வ.உ.சி துறைமுக ஆணையம்
वी.ओ.सी पत्तन प्राधिकरण
V.O.C Port Authority

Global Connect

V O CHIDAMBARANAR PORT AUTHORITY
MECHANICAL & ELECTRICAL ENGINEERING DEPARTMENT
TUTICORIN

Tender No. MEE/FFFS/AUG/2025

e – TENDER

for

"Augmentation of Fire Fighting Facilities for handling above 40000 DWT vessels as per OISD 156 at Oil Jetty of VOCPA"

Online submission closing date: 20.11.2025 @15:00 hrs
Online Opening date: 21.11.2025 @15:00 hrs

https://etenders.gov.in/eprocure/ app

CONTENTS

		Form-X	"Local Content declaration & Self-Certification" as per the GoI Order on Public Procurement (preference to Make in India)
		Form-XI	Integrity Pact
		FOR JV/CONSORTIUM	
		Form-XII	Declaration of Power of Attorney
		Form-XIII	Declaration of Power of Attorney for Consortium
		Form-XIV	Evidence Towards Site Visit
	B	**Annexure B** – Contract Agreement Form	
	C	**Annexure C** – Bank Guarantee Form for EMD	
	D	**Annexure D** – Bank Guarantee Form for Performance Security Deposit	
IX	**PRICE SCHEDULE**		

SECTION- I

NOTICE INVITING TENDER (NIT)

1.1 V.O. Chidambaranar Port Authority invites electronic tender (Two Cover System) fromeligible bidders for the work ***"Augmentation of Fire Fighting Facilities for handling above 40000 DWT vessels at Oil Jetty as per OISD 156"***.

1.2 A complete set of Tender documents may be downloaded by any interested Bidders from e-Tender web portal https://etenders.gov.in/eprocure/ app . The Bidder shall submit his bid in Central Public Procurement Portal (e-Procurement) at https://etenders.gov.in/ eprocure/app by following the procedure of Instruction to Bidder (Section - II). Non-submission of Bid along with relevant documents shall lead to rejection of the tender.

1.3 Salient features of the Bid:

Tender No.	**MEE/FFFS/AUG/2025**
Tender Type	Open online e-Tender
Tender Inviting Authority	Chief Mechanical Engineer, VOCPA
Address	V.O. Chidambaranar Port Authority, Harbour Estate, Tuticorin – 628 004,Tamil Nadu
Contact Details & Email	Tel. off: 0461-2372206, 0461-2352226, 0461-2352255 e-mail: cme@vocport.gov.in
Brief Work Description	Scope of Work includes *"Augmentation of Firefighting facilities as per OISD-156 for handling above 40000 DWT Vessels at Oil jetty at VOCPA". It also includes all the firefighting system equipment shall be ensured as UL approved and the proposed FFS integrated with the existing FF system to fulfil the requirement of OSID 156 for handling above 40,000 DWT Vessels at Oil jetty including SCADA and CCTV integrated with control room. The work further includes extension of existing pumproom with pile foundation after test pile. The contractor shall engage civil contractor who are having working experience in the similar field for execution of extension pump room work.*
Location of the work	VOCPA Premises
Estimated Cost	**₹ 14,99,61,222/- plus GST**
Bid Validity	**120 days** from the date of opening of the Tender
EMD	**₹ 29,99,224/-** (Rupees Twenty-Nine Lakhs Ninety-Nine Thousand Two Hundred and Twenty-Four only). All bidders other than an MSEs should pay the EMD through online payment gateway mode in CPP e- Tender web Portal or shall submit the EMD in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or irrevocable & operative Bank Guarantee from any of the Scheduled Commercial Banks. The validity period of bid security is to remain valid for a period of 45 (forty-five) days beyond the final bid validity period. Otherwise, his/her/their tender will be rejected. EMD in any other form shall not be

	accepted. The MSEs are required to furnish relevant valid Certificate for claiming exemption. This valid certificate shall be uploaded in the Bid, failing which the Technical Bid shall not be evaluated. Similarly, bidders are required to upload scanned copies in the Bid incase payment of EMD in the form of Insurance Surety Bonds, account payee demand draft, fixed deposit receipt, banker's cheque or Bank Guarantee from any of the Commercial Banks, failing which the Technical Bid shall not be evaluated. The originals of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee from any of the Commercial Banks shall be received only after the bid opening date. If the originals not received within 7 days of bid opening date the bid may not be considered.
Delivery period of the Contract	200 days from the date of commencement of work.
Downloading of Tender documents start date	01.11.2025
Downloading of tender document end day	20.11.2025 up to15:00 hrs.,
Start date of seeking clarifications	01.11.2025 @ 17:00 hrs.,
End date of seeking clarifications	10.11.2025 @ 17:15 hrs.,
Pre-Bid Meeting	11.11.2025 @ 15.30 hrs. (Physical & Virtual)
Reply to Pre-bid queries	14.11.2025
Bid Submission end date & time	20.11.2025 @ 15:00 hrs.,
Bid opening date & time	21.11.2025 @ 15:00 hrs.,
Currency of Contract	INR
Language of Contract	English

Bidders fulfilling following eligibility / pre-qualification criteria may participate in the tender:

a) <u>Financial Capability:</u>

Average Annual financial turnover during the last three years, ending 31st March of the previous financial year, should be at least 30% (Thirty per cent) of the estimated cost. The details shall be furnished by the bidder on Form III of Annexure A.

b) <u>Similar Work Experience:</u>

The bidder should have successfully completed similar work(s) as detailed below during the last 07 years from the previous month of date of publication of the NIT with either of the following in any

Central / State Government / Autonomous bodies / PSEs / PSUs / Public Limited or Private Limited Companies, Major / Minor Ports etc.

i) Three similar completed work each costing not less than the amount equal to 40% (Forty per cent) of the estimated cost (i.e. Rs. 5,99,84,489/-)

(OR)

ii) Two similar completed work each costing not less than the amount equal to 50% (Fiftyper cent) of the estimated cost. (i.e. Rs. 7,49,80,611/-)

(OR)

iii) One similar completed work costing not less than the amount equal to 80% (Eighty percent) of the estimated cost (i.e. Rs. 11,99,68,978/-)

"Similar work" shall mean.

The term similar work shall mean "Design, Supply, Erection, Testing and Commissioning of Fixed firefighting system as per OISD 156" at Central / State Government /PSUs/Ports or Private Organizations.

The bidder shall also furnish the Certificates of Work Order / Completion Certificate with performance for "Design, Supply, Testing and Commissioning of FFFS at Oil Jetty in Ports" irrespective of value of work.

Copies of work order(s) & respective satisfactory completion(s) / performance certificate(s) must be furnished in support of meeting similar work experience. In case of experience other than Govt Organisations, the bidder has to submit TDS certificate for the past experience, only then will the experience be considered.

1.4 The bidder should have (i) EPF registration certificate; (ii) ESI; (iii) Permanent Account Number [PAN]; (iv) Income Tax Return of preceding three years; and (v) GST Registration Certificate etc.

1.5 Other details can be seen in the Tender documents. The Bidders are advised to read the whole document carefully and submit their tender/bid strictly, meeting the requirements spelled out in the bid document.

1.6 The bid document is required to be submitted only through e-tender web portal https://etenders.gov.in/eprocure/app.

1.7 While E-tendering all the supporting documents as stated in Annexure A have to be signed in each and every page serially numbered along with seal and shall be uploaded by the Bidders. No hard copies need to be sent to the Authority.

1.8 The Authority will not be held responsible for any technical snag or network failure during online bidding.

1.9 The Authority reserves the right to cancel any or all bids without assigning any reason.

1.10 The contractor execute the incomplete work in the Port as a contractor/ Sub- Contractor shall be not entertained in the bid.

1.11 The bidder shall upload the site inspection as per **Form- XIV** "**Evidence towards site visit**" annexed in the tender document, failing which the bid will be treated as non-responsive.

1.12 **Format and Signing of Bid:**

The Price Bid to be submitted on-line shall be signed digitally by a person or persons duly authorized to sign on behalf the Bidders.

The Bid shall contain no alternations additions, except those to comply with instructions issued by the Employer.

Contacts:

1. The Chief Mechanical Engineer
   Mechanical & Electrical Engineering Department,
   V.O. Chidambaranar Port Authority,
   Tele:0461-2352270
   Email: cme@vocport.gov.in

2. The Deputy Chief Mechanical Engineer
   Mechanical & Electrical Engineering Department,
   V.O. Chidambaranar Port Authority,
   Tele: 0461-2352270
   Email: niharranjanbhoi@vocport.gov.in

3. The Superintending Engineer (Mech.),
   Mechanical & Electrical Engineering Department,
   V.O. Chidambaranar Port Authority,
   Tele: 0461-2372207.
   Email: aravinthan.t@vocport.gov.in

4. The Executive Engineer (Mech.),
   Mechanical & Electrical Engineering Department,
   V.O. Chidambaranar Port Authority,
   Tele: 0461-2372227
   Email: chidambarampillai.g@vocport.gov.in

5. The Assistant Engineer (Mech.),
   Mechanical & Electrical Engineering Department,
   V.O. Chidambaranar Port Authority,
   Tele: 0461-2372255, Mob: 9042406093.,
   Email: p.suresh@mail.vocport.gov.in

Sd/-
Chief Mechanical Engineer
V. O. Chidambaranar Port Authority

SECTION-II
INSTRUCTION TO BIDDERS

CONTENTS

SECTION II

INSTRUCTION TO BIDDERS

2.1.1 e-TENDER NOTICE:

2.1.1.1 e-Tenders (Online) are invited in the **"TWO COVER"** system on behalf of **V.O. CHIDAMBARANAR PORT AUTHORITY (VOCPA)** from interested, reputed and experienced eligible bidders for the work as mentioned in the **Notice Inviting Tender (NIT) Section-I**. The bidder must fulfill the eligibility criteria and other requirements stipulated in the bid document.

2.1.1.2 Bid document having all details are available at the URL of the e-Tender web portal https://etenders.gov.in/eprocure/app or at the Port website www.vocport.gov.in for downloading during the period specified in the **NIT (Section-I).** The completed bid documents are required to be submitted only through online (e-mode) offered on the e-Tender web portal https://etenders.gov.in/eprocure/app. Bids in any other manner will be rejected, and no correspondence on such matter will be entertained. No bids shall be accepted off-line.

2.1.2 PARTICIPATING IN THE TENDER IN THE E-PROCUREMENT PORTAL:

2.1.2.1 The intending Bidders are required to register on the e-Tender web portal https://etenders.gov.in/eprocure/app (If not already registered) by clicking "Online Bidder Enrolment" option in order to obtain user-id and password and then to activate their respective user-id by using Digital Signature Certificate (Class-III). The bidders will have to accept, unconditionally, the online user portal agreement which contains all the terms and conditions of NIT including commercial and general terms and conditions and other conditions, if any, along with an online undertaking in support of the authenticity of the declarations regarding facts, figures, information and documents furnished by the bidder online; The bidder shall visit the homepage of the e-tender portal for getting information to be followed for bidding in the e- tender portal.

2.1.2.2 Any prospective bidder can view or download the bid documents from the e-Tender web portal https://etenders.gov.in/eprocure/app during the period as indicated in NIT / home page of portal.

2.1.2.3 In the case of any failure, malfunction, or breakdown of the electronic system used during the e-Procurement process, the Tender Inviting Authority shall not accept any responsibility for such failures or breakdowns other than in those systems strictly within their own control.

2.1.3 ELIGIBLE BIDDERS:

2.1.3.1 All eligible bidders meeting the eligibility criteria as defined in NIT (Section-I) can participate in the tender.

2.1.3.2 Bidder means any eligible person or firm or company; Please refer to Special Condition of Contract (SCC) for applicability of Joint Venture / Consortium.

2.1.3.3 Bidders who have been non-performing / debarred / blacklisted by any Purchaser / Employer / Client at the time of bidding shall not be allowed to participate in this tender.

2.1.4 COST OF BIDDING:

2.1.4.1 The Bidder shall bear all costs associated with site visit(s), pre-bid / post bid conference(s), preparation, and submission of his Bid, opening of price bid and VOCPA will in no case be responsible or liable for those costs regardless of the conduct or outcome of the bidding process.

2.1.5 LOCAL CONDITIONS:

2.1.5.1 It will be imperative for each Bidder to fully inform himself of all local conditions and factors which may have any effect on the execution of the works covered under the bidding documents and specifications. VOCPA will not entertain any request for clarifications from the Bidders regarding such local conditions.

2.1.5.2 It must be understood and agreed that such factors have properly been investigated and considered while submitting the bid. Neither any change in the time schedule of the contract nor any financial adjustment arising thereof which are based on the lack of such clear information, its effect on the cost of the works to the Bidder shall be permitted by the VOCPA. No claim for financial adjustment to the contract awarded under these specifications and documents will be entertained by the VOCPA.

2.1.6 SITE VISIT:

2.1.6.1 The Bidder, at the bidder's own responsibility and risk are encouraged / advised to carry out the site visit to VOC Port at their own cost for the intended work and to inspect / examine & assess the site condition and its surroundings and satisfy themselves prior to submission of his bid.

2.1.6.2 In general, they shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A Bidder shall be deemed to have full knowledge of the site, whether he inspects it or not and no extra charges arising out of any misunderstanding or otherwise shall be allowed. Bidders shall submit a realistic offer for the execution of the work at their own cost without any liability on VOCPA.

2.1.6.3 It is implied that on submission of the bid/tender, the Bidder is deemed to have read the Tender document, clearly understood & satisfied himself regarding terms & conditions, scope of work and technical specifications of the work & services to be executed, local conditions and other factors likely to be encountered & having a bearing on the execution of work thereof. The price quoted in the **Cover B – Price bid** is adequate and all- inclusive with respect to all factors, circumstances, and conditions likely to be incidental, both direct and indirect, to the work and services mentioned in the subject tender.

2.1.7 PRE-BID MEETING

A pre-bid meeting will be conducted on the date & time as specified in **NIT (Section – I)** through hybrid mode. Interested bidders can participate in the pre-bid meeting physically or through the VC link uploaded in the CPP portal and Port website.

2.1.8 UNDERSTANDING AND CLARIFICATION ON BIDDING DOCUMENTS:

A prospective bidder requiring clarification regarding discrepancies or omissions in the tender documents or in doubt as to the true meaning of any part, may send queries at once in writing / email / through e-tender portal, provided the queries are raised during the period as mentioned in the NIT / home page of portal. Any queries received after the due date shall not be considered and no reply to such queries will be given. Reply to queries shall be given by VOCPA only if the queries requested are considered appropriate by VOCPA. Verbal clarifications and information given by the VOCPA or his employee(s) or his representative(s) shall not in any way be binding on the VOCPA.

2.1.9 AMENDMENT TO BID DOCUMENTS:

2.1.9.1 At any time prior to the due date & time of opening of bids, VOCPA may, for any reason, whether at its own initiative or in response to a clarification sought by any prospective bidder, modify the

bidding documents, bidding process, terms & conditions, specifications, etc. by issuing Corrigendum and/or Addendum.

2.1.9.2 Any Corrigendum and/or Addendum thus issued shall be part of bidding documents and shall be notified only on the web portal https://etenders.gov.in/eprocure/app. Bidders intending to participate in the tender shall be solely responsible for checking the portal for any amendment issued in the shape of Corrigendum and/or Addendum.

2.1.9.3 In order to afford prospective bidders reasonable time to take the amendment into account in preparing their bids, VOCPA may, at its discretion, extend the deadline for the submission of bids.

2.1.10 BIDDER'S RESPONSIBILITY:

2.1.10.1 **Contacting VOC Port Authority:**

Bidder shall not contact VOC Port Authority on any matter relating to its Bid from the time of the Bid Opening to the time the contract is awarded. Any effort by any Bidder to influence VOC Port Authority in the Bid Evaluation, Bid Comparison, or Contract Award decision shall result in disqualification of the bidder.

2.1.10.2 **Undertaking By the Bidders:**

(i) The Bidder undertakes, if his tender is accepted, has to enter into and execute when called upon to do so, a Contract Agreement as provided in **Annexure B** with such modifications as agreed upon. Until the formal Contract Agreement is prepared and executed, this tender/bid document together with the written acceptance shall form a binding agreement between the Port and the Contractor.

(ii) The Bidder undertakes, if his tender is accepted, has to give the required performance security as per **Clause No.2.1.16 of ITB**.

(iii) The Bidder shall submit a declaration as provided in the **Form VII** of the bid document that the Bidder has not been blacklisted or debarred in the last 3years by any of the Central / State Government / Autonomous bodies / PSEs / PSUs and any other organizations in India prior to and as on the bid submission date mentioned in the NIT and the same shall be uploaded along with the bid document in the e-tender portal.

(iv) The bidders shall submit a declaration as provided in the **Form VII** of the bid document that they have not made any payment or illegal gratification to any person / authority connected with the bid process so as to influence the bid process and have not committed any offence under the Prevention of Corruption Act (PC Act) in connection with the bid.

2.1.11 PREPARATION OF BID

2.1.12 LANGUAGE OF BID:

The bid prepared by the Bidder and all correspondences and documents relating to the bid exchanged bythe Bidder and VOCPA shall be written in the English language, provided that any printed literature furnished by the Bidder may be written in another language so long as it is accompanied by an English translation of its pertinent passages in which case for the purpose of interpretation of the Bid, the English translation shall be considered.

2.1.13 BID PRICES:

2.1.13.1 The Bidder shall quote, on the prescribed Price Schedule, the landed prices (F.O.R Destination basis) of all the goods and services at VOCPA.

2.1.13.2 The quoted price shall be a firm lump-sum price and shall be as on the opening of the bid. The

Bidder shall ensure that the prices are rational, reasonable. The above lump-sum price shall include all the taxes (except GST), duties, fees, all types of cess, insurance, transportation, packing, forwarding and all other incidentals required for execution of the contract in all respects. In case of change in /Custom Duties/other Government taxes & levies during pendency of the contract, only incremental change will be paid, provided goods and services are executed during the original completion date of the Contract. Variation of taxes & duties during extended period of Contract shall only be considered on merit.

2.1.13.3 No price escalation shall be admissible unless the contract specifically provides for it. In general, no price escalation is applicable on any account till the contract is executed in full and its subsequent amendments accepted by the Contractor even though the completion / execution of the contract may take a longer time than the scheduled period incorporated and accepted in the contract.

2.1.13.4 Also, by submitting a bid for the work, bidders shall be deemed to have satisfied himself by actual inspection of the site and locality of the work, that rates quoted by him in the Bid will be adequate to complete such work according to the specification and conditions attached here to and he has taken into account all conditions and difficulties that may be encountered during its progress and to have quoted labour and material rates which shall include the cost of the material with taxes, duties and incidental and all other charges necessary for the completion of the work, to the entire satisfaction of VOCPA.

2.1.14 BID VALIDITY:

The bids shall be valid for a period of 120 days from the date of opening of e-Tender. During this period, the bidder shall not be permitted to withdraw or vary their offers, once made and if they do so, EMD paid by the bidder will be forfeited.

In exceptional circumstances, prior to the expiry of the original time limit, the "Tender inviting Authority" may request the bidders to extend the period of validity for a specified additional period. The request and the bidders' responses shall be made in writing or by e-mail. A bidder may refuse the request without any risk of forfeiture of Bid Security (EMD). A bidder agreeing to the request will not be required or permitted to modify his bid but will be required to extend the validity of his bid for the period of the extension.

2.1.15 BID CURRENCIES:

The prices shall be quoted in the currency of Indian Rupees only. The price quoted in the currency of Indian rupees in the 'Price Schedule' shall be firm and shall not be varied on account of exchange rate fluctuation during the bid validity / contract period.

2.1.16 BID SECURITY/ EARNEST MONEY DEPOSIT (EMD):

2.1.16.1 The Bidder shall furnish, as part of its bid, bid security (EMD) for the amount stipulated in the NIT.

Any bid not accompanied by prescribed bid security shall be rejected by the VOCPA as being non-responsive.

2.1.16.2 All bidders other than an MSEs should pay the EMD through online payment gateway mode in CPP e- tender web Portal or shall submit the EMD in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or irrevocable & operative Bank Guarantee from any of the Scheduled Commercial Banks. The validity period of bid security is to remain valid for a period of 45 (forty-five) days beyond the final bid validity period. Otherwise, his/her/their tender will be rejected. EMD in any other form shall not be accepted.

2.1.16.3 The MSEs are required to furnish relevant valid Certificate for claiming exemption. This valid certificate shall be uploaded in the Bid, failing which the Technical Bid shall not be evaluated. Similarly, bidders are required to upload scanned copies in the Bid in case payment of EMD in the form of Insurance Surety Bonds, account payee demand draft, fixed deposit receipt, banker's cheque or Bank Guarantee from any of the Commercial Banks, failing which the Technical Bid shall not be evaluated. The originals of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee from any of the Commercial Banks shall be received only after the bid opening date. If the originals not received within 7 days of bid opening date the bid may not be considered.

2.1.16.4 The bid securities of unsuccessful bidders will be returned at the earliest after expiry of the final bid validity period and latest by 30th day after the award of contract.

2.1.16.5 A bidder's bid security will be forfeited if the bidder:

a. Withdraws or amends its / his bid.
b. Impairs or derogates from the tender in any respect within the period of validity of the tender.
c. If the bidder does not accept the correction of his bid price during evaluation.
d. If the Bidder submits fraudulent documents and / or wrong information in support of itseligibility / qualification
e. In case of any bidder found indulged in corrupt, fraudulent, coercive, undesirable and restrictive practices during the bidding process and
f. If the successful bidder fails to sign the contract or furnish the required performance security within the specified period.

2.1.16.6 No interest shall accrue or is payable on the EMD from the date of its remittance till it is returned to the bidders.

2.1.16.7 Bid security shall be refunded to the successful bidder on receipt of a performance security and signing of contract. Bid security of the successful bidder may be adjusted against Performance Security Deposit if requested by the successful bidder.

2.1.16.8 If successful bidder on award of contract fails to sign the contract or to submit a performance security within the specified period, EMD will be forfeited, and the bidder may be suspended for a period of 3(three) years from being eligible to submit Bids for contracts with VOCPA.

2.1.16.9 The MSEs are exempted from payment of Bid Security subject to furnishing of relevant valid Certificate by uploading the said valid certificate copy at the time of submission of their bid along with the details duly filled in as per Form-II A. MSE bidders claiming exemptions from EMD as per MSME guidelines must also register Udyam Registration Certificate indicating URN (Udyam Registration Number) issued from MSME, in order to avail the benefits available to MSEs as contained in Public procurement policy.

2.1.17 DOCUMENTS COMPRISING THE BID:

2.1.17.1 The bidder is required to download all the documents for the preparation of his bid. The bidders are strongly advised to examine all the instructions, forms, terms, and specifications in the Tender/Bid documents. Failure to furnish all the information required by the Tender/Bid Document or submission of a Bid not techno-commercially responsive, in every respect, will be at the Bidder's risk and shall result in the rejection of its Bid.

2.1.17.2 The bidder shall carefully prepare the list of required documents that are asked for submission along with the bid. The bid shall be a Techno-Commercial bid and financial bid. The bid shall be

prepared as under and uploaded the same online through e-Procurement Portal in two cover system and digitally signed by the authorized representative of the bidder as follows:

2.1.17.3 **Cover A – Techno-Commercial Bid:**

(i) Duly filled in **Form -I – "**Bid Cover Letter**"**

(ii) Scanned copy of system generated proof towards successful payment of EMD in case of payment through online payment gateway mode in CPP e- tender web Portal **OR** scanned copy of proof towards successful payment of EMD in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee from any of the Commercial Banks along with filled in **Form-II A OR** valid Certificates by MSEs for claiming exemption along with filled in **Form-II B.**

(iii) Eligibility / pre-qualification criteria information on **Financial Capability** as detailed under SI. No. 3. a) of Notice Inviting Tender (Section-I):

Scanned copy of Profit & Loss statements for the last 3(three) years ending 31st March of the previous financial year duly certified by the Chartered Accountant in support of meeting Financial Capability along with duly filled in **Form-III.**

(iv) Eligibility / pre-qualification criteria information on **Similar Work Experience** as detailed under SI. No. 3. b) of Notice Inviting Tender (Section-I):

Scanned copies of work order(s) along with BOQ & respective satisfactory completion with performance certificate in support of meeting Similar Work Experience along with duly filled in **Form-IV.** In case of experience other than Central / State Government / Autonomous bodies / PSEs / PSUs / Public Limited Companies, the bidder has to submit scanned copies of TDS certificate along with duly filled in **Form-IV A.**

(v) Scanned copies of (i) EPF registration certificate; (ii) ESI; (iii) Permanent Account Number [PAN]; (iv) Income Tax Return of preceding three years; and (v) GST Registration Certificate

(vi) Duly filled in Form-V – "Declaration of Authorized Representative"

(vii) Duly filled in Form-VI – "Schedule of No deviation"

(viii) Duly filled in Form-VII – "Declaration by the Bidder"

(ix) Duly filled in Form-VIII – "Bank Mandate Form"

(x) Duly filled in Form-IX – "Tender Acceptance Letter"

(xi) Duly filled in Form-X – "Local Content declaration & Self-Certification" [**wherever applicable if specifically asked for in bid document]**

(xii) Duly filled in and signed Form-XI – "Integrity pact" [**wherever applicable as per as per Clause No.2.10 (ii) of ITB]**

(xiii) Details of Technical Manpower to be deployed for execution of work **[wherever applicable if specifically asked for in bid document]**

(xiv) Scanned copy of valid license "ESB/" ESA"/"EA" grade issued by the Licensing Board **[wherever applicable if specifically asked for in bid document]**

(xv) The bidder shall submit the technical details and broaches of the proposed Fire Fighting Systems /equipment to be deployed along with technical bids with necessary certifications as per the technical requirement.

(xvi) Any other documents which need to be uploaded, as a support to bidder's qualification/ responsiveness to the bid in compliance to Tender Document.

(xvii) In Case of JV / Consortium following forms should be filled in and submitted along with bid document

FORM-XII	Declaration of Power of Attorney
FORM-XIII	Declaration of Power of Attorney for Consortium
FORM-XV	Joint Bidding Agreement (JBA)

(xviii) In order to file an error-free tender/bid, the bidders may make use of the qualification documents to be uploaded list provided **in the Pre-qualification and Responsiveness Information in Annexure - A** of the bid document to identify the documents to be scanned and uploaded in support of their bid. Scanned copy of duly filled in Annexure - A shall be uploaded by the Bidder.

NB: *Please note that bidders should upload only the documents that are mentioned in the preceding clauses. The bidders need not send any documents (Hard Copy) to the Tender Inviting Authority. The NIT corrigendum/ addendum published by Tender Inviting Authority need not be uploaded and will be deemed to be part of the bid. Bid documents may be scanned with 100dpi with black and white option which helps in reducing size of the scanned document.*

2.1.17.4 **Cover B – "Financial Bid"** shall comprise Price Schedule

(i) Price proposal by the bidder:

a. In the e-Procurement Portal, an intelligent Price Schedule / Bill of Quantity in Microsoft Excel format shall be made available to the bidder.

b. The bidder shall bid for the whole works as described in the Price Schedule.

c. The bidder shall be deemed to have satisfied himself/herself as to the correctness and sufficiency of the Tender and the rates and prices quoted in the Price Schedule, all of which shall cover all his/her obligationsunder the Contract and all matters & things necessary for the proper execution and completion of the work and the remedying of any defects therein.

2.1.17.5 Bidders shall submit offers that fully comply with the requirements of the Tender documents. Conditional offers or alternative offers will not be considered in the process of bid evaluation.

2.1.18 FORMAT AND SIGNING OF BID:

2.1.18.1 The bidder shall upload the completed bid at his/her convenience within the final date and time of submission. The bidder shall only submit a single copy of the required documents and Price Bid in the portal. The Bidders are advised to upload the completed Bid document well ahead of bid closure time to avoid any last-moment problem of power failures, network failure, etc. VOCPA shall not be responsible in any manner.

2.1.18.2 The bidder shall ensure the correctness of the bid prior to uploading and also ensure

clarity/legibility of the document uploaded by him/her to the portal, especially the scanned documents. Non-submission of legible documents may render the bid non-responsive. However, VOCPA, if so desires, can ask for legible copies or original copies of scanned documents and statements uploaded in the portal within the specified period for verification provided such document in no way alters the Bidder's price bid. If the Bidder fails to submit the original documents within the stipulated date, his bid shall be considered nonresponsive.

2.1.18.3 The bidder shall digitally sign on all the statements, documents, certificates uploaded by him/her in support of the Pre-qualification and Responsiveness of the bid, owning responsibility for their correctness/ authenticity. The bidder must note that misrepresentation of facts and/or submission of fraudulent documents or submission of bid in an irresponsible manner may disqualify the bidder from participating in any tender of VOCPA and also termination of any other ongoing contracts with forfeiture of the Security Deposit. VOCPA reserves the right to verify the authenticity of the documents/information submitted by the bidder.

2.1.18.4 Signatory of the bid documents shall be Bidder himself, or a person duly authorized and holding power of attorney to do so on behalf of the Bidder, as furnished in **Form-V** of the bid document.

2.1.19 DEADLINE FOR SUBMISSION OF THE BIDS:

2.1.19.1 The online bidding will remain active till the last date and time of the bid submission. Once the date and time (Server date and time) are over, the bidder will not be able to submit the bid. The date & time of bid submission should remain unaltered even if the specified date for the submission of bids declared a holiday for the VOCPA.

2.1.19.2 The Tender Inviting Authority/ VOCPA may extend the deadline for submission of bids by issuing an amendment in accordance with **Clause No.2.1.19.1** of this Section, in which case all rights and obligations of the VOCPA and the bidders previously subject to the original deadline will then be subject to the new deadline. The new date after extension shall be available on the Tender portal.

2.1.20 LATE BIDS:

The system shall reject the submission of any bid through the portal after the closure of the receipt time.For all purposes, the server time displayed in the e-procurement portal shall be the time to be followed by the bidder and concerned officers.

2.1.21 MODIFICATION AND WITHDRAWAL OF BIDS:

(i) In the E-Procurement Portal, it is allowed to modify the bid any number of times before the final date and time of submission. The bidder shall have to log on to the system and resubmit the documents as asked for by the system, including the price bid. In doing so, the bids already submitted by the bidder will be removed automatically from the system, and the latest bid only will be admitted. But the bidder should avoid modification of bid at the last moment to avoid system failure or malfunction of internet or traffic jam or power failure etc. If the bidder fails to submit his/her modified bids within the designated time of receipt, the bid already in the system shall be taken for evaluation.

(ii) In the e-Procurement Portal, withdrawal of bids is allowed. But in such a case, the bidder has to write a confidential letter with appropriate reasons for his/her withdrawal addressed to the Tender Inviting Authority and upload the scanned document to the portal in the respective bid before the closure of submission. The system shall not allow any equipment withdrawal after the expiry of the closure time of the bid.

OPENING AND EVALUATION

2.2 BID OPENING:

(i) Bid opening dates are specified during the publishing of tender or can be extended vide corrigendum. These dates are available in NIT / Corrigendum as well as the home page of the portal.

(ii) If the specified date of bid opening is declared a holiday for VOCPA, the bids shall be opened at the appointed time on the next working day.

(iii) If the required EMD has not been provided or exemption from EMD is claimed without acceptable poof of exemption, bid will not be considered for techno-commercial evaluation.

(iv) The Cover A – Techno-commercial Bid containing the techno-commercial documents listed in the Pre- Qualification and Responsiveness Information in Annexure- A and any other documents uploaded by the Bidders as required for bidding purpose will be opened through online on the scheduled date and time in the presence of such bidders and/or their authorized representatives, who wish to be present at the time of opening, at their own cost.

(v) The Price bid of the shortlisted bidders i.e., technically qualified bidders will alone be opened by the Port on a date and time to be notified later.

2.3 CLARIFICATION ON BIDS:

During evaluation and comparison of the bids, the VOCPA may, at his discretion, ask the bidder for clarification on the bid. The request for clarification shall be given in writing by registered/ Speed Post/Registered e-mail/uploaded on the e-procurement Portal, asking the bidder to respond by a specified date, and also mentioning therein that, if the tenderer does not comply or respond by the date, his tenderwill be liable to be rejected. Depending on the outcome, such tenders are to be ignored or considered further. No change in prices or substance of the bid shall be sought, offered, or permitted. No post-bid clarification at the initiative of the bidder shall be entertained. The shortfall information/documents should be sought only in case of historical documents which pre-existed at the time of the tender opening, and which have not undergone change since then. (Example: if the Permanent Account Number, *registration with GST* has been asked to be submitted and the tenderer has not provided them, these documents may be asked for with a target date as above). So far as the submission of documents is concerned with regard to qualification criteria, after submission of the tender, only related shortfall documents should be asked for and considered. For example, if the bidder has submitted a work /supply order without its completion/ performance certificate, the certificate can be asked for and considered. However, no new work supply/work order should be asked for so as to qualify the bidders.

2.4 EVALUATION & COMPARISION OF BID:

(i) Evaluation of Techno-Commercial Bid:

In evaluation of the techno-commercial bid, conformity of the eligibility/ qualification, technical and commercial conditions to those in the bid document is ascertained. Additional factors, if any, incorporated in the tender documents may also be considered in the manner indicated therein. A responsive tender is one whinter-alia confirms to all the terms and conditions including General and Special conditions of the entire bid documents without any deviation or reservation and the same shall be determined as described below:

(a) The documents uploaded by the bidder as specified in **Form- IV** read with **Section - II, Clause 2.1.17.3 (iv)**, will be evaluated basing on the work orders, Performance Certificate / work completion certificate of similar nature of the work and value of the work fulfilling the eligibility criteria.

