गार्डन रीच शिपबिल्डर्स एण्ड इंजीनियर्स लिमिटेड

GARDEN REACH SHIPBUILDERS & ENGINEERS LTD.

(भारत सरकार का प्रतिष्ठान) (A GOVT. OF INDIA UNDERTAKING)

61, गार्डन रीच रोड, 61, Garden Reach Road,

कोलकाता-700 024 Kolkata 700-024

सी.आई.एन (CIN): L35111WB1934GOI007891

फोन Phone:2469-8100 से 8113

बिस्तार Extn. - 225

फैक्स Fax : (033) 3932/ 2020

वेबपेज Webpage : www.grse.in

ई-मेल : Kandir.Anukaran@grse.co.in

CORRIGENDUM – II

Job Description: Upgradation work on Turnkey basis at Timber Pond area including O & M at Shalimar, Howrah.

NIT Ref. No. SCC/AJK/OT PRESS/TIMBER POND UPGRADE/049/ET-3246

Due date:04.08.2025 (12:00 Hrs.)

1. Certain specific points of SOTR have been modified and to be read as follows in addition to the original Tender document.

Sl. No.	Existing	To be read as
(i)	In BOQ of Electrical Work Sl. No.- 1,34,39,50,51 & 63	6.0 kV in place of 11 kV in all relevant clauses as mentioned in BOQ as indicated in Electrical Package of Appendix-2. Since available DESCOM-CESC HT supply is 6.0 kV at Shalimar-Howrah District.
(ii)	In Technical offer (ANNEXURE -A): Sl. no. 20.01, 20.34, 20.39, 20.50, 20.51 and 20.63	6.0 kV in place of 11 kV in all relevant clauses as mentioned in the technical offer. Since available DESCOM- CESC HT supply is 6.0 kV at Shalimar-Howrah District.
(iii)	In Price Bid (ANNEXURE-C): Sl. no.2.001, 2.034, 2.039, 2.050, 2.051 & 50.063	6.0 kV in place of 11 kV in all relevant clauses as mentioned in the Price Bid. Since available DESCOM- CESC HT supply is 6.0 kV at Shalimar-Howrah District.

All Bidders are requested to submit their offer accordingly.

2. **Revised Tender Submission date**: Extended due date: 11.08.2025, 15.00 Hrs., Tender Opening date: 12.08.2025, 12.00 Hrs.

3. Other detail of tender will remain unaltered.

05/08/2025

Authorised Signatory

GARDEN REACH SHIPBUILDERS & ENGINEERS LTD.

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Web site वेब**:** www.grse.in

CIN सी आई एन: **L35111WB1934GOI007891**

NOTICE INVITING TENDER (NIT)

निविदा आमंत्रण सूचना

Garden Reach Shipbuilders & Engineers Limited, a leading Warship Builders and Engineering Product Company, invites interested, reputed, resourceful and financially solvent Service provider to submit **single stage two-part (Part I- Techno-Commercial & Part II- Price) bids** through e-tendering mode for the work package as per following bid document.

NIT No. निविदा संख्या**:**	**SCC/AJK/OT PRESS/TIMBER POND UPGRADE/049/ET-3246** Date: 12.07.2024
Job Title कार्य का नाम:	**UPGRADATION WORK ON TURNKEY BASIS AT TIMBER POND AREA INCLUDING O & M AT SHALIMAR, HOWRAH** to be executed as per SOTR No. [YM/SOTR/SH/TP/2025 dt.24.05.2025]
Tender issuing Dept. बिभाग द्वारा जारी:	Contract Cell संविदा बिभाग (GRSE Main)

ARTICLE 1 अनुछेद-1: **SCHEDULE OF CALENDAR DATES** समायावली की अनुसूची:

SCHEDULE सारणी		
Pre-Bid Meeting (if applicable) बोली-पूर्ब बैठक (यदि लागु है)	22-07-2025	11.00 Hrs.
Tender Due Date निविदा जमा की अंतिम तिथी	04-08-2025	12:00 Hrs.
Tender Opening Date (Part I) निविदा खुलने की तिथी	06-08-2025	14:00 Hrs.
Offer Validity Period minimum ऑफर की नियुन्तम वैधता अवधी	90 Days from Tender due date	

ARTICLE 2 अनुछेद-2: **COMMERCIAL REQUIREMENT FOR THE NIT** निविदा की ब्यवसायिक आवश्यकता:

FEES / DEPOSITS	
Tender Fee (refer clause 03 of STAC) निविदाप्रपत्र मुल्य (स्टैक के परिछेद 03 मे उदधृत)	INR 500 (Rupees Five Hundred only)
Earnest Money Deposit (EMD) (refer clause 04 of STAC) बयाना राशि जमा (स्टैक के परिछेद 04 मे उदधृत)	INR 10,00,000/- (Rupees Ten Lakhs Only)

Security Deposit (SD) प्रतिभूति	5% of Order Value (incl. GST)
PBG पी बी जी	10% of Order Value (incl. GST)
Liquidated Damages परिनिर्धारित नुकसान	½ % per week max. 5 % of unexecuted job
Billing Frequency बिल करने की अवधी	Monthly Running Bill basis (until completion)
Evaluation of L1 एल1 का मूल्यांकन	L1 bidder will be decided on Totality

Note: - 1. **Attending Pre-Bid meeting and site visit is mandatory for participation against this tender as per SOTR. Any bid received from any vendor who has not attended pre-bid meeting and/or did not visit the site will not be considered for processing of the tender. For pre-bid meeting, please contact Mr. Satyapriya Hore, Manager (ES&CM), Mob: 8083857196, email: Hore.Satyapriya@grse.co.in**

2. Bidders are required to submit EMD amount as Bid Security in the form of DD/ Pay Order against this tender as per the Clause Ref. (2) of STAC, Enclosure-2. In case of withdrawal of the bid/ fail or refuse to execute the contract / fail or refuse to furnish the security deposit, the EMD shall liable to be forfeited.

MSE/NSIC registered firms having the tendered service listed in their MSE document will be eligible for exemption from submitting the EMD.

Non-submission of EMD or a valid MSE/NSIC certificate may lead to offer rejection.

3. In case of open tender, the vendors registered with GRSE shall be exempted from submission of EMD subject to submission of valid copy of the registration certificate issued by GRSE. Having tender's service similar to tendering service listed with the list of items/services for which they are registered. In lieu, they shall be required to submit 'Bid security Declaration' as per the format at annexure-5.

4. In the case of Consortium, the lead partner should be registered with GRSE to qualify for exemption of EMD.

5. In the case of joint Venture, the entity should be registered with GRSE to qualify for exemption of EMD.

6. The Registration Number allotted to MSME's by Trades Receivable e-Discounting System (TReDS) to be furnished. Non-submission TReDS registration no. by MSME registered firm may lead to offer rejection.

7. Note: Relaxation on prior experience and prior turnover to MSE / Start-up shall not be applicable for this tender.

ARTICLE 3 अनुछेद-3: **ANNEXURES FORMS PART OF THIS TENDER** निविदा की संलग्नक प्रपत्र:

ARTICLES ENCLOSED FORMING PART OF THIS e-TENDER ई-निविदा अंतर्गत संलगित परिछेद		
Annexure 1 संलग्नक-1	Statement of Technical Requirement (SOTR) and Special Terms and Conditions	Yes
Annexure 2 संलग्नक-2	GRSE Standard Terms and Conditions (STAC) (please refer **www.grse.nic.in**)	Yes
Annexure 3 संलग्नक-3	Format for - Integrity Pact (please refer **www.grse.nic.in**)	Yes
Annexure 4 संलग्नक-4	Format for Technical Eligibility Criteria (Attached with NIT)	Yes
Annexure 5 संलग्नक-5	Format for Financial Eligibility Criteria (Attached with NIT)	Yes
Annexure 6 संलग्नक-6	Format for Self-Certification (Attached with NIT)	Yes
Annexure 7 संलग्नक-7	Fire & Safety Guidelines (please refer **www.grse.nic.in**)	Yes
Annexure 8 संलग्नक-8	Special condition of contract (please refer **www.grse.nic.in**)	Yes
Annexure 9 संलग्नक-9	Contractors Responsibility (please refer **www.grse.nic.in**)	Yes
Annexure 10 संलग्नक-10	General Requirement (please refer **www.grse.nic.in**)	Yes
Annexure 11 संलग्नक-11	Check List for Bill submission (please refer **www.grse.nic.in**)	Yes
Annexure 12 संलग्नक-12	Format for - Bank Guarantee Format for EMD (please refer www.grse.in→ Tender → Enclosures Related to tenders of Sub-Contracting Activities)	Yes
Annexure 13 संलग्नक-13	Format for - Bank Guarantee Format for SD (please refer **www.grse.nic.in**)	Yes
Annexure 14 संलग्नक-14	Format for - Bank Guarantee Format for PBG (please refer **www.grse.nic.in**)	Yes
Annexure 15 संलग्नक-15	Guide line for Bank Guarantee (please refer **www.grse.nic.in**)	Yes

ARTICLE 4 अनुछेद-4**: DOCUMENTS TO BE UPLOADED** अपलोड हेतु दस्तावेज:

Self-Attested documents are to be scanned and uploaded with Part I of e-bid ई-बिड के भाग-1 के साथ स्कैन एवं अपलोड हेतु स्वअभिप्रामाणित दस्तावेज	
1	DD/PO or MSE/NSIC Exemption certificate towards tender fee
2	Technical Acceptance format as available with NIT after being downloaded and filled up
3	Commercial Acceptance Format as available with NIT after being downloaded and filled up
4	Documents meeting the Technical Eligibility Criteria as per format at Annexure-4
5	Documents meeting the Financial Eligibility Criteria as per format at Annexure-5

Self-Attested documents are to be scanned and uploaded with Part I of e-bid ई-बिड के भाग-1 के साथ स्कैन एवं अपलोड हेतु स्वअभिप्रामाणित दस्तावेज	
6	Audited/Certified Annual Accounts and Annual Report for immediate last three years in support of Financial Eligibility.
7	PAN /TAN, GST, Labour License Certificate, Registration Certificate of the Company with ROC
8	Integrity Pact (refer clause 01 of STAC)
9	Partnership Deed / Memorandum and the Article of Association of the firm confirming partners and lead partner
10	Government E-Market Place (GeM) registration certificate with Unique GeM Seller ID
11	Registration Number allotted to MSME's by Trades Receivable e-Discounting System (TReDS)

a. Registered Bidders with GRSE need not upload para 7 documents if valid documents already submitted / available with GRSE Vendor Registration Cell.

b. Winning Bidder may submit ink signed hard copy of all above documents, prior to issuance of PO.

ARTICLE 5 अनुछेद-5**: DOCUMENTS IN PHYSICAL FORM TO SUBMIT** वास्तविक प्रपत्र जो जमा करने हैं:

PHYSICAL SUBMISSION		
1	Tender Fee instrument	Within 03 days from opening of Part-I bid
2	EMD Instrument	Within 03 days from opening of Part I bid
NOTE:	If instruments submitted through demand draft, the same to be drawn in favour of:	GARDEN REACH SHIPBUILDERS & ENGINEERS LIMITED
	The demand drafts should be payable at	Kolkata
3	Integrity Pact	Within 03 days from opening of Part I bid

a. Above original Negotiable Instruments as stipulated, to reach to Mr. A. J. Kandir, SM (Contract), Contract Cell, GRSE, 61 Park Unit within stipulated period as indicated above in a sealed envelope with tender number and job duly superscripting on it.

ARTICLE 6 अनुछेद-6**: JOB EXECUTION SCHEDULE** कार्य निष्पादन सूची:

(A) Mobilization period: - 15 days from the date of issue of LOI/PO whichever is earlier.

(B) **Job Starting Date** कार्य आरम्भ तिथी: Job must be started on completion of mobilization period on receipt of LOI/ PO whichever is earlier**.**

(C) **Job Completion date** कार्य समाप्ती तिथी: The entire job (Except BOQ sl. no. 4 to 8) must be completed **within 04 (Four) months** from the date of issuance of LOI/ PO whichever is earlier.

Job against BOQ sl. no. 4 to 8 to be continued initially for 12 months from the job starting date and extendable for another two years as per SOTR with same rate & terms and conditions.

(D) However, 15 days mobilization time will be provided separately over and above-mentioned months after placement of LOI/ PO whichever is earlier.

ARTICLE 7 अनुछेद-7: JOB EXECUTION **कार्य निष्पादन**:

i. "UPGRADATION WORK ON TURNKEY BASIS AT TIMBER POND AREA INCLUDING O & M AT SHALIMAR, HOWRAH" has to be carried out strictly as per SOTR No. YM/SOTR/SH/TP/2025 dt.24.05.2025 enclosed herewith as Annexure - I.

ii. In case of any doubt, instructions of the Officer in-charge (YM Dept.) is to be followed.

ARTICLE 8 अनुछेद-8: GURANTEE & WARRANTEE **गारंटी एवं वारंटी**:

The work executed including equipment or components thereof are to be guaranteed for satisfactory performance for the period of 24 (Twenty-Four) Calendar months from the date mentioned in the Completion Certificate, unless otherwise agreed in writing by the Engineer. This will be deemed as the 'Guarantee Period'/ 'Defect Liability Period'.

ARTICLE 9 अनुछेद-9: PRICE **मूल्य**:

Price quoted will be firm and fixed for the entire contract period till completion of work awarded during valid contract period. GST is to be indicated separately and will be paid extra. No escalation whatsoever will be considered under any circumstances within the stipulated period of contract.

ARTICLE 10 अनुछेद-10**: ESCALATION** मूल्य वृद्धी: Not Applicable

ARTICLE 11 अनुछेद-11: **UNREASONABLE QUOTES अतर्कसंगत भाव**:

i. In case the price of L-1 Bidder is found to quote unreasonably low and/or express desires to withdraw from the tender then such bid will be cancelled and EMD will be forfeited and punitive action will be taken in line with the provision as per GRSE Vendor policy.

ii. However, in case the L1 Bidder agrees to take-up the job with such unreasonable low quote, lower by 30% or more than estimate and also if the difference in price between L1 & L2 is 30% or more, then the quoted price to be analyzed w.r.t. tender requirement and if the L1 bidder fails to justify their quoted rate, the obtained L1 quote will be rejected and the tender will be cancelled. During re-tendering, such bidder with low quote will not be allowed for participation.

iii. If justification is acceptable to GRSE, then Bidder have to submit a declaration to execute the job till satisfactory completion of entire contract. In case of breach of contract, GRSE shall reserve the right to impose Tender Holiday for a period of at least 01 year.

ARTICLE 12 अनुछेद-12**: OFFER VALIDITY** प्रस्ताव की वैध्यता:

Offer should be valid for 90 days from the date of opening of Part-I bid i.e. Techno-commercial bid. Under exceptional circumstances GRSE may request for extension of price validity, beyond 90 days against valid reason.

ARTICLE 13 अनुछेद-13**: CONDITIONAL OFFER** सशर्त प्रस्ताव:

Conditional offers w.r.t. SOTR will not be accepted. However, in case of bidder wish to deviate on any / some commercial terms & conditions, then separate deviation statement has to be uploaded along with Part-I bid. However, GRSE reserves the right to accept / reject the deviations / bid with deviations after giving reasonable opportunity to the Bidder.

ARTICLE 14 अनुछेद-14**: DETERMINATION OF L1** एल-1 का चयन:

L1 bidder will be decided on total basic quote.

ARTICLE 15 अनुछेद-15**: BOQ बी** ओ क्यु:

The quantity mentioned in BOQ may vary according to actual requirement of job during the period of contract. BOQ with item quantities for construction as part of SOTR are given in the tender is tentative. The quantities set out in the BOQ of the tender shall be treated as estimated quantities of the work and shall not be deemed as actual or correct quantities of the work to be executed by the Contractor.

The Contractor shall execute required quantity for successful completion of project work at the same contractual rates and terms & conditions for any extent of variation in stipulated BOQ quantities.

All bidders shall quote against all the items of BOQs, otherwise, their bid would be considered as Incomplete Bid and shall be liable for rejection.

ARTICLE 16 अनुछेद-16: OPENING OF BIDS निविदा खुलना:

Part-I (techno-commercial) bid will be opened on the date declared in NIT. Part-II bid will be opened post techno-commercial evaluation by GRSE. Price bid of only those who qualify techno-commercially will be opened. Opening date of Price Bid will be intimated accordingly to all qualified bidders. Disqualified bidders, either during technical assessment or commercial discussion will also be intimated about their non-consideration for farther processing.

ARTICLE 17 अनुछेद-17**: MICRO & SMALL ENTERPRISES** सूख्छम एवं छोटे उद्योग:

Purchase preference may be given to eligible Micro and Small Enterprise Firms as per MSME Act provided, the tendered job is listed in their MSE document. (Detail at Clause 2 of STAC)

All Micro & small enterprises are required to declare their Udyog Aadhar Memorandum (UAM) number on the Central Public Procurement Portal (CPPP). Documentary evidence of the said declaration is to be submitted along with the techno-commercial bid failing which benefits being accorded to Micro & Small Enterprises will not be extended.

ARTICLE 18 अनुछेद-18**: AWARDING JOBS TO MULTIPLE BIDDER** बहुल बिडर के लिए ठेका कार्य:

Not applicable.

ARTICLE 19 अनुछेद-19**: ELIGIBILITY CRITERIA** पात्रता के मापदंड:

Technical Eligibility Criteria तकनीकी मापदंड – As per SOTR (Cl. no. 5).

(i) The bidders have to submit the supporting documents meeting the technical eligibility criteria along with the bid. The past experience in similar nature of work should be supported by the PO / LOA and related completion certificate issued by the client's organization. In case the work experience is of Private sector the completion certificate shall be supported by the copies of LOA/PO and corresponding TDS Certificates. Also, the bidders have to submit the full contact details like name, address, telephone numbers, official mail-id of the concern person under whose direct jurisdiction the work was executed to prove that they had carried out such works successfully in any PSU / Corporate house / Reputed Industry.

(ii) Format for Technical Eligibility Criteria has been attached to this document as per format attached at Annexure - 4. The format has to be filled up and to be uploaded with the Techno-commercial Bid.

Note: Non-submission of documents along with Techno-commercial bid as mentioned in above clauses, the offer will not be considered for further tender processing /bidders not having requisite experience as established by their uploaded technical bids, may not be called for TNC.

Financial Eligibility Criteria वाणीजीक मापदंड –

(i) Bidder should have average minimum Annual Turnover of Rs.220.0 Lakhs during last 03 (three) financial years ending on 31.03.2024.

(ii) Audited Balance Sheet and Profit & Loss Account of the company for last 03 (three) financial years ending on 31.03.2024 need to be submitted in support of above requirement.

(iii) The bidder should give self-certification (as per Annexure-6) that they have neither been Blacklisted nor have received any tender holiday from any PSUs/Central & State Govt. Organizations or any other Government / Quasi Government Organizations during last 03 (three) years ending on 31.06.2025. The bidder has to submit self-certification for the same along with the techno-commercial offer. GRSE reserves the right to independently verify the same. In case violation of declaration is detected at any stage of tender process and during currency of contract, the order will be terminated.

Note:

a) If any bidder has been black listed by any PSUs/Central & State Govt. Organizations or any other Government / Quasi Government Organizations, then the bidder is not eligible to participate in this tender. If any discrepancy is detected at any stage of the tender, then the offer submitted by the bidder / contract awarded to the bidder will be cancelled and

EMD/SD shall be forfeited and appropriate action will be taken in accordance with the vendor policy of GRSE.

b) If any bidder has been 'Put on Tender Holiday' by any PSUs/Central & State Govt. Organizations or any other Government / Quasi Government Organizations, then this fact must be clearly stated and it may not necessarily be a cause for disqualifying them.

c) In case of non-submission of the self-certification document as per format at Annexure-6, the bidder will be treated as non-responsive and their offer will be rejected.

ARTICLE 20 अनुछेद-20**: INSTRUCTION TO THE BIDDERS** बिडर हेतु अनुदेश:

1. Before submitting a bid, bidders are expected to examine the Bid Documents carefully, if they desire, may visit the work front, fully inform themselves of existing conditions and limitations including all items described in the Bid Documents. NO consideration will be granted for any alleged misunderstanding or the materials to be furnished, work to be performed or actual considerations to complete all work and comply with conditions specified in the Bid Document.

2. Any qualified deficiency, errors, discrepancies, omissions, ambiguities or conflicts in the Bid Documents, or there be any doubts as to the meaning of a provision or requirement, the same shall immediately brought to notice of GRSE Tendering Dept. in writing not less than 07 days prior to bid closing date.

3. It is understood that in receiving this bid, GRSE assumes no obligation to enter into a contract for the WORK covered by this bid request. GRSE reserves the right to reject any and all unqualified proposals or waive irregularities therein. GRSE reserves the right to evaluate each and every proposal and accept the whole or any part of the tender and the Tenderer shall be bound to perform the same at the rates quoted.

4. GRSE also reserves the right to reject any and all bids and accept the bid, which in its opinion, appears to be most advantageous to GRSE. Receipt and review of this Bid Request constitutes an agreement of confidentiality between GRSE and each of the contracting Firms preparing its Bid. GRSE reserves the right to change the form of this request to Bids, or make clarifications thereto, within a reasonable time before date of submission of Bids.

5. General Contractors assume all safety related responsibilities for the site and will furnish and maintain its own safety program for itself and its subcontractors. Contractor are bound to comply with all applicable Environmental, Health & Safety rules, regulations, policies, procedures and guidelines when performing work in the facility or site.

6. **Independent External Monitors (IEM):**

Either or both of the following Independent External Monitors will have the power to access the entire project document and examine any complaints received by him. In

case of any change in IEMs, it will be informed accordingly.

The communication details of the IEMs are as follows: -

(i) Shri Lov Verma, IAS (Retd.),
Email: - lov_56@yahoo.com

(ii) Shri Debashis Bandyopadhyay, Ex-Director (HR), BHEL
E Mail: - debashis9999@gmail.com

7. **Integrity Pact:**

The Integrity pact essentially envisages the agreement between prospective vendors /Bidders & buyers committing the person/officials of both the parties not to exercise any corrupt influence on any aspects of the contract. Only those vendors/bidders who enter into such an integrity pact with the buyer would be competent to participate in the bid. The format of integrity Pact is enclosed with tender documents. Refer Annexure-4. The "Integrity pact on Govt. issued bond paper of Rs. 100 duly filled as per enclosed format to be submitted in original. Bidders to ensure that every page of IP is ink signed with company seal/stamp in every pages. [Please refer guideline for IP in STAC (Sl.-1) in GRSE website/ Annexure-2 of the tender]

8. Job is to be carried out as per SOTR and instruction of the Engineer in-charge.

9. Any Drawings or technical information attached / provided with this NIT is the Intellectual Property of the Company and will be governed by the specific Acts applicable thereto.

10. Post submission of Tender, such drawings and technical information are to be physically returned. Also all soft copies are to be destroyed and a self-certification to be submitted during CNC, failing which the processing of bid will not be taken further.

11. Contractors are responsible to clean up the area of work w.r.t. all sort of debris generated on daily basis. If they fail to do so GRSE reserves the right to perform the cleaning activity and charge the contractor with penalty as per prevailing norms of GRSE. As a part of National Mission of Swachh Bharat, GRSE has adopted Swachh GRSE and maintaining cleanliness of work area is an essential pre-requisite.

12. Bidder has to declare, in what capacity he is participating in the tender viz PSU, Limited Co, Pvt Ltd. Co., Sole Proprietorship Organization, Partnership firm, Joint Venture, etc. Supporting documents (scanned copy) confirming such status to be uploaded as attachment to Part I bid.

13. A Bidder is allowed to submit only one Bid under any capacity / status. If it is found that any one bidder under any capacity/status has submitted more than one bid, all the bids submitted by him will be rejected.

14. Difficulty in submitting the bid:

    Any query/difficulty in understanding of SOR or other technical Terms may be got clarified from Mr. Tanay Saha, DGM (YM) e-mail: Saha.Tanay@grse.co.in (Contact no.7603039445) prior to submission of offer.

    For difficulty in submitting / uploading of e-tender or for any system help contact person is Mr. Saraswata Palit, SR MGR (E-PROCUREMENT); e-mail/ Palit.Saraswata@grse.co.in and / or GRSE Service Provider M/s. NIC personnel may be contacted at Land line no: 033 24893902

15. E-mail Address for communication **संचार हेतू ई. मेल पता**: Vendor to provide e-mail address to enable faster communication.

ARTICLE 21 अनुछेद-21**: e-BID INSTRUCTION** ई बिड के अनुदेश:

a) To participate in the e–Bid submission for GRSE, it is mandatory for the bidders to get their firms registered with E–Procurement portal http://www.grse.in/etender or http://eprocuregrse.co.in

b) It is mandatory for all bidders to have class – III Digital Signature Certificate (DSC) in the name of the person who will digitally sign the bid from any of licensed Certifying Agency (CA). Bidders can see the list of licensed CAs from the link http://www.cca.gov.in.

c) Bidders can view / download Part-1 (Techno-Commercial) bid documents along with all attachments. They need to fill up the downloaded documents as per instruction and upload the same during bid submission. Non-acceptance of any techno-commercial criteria is discouraged. However, if there is any, it is to be commented accordingly and also stated in the separate deviation format.

d) Bidders need to fill up Part II (Price) bid online in HTML price bid format by inserting unit price only. No other attachment to the price bid will be reckoned.

e) In case the bidder does not quote his rate for any item(s), it will be presumed that the bidder has included the cost of that/those item(s) in the rates of other items and the rate for such item(s) shall be considered as **Zero** and the tender will be evaluated by the Employer accordingly and the work executed by the successful bidder accordingly.

f) Bids can be submitted only during validity of registration of bidder with GRSE e–Procurement portal.

g) The amendments / clarifications to the bid document, if any, will be posted on E-Procurement portal / GRSE web site only.

h) It will be the bidder's responsibility to check the status of their Bid on-line regularly after the opening of bid till award of work.

i) **AMENDMENT OF TENDER DOCUMENT**

i. Before the deadline for submission of tenders, the Tender Document may be modified by GRSE Ltd. by issue of addenda/corrigendum. Issue of addenda / corrigenda will however be stopped 7 days prior to the deadline for submission of tenders as finally stipulated.

ii. Addendum/corrigendum, if any, will be hosted on website / e procurement portal and shall become a part of the tender document. All Tenderers are advised to see the website for addendum/ corrigendum to the tender document which may be uploaded up to 7 days prior to the deadline for submission of Tender as finally stipulated.

iii. To give prospective Tenderers reasonable time in which to take the addenda/ corrigenda into account in preparing their tenders, extension of the deadline for submission of tenders may be given as considered necessary by GRSE.

ARTICLE 22 अनुछेद-22**: BID REJECTION CRITERIA** बिड अस्वीकृति के मापदंड:

Following bid rejection criteria may render the bids liable for rejection:

a) Bidder's failure to furnish sufficient or complete details for evaluation of the bids within the given period which may range in between two to three weeks depending on the deficiencies noticed in the drawings / technical data which shall not however conflict with validity period.

b) Incomplete / misleading / ambiguous bid in the considered opinion of the Technical Negotiation Committee (TNC) of GRSE.

c) Bid with technical requirements and/or terms not acceptable to GRSE / Customers / External agency nominated, as applicable.

d) Bid received without qualification documents, where required as per the tender.

e) Bid not meeting the pre-qualification parameters / criteria stipulated in the Tender Enquiry.

f) Bid with validity expiry date shorter than that specified in the Tender Enquiry.

g) Bid Security Declaration form not submitted as per format enclosed within time.

h) Bidders who have not agreed for the fixed price till the validity of the tender or have quoted the variable price.

i) Bidder not agreeing for furnishing of the required Security Deposit (SD).

j) Bidder not submitting Integrity Pact as per requirement of the tender.

k) Bidder submitted false/incorrect documents etc.

ARTICLE 23 अनुछेद-23**: POST AWARD APLLICABLE CLAUSES** ठेका जारी करने के पश्चात लागू उपधारा:

i. Security Deposit प्रतिभूति जमा -

(a) Successful bidder will deposit an amount equivalent to 5% (five percent) of the total contract value (inclusive of GST) as interest free refundable Security Deposit (SD) is to be submitted in the form of Pay Orders/D.Ds/Bank Guarantees (in case of BG - with validity of sixty days beyond contract period as per GRSE format) on any schedule bank other than Co-operative bank payable at Kolkata, duly crossed favoring "Garden Reach Shipbuilders & Engineers Limited", within 15 days from the date of released order. In case of non-submission of SD as per schedule, penal interest will be changed for delayed period of submission of SD beyond 15 days at the prevailing SBI cash credit rate on the amount of SD to be submitted.

(b) If S.D is submitted in the form of B.G then same is to be forwarded directly to our Gen. Mgr. (Finance) in Banker's sealed envelope failing which same will not be accepted. Details of B. G. should also be confirmed to Ordering Department, GRSE.

(c) Applicable for invoice processing through OBPS.**:** Bank Guarantee should be executed on the non-judicial stamp paper of Rs.100/- which should be obtained in the name of the executing Banker. Bank guarantee must explicitly mention GRSE SAP PO no. else B.G. will not be accepted. In case a single stamp paper of Rs.100/- is not available, stamp paper of multiple denomination is acceptable provided serial no. of such stamp paper are consecutive and are purchased on the same date. Bank Guarantee should be executed strictly as per GRSE's format. Any alteration in the writing is required to be authenticated by the signatory executing the Bank Guarantee under official seal. Hard copy/Original B.G. must be submitted by supplier's bank in banker's sealed envelope directly to dealing officer of Commercial dept/ordering dept. BG in PDF is to be uploaded by vendor in OBPS portal.

(d) S.D. amount would be refunded / returned after successful execution of the job and certification of Material Reconciliation Statement by Internal Audit, if applicable. Vendor is to apply for release of their SD which has to be certified by PL/Engineer-in-charge of GRSE through GRSE Ordering Dept. In the event of failure to execute the order satisfactorily or default by the contractor/ sub-contractor, the security deposit will be forfeited.

ii. Work Done Certificate (W.D.C.) कार्य पूर्ति प्रमाण-पत्र (डबल्यू.डी.सी) –

The contractor will put up Work done for certification to Engineer along with all inspection report / measurement sheet signed by Quality Assurance Authority/Engineer though OBPS. Work done certificate is to include whether work has been completed as per delivery schedule or the delay in days/weeks occurred in completion of work. Any recovery towards usage of GRSE resources is also to be indicated.

iii. Bill Submission बिल प्रस्तुति:

On obtaining WDC, bills are to be raised (considering the checklist for Bill Submission as per attached format at Annexure-11) by contractor monthly progressive basis. Bills are to be submitted along with supporting document (Work Done Certificate) through OBPS. Bill Certifying Authority Against this particular case: (i) SOTR Scope of work sl. no. 2.1 to 2.2.2: - YM Dept. (ii) SOTR Scope of work sl. no. 2.3: - ES dept. (iii) SOTR Scope of work sl. no. 2.4: - Security Dept.

