landscaping and maintenance of landscaped area for two years, Yoga platform & repair works to the structures in Priyadarshini Park, North End Willingdon Island.**
- b) Estimated cost : **Rs.34,34,450.00/-**
- c) Earnest Money : **Rs.68,689.00/-**
- d) Security Deposit : 10% of the value of the Contract awarded or value of the work done whichever is higher. (Performance Security @ 5% of contract value payable on award of the contract and Retention Money 5% of the gross amount of each bill)
- 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 : **7 days**
- g) Time allowed for the work from the date of commencement of work : i. **3 (Three) Months from the date of commencement for the providing of Landscaping and other constructions/ Repair works.**

ii. 2 (Two) Years for the Maintenance of Landscaped area from the date of completion of the works mentioned under (i)

h) Schedule, specifications, conditions, : As per Contents sheet attached. drawings etc.

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..... has been deposited with 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 Contract Data in accordance with clause 52 of the said conditions of Contract 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 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 Contract Data 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 Conditions of Contract.

Dated the day of 2026

Signature of the Tenderer

Address :

Witness :

Address :

Occupation :

ACCEPTANCE

The above tender is hereby accepted by me for and on behalf of the Board.

Dated the day of 2026.

Dated

**CHIEF ENGINEER
COCHIN PORT AUTHORITY**

3. CONTRACT DATA

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

Sl. No.	Description	Reference Clause No. in GCC								
1	<i>The following documents are also part of the Contract</i>									
	The Schedule of other Contractors	(8.2)								
	The Schedule of Key personnel ó As per Tender	(9)								
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Qualification of Staff</th> <th style="text-align: center;">No.</th> <th style="text-align: center;">Min. Experience (Years)</th> <th style="text-align: center;">Rate of recovery in case of non-compliance</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Horticulturist/Experienced Gardener</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td style="text-align: center;">Rs.15,000/- p.m</td> </tr> </tbody> </table>	Qualification of Staff	No.	Min. Experience (Years)	Rate of recovery in case of non-compliance	Horticulturist/Experienced Gardener	2	2	Rs.15,000/- p.m	
Qualification of Staff	No.	Min. Experience (Years)	Rate of recovery in case of non-compliance							
Horticulturist/Experienced Gardener	2	2	Rs.15,000/- p.m							
2	The Employer is:	(1)								
	The Board of Major Port Authority for Cochin Port, COCHIN PORT AUTHORITY, Cochin -9.									
	Name of Authorized Representative:									
	Name : Sri. B.Kasiviswanathan, IRSME, Chairperson, Cochin Port Authority, Cochin -9.									
3	The Engineer is									
	Name : Col Jassar S M Chief Engineer , Cochin Port Authority, Cochin-9.									
	Name of Nominee/Engineer-in-Charge: Name: Sri. Sudhir J Sawant, Suptdg.Engineer-II									
4	Name of Contract- Providing landscaping and maintenance of landscaped area for two years, Yoga platform & repair works to the structures in Priyadarsini park, North End Willingdon Island. Tender No. T6/T-2072/2025-C	(1)								
5	10 copies of Contract Agreement shall be furnished by the Contractor	(7.1)								
6	Tender document and other data are available at Cochin Port web site, Government of India CPP Portal and e ó tendering portal.	(7.2)								

Sl. No.	Description	Reference Clause No. in GCC							
	www.cochinport.gov.in www.eprocure.gov.in www.tenderwizard.com/CPT								
7	<p>The Intended completion date for the whole of the Work is</p> <p>i. 3 (Three) Months from the date of commencement for the providing of Landscaping and other constructions/ Repair works.</p> <p>ii. 2 (Two) Years for the Maintenance of Landscaped area from the date of completion of the works mentioned under (i) .</p> <p>with the following milestones:</p>	(17,28)							
8	<table border="1"> <thead> <tr> <th colspan="2" data-bbox="296 846 1158 896">Milestone dates:</th> </tr> <tr> <th data-bbox="296 896 719 1014">Physical works to be completed</th> <th data-bbox="719 896 1158 1014">Period from the date of receipt of LoA to commence and proceed with the work</th> </tr> </thead> <tbody> <tr> <td data-bbox="296 1014 719 1272">iii. 3 (Three) Months from the date of commencement for the providing of Landscaping and other constructions/ Repair works.</td> <td data-bbox="719 1014 1158 1272" rowspan="2" style="text-align: center; vertical-align: middle;">7 days</td> </tr> <tr> <td data-bbox="296 1272 719 1585">iv. 2 (Two) Years for the Maintenance of Landscaped area from the date of completion of the works mentioned under (i)</td> </tr> </tbody> </table>	Milestone dates:		Physical works to be completed	Period from the date of receipt of LoA to commence and proceed with the work	iii. 3 (Three) Months from the date of commencement for the providing of Landscaping and other constructions/ Repair works.	7 days	iv. 2 (Two) Years for the Maintenance of Landscaped area from the date of completion of the works mentioned under (i)	
Milestone dates:									
Physical works to be completed	Period from the date of receipt of LoA to commence and proceed with the work								
iii. 3 (Three) Months from the date of commencement for the providing of Landscaping and other constructions/ Repair works.	7 days								
iv. 2 (Two) Years for the Maintenance of Landscaped area from the date of completion of the works mentioned under (i)									
9	<p>The following shall form part of the Contract Document:</p> <p>(1) Agreement</p> <p>(2) Letter of Acceptance</p> <p>(3) Bill of quantities</p> <p>(4) Contractor's Bid</p> <p>(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).</p> <p>(6) Contract Data</p>	(2.3)							

Sl. No.	Description	Reference Clause No. in GCC
	(7) General Conditions of Contract (8) General Description and Special Conditions of Contract (9) Technical Specifications (10) Drawings if any and (11) Any other documents listed in the Contract Data as forming part of the Contract.	
10	The Contractor shall submit a Program for the Works within 3 days of date of the Letter of Acceptance.	(27)
11	The site possession date The site will be handed over within 7 days after issue of LoA, and failure to take over the same within such period shall be attributable to contractor alone.	(21)
12	The start date shall be 7 days from the date of receipt of the Letter of Acceptance (LoA) by the Contractor.	(1)
13	The site is located in W/Island.	
14	The Defects Liability Period: One year from the date of completion of the construction/repair work.	(36) NA
15	The minimum insurance cover for physical property, injury and death is Rs.10 lakhs (Rupees Ten lakhs) per occurrence with the number of occurrences unlimited. After each occurrence, Contractor will pay additional premium necessary to make insurance valid always.	(13)
16	The following events shall also be Compensation Events: NIL	(44)
17	The period between Programme updates shall be 7 days.	(27)
18	The amount to be withheld for late submission of an updated programme shall be ----- NA	(27)
19	The language of the Contract documents is English.	(3)
20	The law, which applies to the Contract, is the law of Union of India.	(3)
21	The currency of the Contract is Indian Rupees.	(46)
22	The proportion of payments retained (Retention Money) shall be 5% from each bill subject to a maximum of 5% of the contract price.	(48)
23	The maximum amount of Liquidated Damages for the whole of the works is 10% of the Contract Price.	(49)
24	The amounts of the advance payments :	(51)
	The advance payments as applicable to the contract are:	

Sl. No.	Description	Reference Clause No. in GCC
	NA	
25	Repayment of advance payment for mobilization: NA	(51)
26	Repayment of advance payment for Construction and equipment: NA	(51)
27	Repayment of Secured Advance: NA	(51)
28	The date by which ðas-built drawings are required is within 90 days of issue of certificate of completion of whole or section of the work, as the case may be: NA	(58)
29	The amount to be withheld for failing to supply ðas built drawings and/or operating and maintenance manuals by the date required is ----- NA	(58)
30	Schedule of Rates Applicable: CPWD DSR 2023 + 35% Cost Index x 0.8246.	
31	Base Rate for materials to be considered for price variation NA	(47)
32	Permissible wastage on theoretical quantities of (a) Cement : (+) 2% (b) Steel Reinforcement and structural steel sections for each diameter, section and category : (+) 5.99 % (c) Bitumen/Bitumen emulsion : (+) 2.5%	(47) NA

4. INSTRUCTIONS TO TENDERERS

- 4.1 Electronic Tenders (e-tenders) on percentage basis under "Two Cover system" are invited for **"Providing landscaping and maintenance of landscaped area for two years, Yoga platform & repair works to the structures in Priyadarshini Park, North End Willingdon Island"**.
- 4.2 The tenderer shall submit the tender Cover-A (Hard Copy of EMD & Cost of Tender form **on the due date of submission of the tender within the prescribed time limit**. All the Technical Bid documents & Price Bid shall be submitted **"online"**.
- 4.3 The Tender Document will be available as three separate files in the e-tendering Portal:
- i. A. Technical Bid Documents (as per Sl. No 1 to 7 of the Contents sheet)
 - ii. B. Price Bid: Schedule of quantities of Work- Schedule-A and
 - iii. C. General Conditions of Contract-2016
- 4.4 The tenderer shall upload the documents indicated in 4.3 (i) & (iii) above and also the Schedule of Quantities(Percentage) [as per Cl.4.3(ii), duly filled in, **"online"**.
- 4.5 **SUBMISSION OF TENDERS**
- 4.5.1 The Cover A containing hard copy of EMD & Cost of Tender form as mentioned in Table 3 of Tender Notice shall be submitted **on the due date of submission of the tender within the prescribed time limit**.
- 4.5.2 **Technical Bid(Online mode)**
- 4.5.2.1 Technical Bid shall contain all technical and commercial details except Schedule of Quantities. It shall consist scanned/ soft copies of the following documents.
- a) A covering letter from the tenderer enlisting the enclosures/ attachments.
 - b) Original Tender Document (Technical Bid) including all Addendum/Corrigenda if any except Schedule of Quantities.
 - c) Copy of the documents in proof of fulfilment of the Minimum Qualification Criteria
 - d) Copy of PAN Card, ESI/EPF & GST Registration documents.
 - e) Copy of Authorization documents of Signatory of the bid in case of Registered Partnership firm / Limited company
 - f) Partnership deed or Memorandum and Article of Association of the company and registration certificate of the company as the case may be.
 - g) Bank information for e-payment system (Annexure IV)
 - h) Power of Attorney (Annexure III)
 - i) Any other relevant document.
- 4.5.2.2 Scanned copies of all documents as per Clause 4.5.2, EMD and Cost of

- Tender Form shall be submitted as Technical Bid.
- 4.5.2.3 Departmental Tender Document (except Schedule of Quantities), along with scanned copies of Cost of Tender form, EMD and other documents as per Clause 4.5.2 shall be submitted 'online' before 14.30 hrs of opening date of the Tender. **In no case shall filled in Price Bid - Schedule of Quantities be submitted in hard copy, as it shall result in rejection of the tender.**
- 4.5.2.4 No changes shall be made in the tender documents. An undertaking that no changes have been made in the Tender document downloaded has to be furnished in **Annexure-II**
- 4.5.3 **Price Bid:**
- 4.5.3.1 Price Bid shall contain only the Schedule of Quantities, which shall be **submitted only in e-tendering mode.**
- 4.5.3.2 **Tenderer should ensure that his tendered percentage as per 'Price Bid' is not mentioned anywhere in any other documents, directly or indirectly. If any such mention is made, the tender will become invalid and shall become liable for rejection.**
- 4.6 **Minimum Eligibility Criteria: The bidders eligible for participating in the tender may be Individual, Proprietorship, Registered Partnership firms, L.L.P, Company or JV. The proof thereof shall be submitted.**
- a) Experience**
- The tenderers should have experience of having successfully completed during the last 7 (seven) years ending **30thNOVEMBER, 2025**, at least either:
- i. Three Similar Works each costing not less than **Rs.13.74 lakhs**
(OR)
 - ii. Two Similar Works each costing not less than **Rs.17.18 lakhs**
(OR)
 - iii. One Similar Work costing not less than **Rs.27.48 lakhs**
- b) Financial Turnover**
- Average Financial Turnover of the tenderer over the last three financial years ending 31st March 2025[2021-'22 ,2022-'23 2023-'24,] shall not be less than **Rs.10.31 lakhs.**
- Explanatory Notes to a) & b) :**
- i. Similar work(s) means **"Construction of Landscaped areas/ Gardens and/ orMaintenance & upkeeping of Landscaped areas/ Gardens"**. The experience certificate of works executed in private sectors/ organizations shall be considered for qualification, only on submission of TDS certificate (**Form No.26AS**) along with work order and completion certificate.
 - ii. Copy of completion certificates of each work issued by the employer/ owner/ responsible officer of the employer/owner under whom he has executed such contract shall be attached. The certificate shall contain details of work involved specifying the nature of work, the completion cost of the work, date of commencement & date of completion of the work.
 - iii. The works reckoned for the above purpose are those executed by the

tenderers as prime Contractor or proportionately as member of joint venture or Sub Contractor. The Sub-Contractor shall be an authorized and approved Sub-Contractor by the Employer of the work(s) against which the tenderer has claimed his experience. The tenderer shall attach 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. The tenderer is also obliged to produce the original of the certified copy(s) on request by the department.