(b) The financial capability will be evaluated based on the information provided in **Form III** read with **Section- II, clause 2.1.17.3 (iii)**.

(c) After scrutiny of the documents uploaded in the **Cover A – Techno-commercial Bid**, the eligible bidders will be pre-qualified based on the details provided by them.

(d) The Port may verify the original documents of the scanned copies uploaded by the Bidder during evaluation or at any time, if required. In case the documents submitted by the bidders found to be forged/ false, the port will take appropriate penal action including cancellation of the work order issued and blacklisting of the firm/ company for a period of 3 years.

(e) The shortlisted bidders after the Techno-Commercial evaluation will be informed through emails after short listing and the same will also be published in the Port website. Any bidders who had participated in the tender having any objections or observations shall inform the same to the designated Email id, within a period of seven days from the date of publishing in the website. Objections if any, received after this date will not be entertained.

(f) Objections so received will be duly examined as per the Terms and Conditions of the tender and the decision will be posted on the website or intimated to the firm. The decision of the competent authority, in this regard, will be final and binding and no further objections will be entertained once the decision is finalized.

(ii) Financial Evaluation:

(a) The due date of opening of Cover B- Financial Bid shall be scheduled and intimated to the prequalified bidders through portal.

(b) The Financial Bid of the pre-qualified & responsive bidders will be opened on the pre-published / notified date &time in the presence of bidders or their authorized representative who wish to be present. The participating bidders can also witness the opening of price bids online by logging on to the portal with his DSC from anywhere.

(c) The financial evaluation shall be made on the basis of total price as indicated price schedule/ Bill of quantity. VOCPA is not bound to accept the lowest quoted offer. Conditions, if any, with Price Bid shall not be considered for any purpose.

(iii) Evaluation of the bid does not exonerate the bidders from checking their original documents. VOCPA reserves the right to verify the authenticity of the documents/information submitted by the bidder.

As per Section-468(Forgery for the purpose of Cheating) and Section–471(using as genuine, a forged document) of IPC-1860, use of fraudulent/forged document for the purpose of participating in any tender is apunishable offense. Hence, in such cases, VOCPA shall have no other option than to take the following actions against the firm, which has restored to use of forged/fraudulent documents in any tender. It is also applicable if, at a later date, the bidder is found to have misled the evaluation through wrong information.

At the time of the bidding stage

(a) Termination of any other ongoing contracts with forfeiture of the Security Deposits.

(b) Blacklisting / debarring / tender holiday of the firm under the Prevention of Corruption Act, 1988 for a period of three years from the date of blacklisting.

At the time of contract execution

(a) Termination of the contract with forfeiture of the Security Deposits.

(b) Termination of any other on-going contracts with forfeiture of the Security Deposits.

(c) Blacklisting of firm under Prevention of Corruption Act, 1988 for a period of three years from the date of blacklisting.

Conditional bids may be rejected by VOCPA. Conditions, if any, on any document enclosed with Price Bid shall not be considered for any purpose.

AWARD OF CONTRACT

2.5 AWARD CRITERIA:

The Tender Inviting Authority, on behalf of VOC Port Authority, will award the contract to the bidder whose bid is the lowest evaluated Bid as per tender conditions and their price schedule will be considered.

2.6 PURCHASER'S RIGHT TO ACCEPT OR REJECT ANY OR ALL THE BIDS:

VOC Port reserves the right to accept or reject any bid and the bidding process at any time prior to award of contract without thereby incurring any liability to the affected Bidder or Bidders on the grounds of VOC Port Authority's action.

2.7 NOTIFICATION OF AWARD:

Prior to the expiration of Bid Validity, the Successful bidder will be notified in the form of Letter of Acceptance / Award or Work Order which will be communicated by registered or by mail that his Bid has been accepted. The successful bidder has to furnish Performance Security & additional security (if any), and non-judicial stamp paper for signing of Contract / Agreement within 15 days from date of issuance of Letter of Acceptance/ Award of Work Order. The issue of the letter of acceptance shall be treated as the closure of the Bid process.

2.8 SIGNING OF CONTRACT:

The successful has to furnish the Performance Security Deposit (PSD), as per the Tender Conditions. The Contractor shall be required to execute an agreement in the proforma prescribed by the V.O. Chidambaranar Port Authority **(as per Annexure- B)** on Tamil Nadu Government State stamp paper of the required value within 28 days from the date of issue of Letter of Acceptance / Work Order. In the event of failure on the partof the successful bidder to execute the agreement within the above stipulated period, or the period agreedby the Port, VOC port being in such circumstances entitled to treat the successful bidder as in breach of contract and proceed accordingly.

2.9 PERFORMANCE SECURITY DEPOSIT or PERFORMANCE GUARANTEE:

(i) The successful bidder (Contractor) shall furnish an amount of 5% of the Contract Price as

Performance Security in the form of Insurance Surety Bond, account payee demand draft, fixed deposit receipt from Scheduled Commercial bank, irrecoverable and operative Bank Guarantee issued / confirmed from any of the Scheduled Commercial bank in India, as per specimen in **Annexure D** or online payment through RTGS/NEFT to the account whose details are provided as below:

A	Name and address of the bank	Indian Overseas Bank, Harbour Branch,Tuticorin-628004.
B	Name of the branch	Harbour Branch
C	IFSC code	IOBA0000143
D	Account Number	014301000000001
E	Type of Account	Savings Account
F	Beneficiary's Name	FA & CAO, V.O. Chidambaranar Port Authority, Tuticorin

Performance Security is to be furnished within 15 days from the date of issuance of Letter of Acceptance/ Award of Work Order towards successful performance of the Contract and it should remain valid for a period of 60 (sixty) days beyond the date of completion of all contractual obligations of the Contractor, including warranty period. However, the Engineer may relax the time limit of 15 days for submission Performance Security and extend it by further period in extraordinary circumstances for the reasons recorded. If the performance Security is not deposited in time as prescribed above, the LOA shall stand cancelled automatically and the Earnest Money Deposit will be forfeited, and action shall be initiated as per **Clause No. 2.1.16 of ITB**

The Contractor shall furnish the BG towards performance security by the issuing bank directly to the Port through SFMS mode.

This will not bear any interest. Bank Guarantee, obtained from the Nationalized Bank /Scheduled bank in the format prescribed, ***shall be in compliance with for a digital confirmation for the Bank Guarantee and the BG not complying with this shall not be considered.***

The Contractor shall ensure that the Performance Security is valid and enforceable until the Contractor has executed and completed the Works including warranty period and remedied any defects. If required, the Contractor shall extend the validity of the Performance Security accordingly.

The performance security will be forfeited in the event of breach of contract by the Contractor.

The performance security should be refunded to the Contractor without interest, after the Contractor duly performs and completes all obligations under the contract but not later than 365days of completion of the Warranty Period.

(ii) <u>Security Deposit / Retention Money:</u>

In addition to Performance Security, Security deposit / retention money for an amount of 5% of the contract value shall be recovered by deducting @10% from each running bill subject to

a maximum accumulation of 5% of the contract value. The earnest money instead of being released may form part of the security deposit. The contractor may, at his option, replace the retention amount with an unconditional BG at the following stages:

(a) After the amount reaches half the value of the limit of retention money; and

(b) After the amount reaches the maximum limit of retention money.

One-half of the retention money (or BG, which replaced retention money) shall be releasedto the contractor without interest on the issue of completion certificate; The other half of the retention money (or BG, which replaced the retention money) shall be released to the contractor without interest, after he duly performs and completes all obligations under the contract but not later than 365days of completion of the Warranty Period.

2.10 OTHER INSTRUCTIONS

(i) PROVISION OF PUBLIC PROCUREMENT (PREFERENCE TO MAKE IN INDIA):

(As per DPIIT Order No. P-45021/2/2017-PP (BE-II) dated 15.06.2017, as amended by O.M. dated 16.09.2020 and subsequent revisions)

1. Applicability:
   The provisions contained in the *Public Procurement (Preference to Make in India) Order, 2017*, issued by the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry, Government of India, vide Order No. P-45021/2/2017-PP (BE-II) dated 15.06.2017, as amended by Office Memorandum dated 16.09.2020 and further amended from time to time, shall be applicable to this Works Contract.

2. Preference to Local Suppliers:

   (a) In accordance with the PPP-MII Order, preference shall be provided to 'Class-I Local Suppliers' and 'Class-II Local Suppliers' in all public procurements of works.

   (b) The *margin of purchase preference* shall be 20%, or as may be decided by the relevant Nodal Ministry for the item from time to time.

   (c) The *minimum local content* shall be 50% for Class-I Local Suppliers and 20% for Class-II Local Suppliers, or as may be notified by the relevant Nodal Ministry for the specific item or category of work.

   (d) Procurements with an estimated value of less than ₹5.00 lakh shall be exempted from the provisions of this Order.

3. Verification of Local Content:

   (a) For procurement value up to ₹10.00 Crore:
   The Class-I or Class-II Local Supplier, at the time of tendering, bidding, or solicitation, shall be required to indicate the percentage of local content and provide a *Self-Certification* (as per the format enclosed) confirming that the item or work offered meets the local content requirement for the relevant supplier class. The supplier shall also furnish details of the location(s) where local value addition is made.

   (b) For procurement value above ₹10.00 Crore:
   The Class-I or Class-II Local Supplier shall be required to furnish a *certificate from the statutory auditor or cost auditor* of the company (in case of companies), or from a *practicing Cost Accountant or Chartered Accountant* (in respect of suppliers other than companies), certifying the percentage of local content.

(c) The local content declared by the Contractor/Supplier shall be subject to verification by the competent authority or any agency nominated by the Employer/Engineer-in-Charge, as per the provisions of the PPP-MII Order.

4. Penalties for False Declaration or Non-Compliance:

   If any false declaration is made, or the Contractor fails to meet the declared local content, the following actions may be taken by the Employer:

   - Termination of the Contract for default;
   - Forfeiture of Performance Security; and/or
   - Debarment from participation in future procurements for a period up to two (2) years, as per the PPP-MII Order and other applicable Government guidelines.

5. Subcontracting:
   The Contractor shall ensure that any subcontracted portion of the work also complies with the applicable local content requirements. The overall responsibility for compliance shall rest with the main Contractor.

6. Changes in Policy:

   Any subsequent amendments, revisions, or replacements to the PPP-MII Order or guidelines issued by DPIIT or the relevant Nodal Ministry shall automatically apply to this Contract and shall be binding on both parties.

7. Interpretation:
   In case of any ambiguity or dispute regarding the applicability or interpretation of this clause, the provisions and definitions contained in the latest version of the PPP-MII Order and related clarifications issued by DPIIT shall prevail

   The Tenderer shall submit the Declaration as per **Form XI.**

(ii) <u>INTEGRITY PACT:</u>

For every work / procurement / contract the value of which is Rs.1crore and above, the Integrity Pact agreement format as given at **Form – X** shall form a part of the bid document and it shall be prepared in Non-judicial stamp paper shall be uploaded along with technical bid by all the participating bidders and theoriginal shall be submitted to Notice Inviting Tender Authority within 7 (Seven) days of opening of tender by all the participating bidders. The Integrity pact signed by the Purchaser and the bidder (successful bidder – Contractor) shall be made part of contract agreement.

The details of Independent External Monitors (IEM) are:

1) Shri Hermanprit Singh, IPS (Retd.),
   12, Belevedre Road,
   Alipore, Kolkata – 700027.
   Phone No: 9830197103
   Email id: hermanprit@gmail.com.

2) Shri Trivikram Nath Tiwari, ILS (Retd.),
   301-B Block – 3B, HIG DDA Flats,

Rani Jhansi Road, DDA Complex,Motia Khan,
New Delhi – 110055. Phone No: 9871788277.
Email id: trivikramnt@yahoo.co.in

SECTION III

GENERAL CONDITIONS OF CONTRACT

3.1 GENERAL PROVISIONS:

3.1.1 Definitions:

In the Conditions of Contract ("these Conditions"), which include Particular Conditions and these General Conditions, the following words and expressions shall have the meanings hereby assigned to them, except where the context requires otherwise.

3.1.2 The Contract:

3.1.2.1 **"Contract"** means the Notice Inviting Tender, the Bid / Tender and acceptance thereof and the formal legal Agreement, if any, executed between the Employer and the Contractor together with the documents referred to therein including General Conditions with appendices and any Special Conditions of Contract, the Specifications, Designs & Drawings, Scope of Work, Priced Schedule / Bill of Quantities and further any documents. All these documents taken together shall be deemed to form one Contract and shall be complementary to one another.

3.1.2.2 **"Contract Agreement"** means the Employer and the Contractor shall enter into a Contract Agreement within stipulated days after the Contractor receives the Letter of Acceptance / Work Order, unless they agree otherwise. The Contract Agreement shall be in the format annexed to the bid document. The costs of non-judicial stamp paper of applicable value and other statuary charges (if any) in connection with entry into the Contract Agreement shall be borne by the Contractor.

3.1.2.3 **"Letter of Acceptance (LOA)/ Letter of Award / Notification of Award / Work Order (WO)"** means the letter of formal acceptance, signed by the Employer.

3.1.2.4 **"Specification"** means the document entitled specification, as included in the Contract, and any additions and modifications to the specification in accordance with the Contract. Such document specifies the works.

3.1.2.5 **"Drawings"** means the drawings of the Works, as included in the Contract, and any additional and modified drawings issued by (or on behalf of) the Employer in accordance with the Contract.

3.1.2.6 **"Schedules"** means the document(s) entitled schedules, completed by the Contractor and submitted, as included in the Contract. Such document may include the Bill of Quantities, data, lists, billing package and schedules of rates and/or prices.

3.1.2.7 **"Price Schedule / Bill of Quantities"** means the documents so named (if any) which are comprised in the Schedules.

3.1.2.8 "**Tender/Bid**" (including terms offers, quotations or proposals in certain contexts) means an offer to supply of goods, services, or execution of works made in accordance with the terms and conditions set out in the bid document inviting such offers.

3.1.2.9 **"Tender/Bid documents"** means a document issued by Employer, including any amendment / corrigendum thereto, that sets out the terms and conditions of the given procurement process including 'Notice Inviting Tender'.

3.1.2.10 **"e-Tender"** means conducting of procurement processes by the Employer with bidders for execution of works and services through use of information and communication technology

(specially the internet) with the aim of open, non-discriminatory and efficient procurement through transparent procedures.

3.1.3 **Parties and Persons:**

3.1.3.1 **"Party"** means the Employer or the Contractor, as the context requires.

3.1.3.2 **"Employer/ Purchaser"** ("Board") means the Board of V.O. Chidambaranar Port Authority and assigns, acting through its Chairperson or any other Officer so nominated by the Board.

3.1.3.3 **"Contractor / Service Provider"** means the person(s), firm or company whose Tender has been accepted by the Employer and includes the Contractor's Representative(s), the successors and/or permitted assigns for the subject Contract.

3.1.3.4 **"Engineer"** means the Chief Mechanical Engineer / V.O. Chidambaranar Port Authority or any other Officer nominated by Chairman.

3.1.3.5 **"Employer's Personnel"** means the Engineer, his representative and all other staff, labour and other employees of the Employer; and any other personnel notified to the Contractor, by the Employer or the Engineer, as Employer's Personnel.

3.1.3.6 **"Contractor's Personnel"** means the Contractor's Representative and all personnel whom the Contractor utilizes on Site, who may include the staff, labour and other employees of the Contractor and of each Subcontractor; and any other personnel assisting the Contractor in the execution of the works.

3.1.3.7 **"Contractor's Representative"** means the person named by the Contractor in the Contract or appointed from time to time by the Contractor under **Sub-Clause 3.4.2** [Contractor's Representative], who acts on behalf of the Contractor.

3.1.3.8 **"Engineer's Representative"** means any Representative(s) of the Engineer, the assistants referred to in **Sub-Clause 3.3.2** [Delegation by the Engineer] whose authority shall be notified in writing to the Contractor by the Engineer.

3.1.3.9 **"Sub-contractor"** means any person named in the Contract as a subcontractor, or any person appointed as a subcontractor, for a part of the Works; and the legal successors in title to each of these persons.

3.1.4 **Money & Payments:**

3.1.4.1 **"Contract Price"** means accepted contract amount mentioned in the Letter of Acceptance towards execution and completion of the Works and the remedying of any defects.

3.1.4.2 **"Executed value"** means the price defined in Sub-Clause 3.22.3 and includes adjustments in accordance with the Contract.

3.1.4.3 **"Cost"** means all expenditure reasonably incurred (or to be incurred) by the Contractor, whether on or off the Site, including overhead and similar charges, but does not include profit.

3.1.4.4 **"Currency"** means Rupees in which part (or all) of the Contract Price is payable.

3.1.4.5 **"Performance Security"** means the security (or securities, if any) under Clause 2.9 of ITB [Performance Security].

3.1.5 **Dates, Periods and Completion:**

3.1.5.1 **"Commencement Date"** means the date notified under Sub-Clause 3.16.1 [Commencement of Work].

3.1.5.2 **"Time for Completion"** means the time for completing the Works or a Section (as the case may be) under Sub-Clause 3.16.2 [Time for Completion], as stated in NIT/ Special Condition of Contract / Scope of Work / LOA (with any extension under Sub-Clause 3.16.4 [Extension of Time for Completion]), calculated from the Commencement Date.

3.1.5.3 **"Acceptance"** means as defined under Clause 3.18 [Acceptance].

3.1.5.4 **"Completion Certificate"** means the certificate issued under Clause 3.18 [Acceptance].

3.1.5.5 **"Warranty Period"** means the period as mentioned under Sub-Clause 3.19.2.

3.1.5.6 **"Day"** means a calendar day of 24 hours from midnight to the next midnight irrespective of the number of hours worked in that day.

3.1.5.7 **"Week"** means, seven days without regard to the number of hours worked in any day in the week.

3.1.5.8 **"Month"** means, month according to Gregorian calendar.

3.1.5.9 **"Year"** means 365 days.

3.1.6 **Works & Goods:**

3.1.6.1 **"Contractor's Equipment"** means all apparatus, Fire Fighting System equipments, vehicles and other things required for the execution and completion of the works and the remedying of any defects. However, Contractor's Equipment excludes Temporary Works, Employer's Equipment (if any), Plant, Materials and any other things intended to form or forming part of the Permanent Works.

3.1.6.2 **"Permanent Works"** means the permanent works to be executed / maintained by the Contractor under the Contract.

3.1.6.3 **"Plant & equipment"** means the apparatus, Fire Fighting System Equipments and vehicles intended to form or forming part of the Permanent Works.

3.1.6.4 **"Materials"** means things of all kinds (other than Plant & equipment) intended to form or forming part of the Permanent Works, including the supply-only materials (if any) to be supplied by the Contractor under the Contract.

3.1.6.5 **"Temporary Works"** means all temporary works of every kind (other than contractor's Equipment) required on Site for the execution and completion of the Permanent Works and the remedying of any defects.

3.1.6.6 **"Works"** mean the Permanent Works and the Temporary Works, or either of them as appropriate including services under the Contract.

3.1.6.7 **"Section"** means a part of the Works

3.1.6.8 **"Goods"** means Contractor's Equipment, Materials, Plant and Temporary Works, or any of them as appropriate. The term 'goods' also includes works & services which are incidental or consequence to supply of such goods, such as transportation, insurance, installation, commissioning, training and maintenance.

3.1.7 **Other Definitions:**

3.1.7.1 **"Contractor's Documents"** means the calculations, computer programs and other software, drawings, manuals, models and other documents of a technical nature (if any) supplied by the Contractor under the Contract.

3.1.7.2 **"Employer's Equipment"** means the apparatus, All Equipments like Fire Pumps, Valves, Tower Monitors and vehicles (if any) made available by the Employer for the use of the Contractor in the execution of the Works, as stated in the specification; but does not include Plant which has not been taken over by the Employer.

3.1.7.3 **"Force Majeure"** is defined as in Clause 3.28 [Force Majeure].

3.1.7.4 **"Laws" means** all national (or state) legislation, statutes, ordinances and other laws, and regulations and by-laws of any legally constituted public authority.

3.1.7.5 **"Site"** means the locations /places/lands where the Permanent Works are to be executed and to which Plant and materials are to be delivered or services to be provided or works to be executed and any other places as may be specified in the Contract as forming part of the Site.

3.1.7.6 **"Variation"** means any change to the Works, which is instructed or approved as a variation under Clause 3.21 [Variations].

3.1.8 **Interpretations:**

In the Contract, except where the context requires otherwise:

(a) words indicating one gender include all genders.

(b) words indicating the singular also include the plural and words indicating the plural also include the singular.

(c) provisions including the word "agree", "agreed" or "agreement" require the agreement to be recorded in writing, and

(d) "written" or "in writing" means hand-written, printed, or electronically made, and resulting in a permanent record.

(e) the marginal words and other headings shall not be taken into consideration in the interpretation of these Conditions.

3.1.9 **Communications:**

Wherever these Conditions provide for giving or issuing of approvals, certificates, consents, determinations, notices and requests, these communications shall be:

(a) in writing and delivered by hand (against receipt), sent by mail or courier, or speed post.

(b) delivered, sent or transmitted to the address for the recipient's communications.

3.1.10 **Law, Language and Jurisdiction:**

The language for communications shall be in English. The contract shall be governed by and constructed according to the laws in force in India. All disputes shall be subjected to exclusive jurisdiction of the courts at Tuticorin only for the purpose of actions and proceedings arising out of this contract.

3.1.11 **Priority of Documents:**

In case of any variation in Instructions to Bidders (ITB), General Conditions of Contract (GCC) and Special Conditions of Contract (SCC), the Special Conditions of Contract – if any, shall prevail. But in case of any requirement / condition specified in the Scope of Work, it shall prevail over all other conditions. It may please be noted that at any time prior to the deadline for submission of Bids, Employer may, for any reason, whether at its own initiative or in response to a clarification requested by any prospective bidder, modify the tender document by amendment / issue of addendum. In such cases, clarifications shall be treated as the appropriate meaning of the respective conditions of bid document.

3.1.12 **Assignment:**

The Contractor shall not assign the whole or any part of the work to any other Party/Firm/Individual without prior written consent of the Employer.

3.1.13 **Care and Supply of Documents:**

The Contractor shall keep on the Site, a copy of the Contract, the Contractor's Documents (if any), the Drawings and Variations and other communications given under the Contract. The Employer's Personnel shall have the right of access to all these documents at all reasonable times.

3.1.14 **Contractor's use of Employer's Documents:**

As between the Parties, the Employer shall retain the copyright and other intellectual property rights in the Specification, the Drawings and other documents made by (or on behalf of) the Employer. The Contractor may, at his cost, copy, use, and obtain communication of these documents for the purposes of the Contract. They shall not, without the Employer's consent, be copied, used or communicated to a third party by the Contractor, except as necessary for the purposes of the Contract.

3.1.15 **Confidential Details:**

The Contractor shall disclose all such confidential and other information as the Engineer may reasonably require in order to verify the Contractor's compliance with the Contract.

3.1.16 **Compliance with Laws, Statues & Regulations:**

The Contractor shall, in performing the Contract, comply in all respect with applicable Laws, Statues and Regulations including clearance from State / Central Govt. Authorities, Pollution Control Boards, labour enforcement and local authorities. The Contractor shall indemnify and hold the Employer harmless against and from the consequences of any failure to do so.

3.1.17 **Details to be Confidential:**

The Contractor shall treat the details of the contract as private and confidential, except to the extent necessary to carry out obligations under it or to comply with applicable laws. The Contractor shall not publish, permit to be published or disclose any particulars of the works in any trade or technical paper of elsewhere without the previous agreement of the Employer.

3.2 **THE EMPLOYER:**

3.2.1 **Right of Access to the Site:**

The Employer shall give the Contractor right of access to, and possession of, all parts of the Site within the time (or times) stated in the Contract. If no such time is stated in the Contact, the

Employer shall give the Contractor right of access to, and possession of, the Site within such times as may be required to enable the Contractor to proceed in accordance with the time schedule (bar chart) submitted under **Sub-Clause 3.16.3** [Time Schedule / Bar Chart].

If the Contractor suffers delay as a result of a failure by the Employer to give any such right or possession within such time, the Contractor shall give notice to the Engineer within 7 (seven) days from end of such time or period and shall be entitled to:

(a) an extension of time for any such delay, if completion is or will be delayed, under **Sub-Clause 3.16.4** [*Extension of Time for Completion*],

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

3.2.2 **Permits, Licenses or Approvals:**

The Employer shall (where he is in a position to do so) provide administrative support to the Contractor at the request of the Contractor:

(a) by obtaining copies of the Laws of the Country which are relevant to the Contract but are not readily available, and

(b) for the Contractor's applications for any permits, Licenses or approvals required by the Laws of the Country for execution of work under the Contact:

(i) which the Contractor is required to obtain.

(ii) for the delivery of Goods, including clearance through customs, and for the export of Contractors Equipment when it is removed from the Site.

(iii) which the Contractor is required to obtain under the Contract

3.2.3 **Employer's Claims:**

If the Employer considers himself to be entitled for any payment (claim) under any Clause of these Conditions or otherwise in connection with the Contract, and/or to any extension of the Defects Liability Period, the Employer or the Engineer shall give notice and particulars to the Contractor.

The notice shall be given as soon as practicable after the Employer became aware of the event or circumstances giving rise to the claim. A notice relating to any extension of the Defects Liability Period shall be given before the expiry of such period.

The particulars shall specify the Clause or other basis of the claim and shall include substantiation of the amount and/or extension to which the Employer considers himself to be entitled in connection with the Contract. The claim amount shall be considered as a deduction in the Contract Price.

3.3 **ENGINEER AND ENGINEER'S REPRESENTATIVE:**

3.3.1 The Engineer shall carry out such duties in issuing decision, certificates and orders as are specified in the contract. The Engineer's Representative shall be responsible to the Engineer and be the Engineer-in-Charge of the work.

3.3.2 **Delegation by Engineer:**

The duties of the Engineer's Representative is to watch and supervise the work and to test and examine any materials to be used or workmanship employed in connection with the works. He shall have no authority to relieve the Contractor or any of his duties or obligations under the contract nor except as expressly provided hereunder or elsewhere in the contract to order any work involving delay or any extra payment by the Employer nor to make any variation of or in the works.

Any written instructions or approval given by the Engineer's Representative to the Contractor within the terms of such delegation (but not otherwise) shall bind the Contractor and the Employer as though it had been given by the Engineer provided, however, that.

a) Failure of the Engineer's Representative to disapprove any work or materials shall not prejudice the power of the Engineer thereafter to disapprove such work or materials and to order the pulling down, removal or breaking up thereof.

b) If the Contractor shall be dissatisfied by reason of any decision of the Engineer's Representative, he shall be entitled to refer the matter to the Engineer who shall thereupon confirm, reverse or vary such decision.

3.4 **THE CONTRACTOR'S OBLIGATIONS:**

3.4.1 **Contractor's General Obligations:**

The Contractor shall design (to the extent specified in the contract) if stipulated in the Contract, execute and complete the Works in accordance with the Contract and with the Engineer's instructions, and shall remedy any defects in the Works.

The Contractor shall provide the Plant& equipment, materials and Contractor's Documents specified in the contract, and all Contractor's Personnel, Goods, consumables and other things and services, whether of a temporary or permanent nature, required in and for this design, execution, completion and remedying of defects.

All the material, equipment offered and used in the execution of the work shall be suitable for sustained service in a marine atmosphere and local environment condition.

The Contractor shall be responsible for the adequacy, stability, and safety of all Site operations and of all methods of construction. The Contractor shall, in consideration of payments to be made to him as hereinafter provided, execute and do the Works set forth as described in the Scope of Work and specifications, including any amendments to tender clauses.

The Contractor shall exercise all reasonable care and diligence in the discharge of all technical, professional and Contractual duties to be performed by them under this Contract as specified in the Scope of Work within the Time for Completion and provide all labour, including the supervision and security thereof, Contractor's Equipment necessary thereof and for carrying out his obligation, so far as the necessity for providing the same is specified in or is reasonable to be inferred from the Contract. The Contractor shall be fully responsible to Employer for proper, efficient, and effective discharge of their duties.

The Contractor shall, whenever required by the Engineer, submit details of the arrangements and methods, which the Contractor proposes to adopt for the execution of the Works. No significant alteration to these arrangements and methods shall be made without this having previously been notified to the Engineer.

If the Contract specifies that the Contractor shall design any part of the Permanent Works, then.

(a) the Contractor shall submit to the Engineer the Contractor's Documents for this part in accordance with the procedures specified in the Contract.

(b) these Contractor's Documents shall be in accordance with the Specification and Drawings and shall include additional information if required by the Engineer to add to the Drawings.

(c) the Contractor shall be responsible for this part, and it shall, when the Works are completed, be fit for such purposes for which the part is intended as are specified in the Contract;

3.4.2 **Contractor's Representative:**

The Contractor shall appoint the Contractor's Representative and shall give him all authority necessary to act on the Contractor's behalf under the Contract. The Contractor shall submit the name and particulars of the representative prior to commencement of work.

3.4.3 **Assignment and Subcontracting:**

The Contractor shall not, assign the contract or any part thereof or any benefit or interest therein or there under without the prior written consent of the Engineer.

The Contractor shall not sub-contract the whole of the works. Except otherwise provided by the Contract, the Contractor shall not sub-contract any part of the Works without the prior written consent of the Engineer and such consent if given shall not relieve the Contractor from any liability or obligation under the Contract and he shall be responsible for the facts, defaults and neglects of any sub-Contractor, his agents, servants or workmen fully as if they were the acts, defaults or neglects of the Contractor.

In the event of the Contractor contravening this condition, Employer shall be entitled to terminate the Contract forthwith and award a fresh Contract to some other party at risk and cost of the Contractor who shall be liable for any loss or damage which Employer may sustain in consequence arising out of such replacement of the Contractor. In such a case, the performance security deposit shall be forfeited.

3.4.4 **Cooperation:**

The Contractor shall, as specified in the Contract or as instructed by the Engineer, allow appropriate opportunities for carrying out work to:

(a) the Employer's Personnel,

(b) any other contractors /PMC/ 3rd party Inspecting Agency employed by the Employer, and

(c) the personnel of any legally constituted public authorities,

who may be employed in the execution on or near the Site of any work not included in the Contract.

3.4.5 **Setting Out:**

The Contractor shall set out the Works in relation to original points, lines and levels of reference specified in the Contract or notified by the Engineer. The Contractor shall be responsible for the correct positioning of all parts of the Works, and shall rectify any error in the positions, levels, dimensions or alignment of the Works.

3.4.6 **Safety Procedures:**

The Contractor shall:

(a) comply with all applicable safety regulations,

(b) take care for the safety of all persons entitled to be on the Site,

(c) use reasonable efforts to keep the Site and Works clear of unnecessary obstruction so as to avoid danger to these persons,

(d) provide fencing, lighting, guarding, and watching& warding of the Works until completion and taking over under Clause 3.18 [Acceptance], and

(e) provide any Temporary Works (including roadways, footways, guards and fences), which may be necessary, because of the execution of the Works, for the use and protection of the public and of owners and occupiers of adjacent land.

(f) provide all lights be placed or screened so as not to interfere with any signal lights on the Employer's railways or with any traffic lights of any local or other authority.

3.4.7 **Site Data:**

The Employer shall have made available to the Contractor for his information, all relevant data if available in the Employer's possession on conditions at the Site, including environmental aspects. The Contractor shall be responsible for interpreting all such data.

The Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or the Tender or Works. To the same extent, the Contractor shall be deemed to have inspected and examined the Site, its surroundings, the above data and other available information, and to have been satisfied before submitting the Tender as to all relevant matters, including (without limitation):

(a) the form and nature of the Site, including sub-surface conditions,

(b) the hydrological and climatic conditions,

(c) the extent and nature of the work/service and Goods necessary for the execution and completion of the Works and the remedying of any defects,

(d) the Laws, procedures, and labour practices of the State / Country, and

(e) the Contractor's requirements for access, accommodation, facilities, personnel, power, transport, water and other services.

3.4.8 **Sufficiency of the Accepted Contract Amount:**

Unless otherwise stated in the Contract, the Accepted Contract Amount covers all the Contractor's obligations under the Contract (including those under Provisional Sums; If any) and all things necessary for the proper execution and completion of the Works.

3.4.9 **Rights of Way and Facilities:**

The Contractor shall bear all costs and charges for special and/or temporary rights of-way which he may require, including those for access to the Site. The Contractor shall also obtain, at his risk and cost, any additional facilities outside the Site, which he may require for the purposes of the Works.

3.4.10 **Transport of Goods:**

Unless otherwise stated in the Particular Conditions:

(a) the contractor shall give the Engineer not less than 07 days' notice of the date on which any Plant or a major item of other Goods will be delivered to the Site;

(b) the Contractor shall be responsible for packing, loading, transporting, receiving, unloading, storing and protecting all Goods and other things required for the Works; and

(c) the Contractor shall indemnify and hold the Employer harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from the transport of goods and shall negotiate and pay all claims arising from their transport.

3.4.11 **Contractor's equipment:**

The Contractor shall be responsible for all Contractor's equipment. When brought on to the Site, Contractor's equipment shall be deemed to be exclusively intended for the execution of the Works and shall be retained at the site till the completion of the work. The Contractor shall not remove from the Site any major items of Contractor's equipment without the consent of the Engineer. However, consent shall not be required for vehicles transporting Goods or Contractor's Personnel off Site.

3.4.12 **Protection of the Environment:**

The Contractor shall take all reasonable steps to protect the environment (both on and off the Site) and to limit damage and nuisance to people and property resulting from pollution, noise and other results of his operations.