Note: - Transaction fee of Rs. 500.00 for first return & Rs. 1000.00 for subsequent return of bill with inappropriate documents will be charged.

iv. Payment Terms भुगतान की शर्तें:

The contractor shall submit the R/A bill in triplicate along with all necessary / required supporting documents, measurement sheet etc.

(i) <u>For all the job line items except (BOQ line item no. 3 to 11)</u>: -

(a) 90% (Ninety percent) of the value of actual work done will be paid progressively against R/A bill at a frequency of once every month during construction. The amount paid at every month shall be evaluated on the basis of actual completed works done during the previous month, against the BOQ item and unit Rates, certification of quantum and quality of work by Engineer / Engineer's Representative.

(b) Balance 10% (Ten percent) bill amount will either be retained from each bill as Performance Guarantee and the same will be released after expiry of guarantee period duly certified by the bill approving authority or be paid against submission of performance Bank guarantee.

(ii) <u>For BOQ job line item no. 3</u>: - 40% payment will be released on completion of preliminary Study and Survey including submission of preliminary Health Study Report to engaging dept, and remaining 60% payment will be released after satisfactory completion of details study including submission of Detail Health Audit Report along with subsequent test report and plan/drawings to engaging dept.

(iii) <u>For BOQ job line item no. 4 to 11</u>: - 100% (Hundred percent) of the value of actual work done will be paid progressively against R/A bill at a frequency of once every month. The amount paid at every month shall be evaluated on the basis of actual completed works done during the previous month, against the BOQ item and unit Rates, certification of quantum and quality of work by Engineer / Engineer's Representative.

(iv). Payment will be made on actual certification basis through ECS mode.

(v). No advance payment will be made in any circumstances.

v. Liquidated Damages (**निर्णीत हर्जाना**)

The vendor will be liable to pay minimum Liquidated Damages @ ½ % per week or part thereof on the undelivered work subject to a maximum of 5 % of the value of the order for delayed part. The amount of L.D. may be adjusted or set-off against any sum payable to the Contractor under this or any other Contract with GRSE Ltd.

vi. Risk Purchase (जोखिम खरीद):

In case the progress of work is not satisfactory and the contractor fails to maintain the schedule, GRSE reserves the right to get the work done by alternative source at the risk and cost of sub-contractor.

GRSE shall be at liberty to purchase/obtain the service from the alternative source as it deems fit, to make good such default and or in the event of the contract being terminated, the balance of the remaining service to be delivered there under. Any excess over the job price / service rates, paid and incurred by GRSE, as the case may be, over the contract price shall be recoverable from the firm. To make good the recoverable excess amount paid, GRSE shall be at liberty to invoke Bank Guarantee and/or with other available dues of the firm.

vii. Time of completion shall always be considered as essence of the contract / PO (कार्य समापन अवधी निविदा का मूलतत्व) and cannot be extended for any reason whatsoever. However, in an unlikely situation beyond the control of the contractor, application for extension of due time shall be submitted by the Contractor, 1 Month in advance with proper justification duly endorsed by Engineer In-charge / YM dept. of GRSE.

ARTICLE 24 अनुछेद-24**: SUBMISSION OF BID** बिड की पेशी:

1. Last date of submission of Bid / Date of opening of bid is indicated in Tender Document. Tender is liable to be rejected if all the requisite documents are not enclosed with the Part I, Techno- Commercial offer.
2. Date of opening of Part II offer i.e. Price Bid will be notified to all Techno-Commercially qualified bidders in due course after conclusion of TNC/CNC meetings and acceptance of Techno-Commercial offer. After opening of e-Price bids, the techno-commercially qualified bidders can view the System Generated Price Comparison Sheet from their own portal.
3. GRSE reserves the right to accept / reject any Tender in full or in part without assigning any reason.
4. Acceptance Format Matrix should be filled up and attached with techno-commercial bid as marks of acceptance of NIT/SOTR/STAC. In case of non-receipt of filled in STACs acceptance format matrix, it would be presumed that you have accepted all our terms& conditions as per GRSE tender until & unless deviation is specially mentioned in offer.

ARTICLE 25 अनुछेद-25**: PRE-BID MEETING** बोली-पूर्ब बैठक:

A pre-bid meeting with post site visit will be held on **22.07.2025** at the YM Dept., GRSE Main Unit, at 11:00 AM to discuss the detail Scope of Work of the Tender/ clarifying the queries of the bidders, if any. Vendors interested to participate in pre-bid meeting should inform Mr. Satyapriya Hore, Manager (ES&CM), email: Hore.Satyapriya@grse.co.in may be contacted, 48 hours before schedule.

Anukaran J. Kandir
SR. MGR. (Contract)
Garden Reach Shipbuilders & Engineers Ltd.
GRSE Ltd., 61 Park Unit,
61, Garden Reach Road, Kolkata-700024

(Cont. no. 9163361808)

ANNEXURE-I

: **GARDEN REACH SHIPBUILDERS & ENGINEERS LIMITED:**

Kolkata-700024

UPGRADATION WORK ON TURNKEY BASIS AT TIMBER POND AREA INCLUDING O & M AT SHALIMAR, HOWRAH

STATEMENT OF TECHNICAL REQUIREMENTS (SOTR),

SPECIAL TERMS & CONDITIONS (STC)

Garden Reach Shipbuilders & Engineers Ltd
Main Yard
43/46 Garden Reach Road
Kolkata - 700024, INDIA

STATEMENT OF TECHNICAL REQUIREMENT (SOTR) AND SPECIAL TERMS & CONDITIONS

CONTENTS

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1. INTRODUCTION

1.1 Purpose

1.1.1 Garden Reach Shipbuilders and Engineers Limited (GRSE), Kolkata invites tender for rejuvenation and development work in Timber Pond area located at Shalimar Howrah which includes civil and electrical work and also health study of existing dry dock as per Item-Rate contract basis.

1.2 General Layout and General Arrangement Drawings

1.2.1 General Layout drawings of the above work is enclosed along with the tender (**List at Appendix-1**) for ready reference.

1.3 General Specification

1.3.1 This set of technical requirement provides a general guideline for successful execution of the work under the scope of this tender. The work for up-gradation is required to be carried out in accordance with the following scope of work, performance specification, Bill of Quantities (BOQ), relevant Indian Standard Codes for design & construction, Specification as per the latest PWD/CPWD Schedule and best engineering practices.

2 SCOPE OF WORK

The total work is bifurcated into three part- A) Rejuvenation and development work

B) Health Study of the existing Dry Dock

C) Yard Maintenance Service (O & M)

D) Security Services

2.1 Detailed Scope of work for Rejuvenation and development work. The work primarily involves construction of boundary wall including fixing of concertina wire, construction of Gate Office, repairing of earthen dam, dock cleaning & levelling of land Including development work, water supply arrangement & toilet block including septic tank & soak pit, high mast light & sub-station including electrical fitting & fixing work at Timber Pond area located at Shalimar Howrah as indicated in the layout drawings (Appendix-1) enclosed along with the tender. The Scope of work under this tender broadly comprises of following:

-

a) Physical site survey by using Total Station / Auto level based on job requirements and necessities of GRSE for finalisation of GA drawing.

b) Preparation of Design and Drawing including construction drawing of the Boundary wall, Sub-Station, Toilet block, High mast light, Gate office [by qualified (minimum BE/ B Tech) & experienced Design Engineer] and subsequent approval by GRSE.

c) GA and detail construction drawing shall be prepared taken into consideration of GRSE requirement.

d) Conducting Soil investigation within the proposed area as mentioned in the BOQ.

e) Design and construction of Boundary wall, Substation, Toilet block, Gate office, shall be in accordance with BIS 456, other relevant BIS, & PWD specification as applicable.

f) Construction of Boundary wall (approx. 500 m) including concertina fencing on wall top using concertina coils and Gate office (aprox.3 m X 3 m) specified in drawings (Appendix-1).

g) Repairing of earthen dam in river front side by using existing silt accumulated in dock and geotextile bags filled with sand as required. Post repair of cofferdam the water ingress into the dock should not exceed such amount that will lead to accumulation of water inside the dock of more than 6 inches with de-watering pumps running, at high tide over a 4 hour cycle.

h) Cleaning of Dock mud, silt, debris etc. approx. area 130MX25MX5M and cleaning, levelling of land of approx. 150MX75M area.

i) Installation of High mast light including civil and electrical work.

j) Civil work to establish new sub-station.

k) Making new toilet block including septic tank & soak pit and water supply arrangement including putting of Fire Main.

l) Supply and installation of HT VCB, Transformer, APFC Panel, Panel, BUS Coupler, Flood Light DB, high mast light etc. Details items specification and make is provided at BOQ.

m) Dressing/levelling / filling and compacting original ground by suitable roller of capacity 80KN to 100 KN to obtain the desired dry density.

n) Dismantling of RCC/PCC/Masonry.

o) Use of water proof steel/ plyboard shuttering as per BOQ.

p) Laying of M25 grade reinforced cement concrete.

q) Primer & Painting over the concrete/metal surface

r) Masonry work.

s)

t) Laying of 80 mm thick(M-40) interlocking designer colour decorative concrete paver block, as per IS: 156582006 over 20-40 mm medium sand bed.

u) Excavation of soil as per requirement. While excavating the earth it is desirable to scan the area with proper scanning machine for presence of any underground electrical cable, water and fire pipeline for precaution of safety

v) All equipment and machinery including consumables necessary for the construction, fabrication & erection are to be arranged by the contractor.

w) Pumping out of water if required during work.

x) Cutting and trimming of trees as required.

y) Necessary Electrical & Utility works as per BOQ.

z) Timely disposal of debris in environmentally sound manner abiding by prevailing Municipal Solid Wastes Rules of Municipal Corporation & get appropriate clearance from the local authority as applicable.

aa) Any other related Civil/Electrical works for successful completion of the project.

bb) Site Clearance.

cc) Defect Liability of 12 (twelve) months against defective material, workmanship, quality for material supplied for the executed work.

2.2 Detail Scope of work for Health Study of the existing Dry Dock. The contractor shall engage a consultant having experience of health study of dock/jetty/structural building /water tank. The scope of work under this part includes-

a) Stage-1: Study, Survey, and Preliminary Health Audit Report
b) Stage-2: Detail Health Audit Report.

2.2.1 Stage-1: Study, Survey, and Preliminary Health Audit Report.

(a) On awarding the contract, the contractor shall deploy his/her appointed consultancy agency to interact and hold start-up discussions with the key officials of GRSE to understand the requirements and the scope of work in detail, fine tuning the schedule, work program, data requirement, etc. in order conduct the health study of the said existing Dry Dock.

(b) The Consultant is required to visit sites for assessing the site conditions and carry out study/ survey/ examine the facilities/ utilizes/ services including the adjacent areas of said site locations and analyse the data for preparing project report.

(c) Measurement and physical survey of structure, identification of missing/damaged structural Components of the existing Dry Dock.

(d) Consultant shall carryout out health audit/assessment of the existing Dry Dock.

(e) NDT (non-destructive tests), in-situ & laboratory tests as necessary as per relevant Standards for structural components/assemblies existing Dry Dock.

(f) Perform structural integrity analysis & find out weaknesses/distresses of the structure including dampness/leakages/corrosion/settlement/deformation etc.

(g) Consultant shall be responsible for arranging all required special instruments/machines and all temporary arrangement viz. steel pipe scaffolding, lifting machine, excavator etc if required for conducting health audit/investigation/testing.

(h) While excavating earth/ drilling any structure, required for health study it is desirable to scan the area as per requirements with proper scanning machine for presence of any underground/concealed electrical cable and other utility lines. Any damages caused are to be repaired without any extra cost.

(i) The Consultant shall carry out the heath investigation/study as per the above scope of work including all allied jobs adhering to relevant BIS, best engineering & standard practices for successful completion of the work.

(j) **Preliminary Health Audit Reports:**

(i) Prepare and & submit preliminary health audit Report based on the health investigation of the existing structures.

(ii) The report shall indicate the present health status of the existing structures.

(iii) The report shall include visual observations, test reports, detailed analysis, identifying distress/damaged portion of the structure with structural diagnosis, recommending type of repair/retrofit/refurbishment work for fitness & restoration of the existing dry dock with technical analysis/justifications, expected service life of the structure etc.

(iv) Prepare block cost estimate for repairing and retrofitting of the existing structure.

(v) 1st PowerPoint Presentation to GRSE on various aspects of the Report and note the modification required (if any).

(vi) Preliminary Health Audit Report is required to be approved and accepted by GRSE only after which Consultant's Services for Stage-1 can be considered to be completed.

(vii) Undertake load testing of the dock floor and establish the load the existing structure can take.

2.2.2 Stage-2: Detail Health Audit Report.

a) Prepare and submit the Detail Health Audit Report, incorporating all the modifications and revisions as decided in the last wrap-up meeting, duly analysed & vetted by a competent Structural Expert [experienced structural Engineer with minimum qualification ME(Civil)] with an objective to have habitable and safe buildings.

b) The Detailed Report shall include the sequence and methodology of construction/repairing/retrofitting, dismantling methodology, safety plan, other improvements, estimated cost, detail schedule of various items & quantities, proposed QAP, likely time frame for execution etc. . It may also recommend (if it emerges from the study) that there is no repairs required provided the minimum size of the vessel (to be indicated) is made / built in the dock.

c) Necessary plan/drawings, which also includes structural drawing for recommended repairing /refurbishment/restoration work and also as-built GA of the existing dry dock to be enclosed with the report.

d) Detail cost estimate shall be prepared based on the recent prevailing WB PWD schedule rate/CPWD schedule rate. If the rate of item/s is/are not available in the WBPWD/CPWD rate schedule the consultant shall go with market rate and in that case the market rate analysis shall be submitted for GRSE approval.

e) Detail Report shall include cost-benefit analysis for dry dock due to repair/retrofitting and the comparison statement between analysis and design result with actual elemental details.

f) Testing and recommendation of the health audit are required to be certified by any Govt Engineering college having research facility.

g) 2nd PowerPoint Presentation to GRSE on various aspects of the Report.

h) Detailed Health Audit Report is required to be approved and accepted by GRSE only after which Consultant's Service for Stage-2 can be considered to be completed.

i) Consultant shall submit 3 hard copies of Final Heath Audit Report in addition to soft copies.

j) Soft Copies of all design files in editable formats, regardless of the software used. (e.g. Analysis and design files in "**.** std" format. In case STAAD.Pro is used)

k) CAD drawings in .dwg & .pdf format.

l) Any supporting calculation sheet if required for clarification of the design and analysis.

2.3 Yard Maintenance Service (O & M). Apart from the DLP stated in preceding Cl. No. 2.1/cc, Yard Maintenance Service and with option of operation of the facility for 01 (one) year has been included in this tender. The services may be extended further to next 01 (one) year, but in that case separate order will be placed for that extended to next 1(one) year. The work of Yard Maintenance Service will be commenced from the date of actual completion of the executing work as stated in Cl. No. 2.1. The broad scope of work come under this Maintenance Services are enumerated below.

a) Dressing, cleaning and cutting of vegetations, shrubs or bushes of the entire area within the boundary at periodic interval or as when required.
b) Keep the entire area within the boundary neat and clean.
c) Keep the dry dock mud free and dry.
d) Contractor shall engage 2 high-skilled electricians round the clock for operation and maintenance of the Electrical Substation.
e) Contractor shall engage 2 semi-skilled operators round the clock for water and fire main system throughout the yard which also includes pump operation.
f) Contractor shall deploy 2 housekeeping staff (unskilled) for general cleanliness of the yard, offices and stores.

2.4 Security Services. The selected vendor during the course of the project execution and thereafter for a period of 01 (one) year will provide Security services to the site. The services may be extended for another 01 (one) year. In the event of extension, a separate order will be issued. The service of security service should be from a qualified and competent security service operator. There is to be a minimum of 3 personnel at a time for perimeter security including the waterfront round the clock i.e. in 3 (three) shift.

2.5 Pre-Bid Meeting

2.5.1 Attending pre-bid meeting along with site visit physically is mandatory and the submitted Bid will not be considered in case of non-participation. Pre-bid Meeting will be held on 10th day from the date of publication of tender. If 10th day is holiday next subsequent official day pre-bid meeting will be held.

2.5.2 Prospective Tenderers shall submit their queries, if any in connection with the Tender, in writing by email at the earliest to enable GRSE to clarify the same. The last date of submitting the queries is 2 days prior to the pre-bid meeting. Copies of the Employer's response will be displayed on GRSE website www.grse.in including a description of the enquiry but without identifying its source.

2.5.3 Also, the Bidder before submission of tender shall make a detail site visit for proper assessment of the work. The tendered job being item-rate contract as per the BOQ, the Bidder should assess and bring out their observation (if any) during pre-bid meeting for discussion.

2.6 Submission of Technical Documents along with the Bid

2.6.1 The Tenderer shall submit following documents along with their technical Bid;

(a) Organisation Chart

(b) Work Plan i.e. Methodology

(c) Schedule/Programme of work with milestones

(d) Necessary supporting documents for work experience as per technical eligibility criteria.

(e) Initial QAP

(f) Initial Safety Plan

2.7 Drawings and Design, Documents including Quality Assurance Plan (QAP)

2.7.1 The Contractor shall submit GA, Drawings, Design Documents including QAP etc. to GRSE for review/approval.

(a) Finalisation of GA, detailed design & construction working drawings for Boundary wall, Substation, Toilet block, High mast light Gate office are required to be submitted by 10 days from the date of LOA. The contractor shall ensure that each drawing & document contain all necessary details to reduce number of revisions.

(b) An Outline Quality Assurance Plan covering activity including procurement, fabrication, erection, testing critical inspection stages and verification/certification shall be submitted at the time of submitting the Technical Bid. The Contractor shall ensure that his detailed Quality Assurance Plan is prepared and submitted (10 days from the receipt of LOA) prior to the Commencement of the Works for approval. The Contractor has to comply with the quality requirements as per the relevant BIS. All relevant Test Reports / Manufacturing Certificates as per the approved QAP shall be submitted. Approval of document shall not relieve the Contractor of any of his obligations under the Contract.

(c) Work programme with break-up of activities shall be submitted along with the Technical Bid. A detailed network programme (preferably in MS project) showing the activities, milestones, critical path etc shall be submitted by 10 days from LOA.

(d) Monthly Progress Reports.

(e) As built drawings (GA, section, elevation etc.) of the above requirements (Clause 2.1), including allied facilities in both hard and soft (AUTOCAD & Pdf) format on completion of work.

2.8 Other General Requirements

2.8.1 The contractor shall take all responsibility regarding co-ordination with local administration for executing the projects.

2.8.2 The Contractor shall carry out detail survey on site for finalisation of extent of work.

2.8.3 The Contractor will be responsible for overall site management, safety and security and coordination of site activities as necessary to ensure the adequacy, stability and safety of the works and of persons at the site. The contractor shall require planning his work in coordination with on-going production activities of GRSE YM/ Nominated officer.

2.8.4 The contractor shall adopt all precautionary safety measures adhering to prevailing safety rules & regulations

2.8.5 The submission to and comment/acceptance by the Engineer of such programmes, methods, QAP shall not relieve the Contractor of any of his duties or responsibilities under the Contract.

2.9 Detail Job Quantity

2.9.1 BOQ with item quantities for construction as part of SOTR are given in the tender is tentative. The quantities set out in the BOQ of the tender shall be treated as estimated quantities of the work and shall not be deemed as actual or correct quantities of the work to be executed by the Contractor.

2.9.2 The Contractor shall execute required quantity for successful completion of project work at the same contractual rates and terms & conditions for any extent of variation in stipulated BOQ quantities.

2.9.3 List of BOQ Items considered under the scope of this tender is provided at successive clause for reference.

2.9.4 All bidders shall quote against all the items of BOQs, otherwise, their bid would be considered as Incomplete Bid and shall be liable for rejection.

3 TECHNICAL SPECIFICATIONS

3.1 Structural Steel Work

3.1.1 In case the material is procured by the Contractor, the Contractor shall submit the test certificate conforming to appropriate standards of all steel materials used for fabrication. All structure steel shall be free from rust, scales, lamination, cracks, fissures and other surface defects.

3.1.2 Steel used for construction exposed to weather or other corrosive influences shall not be less than 8 mm in thickness and in construction not exposed to weather, thickness shall not be less than 6 mm. The controlling thickness as specified above, for rolled beams and channels shall be taken as the mean thickness of flange, regardless of web thickness

3.1.3 Sealed tubes and sealed hollow box sections used for external construction exposed to weather shall not be thinner than 4 mm and for construction not exposed to weather shall not be thinner than 3 mm.

3.1.4 All fabrication of structural steelwork shall be in accordance with IS: 800 and as per the approved drawings unless otherwise specified. The tolerances of fabrication of steel structures shall be in accordance with IS: 7215 unless otherwise specified.

3.1.5 Concreting Work (Nominal & Ready Mixed Concrete):

(a) The Contractor shall provide ready mixed concrete (RMC) including all labour, materials, equipment and incidentals required for proper execution and completion of all concrete work as specified in IS 456(Latest edition) and latest PWD schedule, West Bengal.

(b) The Contractor shall not pour any concrete unless and until the representatives of the Engineer have inspected the formwork, reinforcing steel and inserts and sleeves if any and given permission to place concrete.

(c) The grade of RMC is M 25.

(d) The contractor shall use concrete vibrator machine while casting of concrete.

(e) Where nominal concrete mixes are described as 1:1:2, 1:1.5:3 etc. The figures denote the relative proportions of cement, dry sand and graded stone aggregate respectively.

(f) Portland Pozzolana Cement (Grade-53) conforming to IS: 1489 (Part-I) (Fly ash based) to be used.

(g) Shuttering shall be steel shuttering at all locations for all shapes etc in all complete including de-shuttering of the same after specified period without damaging the concrete works as directed by Engineer-in charge, etc. Providing and applying approved form oil on all surfaces of formwork coming in contact with concrete as per specifications and drawings and as directed by Engineer in-charge. Shuttering shall be of leakproof.

(h) Each layer of concrete shall be compacted fully before the succeeding layer is placed.

(i) All concrete work shall be water cured for a minimum period of 7 days after concreting or as directed by Engineer.

3.1.6 Steel Reinforcement

(a) Supplying TOR steel reinforcement (of approved manufacturer) of tested quality of any diameter up to 32mm dia minimum Fe 415 confirming to IS:1786 for reinforced concrete work in all sorts of structures at all depth and height including distribution bars, stirrups, binders etc. initial straightening and removal of loose rust (if necessary), cutting to requisite length, hooking and bending to correct shape, placing in proper position and binding with 16 gauge black annealed wire at every intersection, complete as per drawing and direction.

3.1.7 Masonry / Brickwork

(a) The bricks shall be locally available kiln burnt bricks of generally regular and uniform size, shape & colour, uniformly well burn but not over burnt. Fly ash brick as per IS-12894 of generally regular and uniform size, shape & colour may also be used. Testing of fly ash brick shall be done as per IS-3495 & IS-10077.

(b) The size of brick shall normally 230 mm x 115 mm x 75 mm. Bricks of one standard size shall be used on one work unless specially permitted by the Engineer.

(c) After immersion in water, absorption by weight shall not be exceeding 20% of dry weight of the brick when tested according to IS 1077 of latest edition. Unless otherwise specified the load to crush the brick when tested according to IS 1077of latest edition shall not be less than 75 Kg/Sq.cm.

(d) Prior approval of Engineer shall be obtained for the brands of bricks to be used in the work after compliance with the above specifications/tests.

(e) Unless otherwise specified, mortar for brick work shall be composed of 1:4 ratio i.e. 1 part of cement to 4 parts of sand.

3.1.8 Painting Work

(a) The Exterior and Interior Painting on all types of surface in accordance with the 'drawings' and Schedule of finishes or as per the guideline explained in IS: 1477, IS: 2395 and as per direction of the Engineer and 'Schedule of Quantities'.

(b) All surfaces for painting shall be properly sand papered and cleaned by mechanical buffing and where necessary good quality putty shall be used to hide all holes, cracks, open joints etc. The rate for painting includes such work.

(c) Paint shall be applied with approved brushes and surfaces shall be sand papered after every coat. All work when completed shall present a smooth, clean solid and uniform surface, to the satisfaction of the Engineer-in- Charge.

(d) All surfaces for painting, if they are new, should have a coat of suitable primer before application of the paint. Old surfaces where existing paints have been completely worn out owing to long use should also receive a coat of priming before application of fresh painting.

(e) Steel Primer: For steel surface red oxide primer, zinc chromate primer of approved brand and manufacture and as per direction of the Engineer-in-Charge is to be applied on the surface.

(f) Acrylic Primer Coat (solvent based Primer): Acrylic primer coat is to be used as base coat on wall finish of cement, lime or lime cement plaster surface before application of any wall coating e.g. distemper, oil-based paints, synthetic enamel, acrylic emulsion etc. on them.

(g) Enamel Paint: Enamel paint of approved brand and manufacture shall be used. Each coat shall be allowed to dry for 24 hours and lightly rubbed down with fine grade sand paper and dusted before the next coat is applied. The finished surface shall present an even and uniform appearance. Minimum thickness of paint should be 25µm/coat.

(h) Acrylic Emulsion Paint: Acrylic emulsion paint are not suitable for application on external surface and surface which are liable to heavy condensation and are be used generally on internal surface. For plastered surfaces a cement priming coat is required before application of acrylic emulsion. Acrylic emulsion paint of approved brand and manufacture and of the required shade shall be used.

3.1.9 Geo-textile bag

The geo-textile bags of different size will be manufactured using the Polypropylene UV stabilized needle punched non-woven Geo-textile having requisite properties. The two long ends will be double chain stitched with polypropylene or equivalent yarn.

a) Specification of woven geotextile as filter materials and to be used in Geo-bags"

Sl No.	Property	Unit	Test Method	Desired Value
1.	Weight	Gsm	ASTM D 5261	430
2.	Tensile Strength Warp/Weft	KN/M	IS : 1969	70/70
3.	Elongation at specified Tensile Strength. Warp/Weft	**%**	IS : 1969	27/25
4.	Trapezoidal Tearing Strength Warp/Weft	N	ASTM D 4533	1500/ 1500
5.	Puncture Strength	N	ASTM D 4833	1200
6.	Water Flow	Lit/m2/Sec	ASTM D 4491	25
7.	AOS	mm	ASTM D 4751	0.425
8.	U.V. Resistance after 500 hrs	% strength retained	ASTM D 4355	>= 80

b) Specification of non-woven geotextile as filter material and to be used in Geo-bags"

Sl No.	Property	Unit	Test Method	Desired Value
1.	Weight	Gsm	ASTM D 5261	300
2.	Tensile Strength	KN/M	ASTM D 4595	17
3.	Elongation	**%**	ASTM D 4595	> 60
4.	Grab Tensile Strength	N	ASTM D 4632	1050
5.	Grab Tensile Elongation	%	ASTM D 4632	> 60
6.	Trapezoidal Tearing Strength	N	ASTM D 4533	425
7.	CBR Puncture Strength	N	ASTM D 6241	3100
8.	Thickness	mm	ASTM D 5199	2.0
9.	Flow water rate - 5 cm head	Lit/m2/Sec	ASTM D 4491	55
10.	AOS	mm	ASTM D 4751	0.015
11.	U.V. Resistance after 150 hrs	% strength retained	ASTM D 4355	>= 75

3.2 Approved Make / Brand

Item	Make / Brand
Cement	Lafarge / ACC / Ultratech /Shree/Kanark
Reinforcement Steel	TISCO / SAIL / ESSAR / RINL/ SRMB
RMC	Ultratech/Prism/Nuvaco/ACC
Structural Steel	SAIL / TATA / JSW/ RINL/SRMB
Paint	Asian Paints / Berger / ICI / Nerolac
GI/MS Pipe	Tata/Jindal/SAIL
HDPE Pipes	Supreme/Oriplast/Skipper/Astral
Tiles	Kajaria/Jhonson
Construction Chemical	Sika/Fosroc/Dr Fixit
UPVC Pipes	Supreme/Astral
Sanitary Fixture	Hindware /Parry ware/Cera
Plumbing fixture	Escco /Johnson/Parry ware
Lighting fiting & Fixture	Phillips/Havells/Crompton/Bajaj
M.C.C.B	Legrand / Siemens / G.E. / ABB/ L&T / Crompton
M.C.B. & distribution board (10KA)	Legrand / Siemens / Merlin Gerin / G.E./ Crompton .
Power cable	Finolex / Asian / KEI / Polycab /UNIVERSAL
Cable trays	Asian Ancillary Corporation / Meghatech Engg

3.3 List of BOQ Items

List of BOQ items considered under the scope of this tender. However, tenderer may point out any discrepancy or inclusion of any new BOQ item in the Pre-bid queries. BOQ is attached in **Appendix-2**

3.4. Health and Safety

In addition to the **GRSE's Health and Safety Guideline** the Contractor must fully comply with all relevant Indian Health and Safety legislation. Nothing in the contract or this specification shall reduce his statutory obligations with respect to health and safety.

4. OTHER REQUIREMENTS

4.1 Contractor to Supply all Materials

4.1.1 Unless stipulated otherwise in the Contract, all materials including consumables required for the work shall be procured and supplied by the Contractor with the approval of the Engineer or his Representative and subject to subsequent testing as may be required by the Engineer or his Representative.

4.1.2 The Contractor shall comply with the relevant IS Codes.

4.1.3 The contractor shall be responsible for arranging electricity and water at their own cost.

4.2 Deployment of Resources

4.2.1 Contractor shall provide adequate number of qualified / experienced workmen, with experienced Engineers / Supervisors.

4.2.2 The contractor shall ensure deployment of adequate and proper skilled /semi-skilled workforce as per work requirements and optimum supporting unskilled workforce as necessary.

4.3 Testing of Materials and Acceptance

4.3.1 Test samples shall be prepared and submitted for approval of the Engineer or his Representative, whenever required to do so, all at the Contractor's cost.

4.3.2 The Contractor shall submit valid correlated test certificates conforming to applicable standards for materials/items before incorporation in the permanent works.

4.3.3 Testing of materials shall be conducted as per the approved Quality Assurance Plan or relevant Indian Standards.

4.3.4 Unless stipulated otherwise in the Contract, the cost of any test required by the Engineer or his representative in respect of materials and workmanship deployed on the work shall be borne by the Contractor.