- iv. 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 the past years.

Table 1

Year before	Multiplying factor
One year	1.07
Two years	1.14
Three years	1.21
Four years	1.28
Five years	1.35
Six years	1.42

- v. **Financial Turnover:**

In proof of Financial Turnover Audited Annual Accounts Statements (Balance Sheet & Profit & Loss Account Statement) & Turnover Certificate signed by the Chartered Accountant or IT returns duly acknowledged by the Income Tax department along with Computation Statement signed by the Chartered Accountant, for the last three years ending on 31st March 2025 shall be produced by the tenderer.

4.7 Other Eligibility Considerations

- 4.7.1 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, disqualifications/ black listing/ debarring by Govt. departments etc.

- 4.7.2 **The bidders having EPF/ ESI registration certificates only shall be considered for qualification in the tender, 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 I to the effect shall be furnished.**

4.8 OPENING AND EVALUATION OF TENDERS

- 4.8.1 Technical Bids of the tenders received shall be opened at 15.00 hrs. on **06/01/2026**, the last date fixed for receiving the bid, in the SE-II's chamber in the presence of the tenderers or their representatives as may be present.

4.8.2 After opening the Technical Bid documents, it shall be thoroughly checked for completeness with respect to the details stipulated to be submitted as Technical Bid by the tenderer. The Price Bid of those tenderers satisfying the tender requirements shall only be opened. The Price Bid of those tenderers who are found responsive and satisfactory on evaluation of Technical Bid documents, will be opened after bringing all tenderers to the same footing and giving notice to the short listed tenderers, on a date to be decided and intimated later.

4.9 **GENERAL INSTRUCTIONS TO TENDERERS**

4.9.1 The submission of a tender by the tenderer implies that he has read the whole tender Documents including GCC-2016.

4.9.2 The tenderer is advised to visit and examine the site of work and its Surroundings, discuss with connected agencies and collect all necessary information on his own responsibility for preparing the tender.

4.9.3 The tenderer is expected to examine the Tender Documents including all conditions, specifications, forms etc and also conditions in the G.C.C. Failure to furnish the information required in the Tender Documents/ G.C.C. or submission of a tender not conforming to the requirements in every respect, is likely to result in the rejection of the tender.

4.9.4 The tenderer shall quote for the work on percentage basis. The departmental rate for each item of work is given in the Schedule of Quantities. The tenderer shall fill the percentage above or below the Departmental rate, in the column provided for the purpose in the Schedule.

4.9.5 In case of discrepancy between the specifications and the drawings, the following order of preference shall be observed:

- a. Conditions & Specifications of tender
- b. Drawings.
- c. B.I.S Specifications.
- d. Sound Engineering Practice.

4.9.6 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 will be binding on the tenderer/ Contractor.

4.9.7 Any error in description, any omissions there shall not vitiate the Contract or release the Contractor from the execution of whole or any part of the works comprised therein according to specifications or from any of his obligation under the Contract.

4.9.8 The Chief Engineer, Cochin Port Authority shall have the right to omit or Suspend certain items of work or revise or amend the Tender Documents at any time prior to the due date of submission of the tender. Such revisions or amendments or extensions if any, shall be communicated to all the bidders who have downloaded the Tender Documents, in the form of an addendum by telefax /e- mail / writing. 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 tender.

4.9.9 All payments due to the Contractor under this Contract will be made in Indian Rupees only.

4.9.10 Tenders received after the date specified for submission shall not be opened.

4.9.11 The Bank Guarantees (BGs) to be furnished by the Contractors in connection with the tender shall be sent to by 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.

4.10 Bid Validity

Bids shall remain valid for a period not less than One hundred and Twenty days (120 days) from the deadline date for bid submission. A bid valid for a shorter period shall be rejected by the Employer as non-responsive.

In exceptional circumstances, prior to expiry of the original time limit, the Employer may request the Bidder to 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).

SIGNATURE OF TENDERER.

5.GENERAL DESCRIPTION AND SPECIAL CONDITIONS OF CONTRACT

5.1 SCOPE OF WORK

5.1.1 The proposed work is for **Providing landscaping and maintenance of landscaped area for two years, Yoga platform & repair works to the structures in Priyadarshini park, North end Willingdon Island**. The work consists of the following:

- i. *Cleaning & maintaining the whole works and facilities of the landscaped areas excluding mowing/ grass cutting at Priyadarshini park, North End, Willingdon Island, including disposing of the rubbish within a lead of 6kms including*
 - (a) *Proper up keep of lawn by deweeding, manuring etc.*
 - (b) *Proper up keep of plants by pruning, nursing, manuring etc.*
 - (c) *Repotting and planting of plants*
 - (d) *Watering daily except rainy days*
 - (e) *Any other work connected with the maintenance of landscaped areas etc.*
 - (f) *Supply of tools/ materials/labour etc.*

One labour shall be assigned for this work.
- ii. *All the above shall be completed as per detailed specifications and directions of Engineer-in-Charge. Cleaning & maintaining the whole works and facilities of the landscaped areas excluding mowing/ grass cutting at Priyadarshini park, North End, Willingdon Island including disposing of the rubbish within a lead of 6kms including*
 - (a) *Proper up keep of lawn by deweeding, manuring etc.*
 - (b) *Proper up keep of plants by pruning, nursing, manuring etc.*
 - (c) *Repotting and planting of plants*
 - (d) *Arranging flower pots in offices as and when required*
 - (e) *Watering daily except rainy days*
 - (f) *Any other work connected with the maintenance of landscaped areas etc.*
 - (g) *Supply of tools/ materials/labour etc.*
- iii. *3 labourers shall be assigned for the work. All the above shall be completed as per detailed specifications and directions of Engineer-in-Charge. Maintaining the landscaped areas/ lawn area/ other areas by mowing/ cutting and removing grass and overgrowth of vegetation at Priyadarshini park North End, Willingdon island by mowing/ cutting and removing grass and other over growth and disposing of the rubbish within a lead of 6kms including*
 - (a) *Proper up keep of lawn and other areas by mowing/ cutting and removing grass and overgrowth of vegetation.*
 - (b) *Any other work connected with the maintenance of landscaped areas etc.*
 - (c) *Supply of brush cutter/ Mower/labour etc.*

5.2 *All the above shall be completed as per detailed specifications and directions of Engineer-in-Charge. This shall be done twice a month. Any leaves will be deducted. Works shall be carried out as and when required as directed by the Engineer-in-charge. The work shall be meticulously planned in consultation*

with the departmental supervisory staff and nearby users, so that minimum inconvenience is caused to the functions of the wharf.

5.3 **SPECIFICATIONS**

The specifications attached shall be considered as part of the contract and shall be complimentary to one another. Any work or materials mentioned in one, but not mentioned in the other should be carried as if it is mentioned in both.

5.4 **WORK SITE**

The work has to be carried out is at Willingdon Island. The site is accessible through road and water. Security rules and regulations including obtaining passes etc. for work are to be observed by the contractor. The work is to be carried out without disturbing the normal Port operations.

5.5 **TIME SCHEDULE AND MONITORING OF PROGRESS**

The tenderer shall prepare and attach with the tender a detailed work schedule indicating **key** activities and critical items for the construction and maintenance of Landscaped areas and gardens during the stipulated Contract period of

(i) **3 (Three) Months from the date of commencement for the providing of Landscaping and other constructions/ Repair works &**

(ii) **2 (Two) Years for the Maintenance of Landscaped area from the date of completion of the works mentioned (i) . This time schedule will form the basis for monitoring the progress of work.**

5.6 **MATERIALS / FACILITIES TO BE PROVIDED BY DEPARTMENT CONTRACTOR'S WORK AREA**

Space will be made available to the Contractor free of rent for storing materials and equipments etc., adjacent to the work site for the duration of the Contract. After the work is over, Contractor shall at his cost, reinstate the area by clearing the temporary works, debris etc. as decided by the Engineer's Nominee.

5.7 **CONTRACTOR'S RESPONSIBILITY**

5.7.1 The tenderer shall visit the area before tendering. It will be deemed that the tenderer has visited the site and studied the site conditions before submitting the tender. The tenderer should get himself acquainted with the nature and extent of the work. No claim whatsoever will be entertained on the plea of ignorance of difficulties involved in execution of work or carriage of materials etc.

5.7.2 All materials, plants and equipments, required for the work shall be provided by the Contractor at his own cost, and shall conform to relevant I.S. Specification unless otherwise specified.

5.7.3 Samples of all materials like Pearl grass, Mexican Grass, Earth, Compost etc, to be incorporated in the work shall be got approved by the Engineer's Nominee before procurement.

5.7.4 The Contractor shall thoroughly study the specifications 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.

5.7.5 All labour, skilled or unskilled shall be provided by the Contractor. Settling any

- dispute with the labour will be Contractor's responsibility. Insurance as per Indian Workmen's Compensation Act for the Contractor's workmen and Public Liability Policy shall be provided by the Contractor at his own cost.
- 5.7.6 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 shall be made good or compensated at his own cost.
- 5.7.7 The Contractor shall take all care and precautionary measures for avoiding any kind of damage/ accidents in the work site due to any of his reasons. The Contractor shall indemnify the Port against any compensation whatsoever payable to the workmen for accident or loss arising out of and in the course of their employment under this Contract.
- 5.7.8 The work shall be arranged by the Contractor without causing any damage to Port structures. Any damage or accident caused by the Contractor's operation shall be compensated / made good at Contractor's risk and cost to the satisfaction of the Engineer's Nominee of the works, failing which department will do the rectification work and the cost incurred will be recovered from his bill or from security deposit.
- 5.7.9 The Contractor shall not construct any structure, even of temporary nature, for any purpose at site, except with the written permission of the Engineer's Nominee of the work and any construction so put up shall be removed by the Contractor whenever the Engineer's Nominee calls upon the Contractor to do so.
- 5.7.10 The Contractor shall remove all temporary works, clear and make good the site, at his cost to the satisfaction of the Engineer's Nominee before the site is returned to the Port Authority. All materials shall be disposed to any place as pointed out by the Engineer's Nominee of the work and site shall be cleared in every respect at no extra cost after completion of work.
- 5.7.11 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's Nominee 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's Nominee 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 in 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.