The Contractor shall ensure that emissions, surface discharges and effluent from the Contractor's activities shall not exceed the values indicated in the Specification and shall not exceed the values prescribed by applicable Laws.

3.4.13 **Site Facilities:**

a) **Facilities Supplied by the Contractor:**

The Contractor shall supply all services, amenities, temporary structures including security fencing if required and storage compounds if required, Machineries, temporary sheds and construction equipment necessary for the proper execution of the Works at Site at his cost except for the items specified below, which will be provided by the Employer.

b) **Facilities Supplied by the Employer:**

The Employer will make available to the Contractor the following services which will be charged at the prevailing rates.

c) **Supply of land for Contractor's site establishment and lay down areas:**

The above shall be made available at rates as given in the Scale of Rates as relevant and applicable subject to revision from time to time.

d) **Construction Water / Drinking Water:**

The Employer will provide a source for reasonable quantity of construction water at one point adjacent to the Contractor's work area on chargeable basis. Any further reticulation to the Contractor's individual facilities shall be the Contractor's responsibility and cost. Similarly

drinking water may be supplied on chargeable basis. However, all necessary arrangement like plumbing / installation of water meter etc. to be made by the contractor. Water charges will have to be paid (adjusted from the contractor's bill) by the contractor against actual consumption recorded through water meter as per the prevailing rates subject to revision from time to time.

e) **Electric Power:**

The Employer will provide source of electric power at one point adjacent to the Contractor's work area. Any further reticulation to the Contractors' individual facilities shall be the Contractor's responsibility and cost.

The **Electricity consumption charges** [as per Port tariff] shall have to be paid by the Contractor immediately, on receipt of the bill from the office of MEE Department, V.O. Chidambaranar Port. All payment on this account should be updated, otherwise the pending bill amount, along with late payment surcharge, will be recovered from the Contractor's bill(s).

The Employer does not guarantee the continuity of power supply in the event of power failure the contractor shall be required to make its own arrangements for the provision of uninterrupted electric power.

3.4.14 **Records to be maintained:**

The Contractor shall maintain site account of materials, including the departmental supply, clearly indicating relevant information such as description of the material, source, date of delivery at site, date of consumption at site. The Contractor shall forward a copy of monthly site account of materials to the Engineer in Charge at the end of every month. On completion of the work under the contract, the Contractor shall submit to the Engineer in Charge a copy of the site account of the materials from the date of commencement to date of acceptance. The Contractor shall also maintain hindrance register, site instructions register, complaint register and daily progress register and the EIC shall verify the registers as and when required and sign the same, duly recording his remarks.

3.4.15 **Security of the Site:**

Unless otherwise stated; authorized persons shall be limited to the Contractor's Personnel and the Employer's Personnel; and to any other personnel notified to the Contractor, by the Employer or the Engineer, as authorized personnel of the Employer's other contractors on the Site.

3.4.16 **Contractor's Operations on Site:**

The Contractor shall confine his operations to the Site, and to any additional areas, which may be obtained by the Contractor and agreed by the Engineer as working areas. The Contractor shall take all necessary precautions to keep Contractor's Equipment and Contractor's Personnel within the Site and these additional areas, and to keep them off adjacent land.

During the execution of the Works, the Contractor shall keep the Site free from all unnecessary obstruction and shall store or dispose of any Contractor's Equipment or surplus materials. The Contractor shall clear away and remove from the Site any wreckage, rubbish and Temporary Works, which are no longer, required. The Contractor shall clear away and remove, all Contractor's Equipment, surplus material if not handed over to the Employer as per the Contract. Contractor shall leave that part of the Site and the Works in a clean and safe condition. The Contractor shall at all reasonable times allow persons duly authorized by the Employer.

3.5 **STAFF AND LABOUR:**

3.5.1 **Engagement of Staff and Labour:**

The Contractor shall make arrangements for the engagement of all staff and labour, local or otherwise, and for their payment, accommodation, feeding and transportation. Since time is the essence of this Contract, the requisite number of labour force has to be kept so as to complete work within the completion period as stipulated in the Contract.

3.5.2 **Compliances of Regulations etc.:**

The Contractor shall, at all times during the continuance of the Contract, so far it may be necessary, comply with all existing enactments including central and state Legislation as well as an applicable Bye-Laws of any local authority regarding labour (Contractor's Personnel), particularly the Minimum Wages Act, Factories Act, Workmen's Compensation Act, Provident Fund and Miscellaneous Provisions Act, Family Pension Fund Act and Employees State Insurance Act, Contract Labour (Regulation and Abolition) Act, Payment of Wages Act, Maternity Benefit Act, National Festival Holiday Act, Shop and Establishment Act, The Apprentice Act and shall keep the Employer indemnified against any action that may be taken against him for the contravention of provisions of the above said enactments by the Contractor. The prices quoted by the Contractor in Bill of Quantities shall be deemed to include all expenses whatsoever the Contractor may be required to incur for the compliance with the provisions of the above said legislation. The Contractor shall make necessary arrangements for the Employer to witness the payments made by the Contractor to his staff and labour and get the certificate from the Employer as required in terms of the regulations.

The Contractor shall cover all its workmen under EPF & ESI irrespective of the no. of workmen engaged in the work. The Contractor shall produce documentary evidence in support of the EPF & ESI coverage to its workers within 30days of induction of contractual worker(s). This will also be applicable to the sub-contractor(s) appointed by the Contractor for the subject work.

The Contractor shall also comply apart from all the relevant labour Laws applicable to the Contractor's Personnel, Laws relating to their employment, health, safety, welfare, and emigration and shall allow them all their legal rights.

The Contractor shall require his employees to obey all applicable Laws, including those concerning safety at work.

3.5.3 **Rates of Wages and Conditions of Labour:**

The Contractor shall pay rates of wages and observe conditions of labour as per the provision of regulations, etc which are not lower than the minimum wages & conditions notified under any Central or State law as applicable to the Employer.

3.5.4 **Persons in the Service of Employer:**

The Contractor shall not recruit, or attempt to recruit, staff and labour from amongst the Employer's Personnel.

The Employer shall be at liberty to terminate the Contract if the Contractor himself or any of his partners / employees / staffs or any of his Directors who having held Class-I post with the Employer prior to his retirement has failed to obtain the Employer’s specific permission to undertake any

outside employment before the expiry of two years from the date of his retirement, in accordance with the regulations.

3.5.5 **Facilities for Staff and Labour:** The Contractor shall provide and maintain all necessary facilities as applicable at site for smooth execution of contract. Port entry permit for the contractor and their staff, materials, vehicles etc. for movement inside the Port area, will be on chargeable basis.

3.5.6 **Health and Safety:**

The Contractor shall at all times take all reasonable precautions to maintain the health and safety of the Contractor's Personnel. The Contractor shall maintain records and make Reports concerning health, safety and welfare of persons, and damage to property, as, the Engineer may reasonably require.

3.6 **Safety Gears, PPEs, Etc.**

The Contractor shall be solely responsible, at his own cost to provide all safety gears including PPEs for all labours engaged and he shall also ensure the use of such safety items by his staff & labour at site.

In the event of failure on the part of the Contractor, the Employer shall provide the same and recover the cost thereof from any amount due or which may become due to the Contractor or from any amount lying with them or under their control.

3.7 **Contractor's Superintendence:**

(a) The Contractor shall give or provide all necessary superintendence during the execution of the Works and as long thereafter as the Engineer may consider necessary for the proper fulfilling of the Contractor's obligations under the Contract. The Contractor, or his competent and authorized agent or Representative is to be constantly on the works and shall give his whole time to the superintendence of the same. Such authorized agent or Representative shall receive on behalf of the Contractor directions and instruction from the Engineer or the Engineer's Representative.

(b) **Epidemics:**

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

3.8 **Contractor's Personnel:**

The Contractor's Personnel shall be appropriately qualified, skilled, and experienced in their respective trades or occupations wherever require. The Contractor shall employ such skilled, semi-skilled and unskilled labour as is necessary for proper, timely execution of work.

The Engineer may require the Contractor to remove (or cause to be removed) any person employed on the Site or Works, including the Contractor's Representative if applicable, who:

(a) persists in any misconduct or lack of care,

(b) carries out duties incompetently or negligently,

(c) fails to conform with any provisions of the Contract, or

(d) persists in any conduct, which is prejudicial to safety, health, or the protection of the environment.

(e) If appropriate, the Contractor shall then appoint (or cause to be appointed) a suitable replacement person.

3.9 **Wage Records:**

The Contractor shall maintain records of wages and other remuneration paid to his employees in such forms as may be convenient and to the requirements of the Engineer and conciliation officer, Central Ministry of Labour, Government of India or such other authorised persons appointed by the State Government. The Contractor shall also exhibit the different notices as required under the Minimum Wages Act, 1949, Payment of Wages Act, 1936 and other Acts, Rules and Regulations made there under from time to time.

3.10 **Accidents:**

The Contractor shall within 24 hours of the occurrence of any accident at or about the site or in connection with the execution of the work report such accidents to the Engineer / Engineer's Representative. The Contractor shall also report such accidents to the competent authorities to whom such report is required to be sent as per prevailing law.

3.11 **Records of Contractor's Personnel and Equipment:**

The Contractor shall submit if required, to the Engineer, details showing the number of each class of Contractor's Personnel and of each type of Contractor's Equipment on the Site. Details shall be submitted each calendar month, in a form approved by the Engineer, until the Contractor has completed all work.

3.12 **Disorderly Conduct:**

The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst the Contractor's Personnel, and to preserve peace and protection of persons and property on and near the Site.

3.13 **Observance By Sub-Contractors:**

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

3.14 **Remedial Action by the Employer:**

If as a result of Contractor's failure, negligence, omission, default, or non-observance of any provisions of any laws, the Employer is called upon by any authority to pay or reimburse or required to pay or reimburse any amount, the Employer shall be entitled to deduct the same from any sums of money due or that they become due to the Contractor under this Contract or any other Contract or otherwise recover from the Contractor any sums which the Employer is required or called upon to pay or reimburse on behalf of the Contractor. All registration and statutory inspection fees in respect of his work pursuant to the Contract shall be paid by the Contractor.

3.15 **PLANT, MATERIALS AND WORKMANSHIP:**

3.15.1 **Manner of Execution**:

The Contractor shall, at his own costs and expenses, provide all labour, plant & equipment, materials, stores, etc. required for efficiently carrying out and completing the work to the satisfaction of the Employer within the stipulated time period as per Scope of Work and Specifications.

All plant & equipment and materials and workmanship shall be of the respective kinds described in the Contract and in accordance with Engineer's instructions and shall be subjected to such tests specified in the Contract.

3.15.2 **Quality Assurance:**

The Quality Assurance Plan defines the methodology to be used to ensure quality of goods / services involved in the work. The Contractor shall submit a quality assurance plan (QAP) for acceptance by the Engineer if specified in the Contract. The QAP shall, contain list of the tests and inspections proposed along with standards (IS or other equivalent standards / performance standards where applicable) to be done to ensure quality for goods and services

3.15.3 **Inspection:**

The Engineer or his designated Representative(s) shall at all reasonable times:

(a) have full access to Contractor or its sub-contractor(s) / its manufacturer(s) premises / work site where the Plant and Equipment are being manufactured or the facilities are being installed / executed, and

(b) during production, manufacture, and construction (at the Site and elsewhere), be entitled to examine, inspect, measure and test the materials and workmanship, and to check the progress of manufacture of materials.

The Contractor shall give the Employer's Personnel full opportunity to carry out these activities, including providing access, facilities, permissions and safety equipment.

3.15.4 **Test**

The Contractor shall at its own expense carry out at the place of manufacture and / or on the Site all such tests of the Plant and Equipment and any part of the Work / Facilities as are specified in the Contract or as per approved QAP.

Unless otherwise specified,

(a) Works where supply of plant & equipment are not included in scope of Contractor, test & inspection shall be done by Engineer or his Representative on quality of workmanship of work.

(b) The contractor shall submit, if necessary, test guarantee certificates / internal inspection report / manufacturer certificates towards acceptance of plant equipment. Inspection of works at site shall be carried out on the basis of workmanship and performance tests.

(c) Works where supply of plant & equipment are included in scope of Contractor and if such tests are clearly intended by or provided for or inferred from the Contract or Specifications or Bill of Quantities, the test & inspection of all such specified plant & equipment / items shall be carried out at Contractor / sub- contractor(s) / manufacturers' premises as per approved QAP. For rest of the equipment / items, the Contractor shall submit test guarantee certificates/internal inspection report / manufacturer certificates. Tests & Inspection of works at site shall be carried out on the basis of workmanship and performance standards and as per approved QAP.

(d) The Engineer or his designated representative(s) shall be entitled to attend the aforesaid test and / or inspection, provided that the Employer shall bear costs and expenses incurred in connection with such attendance including, but not limited to, all travelling and board and lodging expenses.

(e) Whenever the Contractor is ready to carry out any such test and / or inspection, the Contractor shall give a 7-day advance notice of such test and / or inspection. The Engineer shall then either carry out the examination, inspection, measurement or testing without unreasonable delay, or promptly give notice to the Contractor that the Engineer does not require to do so. If the Contractor fails to give the notice, he shall, if and when required by the Engineer, shall carry out any such test and / or inspection and thereafter reinstate and make good, all at the Contractor's cost. The Contractor shall provide the Engineer with a certified report of the results of any such test and / or inspection.

(f) If any Plant and Equipment or any part of the Facilities fails to pass any test and/ or inspection, the Contractor shall either rectify or replace such Plant and Equipment or part of the Facilities and shall repeat the test and / or inspection upon giving a notice.

(g) The execution of a test and / or inspection of Plant and Equipment or any part of the Facilities, or the attendance by the Employer or the Engineer, or the issue of any test certificate or waiver certificate shall not relieve the Contractor from any of its responsibilities under the Contract.

(h) Employer's right to inspect, test and, where necessary, reject the Goods after the Goods arrival in Employer premises shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by Employer or its representative prior to the Goods‟ shipment from the place of origin.

3.15.5 **Rejection:**

If, as a result of an examination, inspection, measurement or testing, any Plant, Materials or workmanship is found to be defective or otherwise not in accordance with the Contract (all such matters being hereinafter, called 'Defects'), the Engineer may reject the Plant, Materials or workmanship by giving notice to the Contractor in writing of the said decision specifying particulars of the defects alleged to exist or to have occurred. The Contractor shall at his own expense and with all efforts would make good the defects so specified.

Further, Employer reserves the right to subject any part / component / equipment for re-test and on written instruction from Employer, the Contractor shall arrange for the re-test and the cost shall be reimbursed by Employer as per actual, only if the test results are satisfactory. In case of unsatisfactory test results, the part / component / equipment shall be rejected and the Contractor shall be responsible for replacement of the item at his own cost and also bear the cost of the re-test.

3.15.6 **Remedial Work:**

Notwithstanding

(a) remove from the Site and replace any Plant or Materials which is not in accordance with the Contract,

(b) remove and re-execute any previous test or certification, the Engineer may instruct the Contractor to: any other work which is not in accordance with the Contract, and

(c) execute any work which is urgently required for the safety of the Works, whether because of an accident, unforeseeable event or otherwise.

The Contractor shall comply with the instruction within a reasonable time, which shall be the time (if any) specified in the instruction, or immediately if urgency is specified under sub-paragraph (c). If the Contractor fails to comply with the instruction, the Employer may take, at the cost and risk of the Contractor, such steps as may in all circumstances be reasonable to make good such defects.

The expenditure so incurred by the Employer will be recovered from the amount due to the Contractor. The decision of the Engineer with regard to the amount to be recovered from the Contractor will be final and binding on the Contractor.

3.16 **COMMENCEMENT AND DELAYS**:

3.16.1 **Commencement of Work:** The work shall be commenced within 15days of issuance of Letter of Acceptance / Work Order. If no notification received from the Contractor regarding commencement date, then 16th date from issuance of Letter of Acceptance / Work Order shall be treated as date of commencement. The Contractor shall proceed with the Works with due expedition and without delay. **Commencement** of work is subject to compliance all the conditions precedent as mentioned **at Clause No. 2.8 of ITB (Section-II).** The stipulated deadlines mentioned **at Clause No. 3.16.3 of Section-III- GCC** would have to be strictly adhered to unless otherwise extended by Employer.

3.16.2 **Time of Completion / Period of Contract:**

The Contractor shall complete the whole of the Works, and each Section (if any), within the Time for Completion as indicated in Work Order / Letter of Acceptance for the Works or Section (as the case may be), including:

(a) achieving the passing of the Tests on Completion, and

(b) Completing all work, which is stated in the Contract as being required for the Works or Section to be considered to be completed for the purposes of taking over under **Clause 3.18** [Acceptance]

3.16.3 **Time Schedule/ Bar Chart:**

If specified in the Contract, The Contractor shall submit a Time Schedule / Bar Chart form within 15 days of issuance of Letter of Acceptance / Work Order.

The Contractor shall submit a bar chart, before signing the agreement, clearly indicating the plan for timely execution of the work. The bar chart must indicate the individual activities and commencement and completion dates of each activity. The bar chart shall be used for monitoring the progress of the work.

Unless the Engineer, within 15 days after receiving bar chart, gives notice to the Contractor stating the extent to which it does not comply with the Contract, the Contractor shall proceed in accordance with the bar chart.

If, at any time, the Engineer gives notice to the Contractor that time schedule fails (to the extent stated) to comply with the Contract or to be inconsistent with actual progress and the Contractor's stated intentions, the Contractor shall submit a revised time schedule / bar to the Engineer.

3.16.4 **Extension of Time for Completion:**

The Contractor shall commence the works after being notified for award of work and shall proceed with the same with due expedition and without delay except as may, be expressly sanctioned or ordered by the Engineer or be wholly beyond the Contractor's control. The Contractor shall maintain the rate of progress required as per schedule.

The Contractor shall be entitled subject Contractor's Claims to an extension of the Time for Completion if and to the extent that completion of work *is* or will be delayed by any of the following causes:

(a) changes ordered by the Employer,
(b) delay in performance of work caused by orders issued by the Employer.
(c) delay in providing work fronts or supply of any materials or services which are to be provided by the Employer,
(d) exceptionally adverse climatic conditions,
(e) force Majeure
(f) other reasonable causes

If the Contractor considers himself to be entitled to an extension of the Time for Completion, the Contractor shall give notice to the Engineer for extension of time before expiry of the period of contract with details of the hindrance(s) on account of which he desires such extension as aforesaid with documentary evidence.

If the progress of work is held up owing to circumstances which, in the opinion of Engineer are beyond the control of the Contractor the Engineer may, at his discretion, grant to the Contractor such extension of time as he considers reasonable for the completion of the work.

The execution of the work during the extended period also shall be only under the conditions and at the rate specified in the contract.

No claim shall be made by the Contractor on the grounds of executing the work beyond the completion period stipulated in the contract.

3.16.5 **Liquidated Damage:**

Unless otherwise specified, in case of delay in completion of the contract, liquidated damages (for works costing up to Rs. 10 lakh - one (1) percent of the contract value per week and for all other works half percent (0.5%) of the contract value per week of delay subject to a maximum of ten percent (10%) of contract value should be levied. Such liquidated damages will be deducted from any money due or become due to the contractor. The payment of such damages shall not relieve the contractor of his obligations to complete the work or from any other of his obligations or liabilities under this contract.

3.17 TESTS, IF ANY ON COMPLETION OF ERECTION & INSTALLATION AT EMPLOYER'S SITE:

(a) On completion of erection / installation of the items under the work / facilities by the Contractor and also when trial runs & final adjustments at the site are completed in accordance with the Contract, the Contractor shall give the Engineer-in-charge notice in writing thereof and before making the tests on completion of 7 days' notice in writing of the date on which he will be ready to make the said tests in accordance with and in the manner prescribed in the specifications.

(b) If any portion of work falls under the tests to fulfil the Contract conditions, tests of the faulty portion shall, if required by the Engineer-in-charge or by the Contractor, be repeated within a reasonable time upon the same terms and conditions.

(c) If the Contractor neglects to make the 'Performance test' within the time stipulated, Employer shall nevertheless have the right of using the Installations at the Contractor's risk until the 'Performance test' is successfully carried out.

3.18 **ACCEPTANCE:**

Upon successful tests under **Clause No.3.17** upon completion of work under this contract, the Engineer may accept the works and/or services, if defects or shortcomings are not considered essential and, the Contractor agrees to make good the deficiencies in confirmation with this contract. Further, no work shall be treated as accepted before the Contractor clears the site of scraps, unused materials, work shed, equipment and all such materials which were used for execution of the work and not required any more at the work site.

The Engineer may, at the sole discretion of the Employer, may accept part or section work if it is substantially completed.

The Contractor shall submit to the Engineer the "as-built" documents and operation and maintenance manuals in accordance with the Specification and in sufficient detail for the Employer to operate, maintain, dismantle, reassemble, adjust and repair this part of the Works. Such part shall not be considered to be completed for the purposes of acceptance until these documents and manuals have been submitted to the Engineer.

As soon as the works have been completed in accordance with the contract and have passed the tests on completion, the Employer shall issue a certificate in which he shall certify the date on which the works have been so completed and have passed the said tests, and the Employer shall be deemed to have taken over the works on the date so certified.

3.19 **DEFECT LIABILITY / WARRANTY:**

3.19.1 The Contractor shall warrant that the work or any part thereof under this contract will comply strictly with the contract or superior to what is defined, shall be first class in every particular case and shall be free from defects. The Contractor shall further warrant that all materials, equipment, and the supplies furnished by him will be new and fit for their intended purposes.

3.19.2 The warranty period shall be for a period of minimum 12 months from date of completion of work, unless otherwise specified in the Scope of Work / Special Condition of Contract.

3.19.3 If during the Defect Liability Period any defect be found in materials and workmanship or of the work executed by the Contractor, the Contractor upon being notified, shall promptly, in consultation and agreement with the Employer and at its cost, repair, replace or otherwise make good such defect as well as any damage to the goods & services and materials caused by such defect within a specified time or a mutually agreed time between the Contractor & Employer.

3.19.4 If the work or any part thereof cannot be used by reason of such defect and / or making good of such defect, the Defect Liability Period of the work or such part, as the case may be, shall be extended by a period equal to the period during which the work or such part cannot be used by the Employer because of any of the aforesaid reasons. In addition, the Contractor shall also provide an extended warranty for any such replaced or repaired component of the work for the period of minimum 12 months or as it may be stipulated in Contract Technical Specifications. Such obligation shall be in addition to the defect liability specified under **Clause 3.19.2** hereof.

3.19.5 If the Contractor, having been notified, fails to remedy the defects in accordance with the contract, the Employer may proceed to take such remedial action as may be necessary, at the Contractor's risk and cost.

3.19.6 In the event of repeated failure of any component or material or fitting, within the warranty period, it shall be treated as failure on the part of the Contractor and the Contractor shall have to promptly

rectify the same at his own cost failing which Employer shall have the right to recover the cost from any other outstanding amount of the Contractor lying with Employer and / or any amount that may become due to the Contractor and the Contractor shall be debarred to participate in any of the tender of Employer in future.

3.20 **MEASUREMENT:**

Unless otherwise specified:

(a) measurement shall be made of the net actual quantity of each item of the Permanent Works, and

(b) the method of measurement shall be in accordance with the Bill of Quantities or other applicable Schedules.

3.21 **VARIATIONS:**

The variation or additional work must be a necessary part within the scope of the original works and should not completely change the scope/ character and purpose of the original contract. The variation may result in additional or reduced payments to the contractor or there may be no price change at all.

3.21.1 **Variation** means:

(a) increase or decrease in the quantity of any work included in the BOQ of the contract.

(b) omission of any such work (but not if the omitted work is to be carried out by the Employer by another contractor);

(c) change in the character or quality or kind of any such work.

(d) change in the levels, lines, position and dimensions of any part of the works.

(e) additional work of any kind necessary for the completion of the works; and

(f) change of the specified sequence or timing of construction of any part of the works.

At any time during the execution of the contract, by a written notice to the Contractor (Change Order), variations as specified above may be made in the scope of contract by Representative of Engineer, with due approval of competent authority.

3.21.2 **Valuation of Variations:**

Variations as specified in **clause 3.21.1** shall not in any way vitiate or invalidate the contract but the cost, if any, arising out of all such changes shall be taken into account in ascertaining the total amount of the contract price. Where the rate is available in the contract and the same is applicable to the additional work, in the opinion of the Engineer, the cost of the additional work shall be determined as per this available rate. But, if the rate for additional work is not available in the contract, the same shall be determined by the Engineer taking into account the market rate and labour cost at the site for similar works and shall be final.

3.21.3 Deviations from the specifications as contained in the contract agreement including the make / model, shall not be accepted. In case of any such deviation, payment shall not be made for that part of the work / item, even if it is meeting the functional requirements and has been accepted by the Employer. The payment for such portion of the work / item can only be released if the contractor

makes good the deviations before the expiry of the warranty period so as to meet the specifications of the tender agreement in all respects.

3.21.4 **Adjustments for Changes in Legislation**:

If during the period of the contract, any statutory regulations or bye-laws, new tax / duty / cess or any other charge is imposed / levied / come into force by the Government / any statutory authority having impact on the payable amount to the Contractor only to the extent of the services to be rendered after commencement of work, then the same would be paid by VOCPA to the contractor at actual on production of relevant proof.

3.22 CONTRACT PRICE AND PAYMENT:

3.22.1 The Contract Price:

The Contract Price as specified in Letter of Acceptance / Work Order shall be for the entire Scope of the work towards execution and completion of the Works and the remedying of any defects. Price Schedule or Bill of Quantity of Contract Price is attached with Letter of Acceptance.

The Contract Price accepted in Indian Rupees shall include all duties, taxes and levies, transportations, incidentals, etc. as may be applicable and prevailing on base date of the Contract i,e. bid opening date but excluding Goods & Service Tax (GST).

3.22.2 Firm Contract Price:

The contract shall be firm, not subject to any escalation except in the event of a change in the scope of work or specification or as otherwise provided in the Contract.

3.22.3 Executed Contract Value:

The Employer hereby agrees to pay to the Contractor the Contract Price in consideration of the performance by the Contractor of its obligations and includes adjustments in accordance with the Contract or such other sums as may be determined in accordance with the terms and conditions of the Contract.

3.22.4 Payment Terms:

Contractor shall submit Tax invoice as per the provision of GST Act and rules. 100% of payment to the Contractor will be made on satisfactory completion of works and will be released within 15 working days from the date of receipt of the complete and correct invoices & relevant documents and unless any objection to such bill is raised by the Employer. Deductions & Recoveries will be made as per conditions of the contract. The quantity given in the Price Schedule / BOQ is only approximate and payment will be made as per actuals.

3.22.5 Taxes & Duties:

The Contractor shall pay all taxes, duties, cess, levies if any, fees and all other dues required to be borne & paid by the contractor under the Contract, and the Contract Price shall not be adjusted for any of these costs except as stated in **Sub-Clause 3.22.1** [Adjustments for Changes in Legislation] on production of documentary evidence by the Contractor;

The Contractor shall bear and pay all the liabilities in respect of non- observance of all legal formalities as per various statutory provisions.

3.22.6 **Goods and Service Tax:**

(i) The GST shall be paid by the Employer at the rates applicable from time to time on submission of bills / invoices as prescribed under GST rules mentioning the full details regarding the Name, Address, GST Registration Number of the bidder along with the description, classification and value of taxable services and GST payable thereon. The GST shall be reimbursed to the Contractor on his making available the GST claimed by him in GSTR against the Port GST number.

(ii) The GST TDS shall be applicable as per the section 51 of the CGST Act, 2017. [As per CGST Act, 2017] and shall be deducted at such rate as may be specified from the invoice of the Contractor.

3.22.7 **Income Tax:**

Income tax will be deducted at the rates as applicable from time to time. It is open to the contractor to make an application to the concerned Income Tax Authorities to obtain a certificate from them authorizing the department to deduct income tax at such lower rate or deduct no tax as may be appropriate to his case. Such certificate will be valid for the period specified therein unless it is cancelled by the Income Tax authorities earlier.

3.22.8 **E-payment:**

The Bidder should submit the consent in a mandate form for receipt of payment through EFT and provide the details of bank A/c in line with RBI guidelines for the same. These details will include bank name, branch name & address, A/c type, bank A/c no., bank and branch code as appearing on MICR cheque issued by the bank. Further, the Contractor should also submit a certificate from their bank certifying the correctness of all the above-mentioned information in the mandate form. In case of non-payment through EFT or where EFT facility is not available, payment will be released through cheque.

3.23 **Deduction / Recoveries:**

(i) Deduction of taxes at source shall be made from the bill of the Contractor in accordance with the prevailing rules& regulations of Employer.

(ii) While performing under the contract, the damages caused by the Contractor or his/her workmen to any of the Employer's shall be promptly made good by the Contractor at his/her own cost. In case the Contractor fails to repair/replace the damage, the Employer shall have the right to take steps to make good the damages and all the cost on this account shall be recovered from the bills of the Contractor or any money due to the Contractor from this contract or any other contract or any other transaction. In determination of the damage, the opinion of the Engineer shall be conclusive.

(iii) Any dues arising out of failure on the part of the Contractor to carry out any obligation under the contract shall be deducted from the bills of the Contractor or from any money due to the Contractor from this contract or any other contract including Security Deposit and Performance Security.

3.24 **No Interest on Account of Delayed Payments:**

Any claim for interest will not be entertained by the Employer with respect to any payment or balance which may be in their hands owning to any disputes between themselves and the Contractor or with respect to any delay on part of the Employer in making payment.

3.25 **BREACH OF CONTRACT, REMEDIES AND TERMINATION:**

3.25.1 **Breach of Contract:**

In the event of unsatisfactory performance or non-compliance with regard to the provisions of the Contract or omission or negligence or default or failure to comply with any of the conditions of contract, a breach of contract is said to have occurred by the Contractor of the terms and conditions of the Contract. In such cases, the Employer will issue notice to the contractor indicating such unsatisfactory performance or non-compliance by the Contractor, for compliance and if the Contractor fails to comply within a period of 15 days or within the time specified in the notice from the date of issue of notice, the Employer reserves the right to terminate the contract following the procedure as stated below:

(a) Consequent to the failure of the contractor to comply with the notice issued for non-performance / breach of contract, the Employer will issue a notice giving the contractor 7 days' time asking him to show cause as to why the contract should not be terminated.

(b) If no reply is received or if the reply received from the contractor within given time is found to be not satisfactory, Port will terminate the contract with immediate effect.

3.25.2 **Termination of Contract for Default:**

Without prejudice to any other remedy for breach of contract, by written notice of default sent to the Contractor, the Employer may terminate the contract in whole or in part, if:

(a) the Contractor has seriously or repeatedly breached the contract including:

(i) failure to complete the work within the time period(s) specified in the contract, or any extension thereof granted.

(ii) substantial suspension of work for more than the specified days without authority from the engineer and failure to proceed with the work within the specified days of receipt of notice from the engineer without any lawful excuse.

(iii) failure to obey instructions in relation to his progress or defective work, material or plant.

(iv) failure to proceed diligently with the work.

(v) breach of the prohibition against sub-contracting.

(vi) abandons the Contractor without reasonable cause.

(b) the contractor has committed fraud.

(c) the contractor fails to perform any other obligation under the contract within the period specified in the contract or any extension thereof granted.

In such event,

(d) the Performance Security and Security Deposit will be forfeited, for the loss or damages suffered by the Port due to the breach of the Contract committed by the Contractor. In addition, the Employer may also black list or suspend or debar the Contractor from participating in future tenders, as the Employer thinks deem fit.

(e) the Employer will take over the site and to complete the works himself or with another contractor (risk Purchase) and using the contractor's materials, equipment, temporary works. The Contractor shall remain liable to the Employer for any excess cost for such works and risk, if any

(f) No payment shall be released in favour of the Contractor till all the balance works are completed in all respects. After the balance works are completed, the Employer may consider payment for the items / goods that have been completed / supplied by the Contractor and accepted by the Employer after adjustment of any additional cost that have been incurred for completing the balance works and outstanding dues that due to the Contractor.

However, the contractor shall continue to fulfil the contract to the extent not terminated.

3.25.3 **Termination of Contract for Insolvency / Bankruptcy / Winding up, etc.:**

The Employer shall be entitled to cancel / terminate the Contract before expiry of contract period, if the Contractor is declared as insolvent or bankrupt or is unable to pay its debts or makes a composition with its creditors or if a trustee, liquidator, receiver or administrator is appointed to take over the assets or the business or the undertaking of the Contractor or if a substantial portion of the assets, property, revenues or business of the Contractor is confiscated or expropriated by the Central / State Government or any governmental agency or third party or if the law relating to the sick companies applies to the Contractor or the Contractor is dissolved or wound up or if an order shall be made or an effective resolution is passed for the winding up of the Contractor or the Contractor is reconstituted or the business or operations of the Contractor is closed either due to disputes inter-se amongst its stakeholders or otherwise. Termination shall be affected by giving a written notice to the contractor, without compensation to the contractor, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to Employer.

3.25.4 **Termination of Contract for Employer's Failure or Convenience / Foreclosure of the Contract by Port:**

After placement of the contract, there may be an unforeseen situation compelling Employer to cancel the contract. In such a case, the Contract may be foreclosed by the Employer by giving 30 (thirty) days advance notice to the Contractor during the subsistence of the contract period without assigning any reasons. In such event, the Performance Security Deposit and Security deposit will be refunded to the Contractor. Also, the Contractor may be suitably compensated on mutually agreed terms for terminating the contract based on value of works executed, value of any materials lying at site, etc., and deducting from it: (i) pending advances; (ii) other recoveries; and (iii) taxes as due.