4.4 Inspection by the Engineer

4.4.1 For Site inspection, the Contractor shall give adequate notice to the Engineer (authorised representative of GRSE).

4.4.2 The Contractor shall provide the Engineer with proper free and safe access to the Contractor's works and stores or his sub-contractor's works and stores at all times and shall provide reasonable facilities to enable him to undertake his inspection.

4.4.3 The Contractor shall make all necessary arrangements to enable stage inspections by the Engineer.

4.4.4 The Engineer or his Representative shall have power to certify or disapprove/reject works or materials, in accordance with the Conditions of Contract.

4.5 Quality & Workmanship

4.5.1 Quality and workmanship of all items/materials and work shall conform to BOQ /Technical Specification / relevant Indian Standards. The Contractor shall be responsible for any loss/damage during the course of work to any structure, machinery, equipment, fittings, wiring, piping, and systems etc. caused by his workman (or his sub contractor's) and the Contractors shall make good such damage free of cost.

4.6 Materials / Work not acceptable to Engineer

4.6.1 The Engineer or his Representative shall have the power to inspect any material and work at any time and to order at any time – (a) for removal from the Site of any material which in his opinion is not in accordance with the Contract or the instruction of the Engineer or his Representative, (b) for the substitution by the proper and suitable materials, or (c) the removal and proper re-execution of any work, which in respect of material and workmanship is not in accordance with the Contract or the instructions of the Engineer. The Contractor shall comply with such order at his own expense and within the time specified in the order. If the Contractor fails to comply, the Engineer shall be at liberty to dispose any such materials and re-do any work in the manner convenient to the Engineer by engaging any outside agency at the risk and expense of the Contractor and after giving him a prior written notice of 7 (seven) days. The Contractor shall extend his full assistance as required by the Engineer during inspection.

4.7 Contractor to Commence Work

4.7.1 The Contractor shall mobilize and commence the work on site within 15 days from issue of LOA/PO whichever is earlier. The Contractor shall then proceed with the work with due expedition and without delay, except as may be expressly sanctioned or ordered by the Engineer or his Representative, time being deemed the essence of the Contract on the part of the Contractor.

4.8 Supervision by the Contractor

4.8.1 The Contractor shall engage experienced and qualified Engineers at site in day-to-day charge of the work and the Engineer should be authorized to receive instructions from the Engineer-In charge /GRSE. He shall receive orders given by the Engineer from time to time and shall act on them promptly. One fully responsible and experienced & Qualified Site-in-charge (Minimum Qualification: Diploma with 3 years' experience) has to be posted at the site during progress of work.

4.8.2 The Contractor shall provide necessary and adequate supervision during the execution of the works and as long thereafter as the Engineer or his Representative shall consider necessary during the Defect Liability Period.

4.8.3 The Contractor or his competent and authorised agent or representative shall be constantly at site during working hours. The Contractor shall inform the Engineer or his Representative in writing about such representative / agent of him at site. Replacement of any of the authorised agent of the Contractor during the currency of Contract shall only be with prior written approval of the GRSE/ Engineer.

4.8.4 The Contractor and his authorised agent or representative shall be readily available to meet with the GRSE and/or Engineer and/or Engineer's Representative and instructions given to him by the Engineer or his Representative in writing shall be binding upon the Contractor.

4.9 Setting Out

4.9.1 The Contractor shall be responsible for the true and proper fitting / alignment of the Works in relation to reference points / lines / levels as applicable. The checking of any alignment or level by the Engineer or his Representative shall not in any way relieve the Contractor of his responsibility for the correctness thereof and he shall fully provide, protect and preserve the setting out of the works.

4.9.2 The Contractor shall promptly notify the Engineer of any discrepancy in the setting out of the works.

4.10 Care of the Work

4.10.1 From the commencement of the works till issue of the Completion Certificate hereof; the Contractor shall take full responsibility for the care thereof. Save for the excepted risks, any damage, loss or injury to the work or any part thereof shall be made good by the Contractor at his own cost as per instruction and to the satisfaction of the Engineer, failing which the Engineer or his Representative may cause the same to be made good by any other agency and the expenses incurred and certified by the Engineer / Owner, shall be recovered from the Contractor.

4.10.2 Any damage caused by the Contractor to the surface of the roads or car parks shall be made good at his own cost.

4.11 Control of Pollution / Health Hazards

4.11.1 The Contractor shall take care to comply with current legislation on the Control of Pollution.

4.12 Site-In charge / Log Book / Hindrance & other Records

4.12.1 One fully responsible and experienced & Qualified Site-in-charge (Minimum Qualification: Diploma with 3 years' experience) has to be posted at the site during progress of work.

4.12.2 Details of technical personnel deployed for the job.

4.12.3 Log book for re-work/ modification.

4.12.4 Site instruction book.

4.12.5 Details of materials brought by vendor along with copies of challan.

4.12.6 Proper record of hindrances is to be maintained by the contractor for the purpose of timely removal of the hindrance and is to be put up for approval by the Engineer on weekly basis.

4.13 Clearance of Site

4.13.1 During construction work, the Contractor shall remove all unsalvageable dismantled materials, dismantled concrete, translucent sheets, north light glazing, excavated surplus earth etc. as directed by the Engineer from the site progressively so that construction activities remain unaffected. These materials shall be disposed of to a suitable area (to be arranged by the Contractor in conformity with statutory rules) outside the working premises.

4.13.2 On receiving the Completion Certificate, the Contractor shall remove any remaining Contractor's Equipment, surplus material, scrap materials, wreckage, debris, rubbish and temporary works from the Site or as directed by the Engineer.

4.13.3 The site shall be handed over in a tidy and workmanship manner.

4.13.4 If all these items have not been removed within 28 (twenty-eight) days, after the issue of Completion Certificate the Owner may sell or otherwise dispose of any remaining items. The Owner shall be entitled to be paid the costs incurred in connection with, or attributable to, such sale or disposal and restoring the Site.

5. SPECIAL TERMS AND CONDITIONS OF CONTRACT

5.1 Technical Eligibility Criteria

5.1.1 Bidder shall have experience of successful execution of Similar Nature /Type of Job i.e. Construction of major civil works including and not limited to piling works, works related to buildings etc. during last Seven (07) years ending on last day of previous month of tender published date. Supporting documents meeting Technical Eligibility Criteria to be submitted along with the bid. Also, full contact details like name, address, telephone numbers of the person under whose direct jurisdiction the work was executed etc. to prove that they had carried out such works successfully in any PSU / Corporate house / Industry.

5.1.2 Bidder has to fulfill experience in successful completion of aforesaid similar jobs of value (including GST) not less than Rs. 5 Crores for one job OR Rs. 3 Crore for two jobs OR Rs.2.5 Crores for three jobs in last Seven (07) years. The bidder must submit necessary proof duly endorsed along with the bid.

5.1.3 Apart from the above credential stated in SOTR Cl. No. 5.1.2, the bidder shall have experience of operating & maintaining a shipyard or fabrication yard (undertaking fabrication works etc) of area similar or more to Timber pond. This is to be shown to TNC Committee members.

5.1.4 The bidders have to submit the supporting documents meeting the technical eligibility criteria along with the bid. The past experience in similar nature of work should be supported by the PO / LOA and related completion certificate issued by the client's organization. In case the work experience is of Private sector the completion certificate shall be supported by the copies of LOA/PO and corresponding TDS Certificates. Also, the bidders have to submit the full contact details like name, address, telephone numbers, official mail-id of the concern person under whose direct jurisdiction the work was executed to prove that they had carried out such works successfully in any PSU / Corporate house / Reputed Industry.

5.2 Site Condition

5.2.1 Tenderer must carefully consider his method of construction and safety of the works in relation to environmental factors and the ground conditions.

5.2.2 Before quoting, the Tenderer in his own interest shall carry out site visits to know the site conditions / situations and full implications of the assignment. This will also help him in proper assessment of the work. Failure to do so will not absolve the contractor of his responsibility to carry out the work as specified in the Tender Documents. The cost of visiting the site shall be borne by the Tenderer and shall be at his own responsibility and risk.

5.3 Award of Works

5.3.1 The established rate with L1 bidder will be offered to execute the work.

5.4 Site Consultations

5.4.1 The work shall be carried out in consultation with the GRSE Nominated officer/ Yard Modernisation Department of GRSE headed by DGM (YM), with other officers as nominated by him.

5.5 Work Done Certificate (W.D.C.)

5.5.1 The contractor will put up Work done for certification to Engineer along with all inspection report / measurement sheet signed by Quality Assurance Authority/Engineer. Work done certificate is to include whether work has been completed as per delivery schedule or the delay in days/weeks occurred in completion of work. Any recovery towards usage of GRSE resources is also to be indicated.

5.6 Completion Period

5.6.1 Completion period of the entire scope of work under this tender shall be: -
Total 04 (Four) months from the date of issue of Letter of Award (LOA) or signing of contract agreement whichever is earlier. 15 days mobilization time will be provided separately over and above of 04 months as mentioned above after placement of LOA/ PO whichever is earlier.

5.6.2 The Tenderer, however, is required to assess the period and confirm the completion period. The tenderer must submit a network schedule (in MS Projects) explaining planning and program in detail for execution of the project.

5.7 Guarantee Period / Defect Liability Period (DLP)

5.7.1 The work executed including supplied components thereof are to be guaranteed for satisfactory performance for the period of 24 (Twenty-Four) Calendar months from the date mentioned in the Completion Certificate, unless otherwise agreed in writing by the Engineer. This will be deemed as the ‘Support / Guarantee Period’/ ‘Defect Liability Period’.

5.8 Submission of RA Bills by the Contractor

5.8.1 The Contractor shall submit to the Engineer, RA bills (in triplicate) for the payments, for the amount due along with all relevant supporting documents each signed by the Contractor’s authorised representative, such interim measurement and valuation of the works, material entry documents, etc. signed by the Engineer’s Representative, certificates of inspection/ trials, as may be applicable to respective stages. Works completed shall be jointly measured by the Contractor & Engineer /Engineer’s representative.

5.9 Completion Certificate

5.9.1 When the whole of the work has been completed to the satisfaction of the Engineer and has passed any final test as per the Specification/Contract/ instruction of the Engineer, the Contractor shall, within 21 (twenty-one) days of submission of his application to the Engineer, be entitled to receive a "Certificate for Completion" of work.

5.9.2 If any part of the total work having been completed to the satisfaction of the Engineer, be taken over and / or used by the Owner, the Contractor shall on application be entitled to partial completion certificate indicating the portion of the work covered by it, so that the Contractor's liability during Defect Liability Period of the Contract, if any, shall commence from the date mentioned in such certificate so far as the completed portion of the work is concerned.

5.10 Variation and its Valuation

The Engineer shall have the power to order the Contractor in writing to make any variation of the quantity, quality or form of the works or any part thereof that may, in his opinion, be necessary and the Contractor upon receipt of such an order shall act as follows:

(a) Increase or decrease the quantity of any work included in the Contract.
(b) Omit any work included in the Contract.
(c) Change the character or quality of kind of any work included in the Contract.
(d) Execute extra and additional work of any kind necessary for completion of the works.

5.10.1 Quantities in Price Schedule are estimated

Quantity of various items mentioned in BOQ as part of SOTR given in the tender is tentative. The detail BOQ is attached with the SOTR. Individual item quantity may vary according to actual requirement of job during the tenure of the work/contract at any extent. The Contractor shall assess actual quantity of work based on drawings and requirements of Owner (to be decided by Engineer) and shall submit updated BOQ incorporating quantity variation to the Engineer for review/approval. Variation (upward/downward) in quantity (without any limit) and value shall no way vitiate or invalidate the Contract or be treated as revocation of the Contract, but the value (if any) of all such variations evaluated shall be considered and the Contract Price shall be varied accordingly without any change in agreed rates of Price Schedule/BOQ on account of variation. Due to above quantity variation in individual items, the total Purchase Order Value may vary for successful completion of the job. Necessary amendment of PO will be issued accordingly. Limit on Cost of Variation & Value of contract may vary up to a maximum of 25% of the total Contract Value. This is to be a cumulative total for all variations. The Contractor shall give reasonable prior notice to the Engineer of any variation which may cause this cumulative limit to be exceeded.

5.10.2 Payment for Extra, Additional, Omitted, Substituted Work

(a) The Contractor shall not be entitled to any claim of additional work unless they have been carried out under the written orders of the Engineer.

(b) The Engineer shall solely determine the amount (if any) to be added to or deducted from the sum named in the Tender in respect of any additional work done or work omitted by his order subject to approval of the Owner.

(c) All additional or substituted work done or work omitted by order of the Engineer shall be valued on the basis of the rates and prices set out in the Contract, if in the opinion of the Engineer, the same shall be applicable. If the Contract does not contain any rates or prices directly applicable to the extra, additional or substituted work, the Engineer shall solely determine suitable rates in the manner deemed by him as fair and reasonable, and his decision shall be final, binding and conclusive.

(d) Rates of item of work that is not included in the schedule of items/BOQ shall be fixed as per the following procedure:

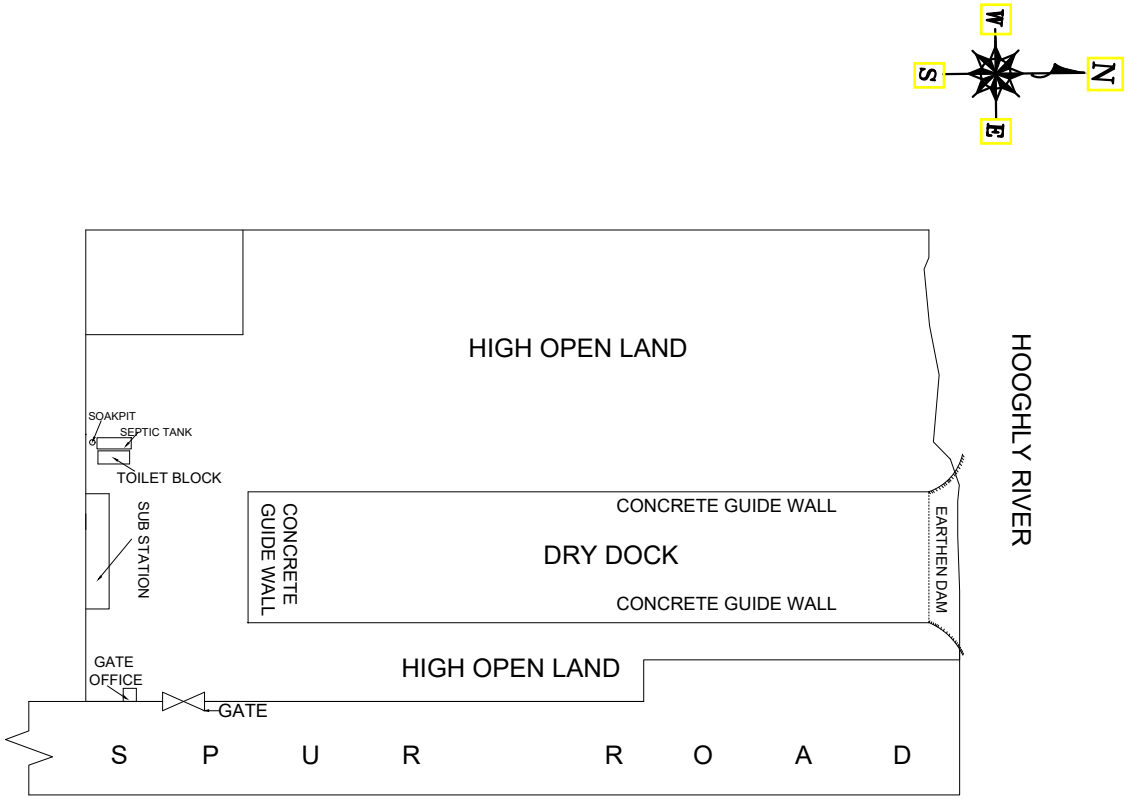
(aa) Where the extra works are of similar character and of equivalent value and / or executed under similar conditions as to any item of work appearing at Schedule of Quantities, then the rates for such extra items shall be equal to the rates of such items.

(ab) If the extra works are of similar character but differing in particulars then the rate of such item or items shall be derived from Schedule of Quantities, as modified to take fair account of the differences in particulars.

(ac) Where items of similar character are not contained in the Schedule of Quantities and none of the foregoing methods are applicable, rates shall be based on the norms of PWD/CPWD for labour, materials content respectively.

(ad) Where rates for extra item of works cannot be established by rate analysis as per the above, then rate for such item shall be estimated and fixed by the Engineer based on the market rates and assessment for labour, materials and other factors involved thereon.

*************END*************



APPENDIX-1

NOTE:-

1. 254 mm thick brick masonary wall all around the boundary of height 3.5 meter
2. Toilet Block - 6 m (L) x 2.5 m (B) x 3 m (H)
3. Septic Tank - 6.5 m (L) x 2.1 m (B) x 2.1 m (H) & Soakpit of dia 1 m and depth 2.5 m
4. Sub Station -22 m (L) x 4.5 m (B) x 6 m (H)
5. Gate Office -2.5 m (L) x 2.5 m (B) x 3 m (H)
6. 8 meter wide gate
7. Detail drawing will be provided by GRSE during the construction

CLIENT:-	PROJECT:-	DWG TITTLE:-	Drawing No:- YM/TP/GAD/01		
GARDEN REACH SHIPBUILDERS & ENGINEERS LTD 43/46,GARDEN REACH ROAD,KOLKATA-700024	CIVIL & ELECTRICAL UPGRADATION WORK ON TURNKEY BASIS AT TIMBER POND AREA, SHALIMAR,HOWRAH	GENERAL ARRANGEMENT DRAWING OF TIMBER POND AREA,SHALIMAR,HOWRAH	Date:- 26.05.2025		REV:- R0
			Prepared by	Checked by	Approved by
			P.GHOSH (BOPT)	A.DAS (SPVR)	S.HORE (MGR)

Garden Reach Shipbuilders & Engineers Ltd
(Ministry of Defence Govt. of India)

Appendix-2

CIVIL AND ELECTRICAL UP-GRADATION WORK ON TURNKEY BASIS AT TIMBER POND AREA SHALIMAR, HOWRAH

(Civil Work)

Sl No	Description of Item	Qnty	Unit	Rate (Rs)	Amount (Rs)
1	Detailed survey,Design, Drawing & Detailing as mentioned below : a. GA drawing i)Architectural drawing and detailing for Civil structures, if required b. All short of Civil drawing incl. structural detailing c.Detailed survey of adjacent area with Auto Level &Total Station d. As-built drawing (All drawing should be submitted both in hard and soft copies along with PDF & Auto Cad files)	1.00	LS		
2	**Detailed Soil investigation**:Soil investigation consisting with subgrade CBR, soil characteristics, index property of soil, permeability, proctor test, field compaction test, Sub soil exploration of 150mm dia conducting standard penetration test as per IS 2131-1981(minimum 3 bore hole) with in the proposed Land of Timber pond	1.00	LS		
3	Health Study of the existing Dry Dock including Survey, Preliminary Health Audit Report and Detail Health Audit Report. (40% payment will be released on completion of preliminary Study and Survey including submission of Preliminary Health Audit Report to engaging Dept. and remaining 60% payment will be released after stisfactory completion of Details study including submission of Detail Health Audit Report along with subsequent test report and plan/drawings to engaging dept.) Note:The details scope under this item as per SOTR Cl. No. 2.2	1.00	LS		
4	Yard Maintenance Service (O & M): For Dressing, cleaning and cutting of vegetations, shrubs or bushes of the entire area within the boundary at periodic interval or as when required.Keep the dry dock mud free, dewatering including required temporary pumping arrangement and the dock keep dry. Note:The details scope under this item as per SOTR Cl. No. 2.3	400.00	MND		
5	**2 high-skilled electricians** round the clock for operation and maintenance of the Electrical Substation (06nos X 12months) Note:The details scope under this item as per SOTR Cl. No. 2.3	72.00	Mon		
6	**2 semi-skilled operators** round the clock for water and fire main system throughout the yard which also includes pump operation (06nos X 12months) Note:The details scope under this item as per SOTR Cl. No. 2.3	72.00	Mon		

7	**2 housekeeping staff (unskilled)** for general cleanliness of the yard, offices and stores (02nos X 12months) Note:The details scope under this item as per SOTR Cl. No. 2.3	24.00	Mon		
8	**2 High-Skilled Security personnel** at a time for perimeter security including the waterfront round the clock i.e. in 3 (three) shift (06nos X 18months) Note:The details scope under this item as per SOTR Cl. No. 2.4	108.00	Mon		
9	Supplying at site composite geotextile bags of size 1.00 m x 0.70 mcomprising UV stabilized needle punched 200 gsm polypropylene nonwoven geotextile as inner liner and 300 gsm UV stabilized woven polypropylene geotextile as outer liner as per specification, double stitched at two ends with polypropylene or equivalent yarn including cost of transportation by all means and other incidental charges complete.	1500.00	Each		
10	Labour charges for filling Geo-textile bags with filler materials (sand), machine stitching the open end of the bag with thread as per design and placing the same on slope or dumping from bank within initial lead of 150m and all lifts including carriage and hire charges of all materials and equipments but excluding the cost of filler materials as directed by the Engineer-in-Charge i) Bag size 1.00m x 0.70m of capacity 0.1325 cum/bag	2000.00	Each		
11	Supply of Silver sand at site for filler of Geo-textile bags	100.00	M3		
12	Surface Dressing of the ground in any kind of soil including removing vegetation inequalities not exceeding 15 cm depth and disposal of the rubbish within a lead upto 75 m as directed	22070.00	Sq.m		
13	Clearing compound premises of shurbs, plants, jungles etc.by cutting and removing as directed (Specific permission of Engineer-in-Charge prior to execution will be necessary)	25253.00	Sqm		
14	Dismantaling all types of masonry excepting cement concrete plain or reinforced, stacking serviceable materials at site and removing rubbish as directed within GRSE Premises.	33.00	Cum		
15	Dismantling all types of plain cement concrete works, stacking serviceable materials at site and removing rubbish as directed within a lead of 75 m.	32.00	Cum		
16	Dismantling R.C. floor, roof, beams etc. including cutting rods and removing rubbish as directed including stacking of steel bars	22.00	Cum		
17	Removal of rubbish,earth etc. from the working site and disposal of the same beyond the compound, in conformity with the Municipal / Corporation Rules for such disposal, loading into truck and cleaning the site in all respect as per direction of Engineer in charge	490.00	Cum		
18	Uprooting and removing plants from the surface of walls parapet etc and making good damages. (Repairing of damages to be paid separately). (a) Small plant of girth of exposed stem upto 75 mm. lift upto 6 mtr.	106.00	Each		
19	Uprooting and removing plants from the surface of walls parapet etc and making good damages. (Repairing of damages to be paid separately). b) Medium size plant of girth of exposed stem above 75 mm. but not exceeding 150 mm. lift upto 6 mtr.	76.00	Each		

20	Uprooting and removing plants from the surface of walls parapet etc and making good damages. (Repairing of damages to be paid separately). C)Large plant of girth of exposed stem above 150 mm. but not exceeding 225 mm. lift upto 6 mtr	60.00	Each		
21	Earth work in excavation including cleaning away vegetation, surbs, etc. if any, for foundation, trenches, drains in earth, soil of all types (ordinary /hard soil) in both dry and wet conditions, sand, gravel and soft murum, including dewatering, dressing of sides and ramming of bottom and remonal of excess earth/soil etc. all complete as specified and as directed.(Mode of measurement shall be nett as per drawing).	15530.00	Cum		
22	Earth work in filling in foundation trenches or plinth with good earth, in layers not exceeding 150 mm. including watering and ramming etc. layer by layer complete. (Payment to be made on the basis of measurement of finished quantity of work) a) With earth obtained from excavation of foundation.	870.00	Cum		
23	Suplying and laying Single Brick Flat Soling of picked jhama bricks including ramming and dressing bed to proper level and filling joints with local sand.	503.38	Sqm		
24	Filling in foundation or plinth by silver sand in layers not exceeding 150 mm as directed and consolidating the same by thorough saturation with water, ramming complete including the cost of supply of sand. (payment to be made on measurement of finished quantity)	151.00	Cum		
25	Supplying and laying Polythene Sheet (150gm / sq.m.) over damp proof course or below flooring or roof terracing or in foundation or in foundation trenches	577.00	Sqm		
26	Ordinary Cement concrete (mix 1:2:4) with graded stone chips (20 mm nominal size) excluding shuttering and reinforcement,if any, in ground floor as per relevant IS codes.	80.00	Cum		
27	Ordinary Cement concrete (mix 1:2:4) with graded stone chips (6mm nominal size) excluding shuttering and reinforcement,if any, in gound floor as per relevant IS codes.	16.00	Cum		
28	Supplying tor steel reinforcement (of approved manufacturer) of tested quality of any diameter upto 32mm dia Fe 500 confirming to IS:1786 for reinforced concrete work in all sorts of structures at all depth and height including distribution bars, stirrups, binders etc initial straightening and removal of loose rust (if necessary), cutting to requisite length, hooking and bending to correct shape, placing in proper position and binding with 16 gauge black annealed wire at every intersection, complete as per drawing and direction.	57.08	MT		
29	Ordinary Cement concrete (mix 1:1.5:3) with graded stone chips (20 mm nominal size) excluding shuttering and reinforcement if any, in ground floor as per relevant IS codes.	60.00	CUM		
30	Supplying ready mixed concrete of M 25 Grade with well graded stone chips of 20 mm nominal size containing designed quantity of cement per Cu.m of wet concrete produced in computerised batching plant under controlled condition using approved super plastisizer, designing concrete mix following I.S. 10262 and I.S. 456, transporting the mix with agitation in transit mixer to work site depositing the mix on a platform erected for the purpose at required levels of concreting and then placing the mix in its final location of form work, compacting and curing the same complete as per specification & direction of the Engineer-in-charge including computerised batching plant transit mixer with all accessories vibrators etc. In foundation & Superstructure with approved Pump	350.00	Cum		

31	Hire and labour charges for waterproof steel/plyboard shuttering of any shape	1981.63	Sqm		
32	Extra for staging beyond 4 m in any floor (Mode of measurement: area in plan x mean height of staging upto soffit of shuttering above initial 4 m)	10.00	Cum		
33	Rendering the Surface of walls and ceiling with White Cement base WATER PROOF wall putty of approved make & brand.(1.5 mm thick)	65.00	Sqm		
34	Brick work with 1st class bricks in cement mortar (1:4) in Foundation	70.00	CUM		
35	Brick work with 1st class bricks in cement mortar (1:4) in Superstructure	332.63	CUM		
36	125 mm. thick brick work with 1st class bricks in cement mortar (1:4)	615.00	Sqm		
37	Plaster with sand and cement mortar including rounding off or chamfering corners as directed and raking out joints including throating, nosing and drip course, scaffolding/staging where necessary .[including cost of chipping over concrete surface if required With 1:4 cement mortar , 20 mm thick plaster	4287.62	Sqm		
38	Plaster with sand and cement mortar including rounding off or chamfering corners as directed and raking out joints including throating, nosing and drip course, scaffolding/staging where necessary .[including cost of chipping over concrete surface if required With 1:4 cement mortar , 15 mm thick plaster	50.00	Sqm		
39	Plaster with sand and cement mortar including rounding off or chamfering corners as directed and raking out joints including throating, nosing and drip course, scaffolding/staging where necessary [including cost of chipping over concrete surface] With 1:4 cement mortar , 10 mm thick plaster	20.00	Sqm		
40	Neat cement punning about 1.5mm thick in wall, dado, window sill, floor etc	615.00	Sqm		
41	Applying One Coat Exterior grade Acrylic primer of approved quality and brand on plastered or cencrete surface old or new surface, ,including scaffolding/staging where necessary	3657.62	Sqm		
42	Protective and Decorative Acrylic exterior emulsion paint of approved quality (Two Coat) Super Protective 100% Acrylic Emulsion.,,including scaffolding/staging where necessary	3657.62	Sqm		
43	Priming one coat on timber or steel or other metal surface with synthetic oil bound primer of approved quality including scaffolding, smoothening surfaces by sand papering etc.	290.00	sqm		
44	Two coat Painting with best quality synthetic enamel paint of approved make and brand on steel or other metal surface including smoothening surface by sand papering etc. including using of approved putty etc. on the surface, if necessary	290.00	sqm		
45	Applying Interior grade Acrylic Primer of approved quality and brand on plastered or cencrete surface old or new surface (a) One Coat i) Water based interior grade Acrylic Primer ,including scaffolding/staging where necessary	215.00	Sqm		
46	Applying Acrylic Emulsion Paint of approved make and brand on walls and ceilingii),including scaffolding/staging where necessary (Two coats)	215.00	Sqm		

47	Supplying fitting and fixing 600 mm (±30 mm) diametre R.B.T (Reinforced Barbed Tape) Concertina fencing on wall top using concertina coils stretched to approx.6 meters length at site clipped with two nos. of horizontal R.B.T strands which will be tensioned and fixed with the vertical M.S angle iron posts by means of security fasteners (such as 'C' clips, R.B.T clips etc	500.00	Mtr		
48	Drum Sheet Walling 1.40m (av.) high on Sal-bullah / Eucalyptus bullah piling 10 cm dia. and 3.25m long driven 1.75m (av.) below G.L. and 75cm centre to centre including fitting fixing 3 nos. of half bullah pieces (from 10 cm dia) and drum(empty bitumen) sheet (approved condition) of height 1.5m , cutting and straightening drum sheet (each joint must have lap length of min.50mm) including cost of necessary nails, bolts, nuts etc. and providing 2 to 3m long half bullah ties of 10cm dia. @ 2.25 m centre to centre fixed with 10 cm dia. bullah posts driven 1.5m below G.L. including cost of all materials and one coat of coal tarring to all bullah etc. complete as per direction.(i) Using Eucalyptus bullah	90.00	Mtr		
49	Supplying and laying true to line and level Double Charge Vitrified Tiles of approved brand conforming to IS 15622: 2006 (Group B I a) and tested as per IS 13630:2006 (relevant parts) [Non-modular sizes for tiles with Water Absorption (av.) ≤ 0.08 %] in floor, skirting etc. using polymerised adhesive of 6mm thick layer applied directly over finished artificial stone floor/Mosaic etc without any backing course and joints grouted with admixture of white epoxy grout materials of approved brand including spacer - 2mm as directed and removal of wax coating of top surface of tiles with warm water and polishing the tiles using soft and dry cloth upto mirror finish complete including the cost of materials,Iabour and all other incidental charges complete as per direction of Engineerin- Charge.	132.00	Sqm		
50	80 mm thick interlocking designer concrete paver block M-40 grade for hightraffic zone, bus terminus, industrial complex, mandi houses etc. as per IS: 156582006 (over 20-40 mm medium sand bed on 250mm thk WBM/ WMM base course & 250 mm thk bound gnaular/ granular sub-base course & filling the interstices of blocks with fine sand by brooming & subsequent watering including cost of sand for sand bed but excluding cost of base, sub-base course & subgrade preparation.) complete as per direction of Engineer-in-Charge	69.90	Sqm		
51	Supplying, spreading and consolidating an uniform and homogeneous mixture of Stone Dust and Sand (mixed in proportion of 3 : 1 by volume and by any approved method as per direction of Engineer-in- Charge) to the required thickness in layers at 97% Proctor Density (not less than 1.7 gm/cc) with power roller to proper gradient and camber, including watering as necessary, lighting, guarding, barricading and making adequate earthen bundh where necessary to protect the edges and curing with water for 2 to 3 days, mending cracks and depressions by rolling where necessary complete as per Specification including all incidental charges of roller, cost of fuel & lubricants. The compaction factor is 0.67. Note: Rolling should also be done before spreading of mixture of stone dust and sand	37.00	Cum		