- 5.7.12 The Contractor shall observe all safety regulations during the execution of the work. Safety measures, precautions, warning signals etc. shall be taken/provided 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, safety belts etc. to the workmen at his own cost and it shall be the Contractor's responsibility to ensure that they use it while on the work site.
- 5.7.13 The Contractor shall ensure that no labourers with criminal background are engaged for the work.
- 5.7.14 The contractor shall take all precautions for not to damage any cables, pipelines etc. passing through the area of work.
- 5.7.15 The Contractor shall comply with all the provisions of the Indian Workmen's Compensations Act, Public Liability Policy, 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.
- 5.7.16 **The bidders having EPF/ ESI registration certificates only 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 I to the effect shall be furnished.**
- 5.7.17 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 the age of six years at his risk and cost.
- 5.7.18 The Contractor shall also be responsible for arranging and carrying out works as mentioned in Clauses 1.1 & 1.2 above.

5.8 **POWER AND WATER**

- 5.8.1 **Electric power required for the work can be supplied by the department from the nearest existing line of the Port Authority 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.
- 5.8.2 **Water required for Civil work shall be arranged by the contractor at his own cost and water required for landscaping maintenance will be provided by dept from the nearest point at free of cost.**

5.9 **WORKMANSHIP**

- 5.9.1 All the works shall be done strictly according to relevant B.I.S. specifications unless otherwise specified. Whenever special conditions and other specifications deviate from the B.I.S. the former shall prevail.
- 5.9.2 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 the same shall be rectified at Contractor's cost to the full satisfaction of the Engineer's Nominee within the time allowed.

5.9.3 Precautions shall be taken for not to damage cables/ pipe lines etc.

5.9.4 The work shall be arranged in the order of preference and as directed by the Engineer's Nominee of work.

5.10 **TEMPORARY WORKS**

5.10.1 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's Nominee, 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 re erection, if required, shall be carried out by the Contractor at the direction of Engineer's Nominee without any delay and any extra cost on this account shall be borne by the Contractor.

5.10.2 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.

5.11 **TIME FOR COMPLETION**

5.11.1 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. The number of days lost due to heavy rain shall be certified by the Engineer's Nominee. The Contract period shall be extended for such certified days also without imposing compensation for delayed performance.

5.11.2 The whole work shall be completed in accordance with the provisions under Contract Data or such extended time as may be allowed as per clause 29 of G.C.C.

5.12 **WORKING TIME**

The normal working time of the Port Authority is from 8 a.m. to 4.00 p.m. on all weekdays. 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's Nominee 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.

5.13 **RATES FOR VARIOUS ITEMS**

The rate specified for each item shall be all inclusive value of the finished work, income tax and other taxes but excluding Service Tax.

5.14 **ALTERATIONS / ADDITIONS / OMISSIONS**

The quantities given in the bill of quantities (Schedule of items) are only approximate and payment will be made as per actual quantity of work done and rate specified.

5.15 MEASUREMENT

- 5.15.1 The quantities shall, unless otherwise stated, be measured in accordance with I.S.1200.
- 5.15.2 For levying compensation as per Clause-49 of General Conditions of Contract (GCC), 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 conditions.

5.16 TERMS OF PAYMENT

- 5.16.1 For the landscaping maintenance, which will include watering, dewatering, mowing, periodic manureing, **Payment shall be made on monthly intervals, subject to condition as per clause 5.20 below.** The first payment shall be after the expiry of one month from the date of commencement of the maintenance period.
- 5.16.2 The periodic maintenance of monthly intervals as per clause 5.1 above shall be made only upon certification by the Engineer-in-Charge and the facilities have been properly maintained and take care of.

5.17 PENALTY FOR NON PERFORMANCE OF WORK

- 5.17.1 If the contractor fails to maintain the facilities satisfactorily as per specifications & instructions of the Horticulturist in any item in full or part thereof this item in full will not be reckoned for payment purpose and there shall be a penalty amount equal to departmental rate with quoted percentage for that item.
- 5.18 A register shall be maintained by the contractor for satisfactory completion of each day's work, and it shall be got verified and countersigned by the Engineer-in-Charge or his authorized representative at the end of each day's work for its acceptance, failing which, that days will not be considered for payment purpose.
- 5.19 Clause-25 of GCC- ~~Settlement of Disputes and Arbitration~~ is not applicable in this Contract.
- 5.20 Clause-26 of GCC- ~~Computerised Measurement Book~~ is modified to the extent as detailed below.

Measurements of Work Done:

Executive Engineer (hereinafter called the Engineer's Nominee) shall, except as otherwise provided, as certain and determine by measurement the value in accordance with the Contract of work done.

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.

All measurements and levels shall be taken jointly by the Engineer's Nominee or his authorised representative and by the Contractor or his authorised 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.

If for any reason the Contractor or his authorised representative is not available and the work of recording measurements is suspended by the Engineer's Nominee or his representative, the Engineer's Nominee and the Department shall not entertain any claim from Contractor for any loss or damages on this account. If the Contractor or his authorised representative does not remain present at the time of such measurements after the Contractor or his authorised 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.

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's Nominee or his authorised 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 authorised 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.

Engineer's Nominee or his authorised 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.

1. **Clause 45 and Clause 80 of GCC shall be modified as below;**
Clause 45-Rates for items to be inclusive of Taxes 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. The invoice to be submitted by the Contractor should include the GST Registration Number of the Contractor as well as the Employer.
Clause 80-Taxes and Duties 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. The Contractor shall comply all the GST Regulations viz. timely uploading of bills, issue of debit/ credit notes etc.
2. Sub clause **43.2** under **Clause 43:Payments,.....** in GCC 2016 stands amended as given below:
 - 43.2 Payment of bills for Civil Works shall be regulated as detailed hereunder:
 - 43.2.1 Any Interim/Final bill which is incomplete in any respect shall be returned to the Contractor within 5 days of date of submission of bill to the Engineer or his Nominee.
 - 43.2.2 Interim bills shall be paid within 21 days of date of submission of bills in full shape, by the Contractor, as detailed below.
 - 43.2.3 Clarifications/corrections if any required on an Interim bill submitted, shall be sought from the Contractor within 4 days of submission of the bill and also, all such clarifications/corrections required shall be sought at one go except in exceptional circumstances. The Contractor shall submit the clarifications including carrying out corrections in the bill, if required, within 4 days thereafter. The clarified / corrected bill shall be verified and forwarded to Finance Department within the next 4 days. Clarifications if any required by the Finance Department shall be sought within 3 days and the Engineer/Nominee shall clear it on top priority within the next 3 days and, finally, the bill shall be paid to the Contractor within 3 days thereafter, i.e., within a total 21 days of date of submission of bills in full shape, as indicated above.
 - 43.2.4 However, on request by the Contractor, 75% of the bill amount shall be paid within 7 days of submission of the bill. Balance amount of the verified bill shall be paid within 21 days of the

submission of the bill, on completion of all contractual requirements as brought out at sub clause 43.2.3. above.

43.2.5 Final bill shall be paid within 3 months of issue of Taking Over Certificate by the Engineer / Nominee, as detailed below.

43.2.6 The Contractor shall submit the Final bill to the Engineer / Nominee within 20 days of issue of Taking Over Certificate by the Engineer / Nominee. The bill shall be checked and all clarifications/corrections required on the bill submitted, shall be sought from the Contractor within 15 days thereafter. The Contractor shall submit the clarifications including carrying out corrections in the bill, if required, within the next 10 days. The clarified / corrected bill shall be verified and forwarded to Finance Department within the next 15 days. Thereafter, clarifications if any required by the Finance Department shall be sought within 10 days and the Engineer/Nominee shall clear it on top priority within the next 10 days and, finally, the bill shall be paid to the Contractor within 10 days thereafter, i.e., within a total 3 months of issue of Taking Over Certificate by the Engineer / Nominee, as indicated above.

43.2.7 However, on request by the Contractor, 50% of the final bill amount shall be paid within 7 days of submission of the bill, which will be adjusted against the final bill payment, on completion of all contractual requirements as brought out at sub clause 43.2.6. above.

SIGNATURE OF TENDERER

**6 DETAILED SPECIFICATIONS FOR MATERIALS TO BE USED
ON WORK**

6.1 GENERAL

- 6.1.1 Except where otherwise specified or authorized by the Engineer-in-Charge, materials supplied by the contractor shall conform to the latest edition of the Indian Standard Specifications and code of practices published by the Indian Standard Institution. 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.
- 6.1.2 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.
- 6.1.3 The materials required for the work shall be brought to the site and stacked at the places shown by the Engineer-in-Charge and the same shall be got approved for use in work sufficiently advance so that the progress of the work is not affected by the supply of materials.
- 6.1.4 Payment for the materials supplied, shall be given only after they are used on the work.
- 6.1.5 Tolls are payable by the Contractor as per rules for vehicles using the Portø road for supplying the materials.

**6.2 FINEAGGREGATE FOR MAKING MORTAR FOR MASONRY
WORK / PLASTERING WORK**

- 6.2.1 Fine Aggregate used for masonry mortar shall conform to IS:2116. Sand used for plastering shall conform to IS:1542-1992.

6.3 AGGREGATES FOR CONCRETE

- 6.3.1 Aggregates (fine and coarse) for concrete shall comply with the requirements of IS: 383 ó -Specifications for coarse and fine aggregate from natural sources for concreteø 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.
- 6.3.2 The fine aggregate shall be clean, hard, durable, uncoated, dry and free from injurious, soft or flaky pieces and organic or other deleterious substances.
- 6.3.3 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.

6.3.4 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.

6.4 **CEMENT**

6.4.1 Quality of cement used for the work shall be 53 grade ordinary Portland cement conforming to IS:12269 or Pozzolona cement conforming to I.S. 1489 unless otherwise approved by the Engineer-in-Charge.

6.4.2 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.

6.4.3 Supply of cement shall be taken in 50kg bags bearing manufacturer'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.

6.4.4 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.

6.4.5 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.

6.4.6 The cement shall be stored in a weather proof building with facilities for inspection.

6.4.7 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.

6.4.8 For cement stored in silo, clauses 6.4.3 and 6.4.4 are not applicable.

6.5 **WATER**

- 6.5.1 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.
- 6.5.2 **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.
- 6.5.3 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.
- 6.6 **ADMIXTURES IN CONCRETE**
- 6.6.1 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.

6.7 STEEL REINFORCEMENT

- 6.7.1 Thereinforcement steel used for the Work will have to be procured by the Contractor and shall be HYSD bars of Fe 500 / Fe415 grade conforming to IS:1786 unless otherwise approved by the Engineer-in-Charge.
- 6.7.2 The reinforcement steel required for the Work will have to be procured by the Contractor and shall comply with the relevant IS. The Contractor shall obtain approval from the Engineer-in-Charge well in advance for purchase of steel.
- 6.7.3 The Contractor shall have to obtain and furnish test certificates to the Engineer-in-Charge in respect of all supplies of steel brought by him to the site of Work. Samples shall also be taken and got tested by the Engineer-in-Charge as per provisions in this regard in relevant BIS codes. In case the test results indicate that the steel arranged by the Contractor does not conform to BIS codes, the same shall stand rejected and shall be removed from the site of Work by the Contractor at his cost within a week's time of written orders from the Engineer-in-Charge to do so.
- 6.7.4 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.
- 6.7.5 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.
- 6.7.6 For checking nominal mass, tensile strength, bend test etc., specimen of

sufficient length as per IS:432/ IS:1608/ IS:1599 or as specified by the Engineer-in-Charge shall be cut from each size of the bar at random at frequency not less than the specified below.