3.25.5 **Discontinuance by the Contractor:**

If the contractor is not in a position to continue the contract, the Contractor should give 90 (ninety) days in writing, prior to the proposed date of discontinuance of the contract to the Port. In such case, the Performance Security and the Security Deposit shall be forfeited.

3.26 **RISK AND RESPONSIBILITY:**

3.26.1 **Indemnification:**

The Contractor shall defend, indemnify, and keep indemnified and hold the Employer, its officers and employees harmless from any and all claims, demands, injuries, damages, costs, charges, compensation, losses, expenses, proceedings or suits including attorney fees, arising from

a) Any breach or default in the performance of any obligation on the Contractor's part to be performed under the terms and conditions of this Contract or

b) any negligence of the Contractor, or any of its agents, or its employees or the person provided for the purpose of this Contractor.

c) non-fulfilment/ non-adherence/ non-compliance of any statutory provisions which is as per law the contractor is required to comply with.

The provisions of this section shall survive even after the expiration or termination of this Agreement.

3.26.2 **Contractor's Care of the Works:**

Care of Works From the commencement to the completion of works the Contractor shall take full responsibility for the care thereof and of all Temporary works and in case any damage, loss or injury shall happen to the works or to any part thereof or to any Temporary works from any cause whatsoever (save and except the Excepted Risks as defined in **clauses 3.26.3**) shall at his own cost repair and make good the same so that at completion, the works shall be in good order and condition and in conformity in every respect with the requirements of the Contract and the Engineer's instructions. In the event of any such damage, loss, injury happening from any of the Expected Risks the Contractor shall if and to the extent required by the Engineer repair and make good the same as aforesaid at the cost of the Employer.

3.26.3 **Excepted Risks:**

The "Excepted Risks" are war hostilities (whether war be declared or not) invasion act of foreign enemies, rebellion, revolution, insurrection or military or usurped power civil war or (otherwise than among the Contractor's own employee's) riot, commotion or disorder or use or occupation by the Employer of any portion of the works in respect of which a certificate of completion has been issued or a cause solely due to the Engineer's design of the Works or any such operation of the forces of nature as reasonable foresight and ability on the part of the Contractor could not foresee or responsibility provide against or any such eventuality which are beyond the control of the contractor and the Employer (all of which are herein collectively referred to as "The Excepted Risks").

3.26.4 **Patent Rights:**

The Contractor shall fully indemnify Employer against any action, claim or demand, costs or expenses arising from or incurred by reason of any infringement or alleged infringements of letters, patents, design, trademark or name, copyright, or other protected rights in respect of any Equipments /valves and others involves in Fire Fighting System, plant, work, materials or things, system or methods of using, fixing working or arrangement used for fixed or supplied by the Contractor in India, or elsewhere.

All payments, or otherwise, shall be deemed to be included by the Contractor in the Prices named in the tender and shall be paid by him to whom they may be payable.

In the event of any claim being made or action brought against Employer in respect of any such matter as aforesaid, the Contractor shall be immediately notified thereof and he shall, with the assistance if he so requires of Employer, but at the sole expense of the Contractor, conduct all negotiations for the settlement of the same or any litigation that may arise there from, provided that the conduct of such negotiations or litigations shall be conditional upon the Contractor giving to Employer such security as shall from time to time, reasonably required by Employer to recover the

ascertained or agreed amount as the case may be of any compensation, damages, expenses and cost which might be payable by Trustees in respect of or as result of any negotiation or litigation.

3.26.5 **Damage to Property:**

The Contractor shall be responsible for making good to the satisfaction of the Port, any loss or damage to any structures and properties within the Port premises if such loss or damage is due to fault and/or the negligence or wilful acts or omission of the Contractor, his employees, agents, representatives and/or manpower deployed by the contractor. The contractor shall make good the loss as assessed by the Port.

3.26.6 **Accident or Injury to Workmen:**

The Employer shall not be liable for any damages or compensation payable at law in respect or in consequence of an accident or injury to any workmen or any other person in the employment of the Contractor and the Contractor shall indemnify and keep indemnified the Port against all such damages and compensation and against such claims, demands, proceedings, costs, charges and expenses whatsoever in respect thereof or in relation thereto.

3.27 **INSURANCE:**

(a) Before commencing of execution of works the contractor shall insure against any damage, loss or injury which may occur to any property including that of the Employer or to any person including any employee of the Employer or arising out of the execution of the works in carrying out of the contract.

(b) Minimum Amount of Insurance: Such Insurance shall be effected with an insurer for at least the awarded value of the contract and the contractor shall produce to the Engineers representative the policy or policies of insurance and receipts for payment of the current premiums, which is mandatory before admitting any bills for payment by Employer.

3.28 **FORCE MAJEURE:**

(a) The term “force majeure” as employed herein shall mean including but not limited to, acts of God, war, revolt, riot, fire, flood and acts and regulations of the Government of India or any of its authorized agencies. In the event of either party being rendered unable by force majeure to perform any obligation required to be performed by them under this agreement, the relative obligation of the affected party by such force majeure shall be suspended for the period during which such cause lasts.

(b) Upon the occurrence of such cause and upon its termination the party alleging that it has been rendered unable as aforesaid thereby shall notify the other party immediately in writing of the alleged beginning and ending thereof giving full particulars and satisfactory proof and it cannot be claimed ex-post facto. The clause does not excuse a party’s non-performance entirely but only suspends it for the duration of the Force Majeure.

(c) The time for performance or relative obligations suspended by the force majeure shall be extended by the period for which the cause lasts or condoned by the Employer without any penalty. If the work is suspended by force majeure conditions lasting for more than 1(one) month, the Port shall have the option of cancelling the Contract in whole or in part thereof at its own discretion. Any situation of force majeure shall not be payable by the Port under any circumstances. For the period of force majeure, no amount shall be payable to the Contractor.

3.28.1 **DISPUTE RESOLUTION MECHANISM:**

3.28.2 Normally, there should not be any scope for dispute between the Employer and Contractor after entering into a mutually agreed valid contract. When dispute/ difference / disagreement / claims of any kind arise, both the Employer and contractor should first try to resolve it amicably by mutual consultation failing which it shall be referred to conciliation &settlement Committee established by the Employer.

3.28.3 **Amicable Settlement:**

If a dispute of any kind, whatsoever, arises between the Employer and contractor in connection with or arising out of the contract or the execution of the works, whether during the execution of the works or after their completion and whether before or after the repudiation or termination of the contract, including any difference, question or disagreement by either party with any action, in action, opinion, instruction, determination, certificate or valuation of the Engineer; the matter in dispute shall,

(a) refer to the Chief Mechanical Engineer, V.O. Chidambaranar Port Authority, Tuticorin.

(b) In case the dispute is not resolved, the same shall be referred to the committee headed by Deputy Chairman and other members to be nominated by Chairman, VOCPT.

(c) If the dispute remains unresolved, the same shall be referred to the Chairman, VOCPT, whose decision, in this regard, is final and binding on both the parties to the contract.

3.28.4 **Conciliation:**

In case any dispute is not resolved amicably as provided in **Clause 3.28.3**, the Contractor may agree to refer the matter to conciliation & settlement Committee established by the Employer. The procedure for reconciliation and settlement shall be followed as per the guidelines issued by the Ministry of Ports, Shipping and Waterways (Conciliation and Settlement Guidelines).

3.28.5 **Arbitration:**

If an amicable settlement is not forthcoming, the Dispute shall be referred to the Society for Affordable Redressal of Disputes - Ports (hereinafter called as SAROD - Ports). The dispute shall be dealt with in terms of Rules of SAROD - Ports. The detailed procedure for conducting Arbitration shall be governed by the Rules of SAROD - Ports and provisions of Arbitration & Conciliation Act, 1996, as amended from time to time. The Dispute shall be governed by Substantive Law of India.

3.29 **OTHER CONDITIONS:**

3.29.1 **Extras:**

Any extra expenses incurred in connection to the Works by the Employer in the performance of the Works owing to the neglect or omission on the part of the Contractor, in any of the case mentioned in this Contract shall be deducted from any sum due or which may thereafter become due to the Contract or from any amount lying with them or under their control or he may be called upon to pay the amount of such extra expense to such person or persons as the Employer may appoint to receive the same and in the event of the Contractor failing to make such payment, the said amount shall be recoverable from him in such manner as the Employer may determine.

3.29.2 **Use of Ground:**

On completion of Works or termination of his contract, he shall clear away all his tools, plant, rubbish, and other materials within a fortnight and handover and peaceful possession of the same to the Employer in a tidy and clean condition.

3.29.3 **Use of Completed Portions:**

(i) Whenever in the opinion of the Employer the work or any part thereof is in a condition suitable for use and in the best interest of the Employer requires the use, the Employer may take possession of the same. The Contractor shall, however, be not relieved of his pending obligations.

(ii) Prior to the date of final acceptance of the work by the Employer, all necessary repairs or renewals in work or part thereof so used on account of defective materials or workmanship or due to the operation's failure except normal wear & tear shall be at the expenses of the Contractor.

(iii) Such use shall neither relieve the Contractor or any of his responsibilities under the contract nor act as a waiver by the Employer of the conditions thereof. However, if, in the opinion of the Employer, the use of the work or the part thereof delays the completion of the remainder of the work, the Employer may grant such extensions of time, as it may consider reasonable.

(iv) The decision of the Employer in the matter shall be final. The Contractor shall not be entitled to claim any compensation on account of such use by the Employer.

3.29.4 **Employer's Lien:**

Employer shall have a lien on over all or any money that may become due and payable to the Contractor under this Contract or any other Contract or from any amount lying with them or under their control and in respect of any debt or sum that may become due and payable by the Employer to the Contractor either alone or jointly with another or other and either under this Contract or under any other Contracts or transaction of any nature whatsoever between the Employer and the Contractor.

3.29.5 **Bribes and Commission:**

Any bribe, commission, gift or advantage given, promised or offered by or on behalf of the Contractor or his or their behalf to any officer, servant, representative or agent of the Engineer or to any person on his behalf in relation to the obtaining or to be execution of this or any other contract with the Employer shall in addition to any criminal liability which he may incur subject the contractor to the cancellation of this and all other contracts with the Employer and also to the payment of any loss or damage resulting from any such cancellation, and the Employer shall be entitled to deduct the amounts so payable from any money otherwise due to the contractor under this or any other contract. Any question or disputes as to the commission of any offence under the present clause shall be settled by the Engineer in such a manner and on such evidence or information as he shall think fit and consider sufficient and his decision shall be final and conclusive.

SECTION IV

SPECIAL CONDITIONS OF CONTRACT

4.1 **Joint Venture:**

4.1.1 The invitation for bid is also open to Joint Venture (JV) / Consortium meeting the eligibility criteria defined in **Section – I (NIT)**.

4.1.2 Members / partners of Joint Venture (JV) / Consortium shall have an equity share of at least 26% (twenty-six per cent), provided that each such member shall, for a period of 2 (two) years from the date of commencement of the contract, hold equity share capital not less than 26% (twenty-six percent) of the subscribed and paid-up equity.

4.1.3 The maximum number of partners/ members in Joint Venture (JV) / Consortium shall be limited to three. All the partners shall be jointly and severally liable for the successful completion of the work.

4.1.4 The Joint Venture (JV) / Consortium should fulfil the criteria as specified in Section – I (NIT) collectively.

4.1.5 Where the bidder is a "Consortium", it shall be required to comply with the following requirements:

(a) Members of the Consortium shall nominate one member as the Lead Member who shall have an equity share holding of at least 26% of the paid up and subscribed equity. The nomination(s) shall be supported by a Power of Attorney, as per the format at **FORM-XIII**, signed by all the other members of the Consortium; Lead Partner / member is responsible for signing Agreement with VOCPA and shall be authorized to incur liabilities and receive instructions for and on behalf of all the partners of joint venture.

(b) The Tender / Bid shall contain the information required for each member of the Consortium.

(c) The Bidder shall include a brief description of the roles and responsibilities of individual members of the consortium, particularly with reference to technical and financial obligations.

(d) An individual (single entity) Bidder participating in the instant tender shall not be a member of any other Consortium participating in the instant tender; further, a member of a particular Consortium shall neither submit any tender individually nor shall be a member of any other Consortium participating in the instant tender.

(e) All members of the Consortium shall be liable and responsible jointly and severally for all obligations of VOCPA in relation to the contract throughout the contract period.

4.2 Successful bidder and Contractor have same meaning for all purposes.

4.3 **Commencement of Work: (Superseding Clause No.3.16.1 of GCC)**

The work shall be commenced within 15days of issuance of Letter of Acceptance / Work Order. If no notification received from the Contractor regarding commencement date, then 16th date from issuance of Letter of Acceptance / Work Order shall be treated as date of commencement. The Contractor shall proceed with the Works with due expedition and without delay. Commencement of work is subject to compliance all the conditions precedent as mentioned at **Clause No. 3.16.1 and 3.17 of GCC (Section-III).** The stipulated deadlines mentioned at **Clause No. 3.16.4 of ITB (Section-III)** would have to be strictly adhered to unless otherwise extended by Employer.

4.4 **Time of completion/period of contract (May be read in conjunction with Clause No.3.16.2 of GCC)**

Delivery & Commissioning of Machines

The entire fixed fire fighting system as per the scope shall be commissioned within 270 days from the date of Commencement of Work.

4.5 **Time Schedule/ Bar Chart:**

The Contractor shall submit the bar chart in accordance with **Clause No.3.16.3 of GCC for delivery of Main Engine and Fire Pumps.**

4.6 **PAYMENT TERMS (Superseding clause 3.22.4)**

a) For Supply of equipment/materials/fittings for Mechanical Works, Machinery Works, Instrumentation Works, Electrical Works and Schedule of Other Items
60% of the Quoted rates (as stated in BOQ) on respective supplies on pro-rata basis will be paid on supply of equipment/materials/fittings in good condition at site and on production of relevant test certificates & documents and certificate issued by Third Party Inspection Agency appointed by Employer.
20% of Quoted rates (as stated in BOQ) on respective supplies on pro-rata basis will be paid on erection of the equipment/materials at site and on production of certificates from Third Party Inspection Agency appointed by Employer.
Balance 20% will be paid after successful commissioning of the system and on issue of Taking Over Certificate in respect of fire-fighting facilities at Oil Jetty.

4.7 **Inspection, Test & Acceptance: (Superseding Clause No. 3.15.3 and 3.15.4 of GCC)**

The Employer may appoint a Third Party Inspection Agency , as detailed at SCC, at the cost of the Employer, for stage-wise technical inspection and certification of materials & workmanship, including painting, erection, commissioning, etc.[in connection with the contract job, in part or as a whole]. In that case The relevant Certificates shall be produced by the Third Party Inspection Agency to the Engineer

The stage-wise technical inspection will be carried out by the representative of the Engineer [or Third Party Inspection Agency] based on the approved Quality Assurance Plan (QAP) & Field Quality Assurance Plan (FQAP) [considering the Technical Specification of the bidding documents].

The Contractor shall have to submit a Quality Assurance Plan (QAP) and a Field Quality Assurance Plan (FQAP), based on the Technical Specification and other terms & conditions stipulated in the bidding documents. The QAP & FQAP shall be approved by the Engineer of the Contract.

4.8 Hot work during maintenance period is subject to adhering to safety measures prescribed by Fire Section/ Safety office Department.

4.9 In case of Vessel berthed at Oi jetty and any hindrance to do hot work same shall be recorded as beyond the control of the contractor and if any extension of time period is required, same shall be granted without any penalty.

4.10 Contractor's Office: The buildings should not be used for residential purposes. The contractors shall at their own cost and expense shall arrange for watch and ward security at the above location.

4.11 No cooking shall be permitted inside the work spot. No alcoholic drinks will be permitted inside the work spot and no personnel with alcoholic influence will be permitted to enter into the work spot. The contractor shall ensure that the personnel employed for this work do not smoke inside the Port area.

4.12 Statutory requirement as per Labour Department and Dock Safety Inspectorate as per regulation should be adhered by the Contractor.

4.13 All safety precautions shall be strictly adhered to.

4.14 The contractor shall allow his labourers for the government notified national and local festival holiday and such closed holidays for the Port declared by the employer and also have due regard to local religious and social customs in respect of labourers employed by him.

4.15 The Contractor shall be responsible for any accident, damage or injury caused to any of his employees during the execution of this work and shall hold the VOCPA blameless in respect thereof and also in respect of any reason whatsoever.

4.16 The Contractor shall be solely responsible for reporting to the Port Authority and Police Department immediately of any serious or fatal accidents inside the Harbour premises to any of his employees/workmen engaged by him.

4.17 The contractor shall deploy disciplined work force. If any the person (s) noticed for malpractice/ disobedience / noncompliance of work, the contractor is responsible for the misbehaviour and the concerned will not be entertained inside VOCPA further. The damage / loss caused shall be rectified by the contractor.

4.18 The staff provided by the contractor are in case found to be indulging in any undesirable or unfair activities in the premises of the office, the contractor will solely be responsible for all the consequences apart from the liberty of office to lodge complaints before appropriate authorities.

4.19 The contractor shall furnish contact telephone number, Mobile number & contact address of representative of contractor.

4.20 Unauthorized person belonging to the contractor are not allowed to enter port premises.

4.21 Accidents: Any accidents including death caused to the contractor or workers during course of execution of work or elsewhere will be taken care by the contractor(s) themselves and Port is no way responsible for the same. The port is not responsible for any loss of life or damage or theft of materials. All the materials should be kept in the safe custody of the Contractor.

4.22 The contractor shall supply the PPEs (safety helmet, Gloves, shoes, reflecting jackets, diversion boards, etc) to the workers for carrying out maintenance works in safe manner.

4.23 The contractor shall furnish the valid labour license under contract labour (Regulation and abolition) Act 1970 within 30 days from the date of work order and comply with all necessary required provisions of the above act as amended and rules /orders framed there under from time to time and shall hold valid license throughout the contract period.

4.24 The contractor shall be responsible for disputes that may arise between the contractor and the manpower contractor and its amicable solutions.

4.25 **Engineer-in-Charge (EIC):**

The concerned Executive Engineer of the Division, executing the work, shall be Engineer-in-Charge (EIC) for the work.

SECTION-V
TECHNICAL SPECIFICATION

5.1 UL / FM Approved Water-cum-Foam Tower Monitor System (2000 GPM, 20 m Tower)

1. General

This specification covers the **design, supply, erection, testing and commissioning** of a **20 m high tower-mounted UL/FM approved water-cum-foam monitor system** of capacity **2000 GPM (7570 LPM ≈ 454.23 m³/hr)**.

The system shall comply with **OISD-STD-156**, **IS 15811:2008**, and be of **UL-listed / FM-approved make** for firefighting service. The pipe line shall supply in line with existing pipelines and its standard as per the site requirements.

2. Standards & Approvals

- **UL (Underwriters Laboratories) Listed** and/or **FM (Factory Mutual) Approved** monitors, valves, and accessories.
- **OISD-STD-156** – Fire Protection Facilities for Petroleum Installations.
- **IS 15811:2008** – Long-range water-cum-foam monitors.
- **IS 875 (Part-3)** – Wind loads for structural design.
- **IS 800 / IS 801** – Structural steel design.
- **IS 1477 / IS 2932** – Surface preparation and painting.
- **NFPA 11 & NFPA 20** – Foam systems and water supply (as reference).
- Local statutory requirements.

3. Monitor Specifications

- **Type**: Water-cum-Foam Tower Monitor.
- **Capacity**: 2000 GPM (7570 LPM).
- **Operating Pressure**: ~7 kg/cm² (100 psi typical).
- **Test Pressure**: 1.5 × working pressure.
- **Approvals**: UL Listed / FM Approved.
- **Performance**:
  - Horizontal traverse: 360° continuous.
  - Vertical elevation: –15° to +90° (minimum).
  - Throw: As per manufacturer's UL/FM rating (≥60 m for water jet).
  - Stream types: Jet, Fog/Spray, Foam induction.
- **Nozzle**: Self-inducting, aspirating/non-aspirating type.
- **Material of Construction**:
  - Body / Barrel: Carbon Steel (epoxy coated) or Stainless Steel.
  - Nozzle: Hard anodized Aluminium Alloy / Bronze / Stainless Steel.
  - Swivel joints: Stainless Steel with sealed bearings.
- **Controls**: Manual handwheel / gear drive; provision for remote actuation if specified.
- **Drain Valve**: Provided for complete draining.

4. Tower Structure

- **Height**: 20 m from finished foundation level.
- **Material**: Hot-dip galvanized structural steel.
- **Design**: IS 875 (wind load), IS 1893 (seismic load).
- **Access**: Ladder with safety cage, platform with handrails & toe boards.

- **Foundation**: RCC foundation designed to soil conditions; anchor bolts and grouting included.
- **Lightning & Earthing**: As per OISD and IS requirements.

5. Piping & Fasteners

- **Inlet Piping**: Sized to ensure rated flow with minimal pressure drop.
- **Valves**: UL/FM approved gate valves or butterfly valves for isolation.
- **Flanges**: ANSI / IS standards.
- **Fasteners**: Stainless Steel (SS 304/316), IS approved.

6. Surface Protection

- **Tower Members**: Hot-dip galvanized (min. 85 µm coating).
- **Painting**: Epoxy zinc-rich primer + polyurethane finish (fire red).
- **Monitor Body**: Manufacturer's standard corrosion-resistant finish.

7. Inspection & Testing

- **Material Certificates**: For all steel, fasteners, and monitor parts.
- **UL/FM Certification**: Original certificates to be provided.
- **Hydrostatic Test**: 1.5 × working pressure, no leakage.
- **Performance Test**: Flow, throw, nozzle pattern as per UL/FM test data.
- **Tower Check**: Verticality, stability, bolt torque.
- **Painting Check**: DFT (Dry Film Thickness) measurement.

8. Documentation

- GA drawings (tower, monitor, foundation).
- UL/FM approval certificates.
- Test reports (factory + site).
- Operation & Maintenance Manual.
- Recommended spares list.

9. Commissioning

- Installation of tower, monitor, piping, valves.
- Pressure & flow testing.
- Functional demonstration with water and foam.
- Training to site personnel.
- Submission of completion & commissioning report.

5.2 Supply, Erection, Testing & Commissioning of Jumbo Water Curtain Nozzle (6000 LPM, 360 m³/hr)

1. General

This specification covers the **supply, erection, testing and commissioning** of **Jumbo Water Curtain Nozzle(s)** of capacity **6000 LPM (360 m³/hr)**, including all accessories, fasteners, and supports, suitable for installation at site as per **OISD-STD-156** and relevant IS standards.

The system shall be designed to provide an effective **water curtain** for exposure protection and radiant heat shielding during fire scenarios.

2. Applicable Standards

- **OISD-STD-156** – Fire Protection Facilities for Petroleum Installations.
- **IS 15325:2003** – Water Spray Nozzles for Fire Protection.
- **IS 636** – Fire Hose delivery connections (if applicable).
- **IS 1364 / IS 1367** – Bolts, nuts, and fasteners.
- **IS 1477 / IS 2932** – Painting & surface protection.
- Other relevant IS / international standards for fire protection equipment.

3. Technical Requirements

- **Type**: Jumbo Water Curtain Nozzle.
- **Capacity**: 6000 LPM (360 m^3/hr) at rated pressure.
- **Operating Pressure**: Typically 7–10 kg/cm^2 (as per hydraulic design).
- **Test Pressure**: 1.5 × working pressure.
- **Spray Pattern**: Wide-angle flat curtain spray, effective for heat/radiant flame shielding.
- **Discharge Angle**: Minimum 120° (adjustable as per site requirement).
- **Throw / Coverage**: As per site layout and design.
- **Material of Construction**:
  - Nozzle Body: Stainless Steel / Gunmetal / Aluminium Bronze (as per site and water quality).
  - Internal Parts: Corrosion-resistant alloys.
- **Mounting**: Fixed / Flanged connection with suitable supports.
- **Fasteners**: IS-approved Stainless Steel bolts, nuts, washers.
- **Flanges**: IS / ANSI standard compatible with existing firefighting lines.

4. Installation & Erection

- Fixing of nozzle(s) on structural supports or pipelines at designated positions.
- Use of SS fasteners, proper gaskets, and flanged connections.
- Alignment and orientation of nozzles to achieve effective water curtain coverage.
- Provision of isolation valves (if required) for maintenance.

5. Surface Protection

- Nozzle exterior: Corrosion-resistant finish (electropolished / epoxy coated).
- Piping & supports: Hot-dip galvanized or epoxy painted (red as per IS 5 – Fire Red shade).

6. Inspection & Testing

- **Material Test Certificates** for nozzle body and fasteners.
- **Hydrostatic Test**: 1.5 × design pressure without leakage.
- **Performance Test**: Verification of discharge rate, spray pattern, coverage, and curtain density at site.
- **Alignment Check**: Proper orientation to ensure shielding as per design.

7. Documentation

- GA drawings and installation details.
- Test & inspection certificates.
- Operation and maintenance manual.
- Recommended spares list.

8. Commissioning

- Flushing and cleaning of pipeline before installation.

- Mounting of nozzles and tightening with SS fasteners.
- Pressure & flow testing with water supply.
- Demonstration of spray curtain effectiveness.
- Handover with commissioning report and operator training.

5.3 Supply, Erection, Testing & Commissioning of Jumbo Water Curtain Nozzle (6000 LPM, 360 m³/hr)

1. General

This specification covers the **supply, erection, testing and commissioning** of **Jumbo Water Curtain Nozzle(s)** of capacity **6000 LPM (360 m³/hr)**, including all accessories, fasteners, and supports, suitable for installation at site as per **OISD-STD-156** and relevant IS standards.
The system shall be designed to provide an effective **water curtain** for exposure protection and radiant heat shielding during fire scenarios.

2. Applicable Standards

- **OISD-STD-156** – Fire Protection Facilities for Petroleum Installations.
- **IS 15325:2003** – Water Spray Nozzles for Fire Protection.
- **IS 636** – Fire Hose delivery connections (if applicable).
- **IS 1364 / IS 1367** – Bolts, nuts, and fasteners.
- **IS 1477 / IS 2932** – Painting & surface protection.
- Other relevant IS / international standards for fire protection equipment.

3. Technical Requirements

- **Type**: Jumbo Water Curtain Nozzle.
- **Capacity**: 6000 LPM (360 m³/hr) at rated pressure.
- **Operating Pressure**: Typically 7–10 kg/cm² (as per hydraulic design).
- **Test Pressure**: 1.5 × working pressure.
- **Spray Pattern**: Wide-angle flat curtain spray, effective for heat/radiant flame shielding.
- **Discharge Angle**: Minimum 120° (adjustable as per site requirement).
- **Throw / Coverage**: As per site layout and design.
- **Material of Construction**:
  - Nozzle Body: Stainless Steel / Gunmetal / Aluminium Bronze (as per site and water quality).
  - Internal Parts: Corrosion-resistant alloys.
- **Mounting**: Fixed / Flanged connection with suitable supports.
- **Fasteners**: IS-approved Stainless Steel bolts, nuts, washers.
- **Flanges**: IS / ANSI standard compatible with existing firefighting lines.

4. Installation & Erection

- Fixing of nozzle(s) on structural supports or pipelines at designated positions.
- Use of SS fasteners, proper gaskets, and flanged connections.
- Alignment and orientation of nozzles to achieve effective water curtain coverage.
- Provision of isolation valves (if required) for maintenance.

5. Surface Protection

- Nozzle exterior: Corrosion-resistant finish (electropolished / epoxy coated).
- Piping & supports: Hot-dip galvanized or epoxy painted (red as per IS 5 – Fire Red shade).

6. Inspection & Testing
   - **Material Test Certificates** for nozzle body and fasteners.
   - **Hydrostatic Test**: 1.5 × design pressure without leakage.
   - **Performance Test**: Verification of discharge rate, spray pattern, coverage, and curtain density at site.
   - **Alignment Check**: Proper orientation to ensure shielding as per design.

7. Documentation
   - GA drawings and installation details.
   - Test & inspection certificates.
   - Operation and maintenance manual.
   - Recommended spares list.

8. Commissioning
   - Flushing and cleaning of pipeline before installation.
   - Mounting of nozzles and tightening with SS fasteners.
   - Pressure & flow testing with water supply.
   - Demonstration of spray curtain effectiveness.
   - Handover with commissioning report and operator training.

5.4 Supply, Erection, Testing & Commissioning of 4-inch Double Hydrants (40 m³/hr)

1. General

This specification covers the **supply, erection, testing and commissioning** of **4-inch Double Hydrants** having a discharge capacity of **40 m³/hr** each, including valves, outlet couplings, fasteners, painting and accessories, suitable for fire water distribution networks in compliance with **OISD-STD-156** and relevant IS standards.

2. Applicable Standards
   - **OISD-STD-156** – Fire Protection Facilities for Petroleum Installations.
   - **IS 5290:2019** – Landing Valves (Hydrants) for firefighting.
   - **IS 903** – Fire Hose Delivery Couplings, Branch Pipe, and Nozzles.
   - **IS 636** – Fire Hose.
   - **IS 1364 / IS 1367** – Bolts, nuts, fasteners.
   - **IS 1477 / IS 2932** – Surface preparation and painting.
   - **NFPA 24** – Standard for Private Fire Service Mains (for reference, if required).

3. Technical Requirements
   - **Type**: Double-headed pillar hydrant, standpost type.
   - **Size**: 4-inch (100 mm NB) inlet with double outlets.
   - **Capacity**: Minimum 40 m³/hr (≈ 667 LPM) per hydrant at rated pressure.
   - **Working Pressure**: 7–10 kg/cm².
   - **Test Pressure**: 1.5 × working pressure.
   - **Outlets**: Two numbers, 63 mm dia instantaneous female coupling (as per IS 903).
   - **Valves**: Oblique type landing valves conforming to IS 5290.
   - **Material of Construction**:
     - Hydrant Body: Cast Iron / Ductile Iron / Carbon Steel (IS standard).
     - Valve Seat: Gunmetal / Stainless Steel.
     - Stem & Spindle: Stainless Steel.

- Couplings: Gunmetal / Aluminium Alloy.
- **Accessories**: Blank caps with chains for both outlets.
- **Fasteners**: Stainless Steel bolts, nuts, washers (IS approved).
- **Finish**: Fire Red (IS 5 Shade No. 536).

4. Installation & Erection
   - Hydrant standpost to be installed on **RCC chamber with cover**, complete with suitable flanged connection to fire water line.
   - Proper alignment and tightening using SS fasteners.
   - Isolation valve (sluice valve / butterfly valve, PN 1.6) provided upstream of each hydrant for maintenance.
   - Chamber to be designed for site load conditions (vehicular traffic, if applicable).

5. Surface Protection
   - Hydrant body: Factory-applied epoxy primer + two coats polyurethane (Fire Red).
   - Underground piping & supports: Coal tar epoxy or equivalent anti-corrosive paint.

6. Inspection & Testing
   - **Material Certificates**: For hydrant body, valves, and couplings.
   - **Hydrostatic Pressure Test**: At 1.5 × design pressure.
   - **Flow Test**: Verify discharge capacity (40 m^3/hr) at rated pressure.
   - **Operational Test**: Opening/closing of valves, leakage checks.
   - **Painting Check**: DFT measurement for corrosion protection.

7. Documentation
   - GA drawings and installation layout.
   - Test & inspection certificates.
   - O&M manual.
   - Spare parts list.

8. Commissioning
   - Flushing of line before installation.
   - Mounting of hydrant with SS fasteners.
   - Pressure & discharge testing in presence of site engineer.
   - Demonstration of operation with hoses & branch pipes.
   - Handover with commissioning report.

5.5 Supply, Erection, Testing & Commissioning of 4-inch International Shore Connection

1. General

This specification covers the **supply, erection, testing and commissioning** of a **4-inch International Shore Connection (ISC)** made of **BMC (Bulk Moulding Compound) glass fibre reinforced polyester**, including gaskets, fasteners, and accessories.

The ISC shall comply with **OISD-STD-156** and relevant IMO/IS requirements, and shall be suitable for connecting shore fire water supply to the ship/jetty fire main during emergencies.

2. Applicable Standards

- **OISD-STD-156** – Fire Protection Facilities for Petroleum Installations.
- **IMO SOLAS Reg. II-2/19.3.1.2** – International Shore Connection requirements.
- **IS 3443** – Fire hydrant standposts (reference for hydrant connection dimensions).
- **IS 2712** – CAF (Compressed Asbestos Fibre) gaskets.

- **IS 1364 / IS 1367** – Stainless steel fasteners.
- **IS 1477 / IS 2932** – Surface protection and painting.

3. Technical Requirements

- **Size**: 4-inch (100 mm NB).
- **Type**: International Shore Connection flange, portable type.
- **Material**: BMC (Bulk Moulding Compound) glass fibre polyester, UV and corrosion resistant.
- **Flange Dimensions** (as per IMO/OISD):
  - Outside Diameter: 178 mm
  - Inner Diameter: 64 mm
  - Bolt Circle Diameter: 132 mm
  - Bolt Hole: 4 × 19 mm, equidistant
  - Flange Thickness: ~14.5 mm
- **Working Pressure**: Minimum 10 kg/cm².
- **Test Pressure**: 1.5 × working pressure.
- **Accessories**:
  - Suitable CAF gaskets (IS 2712).
  - Stainless Steel bolts, nuts, washers (IS approved).
  - Carrying handle or mounting arrangement.
- **Finish**: Smooth moulded finish, corrosion resistant, colour: Fire Red.

4. Erection & Installation

- ISC to be installed/kept ready at jetty/shore hydrant point as per OISD-156 layout requirements.
- Proper mounting with SS fasteners, ensuring interchangeability with ship's hydrant flange.
- Easily accessible and ready for emergency use.