52	Supplying, fitting & fixing of partly glazed partly panelled or fully glazed single leaf Aluminium swing door of all aluminium sections viz door frame (top and side frame), shutter(top rail, bottom rail, lock rail, door vertical) , glazing clip made of Aluminium Alloy Extrusions conforming to IS: 733-1983 and IS: 1285-1975, annodized conforming to IS:1868- 1983, fitted with all other accessories viz. EPDM gusket,cleat, angle screws, handle,door stopper. including labour charges for fitting and fixing of aluminium door with door spring,/aluminium hinges, glass / Panel board all complete as per architectural drawings and direction of Engineer-in charge,10-12 Micron thickness Annodizing film colour powder coating	5.00	Kg		
53	Supplying bubble free float glass (clear)of approved make and brand conforming to IS: 2835-1987; 6mm thick	10.00	Sqm		
54	Godrej Hydraulic door closer fitted and fixed complete Heavy type	1.00	EA		
55	Supplying 'Godrej' mortice lock chromium plated with keys 6 levers including fitting & fixing complete	1.00	EA		
56	M.S. structural works in columns, beams etc. with simple rolled structural members (e.g. joists, angle, channel, rail section conforming to IS: 226, IS: 808 & SP (6)- 1964,hollow sections (square or rectangular shape) conforming to IS: 806-1968 & IS:1161-1998),tabular sections conforming to IS: 806-1968 & IS: 1161- 1998 connected to one another with bracket, gussets, cleats as per design, direction of Engineer-in-charge complete including cutting to requisite shape and length, fabrication with necessary bolting, metal arc welding conforming to IS: 816- 1969 & IS: 1995 using electrodes of approved make and brand conforming to IS:814- 2004, haulage, hoisting and erection all complete. The rate includes the cost of rolled steel section, consumables such as electrodes, gas and hire charge of all tools and plants and labour required for the work including all incidental chages such as electricity charges, labour insurance charges etc.	30.00	MT		
57	Supplying , fitting and fixing single skin color coated trapezoidal profile for wall cladding, Roof shall be made of 0.45mm BMT (Base Metal Thickness) 0.50mm TCT (Total Coated Thickness excluding paint), G550 (minimum 550 yield strength), of Zincalume metallic coating (IS15965) with high Solar Reflectance Index (SRI) value for better cooling as per thermatch technology, 1000-1015mm effective cover width with five major corrugation, 28mm high rib spaced at 203mm c/c with subtle square fluting in the pan and the end rib shall have anti-capillary groove & return leg. The steel sheet shall be fastened with 40 micron zinc coated or 25 micron zinc-tin alloy coated, hex- head, self-drilling screw as per IS 3566-2002 class 3 fastener. The base steel shall be coated with zinc-aluminum alloy Zincalume (AZ150)(i.e, 55% Al, 43.4% Zinc, 1.6% Si) minimum of 150g/m2 coating total on both sides, pre-painted with colorbond XRW (exterior roofing, walling) paint system of 35 micron super Durable Polyester paint (SDP) with stable inorganic pigment with no lead contents confirming IS15965. The sheet shall be free from defects and have brand marking of the manufacturer giving product details on the back of the sheet at regular interval confirming genuinity of the material. In Roof, Ridge, valley and Wall with 0.50 mm thick sheet)	50.00	Sqm		

58	Supplying bubble free float glass of approved make and brand conforming to IS: 2835-1987. xiii) 12mm thick cleared toughened glass coforming to IS: 2553-1992 (Part-II)	10.00	Sqm		
59	Providing and fixing double scaffolding system (cup lock type) on the exterior side, up to seven story height made with 40 mm dia M.S. tube 1.5 m centre to centre, horizontal & vertical tubes joining with cup & lock system with M.S.tubes, M.S. tube challies, M.S. clamps and M.S. staircase system in the scaffolding for working platform etc. and maintaining it in a serviceable condition for the required duration as approved and removing it there after .The scaffolding system shall be stiffened with bracings, runners, connection with the building etc wherever required for inspection of work at required locations with essential safety features for the workmen etc. complete as per directions and approval of Engineer-in-charge .The elevational area of the scaffolding shall be measured for payment purpose .The payment will be made once irrespective of duration of scaffolding. Note: - Necessary deduction for scaffolding in the existing item if included to be done.	65.00	Sqm		
60	Supplying, fitting & fixing UPVC pipes A- Type and fittings conforming to IS:13592-1992 with all necessary clamps nails,bends,tees, trapsas required including making holes in walls, floor etc. cutting trenches in any soil through masonry concrete structures etc if necessary and mending good damages including joining with jointing materails (Spun Yarn, Valamoid/Bitumen/M-Seal etc) complete.UPVC Pipes:110 mm. Dia	41.00	M		
61	Anodised aluminium barrel / tower / socket bolt (full covered) of approved manufactured from extruded section conforming to I.S. 204/74 fitted and fixed with cadmium plated screws:75mm long x 10mm dia. bolt.	1.00	EA		
62	Levelling and Compacting original ground (Sub Grade) by power roller of capacity 80Kn to 100 Kn including filling in depression occour during rolling to obtain the desired dry density	900.00	Cum		
63	Providing, laying, spreading and compacting stone aggregates of specific sizes including spreading in uniform thickness, hand packing, rolling with vibratory roller 8-10 tonnes in stages to proper grade and camber, applying and brooming requisite type of screening / binding materials to fill up the interstices of coarse aggregate, watering , including cost of all materials and hire and labour charges of all men and machinery and compacting to the required density, as per Clause 404 of Specifications for Road & Bridge Works of MoRT&H (5th Revision). Grading-2 Aggregate (53 mm to 22.4 mm@ 1.21cum) Using Stone Screening Type B (11.2 mm@0.24 cum) and binding material stone dust mixed with grit @0.08cum By Manual Means	220.00	Cum		
64	MS (IS-2062) Holding down bolt (duly hot dip galvanised) with 100 x 100 x 6 mm plate washer at bottom, MS Insert Plates and packing the hole with cement concrete or cement grout as directed.20 mm dia bolt,450 mm long	96.00	Nos		

65	C.I. sluice valve 150 mm dia. with flanged ends drilled to as per I.S. 1358/62 and having all cast iron components as per I.S. 780/71 solid forged bronze inside screw spindle having ultimate tensile strength not less than 4.72 MT per sq. cm. Spindle nut valve and seat faces of hard wear resisting, manufactured from best quality gunmetal conforming to I.S. 780/71, painted black all over with asphalt base paint tested to 21 kg (hydraulic pressure) per sq. cm., valve opening to anticlockwise direction, fitted and fixed complete.	10.00	EA		
66	Supply fitting and fixing of Stainless Steel Single Headed Hydrant Valve, 63mm (2 ½ inch) Female instantaneous Coupling, Oblique type, with Gun Metal Blank cap. ISI marked: as per IS: 5290 Coupling size: 63mm Female single outlet type #A# (Flow: 900 LPM at 7kg/cm2). O.D. 200 mm. I.D. 75 mm. Valve body, Bonnet, Stop Valve, Check Nut and Instantaneous Female Outlet is to be made of Stainless Steel Grade 1 of 4 of IS: 3444 Valve Spindle is to be made of SS confirming to IS: 6603. Hand Wheel is to be made of MS confirming to IS: 1030. Washers, Gaskets are to be made of Rubber confirming to IS: 937. Spring is to be made of SS Wire confirming to IS: 6528. Flange is of 4 holes on 160 mm PCD.	4.00	EA		
67	Writing and block letters/digits painting including logo on the entrance Gate with approved enamel paint by EIC on metal/plastered/wooden surface in English,Hindi,Bangali (Rate include all charges for completing the work)	1.00	LS		
68	40 mm. thick damp proof course with cement concrete (1:1.5:3) (with graded stone chips 20 mm nominal size) with water proofing compound of approved brand @ 0.2% weight of cement including cost of materials over two coats of non toxic acrylic polymer modified cementitious waterproofing slurry coat complete [cost of water proofing compound and non toxic paint to be paid seperately) for underground water retaining structures.	10.00	M2		
69	Supplying, fitting & fixing 1st quality Ceramic tiles in walls and floors to match with the existing work & 4 nos. of key stones (10mm) fixed with araldite at the back of each tile & finishing the joints with white cement mixed with colouring oxide if required to match the colour of tiles including roughening of concrete surface, if necessary or by synthetic adhesive & grout materials etc. In Floor colour decorative area of each tiles above 0.09 SQm With Sand Cement Mortar (1:4) 20 mm thick & 2 mm thick cement slurry at back side of tiles using cement @ 2.91 Kg/Sq.m & joint filling using white cement slurry @ 0.20kg/Sq.m	60.00	M2		
70	Supplying, fitting & fixing 1st quality Ceramic tiles in walls and floors to match with the existing work & 4 nos. of key stones (10mm) fixed with araldite at the back of each tile & finishing the joints with white cement mixed with colouring oxide if required to match the colour of tiles including roughening of concrete surface, if necessary or by synthetic adhesive & grout materials etc. In Wall colour decorative area of each tiles above 0.09 SQm With Sand Cement Mortar (1:4) 20 mm thick & 2 mm thick cement slurry at back side of tiles using cement @ 2.91 Kg/Sq.m & joint filling using white cement slurry @ 0.20kg/Sq.m	100.00	M2		

71	Supplying, fitting & fixing granite tiles 10mm to 12mm. thick in columns, wall, facia etc. with 15 thick [avg] cement mortar (1:2) including making suitable arrangements to hold the stones properly by brass / copper hooks including pointing in cement mortar (1:2) (1 white cement : 2 marble dust) with admixture of pigment matching the stone shades all complete as per direction of the Engineer-in-charge including cost of all materials, labours, scaffolding, staging ,curing and roughening of concrete surface complete. [Using cement slurry at back side of tiles@ 4.4 kg/sq.m & white cement slurry for joint filling @ 1.8 kg/sq.m] Area of each slab upto 0.2 Sq.m	11.00	Sqm		
72	Supplying, fitting and fixing Marble Slab/tile of 15 to 18 mm thickness in floor, lobby, stair, landing & treads etc. over 20 mm (av.) thck base of Cement mortar (1:2) laid with white cement slurry @ 4.4 kg/Sq.m before placing marble & jointed with white cement slurry @ 2.0 kg/Sq.m with necessary pigments including grinding and Granite polishing as per direction of Engineering -in -Charge in Ground Floor. {White cement and Pigment to be supplied by the Agency] (a) With Makrana plain pink / Adranga Pink / Garbh Gulabi /Udaypur Pink / Udaypur green / Black Bhalsana (ii) Area of each slab/tile exceeding 0.3sq.m. but not exceeding 0.6 sq.m.	12.00	Sqm		
73	Rendering the surface of walls and ceiling with white cement based wall putty of approved make and brand(1.5mm thick)	33.00	M2		
74	Acrylic Distemper to interior wall, ceiling with a coat of solvent based interior grade acrylic primer (as per manufacturer's specification) including cleaning and smoothning of surface. Two Coats	20.00	M2		
75	Supplying 1.5mm thick M.S. sheet fitted and fixed on one or both faces of M.S./ W.I. gate etc. with point welding at not more than 150mm apart complete in all respect as per design including cost of all labour and materials	4.00	Sqm		
76	M.S.or W.I. Ornamental grill of approved design joints continuously welded with M.S, W.I. Flats and bars of windows, railing etc. fitted and fixed with necessary screws and lugs in ground floor. (i) Grill weighing above 10 Kg./sq.mtr and up to 16 Kg./sq. mtr	10.00	QNTL		
77	Wood work in door and window frame fitted and fixed in position complete including a protective coat of painting at the contact surface of the frame exluding cost of concrete, Iron Butt Hinges and M.S clamps. (The quantum should be correted upto three decimals). d) Sal : Local	0.40	M3		
78	Supplying solid flush type doors of commercial quality, the timber frame consisting of top and bottom rails and side styles of well seasoned timber 65mm wide each and the entire frame fitted with 37.5mm wide battens places both ways in order to make the door of solid core and internal lipping with Garjan or similar wood veneers using phenol formaldehyde as glue etc. complete, including fitting, fixing shutters in position but excluding the cost of	8.00	M2		

79	Supplying, fitting and fixing fibre reinforced polymer (FRP) Composite door frame as per approved section with glass fibre reinforced plastic moulded skins and a special sandwich core, so as to impart monolitaheic composite structure as per approved technology of Department of Science and Technology (DST) to safisfy IS: 4020 door testing performance criteria.. (ii) 66mm x 70mm	30.00	Mtr.		
80	Supplying, fitting & fixing fibre reinforced polymer (FRP) Composite door shutters as per approved design with glass fibre reinforced plastic moulded skins and a special sandwich core, so as to impart monolitaheic composite structure as per approved technology of Department of Science and Technology (DST) to satisfy IS:4020 door testing performance criteria. In ground floor,(ii) 25 mm thick	10.00	Sqm		
81	Supplying,fitting & fixing of 2-Track / 3-Track Aluminium sliding Window of all Aluminium sections(including louvered section) viz. window frame (top,bottom & side frame), shutter (top, bottom, side & interlock member) made of aluminium alloy extrusions conforming to IS 733-1983 & IS 1285-1975, annodised conforming to IS 1868-1983, fitted with all other accessories viz. PVC roller, EPDM gasket, maruti lock, screws etc. including labour charges for fitting & fixing of aluminium 2-track/3-track sliding window with fixing of glass (excluding cost of glass) all complete as per architectural drawings and direction of Engineer-in-charge. 10-12 Micron thickness Annodizing film Natural white	44.00	KG		
82	Supplying, fitting and fixing M.S. clamps for door and window frame made of flat bent bar, end bifurcated with necessary screws etc. by cement concrete(1:2:4) as per direction. (Cost of concrete will be paid separately) (a) 40mm X 6mm, 250mm Length	36.00	EACH		
83	Iron butt hinges of approved quality fitted and fixed with steel screws, with ISI mark (viii) 100mm. X 75mm. X 3.50mm	36.00	EACH		
84	i) Iron hasp bolt of approved quality fitted and fixed complete (oxidised) with 16mm dia rod with centre bolt and round fitting. (b) 250mm long	8.00	EACH		
85	Anodised aluminium barrel / tower / socket bolt (full covered) of approved manufactured from extruded section conforming to I.S. 204/74 fitted and fixed with cadmium plated screws: (v) 150mm long x 12mm dia. bolt.	14.00	EACH		
86	Supplying, fitting and fixing Half round channel with or without outlet as required set in cement concrete (6:3:1) with jhama chips complete. (Payment of concrete will be paid seperately) (b) White vitreous chinaware	7.00	M		

87	Supply of UPVC pipes (B Type) & fittings conforming to IS-13592-1992 (A) (i) Single Socketed 3 Meter Length (b) 110 mm	50.00	M		
88	Supply of UPVC pipes (B Type) & fittings conforming to IS-13592-1992 \UPVC "P" trap(LH,RH),110mm.	5.00	EACH		
89	Supply of UPVC pipes (B Type) & fittings conforming to IS-13592-1992 xii) Door Bend (LH) & (RH) (b) 110 mm	26.00	EACH		
90	Supply of UPVC pipes (B Type) & fittings conforming to IS-13592-1992 (B) Fittings iv) Door Tee(LH) & (RH) (b) 110 mm	10.00	EACH		
91	Supply of UPVC pipes (B Type) & fittings conforming to IS-13592-1992 UPVC vent cowl,75mm.	4.00	EACH		
92	Supplying, fitting and fixing CPVC (Chlorinated Polyvinyl Chloride) pipes of approved make conforming to IS-15778: 2007 . with all necessary accessories, specials viz. socket, bend, tee, union, cross, elbo, nipple, longscrew, reducing socket, reducing tee, short piece etc. fitted with holder bats clamps, including cutting pipes, fitting, fixing etc. complete in all respect including cost of all necessary fittings as required,jointing materials in any position above ground. (Payment will be made on the centre line measurements of total pipe line including all specials. No separate payment will be made for accesories, specials. (b) For Concealed Work (i) CPVC Pipes Class-1,SDR-11 15 mm	50.00	M		
93	Supplying, fitting and fixing CPVC (Chlorinated Polyvinyl Chloride) pipes of approved make conforming to IS-15778: 2007 . with all necessary accessories,specials viz. socket, bend, tee, union, cross, elbo, nipple,longscrew, reducing socket, reducing tee, short piece etc. fitted with holder bats clamps, including cutting pipes,fitting, fixing etc. complete in all respect including cost of all necessary fittings as required,jointing materials in any position above ground. (Payment will be made on the centre line measurements of total pipe line including all specials. No separate payment will be made for accesories, specials. (b) For Concealed Work (i) CPVC Pipes Class-1,SDR-11 20 mm	54.00	M		
94	Supplying, fitting and fixing CPVC (Chlorinated Polyvinyl Chloride) pipes of approved make conforming to IS-15778: 2007 . with all necessary accessories, specials viz. socket, bend, tee, union, cross, elbo, nipple, longscrew, reducing socket, reducing tee, short piece etc. fitted with holder bats clamps, including cutting pipes, fitting, fixing etc. complete in all respect including cost of all necessary fittings as required,jointing materials in any position above ground. (Payment will be made on the centre line measurements of total pipe line including all specials. No separate payment will be made for accesories, specials. (b) For Concealed Work (i) CPVC Pipes Class-1,SDR-11 25 mm	10.00	M		
95	Supplying, fitting and fixing 18 mm thick marble partition slab with chawk doongri marbel square cut, both sides polished with two front corners rounded and edges polished.	1.80	M2		

96	Supplying, fitting and fixing E.W.C. in white glazed vitreous chinaware of approved make complete in position with necessary bolts, nuts etc. (a) With 'P' trap	5.00	EACH		
97	Supplying, fitting and fixing Closet seat of approved make with lid and C.P. hinges, rubber buffer and brass screws complete. Plastic (hallow type) white	5.00	EACH		
98	Supplying, fitting and fixing 10 litre P.V.C. low-down cistern conforming to I.S. specification with P.V.C. fittings complete,C.I. brackets including two coats of painting to bracket etc. white	5.00	EACH		
99	Supplying P.V.C. water storage tank of approved quality with closed top with lid (Black) - Multilayer d) 2000 litre capacity	2.00	EACH		
100	Supplying, fitting and fixing Flat back urinal (half stall urinal) in white vitreous chinaware of approved make in position with brass screws on 75 mm X 75 mm X 75 mm wooden blocks complete. (ii) 470 mm X 280 mm X 340 mm	5.00	EACH		
101	Supplying, fitting and fixing white vitreous china best quality approved make wash basin with C.I. brackets on 75 mm X 75 mm wooden blocks,C.P. waste fittings of 32 mm dia., one approved quality brass C.P. pillar cock of 15 mm dia., C.P. chain with rubber plug of 30 mm dia., approved quality P.V.C. waste pipe with C.P. nut 32 mm dia., 900 mm long approved quality P.V.C. connection pipe with heavy brass C.P. nut including mending good all damages and painting the brackets with two coats of approved paint. (ii) 550 mm X 400 mm size	5.00	EACH		
102	Supplying,fitting and fixing approved brand 32 mm dia.P.V.C. waste pipe,with PVC coupling at one end fitted with necessary clamps. 900mm long	6.00	EACH		
103	Supplying,fitting and fixing approved brand P.V.C. CONNECTOR white flexible, with both ends coupling with heavy brass C.P. nut, 15 mm dia.,600mm long	12.00	EACH		
104	Supplying, fitting and fixing dome shaped C.P. waste grating for urinals 32mm.	5.00	EACH		
105	Supplying, fitting and fixing Chromium plated stop cock.	10.00	EACH		
106	Supplying, fitting and fixing Chromium plated bib cock.	4.00	EACH		
107	Supplying, fitting and fixing CP pillar cock.	5.00	EACH		
108	Hand Shower(Health Faucet) with 1mtr Fexible Tube with Wall Hook(Equivalent to Code No.573 & Model -ALLIED of Jaquar or similar)	5.00	EACH		
109	Supplying, fitting and fixing shower of approved brand and make Chromium plated overhead Rain shower (Square), size-180x180mm with revolving joint (Model Code No. F7010501 of CERA or equivalent)	3.00	EACH		
110	Supplying, fitting and fixing complete Bottle waste trap (Heavy Quality) PTMT Bottle trap 32 mm with connecting pipe (Prayag or equivalent)	5.00	EACH		
111	Supplying, fitting and fixing gunmetal wheel valve of approved brand and make tested to 21 kg per sq. cm. (for water lines only). ,25mm	3.00	EACH		

112	Supplying, fitting and fixing gunmetal wheel valve of approved brand and make tested to 21 kg per sq. cm. (for water lines only). ,15mm	4.00	EACH		
113	Supplying, fitting and fixing bevelled edged mirror 5.5 mm thick silver red as per I.S. 3438 / 1965 together with brass C.P. hinges. 600x450mm.	2.00	EACH		
114	Supplying, fitting and fixing porcelain soap tray of approved make.,150x150mm.	5.00	EACH		
115	Supplying, fitting and fixing towel rail with two brackets made with aluminium 25mm. dia.,450mm long	6.00	EACH		
116	Supplying, fitting and fixing C.I. square jalli ,150mm.	2.00	EACH		
117	Construction of septic tank of different capacities as per approved drawing with 1st class brick work in cement mortar (1:4) including two 560 mm dia. R.C.C. manhole cover(heavy type)of approved make supplied, fitted and fixed in the 100mm thick R.C.C (1:1.5:3) top slab with necessary fittings, 20mm thick cement plaster (4 : 1) with neat cement finish to the internal surfaces and 15 mm thick cement plaster (4 : 1) to outside wall upto 200 mm below G.L floor finished with 25 mm thick grey artificial stone over 100 mm thick R.C.C(1:1.5:3) bottom slab including supplying, fitting and fixing all necessry specials, fittings, S.W. tees, C.I. foot rest etc. including excavation earth in all sorts of soil, shoring, bailing out and pumping out water as necessary, ramming, dressing the bed and fefilling the sides of the tanks with earth, removing spoils, filling up the chamber with clear water, removing foreign materials from the chamber and including constructing attached inspection pit as per approved drawing and connecting all necessary pipes, joints etc. with internal plaster work and artificial stone flooring is to be done with admixture of water proofing compound @ 0.5% by weight of cement with all costs of labour and materials. v) For 100 users With SAIL/TATA/RINL	1.00	EACH		
118	Construction of circular soak well 2.5 metre deep in all types of sandy soils with dry brick work upto 1.6 metre from the bottom having 150 mm intermediate cement brick work (1:4) band all round and cement brick work (1:4) upto 0.90 metre from top with 20mm thick cement plastering (1:4) to inside face upto the depth of cement brick work, 15mm thick cement plaster (1:4) on outer face from top of the well upto G.L. and 6 mm thick cement plaster (1:4) on top of the R.C.C. cover slab including filling bottom 1.00 metre of inside of the well with brick metal (50 mm to 63 mm size) including R.C.C. cover slab of 100 mm thick with cement conc (1:1.5:3) with stone chips with necessary reinforcement and shuttering including one 560 mm dia. R.C.C. manhole cover (heavy type)of approved make supplied, fitted and fixed in the cover slab with necessary fittings, making nacessary arrangements for pipe connections, excavation of well including shoring, dewatering and removing the exess earth from the premises as per direction complete in all respect with all costs of labour and materials.With 250 mm thick dry brick work and 250 mm thick cement brick work (1:6) and 1.00m inside dia. (SAIL/TATA/RINL)	1.00	EACH		

119	Installation of 1 No 250 mm x 150 mm dia Tubewell along with providing, testing and commissioning of Submersible pumpset Labour for boring through any type of soil for sinking tube well of required dia. With top enlargement by rig boring system including hire charges and labour for supplying of suitable dia. Casting pipes upto full depth of tube well with necessary sockets, tools and plants, staging, force pumping set and making necessary arrangements for boring and also cost of withdrawing the casing pipes and lowering pipes, stainers, blind pipes etc. complete. (The casing pipe should have a minimum 50 mm gap in between the outside of the tube well pipe and the casing pipe). a) For depth upto 250 meter for 150 dia. Tube well with top enlargement of 250 mm dia. i) First 50 metre	50.00	Mtr.		
120	Installation of 1 No 250 mm x 150 mm dia Tubewell along with providing, testing and commissioning of Submersible pumpset Labour for boring through any type of soil for sinking tube well of required dia. With top enlargement by rig boring system including hire charges and labour for supplying of suitable dia. Casting pipes upto full depth of tube well with necessary sockets, tools and plants, staging, force pumping set and making necessary arrangements for boring and also cost of withdrawing the casing pipes and lowering pipes, stainers, blind pipes etc. complete. (The casing pipe should have a minimum 50 mm gap in between the outside of the tube well pipe and the casing pipe). a) For depth upto 250 meter for 150 dia. Tube well with top enlargement of 250 mm dia. ii) Next 50 metre	50.00	Mtr.		
121	Installation of 1 No 250 mm x 150 mm dia Tubewell along with providing, testing and commissioning of Submersible pumpset Labour for boring through any type of soil for sinking tube well of required dia. With top enlargement by rig boring system including hire charges and labour for supplying of suitable dia. Casting pipes upto full depth of tube well with necessary sockets, tools and plants, staging, force pumping set and making necessary arrangements for boring and also cost of withdrawing the casing pipes and lowering pipes, stainers, blind pipes etc. complete. (The casing pipe should have a minimum 50 mm gap in between the outside of the tube well pipe and the casing pipe). a) For depth upto 250 meter for 150 dia. Tube well with top enlargement of 250 mm dia. iii) Rest 50 metre	50.00	Mtr.		
122	Installation of 1 No 250 mm x 150 mm dia Tubewell along with providing, testing and commissioning of Submersible pumpset Labour for boring through any type of soil for sinking tube well of required dia. With top enlargement by rig boring system including hire charges and labour for supplying of suitable dia. Casting pipes upto full depth of tube well with necessary sockets, tools and plants, staging, force pumping set and making necessary arrangements for boring and also cost of withdrawing the casing pipes and lowering pipes, stainers, blind pipes etc. complete. (The casing pipe should have a minimum 50 mm gap in between the outside of the tube well pipe and the casing pipe). a) For depth upto 250 meter for 150 dia. Tube well with top enlargement of 250 mm dia. iv) For additional depth beyond 150 m	100.00	Mtr.		

123	Supplying, fibre glass reinforced Epoxy resin slotted of 1 mm slot width in 6.1m length of approved make and as per direction of the Engineer - in - Charge. 150 mm dia. 6.0 mm wall thickness	30.00	Mtr.		
124	Supplying, fitting & fixing heavy type bell mouth PVC reducing socket. 200 mm X 250 mm	1.00	Each		
125	Supplying, fitting and fixing G.I. cap at top. 300 mm	1.00	Each		
126	Supply and delivery of UPVC pipe (CD) conforming to IS 12818:2010. (CIPET Certified)150 mm dia	220.00	mtr		
127	Supply and delivery of UPVC pipe (CD) conforming to IS 12818:2010. (CIPET Certified) 250 mm dia.	30.00	mtr		
128	Lowering the tube well assembly (UPVC Casing pipe ,well pipe, strainer along with UPVC accessories) vertically in a position with proper lowering arrangement by applying necessary jointing compound including labour cost for subsequent gravel packing and machine operation cost etc.	1.00	LS		
129	Washing and developing tube well with air compressor pump and engine for 8 (eight) hours continuous pumping per day with necessary arrangements for testing the yeild in gallons per hour with "V" notch including hire and labour charges for all tools and plants and scaffolding as required complete in all respect.	3.00	Day		
130	Labour for making arrangement for showing vertically test including the cost for hire charges of tools and plants, scaffolding labour etc. all complete.	1.00	L.S.		
131	Collecting sample of water for physical bacteriological and chemical test from any depth at any time during execution of work including hire and labour charges for tools and plants and sterilising the equipments, paying all charges and fees, testing etc, complete in all respect as per direction and as per IS 10500 parameters.	1.00	L.S.		
132	Packing the annular space between the outside of the tube well pipes & strainers and the bore with pea size washed gravel of approved quality having sizefrom 2 mm to 5 mm or the size aproved by the Engineer - in- charge including cost of materials labour and equipment complete.	4.00	Cu. M		
133	Packing the annular space between the outside of the housing pipe & the bore with puddled clay balls of approved size as per direction of the Engineer - in- charge with cost of materials & labour complete.	15.00	Cu. M		
134	Providing & fixing bottom plug as required for 150 mm dia PVC pipe including cost of materials & labour with fixing in position complete for sealing the bottom of assembly.	1.00	Each		
135	Supplying, fitting and fixing of M.S. Housing clamp 250 mm dia.	1.00	Per Set		
136	Supplying, fitting and fixing of M.S .Centre guide (Special Type)	10.00	Per Set		
137	Geophysical investigation of the aquifer by electro logging system with all tools & plants as necessary including supply of necessary report.	1.00	Each test		
138	Supply and delivery of CIDF sluice valve (Special type) PW-1.00 of different dia make with CI double flanged non rusting spindle sluice valves conforming to IS 14846 -2000 with latest emended having body dome/bonnet and cover of C.I.Gr-F.G 210mtr. spindle of IS-6603 G.R- 12/Gr-13 non-magnetic, nuts seat rings are of Gunonetal as per IS:318 LTB-2 flanges and drilled to IS:1538 Part IV & VI valves are suitable for max. working pressure of 10kg/cm2(seat test) and body tested to 15kg/cm2. 100 mm dia.	1.00	Nos.		