Size of bar	For consignment below 100 tonnes	For consignment over 100 tonnes
Under 10 mm dia	One sample for each 25 tonnes or part thereof	One sample for each 40 tonnes or part thereof
10 mm to 16 mm dia	One sample for each 35 tonnes or part thereof	One sample for each 45 tonnes or part thereof
Over 16 mm dia	One sample for each 45 tonnes or part thereof	One sample for each 50 tonnes or part thereof

6.7.7 The Contractor shall supply free of charge the steel required for testing. The cost of tests shall be borne by the Contractor.

6.7.8 Steel brought to site and steel remaining unused shall not be removed from site without the written permission of the Engineer-in-Charge.

6.8 EPOXY PAINT

6.8.1 Epoxy paint has got excellent adhesion properties and offers a balanced aesthetic and corrosion protective surface. Epoxy offers good resistance to water and humidity. Epoxy coating are used because of their outstanding chemical resistance, durability, low porosity and strong bond strength and it provides dry tough and protective coatings. Epoxy coatings are created, by chemical reaction using an epoxide resin and polyamine hardener.

6.9 WATERTHINNABLE CEMENT PRIMER

6.9.1 The primer used for the work shall be Silicon based primer, manufactured by Asian/ Nerolac/ Berger/ Nitco of premium quality.

6.10 ACRYLIC EMULSION PAINT EXTERIOR/INTERIOR

6.10.1 The weatherproof exterior acrylic emulsion paint and interior acrylic emulsion paint must be of approved premium quality and from a recognized manufacturer. The coverage of both paints shall adhere to the specifications provided by the manufacturer. The colour and shade of the paints shall be determined as per the directives of the Engineer-in-Charge.

- 6.10.2 The painting of internal walls shall consist of two coats of premium quality interior-grade acrylic emulsion paint, which contains a volatile organic compound (VOC) content of less than 50 grams per litre from an approved brand and manufacturer. Additional coats shall be applied as necessary to achieve a uniform shade and colour.
- 6.10.3 The painting of external walls shall be executed with two or more coats of 100% premium acrylic emulsion paint that complies with a VOC content of less than 50 grams per litre. This paint shall possess ultraviolet (UV) resistance as per IS 15489:2004, as well as resistance to alkali, fungi, and dirt. The exterior paint shall be of the required shade and shall include silicone additives. The application shall be conducted over and including a priming coat of approved exterior primer.
- 6.10.4 The weather proof exterior acrylic emulsion paint shall be of approved premium quality either "Apex Ultima" by Asian Paints, "Weather coat" by Berger or Nerolac Excel or "Weather shield" by ICI Dulux or Snowcryl XT-premium by Snowcem India Ltd. or Jotun Paints. The interior acrylic emulsion paint shall be of approved premium quality either manufactured by Asian Paint, Berger or Dulux or Nicholson or Jotun Paints. The coverage shall conform to the manufacturer's specification. The colour/ shade shall be as per direction of the Engineer-in-Charge.
- 6.10.5 The coverage shall conform to the Manufacturer's specification. The colour / shade shall be as per schedule or as per the direction of Engineer-in-Charge. . The paint shall be brought to the site of work by the Contractor in its original containers in sealed condition. The material shall be brought in at a time in adequate quantities to suffice for the whole work or at least a week's work. The materials shall be kept in the joint custody of the Contractor and the Engineer-in-Charge. The empty containers shall not be removed from the site of work till the relevant item of the work has been completed and permission obtained from the Engineer-in-Charge.
- 6.10.6 The Contractor shall invariably produce the Test Certificates and Bills with batch number and date, signed by an authorized person of the Manufacturer / Dealer, while seeking final approval of the Engineer-in-Charge for use on the Work.

6.11 SYNTHETIC ENAMEL PAINT

- 6.11.1 The Synthetic Enamel paint shall be of approved premium quality and shall conform to IS :2932 (2013). The coverage shall conform to the Manufacturer's specification. The colour / shade shall be as per schedule or as per the directions of Engineer-in-Charge. The paint shall be brought to the site of work by the

Contractor in its original containers in sealed condition. The material shall be brought in at a time in adequate quantities to suffice for the whole work or at least a week's work. The materials shall be kept in the joint custody of the Contractor and the Engineer-in-Charge. The empty containers shall not be removed from the site of work till the relevant item of the work has been completed and permission obtained from the Engineer-in-Charge.

- 6.11.1 The Contractor shall invariably produce the Test Certificates and Bills with batch number and date, signed by an authorized person of the Manufacturer / Dealer, while seeking final approval of the Engineer-in-Charge for use on the Work.

6.12 STRUCTURAL STEEL

- 6.12.1 The mild steel flats / plates used for the work shall conform to I.S. 2062. The material shall be free from visible as well as hidden defects such as pitting cracks, laminations, twists etc. and excessive rusting.
- 6.12.2 It is not necessary for the Contractor to obtain separate approval in case mild steel tube/pipe/plate is purchased from Steel Authority of India Ltd. or TATA Iron & Steel or Jindal Steel & Power Ltd. (JSPL). 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.
- 6.12.3 Mild Steel Rectangular / Square Hollow Sections used shall be of Yst 310 grade conforming to IS : 4923. Pipes shall be designated by their outer dimension and weight per metre. It shall be free from visible as well as manufacturing defects such as pitting, cracks, laminations, twists etc. and excessive rusting.
- 6.12.4 Mild Steel tubular sections used shall be of Yst 320 grade conforming to IS 806 & 1161. Tubes shall be designated by their nominal bore and weight per metre. It shall be free from visible as well as manufacturing defects such as pitting, cracks, laminations, twists etc. and excessive rusting.

6.13 CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPES

CPVC pipes & fittings used in hot & cold potable water distribution system shall conform to requirement of IS 15778. The material from which the pipe is produced shall consist of chlorinated polyvinyl chlorides. The polymer from which the pipe compounds are to be manufactured shall have chlorine content not less than 66.5%. The internal and external surfaces of the pipe shall be smooth, clean and free from grooving and other defects. The pipes shall not have any detrimental effect on the composition of the water flowing through it.

Each pipe shall be clearly and indelibly marked in ink/paint or hot embossed on white base at

intervals of not more than 3 m. The marking shall show the following:

- (a) Manufacturer's name or trade-mark
- (b) Outside diameter,
- (c) Class of pipe and pressure rating, and
- (d) Batch or lot number

The fittings shall be as follows:

- (a) Plain CPVC solvent cement fittings from size 15 mm to 160 mm.
- (b) Brass threaded fittings.
- (c) Valve from size 15 mm to 160 mm

(d) Brass Threaded Fittings: All types of one end brass threaded male/female adaptors in various fittings like coupler, socket, elbow, tee are available for transition to other plastic/metal piping and for fixing of CP fittings. Ball, Gate valves in CPVC are available in all dimensions. All fittings shall carry the following information:

- (1) Manufacturer's name/trade mark.
- (2) Size of fitting

6.14 GLASS

The glass to be used on the work shall be of good quality conforming to IS:2835 and free from defects scratches etc. The thickness of glass shall be as specified in the Schedule of quantities.

6.15 BRICKS

6.15.1 Bricks used in the masonry may be Common Burnt Clay Bricks shall conform to IS:1077 and shall be hand moulded or machine moulded. They shall be free from nodules of free lime, visible cracks, flaws warpage and organic matter, have a frog 100 mm in length 40 mm in width and 10 mm to 20 mm deep on one of its flat sides. Bricks made by extrusion process and. Each brick shall be marked (in the frog where provided) with the manufacturer's identification mark or initials.

6.15.2 Bricks shall have a minimum compressive strength to 50kg/sq.cm and shall not absorb water more than 20% of its dry weight, when soaked in cold water for 24 hours. The tolerance limit shall be 8 % for absorption.

6.15.3 In the case where locally available bricks do not meet standard, contractor shall carry out all the tests specified above on the bricks and submit the test report to the Engineer-in-charge, who will take a final decision on the use of the bricks, which shall be binding.

6.16 PVC PIPE FOR DRAINAGE DISPOSAL

6.16.1 PVC pipes shall conform to IS 4985 and class as specified in the schedule.

6.17 KOTA STONE SLABS

The slabs shall be of selected quality, hard, sound, dense and homogenous in texture free from cracks, decay, weathering and flaws. They shall be hand or machine cut to the requisite thickness. They shall be of the colour indicated in the drawings or as instructed by the Engineer- in ó Charge.

The slabs shall have the top (exposed) face polished before being brought to site, unless otherwise specified. The slabs shall conform to the size required. Before starting the work the contractor shall get the samples of slabs approved by the Engineer in charge.

6.18 TIMBER

The timber shall be free from decay, fungal growth, boxed heart, pitch pockets or streaks on the exposed edges, splits and cracks. The timber shall be graded as first grade and second grade on the basis of the permissible defects in the timber.

SIGNATURE OF TENDERER

7. **DETAILED SPECIFICATIONS FOR ITEMS OF WORKS**

7.1 **GENERAL**

7.1.1 Except where otherwise specified or authorized by the Engineer-in-Charge, all items of works **executed** by the contractor shall conform to the latest edition of the Bureau of Indian Standard Specifications and code of practices published by the B.I.S. Where no such specifications or code of practice exists the latest B.S.S. codes of practice or any other equivalent / standard code of practice shall also be considered for adoption. The tenderer while indicating any such specifications shall enclose the full set of the publication so referred and not in extracts. Photostats / Xerox copies in duplicate shall be forwarded which shall not be returned to the contractor. In absence of any specification, the department deserves the right to adopt trade specifications and/or sound engineering practices for the specialized work as may be decided by the Engineer-in-Charge which shall be final, conclusive and binding on the contractor.

7.2 **DISMANTLING AND DEMOLISHING**

7.2.1 During demolition or dismantling, every precaution shall be taken by the contractor to prevent damage to any part of the structure and also to any adjacent structures which are to be left intact. Any damage caused to the structures, due to the carelessness and negligence of the contractor shall be made good by him at his own expense. Care must be taken by the contractor in such a way that debris shall not fall into water and if falls to be removed immediately.

7.2.2 All materials obtained from dismantling or demolition shall be the property of the CoPA unless otherwise specified and shall be kept in safe custody until they are handed over to the Engineer-in-Charge.

7.2.3 The demolition shall always be well planned before hand and shall generally be done in reverse order of the one in which the structure was constructed. The operations shall be got approved from the Engineer-in-Charge before starting the work. Due care shall be taken to maintain the safety measures prescribed in IS 4130 and construction and demolition waste management rules 2016 shall be followed.

7.2.4 Necessary propping, shoring and or under pinning shall be provided to ensure the safety of the adjoining work or property before dismantling and demolishing is taken up and the work shall be carried out in such a way that no damage is caused to the adjoining work or property. Wherever specified, temporary enclosures or partitions and necessary scaffolding with suitable double scaffolding and proper cloth covering shall also be provided, as directed by the Engineer-in-Charge. It shall be ensured that no dust is generated while demolishing. Barricading shall be provided wherever required.