5. Inspection & Testing

- **Hydrostatic Test**: Flange assembly tested at 1.5 × design pressure, no leakage.
- **Dimensional Check**: As per IMO flange dimensions.
- **Material Certificate**: For BMC glass fibre polyester body.
- **Fasteners Test Certificate**: For SS bolts, nuts, washers.

6. Documentation

- GA drawing and dimensional compliance certificate.
- Hydrotest & inspection reports.
- Material and fastener certificates.
- Operation & maintenance manual.

7. Commissioning

- Final installation check with shore pipeline.
- Demonstration of connection with fire water line.
- Functional trial with hydrant/shore pump.
- Handover with test reports and commissioning certificate.

5.6 Supply, Erection, Testing & Commissioning of Fixed Flow Spray System

1. General

This specification covers the **design, supply, erection, testing and commissioning** of a **fixed water spray system** for fire protection of the **jetty manifold area (200 m²)**, in compliance with **OISD-STD-156** and relevant IS codes.

2. Applicable Standards

- **OISD-STD-156** – Fire Protection Facilities for Petroleum Installations.
- **IS 15105** – Water spray system for fire protection – Code of practice.
- **IS 1239 / IS 3589 / IS 4923** – Steel pipes for water lines.
- **IS 1536 / IS 1537** – Cast iron/ductile iron fittings.
- **IS 2712** – CAF (Compressed Asbestos Fibre) gaskets.
- **IS 5290** – Hydrants and associated valves.
- **IS 1364 / IS 1367** – Stainless steel fasteners.
- **IS 1477 / IS 2932** – Painting and surface protection.

3. Design Basis

- **Protected Area**: Jetty Manifold = 200 m² (25 m × 8 m).
- **Application Density**: 10.2 LPM/m² (as per OISD-156).
- **Total Flow Requirement**:
  - 200 m² × 10.2 LPM/m² = **2040 LPM**
  - ≈ **122 m³/hr**.
- **System Type**: Fixed water spray system with automatic/manual actuation.
- **Working Pressure**: 7–10 kg/cm².
- **Test Pressure**: 1.5 × working pressure.

4. System Components

(i) Spray Nozzles

- Fixed type, UL/FM approved.
- Spray angle and K-factor selected to ensure uniform coverage.
- Material: SS 316 / Brass with corrosion-resistant finish.

(ii) Piping Network

- Carbon steel seamless pipes, IS 1239 / IS 3589 heavy duty.
- Flanged or grooved couplings with SS bolts/nuts.
- Proper supports, clamps, and corrosion protection.

(iii) Valves & Accessories

- Isolation valves, strainer, NRV, pressure gauge.
- Flow control valve sized for 122 m³/hr.
- Test line and drain arrangement.

(iv) Fasteners & Gaskets

- IS-approved stainless steel bolts, nuts, washers.
- CAF gaskets (IS 2712).

(v) Surface Protection

- Internal cleaning, primer + two coats PU finish paint (Fire Red, IS 5 Shade 536).

5. Erection & Installation

- Fabrication and installation of piping as per approved drawings.
- Correct orientation of spray nozzles for uniform spray coverage over manifold area.

- Proper spacing of nozzles to avoid dry spots.
- Supports and clamps to withstand vibration, wind and environmental conditions.

6. Testing & Commissioning

- **Hydrostatic Test**: 1.5 × design pressure for 2 hours – no leakage.
- **Performance Test**:
  - Flow test to confirm discharge of **2040 LPM (122 m³/hr)**.
  - Verify spray density and coverage over 200 m² area.
- **Functional Test**: Operation through hydrant/fire water pump system.

7. Documentation

- Piping layout and nozzle arrangement drawing.
- Material test certificates for pipes, valves, and nozzles.
- Test reports (hydrostatic and functional).
- Final commissioning & handover report.

5.7 Supply, Erection, Testing & Commissioning of Diesel Driven Vertical Turbine Pump (UL/FM Approved)

1. General

This specification covers the **supply, erection, testing and commissioning** of a **diesel engine driven vertical turbine pump set** for fire water service, in line with **OISD-STD-156** and UL/FM approvals. The scope includes pump, engine, gearbox, coupling, coupling guard, exhaust system, controls, accessories, wiring, and fasteners.

2. Applicable Standards

- **OISD-STD-156** – Fire Protection Facilities for Petroleum Installations.
- **NFPA 20** – Standard for the Installation of Stationary Pumps for Fire Protection.
- **UL/FM** – Approved pump and engine assemblies.
- **IS 325** – Electric motors (for reference).
- **IS 12615** – Energy efficient motors (reference if jockey pump needed).
- **IS 2712** – CAF gaskets.
- **IS 1364 / IS 1367** – Stainless steel fasteners.
- **IS 1477 / IS 2932** – Painting and surface protection.

3. Technical Requirements

Pump

- **Type**: Vertical Turbine Pump, UL/FM Approved.
- **Capacity**: 750 m³/hr (12,500 LPM).
- **Head**: As per fire water system design (typically 100–120 m).
- **Speed**: Suitable for duty point with diesel engine drive.
- **Materials**:
  - Bowl & Impellers: Bronze / Stainless Steel.
  - Column Pipe: Carbon Steel with line shaft bearings.
  - Shaft: Stainless Steel.
  - Discharge Head: Cast Steel / Ductile Iron.

Diesel Engine

- UL/FM approved diesel engine sized to drive the pump at rated duty.

- **Accessories**:
  - Starting batteries with charger.
  - Control panel with gauges, shutdowns & alarms.
  - Radiator or heat exchanger cooling system.
  - Flexible coupling with guard.
  - Exhaust piping with hot insulation and rain cap.

Gearbox & Coupling

- Vertical right-angle gearbox UL/FM approved.
- Flexible coupling with coupling guard.

Instrumentation & Accessories

- Pressure gauge at pump discharge.
- Pressure switch for automatic operation.
- Control panel for starting/stopping and engine monitoring.
- Battery rack and charger with wiring.

Fasteners & Gaskets

- All **bolts, nuts, washers** – Stainless Steel, IS-approved.
- All flange joints with **CAF gaskets (IS 2712)**.

4. Erection & Installation

- Foundation preparation, alignment of pump and driver.
- Grouting of pump base frame.
- Installation of suction column, bowl assembly, shaft, and discharge head.
- Coupling alignment with guard fitting.
- Installation of exhaust piping with insulation.
- Electrical cabling for charger, instruments, and panel wiring.
- Fixing of pressure gauge, pressure switch, and control instruments.

5. Testing & Commissioning

- **Hydrostatic test** of pump casing at 1.5 × design pressure.
- **Performance test** of pump at duty point (750 m^3/hr @ rated head).
- **Engine test** for smooth running, auto start from pressure switch, shutdown checks.
- **Full load test** – continuous running at duty point for 1–2 hours.
- **Control panel test** – alarms, battery charging, auto start/stop.
- **System integration test** – pump start on low pressure from fire water ring main.

6. Surface Protection

- All exposed metallic surfaces to be epoxy primed and finished with polyurethane fire red paint (IS 5 Shade 536).
- Exhaust piping insulated with aluminium-clad hot insulation.

7. Documentation

- UL/FM approval certificates for pump and diesel engine.
- Test certificates (factory test & site performance test).
- Material test certificates for shaft, impellers, bearings, fasteners.
- O&M manuals, as-built drawings, and commissioning reports.

5.8 Supply, Installation, Testing & Commissioning of UL Listed Inline Balance Pressure Foam Proportioner (IBPFP)

1. General

This specification covers the **supply, installation, testing and commissioning** of a **UL Listed Inline Balance Pressure Foam Proportioner (IBPFP)** for use in fire water–foam systems. The proportioner shall be wafer type or flanged end, suitable for connection to **ANSI B16.5, 150# flanges**, and in compliance with **OISD-156** and **NFPA 11** standards.

2. Applicable Standards

- **OISD-STD-156** – Fire Protection Facilities for Petroleum Installations.
- **NFPA 11** – Standard for Low-, Medium-, and High-Expansion Foam.
- **ANSI B16.5, 150#** – Pipe flanges and flanged fittings.
- **UL 162** – Foam equipment approval.
- **FM Global Approval Guide** (if applicable).
- **IS 1239 / IS 3589** – Steel pipes (reference).
- **IS 1364 / IS 1367** – SS bolts, nuts, washers.

3. Technical Requirements

- **Type**: Inline Balance Pressure Foam Proportioner (wafer type / flanged end).
- **Size**: 3" (DN 80).
- **Design**: UL Listed, factory-tested.
- **Flow Range**: Suitable for **30% to 120% of rated flow** with accurate proportioning.
- **Foam Induction Rate**: 3% or 6% (as per system design).
- **End Connections**: ANSI B16.5, 150# RF flanges (compatible with fire water system).
- **Body Material**: Carbon Steel / Stainless Steel (Epoxy coated).
- **Internals**: Stainless Steel / Brass / compatible corrosion-resistant material.
- **Accuracy**: ±0.25% induction over entire operating range.
- **Working Pressure**: 7–10 kg/cm².
- **Test Pressure**: 1.5 × working pressure.
- **Accessories**:
  - Pressure balancing line with isolation valves.
  - Strainer and NRV (if required).
  - Pressure gauge tappings.
  - Gaskets (CAF / spiral wound).
  - IS-approved stainless steel bolts & nuts.

4. Installation & Erection

- Mount proportioner in the foam line between fire water supply and foam chamber.
- Ensure correct flow direction as per manufacturer's arrow mark.
- Connect balancing line between foam concentrate tank and proportioner.
- Use SS bolts, nuts, and IS 2712 gaskets for all joints.
- Provide proper support for piping to avoid strain on proportioner body.

5. Testing & Commissioning

1. **Hydrostatic Test**: All flange joints tested at 1.5 × working pressure.
2. **Functional Test**:
   - Flow water through proportioner and verify correct foam induction.
   - Test induction rate (3% / 6%) at multiple flow rates (50%, 100%, 150%).

- Record readings to confirm compliance with UL/NFPA standards.

3. **System Integration Test**: Verify correct operation with foam bladder tank / foam pump and discharge devices (monitors/sprinklers).

6. Surface Protection

- Carbon steel body to be epoxy powder coated, minimum 200 microns.
- All SS fasteners polished and protected with anti-seize compound.

7. Documentation

- UL listing certificate for proportioner.
- Manufacturer's test certificate for accuracy of induction.
- Installation & maintenance manual.
- Hydrostatic and functional test reports.
- As-built drawing showing piping connection details.

5.9 Supply, Erection, Testing & Commissioning of Forged Carbon Steel Valves

1. General

This specification covers the **supply, erection, testing and commissioning** of **Carbon Steel Forged Valves** (Gate Valves, Ball Valves, Non-Return Valves, and Deluge Valves) of various sizes for use in fire water and foam systems. The valves shall have **glass coating for corrosion protection and stainless steel internals**.

All valves shall conform to **OISD-STD-156** and applicable international standards.

2. Applicable Standards

- **OISD-STD-156** – Fire Protection Facilities for Petroleum Installations.
- **API 600 / API 602** – Steel Gate Valves.
- **API 6D / BS 5351** – Ball Valves.
- **API 594 / BS 1868** – Check / Non-return Valves.
- **UL/FM Approved** – Deluge Valves for fire protection service.
- **IS 778 / IS 9890** – Valves (reference for design/testing).
- **IS 1364 / IS 1367** – Stainless Steel Fasteners.
- **IS 2712** – CAF Gaskets.
- **IS 1477 / IS 2932** – Painting and surface protection.

3. Technical Requirements

General

- **Body Material**: Forged Carbon Steel (ASTM A105 or equivalent).
- **Coating**: Internal glass lining / fusion-bonded epoxy coating (minimum 200 microns).
- **Internals**: Stainless Steel (SS 304 / SS 316) for disc, seat, and stem.
- **End Connection**: Flanged, ANSI B16.5, 150# / 300# as per design.
- **Fasteners**: Stainless Steel, IS-approved.
- **Gaskets**: CAF (IS 2712) / Spiral Wound SS with graphite.
- **Pressure Rating**: Suitable for working pressure 7–10 kg/cm².
- **Test Pressure**: 1.5 × working pressure (hydrostatic).

Valve Types

1. **Gate Valves** – Rising stem, outside screw & yoke, bolted bonnet, bi-directional shutoff.
2. **Ball Valves** – Full bore, fire-safe design, anti-static, blowout-proof stem.
3. **Non-Return Valves (NRV)** – Swing type, wafer or flanged, non-slam design.

4. **Deluge Valves** – UL/FM approved, hydraulically operated, epoxy/glass coated inside, with trim, pressure gauge, strainer, and manual override.

4. Erection & Installation
- Valves to be installed at designated fire water/foam system points as per approved layout.
- Proper alignment and flange bolting with SS fasteners.
- All joints with CAF/spiral wound gaskets.
- Supports provided for heavy valves to avoid load on pipeline.

5. Testing & Commissioning
- **Hydrostatic Testing**: All valves pressure-tested at 1.5 × rated pressure.
- **Functional Testing**:
  - Gate Valves – Full open/close operation.
  - Ball Valves – Leak tightness in both directions.
  - NRVs – Check for correct seating and non-slam operation.
  - Deluge Valves – Operational test with water flow, pressure drop, and trim operation.
- **System Integration Test**: Valves operated under live fire water pressure to ensure reliability.

6. Surface Protection
- External surface to be epoxy primed and polyurethane coated (Fire Red – IS 5 Shade 536).
- Glass coating inside to prevent corrosion and scaling.

7. Documentation
- Manufacturer's test certificates for each valve.
- UL/FM approval certificates for deluge valves.
- Hydrostatic and functional test reports.
- O&M manual and installation instructions.
- Final commissioning report with site test results

5.10 Supply, Installation, Testing & Commissioning of 2" Remote Operated Solenoid Valve

1. General

This specification covers the **supply, installation, testing and commissioning** of a **2-inch remote-operated solenoid valve** for fire water/foam system applications. The valve shall be suitable for automatic actuation through electrical signal, with manual override facility, and in compliance with **OISD-156**.

2. Applicable Standards
- **OISD-STD-156** – Fire Protection Facilities for Petroleum Installations.
- **NFPA 20 / NFPA 11** – Fire pump and foam system design standards.
- **UL 429** – Standard for electrically operated valves (if UL listed).
- **FM Approval Standard Class 1321/1323** – Solenoid operated valves.
- **ANSI B16.5** – Flanges and flanged fittings.
- **IS 778 / IS 9890** – General requirements for valves.
- **IS 1364 / IS 1367** – Stainless steel bolts, nuts, washers.

3. Technical Requirements
- **Size**: 2" (DN 50).
- **Type**: Remote operated, normally closed, solenoid actuated.

- **End Connection**: Screwed / Flanged (ANSI B16.5, 150#) as per site requirement.
- **Body Material**: Carbon Steel / Ductile Iron / SS with epoxy or glass lining.
- **Internals**: Stainless Steel (SS 304 / 316).
- **Sealing**: Nitrile / Viton / EPDM suitable for water-foam service.
- **Coil Rating**: 24V DC / 110V AC / 230V AC (as per system design).
- **Protection**: IP65 / IP67, weatherproof, flameproof enclosure (Ex d IIA/IIB as applicable).
- **Working Pressure**: Minimum 7–10 kg/cm².
- **Test Pressure**: 1.5 × working pressure.
- **Control**:
  - Electrical actuation via fire alarm panel or deluge system.
  - Manual override lever/knob for emergency operation.
- **Accessories**:
  - Position indicator (open/close).
  - Limit switches if required.
  - SS fasteners & CAF gaskets.

4. Installation & Erection

- Install valve in designated line with correct flow direction marking.
- Provide proper supports and clearance for solenoid coil replacement.
- Connect solenoid coil to fire alarm / control panel through armored cables.
- Ensure proper earthing of coil and enclosure.

5. Testing & Commissioning

- **Hydrostatic Test**: Valve body tested at 1.5 × rated pressure.
- **Functional Test**:
  - Open/close operation via remote electrical signal.
  - Manual override operation check.
  - Position feedback to panel (if applicable).
- **System Integration Test**: Operation under fire water pressure, coordinated with foam/deluge system logic.

6. Surface Protection

- External coating with epoxy primer and PU topcoat (Fire Red IS 5 Shade 536).
- Internals glass coated / epoxy lined for anti-corrosion.

7. Documentation

- Manufacturer's test and inspection certificates.
- UL/FM approval certificates (if specified).
- Coil voltage and wiring details.
- As-built drawings and O&M manual.
- Commissioning & handover report.

5.11 Providing Fire Detection, Alarm & Communication System as per OISD-156

1. General

This specification covers the **design, supply, installation, testing and commissioning** of a **fire detection, alarm and communication system** for petroleum installation facilities, in compliance with **OISD-156**, **NFPA 72**, and relevant IS/IEC standards.

The system shall provide **early fire detection, automatic alarm, manual call points, public address (PA) / communication**, and integration with firefighting systems.

2. Applicable Standards

- **OISD-STD-156** – Fire Protection Facilities for Petroleum Installations.
- **NFPA 72** – National Fire Alarm & Signaling Code.
- **IS 2189** – Selection, installation & maintenance of automatic fire detection systems.
- **IS/IEC 60849** – Sound systems for emergency purposes.
- **IS/IEC 60079** – Explosion-protected equipment (for hazardous areas).
- **IS 1646** – Fire safety of buildings (general).

3. System Components

3.1 Fire Detection System

- **Fire Alarm Control Panel (FACP)** – Addressable / Intelligent type, UL/FM listed.
- **Detectors**:
  - Flame detectors (UV/IR) for manifold & pump house.
  - Heat detectors for control rooms, electrical rooms, and cable galleries.
  - Smoke detectors for MCC/PLC/office areas.
- **Manual Call Points (MCPs)** – Break-glass type, weatherproof, flameproof (Ex d IIA/IIB).
- **Sounders / Hooters / Strobes** – Flameproof, IP65, with 24V DC operation.
- **Cabling** – Armoured FRLS/FRLSH cables in GI conduits/trays.

3.2 Alarm & Communication System

- **Public Address (PA) System** – Explosion-proof loudspeakers in jetty, tank farm, and pump house.
- **Talk-back System** – Hands-free communication stations in hazardous zones, connected to central console.
- **Integration** – Fire alarm panel to be integrated with PA/talk-back for emergency broadcast.
- **Emergency Telephone** – Weatherproof telephones at hydrant posts, manifold, control room.

3.3 Control & Integration

- Auto-alarm signals to **Fire Control Room** and **Main Control Panel**.
- Interface with **deluge/foam system solenoid valves** for automatic release.
- Battery backup for 24 hours standby + 30 minutes alarm operation.

4. Technical Requirements

- **FACP**: UL/FM approved, networkable, loop-based, expandable for future loads.
- **Detectors**: SIL-2 / UL listed, response as per OISD hazard classification.
- **PA System**: 100V line, weatherproof, flameproof speakers, minimum 15 W output per speaker.
- **Talk-back Stations**: Zone-wise, intrinsically safe handsets, IP65.
- **Power Supply**: 230V AC with battery charger, SMF batteries, auto-changeover.
- **Wiring**: Colour-coded, FRLS armoured copper cables, terminated with SS glands & lugs.

5. Installation & Erection

- Install detectors at recommended spacing & mounting height (as per NFPA 72 / IS 2189).
- Mount MCPs at 1.4 m height, near exits and strategic locations.
- Route cabling in GI trays/conduits, avoiding high-voltage cables.

- Mount speakers and talk-back stations in weatherproof enclosures with clear audibility.
- Label all devices and provide mimic panel in fire control room.

6. Testing & Commissioning
   1. **Detector Test**: Smoke, heat, and flame detectors tested with test kits.
   2. **MCP Test**: Break-glass alarm activation checked.
   3. **Alarm Test**: All hooters, strobes, PA system speakers tested for coverage.
   4. **Talk-back Test**: Zone-to-zone and central communication verified.
   5. **Integration Test**: Signal to deluge/foam valves, pump start, and SCADA/PLC system.
   6. **Battery Backup Test**: 24 hours on battery, 30 min alarm load.

7. Documentation
   - GA drawings & loop diagrams.
   - Device layout drawings with zone details.
   - Test & inspection certificates (UL/FM listing).
   - Operation & maintenance manual.
   - As-built drawings and commissioning report.

5.12 Providing Portable DCP Fire Extinguishers as per OISD-156

1. General

This specification covers the **supply and installation of Portable DCP Fire Extinguishers** for petroleum installations in compliance with **OISD-156**, IS standards, and relevant approvals. Extinguishers shall be suitable for use on **Class B & C fires** (flammable liquids, gases, and electrical equipment).

2. Applicable Standards

- **OISD-STD-156** – Fire Protection Facilities for Petroleum Installations.
- **IS 15683:2018** – Portable fire extinguishers (Performance & construction).
- **IS 2190** – Code of practice for fire extinguisher selection, installation, and maintenance.
- **UL 299 / NFPA 10** – Portable fire extinguishers.

3. Technical Requirements

- **Type**: Dry Chemical Powder (DCP) – BC type or ABC type (sodium bicarbonate / MAP 50 powder).
- **Capacity**: Minimum **10 kg** and **25 kg trolley-mounted** (as per OISD norms for hydrocarbon facilities).
- **Propellant**: CO_2 cartridge / stored pressure type.
- **Discharge Rate**: Not less than 85% of total charge.
- **Discharge Time**: 15–20 seconds for 10 kg unit, 30–45 seconds for 25 kg unit.
- **Range of Discharge**: Minimum 6 m for 10 kg, 8–10 m for 25 kg unit.
- **Body Material**: Seamless steel cylinder, ISI marked, epoxy powder coated (Red, IS 5 Shade 536).
- **Operating Valve & Nozzle**: Brass / SS, squeeze grip type with safety pin & discharge hose.
- **Pressure Gauge**: Colour-coded dial gauge for stored pressure type.
- **Wheels (for trolley units)**: Solid rubber wheels with MS frame.
- **Marking**: ISI mark, year of manufacture, capacity, operating instructions, recharge date.

4. Installation

- Portable 10 kg units mounted on wall brackets at 1.0–1.5 m height.
- Trolley-mounted 25 kg units located at strategic locations near hydrants, pumps, manifolds, and Jetties.
- Clear signage and glow-in-dark marking provided.

5. Testing & Inspection

- **Factory Test**: Hydrostatic pressure tested at 30 kg/cm² or as per IS requirement.
- **Site Test**: Random units to be discharged for performance verification.
- **Inspection**: Check weight, pressure, paint finish, ISI certification.

6. Documentation

- ISI certification and type test certificates.
- Manufacturer's warranty certificate.
- Maintenance and recharge instructions.
- Supply, installation, and commissioning report.

5.13 Providing Clean Agent Fire Suppression System for Control Room / Computer Room as per OISD-156

1. General

This specification covers the **design, supply, installation, testing and commissioning** of a **Clean Agent Fire Suppression System** for control rooms, computer rooms, and electrical/electronic equipment areas. The system shall comply with **OISD-156**, NFPA standards, and relevant IS/IEC codes.

The system shall suppress fire without damaging sensitive electronic equipment and without leaving residue.

2. Applicable Standards

- **OISD-STD-156** – Fire Protection Facilities for Petroleum Installations.
- **NFPA 2001** – Standard on Clean Agent Fire Extinguishing Systems.
- **IS 15493** – Gaseous fire extinguishing systems – General requirements.
- **IS 2189** – Fire detection and alarm system.
- **UL / FM Approved** Clean Agent Cylinders & System Components.
- **ISO 14520** – Gaseous fire-extinguishing systems.

3. System Requirements

- **Type of Agent**: Clean Agent (HFC-227ea/FM-200, FK-5-1-12 / Novec 1230, or equivalent UL/FM approved).
- **Extinguishing Method**: Total Flooding system.
- **Design Concentration**: As per NFPA 2001, typically 7–9% for HFC-227ea and 4.5–6% for Novec 1230.
- **Discharge Time**: Within 10 seconds.
- **Cylinder Assembly**: Seamless steel, UL/FM approved, with pressure gauge and safety devices.
- **Operating Pressure**: 25 bar / 42 bar (as per design).
- **Actuation**:
  - **Automatic**: Via cross-zoned smoke detectors.
  - **Manual**: Release switch / pull station.

- **Piping & Nozzles**: Seamless MS / SS pipes with UL/FM listed nozzles, properly sized as per hydraulic calculation.
- **Detection & Control Panel**: Microprocessor-based, UL listed, integrated with fire alarm system.
- **Warning Devices**: Pre-discharge alarm (audible + visual), abort switch.

4. Coverage & Design

- **Protected Areas**: Control room, computer room, UPS room, server room.
- **Design Basis**: Room volume calculated, agent quantity sized accordingly.
- **Leakage Test**: Room integrity fan test (door fan test) to ensure minimum retention time of 10 minutes.

5. Accessories

- Discharge hose, release valves, solenoids.
- SS brackets and IS-approved fasteners.
- Safety devices: pressure relief valves, NRVs.
- Pressure switches for monitoring.

6. Installation & Erection

- Cylinders mounted on MS stands with seismic supports.
- Piping routed neatly with supports, painted red (IS 5 Shade 536).
- Nozzles installed as per hydraulic design.
- Control panel interfaced with building fire alarm & emergency shutdown system.
- Clear signage and operating instructions displayed.

7. Testing & Commissioning

1. **Hydrostatic Test**: All cylinders as per IS/UL standards.
2. **Piping Pressure Test**: At 1.5 × working pressure.
3. **Functional Test**: Release sequence tested with simulation (without agent discharge).
4. **Room Integrity Test**: Door fan test to check retention time.
5. **Full Discharge Test**: If required, one-time discharge test in presence of client/third-party.

8. Documentation

- Hydraulic calculation sheets.
- UL/FM approval certificates for agent & equipment.
- Factory test & inspection reports.
- O&M manual.
- As-built drawings.
- Commissioning report.

5.14 Electrical & Instrumentation Works for Firefighting System

1. General

This specification covers the **supply, installation, testing, and commissioning** of **Electrical and Instrumentation works** for the firefighting system at the Jetty area, covering both **existing and proposed facilities**.

The system shall ensure **full automation** of firefighting operations, triggered automatically on detection of fire/smoke, and comply with OISD-156 and relevant IS/IEC standards.

2. Applicable Standards

- **OISD-STD-156** – Fire Protection Facilities for Petroleum Installations.
- **IS 732** – Electrical wiring installation.
- **IS/IEC 60079** – Flameproof (Ex) equipment standards.
- **IS 5571** – Guide for selection of electrical equipment in hazardous areas.
- **IS 1554 / IS 7098** – Power and control cables.
- **IS 8623** – LT panels.
- **IS 3043** – Earthing code.
- **NFPA 70 (NEC)** – Electrical installation.
- **IEC 61508 / 61511** – Safety instrumentation.

3. Scope of Supply & Work

3.1 Electrical Works

- **Power & Control Cables**:
  - XLPE insulated, armoured, FRLS/FRLSH type, copper/aluminium as per load.
  - Cable trays, ladders, GI conduit with earthing.
- **Lighting Arrangement**:
  - Flameproof (FP), weatherproof LED fittings (IP66/67) for Jetty and pump house areas.
  - Aviation/obstruction lights on tall structures.
- **Panels & Distribution**:
  - **LT Panel**: Dust & vermin proof, compartmentalised, with MCCBs/ACBs, meters.
  - **Distribution Boards (DBs)**: For local loads.
  - **Junction Boxes (JBs)**: Weatherproof/FLP for field terminations.
- **Earthing**: Dedicated earthing for electrical and instrumentation circuits as per IS 3043.

3.2 Instrumentation Works

- **Field Instruments** (FLP / Weatherproof):
  - **Pressure Gauges (PG)**: SS case, glycerine filled, range as per design.
  - **Pressure Switches (PS)**: Flameproof, adjustable range, SPDT contacts.
  - **Pressure Transmitters (PT)**: With local digital display, 4–20 mA output, FLP certified.
  - **Solenoid Valves (SOVs)**: FLP/IP67, 24V DC / 110V AC, SS body, with manual override.
- **Automation & Control**:
  - Integration of **deluge valves, foam proportioners, diesel pump start/stop** with Fire Alarm Control Panel (FACP).
  - Signals (start/stop/feedback) wired to Central Control Room.
- **Communication Interface**:
  - Signals integrated to PA/GA system and SCADA/DCS if applicable.

4. System Operation

- On **fire/smoke detection** at Jetty area (via detectors/manual call point), system shall:
  1. Send alarm to **Fire Alarm & Control Panel**.
  2. Trigger **solenoid valves** to open deluge/foam spray lines.
  3. Start **fire pumps (diesel/electric)** automatically.
  4. Provide visual/audible alarms at site & control room.
- Manual override through local push buttons and panel controls shall be provided.

5. Installation & Execution
- All cable terminations with tinned copper lugs, double compression SS glands.
- JB/Panel entries through flameproof glands.
- Segregation of **power & signal cables** to avoid interference.
- Proper tagging & ferruling for all cables and instruments.
- Loop diagrams and interlock logic to be followed as per approved drawings.

6. Testing & Commissioning
- **Electrical Tests**: IR test, continuity, HV test, earth resistance.
- **Lighting Test**: Lux level measurement.
- **Instrument Calibration**: Factory calibrated, verified at site.
- **Loop Checking**: From field instruments → JB → Control Panel → FACP.
- **Functional Test**:
  - Auto start of pumps.
  - SOV actuation.
  - Pressure switch/transmitter feedback.
  - Integration with Fire Alarm & SCADA/DCS.

7. Documentation
- As-built electrical SLDs, loop diagrams, and termination details.
- Calibration and test certificates for instruments.
- OEM manuals for panels, instruments, and valves.
- Inspection reports and commissioning report.

5.15 SCADA and Automation System Integrated with Fire Fighting System

1. General

This specification covers the **design, supply, installation, testing, and commissioning** of a **SCADA & Automation System** fully integrated with the **existing and new Fire Fighting (FF) systems**, in compliance with **OISD-156**.

The system shall include **real-time monitoring, automatic controls, AI-based CCTV surveillance, and integration with QRMH (Quick Release Mooring Hook System)**. The monitoring shall be provided on **large display monitors (65-inch)** in the **Pump Room** and **Port Control Room**.

2. Applicable Standards
- **OISD-STD-156** – Fire Protection Facilities for Petroleum Installations.
- **NFPA 72 / NFPA 2001** – Fire Alarm & suppression integration.
- **IEC 61131 / IEC 62443** – Industrial control systems automation & cybersecurity.
- **IS/IEC 60079** – Electrical apparatus for explosive gas atmospheres.
- **IS 2189** – Fire detection & alarm systems.
- **ONVIF / UL / CE** – CCTV standards.

3. System Architecture

3.1 SCADA & Automation
- Centralized SCADA platform for **monitoring, control, and logging** of:
  - Fire pumps (electric/diesel driven).
  - Deluge valves, foam proportioners, spray systems.
  - Pressure transmitters, switches, gauges, solenoid valves.
  - Fire water tank levels and flow meters.
- Redundant PLCs with industrial grade servers.

- HMI/SCADA software with graphics, alarms, and event logging.
- Data storage for minimum 1 year with trending and reporting.

3.2 Displays & Control Rooms

- **65-inch LED Monitors** in Pump Room & Port Control Room.
- Real-time fire system graphics (pump status, valve position, pressure trends).
- Alarm/event display with time-stamp and acknowledgement function.
- CCTV live video integration on same screen.

3.3 AI-based CCTV System

- Explosion-proof (FLP/ATEX/IECEx certified) cameras for hazardous areas.
- AI features: flame/smoke detection, intrusion detection, people/vehicle analytics.
- Integration with SCADA/Control Room monitors.
- 24×7 recording with redundancy (NVR with RAID storage).
- Minimum 30 days recording backup.

3.4 QRMH Integration

- SCADA to integrate with **Quick Release Mooring Hook System**
- Wireless / Fiber optic communication for real-time data transfer.
- Alerts & event logs synchronized between Port Control & QRMH unit.

4. Technical Requirements

- **PLC/RTU**: Redundant, industrial grade, IEC 61131 compliant.
- **SCADA Software**: Open protocol (Modbus TCP/IP, OPC UA), scalable.
- **Communication Network**: OFC backbone, redundant ring architecture, managed switches.
- **Cybersecurity**: IEC 62443 compliant firewall & authentication.
- **CCTV**:
  - Resolution: 4 MP minimum, IR/night vision.
  - Housing: IP66/67, corrosion-resistant, explosion-proof.
- **Monitors**: Industrial-grade LED, minimum 65-inch, 4K resolution, 24×7 operation.

5. Installation & Integration

- Existing FF instrumentation loops (pressure transmitters, solenoid valves, detectors) connected to SCADA.
- New devices integrated seamlessly without disturbing existing operation.
- Network segregation for CCTV and SCADA with firewall protection.
- Structured cabling with proper tagging, routing in FRLS/FRLSH cables.
- Integration of fire alarm panel, PA system, and CCTV into unified monitoring.

6. Testing & Commissioning

1. **SCADA Test**: Verification of all signals (analog/digital).
2. **Automation Logic Test**:
   - Auto pump start.
   - Deluge valve actuation.
   - Alarm/event handling.
3. **CCTV Test**: Video feed, AI analytics verification, recording/playback.
4. **Integration Test**: SCADA + CCTV + Fire Alarm + QRMH.
5. **Failover Test**: Redundancy of servers, PLCs, and network.
6. **Demonstration**: To client as per approved cause & effect matrix.

7. Documentation

- SCADA architecture & network drawings.
- PLC/SCADA logic (cause & effect matrix).
- CCTV layout & coverage plan.
- OEM test certificates.
- O&M manuals.
- As-built drawings and commissioning report.