139	Sluice valve chamber with C.I. heavy cover with locking arrangement, (weight not less than 25 kg) (size of chamber 450 mm X 600 mm inside upto 900 mm depth) 250 mm thick cement brick walls (6:1), 150 mm thick cement concrete (6:3:1) bed with stone chips, 20 mm thick cement plaster (6:1) for inside wall and 15 mm thick cement plaster (4:1) for outer walls including rounding corners	2.00	Each set		
140	Construction of different dia Sluice valve / Air Valve /Washout chamber in the different sizes for village road where light traffic run and for main road where heavy traffic run as per as dept. approved drawing with 25cm brick work (1:6) over cement concrete (4:2:1) over a single B/F soling over 150mm thick sand filing in foundation including earth work in excavation and disposal of excess earth from work site with RCC cover slab (1:1.5:3) 100mm / 150mm thick slab on top of chamber with 1% reinforcement in RCC cover slab with necessary opening for operation of valve all complete including cost of labour and meterial as per departmental drawing (Reinforcement type : Other manufacturers not specified)	2.00	Each set		
141	Supplying, fitting and fixing in position G.I. pipes of TATA make for underground works with all necessary accessories,specials viz.socket, bend, tee, union, cross, elbow, nipple, short piece etc.including cost of all materials,jointing materials ,cutting pipes,making threads,cutting trenches upto 1.5 metre below surface in all sorts of soil and refilling the same as directed with two coats of painting on G.I. pipes and specials with bituminous paint complete in all respect. (Payment will be made on the centre line measurement of the total pipe line including all specials No separate payment will be made for accessories, specials.Payment for painting will be made seperately). 50 mm dia. medium quality.	210.00	Mtr.		
142	Supplying, fitting and fixing in position G.I. pipes of TATA make for underground works with all necessary accessories,specials viz.socket, bend, tee, union, cross, elbow, nipple, short piece etc.including cost of all materials,jointing materials ,cutting pipes,making threads,cutting trenches upto 1.5 metre below surface in all sorts of soil and refilling the same as directed with two coats of painting on G.I. pipes and specials with bituminous paint complete in all respect. (Payment will be made on the centre line measurement of the total pipe line including all specials No separate payment will be made for accessories, specials.Payment for painting will be made seperately). 40 mm dia. medium quality.	310.00	Mtr.		
143	Supplying, fitting and fixing in position G.I. pipes of TATA make for underground works with all necessary accessories,specials viz.socket, bend, tee, union, cross, elbow, nipple, short piece etc.including cost of all materials,jointing materials ,cutting pipes,making threads,cutting trenches upto 1.5 metre below surface in all sorts of soil and refilling the same as directed with two coats of painting on G.I. pipes and specials with bituminous paint complete in all respect. (Payment will be made on the centre line measurement of the total pipe line including all specials No separate payment will be made for accessories, specials.Payment for painting will be made seperately). 25 mm dia. medium quality.	50.00	Mtr.		

144	Supplying & laying Double Wall Corrugated (with external annular corrugation and smooth internal walls) High Density Polyethelene Pipes conforming to IS 16098 (Part-II):2013 having Stiffness Class of SN 8 with Ring Stiffness not less than 8.00 KN/Sqm. and Impact Resistance TIR value not more than 10% including necessary jointing materials for non-pressure underground Drainage, Sewerage & Cross drainage application. 300 mm internal dia.	100.00	Mtr.		
145	Supplying & laying Double Wall Corrugated (with external annular corrugation and smooth internal walls) High Density Polyethelene Pipes conforming to IS 16098 (Part-II):2013 having Stiffness Class of SN 8 with Ring Stiffness not less than 8.00 KN/Sqm. and Impact Resistance TIR value not more than 10% including necessary jointing materials for non-pressure underground Drainage, Sewerage & Cross drainage application. 250 mm internal dia.	100.00	Mtr.		
146	Constructing Inspection pit of inside measurement 600mm X 600mm X upto 600mm (depth) with 250 mm thick 1st. class brick work in cement mortar (1:4) on all sides, bottom of the pit consisting of 100 mm thick cement concrete (1:3:6) with stone chips over a layer of jhama brick flat soling, 15 mm thick (1:4) cement plaster to inside walls and out-side walls upto G.L. and 20 mm.thick (1:4) plaster to bottom of the pit, providing necessary invert with cement concrete (1:3:6) with stone chips as per direction, neat cement finishing to entire internal surfaces, top of the pit covered with 100 mm thick R.C.C. slab (1:1.5:3) with stone chips and necessary reinforcements upto 1% and shuttering including 6 mm thick cement plaster (1:4) in all external surfaces of the slab and one 560 mm dia. R.C.C. manhole cover of approved make supplied, fitted and fixed in the slab with necessary fittings, necessary earthwork in excavation in all sorts of soil, filling sides of the pit with earth and removing spoils after work complete in all respect with all costs of labour and materials. With Pakur variety. (SAIL/TATA/RINL)	1.00	Each		

(Electrical Work)

Sl No	Description of Item	Qnty	Unit	Rate (Rs)	Amount (Rs)

1	**Scope of Work for DISCOM Connection & Related Statutory Approvals:** The scope of work shall include obtaining all necessary permissions, clearances, and statutory approvals from CESC (DISCOM) for availing 11kV power supply connection for the proposed substation. This shall cover but not be limited to: 1. Submission of all requisite documents, drawings, and applications to CESC as per prevailing guidelines and as per recent IE/CEA guideline and rule . 2. Liaison and coordination with DISCOM(CESC) officials for site inspection, sanction load approval, and meter installation. 3. Procurement and installation of all instruments/equipment as per DISCOM and statutory requirements (such as CT/PT, Energy Meter, AB Switch, GOAB, LA, Cable, etc.). 4. Arrangement of statutory approvals from Regional Electrical Inspector (REI) and/or Central Electricity Authority (CEA) wherever applicable. 5. Obtaining final charging permission and energisation clearance from DISCOM and statutory bodies. 6. Any incidental expenses, statutory fees, and liaison charges associated with the above shall be in the vendor's scope.The vendor shall be solely responsible for completing the entire process in compliance with applicable rules, regulations, and safety norms.	1	EA		
2	Job of Complete design & engineering, preparation of drawings, Single Line Diagrams (SLD), electrical calculations, and all related technical documentation required for the construction of a substation along with its outgoing distribution system with Installation, Testing and Commissioning. The vendor shall be responsible for: 1) The scope of Work includes Installation site survey in details. 2) Preparation and submission of design calculations, technical specifications, and datasheets. 3) Preparation of all relevant drawings including layout drawings, SLDs, GA drawings, and schematic diagrams. 4) Submission and approval of all documents to the client(GRSE) & consultant(ICA) before execution. 5) Incorporating any revsions or modifications as required during the review and approval process. 6) Providing final as-built drawings and documentation upon completion. 7)Preparation of Final detailed project report (DPR) along with all certificate.	1	AU		
3	Involving Independent Certification Agency(ICA) for Approval of Design, Documents, BOQ, Witness the FAT (Factory Acceptance Report) before dispatch of materials at OEM premises & SAT (Site Acceptance Test) at site during Erection, Testing & Commissioning of the Project.	1	AU		
4	**Point wiring in GI Conduit with Modular type Switch:-** Wiring for light point / exhaust fan point / call bell point with 1.5 Sq mm FRLS PVC insulated copper conductor, single care cable in surface / recessed GI conduit, with modular switch, Modular Plate, Suitable GI box and earthing the point with 1.5 Sq. mm FRLS PVC insulated copper conductor single core cable etc. as required. Make of modular switches as per make list. (Make Modular Switch Sockets:- MK (Blenz), Legrand (Arteor)/ Schneider(Zencello)/ Havells-Cabttery-Premium)	150	EA		

5	Supplying and fixing of following Modular switch/ socket for modular plate & switch box including connections but excluding modular plate etc. as reqd. (Make Modular Switch Sockets:- MK (Blenz), Legrand (Arteor)/ Schneider(Zencello)/ Havells- Cabttery- Premium) 5/6 amps switch(60 nos) 15/16 amps switch (20 nos)	80	Each		
6	Supplying and fixing of following Modular switch/ socket for modular plate & switch box including connections but excluding modular plate etc. as reqd. (Make Modular Switch Sockets:- MK (Blenz), Legrand (Arteor)/ Schneider(Zencello)/ Havells- Cabttery- Premium) 3 pin 5/6A(30 nos) & 15/16A(10 nos) socket outlet	40	Each		
7	Supply and fixing of following size/ modules, GI box along with modular base & cover plate for modular switch/ regulator in recess, including connection as required.**6 Module (200mmX75mm)**	10	Each		
8	Supply and fixing of following size/ modules, GI box along with modular base & cover plate for modular switch/ regulator in recess, including connection as required **8 Module (125mmX125mm)**	10	Each		
9	Supply and fixing of following size/ modules, GI box along with modular base & cover plate for modular switch/ regulator in recess, including connection as required **12 Module (200mmX150mm)**	20	Each		
10	Supplying & fixing of 3 pin, 5 amp **Ceiling rose** on including connection as required	20	Each		
11	Supplying and fixing brass batten/angle holder including connection with Supply, fitting, fixing & testing of 10W/12W LED Bulb in existing holders. (Make:- Philips/ Trilux/Wipro/Havells). etc. as required.	15	Each		
12	Supplying and fixing following way, horizontal type three pole & neutral, sheet steel, MCB distribution board, 415V, on surface/ recces , complete with tinned copper bus bar, neutral bar, earth bar, din bar interconnections, powder painted including earthing etc. as required (But without MCB/RCCB/Isolator) Make- Legrnd/Siemens/ L&T.6 way (4+18) Double door	6	Each		
13	Supplying and fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator) 12 way , Double door	8	Each		
14	Supplying & fixing 5 amps to 32 amps rating 240/415 volts 10 kA, C curve Miniature Circuit Breaker suitable for inductive loads of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.Make- Legrnd/Schneider/Siemens/ L&T- U Version.**Single Pole(6A-70nos,10A-50nos,16A-30nos)**	150	Each		
15	Supplying & fixing 5 amps to 32 amps rating 240/415 volts 10 kA, C curve Miniature Circuit Breaker suitable for inductive loads of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.Make- Legrnd/Schneider/Siemens/ L&T- U Version **Double Pole (10A-15Nos,16A-10 nos**	25	Each		
16	Supplying & fixing 5 amps to 32 amps rating 240/415 volts 10 kA, C curve Miniature Circuit Breaker suitable for inductive loads of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.Make- Legrnd/Schneider/Siemens/ L&T- U Version **Triple Pole(25A-5 nos & 32 A-10 Nos)**	15	Each		

17	Supplying & fixing 5 amps to 32 amps rating 240/415 volts 10 kA, C curve Miniature Circuit Breaker suitable for inductive loads of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.Make- Legrnd/Schneider/Siemens/ L&T- U Version **Four Pole(32A-10nos)**	10	Each		
18	Supplying & fixing & connection of40A rating double pole (Single Phase & Neutral) 240 V, Resudual Curren Circuit Breaker **(RCCB)** , having a sensitivity suitable for inductive loads of following poles in the existing MCB DB complete with connections, testing and ccurrent 30 mA in the existing MCB DB complete with connections, testing and commissioning etc. as required .Make- Legrnd/Siemens/ L&T- U Version.	3	Each		
19	Supplying and fixing & connectionof 20 Amps, 415 Volts, TPN Industrial type, socket out lets, with 4 pole and earth, metal enclosed plug top alongwith 20 Amps."C" curve, TP MCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the shocket 0ut let and complete with connections, testing and commissioning etc. as required. Make- L & T, Legrand, Schneider/Siemens	5	Each		
20	Supplying and fixing & connectionof 30 Amps, 415 Volts, TPN Industrial type, socket out lets, with 4 pole and earth, metal enclosed plug top alongwith 30 Amps."C" curve, TP MCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the shocket 0ut let and complete with connections, testing and commissioning etc. as required. Make- L & T, Legrand, Schneider, Siemens	5	Each		
21	Supply, Erection, testing & commissioning of SDF 63A TPN 4P, 415V AC Open Execution & SS Enclosure, CE Handle DIN Type **SFU** with necessary connection.	30	Each		
22	Supply & fixing of M.V. danger notice plate of 200 mm x 150 mm, made of mild steel, at least 2 mm thick, and vitreous enamelled white on both sides, and with inscription in single red colour on front side as required.	20	Each		
23	supply,fixing Earthing with G.I. Earth Pipe 4.5 meter long, 40 mm dia including accessories and providing masonary enclosure with cover plate having locking arragement and watering pipe etc. with charcoal/cock and salt as required. (FOR LIGHTNING ARRESTER)	2	Each		
24	supply,fixing Earthing with G.I. earth pipe 4.5 metre long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal/ coke and salt as required.	20	Each		
25	supply,fixing Earthing with Copper Earth Plate 600 mmx600 mmx3 mm thick including accessories and providing masonary enclosure with cover plate having locking arragement and watering pipe of 2.7 meter long etc. with charcoal/cock and salt as required.2 nos. Neutral Pits for Each Transformer	4	Each		
26	Supplying and laying **50 mm X 5 mm copper strip** at 0.50 meter below ground as strip earth electrode, including connection/ terminating with nut, bolt, spring, washer etc. as required(Jointing shall be done by overlapping and with 2 sets of brass nut bolt & spring washer spaced at 50 mm)	100	Mtr		
27	Supplying and laying **50 mm X 6 mm GI strip** at 0.50 meter below ground/surface as strip earth electrode, including connection/ terminating with nut, bolt, spring, washer etc. as required(Jointing shall be done by overlapping and with 2 sets of brass nut bolt & spring washer spaced at 50 mm)	400	Mtr		

28	Supplying & fixing 20mm dia 2 mtr long G.I spike type Earth Rod	5	Each		
29	Supplying and laying 25 mm X 3 mm GI strip at 0.50 meter below ground/surface as strip earth electrode, including connection/ terminating with nut, bolt, spring, washer etc. as required(Jointing shall be done by overlapping and with 2 sets of brass nut bolt & spring washer spaced at 50 mm)	100	Mtr		
30	Supply, testing,Laying and commissioning of following type of 1100V grade XLPE insulated, armoured aluminium cable as per specification and SLD **3.5 Core 400 Sq. mm**	1000	Mtr		
31	Supply, testing,Laying and commissioning of following type of 1100V grade XLPE insulated, armoured aluminium cable as per specification and SLD **3.5 Core 150 Sq. mm**	500	Mtr		
32	Supply, testing,Laying and commissioning of following type of 1100V grade XLPE insulated, armoured aluminium cable as per specification and SLD **3.5 Core 50 Sq. mm.**	500	Mtr		
33	Supply, testing,Laying and commissioning of following type of 1100V grade XLPE insulated, armoured aluminium cable as per specification and SLD **3.5 Core 25 Sq. mm.**	500	Mtr		
34	**HT Cable:** Supplying of Unearthed/earthed armoured, aluminium conductor XLPE power cable of 11 KV grade confirming to IS 7098 (Part II) amended upto date as per the following size: 3x300 sqmm.(Actual requirement of length to be taken as per site requirement)	200	Mtr		
35	1.1 KV Cable End Termination:-Supplying and making indoor cable end termination with brass double compression gland and aluminium lugs for following size of PVC insulated XLPE Al. Ar. Cable of 1.1 KV grade as required. **3.5 Core 400 Sq. mm(82mm)**	40	EA		
36	1.1 KV Cable End Termination:-Supplying and making indoor cable end termination with brass double compression gland and aluminium lugs for following size of PVC insulated XLPE Al. Ar. Cable of 1.1 KV grade as required. **3.5 Core 150 Sq. mm.(50mm)**	50	EA		
37	1.1 KV Cable End Termination:-Supplying and making indoor cable end termination with brass double compression gland and aluminium lugs for following size of PVC insulated XLPE Al. Ar. Cable of 1.1 KV grade as required. **3.5 Core 50 Sq. mm.(35mm)**	50	EA		
38	1.1 KV Cable End Termination:-Supplying and making indoor cable end termination with brass double compression gland and aluminium lugs for following size of PVC insulated XLPE Al. Ar. Cable of 1.1 KV grade as required. **3.5 Core 25 Sq. mm.(28mm)**	50	EA		
39	supplying and making indoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 11 KV grade as required For 300 Sq.mm 11kv HT cable	6	EA		
40	Supply Installation, testing and commissioning of 40 Watt 4 ft LED fitting complete with all accessories including supplying and fixing ball and socket arrangement, 2 Nos. down rods of 20 mm dia X 1.6 mm thick steel conduit upto 30 cm length, painting and wiring the down rods and connections with 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable and earthing etc. as required.	30	Each		

41	Supply, fitting, fixing and testing of **LED BOX Type 2X20W (1x40W) NEXT (1200mm)** (suspended Type) with Advance optical PC material for excellent and smooth light output, CRI>80, uniform distribution,lumen output should be minimum 4000,Lifetime of 30,000 burning hours@L70, comply to 3KV surge test(avoiding damage caused by input voltage fluctuation and lightning strike) and high-pot test(4KV) compliance of CE,KEMA, RoHS, REACH, Color Temperature should be 6500k ,Power Factor >.9,THD<10 ,Working Temp -20 to 45D Celsius, LM 79 and LM 80 reports need to be submitted with all accessories. Make Philips /Trilux/WIPRO	10	No		
42	**Building Outer Light (45/48W LED) :-** Supply, fitting, fixing and testing of building outer lighting luminaire aerodynamically shaped single piece pressure die-cast Aluminum luminaire with high power LEDs as light source and electronic driver (IP65), along with **45/48W LED Lamp,(4000K)** as Energy saving as per drawing prescribed reflector and heat resistant toughened flat glass cover, with 5ft long 40mm dia G.I. pipe with 3 Nos. of iron clamps , anchor nut bolts with double washers as per direction of E/I or consultant as per drawing prescribed reflector and heat resistant toughened flat glass cover (IP-65) (Make:- Philips/ Trilux/Wipro).	10	Each		
43	**POLE LIGHT:**Supply, erection, Testing & commissioning of outdoor type 200W LED Flood Light, 220V-240V, IP56 with 7mtrs Hight Octagonal Light Pole and Connection of 2nos LED Flood Light each pole	2	Each		
44	**HIGH MAST LIGHT:**Supply, erection, Testing & commissioning of outdoor type 350W LED Flood Light, 220V-240V, IP-56 with 25mtrs Height High Mast Light Pole and Connection of 8nos LED Flood Light each High Mast & Provide sufficient LA at the top of High mast	4	Each		
45	Supply Installation Connection of LED Flood Light 100 Watt	10	Each		
46	Supply of 1400mm sweep ceiling fans complete with, motor, blades, down rod, suitable for operation on 230 volts, 50 Hz., 1 phase, AC supply connection with 1.5 sq.mm PVC Copper wire complete as required ISI minimum air delivery of 280 CFM/M , 2 years warranty. Fan shall be provided or approved by engineer incharge) Make- Havells/ Atomberg / CROMPTON./reputed Company	10	Each		
47	Supply of 300mm 230V AC Exhaust Fan 300mm (Meta Body- Heavy Duty) exhaust fan double ball bearing as required. Make- Havells /Usha/Crompton.GEC	8	Each		
48	**MAIN LT PANEL (PCC PANEL) OF SUB- STATION BUILDING:** Supplying, designing, manufacturing, installation, un loading at site, shifting in location, testing and commissioning in correct alignment position, effecting proper connection of all incomer and outgoing of Main LT Panel (PCC PANEL), floor mounting with Base Channel size - 100 mm x 100 mm x 6 mm (for as per Tested Assembly (TA) PANEL NORMS with a proper lifting arrangement or as per IEC 61439-1 & 2 standard and IEC 61641 for Internal Arc.	1	Set		

The offered Panel of Sub-Station shall be as per IEC 61439-1 & 2 suitable for operation on 415V, 50Hz, 3 Ph. AC supply and fault level 65 KA for 1 sec. Degree of protection shall be IP42. Panel shall be fabricated out of 2 mm thick CRCA sheet steel in cubicle compartmentised modular construction complete with supporting rigid structure, interconnections, aluminums bus bar strip. The panel manufacturer shall have a pre-painting 7-tank facility for sheet cleaning and should have a CPRI/ERDA/KEMA/ ASEFA or Internationally acclaimed laboratory approval for same rating panel for 65KA fault level for 1 sec and impulse withstand test for 8-12kVp at 600-690V.

The Offered LT Panel shall be form 4b design and shall be (tested assembly – TTA) CPRI/ERDA /Independent international test house tested for all the tests as per IEC61439-1 & 2 and internal arc tests as per IEC 61641 V2, 65kA for 0.5 sec tested at HBB,VBB, cable termination chambers. **Copies of the test certificates shall be submitted with the Item.**

For operator safety IP2 X (touch proof) protection to be available even after opening the feeder compartment door. The compartmentalization to be achieved by using metal separators, use of PVC sheet / Hylem sheets shall not be allowed, Panel shall also be tested of design as per Seismic Zone 4 of IEC 60068-3-3 requires compliance against 0.4g acceleration. Main horizontal busbar and neutral should be in same compartment, clearances between phases should be in line with IEC.

Individual equipment housed in the Main L.T. Panels shall conform to the following IS Specification.

(i) Air circuit breakers/ moulded case circuit breaker IS: 60947 (Part-II) & IEC 60947(2)
(ii) Fuse switch and switch fuse units IS: 13947 (Part-3) & IEC 947 (3).
(iii) HRC fuse links IS: 13703
(iv) Current Transformers IS :2705
(v) Voltage Transformers IS :3156
(vi) Indicating Instruments IS: 1248
(vii) Integrating Instruments IS : 722
(viii)Control Switches & Push Buttons IS : 6875
(ix) Auxiliary Contactors IS: 13947 (Part-4/Sec.-I) & IEC 947 (4/1)
(x) Relays IS: 3231

AL. BUS BAR:- The PCC panel/Main LT Panel includes 415V, 4000A, 3Ph, 65KA, 50Hz,busbars shall be made of high conductivity, and high strength Aluminum E91 grade Busbars shall be of rectangular cross sections , not more than 6mm thickness better suitable for full load current for phase bus bars and half/ full rated current for neutral bus bar or as stipulated in schedule of quantities. Busbar shall be suitable to withstand the stresses of fault level as specified in schedule of quantities removable glands plates, cable glands at sending and receiving ends, including connection with outgoing Feeders complete in all respects.

Approved Company Panel Builders- SIEMENS- SIEPAN-8PU / XL³ LEGRAND, L & T-TA- PANEL / SCHNEIDER-Block-SET / ABB-R2K The equipment shall be manufactured as directed by the Consultant / Engn. In-Charge- RBD, and Shop drawings shall be approved by Consultant. Panel inspection in factory shall be made by E/I of RBD and the Consultant and for that all arrangement shall be made by the contractor.

The LT panel will be commissioned after:
• Tightening of all nuts and bolts.
• Closing any left-out holes to ensure the entire panel is insect proof.
• Megger testing.
• Earth testing.

ACB ,MCCB & MFM -

(a) Incomer ACBs shall be EDO type and with extended LCD display module (96x96 mm) or HMI for maintenance indicators, event records & alarms and breaker control.Outgoing ACBs shall have Multifunction meter (PM2220) with required CTs and accessories.

(b) ACB operating voltage up to 690V AC , Impulse Withstand voltage 12kV, moulded case design to ensure high endurance without maintenance and the Ultimate breaking capacity (Icu) = Ics = Icw as per SLD for 1 Sec

(c) All ACB shall be microprocessor release communicable type , individual ACB release data on ethernet,Trip release communicable for setting, trip causes , status , release metering data etc.

Incomer ACB release shall display have I,V, power factor, Demand Power, Energy, frequency, voltage and current imbalance, last 8 trip history, phase sequence, reverse power etc.

Outgoing ACB release display shall have I,V, power factor, Demand Power, Energy, and last 8 trip history etc.

(d) All ACB with microprocessor based trip release ,LCD display shall have (O/C, S/C & E/F Protection) with adjustable current & time delay and Instt. protection.

(e) Individual fault trip LED indications (OL, SC & EF) shall be available on trip units for easy & faster identification of cause of fault.

(f)All ACB shall have provision to store min 8 fault history and bar graph display to indicate % loading of indivuda

(a) All **MCCBs** shall have rated service breaking capacity (Ics) = Icu= 100%) at defined operational voltage

(b) MCCBs up to 250A shall be Thermagnetic type and above 250A shall be microprocessor type. (Logic selectivity (inbuilt delay 0f 50 ms beteen upstream and down stream breake), With positive Isolation Marked, With 8 steps adjustable short circuit and over load current and with earth fault indication. The MCCB be of certified design confirming to IEC 60947-2.

(c) The MCCBs shall be of double break rotary contact mechanism, having current limiting feature to limit let through energy on the installation.

(d) Earth fault protection if specified should be provided by integral / add on module with time delay and earth fault differentiation, there should be fault differentiation of over current and earth fault on MCCB or panel door.

(e) Electric fault trip indication on Panel.

(f) MCCBs up to 250A shall have same foot print

(g) ALL MCCB shall have extendable front rotary handle.

The PCC Panel/ Main panel shall be provided with a thermostatically controlled heating arrangement with 1 No. 10W LED Lamp to take care of high humidity conditions. A 15A socket with switch as service outlet (single phase) shall be provided in one of the compartments as service outlet in the panel. Panel shall be so designed as to have minimum 10% spare feeders/space. . All cable terminations shall be from bottom/ top. The complete panel shall be fuse less type, for control circuits 2A MCB's to be used.

	All openings shall be covered by soft rubber gasket, enclosure shall be galvanized. Panel shall have suitable cable entry from bottom and suitable Bus arrangement for multi runs aluminum cables for all M.C.C.B. ACB Make:- L&T "U"-Power Omega with MTX 3.5 with releaseand above / Legrand DMX³/M-2 Series / Siemens - 3WL-ETU-27B onwards / Schneider- Master Pack NW / ABB E-max Make of MCCB - L&T D-Sine/ Legrand DPX³ / Schneider-NSX / Siemens - 3VL-or 3 VA /ABB T-max (Note:- All MCCB must have over load and short circiut indication) Make of MCB- C Series 10kA- Legrand- DX³/Schneider-ACTI-9/ Siemens- Beta Guard/ L&T- AU VERSION. (Icu=15kA as per Iec 60947-2, Impulse withstand 6KVp, Pollution degree 3, Energy limiting Class 3) The Name Plate for each feeder must be in Anodized Aluminium Sheet. Panel Size - As per ICA approved drawing. The main LT Panel (PCC Panel) electrical infrastructure should be technically superior and it should not be the cause of untoward incidences like fire, electrical shock etc and if it happens the system should be designed in such a way that it will trip the faulty section fast and localize the fault and continuity of power should be ensured in healthy sections. Fast fault localization will help to identify the area, hence down time will be less and system can be made back in fastest possible time. Internal arc tested as per IEC 61641. & Internal fire suppression system. **SLD will be submitted by the contractor for approval to Engineering Incharge of GRSE /ICA before submitting the PCC Panel drawing. Based on approved SLD, contractor will provide the GA drawing of PCC Panel along with control Circuit diagram, BOM of Equipments with CAT No. & Make.** 1 Set of Fabrication part of PCC LT Panel & busbar system, in CRCA Sheet Steel enclosure (IP-42) with following components & its busbars as per IEC 61439-1 & 2 standard. 3 nos. LED indicatore (RYB) of 220V. 2 Set(Both TFR). Make- Schendier/Siemens/L&T / Rishabh. (R Y-& B) with 2A SP MCB protection. **20 Sets Multifunction Meter** having LED display accuracy Class 1 as per IEC 62053-21, RS-485 port, in built RTC, Aux Supply: 44-277Vac/dc. Parameters: Volts, Amps, PF, THD, F, W, Wh, VA, VAh, Var, Varh, Runhrs, Onhrs Interrupts, THD for V&I per phase, individual harmonics for V&I upto 15th level complying with IEC61557-12. Min/Max for eight parameters. Sampling rate: 64 samples per cycle. Make-Schneider/ Satec/Siemnes (FOR All Incomer and out going Feeders (ACB & MCCB) 63 Nos. Cast Resin CT of different requried ratio CL-1 for metering & protection.With required protection MCBs and accessories. Make- L & T, Kappa, Matrix 2 nos. 2500A FP / ACB EDO type with Handle with all release as mentioned above (65 KA) with SPD (For Transformer – 1 & 2 Incomer) 1 no. 2500 A FP / ACB EDO Bus Coupler with Handle without release (65 KA)					

	2 nos. 800A FP / ACB EDO type with Handle with all release as mentioned above (50 KA) with SPD (1 no. for Capacitor Bank) 1 nos. 400A FP/36KA, MCCB with adjustable microprocessor release type with S/C, O/L & E/F protection, extended front rotary handle & spreader links with ON OFF & trip **.For Main lighting DB** 1 no. 400A FP/36KA, MCCB with adjustable microprocessor release type with S/C, O/L & E/F protection, extended front rotary handle & spreader links with ON OFF & trip.Dock Pump 1 no. 320A FP/36KA, MCCB with adjustable microprocessor release type with S/C, O/L & E/F protection, extended front rotary handle & spreader links with ON OFF & trip**.For Fire Fighting Room DB** 1 nos. 200A FP MCCB (25KA) with adjustable thermomagnetic release type with S/C & O/L protection with extended front rotary handle type with spreader links.with ON OFF & trip. For fresh Water Pump 2 nos. 400A FP MCCB (25KA) with adjustable thermomagnetic release type with S/C & O/L protection with extended front rotary handle type with spreader links.with ON OFF & trip. For Jetty Power supply 1 nos. 400A FP MCCB (25KA) with adjustable thermomagnetic release type with S/C & O/L protection with extended front rotary handle type with spreader links.with ON OFF & trip. For Vendor Shed 3 nos. 400A FP MCCB (25KA) with adjustable thermomagnetic release type with S/C & O/L protection with extended front rotary handle type with spreader links.with ON OFF & trip. For Spare 5 nos. 200A FP MCCB (25KA) with adjustable thermomagnetic release type with S/C & O/L protection with extended front rotary handle type with spreader links.with ON OFF & trip. For Spare				
49	**A.P.F.C. Panel (Capacitor Bank) :-** Supplying, designing, manufacturing, installation, un loading at site, shifting in location, testing and commissioning in correct alignment position, effecting proper connection of all incomer and outgoing of APFC Panel of capacity 550 **KVAR** @ **415V**. The stage ratings shall be as mentioned in SLD. The APFC Panel shall be fully type tested at an Independent Laboratory and shall comply to **IEC 61439-1&2 and IEC 61921.** The APFC Panel shall be **IP31** type, weather, dust and vermin proof suitable for humidity up to 95%. Average daily temperature: +35°C max, Ambient temperature: -5°C to 45°C, Maximum altitude: 2000 m. The equipment shall be manufactured as directed by the Engr-in-Charge and shall comprising of the following: Shop drawings shall be approved by Consultant. The APFC floor mounting with Base Channel size - 100 mm x 100 mm x 6 mm with a proper lifting arrangement or as per **IEC 61439-1 & 2 standard.** (A) Lynergy channelled busbars extruded from aluminium infused with copper at contact terminals of copper and rated of **800 Amps** capacity.The short circuit withstand capacity shall be 50 KA / 1 Sec (Icw) for the main bus bar and the rated impulse withstand voltage shall be 8 KV.	2	Set		

	(B) The incomer of the APFC Panel shall be a 800 **Amp**, T/P MCCB Microprocessor type, ,Ics = 100% Icu.Class II Front Face, 36KA rupturing capacity, Isolation with Positive Break Indication with Double Break Contacts.. The MCCB shall have, spreaders Links, phase barrier & extended Front rotary Handle. The MCCB be of certified design confirming to IEC 60947-2. (C) Capacitor Units : The capacitor unit shall be metalized polypropylene film with Zn / Al alloy. The capacitors shall be encapsulated in an aluminium CAN (CAN CYLINDRICAL Power Capacitor- Super Heavy Duty). . The capacitor unit shall have a rated voltage of 480V and shall have a maximum over current capacity of : 1.8 In. The capacitor unit shall have a built in 3 phase over pressure protection and shall have discharge resistors (50V in 1min) factory fitted and shall be tamper proof. Capacitance Tolerance -5%, +10%. Maximum permissible over voltage 1.1 x Un, 8 h every 24 h. The capacitor unit shall be of certified design confirming to IS-13340-1993,13341-1992 & IEC -60831-1&2. (D) Thyristor with Reactors : The Thyristors and de-tuning reactors shall be connected in series with each capacitor stage and shall be of iron cored type. The reactors shall have relative impedance of 14%, with a de-tuning frequency of 135 Hz. The reactors shall prevent amplification of 3rd and higher order harmonics. The reactors shall have built in thermostats to protect from overheating. The reactor insulation shall be Class “H” rated at 180 degree C. The reactors shall be of certified design confirming to IEC-60076 - 6. (E) Short-circuit and Overload Protection : Each stage of the APFC Panel shall have a suitably rated MCCB with an electronic over-current relay for short-circuit and overload protection. The electronic over-current relay shall be adjusted to trip if the RMS current of the stage exceeds the overload setting. The MCCB shall be of certified design confirming to IEC 60947-1,2 & 3. (F) PF Regulator : Advanced Range PF Regulator shall have 8 steps with a LCD Display, Voltage Range : 90V - 480V, 50 / 60Hz, CT Input : 1A/5A with a built in RS 485 communication port. The PF Regulator shall be of certified design confirming to IEC 61326. (G) Stage Reactors : The electromagnetic reactors shall be rated for 440 Volts and shall be 3-pole type and shall be employed for switching 'on' and switching 'off' operations in capacitor banks. The rated voltage of control coil shall be 415V (phase-to-phase). This voltage is subject to a variation of (+) 10% and (-) 15%. The Reactors shall be AC 3b type. The Reactors shall be of certified design confirming to IEC 60947-1 & 4-1. (H) Ventilating fans of required size shall be sued to dissipate the heat produced by the capacitor bank components like the capacitor units, reactors, contactors, breakers etc. The capacitor banks should be of type tested design and temperature rise test report of the capacitor bank performed at an independent laboratory should be submitted along with the offer.				