- 7.2.5 Necessary steps shall be taken to keep noise and dust nuisance to the minimum. All work needs to be done under the direction of Engineer-in-Charge. Helmets, goggles, safety belts etc., should be used whenever required and as directed by the Engineer-in-Charge. The demolition work shall be proceeded with in such a way that it causes the least damage and nuisance to the adjoining building and the public.
- 7.2.6 Dismantling shall be done in a systematic manner. All materials which are likely to be damaged by dropping from a height or by demolishing roofs, masonry etc. shall be carefully removed first. Chisels and cutters may be used carefully as directed. The dismantled articles shall be removed manually or otherwise, lowered to the ground (and not thrown) and then properly stacked as directed by the Engineer-in-Charge.
- 7.2.7 Any serviceable material, obtained during dismantling or demolition, shall be separated out and stacked properly as directed by the Engineer-in-Charge within a lead of 50 meters. All unserviceable materials, rubbish etc. shall be disposed off at authorized locations as directed by the Engineer-in-Charge.
- 7.2.8 Where existing fixing is done by nails, screws, bolts, rivets, etc., dismantling shall be done by taking out the fixing with proper tools and not by tearing or ripping off.
- 7.2.9 Appropriate screens shall be placed where necessary to prevent injuries due to falling pieces. Water spray shall be used to reduce dust while tearing down plaster from brick work. Safety belts shall be used by labourers while working at higher level to prevent falling from the structure. Wherever, possible mechanized working platform shall be used. First-aid equipment shall be made available at all demolition works of any magnitude.
- 7.2.10 The contractor shall maintain/disconnect existing services, whether temporary or permanent, wherever required by the Engineer-in-Charge.
- 7.3 CEMENT PLASTERING**
- 7.3.1 Cement plastering shall be with the grade of mortar and of thickness specified in the schedule. The surface to be plastered shall be thoroughly cleaned and kept wet for 4 hours before plastering.
- 7.3.2 All the corners shall be rounded off to a radius of 25 mm unless otherwise specified.
- 7.3.3 Where smooth finishing is specified in the schedule the plastering shall be floated over with neat cement slurry using 2.2 kg of cement per square meter immediately after the final coat of plastering and rate quoted for plastering shall include cost of this finishing work.
- 7.3.4 The plastered surface on which glazed tiles or other similar type of finishing are to be provided subsequently shall not be finished smooth but

shall be scarified for forming a base for providing the final surface finish as required.

7.3.5 The surface shall be cured for 7 days.

7.3.6 The rate shall include all labour and materials including scaffolding, curing etc. complete. required for completion of work. Measurement of the work under this head shall be made on the basis of the area of work done.

7.4 REPAIR TO PLASTER (12MM TO 20MM THICKNESS)

7.4.1 The work includes cutting the patch and preparing the wall surface. Scaffolding as required for the proper execution of the work shall be erected. If work can be done safely with the ladder or jhoola these will be permitted in place of scaffolding.

7.4.2 The mortar of the patch, where the existing plaster has cracked, crumbled or sounds hollow when gently tapped on the surface, shall be removed. The patch shall be cut out to a square or rectangular shape at position marked on the wall as directed by the Engineer-in-Charge or his authorized representative. The edges shall be slightly under cut to provide a neat joint.

7.4.3 The masonry joints which become exposed after removal of old plaster shall be raked out to a minimum depth of 10 mm in the case of brick work and 20 mm in the case of stone work. The raking shall be carried out uniformly with a raking tool and not with a basuli, and loose mortar dusted off. The surface shall then be thoroughly washed with water, and kept wet till plastering is commenced. In case of concrete surfaces, the same shall be thoroughly scrubbed with wire brushes after the plaster had been cut out and pock marked with a pointed tool, at spacings of not more than 5 cm. Centres, the pock being made not less than 3 mm deep. This is to ensure a proper key for the plaster. The surface shall be washed and cleaned and kept wet till plastering is commenced.

7.4.4 Mortar of specified mix with the specified sand shall be used. The surface shall be finished even and flush and matching with the old surrounding plaster. All roundings necessary at junctions of walls, ceilings etc. shall be carried out in a tidy manner.

7.4.5 All dismantled mortar & rubbish etc. shall be disposed off within 24 hours from its dismantling promptly as directed by the Engineer-in-Charge.

7.4.6 Doors, windows, floors, articles of furniture etc. and such other parts of the building shall be protected from being splashed upon. Splashing and droppings, if any, shall be removed by the contractor at his own cost and the surface cleaned. Damages, if any, to furniture or fittings and fixtures shall be recoverable from the contractor.

7.4.7 Curing shall be started as soon as the plaster has hardened sufficiently not to be damaged when watered. The plaster shall be kept wet for a period of

at least 7 days.

7.4.8 Cleaning of existing Reinforcement and passivating its surface

7.4.8.1 The alkaline chemical rust remover as approved by the Engineer-in Charge and should be procured in sealed containers indicating the batch number and the date of manufacture etc.

7.4.8.2 The rust has to be removed from the surface of the reinforcement manually using chisels, wire brush, emery paper etc. as directed by Engineer-in-Charge at no extra cost, till the steel surface is cleared of all rust that could be removed manually or mechanically.

7.4.8.3 Then alkaline chemical rust remover, as approved by the Engineer-in Charge shall be applied with brush over the reinforcement surface thoroughly along the full length of rusted reinforcement. After 24 hours of its application the surface shall be cleaned with wire brush and all loose particles removed. It should then be washed clean, with water, thoroughly and allowed to dry. alkaline chemical rust remover should be applied to the reinforcement approximately one litre for 6 to 7 sqm. of the steel area (assuming the surface of the reinforcement of rough) the consumption of the alkaline chemical rust remover should be about 0.40 litres per 10 Sqm. area of RCC unit.

7.4.9 Application of Bonding Coat on RCC

7.4.9.1 Epoxy bonding adhesive shall be approved by the Engineer-in Charge. Bonding coat is required to be applied for adhesion of applied repair concrete or mortar to the parent concrete. For this, the surface should be thoroughly cleaned by brushes and by blowing air from hand operated pump. The surface shall then be saturated with water (but without excess water).

7.4.9.2 The components of bonding coat shall be weigh batched and mixed in specific proportions, in a clean container, as directed by the Engineer-in-Charge. They should then be blended to a uniform and homogeneous mixture, lump free and of creamy consistency.

7.4.9.3 The epoxy bonding adhesive, with a coverage rate of 2.20 sqm/kg, shall be applied by stiff nylon bristle brush. The bonding material should be worked well onto the concrete surface of the parent concrete including reinforcement surface ensuring that no pinholes are visible

7.5 PROVIDING AND APPLYING SYNTHETIC ENAMEL PAINT

7.5.1 Paints/ primers of approved premium brand and manufacture shall be used. Only ready mixed Paint (Exterior grade) as received from the manufacturer without any admixture shall be used. If for any reason, thinning is necessary in case of ready mixed Paint, the brand of thinner recommended by the manufacturer or as instructed by the Engineer-in-Charge shall be used.

- 7.5.2 The surface shall be thoroughly cleaned off all dirt, rust, dust, grease etc. with wire brush, sand paper etc., and be made perfectly clean and dry while painting. For wood surfaces visible knots, holes etc. shall be filled with appropriate filling material with some shade as paint and rubbed smooth before applying paint.
- 7.5.3 The number of coats shall be as per schedule. Successive coats shall be applied only on the next day after rubbing with the finest grade of wet abrasive paper and dusting of the loose particles.
- 7.5.4 Measurements 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 surface preparation, materials, labour, scaffolding etc. required for the completion of works as detailed above.

7.6 APPLICATION OF EPOXY PAINT

- 7.6.1 Epoxy paint (two or more coats) shall be applied as per manufacturer's specifications after applying appropriate priming coat on exposed iron/steel surfaces.
- 7.6.2 All rust, scales and Old paint shall be removed by scrapping or by brushing with steel wire brushes. Hard skin of oxide formed on the surface of wrought iron during rolling which becomes loose by rusting, shall be removed. Surface must be dried, cleaned & made free from oil, grease, dirt, dust & all other contaminants that could interfere with adhesion of coating. If the surface is wet, it shall be dried before priming coat is undertaken. Before primer is applied, holes and undulations, shall be filled up and rubbed smooth.
- 7.6.3 The primer shall be applied with brushes, worked well into the surface and spread even and smooth. The painting shall be done by crossing and laying off. Paint shall be applied with a brush on the cleaned and smooth surface. Horizontal strokes shall be given, First and vertical strokes shall be applied immediately afterwards. This entire operation will constitute one coat. The surface shall be finished as uniformly as possible leaving no brush marks.
- 7.6.4 Epoxy paint is supplied in two parts i.e. (base and hardener). Stir the base and hardener separately. Mix hardener gradually into the base under continuous stirring as per mixing ratio as specified by the manufacturers.
- 7.6.5 The epoxy paint shall be consumed within the working pot life as specified by the manufacturers. Part mixing should be avoided. To achieve optimum performance of the product, minimum 2-3 coats by brushing would be required to get the desired dry film thickness (DFT) as specified by the manufacturer.
- 7.6.6 Rate shall include the cost of all labour and material involved in all operation including priming coat.

7.7 STRUCTURAL STEEL WORK

7.7.1 Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer. Workmanship of structural steel shall be in accordance with IS 800. The material shall be free from visible as well as hidden defects such as pitting cracks, laminations, twists etc. and excessive rusting.

7.7.2 All structural steel members and parts shall have straight edges and blunt surfaces. If necessary, they shall be straightened or flattened by pressure unless they are required to be of curvilinear forms. They shall also be free from twist. Pressure applied for straightening or flattening shall be such as would not injure the materials. Hammering shall not be permitted. Adjacent surfaces or edges shall be in close contact or at uniform distance throughout.

7.8 PLAIN & REINFORCED CEMENT CONCRETE

7.8.1 General

The concrete used for all works, concreting procedure etc. shall be in accordance with IS:456-2000.

7.8.2 Concrete Mix

Mix used for Cement Concrete shall be as specified in the schedule.

7.8.3 Nominal Mix

For nominal mix concrete, proportion of fine aggregate to coarse aggregate shall be 1:2 by mass. The minimum cement content per cubic meter of nominal mix concrete shall be as per table 5 of IS: 456-2000.

7.8.4 Size of Coarse Aggregate

For all concrete, 20 mm size graded aggregate conforming to IS:383-2016 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.

7.8.5 Mixing of Concrete

7.8.5.1 Concrete shall be mixed in a drum or pan type batch mixer, the type and capacity of which is to be approved by the Engineer-in-Charge. Time allowed for mixing, after all ingredients have been placed in the mixers shall not be less than two minutes. If there is segregation after unloading from the mixer, the concrete should be remixed.

7.8.6 Ready mix concrete from outside 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 2.3.4 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.

7.8.7 Transporting, placing, compacting and curing of concrete

- 7.8.7.1 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.
- 7.8.7.2 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.
- 7.8.7.3 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.
- 7.8.7.4 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.
- 7.8.7.5 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.
- 7.8.7.6 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.
- 7.8.7.7 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).
- 7.8.7.8 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.

- 7.8.7.9 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

7.9 REINFORCEMENT STEEL

General

Reinforcement bars, if supplies are arranged by contractor unless otherwise specified, shall be either plain round mild steel bars grade I as per IS 432 (Part I) or medium tensile steel bar as per IS 432 (Part I) or hot rolled mild steel and medium tensile steel deformed bars as per IS 1139 or cold twisted steel bars as per IS 1786, as shown and specified on the drawings. Wire mesh or fabric shall be in accordance with IS 1566. Substitution of reinforcement will not be permitted except upon written approval from Engineer.

Plain round mild steel bars grade II as per IS 432 (Part I) may be used with prior approval of Engineer in writing and with 10% increase in the reinforcement area but its use shall not be permitted in structures located in earthquake zones subjected to severe damage (as per IS 1895) and for structures subject to dynamic loading (other than wind loading), such as frames supporting rotary or reciprocating machinery, etc.

All reinforcement shall be clean, free from grease, oil, paint, loose mill scale, loose rust, dust, bituminous material or any other substances that will destroy or reduce the bond. All rods shall be thoroughly cleaned before being fabricated. Pitted and defective rods shall not be used.

All concrete in the works shall be of design mix as defined in IS 456, unless it is a nominal mix concrete such as 1:3:6, 1:4:8 or 1:5:10.