SECTION VI

SCOPE OF WORK

6.1 *About Project*

The existing oil jetty is located in North break water in between coal jetty-I and Coal Jetty-II with LOA of 230m, draft of 13m for at present handling vessels below 40,000 DWT. The cargo handling in oil jetty like Naphtha, Furnace oil, Ammonia, Diesel oil, POL products, LPG and Chemicals etc., Accordingly, VOCPA enhanced the Fire Fighting Systems for handling vessel below 40,000 DWT in the year 2023-2024 as per OISD-156 guidelines.

In responsibilities the oil jetty must handle through significant upgrades to enhance capacity, improve operational efficiencies and meet international safety standards in the long term, the oil jetty transformation into the multi personal facility capable of handling not only POL and also LNG clean / Green Energy Fuels which supports for reducing carbon emissions. The faced upgrades will ensure the oil jetty remains the key player in both traditional and Energy Markets, enhancing competitiveness and contributing suitable energy solutions for the future.

One of the highest priorities for the oil jetty is upgrading the safety mechanism to meet the requirement of OISD-156 for handling higher capacity vessels with automation of the Fire Fighting System of more than 40,000 DWT for handling LPG and POL products etc.,

6.2 *Present Facilities*

The existing Fixed Fire Fighting system at Oil Jetty executed as per Sl.No.3, Table - 2 Fire water design guide for port terminal handling liquified hydrocarbon gases as per OSID -156 (October – 2017) involves the followings sub systems.

1. Fire water Network including all accessories - (Main fire Water Pumps – 5 Nos(3W+2S), Jockey Pumps 2 Nos (1W+1S), Tower Monitors 3 Nos, Hydrants 4 Nos and Water Monitor 4 Nos, Jumbo Nozzles 3 Nos)
2. Instrument Air Network including all accessories– Operation of ROSOV (2 Nos. Compressor (1W+1S), 1KL Air Receiver)
3. Foam Network including all accessories – 2 Nos of foam Pumps (1W+1S) 40 Cum/ Hr Capacity, with 40 KL foam storage (20KL x 2 Nos of tanks)
4. Gas and Flame detection system including all accessories.
5. Fire Alarm System including all accessories.
6. Electrical & instrumentation system including all accessories.
7. EOT crane including all accessories.
8. 1No. High Mast Tower lighting system and CCTV system
9. DG set including all accessories.
10. PAGA & walki takie
11. Air conditioning system in control room
12. Illumination system in Control room, Pump house and jetty

Feedback for the system to get operational:

a) In case there is a fire which is observed by any person working in the jetty premises he will start any hydrant / monitor. This will create a pressure drop in the system and will activate the firefighting system.
b) In case there is detection of flame in the flame detectors then the Jumbo nozzle ROSOV will be activated creating a pressure drop in the system and activating the Firefighting system.
c) In case there is fire in the ship then anyone in jetty area can start the tower monitor from the local control panel in the field which will create a pressure drop in the system and will activate the firefighting system.
d) A fire alarm system is installed in the jetty area. There are manual call points at regular intervals in the jetty platform. In case of fire the operator will break the glass and punch the alarm key which will give an alarm with location in the control room and the operator sitting in the control room will immediately start the fire fighting system.
e) Gas detectors are also installed in the jetty area, in the gas levels are in alarming levels the alarm will be shown in the PLC and the operator will stop all the operations in the jetty area till the gas levels are low.

The control logic will be followed by PLC for start and stop of the pumps depending upon the pressure in the fire water network.

6.3 *Description of Project*

The planning and design of the present project to envisage upgrading the complete existing Fixed Fire Fighting Systems at Oil Jetty as per Sl No.4, Table-2 Fire water design guide for port terminal handling liquified hydrocarbon gases as per OISD -156 (October – 2017) with automation (CCTV with AI) to handle vessels more than 40,000 DWT on EPC mode integrated with existing automation system. The work further included extension of existing pumproom with pile foundation after test pile. The contractor shall engage civil contractor who are having working experience in the similar field for execution of extension pump room work. All the work shall be executed by the contractor as directed by Engineer of the contract to meet the requirements of OISD-156 (October,2017 or its updated edition). The make of the equipments shall be UL approved and data sheet/drawing to be submitted to the Engineer of the Contract for approval.

6.4 *Scope of work*

The scope of work shall include design, supply, installation, testing and commissioning of Upgradation the complete existing Fixed Fire Fighting Systems at oil jetty as per OISD-156 with automation to handle more than 40,000 DWT at oil jetty including extension of pump housework with pile foundation on EPC mode. It also includes dismantling the existing equipment and relocating the same as per the site requirement to meet the OISD-156 guidelines. The complete FFFS integrated with the existing system and control from the main control room with automation through SCADA with CCTV. The proposed FFS also includes providing separate suitable pipeline in line with existing work from pump room to jetty connected to the existing system to fulfil the requirements of OISD-156

during operations at jetty for operating the proposed system. The display (43") will ensure in Control room (2 Nos.), Jetty Crew station at Oil Jetty, CISF Control room and the office of Engineer at Administrative building.

The layout of the port liquid terminal handling Hydrocarbons in accordance with the standard engineering practices / requirements of OISD-156 guidelines of Sl.No.3 Table 2 of Fire water design guide for port terminal handling liquefied Hydrocarbon gases of less than 40,000 DWT. Now, it is proposed to handle more than 40,000 DWT vessels at oil jetty which required to implement Sl.No.4 of Table 2 of fire water in the jetty as per OISD-156. The successful contractor executes the work as per the Sl.No.4 of Table 2 in addition to existing fire water arrangements in line with Sl.No.3 of Table 2. Further, the contractors strictly follow the OISD-156 guidelines or it updated amendments.

The successful contractor takes necessary approval of the system from PESO with all the documents concern with Engineer of the contract for execution of the work. After execution of the work, the contractor shall arrange the PESO representative to ensure the FFFS shall be executed as per the OISD-156 before completion / taken over of the work by the system by the port.

The quantity available in Bill of Quantity (BOQ) is minimum, however, the successful EPC contractor execute the work to fulfil the requirements of OISD-156.

The major items covered under the Fixed Fire Fighting Facilities are as follows:

Sl. NO.	**FACILITIES**	**SCOPE**
1	SHIP SIZE	MORE THAN 40000 DWT
2	Fire water network with all Necessary equipment & components	Fire water pipes, equipment & components shall be provided by as per drawing and as per OISD 156.
3	Installation of new pumps & it's associated piping, electrical, instrumentation, Civil works etc.	2 No of Diesel operated Fire Water Pumps capacity of 2x750 M^3/Hr shall be supplied and installed and commissioned with required modification in the existing installed pumps and pump house as per OISD 156 (2017) Latest Edition
4	Panels in Pumphouse for Pumps	Yes, as per requirements
5	Foam System	The existing system to be relocated and the system to be connected to the existing network.
6	Air System	Existing system to be relocated as per the

		drawing
7	Refurbishment of Firefighting Control room panels	Existing PLC panel can be used with the required modification and the control desk and SCADA system to provide new one.
8	Remote operational control including instrumentation and electrical with necessary PLC & SCADA based system	Tower Monitor, water curtain nozzle and all valves operation.
9	Monitoring of the Whole FF system	The Monitoring view has to be extended to 5 Location (ie VOC Port Admin office 3 Nos, 1 no at Fire crew station at oil jetty and 1 no at Fire water pump house. (Display will as per the requirements)
10	Fire Fighting Equipments	
	a) Tower Monitor Remote operated	4 Nos x 7570 LPM (2000 GPM) coverage distance will be 100 Mtr minimum.
	b) Jumbo Nozzles	4 Nos x 6000 LPM (1500 GPM) coverage radius will be 15 Mtr minimum
	c) Water Hydrants and Water Monitor	Hydrants to be provided at a distance of 30 Mtr at hazardous area and 45 Mtr is other misc. Area and Water Monitor will be as per overall requirements to be as per OISD 156 Latest Edition.
11	Pipeline supports	Yes, as per the requirements
12	Tower Monitor structures 1 No	All the tower monitor structures will be HOT Dip. Galvanized steel.
	Tower Monitor structures 3 No	Existing Tower No.2 to be relocated Other 2 towers need to be painted with proper surface preparation.
13	Pipeline	Velocity to be maintained in 5m/sec and to ensure the pipe network will be Multi directional flow as OISD 156 Latest Edition

14	Controlling system	All systems can be controlled in the field location and the control room with enhanced SCADA system. Also, the controlling system extended to PORT admin office at 3 Locations.

Note: Since sources of water from sea, there is no requirement of fire water tanks**.**

6.5 *Fire Fighting Facilities after* ***Augmentation of Fire Fighting Facilities as per OISD-156 for handling above 40000 DWT vessels at Oil Jetty*** *shall consist of:*

1. Water source as sea water
2. Fire Water Pump House
3. Electrical Substation (PCC & MCC)
4. Fire Hydrant System
5. Tower Monitors
6. Ground Monitors
7. Jumbo Water Curtains
8. Fixed Foam System
9. Fixed International Shore Connection
10. Gas/Flame Detection System
11. Manual Call Point System
12. Remote Control Valves and Panels
13. Flame proof Electrical Fittings
14. PLC System & Control Cables
15. DCP protection system
16. Potable Fire Equipment
17. Fire Alarm/Communication System
18. Any other facilities to be provided

The firefighting facility at the marine terminal shall be designed on the following basis:

a) Firewater facilities shall be designed on the basis that city fire water is not available close to the installation.
b) All facilities shall be covered by hydrant system.
c) Tower mounted water/foam monitors shall be provided for the protection of loading arm and providing first aid to tankers.
d) Water curtains shall be provided for segregation of loading arms/piping manifold from ship tanker in the event of fire of either of these facilities.
e) Jetty shall be provided with Tower mounted water /foam monitors and hydrant service & Water curtains
f) Dry Chemical Powder (DCP) protection shall be provided.
g) The system shall be operated automatically in the following circumstances

1. In case there is a fire which is observed by any person working in the jetty premises he will start any hydrant / monitor. This will create a pressure drop in the system and will activate the firefighting system.
2. In case there is detection of flame in the flame detectors then the Jumbo nozzle ROSOV will be activated creating a pressure drop in the system and activating the Firefighting system.
3. In case there is fire in the ship then anyone in jetty area can start the tower monitor from the local control panel in the field which will create a pressure drop in the system and will activate the firefighting system.
4. A fire alarm system to be installed in the jetty area. There are manual call points at regular intervals in the jetty platform. In case of fire the operator will break the glass and punch the alarm key which will give an alarm with location in the control room and the operator sitting in the control room will immediately start the fire fighting system.
5. Gas detectors are also installed in the jetty area, in the gas levels are in alarming levels the alarm will be shown in the PLC and the operator will stop all the operations in the jetty area till the gas levels are low.

6.6 *Tower Mounted Water cum Foam Monitors*

Some of the key features of Tower Mounted Water cum Foam Monitors are as follows:

a) The monitors shall be remotely operated from control station at terrace level of the Fire water Pump house from where monitors will be clearly visible.

b) The monitor is tapped from firewater network system through a Deluge Valve and shall be installed at the suitable height on the tower such that it will cover the deck of the largest tanker in the lightest condition at spring tides at the jetty. At the downstream of the motorized gate valve same has to be approved by PESO an inline balance proportioner shall be installed.

c) The discharge header from foam pump shall be connected to the pressurized foam concentrate pipe, which will be laid parallel to the hydrant header throughout jetty terminal.

d) Tapping shall be taken from foam concentrate header and will be connected to the foam line of inline balance proportioner of each tower mounted monitor through a manual isolation valve (normally open).

e) The piping and valves handling foam concentrate shall be of Stainless Steel. Foam concentrate shall be AFFF type and MOC of tower mounted water cum foam monitor shall be Stainless steel.

6.7 *Automatic Water Curtain System (Jumbo Nozzles)*

It is automatic water curtain systems to segregate loading / unloading arms / piping manifold and ship tanker of the Jetty.

6.8 *Portable Fire Extinguisher*

The portable fire extinguishers are to be located in all facilities / buildings and these can be used for extinguishing small fires. Portable extinguishers shall be provided as per Table -5 of OISD-156.

The extinguisher locations are decided based on the following considerations:

a) Travel distance of 15 meters maximum,
b) Uniform distribution,
c) Easy accessibility,
d) Nearness to doors, windows, emergency doors and escape routes

6.9 *Brief Specifications of Major Fire Fighting Components*

a) Piping materials shall be ASTM 106 Grade "B" Sch.Std.,
b) Isolating valves shall be gate valves of cast steel construction for hydrant system/ water curtain system. The isolation valve used in Foam concentrate line shall be of stainless steel.
c) Hydrant valves shall be SS-316 ISI marked oblique pattern conforming to IS: 5290 Type A.
d) Branch pipes with nozzle shall be SS-316 ISI marked short pattern (other than fog nozzles) conforming to IS: 903.
e) Fire hoses for hydrants shall be Rubber-lined, with SS-316 instantaneous couplings duly bound at either end or conforming to IS: 636 Type-B.
f) Hose cabinet shall be fabricated out of Carbon (Mild) Steel; SWG 18 Gauge with epoxy painted, with 3mm thick glass fronted doors suitable for holding two nos. fire hoses, one branch pipe with nozzle and one no. nozzle spanner. First aid hose reel shall confirm to IS:884 and be provided with 36m long x 20mm dia. rubber hose pipe and gun metal shut-off nozzle.
g) Tower mounted monitor shall be UL listed, or FM approved.

6.10 *Fire Water Distribution Network*

Fire Water Pipes shall be coated externally 3 LPE and internally lined with poly glass coating of thickness with minimum 3mm. The diameter of the pipeline shall be established after the completion of pipeline hydraulic and network analysis during detailed engineering. Within the pump house, there shall be a 650 NB (26") header pumping sea water through the pump sets. Two sets of branches out connections from header at jetty end shall be used for the following.

- Tower Monitor Line along with the Hydrant Line
- Hydrant Line with jumbo water curtain nozzles

Pipes up to and including 150mm NB shall conform to ASTM A 106 GRADE B and shall be used for the firewater network system. All pipes for sea water applications

shall be internally coated with Poly glass. The pipes carrying foam concentration shall be of stainless steel (SS316).

All exposed pipes shall be painted with a suitable painting system rated for marine seawater conditions.

The Contractor shall provide the required pipe support, specials reducers, expanders, puddle pipe, fittings, flanges, gaskets, nuts and bolts etc. Fabrication and inspection of pipelines shall be in accordance with the following codes: B1S-9595, 814, 822, 4853, 3703 and as per OISD-156 guidelines.

10% of field weld joints shall be x-ray tested and if the results are unsatisfactory, the same has to be removed, re-welded and radio graphed to ensure sound weld. Pad plates for piping support shall be provided by contractors for running the main firefighting pipelines on approach trestle. The Contractor as required at his cost shall provide necessary steel clamps, saddles and support for duct foot bends etc. Suitable support pads to be provided to the pipelines wherever they rest on the pedestals.

The vertical pipeline to water / foam monitor shall also be properly supported / fixed by providing suitable steel brackets/clamps and stays etc.

All pipelines to be laid on unloading platform, approach trestle and pump house are to be supported by providing steel saddle with clamps fittings and fixtures.

All pipelines shall be hydrostatically tested to 1.5 times their respective operating pressure.

All pipes should be supplied in complete conformity to all requirements specified in the standards. Suitable pressure gauges to be provided in the fire water network / foam injection lines at strategic locations. Hydraulic pressure drop calculations shall be provided for each of the 3 pipelines namely Monitor System, Hydrant System and Foam System. The calculations must ensure that the pipe sizing being considered is adequate

to ensure that the required pressure is being achieved at the base flange of each of the outlet equipment such as tower monitors, base monitors, hydrants, water curtain system etc.

The maximum allowable flow/velocity in the system should be not more than 4.5 m/s in the pipe network and for pump suction shall not be more than 2 m/sec and pump delivery shall not more than 4 m/sec. The contractor shall calculate and confirm the pipe dia. and thickness prior to procurement and obtain approval from the Engineer's Representative.

Pipes shall be kept thoroughly clean during installation. The ends of pipes shall be blocked with wooden plugs wedged home, at the end of each day's work to prevent

dirt, rodents and insects etc., entering the pipe. The general information of the fire water header / pipeline network shall be as per technical data sheet.

6.11 *Pipe Protection*

The sea water pipelines are envisaged to be internally coated with Polyglass wherever flanged joints relate to stainless steel bolts& nuts. To the extent it is practical, all pipe sections and standard size fittings such as bends, reducers, tees etc. shall be forged welded and lined with poly glass thickness with minimum 3mm and externally 3 LPE coating in the factory/Site premises.

In the case of the external paint system the painting shall be such that it shall be guaranteed by the paint manufacturer for marine sea water environment. Only the final finished coat of paint in approved color shall be carried out at site after completion of the installation and testing process. The field site fabrication and painting works are to be inspected with holiday detectors. The oil jetty is in the vicinity (within 300m) of an operating Oil/LPG vessel and no hot works shall be permitted during ship unloading operations at the existing oil jetty within 100m from the hydrocarbon handling point.

6.12 *Pipelines*

i. Erected pipelines together with fittings shall be tested by hydraulic pressure. The value of test pressure shall be equal to 1.5 times the working pressure or 20 kg/cm2 whichever is higher for duration of 4 hrs.
ii. The Foam Pumps and monitors shall be disconnected before the test Combined tests of equipment with the pipeline is not allowed.
iii. Hydrostatic tests shall be conducted for each system of piping separately.
iv. Air vents shall be provided at all high points of the piping where the test shall be conducted to purge air pockets while the piping system is being filled up. Hydraulic test pressure shall be maintained for duration of 4 hrs. At this pressure the pipelines shall be inspected, and all welded joints shall be tapped by a hand hammer.
v. Hydraulic test will be considered satisfactory if during the tests, pressure does not decrease, and no leakage or mist is found in the joint's fittings etc.
vi. The contractor shall arrange at his own expenses all equipment, material, instruments and consumables to conduct the various site tests to demonstrate specified performance of all plant and equipment offered by the contractor.
vii. The Engineer's Representative and Contractor shall make a statement regarding the acceptance of the erected pipelines mentioning defects found during the tests, characteristics of the defects and the method of their elimination.

6.13 *Commissioning*

a. Before start of preparation for commissioning, all the equipment and

pipelines shall be certified by the Engineer's Representative for commissioning.

b. The site shall be thoroughly cleaned of all sorts of foreign materials such as welding rod ends, welding beads, metal chips etc. by the contractor from the site before commencement of commissioning activities.

c. Before commissioning all the pipelines shall be blown with compressed air until the air discharged is free from dust particles etc.

d. All lubricants, oils and other consumables required for commissioning the system shall be supplied by the Contractor.

e. Commissioning of the various equipment and system shall be carried out by the Contractor as per the accepted procedure and as per the instructions of the Suppliers of the equipment.

f. On completion of the installation but before powering of the electrical system, all installation shall be physically checked and properly tested. These checks and tests shall be conducted by the Contractor under the supervision of the Engineer's Representative. Any defect observed during such checks and tests shall be made good by the Contractor before commencement of commissioning.

6.14 *Test Certificates and Documents*

For each of the items being manufactured, following test certificates and documents as applicable for each of the equipment, in requisite copies including original shall be submitted to purchaser / their representative. All test certificates must be endorsed by the Manufacturer and Contractor with linkage to project, purchase order and acceptance criteria.

a. Raw materials identification and physical and chemical test certificates for all materials used in manufacture of the equipment (except IS 2062 - 1992 Gr. A & IS 210 - 1993, FG -150)

b. Welding procedures and welders' qualification test certificates as per applicable code.

c. Details of stage wise inspection and certification record for fabricated items, castings, forgings and machined articles.

d. Control dimension chart with records of alignments, scariness etc.

e. Manufactures material and performance / relevant test certificates for all bought- out items,

f. Details of heat-treatment and stress relieving charts as per specification.

g. Non-Destructive Test reports as per respective code

h. Static/dynamic balancing certificate for rotating components /machines.

i. Hardness test certificate, x. Pressure Test Certificate.

j. Performance Test Certificate for all characteristics.

k. Geometric accuracy and repeatability test reports of machine tools.

l. Routine / type / calibration / acceptance / special test certificates for electrical items.

m. Diagnostic features of NC/CNC system and test for electrical items.

n. Surface preparation and painting certificates.

o. Certificates from competent authority for the items coming under statutory regulations.

Where physical and chemical test certificates of material are not available, the contractor / Subcontractor shall arrange to have specimens and test samples of the materials tested in its own laboratory at his cost and submit the copies of test results in requisite numbers to purchasers / their representative for scrutiny & approval. Number to test samples against each heat / cast / lot or batch of materials shall be as per relevant Indian or international standards.

Where facilities for testing do not exists in the contractor / subcontractors' laboratories or in case of any dispute, sample & test piece shall be drawn by the Contractor / subcontractor in presence of purchaser, their representative & sealed sample shall be sent to any approved laboratory for necessary tests at contractor / subcontractor's cost.

The purchaser / their representative shall have the right to be present & witness all tests being carried out by the contractor / subcontractor at their own approved laboratories. Also, the purchaser / their representative shall preserve the right to call for confirmatory test on samples, at his discretion. Valid calibration certificate of all measuring instruments & gauges used during inspection & testing with tractability to national, standard of NPL / NPL accredited testing laboratories shall be furnished along with "inspection call" prior to undertaking inspection' by purchaser / their representative.

SCOPE OF WORK FOR CIVIL WORKS (EXTENSION OFEXISTING PUMP HOUSE)

A. GENERAL INFORMATION FOR CIVIL CONSTRUCTION

1.0 SITE

V.O. Chidambaranar Port, fast growing Port situated on the South East coast of India adjoining the Gulf of Mannar at 8°47' 30" N, and 78°12' 15" E is one of the twelve Major Port of India. The V.O. Chidambaranar Port was declared as a Major Port by the Government of India in July, 1974. The Port has two operational wings viz. Zone 'A' comprising the new port and Zone 'B' constituting the old anchorage port, situated about 9 km away from the new port. Presently, Zone 'A' has thirteen cargo berths including ten alongside berths, one oil jetty and two coal jetties. Zone 'B' has only three berths, including one north coal wharf, one sheet pile wharf and one RCC jetty.

Facilities available at V.O. Chidambaranar Port Authority

Zone `A' (Major Port)

a)	**Berths at South Breakwater**	
i)	Alongside berths	9 Nos.
ii)	Shallow Draught Berth	1 No.
b)	**At North Breakwater**	
i)	Oil Jetty	1 No.
ii)	Coal Jetty	2 Nos.
iii)	North Cargo Berths	3 Nos.
c)	**Depth**	
	Maximum depth available	14.1 m CD.

2.0 DATA

2.1 Meteorological Data

2.1.1 Atmospheric Pressure

Mean pressure reduced to MSD is 1010.7 millibars.

2.1.2 Temperature

The mean of the daily maxima and minima are about 38º C and 26 º C in summer and 28 º C and 20 º C in winter.

2.1.3 Relative Humidity

The maximum humidity are 52% and 81% during South West Monsoon and North East Monsoon respectively. The highest and lowest values of humidity will vary from 81% in winter to 61% in summer.

2.1.4 Rainfall

Tuticorin experiences rain from both South-west and North-East monsoons. The major quantum of spell occurs over the period from September to March. The average annual rainfall observed over a period of 37 years is about 610 mm. However, V.O.Chidambaranar Port received the highest rainfall of about 1100 mm in 1997 which was not witnessed in the past 50 years.

2.1.5 **Wind**

Mean wind speeds of about 15 knots are quite probable from W and ENE and about 10 knots from SSE. Wind speeds of about 27 knots lasting for a few days have also been observed. But on a very few occasions like the year 1961 these speeds have been exceeded.

2.1.6 **Cyclones**

The months of November and December are the worst as far as cyclones in this area are concerned. The winds associated with the cyclones, especially these emanating from the Bay of Bengal may generate significant disturbances. Only two severe storms passed close to Tuticorin Port and other storms crossed further away. One of these severe storms passed directly over Tuticorin with a gust speed 113 k.m.p.h. during November 1992. Recently Tsunami waves attacked Tuticorin Port during December, 2004. Tuticorin Port can work normally throughout the year except during severe storms.

2.2 Marine Data

2.2.1 **Deep Sea**

The estimated wind speed exists around 25 km/hr in January, May and October, 15 km/hr in February, March and September, 5 to 15 km/hr in April and November, 35 km/hr in December, 25 to 55 km/hr in July and about 55 km/hr in June and August. Strong wind prevails during South West Monsoon as well as North East Monsoon. The wind direction predominantly varies between 60º - 90º during November to March 220º – 270º during May to September and 180 º in April.

2.2.2 **Shore**

Morning wind prevailed about 10 knots during January – March, June, July, October and December and less than 5 knots during rest of the year. Evening wind was 10-15 knots throughout the year. Morning wind was from 20º in December to March and about 250º during rest of the year. Evening wind was 110º in December to March and 230º – 290º during the rest of the year.

2.2.3 **Tides**

The tide levels from Chart Datum at Tuticorin are given below.

Lowest Low Water Level	:	+ 0.11 m
Mean Lower low Water Springs	:	+ 0.25 m
Mean Low Water Springs	:	+0.29 m
Mean Low Water Neaps	:	+ 0.55 m
Mean Sea Level	:	+ 0.64 m
Mean High Water Neaps	:	+0.71 m
Mean High Water Springs	:	+ 0.99 m
Highest High Water Level	:	+ 1.26 m

2.2.4 **Currents**

The currents along the coast generally set with wind. Currents are weak ranging from 0.5 to 1.00 knot. The currents are southerly or northerly depending on the monsoon seasons.

2.2.5 **Waves**

National Institute of Ocean Technology has deployed one shallow water wave rider buoy to collect physical oceanographic information off V.O.Chidambaranar Port. Wave information collected by this buoy has been analyzed and a one year data has been prepared. The wave height, wave period and wave directions are shown in the Table 1 to 3.

1. The peak wave heights are observed during the mid of May and August of the order of 2.2 m and during December of the order of 1.5 m.
2. The peak wave period is 9s with the wave approaching from South of South East.
3. The Peak wave heights of 1.75 m and 2.25 m are observed from the waves approaching from East and South directions respectively.
4. The wave directions vary from about 45 º (North east) to 225 º (South West).

Table -1 Frequency analysis of Wave Height

0	Number of Occurrences	% of Occurrences	Cumulative % of Occurrences
<0.2	0	0.0	0.0
0.2-0.4	5	0.2	0.2
0.4-0.6	158	5.6	5.8
0.6-0.8	817	28.7	34.5
0.8-1.0	646	22.7	57.2
1.0-1.2	621	21.9	79.1
1.2-1.4	266	9.4	88.5
1.4-1.6	228	8.0	96.5
1.6-1.8	77	2.7	99.2
1.8-2.0	20	0.7	99.9
>2.0	4	0.1	100.0

Table – 2 Frequency analysis of Wave Period

Wave Period (s) Range	No. of Occurrences	% of Occurrences.
<2.5	0	0.0
2.5-3.0	7	0.2
3.0-3.5	252	8.9
3.5-4.0	633	22.3
4.0-4.5	398	14.0
4.5-5.0	575	20.2
5.0-5.5	345	12.1
5.5-6.0	236	8.3

Wave Period (s) Range	No. of Occurrences	% of Occurrences.
6.0-6.5	151	5.3
6.5-7.0	117	4.1
7.0-7.5	72	2.5
7.5-8.0	31	1.1
>8.0	25	0.9

Table – 3 Frequency analysis of Wave Direction from North

Wave Direction (º) Range	No. of Occurrences	% of Occurrences
<10	1	0.0
10-30	5	0.2
30-50	32	1.1
50-70	171	6.0
70-90	343	12.1
90-110	249	8.8
110-130	187	6.6
130-150	246	8.7
150-170	863	30.4
170-190	571	20.1
190-210	138	4.9
210-230	28	1.0
230-250	5	0.2
250-270	1	0.0
>270	0	0.0

2.3 Geological Data

2.3.1. Shore Area

The general features of geological conditions of Port are indicated below.

1. Shore area is of very fine sand except for a thin layer of about 2 m of limestone occurring around – 6 to -7 m below CD.
2. Flat and Low with levels varying + 1.2 m to + 1.7 m.
3. GWL varies between 0.6 m to 1.2 m below ground level.
4. Water is saline in most areas.
5. Seabed is shallow with depth of – 1 m below CD at 480 m and -10 m below CD at 3000 m from shoreline.
6. Thereafter the seabed dips at a rate of one in 100 m. approximately and a depth of (-)10 m is noticed at about 3000 metres away from the coastline.

3.0 **DATUM**

The Datum to which levels and soundings have been reduced for the purpose of Drawings in Contract is the chart datum which is 2.36 metre below the G.T.S. Benchmark situated beside the path leading to the main entrance of the Holy Trinity Church of England at Tuticorin. The Contractor will be given, by the Engineer, the value of a Benchmark relative to the chart Datum located near the Green Gate of the Port which shall be used for all setting out, soundings etc.

4.0 **BASELINE**

The base line, the length and bearings of which are given, is indicated in the Drawings.

5.0 **HIGH & LOW WATER**

The levels of high and low water shown on the drawings are derived from information available. The actual water level may vary from the predicted level from day to day. The Contractor will not be entitled to any extra payment should such levels prove during the execution of the works to be either too high or too low or delay or damage, especially due to high tides of floods.

6.0 **ORDER OF WORKS**

The order in which the works are to be carried out shall be such to suit the detailed method of construction to be adopted by the Contractors. The order in which the works are to be carried out shall be such to suit the detailed method of construction to be adopted by the Contractors. The work shall be carried out so as to enable the contractors to work concurrently and in such a way as not to be interference with the proposed Construction works of existing Fire Pump House.

The order in which the works are to be carried out shall be such to suit the detailed method of construction to be adopted by the Contractors. The order in which the works are to be carried out shall be such to suit the detailed method of construction to be adopted by the Contractors. The work shall be carried out so as to enable the contractors to work concurrently and in such a way as not to be interference with the proposed Construction works of existing Fire Pump House.

7.0 **MARKER BUOYS**

The Contractor shall install and maintain such buoys as may be necessary to define the extent of the site and alignment.

8.0 **SUB SURFACE PROFILE**

Soil investigation report nearby area to the Pump House is enclosed for ready reference. In case, bidder needs to assess the subsurface profile they have to do in their own cost.

8.1 Laboratory Tests on Samples

The laboratory tests have been carried out as per the standard procedures laid down by the Government and relevant I.S Codes and the borehole investigation details and laboratory results are attached in this document.

9.0 **SERVICES AND FACILITIES**

The following services and facilities are available for use of the contractors for construction.

9.1 Multipurpose of Workshop

Facilities for taking minor mechanical jobs are available in the Project neighbourhood. Contractors assess for the same and necessary charges should be born by the contractor directly. Port is not responsible whatsoever.

9.2 Facilities for Housing Labour

The Port may at its discretion allow use of vacant Quarters to the workmen of the Contractor on payment at Market Rent and water charges , electricity charges as per the Port Scale of Rates. Otherwise, the Port does not take any responsibility for provision of any facility to the workmen of the Contractor.

9.3 Availability of Materials

Diesel and petrol filling stations are available at Harbour Area and Tuticorin Town.

10.0 **CONTRACTOR TO WORK TO OTHER CONTRACTOR'S DRAWINGS**

The Contractor shall where so directed by the Engineer or Engineer's Representative be required to work to other Drawing whosesoever that the Drawings for works not included in this Contract are related to particular details of work.

11.0 **ATTENDANCE ON OTHER CONTRACTORS**

The Contractor shall from time to time as the Engineer directs provide attendance on other contractors and carryout minor works in connection with such Contract.

12.0 **CONTRACTORS WORKING AREA**

The location area and the plan of such structures must be got approved by the Engineer and no such work shall be constructed before obtaining the written approval of the Engineer. No rent will charged for the area allotted/occupied for the above use by VOCPA. But these buildings are not to be used for residential purposes. The allotted area shall be properly fenced with suitable material. After completion of work this area should be vacated and handed over to port.

13.0 **SURVEYS AND LEVELS TO BE AGREED**

Before the works or any part thereof are begun, the Contractor's agent and the Engineer or his Representative shall together survey and take levels of the site of the works both above and below water level and agreed to all particulars on which the survey is to be made and on which the measurements of the works are to be based. Failing such surveys and agreements being prepared and or signed by the Contractor's agent the surveys of the Engineer shall be final and binding of the contractors.

14.0 **NOTICE OF OPERATIONS**

No important operation shall be commenced nor shall the work outside the working hours be carried out without the consent of the Engineer or his Representative or without full and

complete notice also in writing being given to him sufficiently in advance of the time of the operation so as to enable him to make such arrangements as he may deem necessary for his inspection.

15.0 DIVERS

When divers are employed, the Contractor is to arrange for competent linesmen to be in attendance at all times during diving operations. Complete equipment and standby diver must be ready for the use whenever operations by a single diver are in progress. Only Divers having License to dive will be allowed to do all diving operations.

16.0 INSPECTION OF UNDERWATER WORKS

Based on need basis works done under water will be inspected by the Engineer or Representative. The Contractor shall give all assistance including provision of diving equipments required for such inspections by the Engineer or his Representative and also provide a standby diver with independent equipment during the period of inspection.