	(I) The enclosure system shall be of certified as per the following standards IEC 62208 / UL 508 A / IEC 61969-3 / IEC 61439-5. The enclosure system should have a minimum of IK 10 certification (external mechanical impacts) in accordance with IEC 62262. The degree of protection of enclosures system of the APFC Panel shall be IP54 in accordance with IEC 60529. The enclosure should have a C4H level conforming to ISO 12944. The enclosure systems shall have fire resistance confirmation upto : 960 °C according to IEC 62208. The enclosure system shall be certified for environmental withstand solar radiation : class 1 up to 1120 W/m² conforming to IEC 61969-3 (2011). The enclosure system shall have a colour shade of RAL 7035. (K) For an outdoor execution, the capacitor bank construction shall be modular. Separate capacitor module and reactor module shall be proposed with separate thermal management and over temperature protection. The Capacitor Module and Reactor Module should separate power cable termination point respectively. The interconnection power cables should travel through the cable gland would be in the scope of the LV PFC equipment manufacturer. Make of MCCB - L&T D-Sine/ Legrand DPX³ / Schneider-NSX / Siemens - 3VL-or 3 VA /ABB T-max (Note:- All MCCB must have over load and short circiut indication) Make of MCB- C Series 10kA- Legrand- DX³/Schneider-ACTI-9/ Siemens- Beta Guard/ L&T- AU VERSION. (Icu=15kA as per Iec 60947-2, Impulse withstand 6KVp, Pollution degree 3, Energy limiting Class 3) Make Capacitor/Thristers and de-tuning Reactors - L&T / Schneider -Meher/Siemens All openings shall be covered by soft rubber gasket, enclosure shall be galvanized. The panel shall have type test certificates with short circuit and IP protection (C.P.R.I. Test) Aluminum Bus Bar for Panel :- The APFC Panel includes 415V, 800A, 3Ph, 36KA, 50Hz,busbars shall be made of high conductivity, and high strength Aluminum E91 grade Busbars shall be of rectangular cross sections , not more than 6mm thickness better suitable for full load current for phase bus bars and half/ full rated current for neutral bus bar or as stipulated in schedule of quantities. Busbar shall be suitable to withstand the stresses of fault level as specified in schedule of quantities removable glands plates, cable glands and sending and receiving ends, including connection with outgoing Feeders complete in all respects. **SLD will be submitted by the contractor for approval to Engineering Incharge/Consultant before submitting the APAFCR Panel drawing. Based on approved SLD, contractor will provide the GA drawing of APFCR Panel.** Approved Company Panel Builders- SIEMENS- SIEPAN-8PU / XL³ LEGRAND, L & T-TA- PANEL / SCHNEIDER-Block-SET / ABB-R2K The equipment shall be manufactured as directed by the Consultant / Engn. In-Charge- RBD, and Shop drawings shall be approved by Consultant. Panel inspection in factory shall be made by E/I of RBD and the Consultant and for that all arrangement shall be made by the contractor.					

	1 Set of Fabrication part of APFC Panel & busbar system, in CRCA Sheet Steel enclosure IP31 without any components & with busbars shall comply to IEC 61439-1&2 and IEC 61921. Bill of Material of APFC Panel 1No. 630A FP/36KA, MCCB with adjustable microprocessor release type with S/C , O/L and E/F protection with extended front rotary handle & spreader links **with ON OFF & trip facility.** 5 Set. CT 800/5A , 10 V.A,CL:1.0,Resin Cast , CT Secondary wire Size should be 2.5 Sq mm. 3 nos. LED indicatore (RYB) of 220V. 1 Set. Make- Legrand / L&T / Rishabh (R Y-& B) with 2A SP MCB protection. **1 Set Multifunction Meter** having LED display accuracy Class 1 as per IEC 62053-21, RS-485 port, in built RTC, Aux Supply: 44-277Vac/dc. Parameters: Volts, Amps, PF, THD, F, W, Wh, VA, VAh, Var, Varh, Runhrs, Onhrs Interrupts, THD for V&I per phase, individual harmonics for V&I upto 15th level complying with IEC61557-12. Min/Max for eight parameters. Sampling rate: 64 samples per cycle. Make-Converse/L&T/ Schneider/ Siemnes 36 Sets LED Indicators sets R.Y.B. (220V) (R –12 / G – 12/ B – 12 = 36 Nos.) self illuminated Red-Green (ON-OFF) push buttons, each backed up with 2 A SP MCB shall be provided for each capacitor unit to indicate the status of the unit. Make-L& T./ AE/ Schneider. 1 nos. 16A – 2 pole / 2 way Rotary Switch. Make:- Legrand / L&T /Reputed 14 nos. 10A Toggle Switch SP – HT Make:- Legrand / L&T / Reputed 1 nos. Power factor correction Intelligent controller Relay with 12 steps and multi -functional display ,APFCR with 12 steps. (Controller Capable of Switching Thyristor) The relay shall be sensitive to pick up 1% of rated current and correct the P.F accordingly. Also the relay shall display the harmonic level of system. Make- L& T, Seimens/Legrand. 1. MPPXL ,480V/50Hz,TP Shunt mixed dielectric Super Heavy Duty Capacitor. 2 Lower operating losses - 0.35W/Kvar). 3. Over current withstand capability - 1.8 times rated current. 4. Inrush current withstand capability - 300 times rated current. 5. Operating Life- 130000 hours. 6. Numbering of switching- 8000 operations per year. 7. Insulation Class H. 4 Set. 100 Kvar = 400 Kvar (CANE CYLINDRICAL Power Capacitor- Super Heavy Duty). 2 nos. 25 Kvar = 50 Kvar (CANE CYLINDRICAL Power Capacitor- Super Heavy Duty). 2 nos. 50 Kvar = 100 Kvar (CANE CYLINDRICAL Power Capacitor- Super Heavy Duty). 7% Copper Reactor, 440V, 50hz Reactor For Step 1 to Step- 4 (for 4 nos 100 Kvar capacitors) Reactor For Step 5 & 6 (For 2 nos. 25 Kvar capacitors Reactor For Step 7 & 8 (For 2 nos. 50 Kvar capacitors TRISTER (SWITCHING DEVICE) 4 Nos. Switching Device (For Step- 1 to Step-4) 12 Nos. Semi Conductor Fuse 3 nos for each set (For Step- 1 to Step-4) 2 nos. Switching Device (For Step- 5 & 6)					

	6 nos. Semi Conductor Fuse 3 nos for each set (For Step-5 & 6) 2 nos. Switching Device (For Step- 7 & 8) 6 nos. Semi Conductor Fuse 3 nos for each set (For Step-7 & 8) PROTECTIONS MCCB & MCB 4 Nos. 160A TP /25kA/MCCB T.M 40 deg (for Step- 1 to Step-4) (4 nos 100 Kvar) 2 Nos. 63A TP /25kA/MCCB T.M 40 deg (for Step-5 & 6) (2 nos. 25 Kvar) 2 Nos. 100A TP /25kA/MCCB T.M 40 deg (for Step- 7 & 8) (2 nos. 50Kvar) 1 Set 25 Kvar (10+15Kvar) as fixed Capacitor Bank with all required accessories like 25A & 20A TP MCB 10kA D Series., capacitor, indicators etc.shall be fixed capacitor to take care of the no load losses of the transformer Note:- The Contractor may select the next higher fault rating of ACCB/MCCB if it is not readily available, without any extra cost, as the figure indicated within the bracket are required maximum fault level of the above panels.				
50	**11 KV VCB (HT SWITCHBOARD) (THREE PANEL) ONE INCOMER & TWO OUT GOING- INDOOR DUTY** Supply, designe, manufacturing, installation, unloading at site, shifting to location, inspection, installstion, testing & commissoning of three Panel (one incomer + two outgoing) indoor duty of HT Panel (VCB) totally enclosed sheet steel clad floor mounting, vermin proof, fully interlocked vertical isolation, extensible, horizontal draw out, air insulated, metal clad switchboard having double isolation features complete with circuits as detailed below. The switchboard would be complete with necessary PVC insulated copper bus bars, small wiring, labels, cable eyes, cable termination to receive XLPE cables, foundation bolts and suitable for operation on 11 kV 3 phase, 50 cycle, earthed system with a rupturing capacity of comprising of 400A/26.3kA/3 Sec. as per IEC-62271-200 (CT ratio IS: 2705) at 11 kV Panel as per SLD and specification as required. **Make:- Kirloskar Electric/Crampton/L & T/Siemens/Schneider.** This HT panel must be extendable for future requirement in such a manner not to disrupt ongoing services at the point of use during extension. The three HT PANEL shall be equipped with following accessories and as per specifications and schematic drawing along with over load, earth fault protection, voltmeter, ammeter, CT's, power factor meter, Kwh meter, P.T, power pack system along with all other protection meters including indicating lamps as per requirement .This HT panel must be extendable for future requirement in such a manner not to disrupt ongoing services at the point of use during extension. The HT Panel shall have 400A 11 KV VCB connected to a common bus bar arrangement. 1 no VCB out of these shall act as an incoming feeder for receiving HT power and 2 No as outgoing feeders for feeding HT power to Transformer. The manufacturer of the panel must possess a type test certificate from CPRI. The panel must be type tested for internal arc fault at high power laboratories (CPRI/KEMA/ PEHLA/ CESI etc). with one incomer and two outgoings including HV termination box, air filled cable box suitable for **11 kV 1 Run 3 Core 300 Sq mm XLPE cable in both ends etc as required**	1	set		

	The panel should be supplied from manufacturer factory and supply of HT PANEL from panel builders will not be accepted. Inspection of HT PANEL will be done at manufacturer factory by the YM Department, GRSE and the ICA**.All expence related to this inspection shall be under vendor's scope.** The VCB shall be free standing, Floor Rolling, Trolley mounted, horizontal draw-out, horizontal isolation type suitable for indoor use (IP4X) and for the rating specified in the feeder schedule, efficiently earthed neutral system having a fault level and voltage rating as specified in the data sheet and comprising of housing for breaker, mechanical interlocks to prevent insertion or withdrawal of the circuit breaker in its closed position with automatic safety shutters covering the fixed main contacts when the circuit breaker is withdrawn, with earthing rails for earthing of circuit breaker carriage in service and test position, isolating plugs and VCB trolley with vacuum interrupters and self aligning finger type isolating contacts suitable for horizontal draw out and horizontal isolation. The vacuum circuit breaker shall be designed with low switching-over voltage levels and with a long switching life. The interrupter shall be leak-free. The breaker feeder trolley shall remain inside the cubicle even in the “Test” position. The complete breaker assembly should have their inter-changeability with breakers of identical ratings from same family. VCB should have spring charging motor rated for 230V AC. Tripping coil and closing coil are rated for 110V DC. The draw out type VCB should come out on the floor directly when racked out from the panel. Separate VCB lifting truck is not acceptable. Interlocking Requirement: SECONDARY DISCONNECTING SWITCH (SDS) • VCB cannot be racked-in unless the SDS plug is inserted. • SDS plug cannot be removed when VCB is in service or intermediate position • SDS plug can be removed only when the VCB is in test or isolated position. BREAKER RACK IN/RACK OUT INTERLOCKS • VCB cannot be racked in/racked out when it is in closed position and rack in/rack out is possible only when it is in open position. • VCB can be closed only when it is either in test or service position • VCB cannot be closed in the intermediate position. EARTHING SWITCH INTERLOCKS • Earthing Switch cannot be closed when VCB is in service position • VCB cannot be racked in from isolated or test position when earthing switch is closed. • Earthing Switch can be closed only when VCB is in isolated or test position. OTHER INTERLOCKS					

	• VCB cannot be closed electrically unless spring is fully charged. • VCB compartment door cannot be opened when VCB is in service position and can be opened only when VCB is in test position. • Safety shutter opens automatically when the VCB is racked-in the service position. • Safety shutter closes automatically when the VCB is from the service position. • Rear door cannot be opened when VCB is in service position and can be opened only when the VCB is in test position. Bus bars shall be high conductivity **copper** supported on insulators made of non-hygroscopic, non-inflammable materials. Closing coils shall operate satisfactorily in the control voltage range of 85 – 110% and tripping coil shall operate in the control voltage range of 70 – 110%. Closing coil & tripping coil shall be rated for continuous operating voltage. Trip Coil configuration shall be as per Battery Cell Configuration I,e 110V DC. The VCB shall be complete with: • Independent spring closing, spring tripping, vacuum restrike free, trip free, stored energy operated type and electric operated (motorized) with breaker “CLOSE / OPEN” & spring “CHARGED / DISCHARGED” indication and with mechanical operation counter. • Breaker operated auxiliary switch with 4 NO and 4 NC contacts. For each outgoing VCB, provision of contacts for the below mentioned faults/ alarms should be made for remote annunciation purpose: Ø Over load alarm and trip contacts Ø Short circuit alarm and trip contacts Ø One no. single phase 230 V space heater with switch. Ø Necessary rating Copper armored cables from LT PCC bus shall be taken for the input supply for space heaters & illumination door lamps, through suitable rating and appropriately located Fuse / MCB for the same. Ø Three nos. single phase draw out type PT with voltage ratio 11 KV / 110 Volts AC, burden 100 VA, class of accuracy 1.0 and as per IS 3156. Voltage transformer shall be dry type, cast resin encapsulated construction with current limiting HRC fuses on both primary and secondary sides for protection. It shall be used for metering purpose and would be required for incoming VCB only. Ø Single phase, wound type cast epoxy resin insulated current transformer for each phase as per IES: 62271-200 with following specifications and STR of 26.3 kA for 3 seconds.The protection CTs shall be of accuracy class 5 P 10 of IS 2705- Part III-1992. For incoming &transformer/motor feeding VCBs For incoming VCB (Two core type) CT ratio (Amp) : 400/200/5/5 Class of accuracy for core 1 :Class 1 Class of accuracy for core 2 : 5P10 Burden :Minimum 15 VA For VCB feeding transformer/motor (Two core type) CT ratio :400/200/5/5 Class of accuracy for core 1 :Class 1 Class of accuracy for core 2 : 5P10 Burden :Minimum 15 VA					

	Instrument Panel fitted with: Analog Ammeter with ASS of size 96 mm x 96 mm, flush mounted, to be provided to indicate three phase current for incoming as well as outgoing panels Analog Voltmeter with VSS of size 96 mm x 96 mm, flush mounted, to be provided to indicate three phase voltage for incoming panel only Multifunction meter, communication capable, with LCD display for measurement and monitoring of Multifunctional Electrical Parameters such as voltage, current, active power, frequency, power factor, active energy, active power, reactive power, apparent power and MDI etc. to be provided for incoming only, complete with all necessary software and convertors required for handshaking with main plant PLC Panel so that the data from HT panel can be communicated using standard communication Protocols like PROFIBUS/ MODBUS / CONTROL NET, DEVICENET etc. Numerical Relay with self monitoring feature shall contain all protections as necessary for safe operation of VCB such as over current, earth fault, and short circuit etc. shall be provided for Incoming VCB. Built-in anti-pumping arrangement in VCB. Separate Anti pumping relay not acceptable. The incoming VCB Panel shall have following relays: Numerical Relay MC61CnX by L&Tfor protection against O/L, E/F (3 O/C + 1 E/F) and RS485 port for communication. Electromechanical type Mastertrip (Lockout) relay of Alstom/Ashidaand Trip Circuit Supervision Relay of L&T/Ashida. Each outgoing VCB Panel shall have following relays: Numerical Relay MC61CnX by L&T for protection against O/L, E/F (3 O/C + 1 E/F) and RS485 port for communication. Electromechanical type Mastertrip (Lockout) relayof Alstom/ Ashida and Trip Circuit Supervision Relay of L&T/Ashida. Auxiliary Relay for transformer protection – AVA33, of Ashida make for protection of transformer for transformer feeder MM10 Relay, in case outgoing feeder is motor feeder. Incoming panel should have following indications by means of LED lamp. Spring charged R,Y,B phase healthy (3 LED lamps) Breaker on Breaker off Auto trip indication Trip circuit healthy indication Outgoing panel should have following indications by means of LED lamp. Spring charged Breaker on Breaker off Auto trip indication Trip circuit healthy indication EMERGENCY PUSH BUTTON. Housing Fabrication Details : The panel shall be fabricated using minimum 2 mm thick cold rolled cold annealed sheet steel structure, indoor, floor mounted, self supporting, abide type made up of vertical panels of uniform height. Each unit of the switchgear shall have necessary internal sheet metal barriers to form separate compartments for buses, instruments and relays, cable connections etc. Panel should have ingress protection rating of IP-4X.					

	Compartments for XLPE armoured cable connections shall allow cable pulling, termination and connection work with the switchgear energized. Terminal strips for outgoing control cable connection should be accessible to facilitate working and testing with breaker in test/service condition and while the switchboard is energized. The panels shall be totally enclosed, dust, weather and vermin proof. However, openings for natural ventilation shall be provided, if necessary. These shall be louvered and provided with wire mesh. Wire mesh for bus bar compartments shall be such as to protect against objects of 1 mm and above. The enclosure shall have complete protection against approach to live parts or contacts with internal moving parts as per IS: 3427. The panels shall be extensible at both the ends by addition of vertical sections in future. Ends of the bus bars shall be suitably drilled for this purpose. Panels at extreme ends shall have openings, which shall be covered with plates screwed to the panel. The short circuit withstands capacity of the VCB Panel & the VCB should be 26.3KA for 3 sec. (500 MVA for 3 sec for 11KV system) All hardware shall be zinc plated. All joints and connections shall be made by galvanized zinc passivity or cadmium plated high tensile strength steel bolts & nuts. Spring washers should be provided to secure against loosening. The maximum height of the panel shall be restricted to 2400 mm and maximum length of a shipping section to 2500 mm. Each shipping section shall be provided with suitable lifting hooks. These hooks when removed shall not leave any opening in the board. All equipments of a single feeder shall be housed in a separate enclosed compartment. All identical equipment and corresponding parts including chassis of the modules shall be fully interchangeable. All components shall be front operated. The panel shall be single front type unless specified otherwise. For draw out modules, only handles of switchgears, knobs, cutouts for lamps and meters shall be arranged on the front doors to permit operation without opening the doors. Relay of circuit breakers shall be mounted on front doors of the compartments. Panel shall be internal arc tested for 1 second for at least 26.3kA according to IEC 62271- 200 with IAC AFLR. Rear door interlocking to be provided in the panel, such that rear door cannot be opened when VCB is in service position and can be opened when the VCB is in test position. Painting: All metal surfaces shall be thoroughly cleaned and degreased to remove all scales, rust, grease and dust. Fabricated structures shall be pickled and treated to remove any trace of acidas per 9 tank process. The under surface shall be prepared by applying a coat of phosphate paint and a coat of yellow zinc primer. The under surface shall be made free from all imperfections before undertaking the final coat. After preparation of the under surface, the panel shall be spray painted with final two coats of powder coated paint. The colour shade of the final paint shall be Grey **- RAL 7032**/ **RAL 7035** unless otherwise specified. The finished panels shall be dried in stoving ovens in dust free atmosphere. Panel finish shall be free from imperfections like pin holes, orange peels, run off paint etc.					

	Name Plates: Apart from panel name plate highlighting the operating voltage, the nameplates for all incoming and outgoing feeders shall be provided on front doors as well as on rear side of the panel of each compartment. Nameplates shall be provided for each equipment (lamp, push buttons, switches, relays, auxiliary contactors, etc.) mounted on the switchboard. Special warning plates shall be provided on all removable covers or doors giving access to high voltage bus bars or cables. Nameplates shall be fixed by screws only and not by adhesives. Special danger plates shall be provided as per requirement. Inside the panels, stickers shall be provided for all components giving identification number as per detailed wiring diagram. Bus bar Sizing, Connection & Supports: The bus bars shall be of high conductivity **electrolytic copper** conforming to grade EQIE of IS: 5082. Buses shall have uniform cross section throughout the length of the panel up to the incoming feeder terminal and shall be sized to carry continuously the current specified in the material requisition. Bus bars shall be housed in a separate chamber and shall be accessible for inspection. Compartment should be open and busbar should be extended without any partition or bushings in bus bar chamber. A suitable body earth electrode shall be provided on the panel. The bus bars shall be provided with heat shrinkable PVC insulating sleeve of high dielectric strength, which should be non-inflammable, & self-extinguishing type and in fast colours to indicate phases. The sleeves shall be rated to withstand the system line-to-line voltage for 1 minute. All bus bar joints and all tap-off connections from the main horizontal bus bars shall be suitably shrouded. The bus bars shall be adequately supported by epoxy compound in adequate numbers and size to avoid sag in bus bars and these shall be capable of with- standing stresses due to short circuit currents of the associated switchgear. All bus supports shall be of non-carbonizing material and shall have hygroscopic characteristics. Minimum clearances should be as per relevant IEC standards. Power connection: The incoming and outgoing power connections shall be through XLPE cables. Ample space for connection of these cables shall be provided at the rear of the switchboards. The power cable shall enter or go out from the switchboard from minimum 3 mm thick gland plate situated at bottom of line/cable chamber. The switchboard shall be supplied complete with supports for clamping outgoing and incoming cables. The head-room available between cable gland plate and terminal lugs shall preferably not be less than 550 mm for switchgear up to 11 kV. In case the standard panel depth cannot accommodate the specified no. of cables, a rear extension panel of uniform height shall be provided. An earth strip shall also be brought to this extension panel. Auxiliary Wiring:					

Wiring for all controls, protection, metering, signaling etc. inside the panel board shall be done using 6600 V grey color PVC insulated copper conductors. Minimum size of copper conductor shall be 1.5sqmm. The wiring shall preferably be enclosed in plastic/ PVC channels. Wiring between HV breakers or cable compartments to relay and metering shall be routed through flexible conduits. Shorting links shall be provided for all CT terminals.

All control wiring should be provided with necessary sockets/ lugs at both the ends. Each termination shall be identified at both the ends by PVC ferrules having numbers corresponding to control circuit diagram.

Sufficient terminals shall be provided on each terminal block to ensure that not more than one outgoing wire is connected per terminal. Terminal strips shall preferably be separated from power circuits by metal barriers or enclosures. 10% spare terminals shall be provided on each terminal block.

Control cables shall enter the switchgear from the bottom. Supporting facilities shall be provided for clamping the control cables. All inter-panel wiring shall be taken through PVC sleeves or suitable grommets by the switchgear vendor. For inter-panel wiring between the shipping sections, wires in rolls of the required length, connected at one point, shall be supplied with the panel for connection at site.
Breaker tripping and closing devices shall be fed with direct current. The rated DC voltage shall be as specified in the data sheet.
Earthing connections:

All cubicles shall be connected to an earth bus bar running throughout the length of the switchboard. The earth bus bar size shall be minimum 30 x 6 mm^2 copper up to short circuit withstand capacity of 26.3 kA and 50 x 6 mm^2 copper for a short circuit withstand capacity above 26.3 kA. All doors and movable parts shall be connected to the earth bus with flexible copper connections. Provision shall be made to connect the earthing bus bar to the plant earthing grid at two ends. All non-current carrying metallic parts of the equipment and components shall be earthed.

The earth bus shall be brought back to the cable compartment and earthing bolts shall be provided to ground cable armour. The mating surfaces of all bolted parts shall be zinc-passivity to ensure continuity between them. Integral earthing switch for earthing of cable side to be provided for each outgoing panel as per the requirement.

Instrument Transformers:
a) Current Transformers:

Current transformers shall be cast resin type and shall generally conform to IS:2705. The short time withstanding rating should be that of the breaker or the switchboard. They shall be mounted on the stationary part of the switchgear. Protective CTs shall have an accuracy class of 5P and an accuracy limit factor of greater than 10. Low reactance CTs shall be used for protection. Metering class of CTs for instruments shall have an accuracy class of 1.0. CT should be rated for full fault current rating for 3 sec.

a) Potential Transformers:
The potential or voltage transformers shall be cast resin typeand shall generally conform to IS: 3156. The potential transformers shall be draw out type and shall be provided with fuses on primary side and MCB/Fuses with on secondary side.

	The draw out mechanism shall disconnect the PT from the main bus bars. The primary connection shall be disconnected before the PT or its primary fuses become accessible. Neutral point of the star connected PTs both on primary and secondary sides shall be earthed. The PTs shall have an over voltage factor of 1.9 for 30 seconds and an accuracy of class 1.0 from 10% to 120% of normal voltage. If not otherwise specified, the secondary voltage of PTs shall be 110 V Protective Relays: The relays shall be mounted on front door of the compartment and accessible for setting and resetting from the front. Hand reset flag indicators visible from the front shall be provided for electromechanical type relays. Details regarding requirement of relays and their type, model etc. shall be as given in the data sheet/ feeder details. Measuring Instruments: All digital measuring instruments for HT panel shall be of size 96 mm X 96 mm, flush mounting type with 3½ digits LCD or LED display. Indicating Lamps: Indicating lamps shall be of LED type. These should be provided with translucent covers of red, green and amber colors as required. Bulbs and lenses shall be easily replaceable from the front. Transformer Protective Devices Wherever mentioned in the feeder details, necessary arrangement shall be provided by the contractor in the VCB panel to facilitate connection of the following protection for the transformer/motor. AVA33 – Auxiliary Relay for transformer protection As the above VCB/HT Panel (One Incomer & 2 Out Goings) shall be as per IEC-62271-200 (CT ratio IS: 2705) which shall be compatible and shall have following protections and receive commands from Transformer. a) Buchholz Relay alarm & Trip. b) Oil Temp. alarm & Trip, c) Winding Temp. alarm & Trip. d) Annunciation System. Provision of interlocking safety shutter automatically closing when the VCB is racked out from the service position. Power Pack: A power pack unit (with minimum 10 min. back up) of 230V AC / 110V DC ‘ALAN’ make shall be provided by the manufacturer where the input 230V AC to the power pack shall be supplied by the customer. Along with your offer also attached the Dimension of each Panel and foundation details with GA drawings and BOM. Factory inspection of above VCB shall be done by the consultant along with engineering incharge of RBD, GRSE . **For that all arrangements shall be done by the contractor scope.**				
51	**1500 KVA INDOOR (OIL COOLED, COPPER WOUND) TRANSFORMER 11/0.433KV (OCTC) :**	2	Set		

Supply, designe, manufacturing, installation, unloading at site, shifting to location, inspection, installstion, testing & commissoning of) of continuous rating of 1500 KVA 11/0.433KV, OCTC oil Cooled, copper wound indoor Transformer as per IS:2026 including HV termination box with air filled cable box suitable for 11KV 1 Run 3 Core 300 Sq mm XLPE AL./AR./C and LV termination box with air filled cable box suitable for 1.1KV 6 Run 3.5Core Sq mm Al./AR.XLPE PVC insulated cable etc as required. Make:- Voltamp Transforemrs Ltd./ Kirloskar Electric Co. Ltd /POWER STAR/Crompton Greaves/Siemens Ltd.

The transformer shall be complete with the following fittings: -

(a)Oil conservator with oil level indicator, minimum level marking and drain plug.

(b)Off circuit type tap changer with position indicator and locking arrangement.

(c)Thermometer pocket with plug.