Bending

Reinforcing bars supplied bent or in coils, shall be straightened before they are cut to size. Straightening of bars shall be done in cold and without damaging the bars. This is considered as a part of reinforcement binding fabricating work.

All bars shall be accurately bent according to the sizes and shapes shown on the detailed working drawings/bar bending schedules. They shall be bent gradually by machine or other approved means. Reinforcing bars shall not be straightened and re-bent in a manner that will injure the material, bars containing cracks or splits shall be rejected. They shall be bent cold, except

bars of over 32 mm in diameter which may be bent hot if specifically approved by Engineer. Bars bent **hot** shall not be heated beyond cherry red colour (not exceeding 845°C) and after bending shall be allowed to cool slowly without quenching. Bars incorrectly bent shall be used only if the means used for straightening and rebinding shall not injure the material. No reinforcement shall be bent when in position in the work without approval whether or not it is partially embedded in hardened concrete. Bars having kink or bends other than those required by design shall not be used.

Fixing

Reinforcement shall be accurately fixed by any approved means and maintained in the correct position shown in the drawings by the use of cover blocks, spacers and chairs as per IS 2502 to prevent displacement during placing and compaction of concrete. Bars intended to be in contact at crossing points shall be strongly bound together at all such points with two no. 16 gauge annealed soft iron wire. The vertical distance required between successive layers of bar in beams or other members shall be maintained by providing of mild steel spacer bars at such intervals that the main bars do not perceptibly sag between adjacent spacer bars.

Cover

Unless indicated otherwise on the drawings, clear concrete cover for reinforcement (exclusive of plaster or other decorative finish) shall be as follows:

- a) At each end of reinforcing bar, not less than 25 mm nor less than twice the diameter of the bar whichever is less.
- b) For a longitudinal reinforcing bar in a column, not less than 40 mm, nor less than the diameter of the bar. In case of columns of minimum dimensions of 20 cm or under, with reinforcing bars of 12 mm and less in diameter, a cover of 25 mm may be used.
- c) For longitudinal reinforcing bars in a beam 25 mm nor less than the diameter of the bar.
- d) For tensile, compressive, shear, or other reinforcement in a slab or wall not less than 12 mm nor less than the diameter of such reinforcement.
- e) For any other reinforcement not less than 12 mm nor less than the diameter of such reinforcement.
- f) For footings and other principal structural members in which the concrete is deposited directly against the ground, cover to the bottom reinforcement

shall be 75 mm. If concrete is poured on a layer of lean concrete the bottom cover may be reduced to 50 mm.

- g) For concrete surfaces exposed to the weather or the ground after removal of forms, such as retaining walls, footing sides and top, etc., not less than 50 mm for bars larger than 16 mm dia and not less than 40 mm for bars 16 mm dia or smaller.
- h) Increased cover thickness shall be provided, as indicated on the drawings, for surfaces exposed to the action of harmful chemicals (or exposed to earth contaminated by such chemical, acid, alkali, saline atmosphere, sulphurous smoke, etc.
- i) For reinforced concrete members, totally or periodically immersed in sea water or subject to sea water spray, the cover of concrete shall be 50 mm more than those specified in (i) to (v) above.
- j) For liquid retaining structures the minimum cover to all steel shall be 40 mm or the diameter of the main bars, whichever is greater. In the presence of sea water and soils and waters of a corrosive character the cover shall be increased by 10 mm.
- k) Protection to reinforcement in case of concrete exposed to harmful surroundings may also be given by providing a dense impermeable concrete with approved protective coatings, as specified by the Engineer.
- l) The correct cover shall be maintained by cement mortar cover blocks. Reinforcement for footings, beams and slabs on sub-grade shall be supported on precast concrete blocks as approved by Engineer. The use of pebbles or stones shall not be permitted.

Inspection

Erected and secured reinforcement shall be inspected, jointly measured and recorded and approved by Engineer prior to placement of concrete.

7.10 PROVIDING AND APPLYING INTERIOR ACRYLIC EMULSION PAINT

The surface shall be thoroughly cleaned of dust and then be sand papered to give a smooth and even surface. Over the prepared surface one base coat of primer for exterior/interior emulsion paint of same brand shall be applied

with hand brush in horizontal stroke followed immediately by a vertical one which together shall constitute one coat. After the primer coat has dried for at least 48 hours, the surface shall be lightly sand papered to make it smooth. All loose particles shall be dusted off after rubbing and the surface cleaned well. The first finishing coat of exterior/interior emulsion paint shall then be applied with hand brush in horizontal stroke followed immediately by a vertical one which together shall constitute one coat. The second coat shall be applied in the same way of first coat to obtain an even surface, after the first finishing coat dried as per the directions of the Engineer-in óCharge

Measurements 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 the completion of work

Application: The number of coats shall be as stipulated in the item. The Paint will be applied in the usual manner with brush, spray or roller. The Paint dries by evaporation of the water content and as soon as the water has evaporated the film gets hard and the next coat can be applied. The time of drying varies from one hour on absorbent surfaces to 2 to 3 hours on non-absorbent surfaces. The thinning of emulsion is to be done with water and not with turpentine. Thinning with water will be particularly required for the under coat which is applied on the absorbent surface. The quantity of water to be added shall be as per manufacturer's instructions. The surface on finishing shall present a flat velvety smooth finish. If necessary more coats will be applied till the surface presents a uniform appearance.

Precautions

Old brushes if they are to be used with emulsion Paints, should be completely dried of turpentine or oil Paints by washing in warm soap water. Brushes should be quickly washed in water immediately after use and kept immersed in water during break periods to prevent the Paint from hardening on the brush. (b) In the preparation of wall for plastic emulsion painting, no oil base putties shall be used in filling cracks, holes etc. (c) Splashes on floors etc. shall be cleaned out without delay as they will be difficult to remove after hardening. (d) Washing of surfaces treated with emulsion Paints shall not be done within 3 to 4 weeks of application.

Measurements: The length and breadth shall be measured correct to a cm. Measurements of the work under this head shall be made on the basis of the

area of work done and the rate quoted shall include the cost of labour, materials scaffoldings etc. required for the completion of the work.

7.11 BRICK MASONRY

Brick masonry shall conform to IS: 2212. All bricks shall be thoroughly soaked in water for at least 6 hours before use. Brickwork shall not be raised more than 14 courses per day.

The grade of mortar shall be as specified in the Schedule of Quantities.

Joints shall be restricted to a thickness of 10mm unless otherwise required and shall be squarely raked to a depth of 12mm while the mortar is still wet and brushed.

Curing shall be done for 7 days.

Payment for brick masonry shall be made on cubic metre basis irrespective of thickness. The rate shall include all labour and materials including scaffolding.

7.12 SCRAPPING & CLEANING OLD PAINTED SURFACE

All loose particles and scales shall be scrapped off and holes in plaster as well as patches of less than 50 cm area shall be filled up with mortar of same mix. The surface shall then be cleaned with water jetting if required and allowed to dry for at least 48 hours before painting.

Whenever scaffolding is necessary, it shall be erected on double supports tied together by horizontal pieces, over which scaffolding planks shall be fixed.

7.13 EXTERIOR PAINTING ON WALL

This paint shall be brought to the site of work by the Contractor in its original containers in sealed condition. The material shall be brought in at a time in adequate quantities to suffice for the whole work or at least a fortnight's work. The materials shall be kept in the joint custody of the Contractor and the Engineer-in-Charge. The empty containers shall not be removed from the site of work till the relevant item of work has been completed and permission obtained from the Engineer-in-Charge.

Preparation of Surface

For new work, the surface shall be thoroughly cleaned off all mortar dropping, dirt dust, algae, fungus or moth, grease and other foreign matter of brushing and washing, pitting in plaster shall make good, surface imperfections such as cracks, holes etc. should be repaired using white

cement. The prepared surface shall have received the approval of the Engineer-in-Charge after inspection before painting is commenced.

Before pouring into smaller containers for use, the paint shall be stirred thoroughly in its container, when applying also the paint shall be continuously stirred in smaller containers so that its consistency is kept uniform. Dilution ratio of paint with potable water can be altered taking into consideration the nature of surface climate and as per the recommended dilution given by manufacturer. In all cases, the manufacturer's instructions & directions of the Engineer-in-Charge shall be followed meticulously. The lids of paint drums shall be kept tightly closed when not in use, as by exposure to atmosphere, the paint may thicken and also dust may accumulate.

Paint shall be applied with a brush on the cleaned and smooth surface. Horizontal strokes shall be given, First and vertical strokes shall be applied immediately afterwards. This entire operation will constitute one coat. The surface shall be finished as uniformly as possible leaving no brush marks.

The specifications in respect of scaffolding, protective measures, measurements and rate shall be as described under 2.4 above.

7.14 WALL PAINTING WITH PREMIUM ACRYLIC INTERIOR EMULSION PAINT

The wall surface shall be prepared as specified in Clause 6.15 above.

Application: The number of coats shall be as stipulated in the item. The Paint will be applied in the usual manner with brush, spray or roller. The Paint dries by evaporation of the water content and as soon as the water has evaporated the film gets hard and the next coat can be applied. The time of drying varies from one hour on absorbent surfaces to 2 to 3 hours on non-absorbent surfaces. The thinning of emulsion is to be done with water and not with turpentine. Thinning with water will be particularly required for the under coat which is applied on the absorbent surface. The quantity of water to be added shall be as per manufacturer's instructions. The surface on finishing shall present a flat velvety smooth finish. If necessary more coats will be applied till the surface presents a uniform appearance.

Precautions

- (a) Old brushes if they are to be used with emulsion Paints, should be completely dried of turpentine or oil Paints by washing in warm soap water. Brushes should be quickly washed in water immediately after use and kept immersed in water during break periods to prevent the Paint from hardening on the brush.
- (b) In the preparation of wall for plastic emulsion painting, no oil base putties shall be used in filling cracks,

holes etc. (c) Splashes on floors etc. shall be cleaned out without delay as they will be difficult to remove after hardening. (d) Washing of surfaces treated with emulsion Paints shall not be done within 3 to 4 weeks of application.

Measurements

The length and breadth shall be measured correct to a cm. Measurements of the work under this head shall be made on the basis of the area of work done and the rate quoted shall include the cost of labour, materials scaffoldings etc. required for the completion of the work.

7.15 PROVIDING AND LAYING OF PIPES FOR EXTERNAL WATER SUPPLY WORKS

General

All the pipes of different diameters and fittings shall be conforming to IS: 15778. The rate quoted shall include cost of all specials like bends, tees, reducers etc., cost of burying or fixing on walls using all fittings as the case may be etc. complete, but excluding cost of taps, valves etc.

Transporting

Pipes, fittings and valves etc. shall be transported from the stacking place to the worksite with sufficient care to avoid damage to them.

Other materials to be made available by the contractor

All other materials except those supplied under specific items in the schedule, required for jointing and laying pipes and fixing valves, including rubber gasket, lead, spun yarn, solvent cement etc. shall be brought by the contractor at his own cost.

Jointing of CPVC pipes

Jointing of CPVC pipes shall be done with IS:15778-2007, solvent welded joint shall be used for jointing of CPVC pipes. Solvent welded joint shall be achieved by non-heat application method. Solvent cement used for the joint shall be fully recommended by the manufacturer.

Testing of pipelines for leakage test

The leakage test shall be conducted at a test pressure of 12.5 kg./cm² for a duration of 2 hours or as directed by the Engineer-in-Charge for duration of 2 hours. No pipe installation shall be accepted until the leakage per hour in cubic centimeter is less than the quantity (Q) determined by the formula

$$Q = \frac{N \times D \times \zeta \times P}{3.3}$$

3.3

Where Q = Allowable leakage in cm³ / hour,

N = No. of joints in the length of the pipeline tested,

D = Diameter of pipe in mm

and P = Test pressure during the leakage test in kg/cm².