17.0 SAFETY PRECAUTIONS

17.1 The contractor shall comply with all the rules, regulations and orders of any statutory authority and of the Engineer at no extra cost to the Port. The Contractor shall obtain from the Engineer details of any restricted areas in or around the site and shall have prominently and clearly displayed for the information of his staff and workers notice defining any such restricted area. Such notice shall be provided at his own expense. The Contractor shall give every facility to the authorized safety officers of the Port to inspect the works wherever required and shall observe and abide by any instruction given by the Engineer in regard to use of the plant and equipment and temporary works whether in respect of fire hazards or general safety and any instructions on smoking or the use of the naked light by persons employed by the Contractor in compliance with such requirements. All mooring buoys lighted buoys, flags or beacons, etc., for all submerged works and of any craft floating plant and staging's of such lines tugs or other mechanical appliances and other navigation lights as and when demanded by the Naval authority or the Port Trust or any other responsible authority for their efficient working, maintenance and use at any time of day and night shall be provided. The Contractor's floating craft should conform to provisions in the relevant acts of Mercantile Marine Department regarding safety at sea.

17.2 Fire Fighting Arrangement

a) The Contractor shall provide suitable arrangements for fire fighting in the plant and equipments. For this purpose, he shall provide requisite number of fire-extinguishers and adequate number of buckets, some of which are to be always filled with sand and some with water. These equipment shall be provided at prominent and easily assessable places as directed by the Engineer and shall be properly maintained.

b) The Contractor may be subjected to periodic fire prevention inspections by local fire prevention authorities or Port's Fire Department. Deficiency or unsafe

condition shall be corrected at the cost of the Contractor with the approval of the Engineer / Port's Fire Department.

These fire prevention inspections will include but are not limited to the following:

i) Proper handling, storage and disposal of combustible materials, liquids and wastes.
ii) Work operations which can create fire hazards.
iii) Access to firefighting equipment.
iv) Type, size, number and location fire extinguishers or other firefighting equipment.
v) Inspection and maintenance of records for extinguishers.
vi) Type, number and location of containers for the removal of surplus materials and rubbish.
(vii) General house-keeping.

c) While carrying out alteration works inside the Port area, the Contractor shall isolate the zone under his occupation in consultation with the Fire Department. Smoke from welding, etc., should be kept to minimum to ensure that false alarms are not raised.

18.0 **ADVERTISING**

No advertisement may be placed on any building fencing or scaffolding etc., erected in connection with this Contract without the written permission of the Engineer.

19.0 **EXISTING SERVICES**

Drains, pipes, cables, overhead wires and similar services encountered in the course of the works shall be guarded from injury by the Contractor at his own expense so that they may continue in full and uninterrupted use to the satisfaction of the owners thereof and the Contractor shall not store materials or otherwise occupy and part of the site in a manner likely to hinder the operation of such services.

Should any damage be done by the Contractor to any main pipes, cables or lines whether above or below the ground must make good such damage at his cost without delay to the satisfaction of the Engineer.

20.0 **FILLING IN HOLES AND TRENCHES**

The Contractor immediately upon completion of any work under the Contract shall at his own expense fill up all holes or trenches which have been made or dug, level or remove mounds of earth that may have been made and clear away all rubbish obtained in the execution of the work or temporary works.

21.0 **KEEPING THE SITE CLEAN**

The Contractor shall at all times keep the site free from all surplus excavated materials, rubbish offensive matter which shall be disposed off in a manner to be approved by the Engineer.

B. **SCOPE OF WORK FOR CIVIL WORKS:**

VOCPA proposed to construct the "Extension of Fire Pump House Building as per plan". The scope of work is as follows:

1. The size of Pump House is to be extended by 10m X 12m. The dia. and founding level of existing piles are to be followed. The size of existing pump house shall be increased by 32m X 12m.

2. Contractor has to carry out a detailed survey for the sub-soil strata, and stability of the existing Pump House, facility available around the project site which may affect execution and other required information by visiting the site before quoting. The available sub-soil strata are enclosed. However, Contractor has to study in detail independently to assess the quantum and scope of work etc. if required.

3. Contractor has to make their own independent arrangement for construction of piles, deck slab, approaches etc. Contractor has to make their own arrangement for driving the piles, concreting etc by standard methodology and as approved by EIC.

4. Contractor has to execute the work without disturbing the regular Port other operation. Contractor has to take proper safety precautions and hot permissions for the activities such as welding, gas cutting etc. from the competent authorities/bodies before execution of work.

5. The tentative drawings are enclosed with the tender. However, contractor has to execute the work as per the approved drawing released by the competent authority.

6. VOCPA may appoint third party for monitoring and supervision of day to day work including quality control. Contractor has to obey the instructions given by third party on behalf of VOCPA. This work may also be inspect by any authorized Government agencies / Vigilance Department etc. and they may order for certain testing / inspection of executed work etc. Contractor has to bear the expenses for such testing and results are binding on the contractor. Such incidental costs are included in the quoted rate.

7. The miscellaneous works such as ladder, railings, filling of expansion joint, placing angles, and other inserters are required to be carried out as per site conditions and as directed by EIC.

8. The exposed concrete surface shall be coated with protective coating as per specifications.

9. Contractor may use the existing Jetty and approach without disturbing the Port operation for shifting of men and materials for proposed construction work at free of cost. However, stacking of materials is not allowed at existing Jetty. The contractor has to make their own arrangement such as removal of any existing temporary installations where ever required for execution of the project at their own cost. No etc claims are entertained in this regard.

10. Contractor has to provide sufficient number of portable site office at the site area for the

use of employer, consultant etc with necessary electrification, furniture's and storage cupboard etc. Contractor shall also place separate portable cabin at pre- cast yard as per the direction of Engineer –in- charge. The space provided for office for the use for employer as well as contractor is at free of cost. However, cost of power consumption and suitable wiring, fixing meter etc shall be borne by the contractor for both the cabins.

11. During execution of the work, if excess power is available, VOCPA may allow the contractor to take power supply from nearby sub-station or other points as directed by Engineering Section on chargeable basis as per Port's prevailing rates. However, contractor has to make their own arrangement for fixing of Meter, cables to take power connection. In case of non-availability of electric power supply at VOCPA, Contractor has to make their own arrangement by installing Generator etc. In such cases, no claim will be entertained.

12. During execution of work the contractor has to arrange a boat for inspection of the work to the employer as and when required. The berthing of this boat at Port premises shall be at free of cost. However, Contractor has to take all statutory approvals from the concerned department/ agencies before deployment of boat by producing required documents of boat. Contractor has to make proper platform to remove the bored material from the piles and shift the same to the designated location as per direction of Engineer In-charge.

13. As the work has to be carried out in Custom bound area, Contractor has to fulfill all the formalities of Customs, CISF as applicable and wherever required.

14. Contractor has to coordinate with other department officials of NTPL, TNEB, Customs, CISF, dredging contractors and other related departments to avoid disturbance of day to day operation of the Port and smooth execution of the proposed work.

15. After completion of work, Contractor has to remove and clean all the debris, waste materials, site office, temporary structures etc from site before handing over to VOCPT.

16. Contractor has to abide all rules and regulations of VOCPT and time to time instructions of the employer.

17. Contractor has to maintain the work upto one year after the issue of Substantial Completion Certificate by the employer.

18. The work may be allowed to be executed in shifts depending upon the requirement. However the contractor has to take full responsibility of safety, security and formalities of custom bound area etc. for all the shifts.

19. For execution of work, any chipping, dismantling, chiselling or any …. For the existing Coal jetty shall be carried out by the contractor. They also have to provide proper bonding agents for bonding between old and new concrete surfaces as directed in consultant manufacturers, such incidental charges are included in the quoted cost.

20. Contractor has to make their own arrangement for laying of access platform, surface preparation, Shuttering for retro fitting works such as Micro-concreting, protective coating etc.

21. After completion of work, contractor has to clean the area & handed over to Port.

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PART - E
MATERIALS

1.0. GENERAL

1.1. Indian Standard

All materials shall, as far as possible be of Indian origin and conform to be latest editions of the Indian Standards. Standards issued elsewhere may be used only if approved by the Engineer and for those materials only, for which appropriate Indian Standards do not exists.

1.2. Sampling and Testing

All materials used in the works shall be subjected to inspection and test. Samples of all materials proposed to be employed in the Permanent Works shall be submitted to the Engineer for approval, before they are brought to the site.

Samples provided to the Engineer or his Representatives for their retention are to be in levelled boxes suitable for storage. Materials or workmanship not corresponding in character and quality with approved samples will be rejected by the Engineer or his Representative.

Samples required for approval and testing must be supplied in sufficient time to allow for testing and approval due allowance being made for the fact that if the first samples are rejected further samples may be required. Delay to the works arising from the late submission of samples will not be acceptable as a reason for delay in the completion of the works.

Materials shall be tested before leaving the manufacturer's premises, where possible. Materials shall also be tested at the site and they may be rejected if found not suitable or not in accordance with the specification notwithstanding the results of the tests at the manufacturer's works or elsewhere or of test certificates or of any approval given earlier.

1.3. Despatch of Materials

Materials shall not be despatched from the Manufacturer's works or to the site without written authority from the Engineer or his Representatives.

1.4. Cost of Sampling and Testing

Sampling of materials for approval and testing as called for under the appropriate Indian Standard or other relevant Standard specification, and sampling and testing referred to in the preceding Sub-Clause and later in this specification, is to be done by the Contractor without charge to the Port and unless otherwise specified, the cost of all such tests and sampling shall be deemed to be included in the rates and prices quoted in the bill of quantities.

1.5. Test Certificates

All manufacturer's certificates of test, proof sheets mill sheets etc., showing that the materials have been tested in accordance with the requirements of the appropriate Indian Standard, other relevant standard specification or this specification, are to be supplied free of charges on request to the Engineer or his Representatives.

1.6. Names of Manufacturers and Copies of Orders

Before ordering any materials of any description for the permanent works the Contractor shall submit for the approval of the Engineer, the names of the makers and suppliers proposed and any other detail required by the Engineer and shall afterwards send to the Engineer copies in quadruplicate, of the orders given by the Contractor for the materials.

1.7. Storage of Materials

All materials used in the Permanent Works shall be stored on racks, supports, in bins under cover etc., as appropriate to prevent deterioration or damage from any cause whatsoever to the entire satisfaction of the Engineer, or his Representatives and as amplified in the succeeding clauses.

1.8. Records and Usage of Materials

The Contractor shall maintain a detailed record of all materials received used and balance quantity on the site or in his stores or storage and working areas in the vicinity of the site and shall make such records available to the Engineer at such times as the later may reasonably require. Materials shall wherever possible and practicable be used in the order in which they arrive on the site and in the stores or storage and working areas in the vicinity of the site.

1.9. Notice for inspection of Materials

Where the Engineer or his Representative shall give notice to the Contractor that materials are to be inspected off the site, the Contractor shall, having regard to the location of the materials and the nature of the inspection, test or examination required, give to the Engineer or his Representative when such materials are ready for inspection, test or examination either during manufacture, fabrication etc., or on completion, such notice as the Engineer may reasonably require to enable the inspection, test or examination to be made.

Delay to the works arising from the later submission of such notice will not be acceptable as reason for delay in the completion of the works.

1.10. Removal of Improper Materials

The Engineer or his Representative shall during the progress of the works have powers to order in writing from time to time.

(a) The removal from the site within such time or times as may be specified in the order of any materials which in the opinion of the Engineer are not in accordance with the Contract.

(b) The substitution of proper and suitable materials.

2.0. CONCRETE AGGREGATE

2.1. Standards

Aggregate shall comply with the requirements of I.S.383 & 515 "Coarse and Fine Aggregate from Natural sources for concrete".

2.2. Quality

The aggregate shall be hard, strong, durable, clean and free from any adherent coatings or other deleterious matter and shall be obtained from an approved source. Aggregates which are chemically reactive with alkalies of cement shall not be used. Aggregates which are not perfectly clean shall be washed in clean fresh water to the satisfaction of the Engineer.

"The Contractor shall take away the rejected Materials and surplus materials (that are proclaimed to be his own) to the outside the Port premises between 8 AM and 6 PM on working days at site, after obtaining due permission of the Engineer's Representative in charge of work".

2.3. Testing

All aggregates shall be subject to inspection and testing sampling and Testing shall be carried out in accordance with I.S.2386 (Part I to Part VIII) "Methods of test for Aggregate for concrete".

2.4. Aggregates for Mass Concrete

Aggregate for mass concrete work shall be mechanically combined and shall be graded to the satisfaction of the Engineer.

2.5. Fine Aggregate for Structural Concrete

The grading of the fine aggregate for reinforced concrete shall be within the limits of grading zones I and II as defined in IS 383 "Coarse and Fine aggregate from Natural sources for concrete" Fine aggregate for use of concrete shall be washed, if ordered by the Engineer.

2.6. Fine Aggregates for Mortar and Grout

Fine aggregates for mortar and grout shall be obtained from an approved source. It shall comply with IS 383 and its grading shall be in accordance with grading zone III of Table III of IS 383.

2.7. Sand for Masonry Mortars

Sand specified for masonry mortars shall be natural sand, crushed stone sand or crushed gravel sand complying with IS 2116 "Sand for Masonry Mortars".

2.8. Sand for Plastering

Sand for use in mortars for internal wall and ceiling plastering and external plastering and renderings shall conform to class `A' grading of IS 1542 "Sand for Plaster".

2.9. Coarse Aggregate

Coarse aggregates for Reinforced concrete shall consist of hard broken granite stone metal free from flat laminated or elongated pieces and shall be within the limits of the relative grading in I.S. 383 Table II. Unless otherwise specified in the drawings, all coarse aggregates for reinforced concrete shall be graded aggregate of 20 mm nominal size.

2.10. Storage at Site

Aggregate shall be stored at the site on clean, well paved and drained areas which are not liable to flooding. The various sizes and types of aggregates shall be well separated and

the layout and sitting of the storage areas shall be submitted to the Engineer for approval prior to start of construction.

2.11. Rejected Material

Any aggregate brought to the site which is not approved by the Engineer shall be immediately removed from the site.

3.0. CEMENT

3.1. Supply of Cement

The Contractor shall arrange for cement required for this work at his cost and quote the rates accordingly. Ordinary Portland Cement / PPC of the required grade viz. 43 or 53 grade conforming to I.S. Nos. 8112-1987, 12269-1987 and 1489 – 1991 respectively shall be procured by the Contractor at his cost. The Contractor shall produce to the Engineer a copy of the manufacturer's test certificate for each consignment of cement.

3.2. Tests

The Engineer may direct the Contractor to carry out such tests and analysis as he may consider necessary on each consignment of cement brought into the site. Cost of all such tests has to be borne by the Contractor. If such tests should lead to rejection of the consignment, cement from the rejected consignment shall not be used in the works and the Contractor shall forthwith remove the entire consignment from the site.

3.3. Stock of Cement

In order to ensure due progress, the Contractor shall at all time maintain on the site at least such a stock of cement as the Engineer may from time to time consider necessary. No cement shall be used upon the works until it has been accepted as satisfactory by the Engineer.

3.4. Conditions for Cement

The Contractor shall procure OPC / PPC of 53 / 43 Grade, as required for the work, from reputed manufacturers of cement, such as ACC, Ultratech, India Cements, Madras Cements, Chettinad Cements, Birla Super and Cement Corporation of India, etc. or any other brand holding licence to use ISI certification mark for their product whose name shall be got approved from Engineer. Supply of cement shall bearing manufacturers name and ISI marking. Samples of cement arranged by the Contractor shall be taken by the Engineer's Representative and got tested in accordance with provisions of relevant BIS codes. In case test results indicate that the cement arranged by 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's Representative to do so. The cement shall be brought at Site in bulk supply.

If the supply of cement is in bags, the cement godown of the adequate capacity to store cement bags shall be constructed by the Contractor at Site of work for which no extra payment shall be made. Proper lock provision shall be made to the door of the cement godown. 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's Representative at any time.

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

The actual receipt and consumption of cement on work shall be regulated and proper accounts maintained. The theoretical consumption of cement shall be worked out on the standard formula as laid down by the Engineer. Over this theoretical quantity shall be allowed a variation of minus 2%. In the event of it being discovered that the quantity of cement used is less than the quantity ascertained as hereinbefore provided (allowing variation on the minus side as stipulated above) the cost of quantity of cement not so used shall be recovered from the Contractor at the local market rate prevailed during that time.

Cement brought to site and cement remaining unused after completion of work shall not be removed from the site with written permission of the Engineer-in-charge.

Copy of manufacturer's test certificate confirms to BIS Codes for the particular consignment and invoice and bills shall be submitted by the Contractor for the supply of cement.

3.5. Storage of Cement

If the supply of the Cement in bags shall be unloaded under cover and stored (in accordance with the relevant BIS provision) in perfectly watertight and well ventilated building having a floor raised not less than 30 cm. from the ground. An air space shall be left between the floor and bottom layers of the bags. Each consignment shall be stacked separately therein to permit easy access for inspection and a record shall be kept so that each consignment may be identified by a serial number and date of delivery.

The store building shall be erected by the Contractor at his own cost near the site of work in such a manner that it is protected from all external agents which may damage it. The Contractor is fully responsible for the proper storage watch of materials.

3.6. Shuttering

All materials for shuttering shall be provided by the Contractor at his cost. The Contractor shall be entirely responsible for the sufficiency of the shuttering and for the safe removal of same. Before commencing the work he shall submit for the approval of the Engineer details of the shuttering he proposes to use, but such approval shall in no way relieve him of any of his responsibility for the sufficiency and efficiency of the shuttering.

4. WATER

Clean fresh portable water only shall be used for mixing and curing all concrete, grout and mortar. The water shall be free from any deleterious matter in solution or in suspension.

5. ADMIXTURES FOR CONCRETE

Contractor shall procure admixtures from only authorized suppliers/ directly from manufacturers like FOSROC, BASF, SIKA or equivalent. Admixtures to the cement shall be used only written approval of the Engineer. When permitted the Contractor shall furnish

full details from the manufacturer and shall carryout such test as the Engineer may require before any admixture is used in the work.

6.0. SUPPLY OF STEEL

6.1. Procurement of Steel

The steel required for the work will not be supplied by the Port. The Contractor shall arrange to procure the steel for this work at his cost.

6.2. Steel Reinforcement

Steel reinforcing TMT bars for concrete shall be Fe500 of Grade I quality complying to relevant IS code "Mild Steel and Medium Tensile Steel Bars and Hard Drawn Steel Wire for Concrete Reinforcement" or high yield strength deformed round bars conforming to BIS 1786 "Specification for Cold Twisted Steel Bars for Concrete Reinforcement". Steel reinforcements of TMT bars as per IS 1786 may be used for works in lieu of CTD bars as per BIS 1786.

The Contractor shall procure steel reinforcement bars conforming to relevant BIS codes from main producers or authorized dealers such as TISCO, SAIL, RINL,Vizag Steel, JSW or any other brand containing IS / BIS codes and as approved by Engineer. The Contractor shall have to obtain and furnish test certificates to the Engineer 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's Representative as per the provisions in this regard in relevant BIS codes. In case the test results indicate that the steel arranged by the Contractor does not confirm 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 from written orders from the Engineer to do so.

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.

6.3. For checking nominal mass tensile strength, bend test, re-bend test etc., specimen of sufficient length shall be cut from each size of the bar of random at frequency not less than that specified below:

Size of Bar	*Frequency*
Under 10 mm dia.	One sample for each 40 tonnes or part thereof
10 mm to 16 mm dia.	One sample for each 100 tonnes or part thereof
Over 16 mm dia.	One sample for each 100 tonnes or part thereof

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

6.5. The actual receipt and consumption of steel on work shall be regulated and proper accounts maintained. The theoretical calculation of steel shall be worked out as per procedure prescribed below:

Theoretical quantity of steel shall be taken as the quantity required as per design or as authorized by the Engineer including authorized Lappages. The quantity of steel exceeding this theoretical requirement including the permissible variation will be borne by the Contractor and no additional payment will be made for this.

6.6. Structural Steel

Structural steel used in the works shall confirming to BIS 226 "Structural Steel" (Standard quality).

The Contractor shall procure structural steel conforming to relevant BIS codes from main producers or authorized dealers such as TISCO, SAIL, RINL. Vizag Steel, JSW or any other brand containing IS / BIS codes and as approved by Engineer.

6.7. High Tensile Steel

High tensile steel, wherever specified, shall be in accordance with I.S. 961 "Structural steel (High tensile)".

6.8. **M.S. Plates**

M.S. Plates, wherever specified, shall be in accordance with I.S. 226.

6.9. **Storage**

Structural steel shall be kept in a clean condition until it is required to be used.

7.0 **PAINT**

7.1. **General**

All paints(anti-corporation paint – equivalent to deck guard primer and deck guard S paint) shall be of a quality approved by the Engineer and shall be obtained from only authorized suppliers/ directly from manufacturers like FOSROC, BASF, SIKA or equivalent.

8.0. **General**

All materials not herein fully specified and which may be offered for use in the works shall be subject to the approval of the Engineer, without which they shall not be used anywhere in the permanent works.

9.0. **Lead for Materials**

The lead statement furnished for the various materials are approximate only. No increase in rates shall become payable to the Contractor if the actual lead for any of the materials is found to be more than specified in the lead statement. If any materials found conveyed from Lesser lead the rate for the concerned items will be suitably revised.

10.0: **Micro Concrete**

The fluid micro-concrete repair material shall be a single component, cement based, micro-concrete to which only the site-addition of clean water (and approved graded coarse aggregates to be washed before use, where specified) shall be permitted. The micro concrete shall contain no metallic aggregates, or chlorides and shall be shrinkage compensated in the plastic state.

The micro concrete in the flow able consistency should achieve a compressive strength of not less than 10N/mm2 after 24 hours, 40N/mm2 after 7 days and 50 N/mm2 after 28 days at 300C. Most importantly, the cured micro-concrete shall contain no metallic aggregates, or chlorides and shall be shrinkage compensated in the plastic state. The unrestrained expansion shall be between 1 - 4%. The flexural strength shall not be less than 5 N/mm2 @ 28 days. The micro-concrete shall have a coefficient of thermal expansion similar to that of the host concrete. The mixed density of micro-concrete shall exceed 2100 kg/m3 at 270C.

Product details:-

i Base – micro concrete

ii Mix Proportion (By volume): As recommended by the manufacturer

iii Shelf Life – 06 months.

11.0 **Epoxy Bonding Agent:**

The bonding agent shall be based two component resin system pre-packed in distinct colours to give visual evidence for proper mixing. The bonding agent should remain in tacky state after application for a minimum period of 6 hours at 300C. There shall not be bond failure of the specimen when tested by slant shear method according to BS standards.

Product Details:

i) Base – Epoxy bonding agent

ii) Mix Proportion (By volume) & Mixing Procedure: As recommended by the manufacturer

12.0 **: Membrane curing agent:**

Acrylic based, concrete curing compound, ready to use clear membrane curing compound based on selected acrylic resins, which when applied on to freshly placed concrete surfaces provides an efficient curing membrane with excellent non yellowing properties. The curing membrane also acts as a primer for selected surface coatings thereby avoiding the need to remove it before application of such coatings.

Product details:-

i . Mix Proportion (By volume): As recommended by the manufacturer.

ii. Consumption: per litre: 5 m2.

iii. Curing - 48 hours in air at 25° C

Note:

Contractor shall procure chemicals or factory made materials for this project from only authorized suppliers/ directly from manufacturers like FOSROC, BASF, SIKA or equivalent conforming with IS/BIS standards. The products shall be used only after written approval of the EIC. When required the Contractor shall furnish full details from the manufacturer and shall carryout such test as the Engineer may require before any products is used in the work.

SECTION VII

SAFETY NORMS & EMS REQUIREMENTS

7.1 SAFETY CLAUSE:

a) The contractor should take all precautionary measures in order to ensure the protection of his own personnel moving about or working on the VOCPA premises and should conform to the rules and regulations of the VOCPA.

b) The Contractor should abide by all VOCPA regulations in force from time to time and ensure that the same are followed by his representatives, agents or sub- contractors, or workmen.

c) The contractor should ensure that unauthorized, careless, or inadvertent operation of installed equipment which may result in an accident to staff and/or damage to equipment, does not occur.

7.2 EMS REQUIREMENTS:

a) The contractor shall ensure that all his workmen wear PPEs commensurate with the severity of work.

b) The contractor shall ensure industrial safety methods in executing his work at VOCPA.

c) The contractor shall ensure that all wastes generated by his activities/work are moved to the respective dumpsites or taken for re-cycling at VOCPA.

d) The contractor has to give prior information on whether any hazardous chemical is used in his work and if so, the operational control to be exercised.

e) The contractor has to ensure that all his material handling equipment / transport Vehicles are emission tested.

f) The contractor has to ensure that his activities are in tune with the VOCPA EMS Policy (to be incorporated as part of the Contract)

g) The contractor's staff must be aware of the contents of MSDS in respect of chemicals / materials (if any).

h) The contractors' staff shall be competent to operate emergency appliances like fire extinguishers.

7.3 Hazardous Substances and Hazardous Site Conditions

a) Contractor shall not, nor shall it permit any other Person to bring any Hazardous Substances on the Site, other than Hazardous Substances to be used by Contractor or any Subcontractor in a manner that:

   (i) does not violate any Applicable Laws, or Permits; and

   (ii) is consistent in quantity and with Good Solar Industry Practices for operating and maintaining solar energy conversion plants, such as motor fuels, solvents and lubricants (collectively, "Permissible Materials").

b) Contractor shall bear all responsibility and liability for:

   (i) any Hazardous Substances that are not Permissible Materials belonging to the Contractor or present on site; or

   (ii) the handling of, or failure to handle, Permissible Materials in violation of Applicable Laws or otherwise in any manner that constitutes negligence or wilful misconduct by Contractor or any Subcontractor.

   (iii) Contractor shall use Hazardous Substances in performance of the Services in accordance with the Performance Standards, Applicable Laws and Good Solar Industry Practices and shall not:

   (iv) utilize, or permit or cause any Subcontractor to utilize, on the Site such Hazardous

Substances as are prohibited under Applicable Law from being used in India; or

(v) import or use at the Site such Hazardous Substances as are prohibited under Applicable Law

NB: The section may be read in conjunction with related clauses of General Condition of Contract, Special Condition of Contract and Scope of Work.

SECTION VIII

ANNEXURES AND FORMS

ANNEXURE A

QUALIFICATION AND RESPONSIVENESS INFORMATION: LIST OF DOCUMENTS TO BE ENCLOSED

All bidders shall include the following information with their bids by scanning the relevant documents after being filled, signed with seal and serially numbered by the Bidder. The above shall be uploaded using their user-id and password in the E-tender portal on or before the last date of submission of tender mentioned in the NIT towards Cover A – Techno-commercial bid.

PART I (COVER A) – TECHNO-COMMERCIAL BID

Sl. No	Qualification Documents to be uploaded	Uploaded Page Ref No.
1	**Form I** – Bid cover letter (as per **Section II**, **clause 2.1.17.3.(i))**	
2	**Form II** – Transaction details for remittance of Earnest Money Deposit (as per **Section II**, **clause 2.1.17.3(ii))** Scanned copy of system generated proof towards successful payment of EMD in case of payment through online payment gateway mode in CPP e- tender web Portal **OR** scanned copy of proof towards successful payment of EMD in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee from any of the Commercial Banks along with filled in **Form-IIA OR** valid Certificates by MSEs for claiming exemption along with filled in **Form-IIB**	
3	**Form III** – Financial capability (as per **Section II, clause 2.1.17.3(iii))** Scanned copy of Profit & Loss statements for the last 3(three) years ending 31st March of the previous financial year duly certified by the Chartered Accountant in support of meeting Financial Capability	
4	**Form IV** Similar Work Experience [as per **Section II, clause 2.1.17.3(iv))** Scanned copies of work order(s) along with BOQ & respective satisfactory completion(s) / performance certificate(s) certificates in support of meeting Similar Work Experience	
5	**Form IV A** – Details of TDS certificate (if applicable) (as per **Section II, clause 2.1.17.3 (iv))**	

	In case of experience other than Central / State Government / Autonomous bodies / PSEs / PSUs / Public Limited Companies, the bidder has to submit scanned copies of TDS certificate	
6	Scanned copies of (i) EPF registration certificate; (ii) ESI; (iii) Permanent Account Number [PAN]; (iv) Income Tax Return of preceding three years; and (v) GST Registration Certificate (as per **Section II, clause 2.1.17.3 (v)**)	
7	**Form V** – Declaration of Authorised Representative (as per **Section II, clause 2.1.17.3 (vi)**)	
8	**Form VI** – Schedule of No Deviation (as per **Section II, clause 2.1.17.3 (vii))**	
9	**Form VII** Declaration by the Bidder (as per **Section II, clause 2.1.17.3 (viii))**	
10	**Form VIII** – Bank Mandate Form (as per **Section II, clause 2.1.17.3 (ix))**	
11	**Form IX** -Tender Acceptance letter (as per **Section II, clause 2.1.17.3 (x))**	
12	Duly filled in Form-XI – "Local Content declaration & Self Certification" [**wherever applicable if specifically asked for in bid document]** (as per **Section II, clause 2.16.2.(xii))**	
13	**Form- X** - Integrity pact (as per **Section II, clause 2.1.17.3 (xi))**	
14	Details of Technical Manpower to be deployed for execution of work **[wherever applicable if specifically asked for in bid document]** (as per **Section II, clause 2.1.17.3 (xiii))**	Not applicable
15	Scanned copy of valid license "ESB/" ESA"/"EA" grade issued by the Licensing Board **[wherever applicable if specifically asked for in bid document]** (as per **Section II, clause 2.1.17.3 (xiv))**	Not applicable
16	The bidder shall submit the technical details and Bouchers of the proposed FFFS Components along with technical bids along with necessary certifications as per the technical requirement.	
17	**FORM-XII -** Declaration of Power of Attorney	
18	**FORM-XIII -** Declaration of Power of Attorney for Consortium Attorney	
19	**FORM-XIV -** Evidence towards site visit	

20	Any other documents which need to be uploaded.	
20	Total number of the pages uploaded by the bidder (mentioned the page no. starting from to end)	
	1. Starting page no.	
	2. Ending page no.	
	3. Total number of pages	

(Fill the page numbers where the documents have been uploaded in the table provided above)

(Signature of Authorized Person)

Place: …….

Name ……..

Date: ……..

Designation ……

Business Address: ……..

…….

Seal……..

FORM I

(To be in the Firm's letter head)

Date:……

BID COVER LETTER

1.	Registered Business Name	:
2.	Registered Business Address	:
3.	Name, Designation& address of the Contact Person to whom all references shall be made regarding this tender	:
4.	Telephone / Mobile No.	:
5.	Fax	:
6.	E-Mail	:

To

The Chief Mechanical Engineer,
Mechanical & Electrical Engineering Department,
V.O. Chidambaranar Port Authority,
Tuticorin – 628 004.

Sir,

We hereby apply to be qualified for the tender invited by the V.O. Chidambaranar Port Authority, Tuticorin as a bidder for the work "_____"

We hereby give our consent to the Port or its authorized Representative(s) to conduct any investigations to verify the statements, documents and information submitted and to clarify the financial and technical aspects of this application. For this, we hereby authorize (any Public Official, Engineer, Bank, Depository, Manufacturer, Distributor, etc.) or any other person or firm to furnish pertinent information deemed necessary and requested by the Port to verify statements and information provided in this application or regarding our competence and standing.

We the undersigned have read and examined in detail the Bid document in respect of work intended and do hereby express our interest to execute the intended work.

We certify that goods & services offered shall be of best quality and the manpower who shall be deployed for the work are competent enough and have necessary qualifications for taking up this assignment.

The names and positions of persons who may be contacted for further information, if required, are as follows

a) For Technical: Shri/ Smt. …… (Name, position, Address, contact number and email id)
b) For Financial: Shri/ Smt. …… (Name, position, Address, contact number and email id)
c) For Personnel: Shri/ Smt. …… (Name, position, Address, contact number and email id)

We declare that the statements made and the information provided in the application are complete, true and correct in every detail.

We understand that V.O. Chidambaranar Port Authority reserves the right to reject any application without assigning any reasons.

Thanking you,

Yours faithfully,

(Signature of Authorized Person)

Place: …….
Date: ……..

Name …….
Designation ……
Business Address: ……..

Seal…….

FORM IIA

(To be in the Firm's letter head)

Date:……

Transaction details for remittance of Earnest Money Deposit (EMD)

The bidder shall upload system generated proof towards successful payment of EMD along with following filled in form in the bid document as follows

Sl.No	Beneficiary reference No.	Date of Payment	Amount (in INR)	Uploaded page No. reference
1				

(Signature of Authorized Person)

Place: …….

Name …….

Date: ……..

Designation ……..

Business Address: ……

……

Seal …….

FORM IIB

(To be in the Firm's letter head)

Date:……

Exemption of EMD by the Micro and Small Enterprises (MSEs)

The bidder shall upload the requisite certificate of registration under **MSEs** along with following filled in form in the bid document as follows

Sl. No	Name of Enterprise	Udyam Registration Number	Enterprise type	Uploaded page No. reference
1				

(Signature of Authorized Person)

Place: …….

Date: ……..

Name …….

Designation ……..

Business Address: ……

……

Seal …….

FORM III

(To be in the Firm's letter head)

Date:……

FINANCIAL CAPABILITY

The details of Summary of Annual Turnover of the Bidder on the basis of the Audited Balance Sheet for the last three financial years shall be given as under

Sl.No.	***Financial year***	***Total Turnover***	***Uploaded page no. reference***
01	Year 20..... –	Rs.....	
02	Year 20..... –	Rs.....	
03	Year 20..... –	Rs.....	

Note: The Profit & Loss statement and Balance sheet to be uploaded shall be duly certified by the Chartered Accountant.

(Signature of Authorized Person)

Place: …….

Date: ……..

Name …….

Designation ……..

Business Address:

……

Seal …….