(d)100 mm dial type /stem type thermometer with metal guard Dial type thermo- meter may have max. temperature indicator and resetting device.

(e)Lifting lugs.

(f)Bi-directional /Unidirectional Rollers to be specified.

(g)Rating diagram and terminal marking plate.

(h)Explosion vent.

(i)Additional Neutral separately brought out on a bushing for earthing.

(j)Earth terminals (2 Nos.).

Transformers considered are with following specifications as per (IS-2026)

Rating of Trafo.	:1500 KVA
No Load Voltage Ratio	:11/0.433 KV
Type-	Oil cooled, copper wound
Installation-	Indoor
Vector Group	:Dyn11
Tapping Range	:+5% to -10% @ 2.5%
Tap – Changer	:Off Circuit Tap changer
Steps	:6 Steps / 7 Positions
Temp. Rise (Oil/Wdg.)	:40/45°C
Total Losses at 50% Load. (Max)	:3.3 KW
Total Losses at 100% Load. (Max)	:9.2 KW
Impedance at 75 º C	:5% (IS Tol)
Insulation Level	:Class A
Ambient Temp- degrees.	:50
Max Temp Rise- degrees.	:90

Apart- From the above standard fittings followings items should be included:-

Oil Temp. Indicator (OTI), with one set of Contact. Winding Temp. Indicator (WTI) with one set of Contact

Conservator:

	Buchholz Relay with set of Contacts and Shut off Valve., Marshalling Box with complete wiring, Breather, silica gel breather, Earthing Terminal, R&D plate, rollers, valves, Magnetic Oil Level Gauge with Contacts. IS: :1180(Level-2) Double winding, Stack Core & None Sealed Type. Tapping Range :+5% to -10% @ 2.5% Impedance :5% Grade of the Core :CRGO- M-3 Grade. Transformer Oil Specification :As per IS: 335-1983. Transformer Oil Make :Savita, Silvassa. Other detail specification of transformer shall be provided with the Offer. Follwing protection commands in Transformer with VCB are to be mentioned a) Buchholz Relay alarm & Trip. b) Oil Temp. alarm & Trip, c) Winding Temp. alarm & Trip. d) Annunciation System HV (KVp/KVrms) :60/20 LV (KVp/KVrms) :--/03 Weights (Approx.) in Kg. :(Approx) Core & Winding :During Tank & Fittings :Details Oil (Kg/Ltrs) :KG. Total Weight Dimensions (Approx.) in mm. :(Sub. To ± 10 % TOL) Length X Breadth X Height : Termination H.V side /L.V side /Orientation :Cable Box / Cable Box /180° Painting :Epoxy					

	Tests: Tests at Works : All routine and other tests prescribed by IS 2026 shall be carried out at the manufacturer's works before dispatch of the transformer in the presence of inspecting officer(GRSE & ICA). Copies of the test certificates shall be furnished to the department. In addition to the prescribed routine tests, temperature rise test shall be invariably done on one transformer of each design. A copy of the impulse test certificate done on the same type/ design of the transformer shall be furnished in accordance with IS for purpose of record. If no impulse test was done in an earlier unit of the same design and capacity, one transformer will be subjected to impulse test in consultation with the Inspector at the firm's cost. Copies of the certificates for pressure test, test for bushings, and type test for short circuit shall be supplied to the Department. Tests at Site : In addition to tests at manufacturer's premises, all relevant pre-commissioning checks and tests conforming to IS code of practice No. 10028 (Part II & III) shall be done before energization. The following tests are to be particularly done before cable jointing or connecting up the bus bar trunking: (a)Insulation test between HV to earth and HV to MV with 5000 volts Megger. **Before Deliver Factory Inspection of 11 KV/0.433KV Oil Cooled 1500 KVA Indoor Transformer (IS-2026) shall be carried out in presence of Engineering incharge of GRSE and ICA. (Elec.) for that all arrangements shall be made by the contractor.**				
52	**Battery Charger Unit with Battery & Battery Rack: -** Supply, design, manufacturing, instgallation, unloding at site, shifting in location, commissioning and testing of 1 No Automatic float cum boost (50 Amp) battery charging equipment suitable for **110V, 200AH, VRLA** with value regulated **SMF lead acid 110V** (55 cells) 200AH battery type 55 UPST200 of with stand and standard accessories, conforming to degree of protection IP – 42, sheet steel enclosure 14 SWG thick, with automatic voltage regulation, current limiting circuitry, auto cut facility, smooth filter circuit switches, ammeter & voltmeter on DC side, RYB indicating lamps (LED type) on AC side complete in all respect with float and boost / buck charging, switchgear, Earthing, powder coated etc as required including one no. distribution board having 63 Amps DP MCCB as incomer and 12 Nos. 20/16A DP MCB's (D.C. duty) as outgoing complete as required and as per technical specifications. **Make:- Baid Power Services Pvt Ltd, , Amar Raja Power System Ltd, HBL, & LIVE LINE, MAKE Battery- Exide/Quantum/HBL.** **Note:- All technical Data Sheet and GA Drawing of battery charger shall be approved by consulatant before final delivery. Inspection of the same shall be carried out at company's factory before delivery.**	1	Set		
53	Supply,complete Installation,Testing & Commissioning of 1.5 KVA UPS system for emergency lighting,signage etc	1	Set		

54	Sub-Station Auxiliaries:-(CONTROL CABLES):- Supply, laying, testing of 650V/1100V grade copper conductor 2xyHFFR XLPE insulated sheathed Unarmoured multicore control cable for various control requirement, including GI spacer, saddle for support end termination with cable gland, cable lugs, 20/25 mm dia PVC conduit of 2 mm thick etc, complete as specified in Sub-Station Area. (Confirming to IS 7098 (Part-1) 1988 (Make:- LAP / Fenolex / Havells) **2 C x 1.5 Sq mm 2XY HFFR**	400	Mtr		
55	Sub-Station Auxiliaries:-(CONTROL CABLES):- Supply, laying, testing of 650V/1100V grade copper conductor 2xyHFFR XLPE insulated sheathed Unarmoured multicore control cable for various control requirement, including GI spacer, saddle for support end termination with cable gland, cable lugs, 20/25 mm dia PVC conduit of 2 mm thick etc, complete as specified in Sub-Station Area. (Confirming to IS 7098 (Part-1) 1988 (Make:- LAP / Fenolex / Havells) **3 C x 1.5 Sq mm 2XY HFFR**	300	Mtr		
56	Sub-Station Auxiliaries:-(CONTROL CABLES):- Supply, laying, testing of 650V/1100V grade copper conductor 2xyHFFR XLPE insulated sheathed Unarmoured multicore control cable for various control requirement, including GI spacer, saddle for support end termination with cable gland, cable lugs, 20/25 mm dia PVC conduit of 2 mm thick etc, complete as specified in Sub-Station Area. (Confirming to IS 7098 (Part-1) 1988 (Make:- LAP / Fenolex / Havells) **4 C x 1.5 Sq mm 2XY HFFR**	200	Mtr		
57	**CABLE TRAY:** Supply, erection Testing & commissioning of 300 mm or pre fabricated hot deep galvanised Iron Ladder type cable tray for LT cable with proper supporting arrangement	300	Mtr		
58	**CABLE TRAY:** Supply, erection Testing & commissioning of 450 mm or pre fabricated hot deep galvanised Iron Ladder type cable tray for LT cable with proper supporting arrangement	300	Mtr		
59	**CABLE TRAY:** Supply, erection Testing & commissioning of 100 mm or pre fabricated hot deep galvanised Iron Ladder type cable tray for LT cable with proper supporting arrangement	200	Mtr		
60	**LA:** Supply,Installation Testing & commissioning of Heavy Duty Lightning Arrester(LA) suitable for 11kV/33kV/66kV(as required),outdoor type,station class metal oxide confirming to IEC 60099-4/IS 3070 with Earthing arregment and Surge counter.	1	Each		
61	Providing a mat made of elastomeric polymers Material (Class-B) one mtr. wide and 2.5 mm thick to withstand 15 KV dielectric strength AS PER IS 15652 : 200. 1000 mm x 600 mm x 12 mm thick chequered Rubber Matting of tested quality to with stand 15KV dielectric strenght as per IS:5424	8	Each		
62	Supply of 440V grade Rubber Hands Gloves. As per IS:4770.	2	Pair		
63	Supply of of Maintence tool kit with 1 pair 11 KV rubber hand gloves of approved make, as per IS:4770.	1	Set		
64	Supply of First Aid Box with all necessary materials and medicine as approved by Indian Red Cross / St. John's conforming to IS:2217.	1	Each		
65	Supply and fixing of Shock Treatment Chart with glass in Aluminium frame and to be fixed on wall in Bengali and English.	5	Each		
66	Supply and fixing position the approved single line diagram framed in 1000 x 800 mm size glass frame and installed in main switch room.	1	No.		

67	**Fire Extinguisher:**-Supplying, commissioning and fixing of Carbon dioxide (Co2) type fire extinguisher of 4.5 Kg. Capacity duly charged confirming to IS: 2828. Make:- Minimax,Real value/Firex/Deflame.	8	No.		
68	Supplying and Fixing 3 Nos. 9 Ltr capacity G.I. buckets duly painted white inside and red oxide paint out side and written 'FIRE' with white paint and filled with dry sand and mounted on MS angle iron bracket of size 50x50x6mm thick and 1200mm long including grouting in wall/floor etc. as required confirming to IS:2546-1974.	8	Set		
69	Supply, laying, testing of 650V/1100V grade armoured copper cable 2xyHFFR XLPE insulated sheathed Unarmoured multicore control cable for various control requirement, including GI spacer, saddle for support end termination with cable gland, cable lugs, 20/25 mm dia PVC conduit of 2 mm thick etc, complete as specified in Sub-Station Area. (Confirming to IS 7098 (Part-1) 1988 (Make:- LAP / Fenolex / Havells) 4 C x 2.5 Sq mm 2XY HFFR	300	Mtr		
70	Supply, laying, testing of 650V/1100V grade armoured copper cable 2xyHFFR XLPE insulated sheathed Unarmoured multicore control cable for various control requirement, including GI spacer, saddle for support end termination with cable gland, cable lugs, 20/25 mm dia PVC conduit of 2 mm thick etc, complete as specified in Sub-Station Area. (Confirming to IS 7098 (Part-1) 1988 (Make:- LAP / Fenolex / Havells) 4 C x 6 Sq mm 2XY HFFR	200	Mtr		
71	Supply, laying, testing of 650V/1100V grade armoured copper cable 2xyHFFR XLPE insulated sheathed Unarmoured multicore control cable for various control requirement, including GI spacer, saddle for support end termination with cable gland, cable lugs, 20/25 mm dia PVC conduit of 2 mm thick etc, complete as specified in Sub-Station Area. (Confirming to IS 7098 (Part-1) 1988 (Make:- LAP / Fenolex / Havells) 4 C x 10 Sq mm 2XY HFFR	200	Mtr		
72	Supply, installation, testing and commissioning of 2 HP submersible borewell pump set complete with DOL starter, suitable control panel with MCB, necessary power and control cabling (including 2.5 sqmm 3.5C armoured cable from pump to starter, 4.0 sqmm 2C cable from starter to power source), earthing arrangement with GI pipe/plate and GI strip, mounting frame, cable glands, lugs, and other necessary accessories as required for complete operation	1	Set		
73	dewatering pump set including suitable starter panel with motor protection, power and control cabling with termination, suction and delivery pipeline with valves , MS base frame with anti-vibration mounts, earthing arrangement, and all necessary accessories for complete functional operation	1	Set		
74	Supply, installation, testing and commissioning of 1 HP centrifugal water supply pump set complete with suitable DOL starter/control panel, power and control cabling with terminations, earthing arrangement, suction and delivery pipelines with valves and NRV, foundation arrangements, and all necessary accessories for complete functional operation for Municipality storage tank	1	Set		

75	Main lighting DB: Design, fabrication, supply, installation, testing & commissioning of Main Lighting Distribution Board (MLDB) suitable for 415V, 3 Phase, 4 Wire, 50 Hz AC supply system, floor-mounted, totally enclosed, dust & vermin proof, made of CRCA sheet steel of min 2.0 mm thickness, powder coated with Siemens grey shade both inside & outside, IP-54 protection.with I/C-400A MCCB,O/G-MCCB-3 nos 32A,3 nos 25A,2 nos 16A and Place for Various rating MCB(4P,3P,2P,1P as Required) **Make of MCCB/MCB - L & T, Legrand, Schneider/Siemens**	1	Set		

Annexure - 2

STANDARD TERMS & CONDITIONS (STAC)
मानक निबंधन और शर्तें (एसटीएसी)

(1) **INTEGRITY PACT समग्रताअनुबंध:**

All the participating vendors in this tender are required to enter into agreement by signing an Integrity Pact.

"The Pact essentially envisages as agreement between the prospective vendors/bidders and the buyer, committing the persons/officials of both the parties, not to exercise any corrupt influence on any aspect of the contract".

Signing of Integrity Pact will be preliminary qualification for participation of this tender, only those vendors who have entered into this Pact with GRSE will qualify for the contract. This Integrity Pact will be effective from the stage of invitation of bids till the date of complete execution of this contract.

Signing Authority for Integrity Pact:
(A) Vendor: Proprietor / Director / Authorized representative
(B) GRSE: Head of the ordering department, not below the rank of DGM / AGM

Vendors need to sign on each page of the Integrity Pact document and provide the same on a Govt. issued bond paper of Rs.100/-. The scanned copy of the same need to be uploaded along with the technical Bid documents and original copy of the same to be forwarded to Tendering Department before the due date of the tender.

The vendor has to submit Integrity Pact as per GRSE Format along with Techno-commercial bid, wherever applicable as per NIT.

(2) **MICRO & SMALL ENTERPRISE (सूक्ष्मऔरछोटेउद्यम) -**

a) Purchase preference will be given to eligible Micro and Small Enterprise firms as per MSME Act on submission of valid Udyam Registration Certificate (URC) or NSIC copy along with their offer to claim the benefit. Tendered Service is to be listed in the URC or NSIC submitted else they are disqualified to avail the benefit.

b) Out of 25% target of annual procurement from MSEs, 4% (within the 25%) reservation will be provided for MSEs owned by Schedule Caste (SC) /Scheduled Tribe (ST) entrepreneurs and 3% (within the 25%) reservation will be provided for MSEs owned by women entrepreneurs. Necessary documents to be submitted along with the techno-commercial bid as evidence failing which benefit shall not be accorded. However, in the event of failure of such MSEs to participate in the tender process or meet the tender requirements and L1 price, 4% reservation for MSEs owned by SC/ST entrepreneurs and 3% reservation for MSEs owned by women entrepreneurs will be met from other MSEs.

c) Following facilities/benefits may be given to MSEs: -
(i) Exemption for payment of Tender Fee & Earnest Money Deposit.

d) (i) MSEs registered with MSME authority as stated above, quoting price within the band of L1 +15% will be allowed to supply a portion of the requirement by bringing

down their price to L1 price in a situation where the L1 price is from someone other than MSE. Such MSEs will be allowed to supply at least 25% of total tendered value. To avail this purchase preference, submission of Udyam Registration Certificate /NSIC is mandatory failing which the benefit will not be accorded.

(ii) In case L1 is not an MSE and there is more than one MSE within the range of L1 +15%, only the lowest MSE shall be considered for 25% order in case of divisible item or 100% in case the order quantity is not divisible, subject to matching the L1 prices.

(iii) If the lowest MSE refuses to accept the L1 price, then the second lowest MSE within the range of L1 +15% will be considered. This process will continue till a MSE in the range accepts the L1 price or the MSEs in the L1 + 15% range are exhausted.

(iv) In case no MSE accepts the L1 price or there is no MSE available in the L1 +15% range, then the order shall be placed to the L1 bidder without applying this principle.

e) Non-Divisibility of Tender Items: - In case of non-divisible / non-splittable item in tenders, an MSE quoting in the price band of L1+15% may be awarded for full/complete supply of total tendered value, considering the spirit of policy for enhancing the government procurement from MSEs subject to matching the L1 prices by the MSE concerned. However, contract will be awarded as per GOI policy and at discretion of GRSE.

f) To qualify for entitlement as SC/ST owned MSE, the SC/ST certificate issued by the District Authority must be submitted along with the offer or the same should be indicated in the relevant document NSIC / Udyam Registration Certificate.

g) For the MSEs owned by SC/ST owned entrepreneur, the benefits as stated above shall be accorded only in the following cases:
(i) For proprietary MSE, proprietor(s) shall be SC/ST.
(ii) For partnership MSE, the SC/ST partners shall be holding at least 51% shares in the unit.
(iii) For Private Limited Companies, at least 51% share shall be held by SC/ST promoters.

(3) **TENDER FEE (निविदाशुल्क): NON-REFUNDABLE (गैर वापसी योग्य) –**

i. Amount of declared non-refundable tender fee is to be submitted in the form of Demand Draft / Pay Order, Payable at Kolkata and issued in favour of “Garden Reach Shipbuilders & Engineers Limited” by any Nationalized/Scheduled Bank other than Co-operative Bank. Physical DD/PO to be forwarded to Tendering Department of GRSE within 07 days of tender due date. A scanned copy of the same is to be uploaded as an attachment to the PART I of e-bid submission.

ii. MSE registered firms having the tendered service listed in their MSE document will be eligible for exemption of tender fee. To claim the exemption, a copy of the valid MSE certificate with its annexure is to be scanned and uploaded as an attachment to the PART I of e-bid submission. The same is to be confirmed in the techno-commercial concurrence format.

iii. Non-submission of tender fee or a valid MSE certificate may lead to offer rejection.

(4) **EARNEST MONEY DEPOSIT (INTEREST FREE) बयाना जमा (ब्याज रहित) -**

i. Amount of declared interest free Earnest Money Deposit (EMD) is to be submitted in form of Demand Draft / Pay Order, Payable at Kolkata and issued in favour of "Garden Reach Shipbuilders & Engineers Limited" by any Nationalized/Scheduled Bank other than Co-operative Bank. Physical DD/PO to be forwarded to Tendering Department of GRSE within 07 days of tender due date. A scanned copy of the same is to be uploaded as an attachment to the PART I e-bid submission.

ii. EMD may also be submitted in the form of Bank Guarantee with six months validity as per enclosed GRSE format of Bank Guarantee and is to be forwarded directly to GM (Finance), GRSE in Bankers' sealed envelope failing which same will not be accepted. Details of B.G. are to be in Techno-Commercial part of offer.

iii. MSE registered firms having the tendered service listed in their MSE document will be eligible for exemption from submitting EMD.To claim the exemption a copy of the valid MSE certificate with its annexure is to be scanned and uploaded as an attachment to the General Document part of E-PROCUREMENT. The same is to be confirmed in the PART I concurrence format.

iv. MSE Registered Firms has to be submit Bid Security Declaration In lieu of Earnest Money Deposit as per GRSE format.

v. Non-submission of EMD /Bid Security Declaration and valid MSE certificate may lead to rejection of offer.

vi. Refund of Earnest Money Deposits (बयाना जमा की वापसी)

a. EMD of unsuccessful bidders will be refunded/ returned within 30 days of finalisation of order on surrendering the original copy of GRSE Money Receipt with an application by bidder addressed to HOD of Ordering Department, GRSE on receipt of intimation from GRSE.

b. EMD of disqualified bidders in TNC/CNC will be returned within 30 days from the date of receipt of application along with original copy of Money Receipt from the bidder. EMD, if not claimed within 1 year from the date of notification EMD will be forfeited.

c. EMD of successful bidder will be returned after receipt of security deposit against work order as per contractual terms.

vii. Forfeiture of Earnest Money Deposit (बयाना जमा की जब्ती)

EMD may be forfeited under the following circumstances:

a. The bidder withdraws the bid after opening of Price Bid during the period of validity of offer.

b. The bidder does not accept the correction of error in bid price as indicated in **Clause 37** hereinafter.

c. The successful bidder fails within the specifies time limit to:

1. Acknowledge the LOA/Order
2. Furnish the required Security Deposit
3. Non-performance of the contract by the Contractor

(5) **VALIDITY OF OFFER (प्रस्ताव की वैधता) :-**

Your offer should remain valid for a period of 90 days (as per terms of specific NIT) from the due date of the tender.

(6) **SECURITY DEPOSIT (INTEREST FREE) प्रतिभूति (ब्याज रहित):**

i. Successful bidder will deposit an amount equivalent to the declared per cent of the total contract value as interest free Security Deposit (SD) in the form of Pay Order/D. D/Bank Guarantee (with validity of sixty days beyond contract period as per GRSE format) on any schedule bank other than Co-operative bank payable at Kolkata, duly crossed favouring Garden Reach Shipbuilders & Engineers Limited., within 15 days from the date of site clearance/receipt of LOA or PO/as specified in the NIT. In case of non-submission of SD as per schedule, penal interest will be charged for delayed period of submission of SD beyond 15 days at the prevailing SBI cash credit rate on the amount of SD to be submitted.

ii. If S.D is submitted in the form of B.G then same is to be forwarded directly to Gen. Mgr. (Finance) in Banker's sealed envelope failing which same will not be accepted. Details of B. G. should also be confirmed to Ordering Department, GRSE.

iii. S.D. amount would be refunded / returned after successful execution of the job and certification of Material Reconciliation Statement by Internal Audit, if applicable. Vendor is to apply for release of their SD along with Job Completion Certificate which has to be certified by PL/Engineer-in-charge/authorized representative of concerned department through GRSE Ordering Dept. In the event of failure to execute the order satisfactorily or default by the contractor/ sub-contractor, the security deposit will be forfeited.

(7) **WORK DONE CERTIFICATE (W.D.C.) (किए हुए काम का प्रमाणपत्र): -** Firm will put up Work Done for certification to site engineer /PL /or as specified in the NIT, along with clear inspection report signed by Quality Assurance Authority. W.D.C. is to include whether work has been completed as per delivery schedule or the delay in days/weeks occurred in completion of work.

(8) **BILL SUBMISSION (बिल प्रस्तुति):**

On obtaining WDC, bills are to be raised on monthly/quarterly/half-yearly/annually (as specified in NIT) progressive basis in accordance with the Checklist as per GRSE format. Bills are to be submitted at the Bill Receiving Counters located at the respective unit of Company. Bill is to be submitted (in 03 copies) in sealed envelope super-scribing on the envelope the Purchase Order No., Vendor code,

Bill / Invoice No., Name of person /employee to whom bill is addressed, for processing. For this Service Name of the person to be mentioned on sealed envelope will be concerned Project Leader of the Ship/Bill certifying officer.

(9) **COMPLIANCE OF ESI & PF (ईएसआई और पीएफ़ का अनुपालन): -**

a) Compliance of ESI & PF of the engaged workman is the responsibility of the contractor.

b) For execution of job inside GRSE premises, vendor has to obtain clearance from HR Dept. regarding statutory compliance of minimum wages, PF, ESI, etc. of their engaged workmen for release of payment.

(10) **POLICE VERIFICATION FOR CONTRACT LABOUR WORKMEN (ठेका श्रमिकों का पुलिस सत्यापन): -**

(a) Police Verification certificates of character antecedents in respect of all employees of Contractors/Sub-contractors for operating inside GRSE Ltd. are required to be submitted to Security Dept./GRSE Ltd. before processing of Gate Passes.

(b) A certificate from the contractor's labour, clearly endorsing that characters of all his labourers have been duly verified and found to be satisfactory be submitted to GRSE at the time of making Gate Pass.

(c) Photo Identity Card /Gate Pass as required by GRSE will be arranged by the contractor for his employees at his own cost.

(11) **GST REGISTRATION (जी एस टी पंजीकरण):** - The vendor will have to submit copy of GST registration certificate (Part A & Part B) along with the Technical bid. Any bidder without having GST Registration Certificate will not be considered for Ordering.

(12) **GUARANTEE PERIOD (गारंटी अवधि): -**

Workmanship will be guaranteed for satisfactory performance for a period ***as stated in NIT.*** Any faulty work carried out by the sub-contractor is to be rectified by them within the time stipulated by the GRSE. In case of failure of sub- contractor to meet the ship's programme, outstanding deficiencies shall be rectified by GRSE and all costs of such work shall have to be borne by the sub-contractor).

During guarantee/ warranty period if any equipment or any component thereof supplied by the contractor, suffers due to defective material and/ or due to improper design and/ or due to defective drawing or due to faulty workmanship the contractor will assume full responsibility of rectification of such defective equipment or component thereof including all direct expenses relating to removal and re-positioning of the replacement/ repaired equipment or component thereof and subsequent test & trial, incurred thereon without any financial implication to GRSE.

(13) **PRICE (मूल्य):**

A. For Tender in NIC Portal (एन आई सी पोर्टल टेंडर हेतु): - NA

a) Price bid need to be filled up (excluding GST) in html format only through e-portal. No other attachment regarding price will be allowed, if so, then offer will be rejected. For break-up of prices, GRSE may attach excel sheet with the html format price bid and the bidder has to fill up their prices in excel sheet and also in html format as per instruction in NIT.

B. For Tender in GeM Portal (जे ई एम पोर्टल टेंडर हेतु):

a) Price bid needs to be filled up (with or without GST as specified in NIT) only through GeM portal for the total job.

b) The Bidder may have to upload the breakup of their quoted price in line with BOQ, as specified in NIT, along with their price offer in GeM portal.

c) The price should remain firm & fixed till satisfactory execution of the entire contract as per NIT. GST percentage has to be indicated in the offer. GST registration certificate for the service being tendered is to be enclosed with the techno-commercial bid. GST registration number is to be quoted in all bills.

(14) **QUANTITY VARIATION (मात्रा भेद) : As per term of NIT.** Quantity as specified in the NIT/SOTR/Price Bid is tentative and it may vary according to the actual requirement of the job. The selected bidder has to execute the required quantity at the same rate, terms & conditions up to variation (+/-25%) or as specified in the NIT in addition to the initial tendered quantity. Necessary amendment of Purchase Orders will be issued accordingly.

(15) **UNREASONABLE QUOTESअतर्कसंगत भाव –**

A. For Job Contract (कार्य संविदा हेतु) :

i) In case the price of L-1 Bidder is found to quote unreasonably low and/or express desires to withdraw from the tender then such bid will be cancelled and EMD will be forfeited and punitive action will be taken in line with the provision as per GRSE Vendor Policy.

ii) However, in case the L1 Bidder agrees to take-up the job with such unreasonable low quote, lower by 30% or more than estimate and also if the difference in price between L1 & L2 is 30% or more, then the quoted price to be analysed w.r.t tender requirement and if the L1 bidder fails to justify their quoted rate, the obtained L1 quote will be rejected and punitive action will be taken in line with the provision as per GRSE Vendor Policy.

iii) If the justification is acceptable to GRSE, then the bidder has to submit Bank Guarantee of 10% of the total Contract value (inclusive of GST) in addition to the Security Deposit (SD) and Performance Bank Guarantee (PBG) (as applicable) for execution of the job till satisfactory completion of entire contract. There shall be no exemption / relaxation for the Guarantee against unreasonable quote. In case of breach of contract GRSE shall reserve the right to invoke the BG and may impose tender holiday for a period as per GRSE Vendor policy.

B. For Manpower Contract (श्रमशक्ति संविदा हेतु): NA

i)The quoted price of the L1 bidder should comply with the prevailing Minimum Wages Act & Other Statutory requirements i.e PF, ESI etc.

ii) In case the quoted price of the L1 bidder is found unreasonably low i.e does not comply with the Minimum Wages Act & Other Statutory requirements and the L1 bidder fails to justify their quoted rate then the obtained L1 quote will be rejected and punitive action will be taken in line with the provision as per GRSE Vendor Policy.

(16) **JOINT VENTURE (संयुक्त ऊधम) :**

The bids submitted by a joint-venture company of two or more firms/persons/entities as partners/promoters shall comply with the following requirements:

i) The Joint Venture Agreement must be a registered document under the Indian Registration Act and must be an independent and registered entity under the Companies Act/Indian Partnership Act, having its own trade name and having separate CIN, PAN, GST and other Statutory Licenses/Registrations independent of its promoters/partners.

ii) All partners/promoters of the joint venture shall be liable jointly and severally for the execution/performance of the project/contract and for all sorts of contractual obligations, responsibilities and liabilities and consequences arising out of breach of terms and conditions of contract.

iii) A Certified/True copy of the Joint Venture Agreement shall have to be submitted with the bid along with the resolution of Board of Directors (in case of a company) or a Power of Attorney to be executed by all the Partners (in case of Partnership Firm) of JV entity authorizing such person who will sign on behalf of JV entity.

iv) Submission of EMD/SDs/Performance Guarantee etc., to be made by the Joint Venture Company/Firm and similarly all payments would also be remitted to/in favour of the JV entity.

v) In order for a joint venture to qualify/meet the minimum criteria as may be specified in the Tender, the experience and financial capability of each of its promoters/ partners would be considered jointly to judge the experience and/or the financial capability of the JV entity as an independent entity. That is to say that the individual experience/qualification of each partner/promoter of the JV would be considered together for ascertaining the experience/qualification criteria of the JV. However, if any specific criteria/qualification is mentioned in the Tender that has to be met by each of the partners, then in such case each of the JV partner/promoters have to meet the same.

vi) Neither the JV entity nor any of its partners/promoters should have been blacklisted, banned or debarred from issuing any Tender or suffering Tender Holiday from participating in any Tender process of Government of India or any of its Agencies or by any State Government or by an PSU (both Central & State included) or by any Court/Tribunal. If so, then the bid is liable to be rejected.

vii) If selected, PO would be issued in favour of the JV.