Fixing of valves and fittings

Fixing of valves and fittings shall form part of laying the pipeline as directed by the Engineer-in-Charge.

Payment

Payment shall be done on running meter basis measured center line length including all the fittings, valves, bolts, nuts etc. No separate payment shall be made for fixing fittings, valves etc. for completing the work to the full satisfaction. The rate quoted shall include the cost of all specials like bends, tees, reducers etc. and materials like rubber gasket, lead, spun yarn, solvent cement, bolts, nuts etc. to be made available by the contractor for jointing pipes, providing suitable connections to the existing delivery line and testing the line as aforesaid.

7.16 EARTHWORK EXCAVATION

Contractor shall be responsible for the true and proper setting out of the work in relation to original points, lines and levels of reference and for corrections of the level dimension and alignment of all parts of work.

All excavations shall be carried out to give exact length, width and depth as per profiles indicated in the drawings or as directed by the Engineer-in-Charge. The phasing and method of excavation shall be to the approval of Engineer-in-Charge. The contractor shall provide suitable arrangements to prevent water from any source entering into excavated pits at his cost.

Necessary shoring and timbering shall be provided as per IS:3764 for preventing slipping of the soil in trenches and for protecting the safety and stability of the existing structures. Dewatering, if required shall also be carried out to keep the excavated surface dry for construction. The cost for pumping or bailing out water by using pump set will be paid separately. Excavation taken wider or deeper than required shall be filled back with crusher run screening or selected materials approved by the Engineer-in-Charge, thoroughly compacted in layers of thickness not more than 20 cm or as decided by the Engineer-in-Charge.

7.17 LANDSCAPING WORK

Surface dressing of the ground

Surface dressing shall include cutting and filling upto a depth of 15 cm and clearing of shrubs, rank vegetation, grass, brushwood, trees and saplings of girth upto 30 cm measured at a height of one metre above the ground level and removal of rubbish and other excavated material upto a distance of 50 metres outside the periphery of the area under surface dressing. High portions of the ground shall be cut down and hollows depression filled upto the required level with the excavated earth so as to give an even, neat and tidy look.

The surface to provide grass shall be cleared by removing weeds or other vegetation and disposed off. The soil shall then be loosened by turning over the top layer containing weeds etc, and bringing the lower layer of good earth to form a proper medium for grassing, regrassing, hedging and shrubbery.

The ground shall be levelled and rough dressed and if there are any hollows and depressions resulting from subsidence which cannot be so levelled, these shall be filled properly with good earth brought from outside to bring the depressed surface to the level of the adjoining land and to remove discontinuity of slope and then rough dressed again. The quantity of good earth used for filling and leveling the area, if any, shall be measured and paid separately under the item of supply of good earth.

Landscaping operations shall be started on ground levelled and dressed to required formation levels and slopes. In case where unsuitable soil is met with, it shall be either removed or, replaced or it shall be covered over to a thickness decided by the Engineer-in-Charge with good earth.

In the course of excavation or trenching during horticultural operations, any walls, foundations, etc. met with shall not be dismantled without pre-measurement and prior to the written permission of the Engineer-in-Charge.

Uprooting of Vegetations

The roots of grass and saplings shall be removed to a depth of 60 cm below ground level or 30 cm below formation level or 15 cm below sub-grade level, whichever is lower. All holes or hollows formed due to removal of roots shall be filled up with earth rammed and levelled. Trees, shrubs, poles, fences, signs, monuments, pipe lines, cable etc., within or adjacent to the area which are not required to be disturbed during jungle clearance shall be properly protected by the contractor at his own cost and nothing extra shall be payable.

Disposal

All unserviceable materials, grass, root of grass etc. which in the opinion of the Engineer-in-Charge cannot be used shall be removed up to a

distance of 50 m outside the periphery of the area under clearance. It shall be ensured by the contractor that unserviceable materials are disposed off in such a manner that there is no likelihood of getting mixed up with the materials meant for construction of Landscaping/ garden.

Measurements

Length and breadth of the dressed ground shall be measured correct to the nearest cm and the area worked out in square metres correct to two places of decimal.

Rates

The rates shall include cost of labour, tools, equipments etc. involved in all the operations described above.

Supply of Materials

The red earth supplied shall be free from weeds, grass, roots of plants, roots of grass etc. The red earth shall be sufficiently fertile good for the growth of grass & plants. The earth shall be free from pebbles. Before supplying the red earth the same shall be got approved by the Engineer-in-charge.

Coco peat blocks, Regent (insecticide), Compost etc. supplied shall be good approved quality and brand as approved by the Engineer-in-charge. The materials shall be supplied from recognized manufacturers.

The Mexican grass and Pearl grass carpets shall be free from diseases, weeds, pests, fungi etc. The grass supplied shall be from recognized nurseries/ agencies.

Mixing of Red earth, coco peat and manure etc.

The Coco peat, manure etc. shall be mixed with the red earth as per the proportion directed by the Engineer-in-charge. The mixture shall be prepared in a uniform manner to get a homogenous mixture suitable for planting grass, plants etc.

The stacked red earth shall, before mixing, be broken down top particle of sizes not exceeding 6 mm in any direction. Good earth shall be thoroughly mixed with sludge or manure in specified proportion of 2:1 or 1:1, as the case may be or as directed by the Engineer-in-Charge.

The quantity of good earth and sludge or manure mixed shall be determined by the difference in the volume of good earth, sludge or manure in stack, before and after spreading duly accounted for voids and looseness in stack.

Maintenance of Landscaping works.

Watering:

During the contract period especially during summer, (October to May), contractor has to water the lawn areas, plants, shrubs, creepers, ground covers and beds daily with the help of sprinkler system or PVC hose pipes or suitable arrangements as approved by the Engineer-in-Charge. During the dry spell of monsoon the contractor shall water the lawns and plants as and when required. Water shall be given free of cost by CoPA from the existing nearest point available.

- i. Applying fertilizer/ manure shall be done as and when required or minimum once in a month and as per the direction of Engineer-in-Charge of the work.
- ii. Periodic application of organic fertilizers to lawn areas, plants, shrubs, creepers, ground covers and beds shall be done as directed by the officer-in-charge. The application procedure, dosage and periodicity are depended on age, species and condition of the plant. Farmyard manure shall be applied for shrubs as per recommendations of Officer-in-Charge.
- iii. Periodic removal of weeds, dry leaves and any foreign materials shall be done as and when required.

De-weeding:

For the management of lawns, de-weeding should be done at least twice in every month or as and when required. **The lawn area shall be free from weed growth and look like a green carpet.**

De-weeding & Soil Working:

- i. De-weeding of ground cover beds, creepers, shrubs should be done twice in every month or as directed by the Officer-in charge. Weeds should not be conspicuous. In the case of shrubs in open area weeds from an area of minimum one meter i.e. measured in width along the row of plants (Plant at the center) should be removed from roots once in a month. Soil working should be done for shrubs and ground covers along with each de-weeding.
- ii. Supplying pesticide/ fungicides shall be done as and when required as per the direction of Horticulturist.
- iii. Cutting and shaping plants/ topiary works, replanting arranging and colouring pots etc. shall be done as directed by department.

Mowing of Lawns/ Grass curring:

Lawn mowing/ Grass Cutting shall be done at least twice in a month or as and when required as directed by the Engineer-in-charge. Engineer-in-charge may direct for additional operation of lawn mowing/

Grass cutting during contract period as per site requirement. Grass should be cut uniformly & should appear as green carpet. The grass clippings/ cuttings should be immediately collected and stacked within 150 m lead and **disposed off the same within a lead of 6Km** as directed. **Contractor should arrange for advanced motor operated lawn mowers/ weed cutter.** In monsoon period grass should be cut with the help of lawn mowing machine/ Brush cutter or with manually as and when required. Officer-in-Charge may direct for additional operation during this period as per site requirement.

Pruning / cutting / shaping:

Pruning / shaping of shrubs / hedges / edges in desired shape be executed as per recommendations of Officer-in-Charge. Foliage/ twigs must be immediately removed from the site and heaped at one point for disposal within 150 m lead and **dispose the same within a lead of 6Km.**

Transportation and disposal:

Leaves, branches of plants/ trees after the pruning/ cutting/ shaping of plants and mowing of lawns shall be disposed by the contractor at his own cost at the Cochin Port Authority dumping ground or area as pointed out by the Engineer-in-charge.

Replanting plants in place of decayed one due to negligence of contractors shall be done by the contractor at his own cost.

Cleaning & maintaining the whole works and facilities of the landscaped areas excluding mowing/ grass cutting at Priyadarshini park, North End , Willingdon Island, including disposing of the rubbish within a lead of 6kms including

- (a) Proper up keep of lawn by deweeding, manuring etc.
- (b) Proper up keep of plants by pruning, nursing, manuring etc.
- (c) Repotting and planting of plants
- (d) Watering daily except rainy days
- (e) Any other work connected with the maintenance of landscaped areas etc.
- (f) Supply of tools/ materials/ labour etc.

One labour shall be assigned for this work.

All the above shall be completed as per detailed specifications and directions of Engineer-in-Charge. .

Cleaning & maintaining the whole works and facilities of the landscaped areas excluding mowing/ grass cutting at Priyadarshini park, North End, Willingdon island , including disposing of the rubbish within a lead of 6kms including

- (a) Proper up keep of lawn by deweeding, manuring etc.
- (b) Proper up keep of plants by pruning, nursing, manuring etc.
- (c) Repotting and planting of plants
- (d) Arranging flower pots in offices as and when required
- (e) Watering daily except rainy days
- (f) Any other work connected with the maintenance of landscaped areas etc.
- (g) Supply of tools/ materials / labour etc.

3 labourers shall be assigned for the work. All the above shall be completed as per detailed specifications and directions of Engineer-in-Charge. Maintaining the landscaped areas/ lawn area/ other areas by mowing/ cutting and removing grass and overgrowth of vegetation at Priyadarshini park, North End, Willingdon Island by mowing/ cutting and removing grass and other over growth and disposing of the rubbish within a lead of 6kms including

- (a) Proper up keep of lawn and other areas by mowing/ cutting and removing grass and overgrowth of vegetation.
- (b) Any other work connected with the maintenance of landscaped areas etc.
- (c) Supply of brush cutter/ Mower/labour etc.

All the above shall be completed as per detailed specifications and directions of Engineer-in-Charge. This shall be done twice a month. Any leaves will be deducted. Works shall be carried out as and when required as directed by the Engineer-in-charge. All the works shall be done as per the direction of the Engineer-in-Charge of the work.

7.20 SPREADING GOOD RED EARTH AND MANURE / SLUDGE

Good red earth mixed with sludge or manure as above shall be spread evenly over the surface to the thickness ordered by the Engineer-in-Charge. It shall be spread with a twisting motion to avoid segregation and to ensure that spreading is uniform over the entire area.

Planting Mexican/ Pearl grass.

The Mexican/ Pearl grass shall be laid on the surface prepared using the Mixture of red earth, coco peat, manure etc.

The carpet shall be joined together to form a ready made lawn.

The bed should be watered before and after setting the Carpet

The carpet shall be laid and fixed in the soft area as directed by the Engineer-in-charge without causing any damages to the carpet and existing plants.

The grass carpet shall be supplied from the sources approved by the Engineer-in-charge.

The area from where the grass roots are to be obtained shall be specified by the Engineer-in-Charge at the time of execution of the work and no royalty shall be charged on this account from the Contractor. Grass is to be arranged by Contractor.

The soil shall be suitably moistened and then the operation of planting grass shall be commenced. Dead grass and weeded shall not be planted.