FORM- IV

(To be in the Firm's letter head)

Date:……

SIMILAR WORK EXPERIENCE

The Bidders experience in similar work carried out each in any Central / State Government / Autonomous bodies / PSEs/PSUs / Nationalised Banks / Public Limited or Private Limited Companies, etc., for evaluating the Eligibility Criteria for pre-qualification to be provided using the format as below:

Details of Similar Work Experience

Sl. No	Name of work	Value of work executed (in Rs.)	Work order reference No.	Contract period		Date of completion certificate	Name and address of the Client	Uploaded page no. reference
				Commencement	completion			
1								
2								
3								

Note:

1. The copies of the documents containing above information like work order and completion certificate have to be uploaded duly self-attested.
2. In case of experience other than Central / State Government / Autonomous bodies / PSEs/PSUs/ Public Limited Companies, the bidder has to submit TDS certificate for the past experience to be uploaded, as provided in **Form IV (B),** only then the experience will be considered.

Yours faithfully,

(Signature of Authorized Person)

Place: …….

Date: ……..

Name …….

Designation ……..

Business Address: ……

……

Seal …….

FORM IV(A)

(To be in the Firm's letter head)

Date:……

DETAILS OF TDS CERTIFICATE

In case of experience other than Central / State Government / Autonomous bodies / PSEs/PSUs/ Nationalized Banks / Public Limited Companies, the bidder has to provide the details of the TDS certificate in the form provided below and shall submit TDS certificate for the past experience to be uploaded, only then the experience will be considered.

Sl. No	Name of work	Value of work executed (in Rs.)	Work order reference No.	TDS Certificate		Name and address of the Client	Uploaded page no. reference
				No.	Amount		
1							

(Signature of Authorized Person)

Place: …….

Name …….

Date: ……..

Designation ……..

Business Address: ……

……

Seal …….

FORM V

DECLARATION OF AUTHORISED REPRESENTATIVE

(To be provided in non-judicial stamp paper with denomination not to be lesser than Rs.100/-)
(Separate Forms to be submitted for each Signatory with details of Proprietor or Partner or Managing Director)

I/We, ... (Name)being the (Partners/Karta/Managing Directors and whole time Director/Members of Managing Committee of Associations/Board of Trustees etc.) of ..... (Name of the Bidder), hereby solemnly affirm and declare that the ..... (Authorised Signatory) is hereby authorized, vide resolution No. (Resolution Number)dated..... (Resolution Date) (copy submitted herewith), to act as an authorized signatory for the business..... (Name of the Bidder) for which submission of bid is being filed under the tender. All his actions in relation to this tender will be binding on me/us.

Signature of the person competent to sign

Name: .....

Description: .....

Name of the Business Entity: .....

Acceptance as an Authorized Signatory

I (Authorised Signatory)hereby solemnly accord my acceptance to act as authorized signatory for the above referred business and all my acts shall be binding on the business.

Signature of Authorised Signatory

Name: .....

Description: .....

Place: .....

Date: .....

Note:

1. For the purpose of this tender and the Agreement, the tender, forms, Agreement and other documents shall be signed only by the persons, who are themselves in a position to undertake the work and possessing all other resources required for the purpose. The tender shall contain the name, residence and place of business of the person or persons submitting the tender and shall be signed by the Bidder with his usual authorized representatives followed by the name and Description of the person signing the document along with a copy of the partnership deed. A copy of the constitution of the firm with the names and addresses of all the partners shall be furnished.
2. Tender by a corporation shall be signed in the name of the corporation by a duly authorized representative, and a power of attorney in that behalf shall accompany the tender. In the case of company, a copy of the Memorandum and Articles of Association shall be furnished.

3. Tenders may be submitted by agents on behalf of their principals, but in such cases the Board reserves the right to enter into contract with the principals, Director, with the principals and agents jointly as deemed appropriate.

FORM VI

SCHEDULE OF NO DEVIATION

This is with reference to Tender No……., for "……"

I/We, ... (Name of the Bidder / Authorised Representative of the Bidder) of M/s..... (Name of the organisation), hereby certify that there is no deviation from the Tender conditions either technical or commercial or tender enquiry and I/We am/are agreeing to all the terms and conditions mentioned and comprised in relation to the above-mentioned Tender.

Yours faithfully,

(Signature of Authorized Person)

Place: …….

Date: ……..

Name …….

Description ……..

Business Address: ……

……

Seal …….

Witness with signature

1) Name & Address

.....
.....
.....

2) Name & Address

.....
.....
.....

FORM VII

DECLARATION BY THE BIDDER

(To be provided in 100 Rs Stamp Paper)

To, The Head of the Department.

I/We M/s. represented by its Proprietor / Managing Partner / Managing Director having its Registered Office at and do declare that I/We have carefully read all the conditions of tender with NIT No……, dated ……., Basis In ……(Name Of The Department) Department At V.O.Chidambaranar Port Authority for a period of ----------,(including extension if any), if needed and accepts all conditions of the tender including amendments/corrigendum subsequently issued by the tender inviting authority, if any. Further I/we confirm our eligibility for this tender and quoted as per the tender condition and Governing laws of India, in case of typographical error found in submitted documents/affidavits/declarations, in this case we accept all the Terms and conditions of bid documents and hereby confirm as under.

1. I/We have not made any counter conditions stipulation and conditions and I/We agree that in the event of any such counter conditions my/our tender will be summarily rejected and such offer will not be evaluated and considered at all by you.
2. I/We do hereby declare that we have not been blacklisted/ debarred by any Central / State Government / Autonomous bodies / PSEs/PSUs / Nationalised Banks / Public Limited or Private Limited Companies, etc., from taking part in the tendering process.
3. I/We have not made any payment or illegal gratification to any person/authority connected with the tendering process so as to influence the tendering process and have not committed any offence under the Prevention of Corruption Act in connection with the tender.
4. I/We hereby declare that, all information furnished by me/us with this tender is true to best of my/our knowledge, belief and in case, if it is found that, the information furnished is not true or partially true or incorrect, I/We agree that my/our tender shall be summarily rejected without prejudice to the right of the board of Trustees of Port of V.O.Chidambaranar Port Authority to take further action in to the matter.

Witness's	Bidder's
Signature: _____ (with date)	Signature:_____ (with date)
Name: _____	Name: _____
Address: _____	Address: _____
Tel. No: _____	Tel. No: _____
Mobile no.:_____	Mobile No:_____

FORM VIII

BANK MANDATE FORM

1. Name of the company :
2. Status :
3. Bank Name, Address & Branch :
4. IFSC Code :
5. MICR Code :
6. Branch Code :
7. Name of the Authorised Person :
8. Signature of the authorised person as per Bank :
9. E-Mail ID of Authorised Person :
10. Contact No. Landline/Mobile :

Copy of cancelled cheque may be enclosed if Bank signature not obtained.

Name & Seal of the Bank with Date

FORM IX

TENDER ACCEPTANCE LETTER

(To be printed on company letterhead and filled, signed, and uploaded)

To

The Chief Mechanical Engineer

V.O. Chidambaranar Port Authority

Tuticorin-4

Sir,

Subject: "----------

Tender reference No. ----------

1. I/We have downloaded/obtained the tender document(s) for the above-mentioned tender/work from the website, namely https://etenders.gov.in/eprocure/app, as per your advertisement given in the above-mentioned website(s).
2. I/We hereby certify that I/We have read the entire terms and conditions of the tender documents from **Page No. to** (including all documents like annexure(s), schedules(s), etc., which form part of the contract agreement and I /we shall abide hereby and agree the terms /conditions /clauses contained therein.
3. The corrigendum(s) issued from time to time by V.O.Chidambaranar Port Authority for the above subject work has also been taken into consideration while submitting this acceptance letter.
4. I/We hereby unconditionally accept the tender conditions of above-mentioned tender document(s)/ corrigendum (s) in its totality /entirety.
5. I/We do hereby declare that our firms have not been blacklisted/ debarred by any Govt. Department/ Public sector undertaking.
6. I / We certify that all information furnished by me/ us is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then V.O.Chidambaranar Port Authority shall without giving any notice or reason therefore, summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full earnest money deposit absolutely

Yours faithfully,

(Signature of the bidder with official seal)

Note: If the firm has been blacklisted or debarred or banned or delisted by any Government or Quasi-Government Agencies or Public Sector Undertaking in India, then the same should be declared properly after modifying the sentence, suitably.

FORM X

Local content Declaration & Self Certification as per the Government of India Order towards Public Procurement (preference to Make in India) vide Letter No. P-45021/2/2017-PP(BE-II), (revised) Dated.16.9.2020)

(To be provided on Rs.100/- non-judicial stamp paper)

I_____(Name of the Person(s),S/o _____at _____(Address), working as _____(Designation and name of the firm/Company/ partnership/ Joint venture), and I have been authorized to sign the Declaration / Self- Certification on behalf of firm / Company/partnership/ Joint venture do hereby solemnly affirm and declare as under:

That I will agree to abide by the terms and conditions of the policy of Government towards Public Procurement (preference to Make in India) vide Letter No. P- 45021/2/2017-PP(BE-II), (revised) Dated.16.9.2020. That the information furnished hereinafter is correct to be of my knowledge and belief and I undertake to produce relevant records before the procuring entity or any

authority so nominated for the purpose of assessing the Local Content. That the local content for all inputs which constitute the said equipment has been verified by me and I am responsible for the correctness of the claims made therein. That in the event of the domestic value addition of the product mentioned herein is found to be incorrect and not meeting the prescribed value addition norms based on the assessment of an authority so nominated for the purpose of assessing the Local Content, action will be taken against me as per the notification P-45021/2/2017- PP(BE-II), (revised) Dated.16.9.2020.

I agree to maintain the following information in the company's record for a period of 8 years and shall make this available for verification to my statutory authority. The Details of the location(s) at which the local value addition is made

i. Name and details of the Domestic manufacture
ii. Date on which this certificate is issued
iii. Product for which the certificate is produced
iv. Percentage of local content. (% to be mentioned)

Signed by me at _____on_____
Authorized signatory
(Name of the Firm entity)

Note: Required particulars are to be filled properly for acceptance.

FORM XI

INTEGRITY PACT

Between

The Board of V.O. Chidambaranar Port Authority, a body corporate under Major Port Authority Act, 2021, represented by its ..... having its office at Administrative building, V.O. Chidambaranar Port Authority, Tuticorin – 628 004 (herein after referred to as the 'Board' which expression shall unless excluded by or repugnant to the subject or context be deemed to include the successor in office) of the one part

And

M/s....., (a partnership firm / proprietorship firm / company registered under the laws of India) having its place of business at ..... represented by its ..... Shri....., s/o..... (Hereinafter referred to as 'Contractor' which expression shall, unless excluded by, or repugnant to the context be deemed to include his heirs, executors, administrators, representatives and assigns or his successors in office) of the other part

PREAMBLE

The Port intends to award, under laid down organizational procedures, contract/s for "----------" vide NIT No----------. The Port values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness /transparency in its relations with its Bidder(s) and/or Contractor(s).

In order to achieve these goals, the Port will appoint an Independent External Monitor (IEM) who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1 – Commitments of the Port:

1. The Port commits itself to take all measures necessary to prevent corruption and to observe the following principles.
   - **a)** No employee of the Port, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
   - **b)** The Port will, during the tender process treat all Bidder(s) with equity and reason. The Port will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
   - **c)** The Port will exclude from the process all known prejudiced persons.
2. If the Port obtains information on the conduct of any of its employees which is a criminal offense under the IPC/PC Act, or if there be a substantive suspicion in this regard, the Port will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions.

Section 2 – Commitments of the Bidder(s)/ contractor(s):

1. The Bidder(s)/ Contractor(s) commits themselves to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.

   a) The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Port's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

   b) The Bidder(s)/ Contractor(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

   c) The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act; further the Bidder(s)/Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Port as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

   d) The Bidder(s)/ Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

   e) The Bidder(s)/Contractor(s) who have signed the Integrity Pact shall not approach the Courts while representing the matter to the IEM and shall wait for the decision in this matter.

2. The Bidder(s)/Contractor(s) will not instigate third persons to commit offenses outlined above or be an accessory to such offenses.

Section 3 – Disqualification from tender process and exclusion from future contracts:

1. If the Bidder(s)/Contractor(s), before award or during execution has committed a transgression through a violation of **Section 2** above or in any other form such as to put his reliability or credibility in question, the Port is entitled to disqualify the Bidder(s)/Contractor(s) from the tender process or terminate the Contract, if already signed, for such reasons mentioned above.

2. If the Bidder / Contractor have committed a serious transgression through a violation of **Section 2** such as to put reliability or credibility into question, the Port is entitled to exclude the Bidder / Contractor from participating in future tender processes. The imposition of such duration of exclusion shall be determined based on the severity of the transgression. The severity will be determined by the circumstances of the case, in particular the number of transgressions, the position of the transgressors within the company hierarchy of the Bidder / Contractor and the amount of the damages. The exclusion may be imposed for a period of minimum 6 months to the maximum of 3 years. In such cases, the decision of the Port shall be final.

Section 4 – Compensation for Damages:

1. If the Port has disqualified the Bidder(s) from the tender process prior to the award of contract according to **Section 3**, the Port is entitled to demand and recover the damages equivalent to 3% of the tender value.

2. If the Port has terminated the contract according to **Section** 3, or if the Port is entitled to terminate the contract according to **Section 3**, the Port shall be entitled to demand and recover from the Contractor liquidated damages amount equivalent to 5% of the contract value.

3. If the Bidder / Contractor can prove that the exclusion of the Bidder / Contractor from the tender process or the termination of the contract has caused no damage or less damage than the amount of the above-mentioned liquidated damages, the Bidder / Contractor has to compensate only to the extent of damages caused due to the act of the Bidder / Contractor. However, if the Port can prove that the amount of the damage caused due to the disqualification of the Bidder / Contractor before the award of contract or after the termination of the contract is higher than the amount of the liquidated damages claimed, the Port is entitled to claim more compensation for the equivalent to the higher amount of damage.

Section 5 – Previous transgression:

1. The Bidder declares that no previous transgressions occurred in the last 3 (three) years with any other Company in any country conforming to the anti-corruption approach or with any Central / State Government / Autonomous bodies / Public Sector Enterprises in India that could justify his exclusion from the tender process.

2. If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

Section 6 – Equal treatment of all Bidders/Contractors/Subcontractors:

1. The Bidder(s) / Contractor(s) undertakes(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact and to submit it to the Port before signing of the Contract.

2. The Port will enter into agreements with identical conditions as this one with all Bidders, Contractors and Subcontractors.

3. The Port will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

Section 7 – Criminal charges against violating Bidder(s) / Contractor(s) / Subcontractor(s):

If the Port obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Port has substantive suspicion in this regard, the Port will inform the same to the Chief Vigilance Officer.

Section 8 – Independent External Monitor / Monitors:

1. The Port appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

2. The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. It will be obligatory for him to treat the information and documents of the Bidders/Contractors as confidential. He reports to the Chairman of the Board of the Port.

3. The Bidder(s)/Contractor(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the Port including that provided by the Contractor. The Contractor will also

grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors.

4. The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/Contractor(s)/Subcontractor(s) with confidentiality. The Monitor has also signed on 'Non-Disclosure of Confidential Information' and of 'Absence of Conflict of Interest'. In case of any conflict of interest arising at a later date, the IEM shall inform Chairman of the Port and rescue himself/herself from that case.
5. The Port will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Port and the Contractor. The parties offer to the Monitor the option to participate in such meetings.
6. As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Chairman of the Port and request the Chairman to discontinue or take corrective action or to take other relevant action. The Monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.
7. The Monitor will submit a written report to the Chairman of the Port within 8 to 10 weeks from the date of reference or intimation to him by the Port and, should the occasion arise, submit proposals for correcting problematic situations.
8. If the Monitor has reported to the Chairman of the Port, a substantiated suspicion of an offense under relevant IPC / PC Act or Anti-Corruption Laws of India, and the Chairman of the Port has not, within the reasonable time taken visible action to proceed against such offense or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.
9. The word '**Monitor**' would include both singular and plural.

Section 9 – Pact Duration:

This Pact begins when both parties have legally signed it. It expires for the Contractor in 12 months after the last payment under the Contract Agreement, and for all other Bidders in 6 months after the contract has been awarded. Any violation of the same would entail disqualification of the bidders and exclusion from future business dealings.

If any claim is made/lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/determined by Chairman of the Port.

Section 10 – Other provisions:

1. This agreement is subject to Indian Law. Place of performance and jurisdiction is the location of the Office of the Port, i.e. Tuticorin.
2. Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.
3. If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.

4. Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
5. Issues like Warranty / Guarantee etc., shall be outside the purview of IEMs.
6. In the event of any contradiction between the Integrity Pact and its Annexure, the Clause in the Integrity Pact will prevail.

……	……..……
(For & on behalf of the Port)	(For & on behalf of the Bidder/Contractor)
……...……	……
(Office Seal)	(Office Seal)
Place: …….	
Date: ……..	
Witness with signature	
1) Name & Address	2) Name & Address
.....	.....
.....	.....
.....	.....

ANNEXURE B

CONTRACT AGREEMENT FORM

This AGREEMENT is made on this ..... day of .....Month of..... Two Thousand ..... (..... 20....) between

The Board of V.O. Chidambaranar Port Authority, a body corporate under Major Port Authority Act, 2021, having its office at administrative building, V.O. Chidambaranar Port, Tuticorin – 628 004 (herein after referred to as the 'Board' which expression shall unless excluded by or repugnant to the subject or context be deemed to include the successor in office) of the one part.

And

M/s....., (a partnership firm / proprietorship firm / company registered under the laws of India) having its place of business at ..... (Hereinafter referred to as 'Contractor' which expression shall, unless excluded by, or repugnant to the context be deemed to include his heirs, executors, administrators, representatives and assigns or his successors in office) of the other part

WHEREAS the Board of V.O.Chidambaranar Port Authority, Tuticorin is desirous of the executing the "_____ "

WHEREAS the Contractor has offered to execute, complete and maintain such works till handing over the Board and whereas the Board has accepted the tender of the Contractor for an amount of Rs._____(Rupees_____) only and

WHEREAS the Contractor has furnished a sum of Rs._____/- (Rupees _____ only) as Earnest Money Deposit (EMD) at the time of tendering, which will be adjusted against Security deposit as stipulated in **Clause No.2.13.5** of the **Section II** of the bid document and the Security deposit will be collected by deductions from the monthly running bills, at the rates mentioned therein for the due fulfilment of all the conditions of the Contract.

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this agreement words and the expressions shall have the same meanings as are respectively assigned to them in the conditions of the contract hereinafter referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement viz.

(a) Notice inviting tender

(b) The original Tender Document

(c) Bid document uploaded by the Bidder

(d) Letter of Acceptance

(e) Any correspondences and documents exchanged between the Contractor & Board in connection with tender/Contract.

3. The Contractor hereby covenants with the Board to execute, complete and maintain the work till handing over the Board in all respects in in conformity and in all respects with the provisions of this Agreement.

4. The Board hereby covenants to pay the Contractor in consideration of such execution, completion, and maintenance of the work for the "Contract Price" at the time and in the manner prescribed by the Contract.

IN WITNESS WHEREOF the parties here into have set their hands and seals the day and year first written.

The common seal of the Board of V.O. Chidambaranar Port Authority was here into affixed and

The ..... thereof, has set his

Hand in the presence of

V.O. Chidambaranar Port Authority

Signed and sealed by

The Contractor in the presence of

Witness with signature

1) Name & Address

.....
.....
.....

2) Name & Address

.....
.....
.....

ANNEXURE C

FORM OF BANK GUARANTEE

(For Performance Security)

In consideration of the Chairman representing the Board of V.O.Chidambaranar Port (hereinafter called "The Port") having agreed to exempt (hereinafter called "said contractors") from the demand, under the terms and conditions of the contract awarded in No dated made between and for (hereinaftercalled"saidAgreement")ofPerformancesecurityfortheduefulfillmentbythesaid contractor(s) of the terms and conditions contained in the said Agreement, on the production of Bank Guarantee for Rs._____(Rupees.....only).

We* (hereinafter referred to as the Bank) at the request of the contractor(s) do herebyundertaketopaytothePortanamountnotexceedingRs.againstanylossordamagecausedto or suffered or would be caused to or suffered by the Port by reason of any breach by the said contractor (s)of any of the terms and conditions contained in the said Agreement.

We*doherebyundertaketopaytheamountsduepayableunderthisGuaranteewithoutanydemur, merely on demand from the Port stating that the amount claimed is due by way of loss or damage caused to or would be caused to or suffered by the Port by reason of any breach by the said contractor(s) of any of the terms and conditions contained in the said Agreement or by reason of the contractor(s) failure by performing the said Agreement. 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 an amount not exceeding Rs……..

We undertake to pay to the Port any money so demanded notwithstanding any dispute or disputes raised by the Contractor(s) in any suit or proceedings 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.

We* further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the Port under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till the Engineering Department, V.O.Chidambaranar Port Authority certified that the terms and condition of the said Agreement had been fully and properly carried out by the said contractor's and accordingly discharges this Guarantee. Unless a demand or claim under this Guarantee is made on us in writing within three months from the date of expiry of the validity of the Guarantee period, we shall be discharged from all liability under this Guarantee thereafter provided further that the Bank shall at the request of the Port but at the cost of Contractor(s) renew or extend this Guarantee for such further period or periods as the Port may require.

We * further agree the Port, that the Port shall have the fullest liberty without consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extend the time of performance by the said Contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Port against the said Contractor(s)or for any

Forbearance, act or omission on the part of the Port or any indulgence by the Port to the said Contractor(s) or by any such matter or thing whatsoever which under the Law relating to sureties would but for this provision, have the effect of so relieving us.

This Guarantee will not be discharged due to the charge in the constitution of the Bank or the Contractor(s)

We* lastly undertaken Otto revokes this Guarantee during its currency except with the previous consent of the Port in writing. (Validity/Period should be noted)

This guarantee is valid upto (period) Dated the.....day of 20__for. .....**

Indicate here the name of the Bank Indicate here the period or date.

FORM XII

DECLARATION OF POWER OF ATTORNEY

(To be executed before Notary Public on a Non-Judicial Stamp Paper of at least Rs 100)

Dated: _____

POWER OF ATTORNEY

To whomsoever it may concern

Mr._____ [**Name of the Person(s)**], residingat _____[**Address of the person(s)**], acting as ____ (**Designation of the person and name of the firm**), and whose signature is attested below, is hereby authorized on behalf of_____[**Name of the Bidder (in case of a consortium, name of the lead member)**] to sign the tender [**(Tender No. ……..**and **(Tender subject- "……")]** and submit the same and is hereby further authorized to provide relevant information/ document and respond to the enquiry's etc. as may be required by V.O Chidambaranar Port Authority (VOCPA) in respect of the tender.

And I/ we hereby agree that all acts, deeds and things lawfully done by our said attorney shall be construed as acts, deeds and things done by us and I/ we undertake to ratify and confirm all and whatsoever that my / our said attorney shall lawfully do or cause to be done for me / us by virtue of the power hereby given.

(Attested signature of Mr._____)

For_____(Name of the Bidder / Consortium Members with Seal)

Note –
(In case of Consortium, representative of all members must sign)

FORM XIII

DECLARATION of POWER OF ATTORNEY FOR LEAD MEMBER OF CONSORTIUM

(To be executed before Notary Public on a Non-Judicial Stamp Paper of at least Rs 100)

POWER OF ATTORNEY

Whereas V.O Chidambaranar Port Authority. Thoothukudi ("the Authority") has invited tenders from interested parties for "……..." (Tender No.....).

Whereas ……., ……., ……. And …… (collectively the "Consortium") being members of the Consortium are interested in bidding for the Tender in accordance with the terms and conditions of the Tender Document and other connected documents in respect of the said tender, and

Whereas it is necessary under the Tender Document for the members of the Consortium to designate one of themas the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's bid for the Tender and its execution.

NOW THEREFORE KNOW ALL MEN BY THESE PRESENTS

We, M/s. …… having our registered office at ……., M/s……having our registered office at ……..., M/s. ……. having our registered office at……..., and M/s. …… having our registered office at ,[the respective names and addresses of the registered office] (hereinafter collectively referred to as the "Principals") do hereby designate, nominate, constitute, appoint and authorize M/s. ……. having its registered office at……, being one of the members of the Consortium, as the Lead Member and true and lawful attorney of the Consortium (hereinafter referred to as the "Attorney"). We hereby irrevocably authorize the Attorney to conduct all business for and on behalf of the Consortium and any one of us during the bidding process and, in the event the Consortium is awarded the Contract, during the execution of the contract, and in this regard, todo on our behalf and on behalf of the Consortium, all or any of such acts, deeds or things as are necessary or required or incidental to the pre-qualification of the Consortium and submission of its bid(s) for the tender, including but not limited to signing and submission of all applications, bids and other documents and writings, participate in Pre Bid and other conferences/meetings, respond to queries, submit information/ documents, sign and execute contracts and undertakings consequent to acceptance of bid(s) of the Consortium and generally to represent the Consortium in all its dealings with the Authority, and/or any other Government Agency or any person, in all matters in connection with or relating to or arising out of the Consortium's bid(s) for the tender and/or upon award thereof till the Agreement is entered into with the Authority.

AND hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and thingslawfully done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us / Consortium.

IN WITNESS HEREOF WE HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS …… DAY OF ……20**

For ……..(Name & Title)

For …….(Name & Title)

For …….(Name & Title)

Witnesses:

1.

2.

……

(To be executed by all the members of the Consortium

FORM - XIV

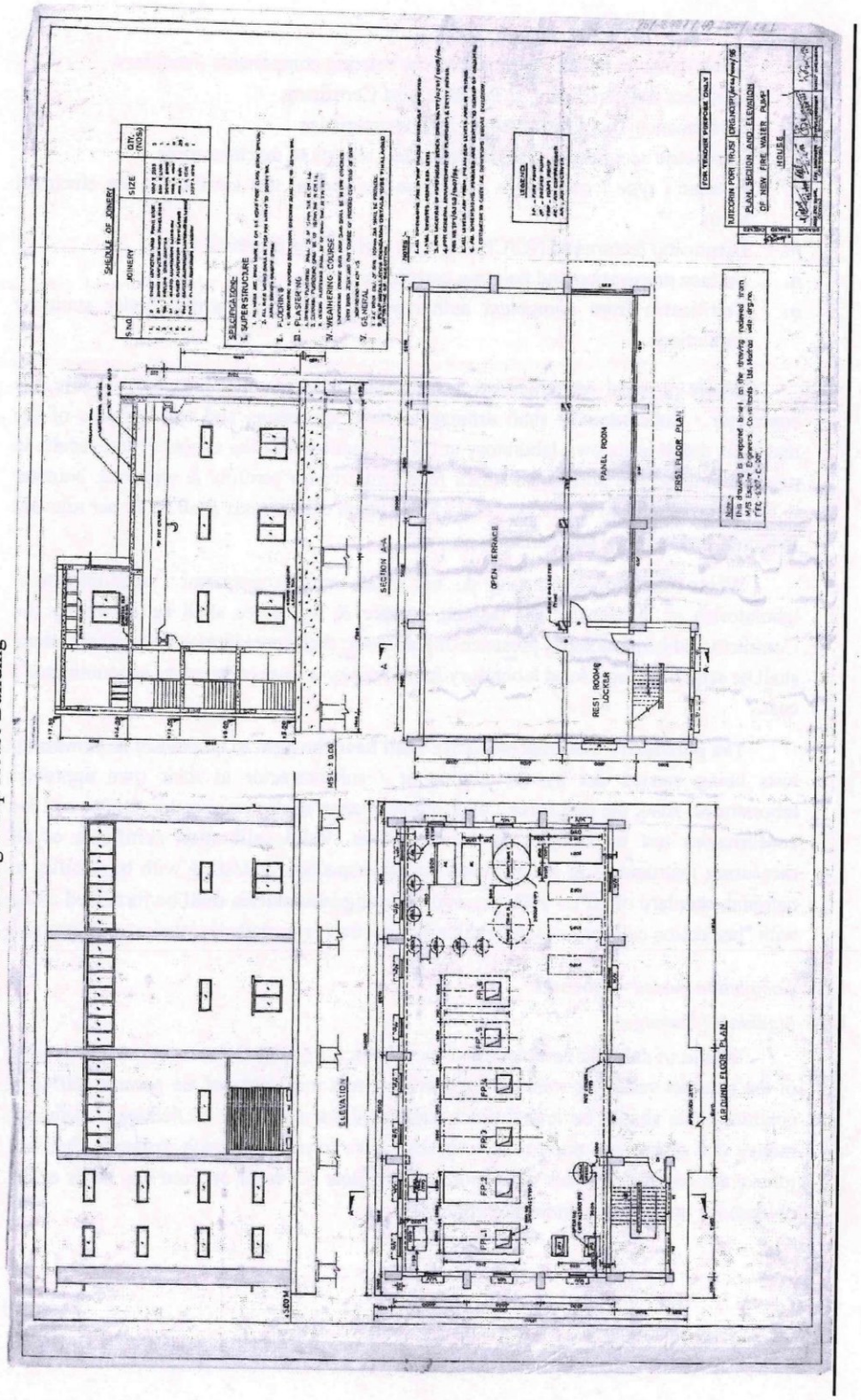
EVIDENCE TOWARDS SITE VISIT

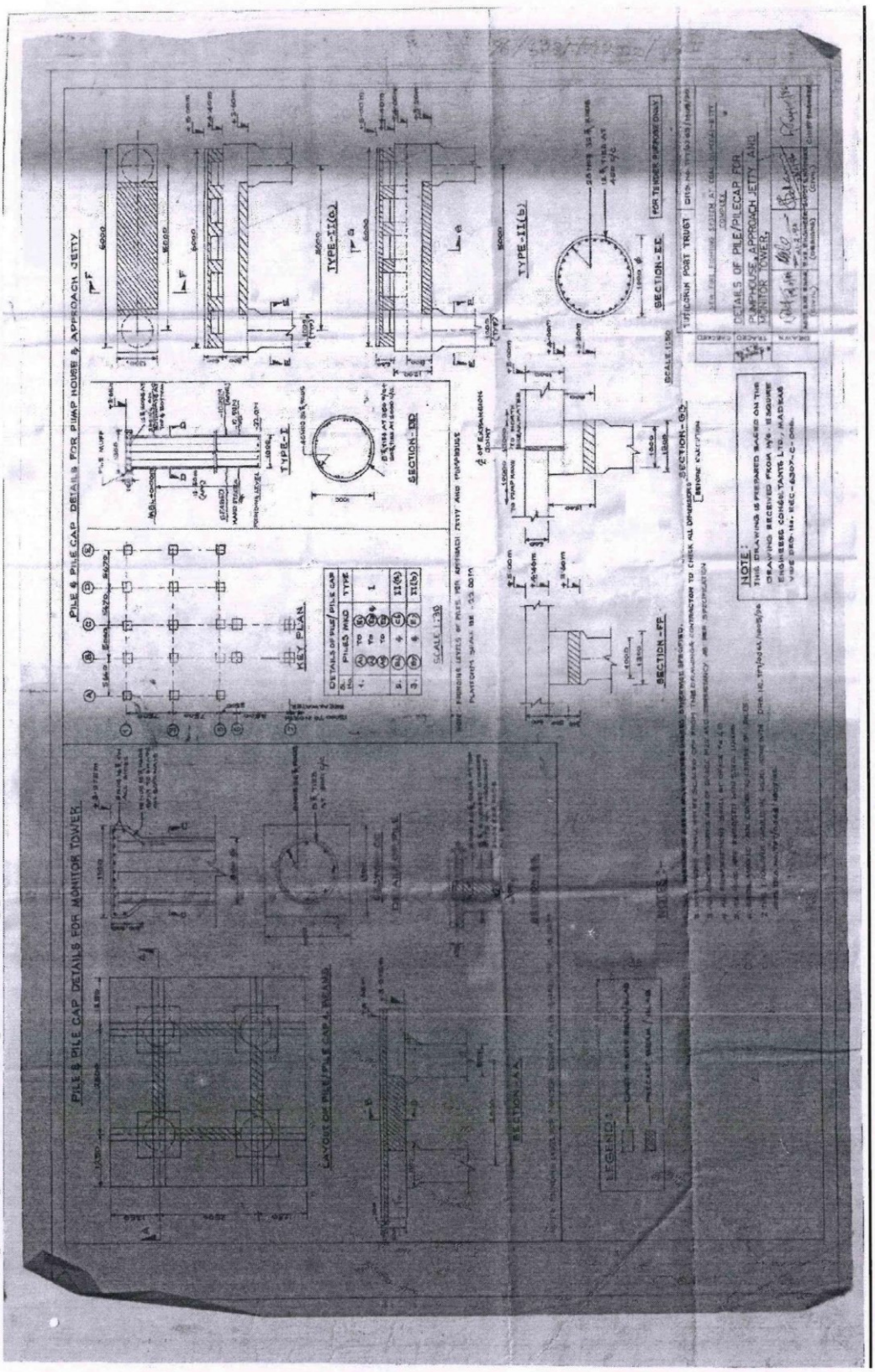
I, Shri……. authorized representative of M/s……. (authorization letter issued by the firm with my specimen signature and Passport size Photo and Aadhaar card are enclosed) has visited the site on…… for the work of "***Augmentation of Fire Fighting Facilities for handling above 40000 DWT vessels as per OISD 156 at Oil Jetty of VOCPA***" and inspected the site and other issues related to tender to my satisfaction.

Signature and Name of the authorised representative with office seal	**Assistant Engineer (Mech)** Mech. & Elec. Engineering Department	**Executive Engineer (Mech)** Mech. & Elec. Engineering Department

Tentative Drawings

01. Pump House Plan, Section and Elevation of Existing Pump House Building





02. Pile and pile cap details for Pump House & Approach

03. Tentative PFD for Fire Fighting System of Oil Jetty at VOCPA