(17) **CONSORTIUM (अल्पकालीन संघटन):**

The bids submitted by a Consortium of two or more firms as partners shall comply with the following requirements:

i) There must be a written Agreement for formation of the Consortium amongst its members which should *inter alia* include the role of each member, the ratio of investment and the ratio of profit/loss sharing. The terms of the Agreement cannot be modified post submission of the bid and during execution of Contract, if awarded, without the express consent of GRSE. The Consortium Agreement must record that as to which member would act as the Lead Member in the Contract/Tender. This authorization shall be evidenced by submitting with the bid a Power of Attorney authorizing such member to act on its behalf as Lead Member, signed by legally authorized signatories of all other partners/members.

ii) Each partner firm/company of a Consortium must legally authorize its representative who will represent the partner firm/company to sign and execute the Consortium Agreement and all other necessary papers/documents required for the formation of Consortium and all other purpose relating to activities of Consortium.

iii) The leader shall be authorized to incur liabilities and to receive instruction for and on behalf of any and all partners/members of the consortium and the entire execution of the contract and all other related documents shall be done under the supervision and involvement of the lead member.

iv) All partners of the consortium shall be liable jointly and severally for the execution of the project or contract without any limitation of liability. Any default or lapse on the part of any of the members of the Consortium regarding performance of the contract will be treated as default on the part of the Consortium as a whole and the Lead Member alone will be responsible for all consequential losses and damages that may be sustained by GRSE for such default or lapse on the part of a member.

v) A Certified True copy of the Consortium contract/agreement entered into by and between the consortium partners and a certified True copy of the Power of Attorney, referred above, must be submitted with the bid and failure to submit any of such documents will make the bid of the Consortium liable to be rejected.

vi). If Contract is awarded to the Consortium, an Agreement would be executed by and between GRSE and all the Consortium members wherein, inter alia, the role of each member and the mode of payments to be specifically defined and/or mentioned. However, all the consortium members shall remain, jointly and severally, responsible for execution and completion of the Contract and also to make good for all losses and damages if any sustained or to be

sustained by GRSE in the subject contract due to default and/or negligence of the Consortium as a whole or of any of its members. Any statement or clause seeking to limit the liability of each member of the Consortium, such statement or clause to be treated as incompatible with the principle of joint and several liability and the bid of the Consortium will be liable to be rejected as not in compliance of tender specifications, without further evaluation.

vii) In order to qualify/meet the qualification criteria, each of its partners/members or combination of partners/members must meet the minimum criteria set for the individual bidder. Failure to comply with this requirement will result in rejection of the Consortium's bid. The data/figures of each of the partners/members of the Consortium shall be added together in proportion to their participation in the Consortium, to determine the bidder's capacity as a whole to comply with the minimum criteria.

viii) The percentage of partnership of the lead partner shall be highest among all the Consortium partners. Bid has to be submitted by the Lead Partner in its name however it should be clearly indicated that the lead partner is submitting such bid on behalf of a Consortium of which it is the Lead Partner.

ix) The lead partner shall be responsible for payment of Bid Security/EMD as well as the Security Deposit & Performance Guarantee. However, the same has to be submitted by MSME/NSIC firms also if such firm acts as a Lead partner.

x) All Payments to be made to the Lead Member pursuant to satisfactory execution of the job as specified in the Contract irrespective of the performance by all the members. Payments made to Lead partner of the Consortium would be construed as valid payment. Further the Consortium members agree not to entangle GRSE in any internal dispute between the Consortium members regarding payment/non-payment or any other issue and accordingly waives their rights, if any in this regard.

xi) None of the consortium partners/members should have been blacklisted, banned or debarred or issued any Tender holiday from participating in Government Contracts by either the Government of India or any of its Agencies or by any State Government or by an PSU (both Central & State included) or by the Courts/Tribunals. If so, then the bid is liable to be rejected.

Note: The Consortium Agreement & the PoA is to be submitted by the Consortium's Lead partner along with the Bid for examination by GRSE. If the Consortium Agreement or the PoA does not meet the criteria as specified in the clause then such bid would be liable to be rejected.

(18) **MAINTENANCE OF MACHINES (यंत्रों का अनुरछण): -** The maintenance of machines brought in by contractors are to be undertaken as per OEM recommendations. Certificate to this effect is to be rendered by the contractor.

(19) **SUB-CONTRACTING OF SUB-CONTRACTED JOB (उप संविदा कार्य का उप संविदा) : -**

a) Sub-Contracting of the Sub-Contracted job is usually discouraged. When a contract is being finalised with a Vendor/ Contractor for execution of a particular job, the Contractor shall not sub-contract the job / a part of the job.

b) However, in case of requirement, the job in part or full could be sub-contracted with an approval from GRSE and copy of the same has to be forwarded to Ordering Dept. & HR Dept. for their information.

c) For sub-contracting of the sub-contracted job, the Vendor/Contractor has to submit the details of the sub-contractor to whom the job will be loaded including their name, credentials, document of past performance etc. for approval of GRSE Engineer In-Charge/ In-charge of User Dept./Project Leader / Project Superintendent /Head of Units.

(20) **EXCESS/WASTE/REJECTED MATERIALS (अतिरिक्त/बेकार/ अस्वीकृत सामग्री) : -** Removal of excess/waste/rejected materials etc. generated during execution of work should be arranged by the Contractor at their own cost immediately after completion of work each day and for non-removal of same by the Contractor, the expenditure incurred by GRSE (if any) in removing these materials will be recovered from the available dues of the Contractor.

(21) **FIRE &SAFETY PRECAUTIONSअग्नि एवं संरक्षा सावधानियाँ : -** The Vendor/Contractor shall abide by the Safety regulations/rules of the GRSE as detailed in Fire & Safety Guidelines (please refer www.grse.in). The Vendor/Contractor should take all safety precautions and provide adequate supervision & control for their workmen in order to carry out the job safely. In case of any violation of safety precaution and non-usage of safety equipment, Contractor shall be liable for a penalty which is detailed in Fire and Safety Guidelines (please refer www.grse.in). Penalty amount depends on the type and frequency of violation mentioned in the safety guideline and the same will be deducted from the defaulter's bill.

(22) **SAFETY GUIDELINE FOR MATERIAL HANDLING EQUIPMENT (सामग्री चालन उपकरण हेतु मार्गदर्शन):** The Vendor/Contractor shall abide by the Safety Guidelines /regulations of GRSE as detailed in NIT. The Vendor/Contractor should comply with all the Safety requirements like Statutory Examination and Certification of Crane & associated lifting tackles, Display of SWL, Competency requirement of Crane Operators, PUC etc. in order to carry out the job safely. In case of any violation GRSE will take appropriate action as per policy.

(23) **MANDATORY USE OF ISI MARKED PPE BY CONTRACTOR EMPLOYEES (संविदा कर्मचारी द्वारा आई एस आई निशान पी पी ई व्यवहार की अनिवार्यता):** The Contractor shall ensure the use of ISI marked PPE by their engaged Employees. An indicative list of ISI marked Personal Protective Equipment, is appended below for mandatory compliance by the vendors without any deviation:

LIST OF PPES (पी पी ई की सूची)

Note: Apart from the above-mentioned PPE, vendors may consider any other type of standardized PPE as per job requirement, in consultation with GRSE Safety Department.

(24) **ENVIRONMENT MANAGEMENT AND OCCUPATIONAL HEALTH & SAFETY(पर्यावरण प्रबंधन एवं व्यावसायिकस्वास्थ्य सुरक्षा):** - The vendor shall ensure compliance of Environment Management System (ISO14001:2014), Occupational Health & Safety (ISO 45001:2018) & Energy Management System (ISO 50001:2011) while carrying out their activity in the yard.

(25) **ENERGY CONSERVATION (ऊर्जा संरक्षण): -**

GRSE will provide power supply at free of cost for execution of job. The vendor should ensure that the power during execution of job shall be used in a very economic way to save energy as per Energy Management System of ISO 50001: 2011.

(26) **GUARANTEE FOR RAW MATERIAL(अनिर्मित सामग्री की गारंटी) :** This Clause will be applicable for Collection of Raw materials /Free Issue materials from GRSE for the jobs which are to be executed outside GRSE premises.

a) Raw materials will be required to collect from GRSE against submission of Bank Guarantee as per GRSE format for the equivalent value of material as specified in NIT/Purchase Order. Transportation of materials from GRSE to Sub-contractor's premises and transportation of finished materials from Sub-contractor's premises up to GRSE is the responsibility of the contractor or as specified in NIT.

b) Indemnity Bond affixing the Common Seal from the registered sub-contractors may be accepted in lieu of Bank Guarantee but it should be backed by Insurance Coverage with GRSE as the beneficiary on case to case basis. If the contractor is unable to take coverage, GRSE will cover such risk and cost of premium will be borne by the contractor/recovered from their dues.

c) Indemnity Bond has to be submitted as per GRSE Format on the non-judicial Stamp paper of value Rs. 100/- and to be Notarized if Common Seal is not applicable.

d) During collection of material, the Transporter of the Sub-Contractor has to submit L-R copy, failing which materials will not be issued to the Sub-Contractor.

e) For the jobs which are to be executed inside GRSE premises, submission of Bank Guarantee or Indemnity Bond for Collection Raw materials is not required.

(27) **MATERIAL RECONCILIATION STATEMENT (MRS) (सामग्री मिलान विवरण) : -**

(a) Firms are to furnish the material reconciliation statement (running MRS) to GRSE, for items supplied by GRSE for execution of a job at vendor’s premises. Furnishing of MRS to be done immediately on delivery of the Finished item/Block but not later than 30 days of delivery of the finished item showing details of raw materials received, material actually consumed, excess material returned, wastage etc. This statement should be submitted with documentary evidence of material

issued/returned/wastage duly accepted by competent authority of GRSE and as per the GRSE format and filled up check list for MRS. Permissible variation in MRS is 1.5% of design weight of structure. MRS certification is to be completed by GRSE within 60 days of receipt of the same from vendors.

(b) Quantity of stiffeners used in transportation are to be mentioned in delivery challan

clearly indicating whether the stiffeners are: -

i) Temporary stiffeners supplied by vendor.
ii) Sections of ABS quality supplied by GRSE.

(c) While submitting MRS of Finished item/Block, copies of certified MRS of all previous Finished items/Blocks are to be enclosed. This will be called the final MRS.

(28) **INSURANCE (बीमा): -** In case the sub-contracted job has to be executed at contractor's premises, the Insurance has to be taken by the contractor with appropriate value coverage for the underlying risks (the beneficiary would be GRSE by endorsement) e.g. Loss due to following:

(i) Fire as per AIFT including EQ, STFI at Contractors premises.
(ii) Burglary including theft during Storage at Contractors premises.
(iii) Marine transit to and fro as per ITC(A) including SRCC (on the basis of agreed valuation between GRSE & contractors).
(iv) Loading & unloading including TP liability at all fabricator's premises.
(v) Loss due to infidelity of contractors whilst in storage.
(vi) Spoilage of material by contractors by any accidental reasons whatsoever.

If the contractor is unable to take coverage, GRSE will cover such risk and cost of premium will be borne by the contractor/recovered from their dues.

For the jobs which are to be executed inside GRSE premises, Insurance coverage will not be the responsibility of contractor.

(29) **SITE-INCHARGE/ LOG BOOK/ HINDRANCE & OTHER RECORDS (कार्यस्थान प्रभार/कार्यपंजी/बाधा एवं अन्य रिकार्ड): -**

a) One fully responsible and Qualified Site-in-charge has to be posted at the site during progress of work.
b) Attendance Register, Wage Register etc. are to be maintained daily for the particular job on board and to be shown as and when required.
c) Details of technical personnel deployed for the job.
d) Monthly progress report.
e) Log book for re-work/ modification.
f) Details of materials brought by vendor along with copies of challan.
g) Proper record of hindrances is to be maintained by the sub-contractor for the purpose of timely removal of the hindrance and is to be put up for approval by

Project Leader/Site Engineer on weekly basis. A copy of the same would have to be enclosed while submitting any request for waiver of liquidated damages.

h) Sufficient Supervisory Staff should be provided by the contractor during execution of work and in case of any accident/ damage to GRSE properties, full responsibility will be attributed to the contractor and loss incurred will be recovered from the contractor.

(30) **WORKING HOURS (कार्य समय) :**

The Contractor's normal working hours shall be in between 8 AM-5:06 PM from Monday to Friday & from 8:00 AM to 1:00 PM on Saturday. 1st & 3rd Saturday is Non-Duty Saturday. Work may also be required to be carried out in shifts (A, B & G shifts) as per GRSE's requirement. Also, work may be required to be carried out on Sunday/Holiday or beyond schedule working hours as per requirement of GRSE and the Contractor will have to arrange for same as per SOTR/NIT Terms.

(31) **RISK PURCHASE (जोखिम खरीद):**

In case the progress of work is not satisfactory and the contractor fails to maintain the schedule, GRSE reserves the right to get the work done by alternative source at the risk and cost of sub-contractor.

GRSE shall be at liberty to purchase/obtain the service from the alternative source as it deems fit, to make good such default and or in the event of the contract being terminated, the balance of the remaining service to be delivered there under. Any excess over the job price / service rates, paid and incurred by GRSE, as the case may be, over the contract price shall be recoverable from the firm. To make good the recoverable excess amount paid, GRSE shall be at liberty to invoke Bank Guarantee and/or with other available dues of the firm.

(32) **INDIVIDUALITY OF THE CONTRACT (संविदा की वैयक्तिकता):**

This Contract should be treated as an individual contract and should not be related with other orders with GRSE in respect of progress of work or payment.

(33) **SECRECY OF INFORMATION (सूचना की गोपनियता): -**

All documents and drawings of this project are of confidential in nature and should be used explicitly for the purpose for which they are provided. Drawings should not be copied and should be returned to GRSE on completion of work.

No information in respect of contracts/orders shall be released to the national or international media or any one not directly involved its execution without the express written approval of the Integrated Headquarters, MOD (NAVY). In the event of any breach of above provisions, the vendor would have to make good of any loss/ cost/ damage/ any other claim whatsoever preferred by anybody to GRSE in this respect.

Non-Disclosure Agreement (NDA) as specified in the NIT has to be submitted as per GRSE Format.

(34) **REGISTRATION OF NEW VENDOR (नए बिक्रेता का पंजीकरण):**

The contractor has to confirm if they are registered with GRSE and Indicate Vendor Code (5 digits) and Product Code group accordingly in their offer. If the contractor is not registered with GRSE, then documents required for provisional vendor registration has to be submitted to the Ordering Department. For Permanent Vendor Registration with GRSE, the contractor has to submit their application to GRSE Vendor Development Cell.

(35) **CONTRACT WORKMAN WAGE PAYMENT (संविदा कामगार का मजदूरी भुगतान): -**

Payment of wages to the contractor's employee/workmen should be made through individual bank account on monthly basis instead of cash payment. PF-UAN activation of all the contractor's employee/workmen is mandatory.

(36) **INSPECTION (निरीक्षण): -**

(i) Quality assurance authority: As per NIT/SOTR.

(ii) Inspection to be carried out stage wise by Quality Assurance Authority. On completion of work for any stage, vendor has to submit Inspection Offer to GRSE (Inspection Agency) for stage inspection. GRSE (Inspection Agency) shall co-ordinate with the Outside Inspection Authorities (as applicable) for carrying out inspection of completed job.

(iii) GRSE reserve the right to inspect all operations to be carried out by the contractor. Free access to the work site at all the time shall be ensured by contractor. The presence or absence of GRSE representative does not relieve contractor of the responsibility for quality control. The contractor shall provide all assistance for carrying out inspection of completed work.

(iv) Repeat inspection for any particular job is to be discouraged as far as possible. Hence the vendor should complete the job in all respect prior to submission of Inspection Offer to avoid reoffering. In case of repeat inspection happens for more than two occasions then the additional cost implication incurred by GRSE will be deducted from the bills of the vendor at actual. Number of occasions of repeat inspection for any particular job is to be indicated by GRSE in inspection note and same is to be incorporated in the work done certificate for deduction of additional cost implication for repeat inspection. Cost of deduction shall be calculated by Executing Dept., GRSE with the help of Finance Dept., GRSE.

(37) **CORRECTION OF ERRORS (त्रुटि सुधार):**

Bids determined to be responsive will be checked by GRSE for any arithmetic error. Errors will be corrected by GRSE as follows:

(i) For Manual Tendering: - NA

a) Where there is a discrepancy between the rates in figures and in words, the rates in words will govern.
b) Where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern.

(ii) For Tendering through NIC Portal: - NA

Where there is a discrepancy between the rates in html format and the attachment to price bid (if applicable), the rates in attachment to price bid will govern. In attachment to Price bid; if any discrepancy found between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will be considered.

(iii) For Tendering through GeM Portal: -

Where there is a discrepancy between the total price quoted in GeM Portal and the attachment (i.e break up of quoted price in line with BOQ) to price offer, the total price quoted in GeM portal will govern. In attachment to the Price offer, if any discrepancy found between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will be considered.

(38) **FORCE MAJEURE (अप्रत्याशित घटना) :**

In the event of contractor being unable to fulfil the obligation under the agreement owing to force majeure, such as War, Fire, Earthquake, Flood, Strike/ Lockout at GRSE premises where the contractor is working, the party affected shall not be held responsible for any failure or non-performance of the duties and obligations under the agreement, provided that all responsible efforts have been made to overcome the consequences of such failure, or non-performance. The time for performances of the contractual obligation shall then be extended by period not more than the duration of such events.
In the event of Force Majeure condition existing at contractor's site in GRSE Premises or CPT areas for GRSE work, GRSE is to be intimated with details of such happenings and cessations thereof, within 3 days. Force Majeure is to be limited to contractor's site in GRSE/CPT premises for GRSE's work only. Lock out/ Closure of contractor's factory premises or office or any other place outside GRSE/CPT/GRSE nominated place as indicated above cannot be considered as a Force Majeure condition under this contract.

(39) **TERMINATION OF CONTRACT (अनुबंध की समाप्ती):** In the event of non-performance or non-engagement of manpower for the execution of the job within the notice period, GRSE reserves the right to cancel the order in part or in full, and no compensation whatsoever will be entertained.

(40) **DAMAGE OF MATERIALS / EQUIPMENTS (सामग्री/उपकरण की छती):** The contractor will ensure that no damage is caused to the materials, equipment or any other property of GRSE due to negligence and / or any reason whatsoever by the contractor's personnel. The cost of such damage will be suitably recovered from contractor's bills.

(41) **OFFICE & STORAGE SPACE (कार्यालय एवं भंडारण स्थान):** The contractor will have to arrange their office & storage required for execution of job, for cumulative order value of Rs.75 lakhs and above, of their own. However, space for placing up to one container will be provided free of cost by GRSE. Container will have to be removed by the contractor within 03 months from the date of final settlement with GRSE. In

case of non-removal of container within specified period penalty as deemed fit will be imposed for the occupied area of GRSE.

(42) **ARBITRATION (मध्यस्थता): -**

i. If at any time, before during or after the contract period, any unsettled claim, question, dispute or difference arises between the parties, upon or in relation to or in connection with or in any way touching or concerning this order, the same shall be settled/adjudicated through Arbitration to be conducted by a Sole Arbitrator, to be appointed by the parties on mutual consent, in accordance with the provisions of the Arbitration and Conciliation Act, 1996.

ii. In the event the parties fail to mutually appoint a SoIe Arbitrator within 30 days from the receipt of a request by one party from the other, then either of the parties may approach the Hon'ble High Court at Calcutta under the provisions of the Arbitration and Conciliation Act, 1996 for appointment of a Sole Arbitrator by the Hon'ble Court.

iii. Such arbitration shall, in all respects, be conducted in accordance with the provisions of the Arbitration and Conciliation Act, 1996 and the rules framed there under or any statutory modification or re-enactment thereof for the time being in force.

iv. The Award of the Sole Arbitrator shall be final, conclusive and binding upon the Parties.

v. In the event of the death or resignation or incapacity or whatsoever of the said Sole Arbitrator if appointed by the parties mutually the said parties may again appoint a suitable Substitute Arbitrator in place of the erstwhile Sole Arbitrator to continue with the proceedings. In the event of appointment of the Sole Arbitrator by the Hon'ble High court at Calcutta on death or resignation or incapacity or whatsoever of the said Sole Arbitrator, either of the parties in this behalf, may make an application to the Hon'ble High court at Calcutta for appointment of a Substitute Arbitrator and the Hon'ble Court may pass such orders as it deems fit and proper.

vi. Also, in the event an Arbitration award is set aside by a competent court the parties may appoint a Sole Arbitrator mutually or on failing to appoint a Sole Arbitrator mutually within the statutory period then either of the parties may file an application before the Hon'ble High Court at Calcutta under the provisions of the Arbitration and Conciliation Act, 1996 for appointment of a Sole Arbitrator by the Hon'ble Court in accordance with the provisions of the Arbitration & Conciliation Act.

vii. The cost of the arbitration, fees of the arbitrator, remuneration of the stenographer and clerk, stamp paper etc. shall be shared equally by the parties, unless otherwise directed by the Sole Arbitrator. The venue of arbitration shall be at Kolkata and unless otherwise decided by the parties or by the Sole Arbitrator himself, the venue shall be the premises of Garden Reach Shipbuilders & Engineers Ltd. located at 43/46, Garden Reach Road, Kolkata 700 024.

viii. The language of the proceeding shall be in English.

(43) **JURISDICTION (न्याय अधिकार):** Litigation, if any, pertaining to this contract will come under the jurisdiction of High Court at Kolkata.

i) All contracts shall be deemed to have been wholly made in Kolkata and all claims there under are payable in Kolkata City and it is the distinct condition of the order that no suit or action for the purpose of enforcing any claim in respect of the order shall be instituted in any Court other than that situated in Kolkata City, West Bengal State, India.

ii) The Firm is warranted that all service rendered by them shall conform to applicable city, states & central laws, ordinances and regulations and the said Firm shall indemnify / defend / relieve GRSE harmless, from / of against loss, cost of damage, by reason or any actual or alleged violation thereof.

iii) GRSE shall not be liable under the workmen's compensation Act of 1923; in case any employee or workmen receives injury while actually serving his employer in connection with the latter's work inside the compound of GRSE Ltd.

iv) All existing applicable Laws such as ESI, PF, SERVICE, CONTRACT LABOUR, CHILD LABOUR etc. as applicable, shall be binding for the contract.

1. For any discrepancy between SOTR/NIT (Notice Inviting Tender) and STAC, SOTR/NIT statement may be taken as final.
2. Clarification required, if any, regarding Tender Document, should be got resolved by contacting competent authority of GRSE prior to submission of bid.

ANNEXURE - 3

INTEGRITY PACT

Between

M/s Garden Reach Shipbuilders & Engineers Limited (GRSE) hereinafter referred to as "The Principal"
and
..... hereinafter referred to as "the Bidder/Contractor"

Preamble

The Principal intends to award, under laid down organizational procedures, contract/s for “Name of the job:----------”. The principal 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)/ or Contractors (s).
In order to achieve these goals, the principal will appoint an Independent External Monitor (IEM), who will monitor the tender process and the execution of the contract for compliance with the principals mentioned above.

Section 1- Commitments of the principal

[1] The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-

a. No employee of the principal, 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 Principal will, during the tender process treat all Bidder(s) with equity and reason. The principal will in particular, before and during the tender process, provided 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 contact execution.

c. The principal will exclude from the process all known prejudiced persons.

[2] If the principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC/PC Act, or if there be a substantive suspicion in this regard, the principal 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) commit himself 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 principal'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 purpose of competition or personal gain, or pass on to others, any information or document provided by the principal 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) of foreign origin shall disclose the name and address of the Agents/representatives in India, if any. Similarly the Bidder(s) / Contractor(s) of Indian Nationality shall furnish the name and address of the foreign particulars, if any. Furthers details as mentioned in the "Guidelines on Indian agents of Foreign suppliers" shall be disclosed by the Bidder(s)/Contractor(s). Further as mentioned in the Guidelines all the payments made to the Indian agent/representative have to be in Indian Rupees only, copy of the "Guidelines on Indian agent of foreign supplier" is annexed and marked as annex.

e. 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.

[2] The Bidders(s)/ Contractor(s) will not instigate third persons to commit offences, outline above or be an accessory to such offence.

Section 3- Disqualification from tender process and exclusion from future contracts.

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 principal is entitled to disqualify the Bidders(s)/ Contractor(s) from the tender process or take action as per the extant procedure of the company.

Section 4- Compensation for Damages.

1) If the principal has disqualified the Bidder(s) from the tender process prior to the award according to section 3, the principal is entitled to demand and recover the damages equivalent to earnest Money deposit/Bid security.

2) If the Principal has terminated the contract according to section 3, or if the principal is entitled to terminate the contract according to section 3, the Principal shall be entitled to demand and recover from the contractor liquidated damages of the contract value or the amount equivalent to Performance Bank Guarantee.

Section 5- Previous Transgression

1) The Bidder declares that no previous transgressions occurred in the last 3 years with any other company in any country conforming to the anti corruption approach or with any other Public Sector Enterprise 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 action can be taken as per the procedure mentioned in "Guidelines on Banning of business dealing"

Section 6- Equal treatment of all Bidders/Contractors/Sub-contractors.

1) The Bidder(s)/Contractor(s) undertake(s) to demand from all sub-contractors a commitment in conformity with this integrity pact, and to submit it to the principal before contract signing.
2) The principal will enter into agreements with identical conditions as this one with all Bidders, Contractors and Sub-Contractors.
3) The Principal will disqualify from the tender process all bidders who do not sign this pact or violates its provisions.

Section 7- Criminal charges against violating Bidder(s) Contractor(s)/Sub-Contractor(s)
If the principal 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 Sub contractor which constitutes corruption, or if the principal has substantive suspicion in this regard, the principal will inform the same to the Chief Vigilance Officer.

Section 8- Independent External Monitor/Monitors

1) The Principal 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 representative of the parties and perform his functions neutrally and independently. He reports to the Chairman GRSE.

3) The Bidder(s)/Contractor (s) accepts that the Monitor has the right to access without restriction to all project documentation of the principal 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. The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s) /Subcontractor(s) with confidentiality.
4) The Principal will provide to the Monitor sufficient information about all meeting among the parties related to the project provided such meetings could have an impact on the contractual relations between the principal and the contractor, The parties offer to the Monitor the option to participate in such meetings.

5) As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the management of the principal and request the management 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.

6) The Monitor will submit a written report to the Chairman, GRSE within 8 to 10 weeks from the date of reference or intimation to him by the principal and should the occasion arise, submit proposals for correcting problematic situations.

7) Monitor shall be entitled to compensation on the same terms as being extended to/provided to Independent Directors on the GRSE Board.
8) If the Monitor has reported to the Chairman GRSE a substantiated suspicion of an offence under relevant IPC/PC act, and the Chairman GRSE has not, within the reasonable time taken visible action to proceed against such offence 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 18 months after the last payment under the contract, and for all other Bidders 6 months after the contract has been awarded.

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 GRSE.

Section 10- Other provisions:

1) This agreement is subject to Indian Law, place of performance and jurisdiction is the Registered Office of the principal i.e. Kolkata.

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.

(For & On behalf of the principal) (For & On behalf of the Bidder/Contractor)

Place …….. Place .....

Date …… Date .....

Witness 1
(Name & Address)

Witness 2
(Name & Address)

ANNEXURE - 4

FORMAT FOR EXECUTED RELEVANT JOBS TO JUSTIFY TECHNICAL ELIGIBILITY

1. **Name of the Bidder:**
2. **Job Description:**
3. **Tender Reference:**

Details of Executed relevant jobs:

Sl. No	Description of Executed relevant jobs	Order No. & Date *(Supporting soft or, hard copy to be submitted)*	Start & Completion date as per Order	Actual start date	Actual Completion Date	Order placed by	Value of Purchase order	Work completion certificate Ref. No. & date *(Supporting soft or, hard copy to be submitted)*
1								
2								
3								
4								
5								

Note: Please add additional pages if required

(Signature of Authorized Representative)

Date:

Name:

Designation:

ANNEXURE – 5

FORMAT ON FINANCIAL ELIGIBILITY CRITERIA

(To be submitted on Company's letter head)

1. **Name of the Bidder:**
2. **Job Description:**
3. **Tender Reference:**

A. Financial Data for evaluating Financial Eligibility:

SL. No.	Financial Years	Turn Over (Rs. In Lakhs)
1	2023-24	
2	2022-23	
3	2021-22	

(Signature of Authorized Representative)

Date:

Name:

Designation:

Note: i) Audited reports for above FY to be submitted as supporting documents.

ANNEXURE – 6

SELF-CERTIFICATION FOR DECLARATION REGARDING BLACKLISTING/ TENDER HOLIDAY

(To be submitted in Company's Letterhead)

A. Name of the Bidder: Date:

B. Job Description:

C. GeM Tender/Bid Reference:

Dear Sir,

1. I / We, Proprietor / Partner(s) / Director(s) of M/s. ..... hereby declare that our firm / company namely M/s. ..... have neither been blacklisted nor have received any tender holiday by any PSUs/Central & State Govt. Organizations or any other Government / Quasi Government Organizations during last 03 (three) years ending on **31-Jun-2025** from taking part in Government tenders.

OR

I / We Proprietor/ Partner(s) / Director(s) of M/s. ..... hereby declare that our firm / company namely M/s. ..... has received tender holiday from M/s. ..... *(name of PSUs/Central & State Govt. Organizations or any other Government / Quasi Government Organizations)* from taking part in Government tenders for a period of ..... months w.e.f. ..... to ..... *(date)*. The period is over on ..... *(date)* and now our firm/company is entitled to take part in Government tenders. (Relevant withdrawal/revocation document is attached).

2. In case the above information are found inappropriate, I / We are fully aware that the offer submitted by our firm / contract awarded to our firm/company namely M/s. ..... will be rejected / cancelled by M/s GRSE, and EMD / SD shall be forfeited and appropriate action will be taken in accordance with the vendor policy of GRSE.

Signature .....
Name .....
Designation: .....
Name & address of the firm: .....
Date: Signature of Bidder
with Seal

Annexure-11

CHECK LIST FOR BILL SUBMISSION - for Service Contracts				
A.	**GENERAL PARTICULARS: (to be checked and submitted by Contractor/Vendor)**			
A.1	BTN (as per BTS System): -	Not applicable for OBPS		
A.2	Invoice No and date / E-Invoice No. & Date (if applicable for the vendor) (Original & in triplicate)			
A.3	PO Number			
A.4	Name of Vendor			
A.5	Location of work:	MW / RBD/ FOJ/ TU / 61Park/other GRSE site/ Vendor's premises		
	I. For RA Bill (Running/Progressive bill) (Put ✓ Mark)	**YES**	**NO**	**NA**
A.6	PO Number and date verified with Invoice:			
A.7	Vendor Name & Address in Invoice verified with Purchase Order:			
A.8	Vendor Code as in PO verified with Invoice:			
A.9	Original certified WDC enclosed:			
A.10	Whether WDC is Certified by the Authorized Person as per PO / SOTR with Rubber Stamp			
A.12	HSN/SAC code is as per PO			
A.13	GSTIN No. is as per PO			
A.14	GST % is as per PO			
A.15	Security Deposit (SD) submittded as per PO			
A.16	PBG of equivalent amount submitted, as per PO			
A.17	Compliance of Statutory Liabilities of labour as per PO			
	II. Applicable for Final/Balance Bill (Put ✓ Mark)			
A.20	Certified Job Completion Certificate (JCC) enclosed			
A.21	MRS as per PO terms enclosed (If applicable)			
A.22	Guarantee Period (GP) expired as per PO term			
A.23	PBG of equivalent amount submitted, if GP is not over (If Yes, copy to enclose with the bill)			