The rate shall include of all the labour and material involved in all the operations described above.

7.21 KOTA STONE SLAB LAYING

Every slab shall be cut to the required size and shape and fine chisel dressed on the sides to the full depth so that a straight edge laid along the side of the stone shall be in full contact with it. The sides (edges) shall be table rubbed with coarse sand or machine rubbed before paving. All angles and edges of the slabs shall be true, square and free from chippings and the surface shall be true and plane.

The thickness of the slab after it is dressed shall be 20, 25, 30 or 40 mm as specified in the description of the item. Tolerance of ± 2 mm shall be allowed for the thickness. In respect of length and breadth of slabs Tolerance of ± 5 mm for hand cut slabs and ± 2 mm for machine cut slabs shall be allowed.

Base concrete or the RCC slab on which the slabs are to be laid shall be cleaned, wetted and mopped. The bedding for the slabs shall be with cement mortar 1:4 (1 cement : 4 coarse sand) or as given in the description of the item.

The average thickness of the bedding mortar under the slab shall be 20 mm and the thickness at any place under the slab shall be not less than 12 mm.

The slabs shall be laid in the following manner: Mortar of the specified mix shall be spread under the area of each slab, roughly to the average thickness specified in the item. The slab shall be washed clean before laying. It shall be laid on top, pressed, tapped with wooden mallet and brought to level with the adjoining slabs. It shall be lifted and laid aside. The top surface of the mortar shall then be corrected by adding fresh mortar at hollows. The mortar is allowed to harden a bit and cement slurry of honey like consistency shall be spread over the same at the rate of 4.4 kg of cement per sqm. The edges of the slab already paved shall be buttered with grey or white cement with or without admixture of pigment to match the shade of the marble slabs as given in the description of the item. The slab to be paved shall then be lowered gently back in position and tapped with wooden mallet till it is properly bedded in level with and close to the adjoining slabs with as fine a joint as possible. Subsequent slabs shall be laid in the same manner. After each slab has been laid, surplus cement on the surface of the slabs shall be cleaned off. The flooring shall be cured for a minimum period of seven days. The surface of the flooring as laid shall be true to levels, and, slopes as instructed by the Engineer-in-Charge. Joint thickness shall not be more than 1 mm. Due care shall be taken to match the grains of slabs which shall be selected judiciously having uniform pattern of Veins/streaks or as directed by the Engineer-in-Charge.

7.22 PRESERVATION OF TIMBER

Preservative treatment does not improve basic properties of timber but gives varying degree of protection against deterioration due to attacks by fungi, termites, borers and marine organisms. Preservative treatment, where specified, shall be done using Oil type, Organic solvent type or Water-soluble type preservative. Oil type preservatives shall be used if the timber is not required to be polished or painted. Before preservative treatment, the timber shall be sawn and seasoned. All surfaces exposed after treatment, except due to planing, shall be thoroughly brushed with the preservation before jointing. Preservative treatment of timber shall be done as per IS 401 in a plant approved by the Engineer-in-Charge.

7.23 COURSED RUBBLE MASONRY - FIRST SORT

7.23.1 Stone: Shall be as specified in 7.23.1.1

7.23.1.1 Stone

The stone shall be of the type specified such as granite, trap, limestone, sand stone, quartzite, etc. and shall be obtained from the quarries, approved

by the Engineer-in-Charge. Stone shall be hard, sound, durable and free from weathering decay and defects like cavities, cracks, flaws, sand holes, injurious veins, patches of loose or soft materials and other similar defects that may adversely affect its strength and appearance. As far as possible stones shall be of uniform colour, quality or texture. Generally stone shall not contain crypst crystalline silica or chart, mica and other deleterious materials like iron-oxide organic impurities etc. Stones with round surface shall not be used. The compressive strength of common types of stones shall be as per Table 7.1 of CPWD Specifications 2019. and the percentage of water absorption shall generally not exceed 5% for stones other than specified in Table 7.1 of CPWD Specifications 2019.

Note 1: Test for compressive strength shall be carried out as laid down in IS 1121 (Part I).

Note 2: Test for water absorption shall be carried out as laid down in IS 1124.

7.23.2 Size of Stone: Shall be as specified in 7.23.2.1

7.23.2.1 Size of Stones

Normally stones used should be small enough to be lifted and placed by hand. Unless otherwise indicated, the length of stones for stone masonry shall not exceed three times the height and the breadth on base shall not be greater than three-fourth of the thickness of wall, or not less than 150 mm. The height of stone for rubble masonry may be upto 300 mm. The selection and grading of stones for rubble masonry is largely done at site and the smaller stones are used in the hearting of wall.

7.23.3 Dressing

Face stones shall be hammer dressed on all beds, and joints so as to give them approximately rectangular block shape. These shall be squared on all joints and beds. The bed joint shall be rough chisel dressed for at least 80 mm back from the face, and side joints for at least 40 mm such that no portion of the dressed surface is more than 6 mm from a straight edge placed on it The remaining unexposed portion of the stone shall not project beyond the surface of bed and side joint. The bushing on the face shall not project more than 40 mm as an exposed face and 10 mm on a face to be plastered. The hammer dressed stone shall also have a rough tooling for minimum width of 25mm along the four edges of the face of the stone, when stone work is exposed.

7.23.4 Mortar

The mortar for jointing shall be as specified.

7.23.5 Laying

All stones shall be wetted before use. The walls shall be carried up truly plumb or to specified batter. All courses shall be laid truly horizontal and all vertical joints shall be truly vertical. The height of each course shall not be less than 15 cm nor more than 30 cm. Face stones shall be laid alternate

headers and stretchers. No pinning shall be allowed on the face. No face stone shall be less in breadth than its height and at least one third of the stones shall tail into the work for length not less than twice their height. The hearting or the interior filling of the wall shall consist of stones carefully laid on their proper beds in mortar; chips and spalls of stone being used where necessary to avoid thick beds of joints of mortar and at the same time ensuring that no hollow spaces are left anywhere in the masonry. The chips shall not be used below the hearting stone to bring these upto the level of face stones. The use of chips shall be restricted to the filling of interstices between the adjacent stones in hearting and these shall not exceed 10% of the quantity of stone masonry. The masonry in a structure shall be carried up uniformly but where breaks are unavoidable, the joints shall be raked back at angle not steeper than 45°. Tothing shall not be allowed.

7.23.6 Bond Stones

7.23.6.1 Bond Stones

Though bond stones shall be provided in walls upto 600 mm thickness, a set of two or more bond stones overlapping each other by at least 150 mm shall be provided in a line from face to back. In case of highly absorbent types of stones (porous lime stone and sand stone etc.) the bond stone shall extend about two-third into the wall, as through stones in such walls a set of two or more bond stones overlapping each other by at least 150 mm shall be provided. Each bond stone or a set of bond stones shall be provided for every 0.5 m² of the wall surface. In case of highly absorbent types of stones (porous lime stone and sand stone etc.) single piece bond stones may give rise to dampness. For all thicknesses of such walls a set of two or more bond stones overlapping each other by at least 15 cm shall be provided. Length of each such bond stone shall not be less than two-third of the thickness of the wall. Where bond stones of suitable lengths are not available pre-cast cement concrete block of 1:3:6 mix (1 cement : 3 coarse sand: 6 graded stone aggregate 20 mm nominal size) of cross section not less than 225 square centimeters and length equal to the thickness.

7.23.7 Quoins

The quoins shall be of the same height as the course in which these occur. These shall be at least 450 mm long and shall be laid stretchers and headers alternatively. These shall be laid square on the beds, which shall be rough-chisel dressed to a depth of at least 100 mm. In case of exposed work, these stones shall have a minimum of 25 mm wide chisel drafts at four edges, all the edges being in the same plane.

7.23.8 Joints

All bed joints shall be horizontal and all side joints vertical. All joints shall be fully packed with mortar, face joints shall not be more than one cm thick.

When plastering or pointing is not required to be done, the joints shall be struck flush and finished at the time of laying. Otherwise, joints shall be raked to a minimum depth of 20 mm by raking tool during the progress of work, when the mortar is still green.

7.23.9 Curing,

Masonry work in cement or composite mortar shall be kept constantly moist on all faces for a minimum period of seven days. In case of masonry with fat lime mortar curing shall commence two days after laying of masonry and shall continue for at least seven days thereafter.

Scaffolding,

Single scaffolding having one set of vertical support shall be allowed. The supports shall be sound and strong, tied together by horizontal pieces, over which the scaffolding planks shall be fixed. The inner end of the horizontal scaffolding member may rest in a hole provided in the masonry. Such holes, however, shall not be allowed in pillars under one metre in width or near the skew back of arches. The holes left in masonry work for supporting scaffolding shall be filled and made good with cement concrete 1 : 3 : 6 (1 cement : 3 coarse sand : 6 stone aggregate 20 mm nominal size).

Measurements

The length, height and thickness shall be measured correct to a cm. The thickness of wall shall be measured at joints excluding the bushing. Only specified dimensions shall be allowed; anything extra shall be ignored. The quantity shall be calculated in cubic metre nearest to two places of decimal.

Rates.

The rate shall include the cost of materials and labour required for all the operations described above and shall include the following :

- (a) Raking out joints for plastering or pointing done as a separate item, or finishing flush as the work proceeds.
- (b) Preparing tops and sides of existing walls for raising and extending.
- (c) Rough cutting and waste for forming gables cores, skew backs or spandrels of arches, splays at eaves and all rough cutting in the body of walling unless otherwise specified.
- (d) Bond stones or cement concrete bond blocks.
- (e) Leading and making holes for pipes etc.
- (f) Bedding and pointing wall plates, lintels, sills etc. in or on walls, bedding roof tiles and corrugated sheets in or on walls.
- (g) Building in ends of joists, beams, lintels etc.

SIGNATURE OF TENDERER

COCHIN PORT AUTHORITY

**PROVIDING LANDSCAPING AND MAINTENANCE OF LANDSCAPED
AREA FOR TWO YEARS, YOGA PLATFORM & REPAIR WORKS TO THE
STRUCTURES IN PRIYADARSHINI PARK, NORTH END WILLINGDON
ISLAND**

UNDERTAKING REGARDING EPF AND ESI REGISTRATION

I/ We, M/s/í .. (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 to the above and indemnify CoPA officials for any actions taken in this regard

SIGNATURE OF TENDERER

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./Mrs. _____ **[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 **“PROVIDING LANDSCAPING AND MAINTENANCE OF
LANDSCAPED AREA FOR TWO YEARS, YOGA PLATFORM & REPAIR
WORKS TO THE STRUCTURES IN PRIYADARSHINI PARK, NORTH END
WILLINGDON ISLAND”**.

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

FORMAT FOR FURNISHING BANK INFORMATION FOR e-PAYMENT

1	Name and full address of the beneficiary	
2	Credit Account No. (Should be full 14 digit)	
3	Account Type (SB or CA or OD)	
4	Name of the Bank	
5	Branch (Full address with telephone No.)	
6	MICR code (Should be 9 digit)	
7	Telephone/Mobile/Fax No. of the beneficiary	Telephone:
		Mobile :
		Fax :
8	Cancelled Cheque	

Signature with seal
(Authorized Signatory)

**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 Board of Authorities of Major ports for the Port of *[insert name of Port]* incorporated by **The Board of Major Port Authority** Act, 2021 as amended by Major Port Authority (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 Trustees of the Port of *[insert name of 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 _____ :- 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 forebear or enforce any of the terms and conditions relating to the said contract and we shall not be relieved from our liability by reason of any such variation or 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).ö

Date _____ day of _____ 20

For (Name of Bank)

(Name)

Signature

* The date will be Sixty (60)days after the end of the period of Contract as specified in the Contract.